

# ENDANGERED *Species* BULLETIN

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*R*estoring threatened and endangered plants and animals to a secure status is one of the main goals of the endangered species program. Unfortunately, recovery is seldom an easy process. It may involve extensive research, habitat protection or restoration, close coordination among agencies and landowners, captive propagation and release, control of harmful non-native species, and a considerable amount of time.

Nearly 40 percent of listed U.S. plants and animals are stable or improving in status. This progress is the result of hard work by State and Federal agencies, independent organizations, landowners, businesses, and concerned citizens. This edition of the **Bulletin** highlights recent successes in the continuing effort to restore balance to wildlife and its habitat.

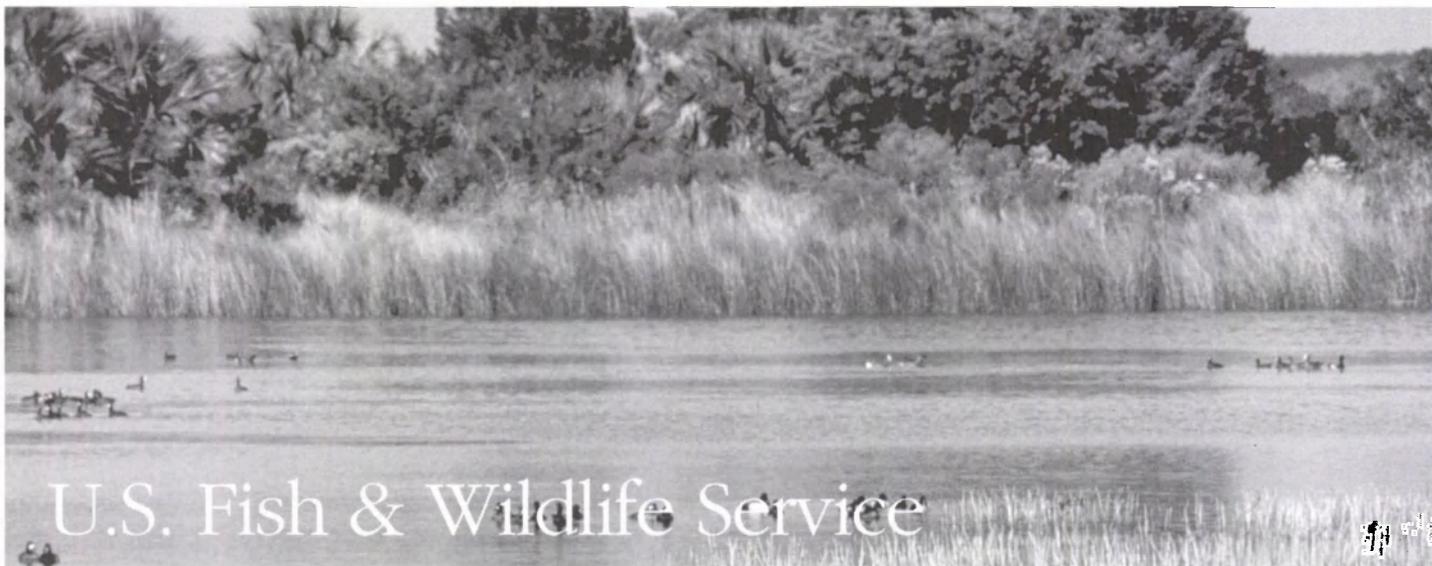


photo by Tom Webster, FWS

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**On the Cover**  
Recovery of the aplomado falcon took a promising turn this year with the first chick born in the United States in over 40 years. The photo to the left shows an adult bird.

**photo by Tom Urban**

The Endangered Species Bulletin welcomes manuscripts on a wide range of topics related to endangered species. We are particularly interested in news about recovery, interagency consultation, habitat conservation plans, and cooperative ventures. Please contact the Editor before preparing a manuscript. We cannot guarantee publication.

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# Yellowstone Wolves Bear Pups

Recovery of the gray wolf (*Canis lupus*) in the Rocky Mountains came another step closer in early May when eight pups—four males and four females—were born to a wolf reintroduced this year into Yellowstone National Park. Biologists believe that the pups are the first wolves born in the Yellowstone region in over 70 years.

Working with biologists from the National Park Service and the Department of Agriculture's Animal Damage Control program, Fish and Wildlife Service biologist Joe Fontaine found the pups under a spruce bough near Red Lodge, Montana, a short distance northeast of the park. They were born to the alpha female from the Rose Creek pack, so named for the location of the acclimation pen that temporarily held a group of three wolves transported from Canada to Yellowstone National Park in January.

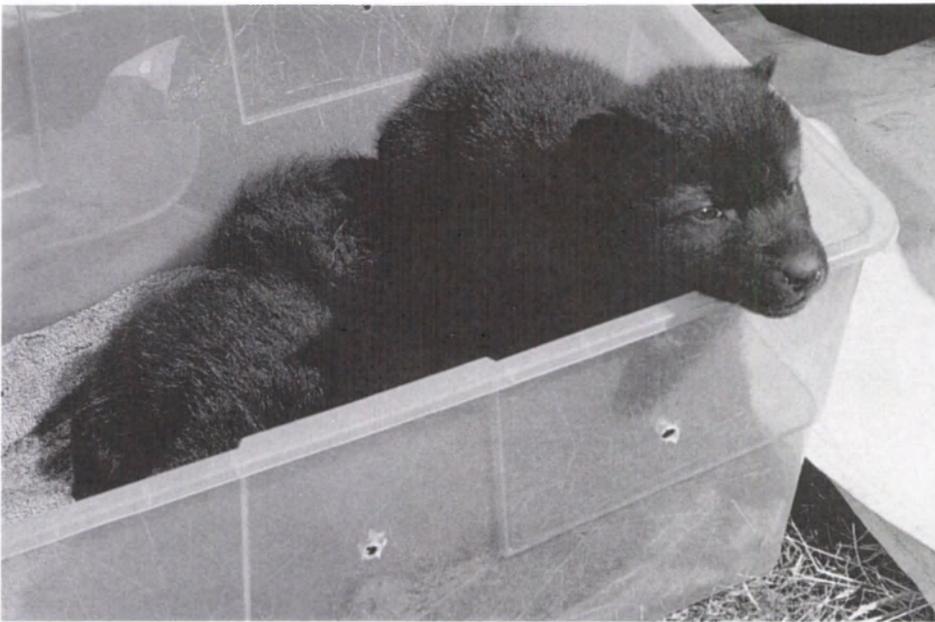


Under normal conditions, other members of a wolf pack assist the alpha female in care of the young. The alpha male provides some of the food for the female, who stays with or near the pups most of the time until they are weaned, which usually occurs within 10 weeks. In this case, unfortunately, the alpha male was illegally killed in April, leaving the female to raise the pups by herself. The only other member of the Rose Creek group, a juvenile female offspring of the alpha female, struck out on her own shortly after leaving the acclimation pen in March.

For a few days, wildlife biologists assumed the role of the missing pack members by providing animal carcasses for food. But because the female and her pups needed continued human assistance for several weeks, wildlife managers captured and moved them on May 18 to the acclimation pen at Yellowstone National Park. A veterinarian pronounced them all in excellent condition. The wolves will stay in the enclosure until the pups have a better chance for survival in the wild.

The two other packs released into Yellowstone National Park are doing well. One remains in the park, where over 3,000 visitors have seen wolves so far this year. The other pack (the Soda Butte pack) moves in and out of the park to the nearby U.S. Forest Service Absaroka-Beartooth Wilderness Area. In mid-June, more good news came to light: during a routine monitoring flight, a National Park Service biologist observed a pup following one of the Soda Butte females. Biologists suspect there may be others.

Yellowstone is not the only reintroduction site; 15 gray wolves were released this spring in central Idaho. One was killed illegally and another has not been



located since early spring, but the remaining 13 wolves appear to be doing well. During June, 12 of them were staying within the central Idaho wilderness, while one was located within the experimental population area on nearby Forest Service land in Montana.

This good news complements the successful wolf recovery program in northwestern Montana, where the population is expanding due to several years of good reproduction and continued dispersal of wolves from Canada. Currently, northwestern Montana supports about 70 wolves. Biologists estimate that several litters are being raised. No conflicts with livestock have been reported so far this year.

The progress of the wolf reintroduction program in its first year has exceeded all expectations. Breeding began ahead of schedule, mortality has been less than projected, and the wolves are remaining closer to their release areas than biologists anticipated. No conflicts with livestock had been reported as of early July. With additional releases in Yellowstone and central Idaho over the next 2 to 4 years and continued natural recovery in northwestern Montana, the gray wolf should be restored and eligible for delisting by the year 2002, if not earlier. Assuming the reintroduction effort continues to be as successful as it has been, the total cost of reaching wolf recovery in the Rocky Mountains will be significantly less than the \$6.7 million originally predicted.



**The wolves reintroduced into Yellowstone National Park were not expected to breed the year of their release, and the pups were a pleasant surprise. This good news was tempered, however, by the death of the Rose Creek pack's alpha male. Biologists monitoring the released wolves discovered the wolf's radio collar in late April. Acting on a tip, FWS law enforcement agents—working closely with the local sheriff and wardens of the Montana Department of Fish, Wildlife, and Parks—found the wolf's hide and skinned carcass. Chad McKittrick, a carpenter in Red Lodge, was charged with illegally taking the protected animal, and trial was scheduled for July 10. Under the experimental population rules governing the reintroduction program, ranchers and their employees in designated areas are allowed to kill wolves that are in the act of taking livestock; however, no livestock depredation was involved in this case, and McKittrick is not involved in the ranching industry.**

*Opposite page*  
**FWS biologist Joe Fontaine preparing to relocate the Red Lodge pups**

# Protecting Habitat for Silversword Recovery

Once, the slopes of Haleakala Crater on the Hawaiian island of Maui glowed at night from fields of unusual silvery plants that reflected the moonlight. By the 1920's, however, the plant that had become a popular tourist attraction was near extinction. But thanks to the efforts of the National Park Service, the Haleakala silversword (*Argyroxiphium sandwicense* var. *macrocephalum*) has increased in number dramatically.



photo by Joan Canfield, FWS

Before Haleakala Crater became a national park, visitors to the area would collect silversword plants as proof that they had made the journey all the way to the summit. Silverswords even were uprooted and rolled down the slopes of cinder cones for fun. Although the species is not a preferred food of goats and cattle, the sparse vegetation in the subalpine reaches of Haleakala made silverswords susceptible to browsing by these non-native animals. By the 1920's, the Maui Chamber of Commerce felt so strongly about the declining population that it petitioned Congress for efforts to save the species. As a result, Congress established Haleakala National Park.

The first ranger was stationed at Haleakala Crater in 1930, greatly reducing the vandalism problem, and cattle were removed from the park in the 1930's. In 1935, however, silversword population estimates were only 4,000 individuals, with fewer than 300 plants flowering. By 1971, the silversword population had increased to about 45,000 plants. Later, in the 1980's, the park boundary was fenced, and goats were evicted from the upper reaches of the park to remove the threat from browsing. The population grew to just under 65,000 plants by 1991.

Although the Haleakala silversword has increased dramatically in numbers, it was listed in 1991 as threatened because of other problems, the most dangerous of

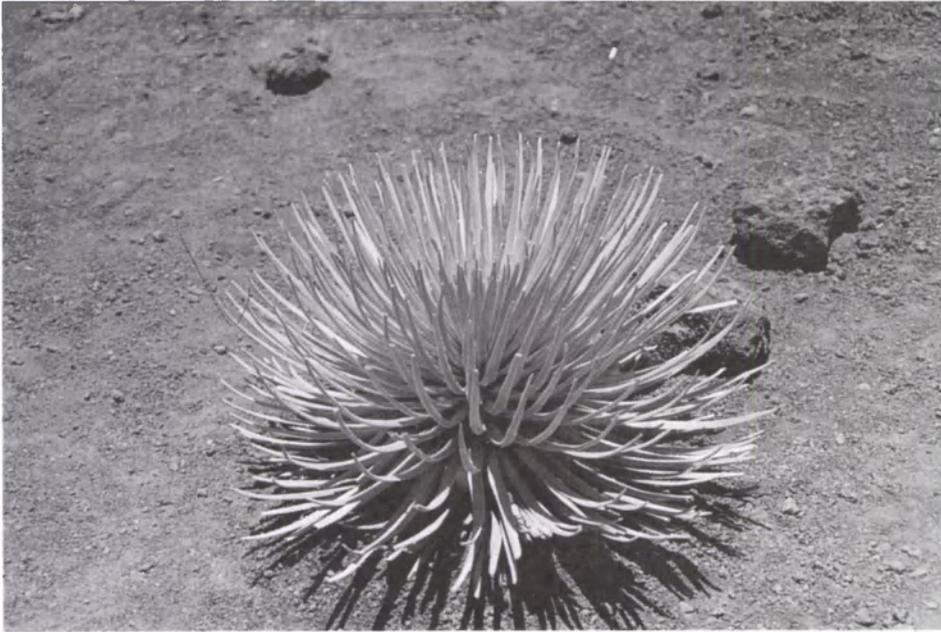


photo by M.M. Bruegmann, FWS

**The Haleakala silversword is found only in a 250-acre (100-hectare) area in the crater and on the outer slopes of Haleakala, Maui's largest volcano, at elevations between 6,900 and 9,850 feet (2,100 and 3,000 meters). Most populations occur within the park boundaries. This majestic, globe-shaped plant with sword-like leaves is covered densely with silvery hairs. After 15 to 50 years, it produces one central flowering stalk up to 10 feet (3 m) tall bearing 50 to 600 pink or wine-red, daisy-like flowering heads. After flowering, the plant dies.**

which is the loss of pollinators. Silverswords are self-incompatible, meaning that flowers from one plant must receive pollen from another plant to produce viable seeds. The localized, endemic insects that pollinate the Haleakala silversword are highly threatened by the introduced Argentine ant, which preys on native insects. Scientists have not yet found a way to effectively control the ants.

Constant monitoring also is required to maintain the fences that keep non-native ungulates out of the park. Illegal collecting, trampling, and increased erosion of the cinder substrate caused by the high number of visitors to the park have become threats again as Haleakala has grown in popularity. In addition, 60 percent of silversword seeds are eaten by some of the remaining native insects, greatly reducing the plant's reproductive success. Insects also eat leaves, stems, and roots of the silverswords, jeopardizing future growth and reproduction. Predation by native insects would not be a problem if the Haleakala silversword were not so reduced in range and numbers.

The dedicated work of the National Park Service saved the Haleakala silversword from extinction, but the species has not yet fully recovered. The remaining threats are difficult to control, and this magnificent plant may remain on the threatened list for several more years. Further recovery of the Haleakala silversword will require a concerted effort to address the numerous effects of introduced species in previously isolated ecosystems like the Hawaiian Islands.

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*Marie Bruegmann is a botanist with the FWS Pacific Islands Office, located in Honolulu, Hawaii.*



photo by M.M. Bruegmann, FWS

# Anastasia Island's Endangered Mouse

**The beach mouse is nocturnal, foraging on sea oats, fruits of the prickly pear cactus (*Opuntia spp.*), other types of vegetation, and insects. These nightly forays are not without danger; raccoons (*Procyon lotor*), opossums (*Didelphis marsupialis*), and possibly eastern diamondback rattlesnakes (*Crotalus adamanteus*) include beach mice in their diets. Other threats to the Anastasia Island beach mouse include coastal storms and hurricanes. At current population levels and distribution, a single hurricane could destroy all that is left of this unique subspecies.**

**The major threat to the survival of the Anastasia Island beach mouse is loss of habitat. Coastal development not only alters habitat but also introduces new predators, such as free-roaming domestic and feral cats (*Felis catus*), and competitors like the house mouse (*Mus musculus*). Exotic vegetation can compete with native plants that provide food for the mouse and stabilize the dunes. Even in areas where good habitat still exists, it often is fragmented or reduced.**

Early in the morning on a misty northeast Florida beach, a small mammal scurries along the foredunes in sea oats (*Uniola paniculata*) and other grasses as ocean waves crash onto shore. It takes the bait of dry oatmeal and is safely live trapped. A short time later, biologists and natural resource managers retrieve the animal. They observe its condition, determine whether it is male or female, and measure its weight before releasing the mammal back into its fragile environment unharmed. After a moment of hesitation, the animal plunges into a small hole in the side of the sand dune.

Why would such a small animal warrant this kind of attention? This particular mammal, endemic to a barrier island off northeast Florida, is the Anastasia Island beach mouse (*Peromyscus polionotus phasma*), listed in 1989 as endangered.

Currently, two areas on Anastasia Island provide relatively undisturbed habitat for the beach mouse. Anastasia State Recreation Area, managed by the Florida Park Service, and Fort Matanzas National Monument, a unit of the National Park Service, contain small amounts of dune habitat for the beach mice. The National Park Service and the

Florida Park Service protect beach mouse habitat by controlling feral cats, monitoring visitor use, and providing public education.

Recovery efforts depend on the cooperation of many State and Federal agencies. For example, research has been funded and/or conducted by the Florida Game and Fresh Water Fish Commission, University of Florida, Florida Museum of Natural History, and U.S. Fish and Wildlife Service.

Another facet of the recovery plan is to reestablish a population of the Anastasia Island beach mouse at another location within its former range. This would add some insurance against the animal's extinction if a severe storm were to wipe out the populations on Anastasia Island. A reintroduction was attempted at Guana River State Park on a barrier island north of Anastasia Island in the fall of 1992. As of spring 1995, the reintroduction effort was going well.

The Anastasia beach mouse and people can coexist. Protecting beach dune habitat benefits both the public as well as the beach mouse. Intact dune systems also help protect inland structures during storms and provide a buffer against beach erosion.



photo by Daniel R. Tardona, NPS

Daniel Tardona is the West District Supervisor for the Timucuan Ecological and Historic Preserve, National Park Service, in Jacksonville, Florida.

# Aplomado Falcons

## Nest in Texas

**W**ildlife biologists were thrilled in early May to discover a pair of northern aplomado falcons (*Falco femoralis septentrionalis*) nesting near Brownsville, Texas, just south of Laguna Atascosa National Wildlife Refuge. Until this year, the last known nesting of an aplomado falcon in the U.S. was near Deming, New Mexico, in 1952. But even better news came in June, when biologists made their way to the nest and found a healthy aplomado chick.

The adult falcons were propagated by the Peregrine Fund, an organization devoted to birds of prey that has been releasing aplomado falcons at Laguna Atascosa NWR since 1985.

The recovery effort began in 1982, when a remnant population was discovered in southern Mexico. Mexican officials allowed the Fund to collect 10 chicks from 10 different nests for propagation at the organization's World Center for Birds of Prey, located in Boise, Idaho. As the breeding stock increased, reintroduction techniques were developed. Since 1985, 62 aplomado falcons have been released at Laguna Atascosa NWR and adjacent lands. Working with the FWS, the Fund plans to continue falcon releases at the refuge. Five chicks were released at Laguna Atascosa in late June, and the Fund hopes that improved captive propagation techniques will allow the release of 30-40 aplomado falcons in the refuge area this year.

Biologists had not expected any of the released birds to nest for at least several more years. Refuge Manager Steven Thompson gives credit for the success to cooperating individuals and organizations, such as the Peregrine Fund and the Cameron County Agriculture-Wildlife Coexistence Committee.

The Committee, comprised of farmers, representatives of agricultural chemical companies, and wildlife officials, negotiated reductions in the use of some pesticides to avoid contaminating the falcon's food supply. Conservation of the falcons seems to be compatible with current land use. The new nest, for example, is on land currently leased for cattle grazing. "Basically, what is good for cattle is also good for aplomado falcons," said J. Peter Jenny, vice president of the Fund.

"The aplomado falcons are on the top 10 list of birds to see," according to Thompson. "People from all over the world come to the Rio Grande Valley just to see this rare falcon." A recent study states that bird watchers visiting the Laguna Atascosa area contribute almost \$8.5 million annually to the Cameron County economy.

**Aplomado falcons once flew widely over the grasslands of Texas and New Mexico, where they perched on yuccas and the crowns of scattered trees. But the species declined dramatically in the early part of this century, due primarily to changing land use practices that promoted the encroachment of brushy plants on grassland habitat. Any of the falcons that survived habitat alteration likely were contaminated by the chlorinated hydrocarbon insecticides (such as DDT) that came into use after World War II. These chemicals interfered with eggshell formation in falcons and led to reproductive failure.**

**The aplomado falcon is named after the Spanish word for lead because of the bird's grayish coloring. Adults are characterized by a gray dorsum, rufous underparts with a black "cummerbund," distinctive black and white facial markings, and a long, banded tail.**



photo by Tom Urban

by Michelle Reynolds,  
Tom Snetsinger, and  
Thane Pratt

# Endangered Birds Found on Maui

Many of the unique birds native to the Hawaiian Islands have declined dramatically since the archipelago was settled. Extensive habitat loss and the effects of introduced predators, competitors, and diseases caused the extinction of some species and reduced others to such a low point that their current status is unknown. Of the 30 Hawaiian bird species listed under the Endangered Species Act, 15 forest birds are among the most rare. Some now are seldom if ever seen. Efforts to find these species and obtain basic information on their numbers, distribution, and ecological requirements are needed if we are to protect and restore the unique Hawaiian avifauna.

The National Biological Service recently initiated surveys for four critically endangered Hawaiian birds inhabiting the windward rainforests of Maui's Haleakala Volcano: the po'ouli (*Melamprosops phaeosoma*), Maui akepa (*Loxops coccineus aureus*), Maui nukupu'u (*Hemignathus lucidus affinis*), and Bishop's o'o (*Moho bishopi*). These species inhabit dense, high-elevation rainforests that cover some of the most inhospitable terrain in the world, a dissected landscape of steep ridges and deep gulches. Rainfall can be as high as 350 inches (890 centimeters) per year. The remoteness and difficulty of working in forests where the rare bird species are found hindered previous research attempts, but recent surveys have yielded some encouraging results.

Biologists with the National Biological Service's Hawai'i Field Station led three expeditions last year into portions of the State's Hanawi Natural Area Reserve and Haleakala National Park. A family group of three po'ouli was discovered during the first expedition in August and September, and a juvenile po'ouli was observed begging and being fed by an adult. Few sightings of this elusive species have been made since the mid-1980's, and evidence of successful breeding was very exciting.

The Hawaiian name for this small chunky brown bird with a black mask and light underparts means "black-faced." Although all historic records of po'ouli have been from 'ohi'a (*Metrosideros polymorpha*) forests with dense native understory, fossil records from dry forests on the southwest slope of Haleakala indicate that the species once enjoyed a much wider

range. Po'ouli feed on snails and insects gleaned from trees and understory plants. These birds are harmed by feral pigs that destroy microhabitats essential to native

**Opposite page**  
**Nukupu'u**

**Below**  
**Po'ouli**  
**paintings by Sheryl Ives Boynton**



snails and other invertebrates. Mosquito-borne avian diseases (malaria and avian pox) at lower elevations and non-native mammalian predators are additional likely threats. A population estimate for po'ouli made in 1980 was less than 150 birds. Today, researchers believe that fewer than 30 individuals remain.

A second expedition in October 1994 found an additional po'ouli about 1 mile (2 km) from the family group. An adult male nukupu'u was also discovered. The last confirmed sighting for the very rare Maui nukupu'u was in 1986. Its Hawaiian name describes its decurved bill: "nuku" means bill, and "pu'u" a round hill. The nukupu'u's upper mandible is twice the length of the lower. The plumage is olive green. Males have a bright yellow head, throat and breast. Nukupu'u feed on wood boring beetles, spiders, nectar, larvae, and flower nectar. Historic records suggest they were originally more common in the lower elevation koa forest (*Acacia koa*) that have been nearly eliminated by cattle ranching.

The third search effort in February 1995 found a po'ouli nearly 1,000 feet (330 meters) lower in elevation than the previous sightings. Perhaps the Maui akepa and Bishop's o'o will be rediscovered next!

Survival of po'ouli and nukupu'u continues to be threatened by the invasion of non-native animals and plants into the birds' nearly pristine habitat. To ward off this invasion, the National Park Service, Hawaii Division of Forestry and Wildlife, Nature Conservancy of Hawai'i, and U.S. Fish and Wildlife Service (FWS) are hard at work fencing and removing feral pigs from the historic range of the po'ouli and other critically endangered forest birds. To date, 900 acres (400 hectares) are pig free, and the remaining 600 acres (250 ha) of the po'ouli's known range should be so by 1997. Adjacent forests are similarly managed and are showing signs of recovery.

This year, the FWS funded an initial 2 years of research and further management for the po'ouli and nukupu'u. This new project, to be carried out by the National Biological Service, will conduct research on the birds' population ecology. Management actions may buy the po'ouli and nukupu'u time until their habitat has recovered from pig damage and the bird populations can increase in numbers and range.

If successful, the surveys will locate additional birds and may lay the groundwork for their recovery.

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*Michelle Reynolds, Tom Snetsinger, and Thane Pratt are wildlife biologists with the National Biological Service, Hawaii Field Station, Hawaii National Park.*



## **Supreme Court Affirms Habitat Protection**

**On June 29, the U.S. Supreme Court upheld the provision of the Endangered Species Act that protects endangered and threatened wildlife from harm due to habitat modification or degradation. The 6-3 ruling in the "Sweet Home" case was welcomed by Secretary of the interior Bruce Babbitt as "a common sense approach" consistent with the actions of past Republican and Democratic Administrations in protecting listed species. "At the same time," Babbitt said, "it makes it all the more important that we work to make this law more flexible and user-friendly for landowners. Cooperation with landowners, big and small, is the best way to ensure both the health of wildlife habitat and sustainable economic development. We will continue to aggressively pursue a variety of reforms to make the Act less onerous on private landowners."**

**"Our objective is to encourage landowners with endangered species habitat to integrate economic development and conservation through practical conservation efforts on their land. Habitat conservation plans are the solution that demonstrate the compatibility of wildlife habitat conservation alongside resource use and land development."**

# Mexican Spotted Owl Draft Recovery Plan

A draft recovery plan for the Mexican spotted owl (*Strix occidentalis lucida*) was released March 27, 1995, for public review and comment. It describes the actions biologists believe are necessary to restore this threatened subspecies to a secure status.

The draft plan was written by a recovery team that included owl experts and other wildlife biologists, landscape ecologists, forest ecologists, and silviculturalists. A Mexican representative was appointed to the team to facilitate owl recovery efforts in Mexico, where land management practices differ substantially from those in the United States. In addition, representatives from various Federal and State agencies, plus a tribal representative, played substantial roles in the recovery plan's development.

The draft recovery plan calls for areas to be treated according to three categories: protected, restricted, or unrestricted. Protected areas include 600-acre "Protected Activity Centers" around occupied or recently occupied owl sites, plus forests within the owl's range that are over 40 degrees in slope. Restricted areas include mixed conifer and pine-oak forests outside protected areas, where logging can take place if conducted in a manner compatible with the owl's habitat. Finally, "unrestricted" areas include the remaining forested lands, such as spruce-fir, pinyon-juniper, and ponderosa pine forests. The team presumes that current management will provide adequate habitat for foraging and dispersal, the owl's primary uses of these forest types.

A major recommendation is to conduct a scientifically based population trend analysis. The Mexican spotted owl was listed based on the projected loss of old-growth or uneven-

aged forest habitat. It assumed that the existing Mexican spotted owl population will survive if sufficient habitat is maintained. However, to determine recovery, the trend in owl abundance will be needed. This will be most important in Arizona and New Mexico where most of the owls exist. Peripheral areas, such as Colorado and Utah, support low densities of spotted owls that would be expected to fluctuate considerably over time. These peripheral populations may have significant genetic importance.

As the primary administrator of lands supporting Mexican spotted owls in the United States, the Forest Service will have a leading role in the recovery effort. Earlier plans for extensive management of southwestern National Forests as even-aged stands are no longer in effect. The Southwestern Region of the Forest Service has been proactive in the recovery effort by considering the draft recovery plan as an alternative in its Draft Environmental Impact Statement to Amend Forest Plans. The Fish and Wildlife Service (FWS) will work closely with the Forest Service to carry out the final recovery plan. In addition, the FWS is assessing the significance of private lands for owl recovery and considering whether a special rule under section 4(d) of the Endangered Species Act, to allow greater flexibility in the use of these lands, would be appropriate. Several private land owners already are working with the FWS in New Mexico to reach agreements on logging within owl habitat.

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*Sarah E. Rinkevich is a wildlife biologist in the FWS New Mexico Ecological Services State Office in Albuquerque.*



FWS photo

The range-wide population of the Mexican spotted owl is fragmented naturally into geographically distinct subpopulations. Within these regions, owls inhabit diverse assemblages of biotic communities ranging from mixed conifer and ponderosa pine/oak forests to steep-walled canyons with varying amounts of coniferous and riparian vegetation. In northern portions of the range (i.e., southern Utah and Colorado), nests have been

found in caves or on cliff ledges in rocky canyons. Elsewhere, most nests appear to be in trees. Forests used for roosting and nesting often contain mature or old-growth stands with complex structure and high canopy closure. Spotted owls may be relatively intolerant of high temperatures, causing them to prefer closed-canopy forests and deep, shady canyons for roosting and nesting. Although the Mexican spotted owl appears to be quite similar

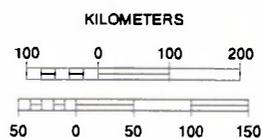
to both the northern and California spotted owls (*S. o. caurina* and *S. o. occidentalis*, respectively) in behavior and ecology, the Mexican spotted owl uses a wider range of habitat types.

Potential threats to the owl and its habitat vary throughout the Southwest. Although a plan to convert the management of most National Forest land in the southwest to even-aged timber production was the main reason for the owl's

listing, other adverse effects on the habitat could result from grazing and certain recreational activities. The team's conclusion was that recovery measures cannot, and should not, be applied uniformly across the owl's entire range.

Consequently, the owl's range was divided into 11 geographic areas or Recovery Units. Six were designated within the United States (see map) and five were delineated in Mexico.

## Mexican Spotted Owl Recovery Unit Index Map



Scale 1:8,500,000

Produced by National Biological Service  
Midcontinent Ecological Science Center  
GIS and Remote Sensing Project

by Hans Stuart

# Protecting the White Sands Pupfish

**The pupfish is essentially a relict of the Pleistocene epoch, according to Craig Springer, a biologist in the FWS Albuquerque Ecological Services Office. Some 20,000 years ago, a huge body of water known as Lake Otero inundated the present-day Tularosa Basin. Over time, as the climate became more arid, the lake subsided, and waters in the Tularosa Basin became separated from waters outside the basin. Consequently, several species of pupfish were isolated and left to adapt to the harsh desert environment in which they now remain.**

An historic agreement among five agencies will protect the habitat of the White Sands pupfish (*Cyprinodon tularosa*), a small fish endemic to a few desert springs and streams in the Tularosa Basin of south-central New Mexico. Signing the agreement were representatives of the White Sands Missile Range, U.S. Fish and Wildlife Service (FWS), New Mexico Department of Game and Fish, White Sands National Monument, and Holloman Air Force Base.

"Our agreement protects this unique fish and precludes the need to add it to the Federal list of threatened and endangered species," said Lynn Starnes of the FWS Southwest Regional Office in Albuquerque, New Mexico. "Each of the parties will help the pupfish by studying, protecting, and managing its habitat, which is also quite rare."

The White Sands pupfish, listed by the State of New Mexico as endangered, is found on White Sands Missile Range. An introduced population of the fish has been established in the Lost River, which flows through Holloman

Air Force Base and White Sands National Monument.

The White Sands pupfish has evolved to tolerate environmental conditions that would kill most other fishes, Springer added. They can endure water temperatures ranging from near freezing to 92 degrees Fahrenheit, flourish in water three times saltier than seawater, and persist in the smallest of pools. Threats to the species include water withdrawals, pollution, and competition from non-native fish that have been introduced into its habitat.

A conservation plan accompanying the interagency agreement addresses each of these threats and calls for introducing the fish into additional waters within the Tularosa Basin. Water withdrawals from pupfish habitat are now prohibited; in the past, water occasionally was used for construction activities within the Missile Range. Biologists from each of the five agencies will develop a monitoring program to track pupfish populations and their habitat. In addition, non-native fishes within pupfish habitat on the Missile Range (e.g., carp and mosquitofish) will be controlled. Permanent waters not presently inhabited by the pupfish are being examined for their potential in expanding the range of the pupfish.

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*Hans Stuart is a public affairs specialist with the FWS Southwest Regional Office.*

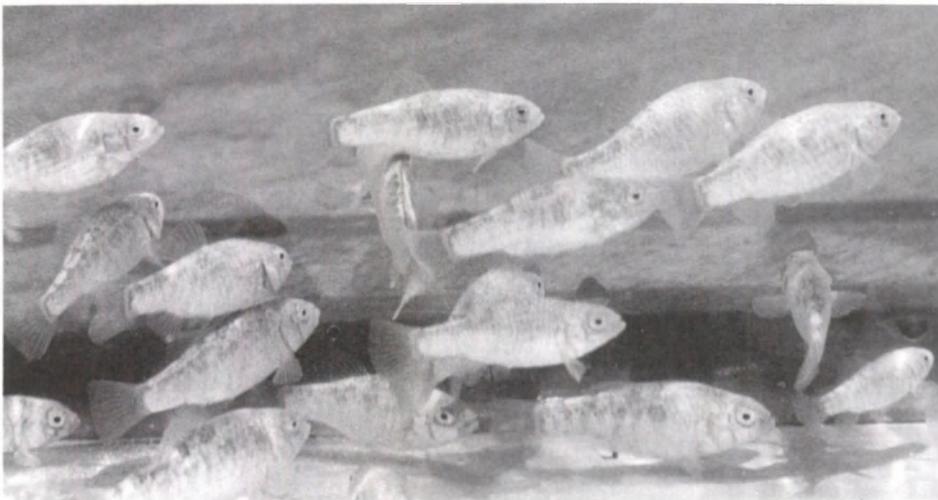


photo by Hans Stuart, FWS

# Back From the Brink

by Hugh Vickery

The bald eagle (*Haliaeetus leucocephalus*), the national symbol that almost disappeared from most of the United States just 25 years ago, is back from the brink. After a year-long review of public comments and scientific information, the Fish and Wildlife Service (FWS) recognized the continuing recovery of this magnificent raptor on July 12 by upgrading its official status from endangered in the lower 48 states to the less critical category of threatened.

This action marks a dramatic turnaround for the eagle, which was down to as few as 417 nesting pairs in the lower 48 states in the 1960's. Since that time, the number of nesting pairs has climbed to nearly 4,500, and the population is still increasing.

The reclassification rule, proposed on June 30, 1994, would have retained the bird's endangered status in Arizona, New Mexico, western Texas, and part of southeastern California. New data revealed that the eagle could be reclassified in those areas as well, and the final rule made this change.

The decline of the bald eagle was caused primarily by habitat loss and widespread use of the pesticide DDT. Eagles ingested the chemical by eating contaminated fish. In the late 1960's and early 1970's, scientists at the Patuxent Wildlife Research Center found that DDE, the principal breakdown product of DDT, accumulated in the fatty tissues of adult female eagles and impaired the release of calcium needed for eggshell formation. As eggshells thinned, reproductive success plummeted. After DDT was banned in the U.S. in 1972, however, populations gradually began to increase.

In addition, the Endangered Species Act (ESA) promoted bald eagle recovery by curbing habitat destruction and protecting nesting sites. Some areas of



photo by Paul Sykes, Jr.

particular importance were added to the National Wildlife Refuge System. Other recovery actions included the release of healthy young eagles in habitat where natural reproduction no longer occurred and the rehabilitation of injured birds. "While banning DDT was vital," FWS Director Mollie Beattie said, "the eagle could not have recovered had there not been strong laws such as the Endangered Species Act to protect its habitat and promote recovery."

Since the late 1970's, bald eagle numbers have been doubling every 6 to 7 years. Surveys indicate the population has risen 10 percent since 1993. Due to continuing threats, however, this species has not attained complete recovery. Episodes of poisoning still occur periodically, and the cumulative effects of incremental habitat loss are a problem in some areas. As a threatened species, the bald eagle will remain under the protection of the ESA.

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**Bald eagles historically ranged throughout North America except extreme northern Alaska and Canada and central and southern Mexico. The species is not listed as endangered or threatened in Canada and Alaska because populations there are considered healthy. A provision of the original reclassification proposal would have extended ESA protection to the species in Mexico, but action has been deferred because of a Congressional moratorium on adding taxa to the list of endangered and threatened wildlife.**

# Relief for Private Landowners

**One of the main criticisms of the ESA in recent years is that it excessively restricts the activities of private landowners, especially owners of small areas of land. Several recent Department of the Interior and Fish and Wildlife Service initiatives have addressed this controversial topic (see *Endangered Species Bulletin*, Vol XX, No. 3). In addition, a new and far-reaching solution to this problem is being crafted to allow private landowner activities that have only minor effects on species listed as threatened and, in the past, may have violated section 9 of the ESA.**

The primary restriction affecting private landowners under the Endangered Species Act (ESA) is the section 9 prohibition against “take” (defined in part as killing, harming, or harassing a federally listed species). However, a proposed “Residential/Small Impact Exemption” would essentially remove from the take prohibition certain classes of private landowner activities determined to have a minor or negligible impact on threatened species. This exemption would be accomplished under the authority of section 4(d) of the ESA, which allows for the development of special management programs for threatened species. However, because section 4(d) applies only to threatened species, endangered species would not be included in the proposed Residential/Small Impact Exemption.

Three kinds of activities would be affected by the proposed exemption: (1) activities conducted on a contiguous parcel of land 5 acres or less in size that is or will be occupied by a single household dwelling and is used principally for residential, non-commercial purposes; (2) activities conducted on a parcel of land that result in the cumulative disturbance of no more than 5 total contiguous acres for the entire parcel; and (3) activities likely to have negligible adverse effects upon the species.

Each of these categories is designed to address a specific or generic set of circumstances. The first is targeted toward residential homeowners and would essentially relieve the maintenance, enhancement, and general use of residential properties from ESA restrictions. Included would be building

a new home on a recently purchased lot, adding to an existing home, landscaping, gardening, and similar activities. The key to this category is that the activities are for *residential* purposes, and the affected property could not exceed 5 acres.

The second category is targeted toward *low-impact* activities, whether they are commercial or non-commercial in nature. This exemption would allow construction of a small to mid-sized business, for example, or use of part of a residential property for income-producing purposes. There is no restriction in the size of the affected property under this exemption. However, the total area of habitat disturbance over time could not exceed 5 acres, and the disturbance area must be contiguous.

The third category is undefined, allowing exemption of activities other than those described above when the FWS determines that the effects on the threatened species would be negligible.

The proposed Residential/Small Impact Exemption would be instituted in accordance with Federal regulations dealing with threatened species (50 CFR 17.33), under the general presumption that the effects of small landowner activities on threatened species are not significant.

For species listed in the future as threatened, the new regulation would require the Fish and Wildlife Service (FWS)—during the listing process—to evaluate the effects the exemptions would have on the species. If the FWS judges the effects are not likely to be significant, the exemptions would apply when the species is listed. However, if the effects are expected to be significant, the FWS would issue a special 4(d) rule concurrently with the final listing rule that would limit the exemptions as necessary to prevent significant effects.

For species already listed at the time the exemption authority takes effect, the FWS would evaluate exemption impacts on a case-by-case basis. Where the effects on a species are not likely to be significant, the FWS would then issue a special 4(d) rule applying the exemptions to that species.

A proposed rule describing the Residential/Small Impact Exemption is expected to be published in the *Federal Register* by late July 1995. A final rule codifying the exemption framework into Federal regulation could be in effect about 6 months later. Furthermore, Secretary Babbitt's March 9, 1995, ten-point plan for improving the ESA calls for an amendment extending the exemption process to endangered as well as threatened species. These will be important steps in balancing conservation goals with the need for easing ESA impacts on families, small landowners, and other property owners whose activities have only minor effects on listed species.

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*William Lehman is a wildlife biologist in the FWS Division of Endangered Species, Washington, D.C.*



**FWS photo**

**Under current law, private landowners either avoid take or, if it cannot be avoided, obtain an "incidental take permit" under section 10(a)(1)(B) of the ESA (see *Bulletin Vol. XX, No. 1*). The proposed exemption, in many cases, would remove ESA restrictions on such activities as home construction.**

# Soaring to Recovery

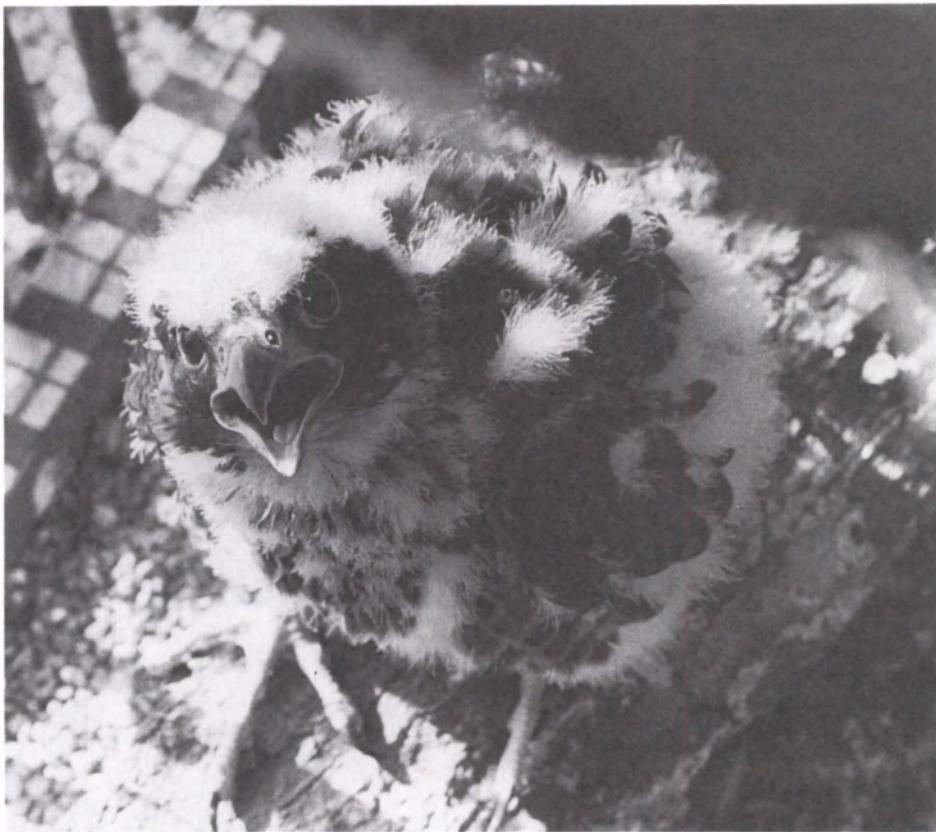
**The American peregrine falcon's population is now estimated at nearly 1,000 nesting pairs in the lower 48 states and more than 300 in Alaska, with additional nesting birds in Canada and Mexico.**

The American peregrine falcon (*Falco peregrinus anatum*), one of nature's most beautiful and exciting birds of prey, may soon wing its way off the list of threatened and endangered species. "After a narrow



photo by Skip Ambrose, FWS

brush with extinction, the peregrine falcon is coming back," Secretary of the Interior Bruce Babbitt said at a June 30 press conference. "Once a tragic symbol of what was wrong with our environment, the peregrine is now a symbol of hope."



***In recent years, peregrines have made themselves at home in a number of cities, including Baltimore, Boston, Chattanooga, Denver, Phoenix, and Seattle, where the birds feed on pigeons and nest on the ledges of tall buildings. The parents of this chick used such a ledge as a substitute for the cliffside nesting sites used by peregrines in more remote areas.***

The Fish and Wildlife Service (FWS) is not yet removing the peregrine from the endangered list, Babbitt said, but is taking the first steps in that process by publishing a notice of intent to propose delisting the species. The notice, published in the June 30 *Federal Register*, called for additional information on the status of the American peregrine falcon throughout its range. Data collected during the 60-day public comment period will help the FWS decide whether it is appropriate under the Endangered Species Act (ESA) to propose the peregrine for delisting.

Like the aplomado falcon, the American peregrine falcon fell victim to contamination by the pesticide DDT, which caused eggshell thinning and reproductive failure. The impact of DDT on peregrines was most profound in the eastern U.S. and southeastern Canada, where the peregrine was virtually eliminated from the wild by the mid-1960's. In the west, some American peregrines managed to withstand the impacts of pesticides, although numbers declined by as much as 80 to 90 percent.

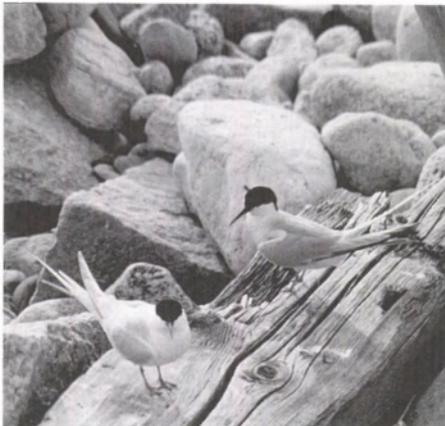
Populations began to increase after DDT was banned in 1972, but the effort to restore the falcon has been long and intensive. Reintroductions of captive-bred peregrines helped to reestablish the bird in parts of the country where it had completely disappeared. Organizations such as The Peregrine Fund and a number of state wildlife agencies also launched reintroduction programs.

As part of its notice of intent, the FWS invited comments and additional information on the species' status, distribution, population size, and vulnerability to threats. All information received by the U.S. Fish and Wildlife Service, 2493 Portola Road, Suite B, Ventura, California 03003, by August 29, 1995, will be considered. After a review of all comments, the FWS will decide whether to propose delisting the American peregrine. If a proposal is issued, the public will again have an opportunity to comment on the change in status before a final decision is made.



## Region 3

Biologists with the FWS Migratory Bird and Ecological Services programs in Regions 3 and 5 are initiating a status assessment for the Great Lakes population of the common tern (*Sterna hirundo*). The assessment will determine whether or not there is enough information to warrant proposing this species as a category 1 listing candidate.



**Common tern**  
photo by Mike Bender

Endangered Species was the theme of this year's Michigan Science Teachers Conference, which was attended by more than 2,500 teachers. FWS East Lansing Field Office staff spoke to the group about Michigan's threatened and endangered species. The FWS "Endangered Species: Road to Recovery" display was featured in the conference exhibition hall.

The FWS delivered a biological opinion to the U.S. Forest Service, Huron-Manistee National Forests, to complete formal consultation on their 6-year plan to manage habitat for recovery of the endangered Karner blue butterfly (*Lycaeides melissa samuelis*). The "no jeopardy" opinion allows incidental take of butterfly eggs, larvae, and adults during burning, cutting, mowing, and scarification of selected sites occupied by the butterfly.

## Region 4

West Indian manatee (*Trichechus manatus*) recovery staff in the FWS Jacksonville, Florida, Field Office recently participated in the Metro-Atlanta Outreach Partnership program, co-sponsored by FWS and Zoo Atlanta. This program seeks to enhance public awareness and stewardship of natural resources and to challenge young people to pursue careers in resource conservation. Since October 1994, FWS Ecological Services staffers have given 12 presentations around Region 4 to students, youth groups, associations, and conferences. Topics included the manatee, red wolf (*Canis rufus*), red-cockaded woodpecker (*Picoides borealis*), Louisiana black bear (*Ursus americanus luteolus*), other endangered species, and careers with the FWS.

Among the approaches being used in the outreach program is the Georgia Statewide Academic and Medical System (GSAMS). GSAMS is an interactive television network that feeds into 150 electronic-learning classrooms. High school students throughout Georgia were introduced to manatees through two presentations on this network.

## Region 5

The Fifth Annual New England (and New York) Freshwater Mussel Meeting was held in Concord, New Hampshire, on April 17 and 18. Organized by Susi von Oettingen, endangered species specialist in the FWS New England Field Office, the 2-day meeting featured research presentations, general discussions of species' status, a taxonomy/anatomy workshop, and a field trip for a look at some local mussels. Over 50 people attended, including representatives of academia, government agencies, conservation organizations, a utility company, and museums, along with consultants and students. Attendance was a record, almost tripling from last year.

Many mussel species depend on a specific host fish during their larval stage. Information on the host fish for the brook floater (*Alasmidonta varicosa*), dwarf wedge mussel (*Alasmidonta heterodon*), and triangle floater (*Alasmidonta undulata*) was presented at the conference. Attendees also learned about a toxicity study of larval and juvenile mussels. Recognizing the growing interest in freshwater mussels, the group decided that a meeting of this type will be held every other year.

The FWS Southwestern Virginia Field Office hosted the second meeting of the Upper Tennessee River Basin Protection Planning Committee in Abingdon, Virginia, on April 5. The committee is an informal technical group that aims to coordinate the efforts of all agencies, organizations, and others interested in 1) identifying and protecting sites that harbor rare species and 2) restoring sites that contribute to water quality problems. Attendees discussed nearly 30 sites in need of some level of protection and/or restoration.

Others participating on the committee include representatives of the Virginia Department of Environmental Quality, Virginia Department of Game and Inland Fisheries, Virginia Department of Conservation and Recreation, Virginia Department of Transportation, Virginia Cave Board, Black Diamond Resource Conservation and Development Council, Tennessee Valley Authority, Clinch and Powell River Action Team, Holston River Action Team, U.S. Natural Resource Conservation Service, National Biological Survey, U.S. Geological Survey, U.S. Forest Service, and The Nature Conservancy (Virginia and Tennessee Chapters).

Endangered Species is the focus for the 1995 *Earth Stewards* program in New Jersey. *Earth Stewards* is a new approach to educating students about environmental issues and empowering them to become stewards of wildlife habitats in their area. Developed by the National Fish and Wildlife Foundation and the FWS Office of Training and Education, the program maximizes the use of FWS and National Biological Service expertise by forming partnerships among these agencies and local schools.

As one of six nationwide pilot sites to implement *Earth Stewards* in 1995, the FWS New Jersey Field Office, in partnership with the faculty of the Smithville Elementary School in Galloway Township, chose endangered species as their theme. By using existing environmental programs and information such as the State's Project WILD, the National Wildlife Federation's packets, and the FWS Endangered Species Issue Pac, a 6-week endangered species curriculum for grades K-6 was developed for the 750 Smithville students. In addition to activities such as planting a butterfly garden and constructing endangered species displays for their school, the *Earth Stewards* students are exploring various wildlife habitats at the nearby Edwin B. Forsythe National Wildlife Refuge.

The 1995 *Earth Stewards* program in New Jersey is supported by contributions from the Smithville Elementary School's PTA, Bally's Park Place Casino Hotel, TropWorld Casino and Entertainment Resort, and grants from the Geraldine R. Dodge Foundation and National Fish and Wildlife Foundation. *Earth Stewards* programs also are being piloted in Pierre, South Dakota; Anchorage, Alaska; Willows, California; Columbia, Missouri; and Lafayette, Louisiana.

On June 7, 1990, the oil tanker *B.T. Nautilus*, owned by the Nautilus Motor Tanker Company of London, England, grounded in the Kill Van Kull waterway between New Jersey and New York. Approximately 267,000 gallons of fuel oil spilled from the ship into the Kill Van Kull and adjacent waterways. Damages outside of the New York/New Jersey Harbor Estuary area included lost recreational use of beaches and injuries to threatened piping plovers (*Charadrius melodus*), that were nesting at the time of the spill.

A settlement resolving all Federal and State (New York and New Jersey) claims with the Nautilus Motor Tanker Company was reached in June 1993. Nautilus Motor Tanker Company paid a total of \$3.3 million in compensation for natural resource injuries. Settlement for injuries to populations of the piping plover accounted for a major component of the damage claim.

State and Federal biologists involved with protecting the piping plover in New Jersey decided that the most effective means to restore piping plover numbers would be to reduce human disturbance and predation from feral and domestic animals at nesting sites. A cooperative restoration plan developed by the State of New Jersey, the National Park Service, The Nature Conservancy, and the FWS calls for such measures as fencing, predator enclosures, and a Memorandum of Understanding with coastal municipalities to promote beach management compatible with nesting plovers.

Funding resolutions for the piping plover restoration plan have been signed by the B.T. Nautilus trustees. The resolutions allow the transfer of \$679,000 over a 5-year period from the B.T. Nautilus settlement to the New Jersey cooperators for measures identified in the plan. Implementing the restoration measures is expected to result in incremental increases in the number of piping plover chicks that successfully fledged, thereby compensating for losses in New Jersey from the oil spill. A similar restoration plan is being developed to compensate for piping plover losses in New York.

### Region 3

**Indiana Bat (*Myotis sodalis*)** Three Indiana bats were discovered hibernating in an 80-year-old hollow concrete dam located about 130 miles (209 kilometers) north of the previously known range of this species in Michigan. In addition to the Indiana bats, over 20,000 bats of other species were found hibernating in the dam.

**Niangua Darter (*Etheostoma nianguae*)** In cooperation with the Niangua Darter Recovery Team, Jerry Hamilton, a hatchery manager with the Missouri Department of Conservation, has successfully propagated this threatened fish in captivity for the first time. The Niangua darters reproduced this spring at the state's Blind Pony Fish Hatchery. Nine fingerlings attained a length of up to 1.5 inches (3.8 centimeters) in about two months. On July 17, five of the fingerlings were released back into the habitat where the adults were captured. Captive propagation of the darter may be essential in the future for the recovery of this fish, which is endemic to Missouri.

**Kirtland's Warbler (*Dendroica kirtlandii*)** Recovery efforts in Michigan for the endangered Kirtland's warbler are showing impressive results. In early June, census takers counted a record 765 singing males in Michigan, up from 633 in 1994 and a low of 167 recorded in 1987. The number of Kirtland's warblers using jack pine plantations this year dramatically increased; 57 percent of the birds were located in areas specifically planted for nesting habitat. The recovery of the Kirtland's warbler is a cooperative effort of the FWS, Michigan Department of Natural Resources, U.S. Forest Service, National Biological Service, and Michigan Audubon Society.

### Region 5

**Virginia Big-eared Bat (*Plecotus townsendii virginianus*) and Indiana Bat** During the winter of 1994-95, biologists with the West Virginia Nongame Wildlife and Natural Heritage Program monitored endangered bat populations in most of West Virginia's significant endangered bat hibernacula. Included in the surveys was a count at Hellhole Cave, one of the most significant bat caves in the eastern United States. Twelve people spent over 100 person-hours tallying a total of 80,263 bats of 6 species in the cave. Hellhole Cave harbors the largest known concentration (6,378 individuals) of the endangered Virginia big-eared bat

(*Plecotus townsendii virginianus*), the largest wintering population (6,808) of the endangered Indiana bat (*Myotis sodalis*) in the East, and over 66,600 little brown bats (*Myotis lucifugus*). Also observed were such non-endangered bats as the eastern pipistrelle (*Pipistrellus subflavus*), big brown bat (*Eptesicus fuscus*), and northern myotis (*Myotis septentrionalis*).

Compared to the numbers observed during the 1993-94 Hellhole Cave survey, the Virginia big-eared bat population increased 28.5 percent and the number of Indiana bats grew 21.2 percent. An additional 1,171 *P. t. virginianus* and 515 *M. sodalis* were tallied in other caves during the winter 1994-95 surveys. These surveys were funded largely by an FWS grant to the State under Section 6 of the Endangered Species Act.



**Townsend's Big-eared Bat**  
photo by Merlin D. Tuttle,  
Bat Conservation International

**Riparian Habitat** In February, biologists in the FWS Southwestern Virginia Field Office met with representatives from the Tennessee Valley Authority, Natural Resources Conservation Service, and local Soil and Water Conservation Districts to discuss partnerships for restoring riparian habitat on the South, Middle, and North Forks of the Holston River in southwestern Virginia. Several species of endangered mussels in the Holston River drainage are affected by cattle waste and bank erosion along reaches where cattle are allowed to access streams for water. Although the Clinch, Powell, and Holston Rivers are all a part of the upper Tennessee River basin, until now the FWS has undertaken riparian restoration partnerships only in the Clinch and Powell River drainages.

**Proposed Listing Rules**

Two plants and a salamander endemic to cienegas—a type of wetland—in southern Arizona and northern Mexico were proposed by the Fish and Wildlife Service on April 3 for listing as endangered. If the proposal is approved, Endangered Species Act (ESA) protection will be extended to the following:

**Canelo Hills ladies'-tresses** (*Spiranthes delitescens*)—a slender, terrestrial orchid that reaches a height of approximately 20 inches (50 centimeters) when in bloom. Five to 10 grasslike leaves grow basally on the stem, and the top of the flower stalk contains up to 40 small white flowers arranged in a spiral.

**Huachuca water umbel** (*Lilaeopsis schaffneriana* var. *recirva*)—a small, herbaceous, semi-aquatic perennial in the family Apiaceae. The cylindrical, hollow leaves of this plant are segmented at regular intervals and grow from creeping rhizomes. Generally, the erect leaves are only 1 to 2 inches (2.5 to 5.0 cm) tall, but they can grow to 8 inches (20 cm) in favorable conditions.

**Sonora tiger salamander** (*Ambystoma tigrinum stebbinsi*)—a large salamander with light-colored blotches on a dark background. The snout-vent length of metamorphosized individuals can reach

4.9 inches (12.5 cm). Larvae are aquatic with plume-like gills and well-developed tail fins.

All three taxa depend on cienegas, perennial streams, and other wetlands, which are extremely rare in the desert southwest. Cienega is a Spanish word for a distinctive type of mid-elevation wetland community often surrounded by an arid environment. Cienegas typically are associated with permanent springs and stream headwaters, have saturated, highly organic soils, and have a low probability for flooding or scouring. Cienegas support diverse assemblages of plants and animals, including many species with limited distributions.

People have affected wetland and riparian systems in the southwest for at least several thousand years. Human settlement in what is now southern Arizona and northern Sonora, Mexico, initially centered on oasis-like cienegas and streams. Much greater impacts came with settlers in the 1800's. By the late 1800's, many of the region's watersheds were in poor condition due to uncontrolled livestock grazing, mining, haying, logging, and other practices. Many wetland and riparian ecosystems have not fully recovered and in some cases may never recover from these activities.

Wetland degradation in the southwest continues due to many of the same threats, as well as such factors

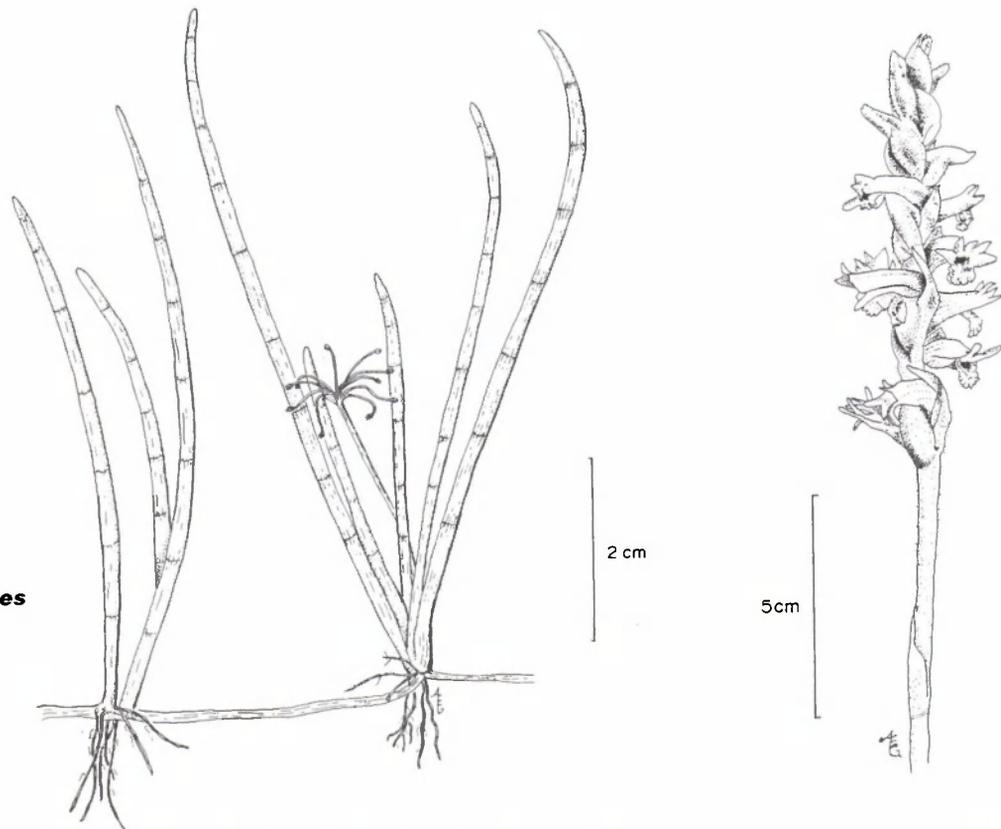
as groundwater overpumping, surface water diversions, channelization, and introductions of non-native plants and animals. The ecological effects of these activities is expected to increase with the region's growing human population.

The Canelo Hills ladies'-tresses occurs at four cienegas in the San Pedro River watershed near the Mexican border within the San Rafael Valley and the Canelo Hills, Arizona. Its occupied habitat totals less than 200 acres (81 hectares), all on privately-owned land. Botanists have surveyed potential habitat in Sonora, Mexico, but without success.

The Huachuca water umbel once was known from 21 locations in Santa Cruz and Cochise Counties and adjacent Sonora, but has been extirpated from 6 sites. Fifteen populations survive on private and public lands within four major watersheds—the San Pedro River, Santa Cruz River, Rio Sonora, and Rio Yaqui. A reintroduction into wetlands on the San Bernardino National Wildlife Refuge appears to have been successful, although overgrazing on adjacent land has led to erosion that threatens the site. The FWS has funded a project to reintroduce the plant along the Santa Cruz River and its tributaries.

Sonora tiger salamanders occur at 17 sites in the headwaters of the Santa Cruz and San Pedro Rivers in

Center  
**Huachuca Water Umbel**  
Right  
**Canelo Hills Ladies'-tresses**  
FWS drawings

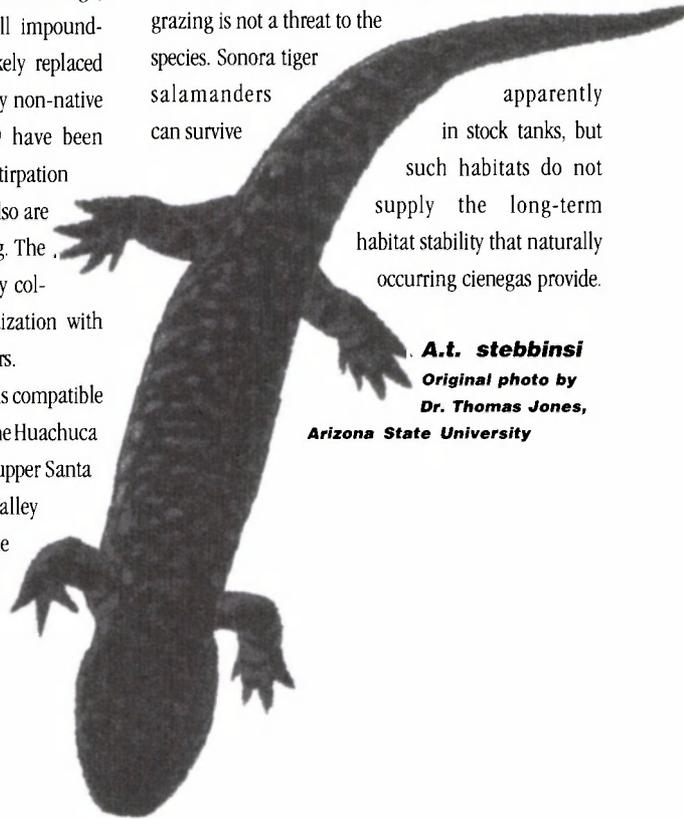


Santa Cruz and Cochise Counties, and possibly at a site in Sonora, Mexico. One of these locations is a cienega, and the others are livestock tanks (small impoundments created to water animals) that likely replaced natural wetlands. Disease and predation by non-native fish and bullfrogs (*Rana catesbeiana*) have been implicated in the salamander's recent extirpation from 3 of the 18 sites. Tiger salamanders also are used widely in the region as bait for fishing. The Sonora subspecies is threatened directly by collection for bait and indirectly by hybridization with other salamander taxa released by anglers.

Conservation of these proposed species is compatible with well-managed land use. The fact that the Huachuca water umbel and its habitat remain in the upper Santa Cruz River system in the San Rafael Valley attests to the good land stewardship of the landowner. Although the effect of livestock

on the ladies'-tresses is unclear, the primary conclusion reached by the FWS is that properly managed grazing is not a threat to the species. Sonora tiger salamanders can survive

apparently in stock tanks, but such habitats do not supply the long-term habitat stability that naturally occurring cienegas provide.



**A. t. stebbinsi**  
Original photo by  
Dr. Thomas Jones,  
Arizona State University

**In early April, Congress passed a moratorium on adding species or critical habitat to the list of threatened or endangered species. The moratorium is in effect through September 30, 1995, was attached to a Department of Defense supplementary spending bill signed by the President on April 10, 1995. The bill also rescinded \$1.5 million from the budget allocated to the FWS listing program. As a result, the FWS will not be adding any animals or plants to the list of threatened and endangered species through September 30, 1995.**

**Science Panel Releases Report on ESA**

**On May 24, 1995, a National Research Council committee released a long-awaited report, "Science and the Endangered Species Act." This study, prepared in response to a bipartisan request from congressional leaders over 2 years ago, set out to address whether the ESA conforms to contemporary scientific knowledge regarding habitat, risks to species, recovery factors, and identification of species and subspecies.**

**The committee concluded that there has been a good match between science and the ESA since its passage in 1973, but recommended certain changes to improve its**

**implementation. Conclusions published in the report include:**

- ✓ **The ESA's emphasis on species, subspecies, and distinct vertebrate populations (taxa below the rank of subspecies) is soundly justified by current scientific knowledge.**
- ✓ **The ESA's emphasis on protecting habitat reflects current scientific understanding of the crucial relationship between species and their habitats.**
- ✓ **Recovery planning is an essential component of any program to protect endangered species. To**

**prevent delay in conserving species, a core amount of "survival habitat" should be protected while recovery plans are developed.**

- ✓ **There is no scientific reason that standards relating to habitat protection, survival, and recovery should differ between plants and animals or between public and private lands.**
- ✓ **Impacts of activities with long-term or irreversible consequences should be evaluated in terms of long-term recovery of the species.**

- ✓ **Negotiation of regionally-based habitat conservation plans should continue under guidance from FWS, including advice on management options and application of risk analyses.**

**Interior Secretary Bruce Babbitt welcomed publication of the report, saying "The Endangered Species Act is not perfect, but this report tells us that the current law is built on the foundation of sound biological science. The report tells us that the only way to prevent extinctions is to protect the natural habitat of threatened and endangered plants and animals."**

# BOX SCORE

Listings and Recovery Plans as of June 30, 1995

GROUP	ENDANGERED		THREATENED		TOTAL LISTINGS	SPECIES W/ PLANS
	U.S.	FOREIGN	U.S.	FOREIGN		
 MAMMALS	55	252	9	19	335	40
 BIRDS	76	177	16	6	275	69
 REPTILES	14	65	19	14	112	30
 AMPHIBIANS	7	8	5	0	20	11
 FISHES	68	11	37	0	116	68
 SNAILS	15	1	7	0	23	11
 CLAMS	51	2	6	0	59	42
 CRUSTACEANS	14	0	3	0	17	4
 INSECTS	20	4	9	0	33	20
 ARACHNIDS	5	0	0	0	5	4
<b>ANIMAL SUBTOTAL</b>	<b>325</b>	<b>520</b>	<b>111</b>	<b>39</b>	<b>995</b>	<b>300</b>
 FLOWERING PLANTS	406	1	90	0	497	200
 CONIFERS	2	0	0	2	4	1
 FERNS AND OTHERS	26	0	2	0	28	12
<b>PLANT SUBTOTAL</b>	<b>434</b>	<b>1</b>	<b>92</b>	<b>2</b>	<b>529</b>	<b>213</b>
<b>GRAND TOTAL</b>	<b>759</b>	<b>521</b>	<b>203</b>	<b>41</b>	<b>1,524*</b>	<b>513**</b>

**TOTAL U.S. ENDANGERED:** 759 (325 animals, 434 plants)  
**TOTAL U.S. THREATENED:** 203 (111 animals, 92 plants)  
**TOTAL U.S. LISTED:** 956 (430 animals, 526 plants)\*\*\*

\*Separate populations of a species listed both as Endangered and Threatened, are tallied twice. Those species are the leopard, gray wolf, bald eagle, piping plover, roseate tern, chimpanzee, green sea turtle, and olive ridley 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.

\*\*There are 411 approved recovery plans. Some recovery plans cover more than one species, 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.

\*\*\*Six animals have dual status.

E N D A N G E R E D

Species

B U L L E T I N

*U.S. Department of Interior  
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