

ENDANGERED

Species

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“*The law doth punish*

*man or woman/That steals the
goose from off the Common/But
lets the greater felon loose/That
steals the Common from the
goose.” These words, written
anonymously in 1764, suggest
our responsibility to the species
we share as well as to their
habitats. For species that mi-
grate across our borders, the
importance of international
cooperation is obvious. How-
ever, Americans also care about
species not native to our land.
This edition of the Bulletin will
explore some examples of how
the U.S. is working with other
countries to ensure the future of
the world’s plant and animal
resources. Ultimately, our inter-
national conservation programs
are a collection of people, who
through funding, energy, and
focus, attempt to make a differ-
ence for wildlife.*

Marshall Jones, Assistant Director for
International Affairs





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On the Cover

African elephant populations remain vulnerable to the human demand for their ivory. As expected, proposals to allow trade in stockpiled ivory generated considerable controversy at COP10, the 1997 CITES conference.

Corel Corp. photo

Opposite page

Demand for the large teeth of the hippopotamus (*Hippopotamus amphibius*) as a substitute for ivory led CITES to regulate trade in this species in 1995.

Photo by David Yeargin



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

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Jamie Clark Takes the Helm as Director



Photo by Tami Heilemann

Jamie Rappaport Clark was sworn in as Director of the Fish and Wildlife Service on September 16 at an outdoor ceremony on the grounds of the Patuxent Research Refuge in Laurel, Maryland. "It is a great honor to be sworn in as Director of what I consider to be finest wildlife conservation agency in the world," Clark said after Interior Secretary Bruce Babbitt administered the oath of office to her.

The value of forming partnerships was a major theme of her remarks. "We have been more successful than any country on earth in conservation because of the willingness of the American people to cooperate with each other, to sit across a table and work it out, to join forces to solve a problem, to compromise, to form partnerships. As a nation, this is our strength, and to be successful the Service must tap into that strength. Partnerships are not new concepts by any means. The Service has always had a strong tradition of partnerships, working with sportsmen's groups, state wildlife agencies and others in the conservation community. But in recent years, we have gone beyond our traditional constituencies and have entered into partnerships that some might have thought were impossible in the past."

"This is not to say that the Service will not continue to meet its statutory obligations to protect and conserve our

trust species. We will. We will not compromise the well-being of any trust species for the sake of avoiding confrontation or reaching consensus. We will stand steadfast when necessary. But at the same time, our preferred method of operation will be to use the flexibility built into statutes wherever possible to meet conservation goals through voluntary partnerships."

Clark has served as the Service's Assistant Director for Ecological Services since 1994. In this position, she has been responsible for implementation of the Endangered Species Act nationwide and has overseen habitat restoration programs, wetlands protection, contaminants damage restoration programs, and other initiatives involving environmental protection. During her career with the Service, she has served as chief of the Division of Endangered Species, Deputy Assistant Regional Director in the Region 2, and senior staff biologist. Her husband, Jim Clark, also is a career Service employee and serves as chief of the Branch of Wildlife Training at the National Conservation Training Center in Shepherdstown, West Virginia.

Before joining the Service eight years ago, Jamie Clark served as Fish and Wildlife Administrator for the Department of the Army from 1988-89, and Natural/Cultural Resources Coordinator for the National Guard Bureau from 1984-88. She also has worked as a research biologist for the Army Medical Research Institute and a wildlife biologist for the National Institute for Urban Wildlife.

Clark received a Bachelor of Science degree in Wildlife Biology from Towson State University and a Master of Science degree in Wildlife Ecology from the University of Maryland.

Wildlife Without Borders

by Marshall P. Jones

The Fish and Wildlife Service (FWS) has a long and very proud history of leadership in international wildlife conservation. It began in 1900, when Congress assigned international conservation responsibility to the agency by passage of the Lacey Act. This was followed in 1916 by the Migratory Bird Treaty between Great Britain, on behalf of Canada, and the United States. The agreement was implemented by the Migratory Bird Treaty Act of 1918, a landmark piece of legislation that clearly established the ultimate authority of the Federal government to regulate U.S. wildlife covered by international treaties. The subsequent Convention on Protection of Migratory Birds and Game Mammals with Mexico was ratified in 1936, accompanied by the first of several updates to the Migratory Bird Treaty Act. Progress continued with negotiation of the Western Hemisphere Convention in 1941; this far-sighted treaty gave the FWS authority to develop cooperative conservation programs in Latin America. In 1954, the importance of international fisheries was recognized in the Great Lakes Fisheries Convention between the U.S. and Canada.

The 1970's saw a host of new international fish and wildlife commitments. In 1972, a new treaty with Japan was added to the migratory bird conservation program. Despite the Cold War—or perhaps because of it, in an effort to use common wildlife conservation goals to help lessen international tensions—the U.S. negotiated an Environmental Protection Treaty with Russia in 1972, followed by a Migratory Bird Treaty in 1974 and a Polar Bear Treaty with Russia, Canada, Norway, and Denmark (for Greenland) that same year. In March of

1973, the FWS was a leader of the U.S. delegation at the conference in Washington, D.C., that negotiated the world's *original* biodiversity conservation agreement, the Convention on International Trade in Endangered Species (CITES). Later that year, the Endangered Species Act of 1973 (ESA) implemented CITES, making the FWS the U.S. Management Authority (and eventually, the Scientific Authority) for CITES. Since 1973, CITES has grown to include 142 Parties or member nations. Beyond this treaty, the ESA also authorized the FWS to undertake cooperative wildlife conservation programs anywhere in the world. Finally, in 1986 the U.S. ratified the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (which had actually been negotiated in Ramsar, Iran, in 1971).

These major laws and treaties form the foundation of FWS involvement abroad, augmented by other recent agreements and authorities that further expand our international role. No matter where you look on a map of the world, you're likely to find the FWS active in collaborative conservation efforts. Ongoing programs in China, Russia, India, South Africa, Latin America, and Canada are a special focus. One of the newest programs involves increased support for polar bear conservation in Russia and Alaska, with funds resulting from a recent amendment to the Marine



As a subspecies of migratory waterfowl, the Aleutian Canada goose (*Branta canadensis leucopareia*) first received protection under the Migratory Bird Treaty Act. Because the introduction of a non-native fox species nearly eliminated the Aleutian Canada goose from its nesting islands, this bird was later given Endangered Species Act protection. Thanks to an intensive recovery program, the goose is now making a strong comeback.
FWS photo

Polar bears (*Ursus maritimus*) are considered marine mammals. They are managed in accordance with international treaty and the Marine Mammal Protection Act. Permits for the importation into the U.S. of sport-hunted trophies may be issued if certain requirements are



met. Import license fees are used for polar bear conservation. With a population estimated at 28,000, the polar bear is not classified as endangered or threatened.

Corel Corp. photo

Mammal Protection Act that allows regulated import of polar bear trophies from Canada.

The FWS International Affairs program distributes small grants throughout Latin America for the conservation of migratory birds and other species. It also provides grants to Russia for assistance in the protection of natural areas, other habitat conservation projects, and education and outreach. Conservation of the African elephant moves forward, aided in part by a series of small grants authorized through the African Elephant Conservation Act that have benefitted more than a dozen African countries. Rhino and tiger conservation has also

been aided by funds resulting from the new Rhinoceros and Tiger Conservation Act, patterned after the African Elephant Act. An Asian Elephant Conservation Act, also based on the same model, is now pending in Congress.

The FWS International Affairs program is as diverse as the individuals and groups interested in wildlife. In the Office of Management Authority—an odd name for a program that deals with CITES implementation and permit needs, but a name nevertheless familiar to our counterparts in other nations—we receive more than 25,000 inquiries annually. These come from a variety of

sources, ranging from individuals bringing their pet birds back into the United States to hunters inquiring about the most expeditious way to import sport-hunted trophies to orchid growers seeking export permits. The FWS Management and Scientific Authorities cooperate very closely on import/export issues with the Division of Law Enforcement, a vital pillar in our efforts to prevent trade from harming wild populations. The office also provides CITES training to foreign governments. It participates in the review process for Pelly certification under the Pelly Amendment to the Fishermen's Protective Act—legislation that allows for trade sanctions against nations undermining international wildlife and fisheries agreements. The office also deals with issues as technically and philosophically complex as the determination of what qualifies as a "primarily commercial purpose." This is important because CITES prohibits commercial transactions in the most imperiled species.

Other issues include topics ranging from the impact of the caviar trade on sturgeon populations to use in the U.S. of traditional Asian medicines that are sometimes derived from endangered species worldwide. In these and other ways, the FWS responds to a broad spectrum of interests, both foreign and domestic. Its obligation as a member of the international community is to share its resources and its expertise for the benefit of wildlife, 1) making much-needed technical conservation information broadly available, and 2) providing financial support wherever possible.

It is interesting to note that the number of official passports held by FWS employees in 1976 totaled only 25. That number grew to 350 by 1996, an indication of how seriously the FWS takes its commitment abroad. International Affairs expects that the number will only increase, especially as the new International Conservation Corp becomes activated in the next few months. This will be a pool of FWS employees whose skills and interests make them good

candidates for foreign assignments. From creating species management plans with another nation to hosting a foreign visitor in the United States, there are many tasks FWS employees listed on the roster may have the opportunity to undertake. Not only will the roster open new opportunities for FWS employees, but it will also expand our ability to provide technical expertise to nations seeking specific assistance.

With its range of duties and responsibilities, the International Affairs program also works with a variety of partners to carry out certain tasks. Nearly all FWS international programs are developed in consultation with the State Department, as well as through frequent contacts with the Agency for International Development, the U.S. Trade Representative's Office, and other agencies. Where regulatory responsibilities overlap, the FWS consults with sister agencies ranging from the National Marine Fisheries Service to the Forest Service. It also works with non-government organizations, trade organizations, and the States and Tribes in projects ranging from CITES implementation to conservation of cross-border marine mammals with Russia to endangered species with Mexico.

During the months ahead, International Affairs will be bringing you articles through the *Endangered Species Bulletin* that focus on these and other aspects of the program. If you are not already familiar with the program, we hope these articles will encourage you to pull out a map of the world to see just how extensive FWS conservation efforts abroad really are. We have come a long way since passage of the Lacey Act, legislation that safeguarded U.S. borders from illegal importation. Now the FWS works actively with other nations, supporting their conservation efforts, providing training, and negotiating agreements on a range of wildlife issues. This is an investment we are making to help ensure a future for healthy wildlife populations worldwide.

Working with people from resource agencies, universities, diplomatic staffs, and native communities, we help to provide breathing room for the wild plants and animals affected by over-exploitation, international trade, habitat loss, political changes, and other human actions. The International Affairs program helps to ensure that wildlife will continue to follow its own wild ways, as it has for millennia, without borders.

Marshall Jones is the FWS Assistant Director for International Affairs.

Asian elephants (*Elephas maximus*) are listed by the U.S. as an endangered species. A bill to supplement this protection by separate legislation authorizing grants to Asian countries for elephant conservation is pending in Congress.

Corel Corp. photo



by Susan S. Lieberman

The Ups and Downs of COP10

*T*he Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is an international treaty designed to control international trade in certain animal and plant species that are, or may become, threatened with extinction. The CITES treaty requires a meeting of the Conference of the Parties (COP) at least every 2 years. "COP10," or the tenth meeting of CITES' 142 member nations, was held this past June in Zimbabwe.

Implementation of CITES is a vital part of global efforts to conserve the world's fauna and flora, both by halting trade in species threatened with extinction and by fostering sustainable trade in other potentially vulnerable species. The lead responsibility for CITES implementation in the United States is assigned by the Endangered Species Act to the Secretary of the Interior, acting through the Fish and Wildlife Service (FWS), which works with other Federal and State agencies.

U.S. positions on many issues raised at COP10 prevailed, including such high-profile examples as the relationship between CITES and the International Whaling Commission and rejection of the proposed reopening of commercial trade in whales and sea turtles. Several U.S. initiatives dealing with alien invasive species, sturgeon conservation, and other issues were adopted. Some U.S. initiatives, however, were not as successful.

In the past, one of the strengths of CITES has been active participation by

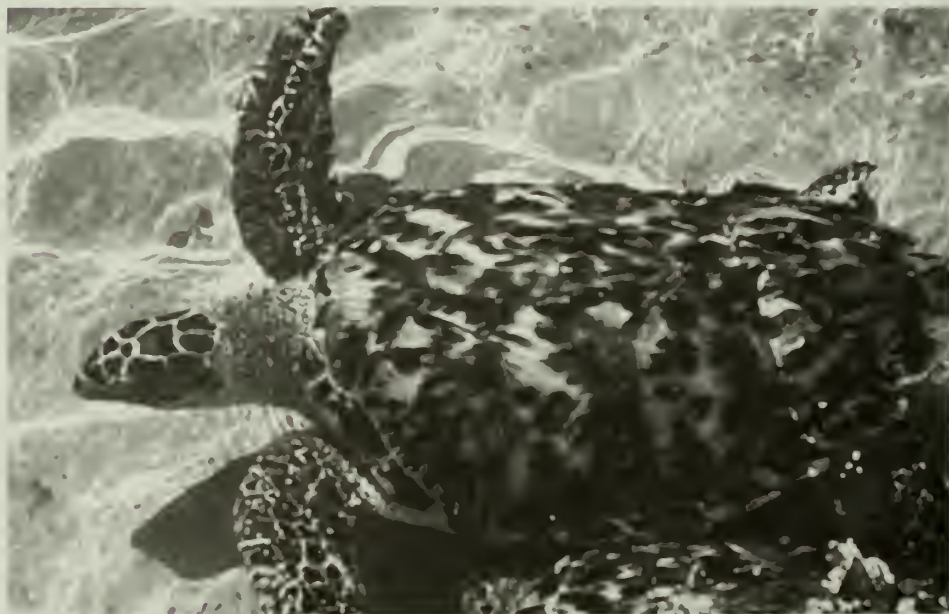


The most controversial issue debated at COP10 involved the proposed relaxing of some trade controls that are in place to protect the African elephant from over-exploitation for ivory and other products.

Corel Corp. photo

A proposed reopening of commercial trade in the hawksbill sea turtle was rejected at COP10.

Photo by Peter Pritchard



non-governmental organizations (NGOs). However, due to the number of proposals under consideration at COP10, time for debate was limited, and the discussion of some issues suffered from lack of broad NGO participation. One priority for the future will be to work to ensure that adequate time and opportunities are available for NGO participation. Also at COP10, more decisions than ever before were made by secret ballot, which allows the Parties to escape public accountability for their votes. Secret ballots were used to vote on proposals for transfer to Appendix II of whales, African elephants, white rhinoceros, sea turtles, and bigleaf mahogany, as well as on resolutions to establish a marine fish working group and Japan's attempt to repeal a long-standing CITES resolution supporting the International Whaling Commission. These secret votes reduced the transparency of the process. Regardless of the secret ballot format, the U.S. delegation publicly announced its vote on all issues, as has been its practice.

The following is a summary of the key results of COP10, both for species proposals and for issues pertaining to CITES implementation and enforcement:

RESOLUTIONS AND DECISIONS

Invasive Species

One important U.S. initiative concerned ways CITES can draw attention to the threats posed by invasive alien (non-native) species. The Parties concurred that live specimens of commercially traded plants and animals can become introduced into new habitats by international trade, with potentially disastrous consequences. The Parties agreed unanimously to adopt a U.S. document (co-sponsored by Argentina and New Zealand) that included: consideration of the threats posed by invasive alien species when developing and implementing sustainable use management plans for internationally traded species; cooperation and collaboration between CITES and the Convention on Biological Diversity and related organizations; work with the IUCN Invasive Species Specialist

Group to identify traded species with the biological potential for invasiveness; and heightening international awareness of the risks posed by invasive alien species.

Illegal Trade in Bear Specimens

In response to the serious threats to bear populations caused by the illegal trade in parts and products of Appendix I bear species, the U.S. placed this issue of the agendas of the Animals and Standing Committees in 1996, which led to a decision to refer the issue to the COP. COP10 adopted a resolution co-sponsored by China, Japan, Korea, Russia, and the U.S. that we hope will benefit global bear conservation. Key elements include: urging countries to adopt, confirm, or improve national legislation controlling trade in bear parts and products; increased efforts to identify, target, and eliminate illegal markets; international wildlife law enforcement training; documenting of domestic demand for parts and derivatives; work with traditional medicine communities that use bear parts; and a call for an international workshop on law enforcement and forensics techniques.

ENFORCEMENT ISSUES

A large number of enforcement issues were discussed at COP10, including a Secretariat-prepared Report on Infractions of the Convention. Due to the high priority the U.S. places on the rigorous enforcement of CITES, the U.S. submitted resolutions dealing specifically with this issues. One was a resolution to establish an Illegal Trade Working Group to provide technical enforcement assistance (such as training in wildlife identification, smuggling detection techniques, and document fraud) by professional enforcement officers. Unfortunately, this resolution was defeated, with several Parties and the Secretariat feeling that any cooperative enforcement efforts should remain the responsibility of the Secretariat. Many developing countries were in favor of the formation of the group, in order to receive assistance with their illegal trade problems, while many



Bear species around the world, including the black bear (*Ursus americanus*) in the United States, are threatened by the trade in their parts for use in traditional medicines.

Corel Corp. photo



Other animals in danger from poaching and illegal trade for traditional Asian medicines are tigers and various African and Asian rhinoceros species.

Corel Corp. photo

Black rhinoceros

Corel Corp. photo



developed countries deemed the group unnecessary. The U.S. will continue to provide bilateral assistance in enforcement training, within available resources. In support of a resolution adopted at the World Conservation Congress (IUCN) in Canada in 1996, the U.S. submitted a resolution to COP10 (which was adopted after some amendments) in support of inspection of wildlife shipments to help curtail the illegal trade.

Rhinoceros and Tiger Trade

The Parties discussed efforts for rhinoceros conservation, and information on the status of rhinoceros populations in Africa and Asia. The discussion was productive, and seven recommendations were adopted involving conservation priorities. After discussion of the dire situation facing tiger populations from poaching and illegal trade, a strengthened version of an earlier resolution was adopted. The U.S. is also involved in bilateral discussions with importing and range countries in an effort to increase CITES enforcement and halt the illegal international trade in rhinoceros and tiger parts and products. Through the grant program under the Rhinoceros and Tiger Conservation Act of 1992, the FWS provides critical assistance to range states in Asia and Africa for the protection of their rhinoceros and tiger populations.

CHANGESTO CITESAPPENDICES

The Parties considered 77 proposals to amend the CITES Appendices. Amendments that may be of particular interest include the following:

African Elephants

As anticipated, the most visible and controversial issue at COP10 was that of the proposals by three countries (Botswana, Namibia and Zimbabwe) to downlist their African elephant (*Loxodonta africana*) populations from Appendix I to Appendix II, in order to allow trade in stockpiled ivory to Japan, exports of sport hunting trophies, exports of live elephants and export (for Zimbabwe) of hides, leather goods, and ivory carvings for non-commercial purposes. The U.S. opposed these proposals because of the risks posed from resumption of the ivory trade.

Just prior to COP10, the African elephant range states held a meeting (with financial assistance provided by the FWS) to discuss the proposals. African countries also met frequently during the COP, where it became clear that many West, Central, and East African countries had concerns about the potentially harmful effects on their elephants from trade resumption. The U.S. decided it could not support downlisting because of serious concerns about the potential for renewed poaching in other countries if ivory trade is resumed. Over several days, the proponent countries and a working group of representatives from Africa, Europe, and Canada negotiated changes to the original proposals, which were put to a secret vote. Unfortunately, debate was not allowed on this revised proposal. With the European Union (EU) abstaining, all three proposals obtained the necessary majority for adoption. The approved amendment involves an annotation to the Appendix II listing, whereby only certain activities may be conducted. In addition to authorizing the exports of trophies, live animals, and (from Zimbabwe only) hides, as well as noncommercial exports of worked leather goods and worked ivory, the

annotation also will allow resumption of limited trade in ivory 18 months after the downlisting takes effect—but only to Japan and only if certain conditions are met and approved in advance by the CITES Standing Committee.

The U.S. explained at COP10 that it had voted against the amended proposals because of its continuing enforcement-related concerns. Nevertheless, the U.S. respects the decision of the COP and will work cooperatively with the Standing Committee, the proponent countries, and other elephant range countries to help minimize the risk to elephants throughout their range. We plan to take an active role in developing the required international monitoring system for illegal trade and in supporting regional law enforcement efforts.

Bigleaf Mahogany

The U.S. and Bolivia cosponsored a proposal to list bigleaf mahogany (*Swietenia macrophylla*), a highly traded tropical timber species, on CITES Appendix II. This species has been over-exploited in parts of its original range in Mexico and Central and South America. During the mahogany debate, Brazil used its influence to raise many objections to the listing. After the vote was taken—but before results were announced—Brazil made a calculated announcement that it had abstained from voting, stating that it has already taken internal steps to address the issue. The Appendix II proposal was then rejected by the Committee, with 67 votes for and 45 against, missing the required majority by only eight votes.

However, because of the relatively close vote and the potential reaction to Brazil's surprise abstention, the U.S. and Bolivia made it clear that they were strongly considering calling for another vote in the final plenary session. However, in the last hours of the COP, the U.S., Brazil, and Bolivia forged an agreement to work with all mahogany range states, and with key importing nations, to improve and ensure the sustainability of mahogany management

and trade. The agreement envisions a working group to produce, over 18 months, a report (with recommendations) on the status, management, and trade in mahogany. Brazil, Bolivia, and Mexico also committed to list their populations of bigleaf mahogany on Appendix III and asked other range states to do the same. We hope that this working group will be able to produce an effective result for mahogany conservation.

Sawfish

The U.S. submitted a proposal to list all seven species of sawfish (order Pristiformes) on Appendix I, noting that several of the species are endangered, that international trade exists, and that they qualify for inclusion under the CITES listing criteria. The proposal was defeated, however, with several countries claiming that the scientific and trade data in the proposal were not sufficiently convincing. The U.S. will continue to closely monitor the status of sawfish and other marine species to evaluate threats from international trade and determine whether or not they qualify for inclusion on one of the CITES Appendices.

Reptiles

The U.S. submitted three proposals to include the following native reptile species on Appendix II: 9 of the 12 species of map turtles in the genus *Graptemys*; the alligator snapping turtle (*Macrolemys temminckii*); and the timber rattlesnake (*Crotalus horridus*). None of these proposals was adopted. The proposals on the alligator snapping



A proposal to conserve the bigleaf mahogany, a tropical species widely used in the furniture trade, by listing it on Appendix II of CITES narrowly missed passage by the required two-thirds majority.

Photo by Scott Landis

CITES regulates international trade in plants and animals to varying degrees, depending on the species' biological status and vulnerability to commercial exploitation. Three appendices to CITES identify how much protection is provided to each species:

Appendix I lists plants and animals threatened with extinction that are, or may be, affected by commercial trade. Commercial trade in Appendix I species is prohibited.

Appendix II includes species that may become threatened if their trade is not brought under control. Commercial trade in Appendix II species is allowed but is subject to regulation. Exports must be accompanied by a valid permit from the CITES Management Authority in the exporting country. Such export permits may be issued only after the Management Authority makes a scientific determination that the export will not be detrimental to the species.

Appendix III lists species that individual CITES Parties identify as subject to domestic regulations for the purpose of restricting or preventing exploitation. Permits or certificates of origin are required for trade in Appendix III species.

Some species covered by other U.S. laws may require additional permits, and trade allowed by CITES may be prohibited. Such laws include the Endangered Species Act, Marine Mammal Protection Act, and Wild Bird Conservation Act.



Alligator snapping turtle

Photo by C. Kenneth Dodd, Jr.

turtle and the timber rattlesnake were withdrawn after several Parties indicated their view that international trade is minimal and conservation problems for the species should be dealt with domestically. The map turtle proposal missed the 2/3 approval majority by only one vote. The FWS intends to work closely with the States and the International Association of Fish and Wildlife Agencies to monitor the burgeoning international trade in our native reptile species to determine the best conservation solutions.

CONCLUSIONS

In the only vote actually required to be by secret ballot, the Parties chose Indonesia as the site of the 1999 COP11. Indonesia supports tremendous biodiversity, but it is also among the largest exporters of protected species, and it has problems implementing and enforcing CITES. Those of us involved with CITES breathe a sigh of relief that the work leading up to COP10 is behind us. We look forward to COP11 as we rededicate ourselves to the important goals embodied by the CITES treaty, which states that "... wild fauna and flora in their many beautiful and varied forms are an irreplaceable part of the natural systems

of the earth which must be protected for this and the generations to come."

Dr. Lieberman, Chief of the Branch of Operations in the FWS Office of Management Authority, was a member of the U.S. delegation to COP10.

A number of significant proposals, resolutions, and decisions were completed at COP10. Due to space limitations, some of the important CITES actions could not be detailed in this article. See the FWS International Affairs homepage at <http://www.fws.gov/~r9dia/index.html> for more information. Click on the CITES/COP10 listing.

**Opposite page:
Scenes like this will continue to be possible if CITES is successful in preventing the over-exploitation of vulnerable wildlife.**

Corel Corp. photo



by Sandra Zaragoza
and Jane Hendron

Restoring the “King of the Andes”



Andean condor

Photo by Ron Garrison, Zoological
Society of San Diego®

Volcan Cayambe

Photo by David Clendenen

Despite its relatively small size, Ecuador is considered one of the richest nations in the world in terms of the diversity of its plant and animal species. But Ecuador is suffering the effects of rapid habitat destruction and the resulting threats to its natural heritage. The Andean condor (*Vultur gryphus*), or “King of the Andes,” is a fitting example of the wildlife treasures that are at risk.

In response to growing concern about the country's diminishing biodiversity, Ecuadorian interests and international parties have focused increased attention on protecting the country's natural resources. In 1995, this far-reaching concern was transformed into an active conservation program, the *Partnership for Biodiversity*. The Partnership, an international, multi-agency venture, is

focusing its efforts in Ecuador to improve management of the condor and its associated high-altitude Andean ecosystems. Sponsors of this complex undertaking include the U.S. Agency for International Development, U.S. Department of the Interior's Office of International Affairs, the U.S. Fish and Wildlife Service (FWS), the Peace Corps, and numerous Ecuadorian counterparts, including the



Ecuadorian government agency, the National Forestry, Natural Areas, and Wildlife Institute (INEFAN), and the Ornithological Foundation of Ecuador.

The Andean condor was selected as the focus species for this impressive conservation effort, in part because it is the national symbol of Ecuador and figures prominently throughout many other South American nations. Like the California condor (*Gymnogyps californianus*), the Andean condor is struggling to survive in the face of habitat destruction, indiscriminate shooting, lack of food, and environmental contaminants. Scientists estimate that around 1860, Andean condors numbered in the thousands, scattered throughout the Andes from western Venezuela to Tierra del Fuego. Today, however, the population has been reduced to a few hundred. A favored habitat of the Andean condor is *paramo*—desolate windswept grasslands, composed of bunch grasses interspersed with rock outcroppings and scattered stands of trees, that are used by the birds for roosting, nesting, and foraging. Unfortunately, however, over-burning, over-grazing, and conversion of the *paramo* to crop production have deprived the condors of crucial habitat. Until the creation of the Partnership, systematic monitoring of Andean condors and their ecosystems was minimal due to a lack of equipment and trained personnel.

The Partnership is working within four high-altitude ecological reserves—Cotacachi-Cayapas, Cayambe-Coca, Antisana, and El Angel—as well as the Cotopaxi National Park. These five areas contain almost 777,000 hectares (1.92 million acres), which may include some of the best remaining Andean condor habitat in Ecuador. Within and adjacent to these protected areas, the Partnership is (1) developing protocols for monitoring Andean condors and their habitat, (2) promoting responsible ecotourism and other income-generating projects, and (3) providing environmental education. We anticipate that a fourth important component, enhanced habitat

management, may be added within the near future.

An active participant in the Partnership is Hopper Mountain National Wildlife Refuge (NWR) Complex, which is the field headquarters for the FWS California Condor Recovery Program, and in particular, Project Leader Marc Weitzel, who oversees the initiative for the FWS. Other FWS personnel who have lent their time and expertise to this conservation project include David Clendenen, Senior Wildlife Biologist at Hopper Mountain, and David Ledig of the Hawaiian Islands NWR Complex, both of whom have assisted with the development of a condor monitoring program. Clendenen and Ledig traveled to Ecuador in May of 1996 to conduct a condor monitoring workshop and deliver vital equipment. In April 1997, Ledig joined Jim Wiley of the U.S. Geological Survey's Biological Resource Division on a visit to Ecuador to provide training in data

management and analysis. These and other workshops have provided an opportunity for the network of Ecuadorian professionals established by the Partnership to collect and analyze baseline data on Andean condor population dynamics, food sources, and habitat loss. Data collected by these biologists is then presented to decision-making authorities within Ecuador, such as INEFAN, so that condor management activities can be strengthened.

No conservation effort can truly be considered successful unless the local citizens support it. Thus, a crucial mission of the Partnership is to foster a greater appreciation for

"Save the Condor" was the message of students at the Fiesta del Condor in Quito, Ecuador.

Photo by Ines Rutkovskis





Environment education is emphasized at a school near the Cotacachi-Cayapas reserve. Students in this classroom are working on recycled paper projects, thanks to the Partnership for Biodiversity.

Photo by Marc Weitzel

Andean condors and their habitat, particularly in communities within and around the five protected areas. Peace Corps volunteers are heavily involved with the ecotourism and environmental education aspects of the Partnership. They work extensively within local communities, helping them to develop ecotourism opportunities and other ventures based on the Andean condor while providing these communities the means to prosper economically.

In addition, Roy Simpson, Environmental Interpreter at Tumacacori National Historic Park in Arizona, has conducted several workshops in the northern Ecuadorian towns of Cayambe, El Verde, and Baños. The focus of these workshops is to train park guards, community leaders, and teachers about the condor and its habitat. Using skills gained in these workshops, participants are better able to address the problems of wanton shooting, indiscriminate use of poisons, and damage to the *paramo*.

The Partnership's efforts for environmental education were reflected in last year's expansion of the traditional "Condor Day" into a "National Week of the Condor" celebration. During the first week of July, the work of the Partnership was in evidence at parades, round-table discussions, and contests, all dedicated to spreading the message: "save the condor." Last year's Condor Week

celebration included 2,000 school children who displayed banners and hand-made condor cut-outs during a parade in Cayambe. The heightened sensitivity toward Ecuador's national symbol has spread from the local level up through various sectors of the Ecuadorian government. The Mayor of Quito, Ecuador's capital, has proposed setting aside valuable land in the Metropolitan Park area of Quito for potential development of an Andean Condor Conservation Center. This Center would conduct environmental education programs for Ecuadorians as well as international tourists who travel each year to Quito.

We hope that Partnership efforts in Ecuador will be viewed as a model for conservation in neighboring countries. According to Weitzel, "An overall objective of the Partnership is to refine monitoring, environmental education, and ecotourism/income-generating strategies to the degree that they can be exported to other, appropriate areas within Ecuador and, potentially, to neighboring South American countries that share common resources, such as the Andean condor." Enhanced coordination among Andean countries is imperative. In light of this, biologists from Colombia participated in the May 1996 condor monitoring workshop.

The Partnership effort within Ecuador has succeeded in bringing an array of interests together for a unified goal: protecting high-altitude Andean condor habitat and the diversity of life within that habitat. Perhaps it is only fitting that such an ambitious project would select as its standard a species of tremendous size and scope, one that is truly worthy of being called "King of the Andes."

Sandra Zaragoza is the FWS Ecuador Program Intern and Jane Hendron is the Information and Education Specialist with Hopper Mountain NWR Complex.

by Roger Helm

FWS Aids Japan in Oil Spill Response

On January 2, 1997, about 150 kilometers (93 miles) west of the island of Honshu, Japan, an explosion apparently occurred aboard the Russian tanker *Nakhodka*. The explosion, combined with winds in excess of 100 kilometers per hour (62 miles per hour) and 6-meter (20-foot) seas, caused the bow of the



Photo by Roger Helm

The full extent of natural resource injury caused by the *Nakhodka* spill is still unknown, but more than 200 kilometers (125 miles) of coastline were contaminated. Various marine-related activities (e.g., fishing and shellfish, seaweed, and crustacean harvesting) probably suffered significant losses, as did businesses relying on coastal tourism. The Japanese government, using information we provided, estimates that at least 20,000 birds were oiled. This total includes small numbers of the rare long-billed murrelet (*Brachyramphus perdix*) and the Japanese murrelet (*Synthliboramphus wumizusume*). Several hundred live oiled birds were taken to wildlife care facilities, but their survival has been poor.

vessel to break away from the stern. Several compartments in the hold ruptured, spilling more than 4.9 million liters (1.3 million gallons) of the 19 million liters (5 million gallons) of C-grade fuel oil onboard. The bow of the vessel, containing about 2.8 million liters (750,000 gallons) of oil, drifted eastward and subsequently ran aground on a reef near Mikunicho in the Fukui Prefecture, Japan. After a road was built to the reef, the oil remaining in the bow was removed and the wreckage hauled away. But the stern, which still contained about 3 million gallons (11.3 million liters) of oil, sank in deep waters and continues to leak.

From January 14-28, 1997, a team of three scientists, Dr. Roger Helm (U.S. Fish and Wildlife Service), Mr. Harry Carter (U.S. Geological Survey), and Dr. Scott Newman (University of California), traveled to Japan to provide advice and assistance on natural resource injury assessment and oiled-wildlife care to the Japan Environment Agency and several non-profit groups, including the Wild

Bird Society of Japan, Japan Alcid Society, and Wildlife Rescue Veterinarians Association. In addition, the team provided information on U.S. legal and regulatory authorities relating to oil spills and natural resource damage assessment, along with examples of how damages collected in U.S. oil spill cases have been used to restore and monitor recovery of injured natural resources.

During our visit, we made numerous presentations to personnel at the Japan Environment Agency and to the various non-profit groups about how best to assess injuries to seabirds and care for oiled wildlife. We also briefed Ms. Akiko Domoto, a member of the House of Ministers of the Japanese Diet (parliament). Since our return to the U.S., we have been providing Ms. Domoto's staff and the Japan Environment Agency with information on the U.S. Oil Pollution Act of 1990, oil spill contingency plans, and California's Oiled Wildlife Care Manuals. Ms. Domoto and her staff are now working on spill contingency response plans and on legislation.

A report on our trip and recommendations, *Seabird injury and wildlife care during the 1997 Nakhodka oil spill in the Sea of Japan: observations and recommendations by a team of U.S. scientists in January 1997*, is available from Roger Helm, U.S. Fish and Wildlife Service, Ecological Services, 911 N.E. 11th Avenue, Portland, Oregon 97232.

Roger Helm is the Region 1 Coordinator for the Natural Resource Damage Assessment Program.

Cooperative Wildlife Projects in India



A great Indian bustard putting on a display.

Photo by Asad Rahmani

Since the late 1970's, the Fish and Wildlife Service (FWS), through its Office of International Affairs, has been assisting with wildlife conservation efforts in the Indian subcontinent, a landmass that incorporates such different ecosystems as moist tropical rain forests, the sun-baked deserts of Gujerat and Rajasthan, and the cold, dry reaches of the Himalayan peaks. Such varying physical features have produced a rich biological diversity of more than 20,000 species of plants, 500 species of mammals, 1,300 species of birds, and 20,000 species of insects.

Although this natural heritage has been maintained largely because of the traditional respect for all life forms by the peoples of India, increasing pressures from a rapidly growing human population have brought habitat deterioration and elimination of species. 100 of the larger wildlife species found in the subcontinent are now considered to be endangered or threatened.

A few of the cooperative activities are described below:

Bombay Natural History Society

When the FWS/India conservation program began, contact was made with the Bombay Natural History Society (BNHS) because of its preeminent position and long history in facilitating bird studies in the subcontinent. Under the leadership of Dr. Salim Ali, the BNHS submitted several multi-year project proposals for Indo-U.S. cooperation. One of the first approved by the Government of India was a 5-year effort entitled "Studies on the Movement and Population Structure of Indian Avifauna." These studies entailed monitoring the movements and habits of both migratory and non-migratory bird species at a number

of sites throughout India. It also included research on the plant, invertebrate, aquatic, and upland communities used by the birds. With nearly 1,300 species of birds recorded for the Indian subcontinent and its importance as a wintering and migratory route widely recognized, the studies were designed to identify the most important sites for bird populations, their migratory routes, and any threats to their welfare.

Two permanent research sites for the avifauna project were established, one at Bharatpur in north-central India on the edge of the Gangetic Plain and one at Point Calimere, a small peninsula on the southeast coast. Bharatpur is the location of the famous Keoladeo National Park, best known then as the only known wintering grounds of the endangered Siberian crane (*Grus leucogeranus*). It is also an important wintering area for Palearctic waterfowl moving south from Siberia. The other major site, Point Calimere, is a marine and freshwater system forming the southernmost tip of a peninsula pointing into the Bay of Bengal towards Sri Lanka. The area serves as a major funnel for birds migrating south along the coast and is a jumping-off point for birds going on to Sri Lanka.

At about the same time, two other 5-year proposals by the BNHS were approved by the Government of India and sent to the FWS for consideration. The first, entitled "Hydrobiological (Ecological) Research Station, Keoladeo Ghana Sanctuary, Bharatpur," focused on this tiny but important sanctuary. It is an island of freshwater marsh and uplands surrounded by a major city, seven large villages, and extensive agricultural tracts. Fed by monsoonal rains and water from

two adjacent rivers, existing in competition with agricultural and urban pressures, subjected to overgrazing by domestic livestock, and deluged by tourists, the area is viewed as a microcosm of the problems facing all of India as it seeks to balance the needs of wildlife and people.

"Study of Certain Endangered Species of Wildlife and Their Habitats (Great Indian Bustard and Asian Elephant)" was a study that attempted to focus attention and collect information on known endangered species. The great Indian bustard (*Choriotis nigriceps*), a large cursorial (having legs highly developed for running) bird inhabiting open grasslands and endemic to India, was feared to be rapidly declining due to hunting and habitat alteration. In 1980, biologists estimated that fewer than 1,000 of these birds remained and that the species was especially vulnerable due to its ability to lay only one egg per year. Once the bustard project was up and running, important habitats were pinpointed and population groups were mapped. Forest departments in the other Indian states cooperated by establishing protected areas especially for bustards, and Rajasthan adopted the species as its state bird.

In 1984, BNHS began its fourth major 5-year project, a study of the ecology, distribution, and status of the lesser florican (*Sypheotides indica*) and Bengal florican (*Eupodotis bengalensis*) and several other endangered species. The Bengal florican, perhaps the rarest member of its family, with an estimated population of 250-300 individuals in India, was found to be restricted almost exclusively to a few protected areas in the north and northeast. However, studies found that the remnant habitats were not unduly threatened and that the bird is not in immediate danger of extinction. Protection and management practices, such as controlled and timely burning and/or cutting of the grassland habitats, were coordinated with the forest departments.

The lesser florican, while found in greater numbers, was found to be the most endangered bustard in the country because its grassland breeding habitats in western India were under severe threat from land-use changes. This threat focused attention on the grassland systems and led to follow-up research and conservation programs.

Conclusion

Over the past 15 years, the FWS has supported 26 major research conservation projects in India. Over 100 Indians have visited the U.S. for training, and over 500 Indians have received training through in-country workshops.

The FWS has facilitated a series of pilot workshops to train teachers, produced an array of conservation education materials, and transferred over 5,000 scientific papers and other publications to more than 50 organizations in India.

The FWS believes that the best way to promote conservation in India is to strengthen the existing institutions and promote local expertise. If our efforts have helped, the environment, the natural resources, and the people of India will all benefit.

David Ferguson is a Wildlife Biologist in the FWS Office of International Affairs in Arlington, Virginia.



Female Bengal florican
Photo by Ravi Sankaran

A researcher records bird movements at the Point Calimere sanctuary on India's southeast coast.
FWS photo



by Karen Cathey

The Endangered Birds of Balcones Canyonlands NWR



An endangered black-capped vireo on her nest made of lichen and spiderwebs.

Photo by Greg Landry

The Balcones Canyonlands National Wildlife Refuge, located about 30 miles northwest of Austin, Texas, was created to conserve habitat vital for endangered songbirds. Approximately 15,000 acres (6,070 hectares) have been acquired thus far, but the approved boundary will protect ultimately about 46,000 acres (18,615 hectares). Visitor use is limited until a public use plan is developed, but some guided birdwatching tours are available. For more information, contact the refuge at 512-339-9432.

The Edwards Plateau of central Texas is an elevated expanse of over 35,000 square miles bordered on the south and east by the Balcones Escarpment. This beautiful region, also known as the Balcones Canyonlands or Texas Hill Country, is characterized by deeply incised canyons and cool, spring-fed streams. It overlays porous limestone that has dissolved in solution to form a honeycomb of underground fissures, caves, and sinkholes. Various spiders, beetles, and other creatures unique to central Texas inhabit this subterranean world.

The Edwards Aquifer, which supplies billions of gallons of drinking water for the one million people in the San Antonio area, courses through this honeycombed limestone. The aquifer is the source of many springs and rivers in the Hill Country that eventually flow into the marshes, estuaries, and bays along the Texas coast. Clothing the plateau and canyons are a variety of habitats, ranging from open prairie to extensive shrublands and dense, old-growth woodlands.

The Balcones Canyonlands National Wildlife Refuge was established in 1992, primarily to protect important habitat in this rapidly-urbanizing region for the endangered golden-cheeked warbler (*Dendroica chrysoparia*) and black-capped vireo (*Vireo atricapillus*). These birds depend on markedly different successional stages of vegetation on the Edward Plateau. The golden-cheeked warbler prefers dense, mature forests of

mixed oaks (*Quercus* spp.) and Ashe juniper (*Juniperus asheii*) with a closed canopy. The juniper, often called "cedar" in Texas, is a vital part of the warbler's nesting habitat due to the bird's propensity for using the loose, shredded bark of mature junipers in nest construction.

While the golden-cheeked warbler prefers mature oak-juniper forests as habitat, the black-capped vireo requires early successional, semi-open habitat of small trees and shrubs. In central Texas, vireo habitat is often dominated by shin oak (*Quercus sinuata* var. *breviloba*), which on stony plateau tops forms oak "shinneries," or low, multi-stemmed shrubs that sprout from the spreading root stock. Being insectivores, both bird species need an ample supply of beetles, caterpillars, moths, and spiders nearby as a food source, and the oak components of their habitats support a ready supply of these insects.

The primary threat to both the golden-cheeked warbler and black-capped vireo is loss of habitat, either directly by conversion to other uses or indirectly through alterations that make the habitat less suitable for these birds. Another threat to these and many other neotropical songbirds in North America is nest parasitism by the brown-headed cowbird (*Molothrus ater*). To date, the Refuge has operated up to five traps to manage the cowbird threat. One type, called the "mega-trap," is 15 by 15 feet (4.5 meters) in size and has been known to remove up to 300 birds in a season.

Due to the suppression of naturally occurring wildfires, which once renewed the early successional vegetation needed by the vireo, many potential habitats are—or soon will be—post-mature in structure. Refuge biologists have evaluated various means of managing or "disturbing" woodlands to recreate the historical semi-open habitat of the Balcones Canyonlands. While prescribed burning is a tool sometimes used to set back succession in hardwoods, such burns must be fairly hot, and hot burns increase liability problems. Use of a tractor-drawn "bush-hog" to create open areas is impractical in dense, mid-successional shrublands. Hand-cutting the trees with chainsaws is effective but labor intensive. Finally, the Refuge came upon a solution: the *Tree Terminator*. This tree shear, attached to a small tractor, cleanly cuts the post-mature shin oak at about several feet above ground level. After shearing the tree, Refuge personnel drag the overgrowth back over the stump, thus partially protecting new growth from deer browsing.

Several small, post-mature oak shineries, cumulatively totaling about 70 acres (28 hectares), were treated in March 1996. A follow-up prescribed burn to reduce the density of mature junipers (softwoods) was conducted the following winter. Evaluations in the spring of 1997 indicated that the oak shinery habitat is coming back with a bang! Due

to greater than average rainfall this year, growth in the shinery has been as much as 3 feet (0.9 meter). We anxiously await next year's breeding season to see if vireo nesting pairs will colonize the young habitat. Recently, surveys of existing colonies discovered that three male vireos, all from a single brood banded in 1996, had returned as one-year-olds to set up nesting territories. Such auspicious news is heartening and makes the outlook for colonization of newly-created habitat more promising.

Management efforts on refuges can be used to demonstrate successful techniques that private land owners can use on their property and can thus lead to creative partnerships with refuge neighbors. Combining Partner's for Wildlife program objectives with the Fish and Wildlife Service's "safe harbor" permit program could hasten the recovery of endangered birds and other wildlife in the Balcones Canyonlands.

Karen Cathey, a Fish and Wildlife Biologist stationed until recently in the FWS Austin, Texas, Field Office, is now in the Albuquerque Regional Office.



The endangered golden-cheeked warbler is an insectivorous songbird native to Central Texas.
Photo by Dean Keddy-Hector

Refuge Operation Specialist Larry Narcisse checks a cowbird "mega-trap."
Photo by Chuck Sexton





Region 1

Multiple Species Conservation Plan On July 18, 1997, the U.S. Fish and Wildlife Service (FWS) issued a permit to the City of San Diego for incidental take of at least 85 species covered by the regional Multiple Species Conservation Plan (MSCP) and the City's subregional plan. Twenty of these taxa are listed as threatened or endangered under the Endangered Species Act. The MSCP is designed to allow for the recovery of listed species and alleviate the need to list additional species while permitting the take of listed species incidental to lawful activities.

The MSCP is a comprehensive habitat conservation plan that emphasizes the protection and management of natural communities rather than focusing on individual species. It's 582,000-acre (235,530-hectare) overall planning area encompasses 12 local jurisdictions in southwestern San Diego County, California. Other local jurisdictions are expected to apply for incidental take permits under the umbrella MSCP. The establishment of a 172,000-acre (69,600-ha) habitat preserve within the planning area will mitigate the impacts of continued urban development, which will take place primarily outside of the preserve boundaries. Thus, the MSCP will result in the permanent protection of large, interconnected habitat blocks for multiple species. Federal, State, and local agencies of government and private property owners will cooperatively implement the plan through local project review and approval procedures, and through the commitment of lands and money for land acquisition, adaptive management, research, and monitoring.

Salton Sea Workshop Participants at a multi-agency workshop held in Palm Springs, California, on August 4-7, 1997, discussed ways to evaluate progress in addressing problems with water level, quality, and salinity problems at the Salton Sea. This low area in southern California has undergone periods of filling and drying

throughout the past 50,000 years. In the early 1900's, the Colorado River was accidentally diverted for a time into the then-dry basin. Since that time, irrigation drainwater and some urban discharges have provided water to maintain an aquatic system. However, because there is no outlet to the ocean, the Salton Sea has been gradually becoming more saline. In the last few years, fish and bird die-offs have created concern for this major bird migration and wintering area. The 1996 die-off affected various species, including more than 1,200 endangered brown pelicans (*Pelicanus occidentalis*).

The workshop participants—drawn from universities and local, State, and Federal agencies—were organized into specialty groups to address physical environment, biology, contaminants, disease, and cultural resources issues. Each group eventually identified its five highest research priorities and developed an estimate of costs. A final report, to be prepared by this fall, will recommend the studies needed to understand the problems facing the Salton Sea ecosystem and to evaluate possible solutions.

(Reported by LaRee Brosseau of the Portland Regional Office.)



Brown pelican

Photo by Dean Biggins

Region 2

California Condor (*Gymnogyps californianus*) The condor reintroduction program at the Vermillion Cliffs, a remote area 30 miles (48 kilometers) north of Grand

Canyon National Park, is making great progress. The six captive-propagated condors released at this northern Arizona site in December 1996 were augmented by another nine in May of 1997. Only two condors have been lost since the program began, one to a golden eagle and one to collision with a power line. The remaining 13, all of which carry radio-transmitters, have ranged as far north as Bryce Canyon National Park, as far east as Moab, Utah, and as far west as the Kaibab plateau. They have avoided contact with humans and have been successful in locating food.



California condor

Photo by Noel Snyder

FWS Region One, which is heading up the condor reintroduction effort, plans to release four more birds this winter at the Vermillion cliffs. Until the reintroduction effort began, California condors were last seen in Arizona in 1924.

Mexican Wolf (*Canis lupus baileyi*) Mexican wolves in the FWS captive management facility at Sevilleta National Wildlife Refuge in New Mexico are thriving. Since November of 1996, five young pairs have been held at the facility, which was designed to provide a natural environment and maximum isolation from humans. Two of the pairs produced pups in May 1997. The Sevilleta wolves are candidates for the first release of endangered Mexican wolves into historic range in Arizona and New Mexico. In cooperation with the U.S. Forest Service and Arizona Game and Fish Department, the FWS is selecting sites within the Blue Range Wolf Recovery Area of Arizona for the construction of "soft-release" pens. The plan is to release three family groups of wolves in early 1998.

Masked Bobwhite (*Colinus virginianus ridgwayi*) For a number of years, the continuing effort to restore a self-sustaining population of masked bobwhites on the Buenos Aires National Wildlife Refuge in southern Arizona, and in nearby areas of Sonora, Mexico, has in-

volved chick releases, habitat management, population monitoring, and research. In April 1997, the refuge also assumed responsibility for captive propagation. The breeding population was moved from the Patuxent Wildlife Research Center in Maryland to a new facility on refuge property east of Arivaca, Arizona. Due to this move, the breeding season was initiated about a month late, and only 1,339 chicks were transferred to the refuge for release. Approximately 200 chicks went to each release site on the refuge. Despite these reduced numbers, refuge biologists are confident that survival among the released chicks was good. Release protocol alterations initiated in 1995 appear to have resulted in the improved survival observed this year. Refuge biologists estimate that the refuge now holds 250 breeding pairs in the wild.



Masked bobwhite

FWS photo

With the end of a drought that began in 1992, the future of the masked bobwhite in Sonora appears to be promising. Grassland habitat improved when the Rancho El Carrizo area received at least average rainfall (12 inches or 30 centimeters). Precipitation on some important habitats exceeded 20 inches (50 cm). Cooperative agreements with Mexican landowners also have increased the amount of habitat suitable for the bird in that country to about 40,000 acres (16,190 ha). Additionally, changes in grazing management have improved habitat conditions enough that masked bobwhites have begun to recolonize the area after a 2-year absence. Although the Sonoran population remained at a low level through at least the summer of 1996, refuge biologists anticipate an increase this year.

Willow Beach National Fish Hatchery Working in concert with the Bureau of Reclamation, the Willow Beach Hatchery is producing 130,000 razorback suckers (*Xyrauchen texanus*) and 40,000 bonytail chubs (*Gila*

elegans) to be used in the Lower Colorado River recovery effort for these endangered species.

Willow Beach supplies all of the razorback sucker and bonytail chub fingerlings used in various "grow-out" facilities (isolated, predator-free backwaters or coves) along the Colorado River. Cooperators in this joint venture include the Bureau of Reclamation, Arizona Game and Fish Department, Nevada Department of Wildlife, Colorado River Indian Tribes, Hualapai Indian Tribe, Arizona State University, and Northern Arizona University.



Razorback sucker

FWS photo

Colorado River Fishes Many native fishes of the American Southwest are imperiled, particularly the Colorado River squawfish (*Ptychocheilus lucius*), humpback (*Gilacypha*), bonytail chub, and razorback sucker. Recent work in Region 2 has demonstrated that when these species are raised at a facility to at least 10 inches (25 cm) in length before being repatriated into Colorado River waters, they survive better than if released at a smaller size. The FWS is cooperating with the Bureau of Reclamation and the Arizona Game and Fish Department to produce the numbers of large fish necessary to maintain populations while moving toward recovery of these endangered fishes.

The Achii Hanyo project, which means "fish farm" in the Mohave language, will promote the effort by providing additional space for raising native fishes. Developed through a Memorandum of Understanding with the Colorado River Indian Tribes, it will be operational this year. Currently, 18 acres (7.3 ha) of ponds are developed and 60 other ponds are being planned.

Attwater's Greater Prairie Chicken (*Tympanuchus cupido attwateri*) Populations of the critically endangered Attwater's prairie chicken received a much-needed boost by the release last year of nearly 70 captive-pro-

duced birds on the Attwater Prairie Chicken National Wildlife Refuge near Eagle Lake, Texas, and The Nature Conservancy's Galveston Bay Prairie Preserve. All of the released prairie chickens were equipped with radio transmitters that allowed biologists to track the birds. Prior to release, the birds were placed in acclimation pens at the release site for either 3 or 14 days. Those birds placed in 3-day acclimation pens experienced four times greater mortality during the first month after release than those that had been acclimated for 14 days. Overall, at least 40 percent of the released birds survived until the spring 1997 breeding season. Biologists located 10 nests built by released birds and six hens successfully hatched chicks.

The released birds were hatched and reared at the Houston Zoological Gardens and Fossil Rim Wildlife Center. Texas A&M University-College Station and the San Antonio Zoological Gardens and Aquarium also hold breeding Attwater's prairie chickens in captivity. A total of about 100 Attwater's prairie-chickens are being held in the captive breeding flock.



Attwater's greater prairie chicken

Photo by Lynn Nymayer

The captive breeding and release program is essential to preventing extinction of Attwater's prairie chicken. Fewer than 100 individuals remain in the wild in 3 geographically separated subpopulations. Habitat loss is the primary long-term threat to the species, but disease, genetic impoverishment, predation, and abnormal weather conditions have contributed to the bird's decline in recent years. The FWS plans to continue with releases in the future to supplement existing populations and reestablish populations that have become extirpated.

(Reported by Larry A. Dunkeson of the Albuquerque Regional Office.)

From May through July of 1997, the Fish and Wildlife Service published the following Endangered Species Act (ESA) rulemaking actions in the *Federal Register*:

Proposed Listing Rules

Newcomb's Snail (*Erinna newcombi*) Newcomb's snail, a small Hawaiian freshwater species, inhabits waterfalls, seeps, and springs in stream drainages on the northern half of the island of Kaua'i. Its historical range has been reduced to five streams on State land. Like many other native Hawaiian animals, Newcomb's snail is threatened by the intentional or accidental introduction of non-native predators. The rosy glandia snail (*Euglandina rosea*) and two species of marsh flies (*Sepedomerus macropus* and *Sepedon aenescens*), which were brought to Hawaii in the 1950's and 1960's to control agricultural pests, prey on the eggs and adults of native snails. In fact, the rosy glandia already has eliminated many populations and species of native snails on other Pacific Islands. Because Newcomb's snail is vulnerable to extinction, the FWS proposed on July 21 to list it as endangered.

Illinois Cave Amphipod (*Gammarus acherondytes*)

A tiny freshwater crustacean, the Illinois cave amphipod is known from six cave systems in the Illinois Sinkhole Plain of Monroe and St. Clair Counties, just across the Mississippi River from St. Louis, Missouri. It is a region of karst terrain, land typified by sinkholes and fissures that provide direct and rapid conduits for waterborne material from the surface to the groundwater, thereby bypassing the filtering and cleansing effects provided by overlying soils.

Ground water systems that feed cave streams can be degraded in various ways. For example, evidence of pesticides, herbicides, and fertilizers has been found in well water samples in Monroe County. Scientists have also detected bacterial contamination in springs and cave streams, likely from human and animal wastes that enter the water supply via septic systems, the direct discharge of sewage into sinkholes, or runoff from livestock feedlots. Sometimes, other toxic substances are accidentally or even intentionally dumped into sinkholes without regard for the aquifer.

Aquatic species like the Illinois cave amphipod are good indicators of water quality. Unfortunately, recent surveys have found the species in only three cave systems, all within Monroe County, and biologists fear that contami-

nation has eliminated it from the other locations. Because of continuing threats to the Illinois cave amphipod and its environment, the FWS proposed on July 28 to list this species as endangered.



Bull trout

Photo by Bill Mullins

Bull Trout (*Salvelinus confluentus*) The bull trout, a member of the salmon family, is native to much of the Pacific Northwest, including parts of Washington, Oregon, California, Idaho, Montana, Nevada, Alaska, Alberta, and British Columbia. On June 13, the FWS recommended ESA protection for two distinct population segments of this fish. In the Klamath River basin of south-central Oregon, where only seven small, isolated populations are known to remain, the bull trout was proposed for listing as endangered. The Columbia River segment—which includes 386 populations in Oregon, Washington, Idaho, and Montana, with additional populations in British Columbia—is not believed to be in as much danger and therefore was proposed for listing as threatened. Only 20 percent of the Columbia River bull trout populations are known to be secure, stable, or increasing. Threats to the bull trout include water quality degradation, water diversions for irrigation, fish passage restrictions at dams, and competition or predation from non-native fish species that have become established in the region.

Because Washington, Oregon, Idaho, and Montana have made their fishing regulations more restrictive to protect the bull trout, the listing proposal contains a special rule that would allow anglers to take this species from the Columbia River population segment when fishing in compliance with State fishing regulations.

Two California Larkspurs Two species of perennial herbs in the buttercup family (Ranunculaceae) were proposed on June 19 for listing as endangered due to habitat loss or degradation:

- Baker's larkspur (*Delphinium bakeri*)—a plant that grows up to about 65 centimeters (26 inches) in

height and produces conspicuous blue-purple flowers, and

- yellow larkspur (*Delphinium luteum*)—not quite as tall as the above, with bright yellow, cornucopia-shaped flowers.

These plants are found in coastal prairie, coastal scrub, and chaparral habitats in northern California. Urban and agricultural development, sheep grazing, quarrying, over-collecting, and certain road maintenance activities imperil both species. Only a single population of Baker's larkspur, numbering about 35 individuals, survives on a road bank in Marin County. The two remaining populations of the yellow larkspur, which total only about 50 plants, are on private land near the town of Bodega in Sonoma County. The extremely small distribution of these species makes them particularly vulnerable to extinction.

Two Sierra Nevada Plants In a rulemaking published June 25, the FWS proposed ESA protection for another two species of California plants:

- lone buckwheat (*Eriogonum apricum*)—a small perennial herb in the family Polygonaceae that produces clusters of white flowers, and
- lone manzanita (*Arctostaphylos myrtifolia*)—a low-growing evergreen shrub in the heath family (Ericaceae) with pinkish, urn-shaped flowers.

Both species are restricted to sandy clay soils of the lone formation, an ancient mineral deposit in the western Sierra Nevada foothills of Amador and Calaveras Counties. These soils are unusual because they have characteristics normally found only in tropical regions. The native plants dependent on this habitat are threatened by mining (for clay, sand, and lignite), land clearing for agriculture, residential and commercial development, and off-road vehicle use.

Keck's Checker-mallow (*Sidalcea keckii*) Keck's checker-mallow, an annual herb in the mallow family (Malvaceae), is distinguished partly by its hairy stem and its deep pink flowers, which are marked with a purplish spot. This species is native to the grasslands of the southern San Joaquin Valley in California. Habitat loss due to urban development and land clearing for agriculture has eliminated two of the three historically known populations. The Keck's checker-mallow survives on a single parcel of privately-owned land in south-central Tulare County. This property is now used for livestock grazing,

which does not seem to harm the population at current levels, but the species' extremely reduced distribution makes it vulnerable to future changes in land management or such random events as fire or insect predation. On July 28, the FWS proposed to list Keck's checker-mallow as endangered. If it is listed, the recovery plan will likely include trying to rehabilitate parts of the former habitat for reestablishment sites.

Final Listing Rules

Thirteen Channel Islands Plants Thirteen plant taxa endemic to the Channel Islands off southern California received ESA recognition on July 31. The 11 in most immediate peril were listed as endangered:

- Hoffman's rockcress (*Arabis hoffmannii*)—a herbaceous perennial in the mustard family (Brassicaceae),
- Santa Rosa Island manzanita (*Arctostaphylos confertiflora*)—a perennial shrub in the heath family,
- island barberry (*Berberis pinnata* ssp. *insularis*)—a perennial shrub in the family Berberidaceae,
- soft-leaved Indian paintbrush (*Castilleja mollis*)—a perennial herb in the figwort family (Scrophulariaceae),
- island bedstraw (*Galium buxifolium*)—a woody shrub in the family Rubiaceae,
- Hoffmann's gilias (*Gilia tenuiflora* ssp. *hoffmannii*)—an annual herb in the phlox family (Polemoniaceae),
- Santa Cruz Island bush-mallow (*Malacothamnus fasciculatus* ssp. *nesioticus*)—a shrub in the family Malvaceae,
- Santa Cruz Island malacothrix (*Malacothrix indecora*)—an annual herb in the aster family (Asteraceae),
- island malacothrix (*Malacothrix squalida*)—related to the above but smaller,
- island phacelia (*Phacelia insularis* ssp. *insularis*)—an annual in the waterleaf family (Hydrophyllaceae), and
- Santa Cruz Island lacepod (*Thysanocarpus conchuliferus*)—a small annual herb in the mustard family.

Two other species that are vulnerable, but not in imminent danger of extinction, were listed under the slightly less critical category of threatened:

- Santa Cruz Island dudleya (*Dudleya nesiotica*)—a succulent perennial in the stonecrop family (Crassulaceae), and
- island bush rose (*Helianthemum greenei*)—a small shrub in the rock-rose family (Cistaceae).

Native plants on the Channel Islands have suffered habitat damage and overgrazing by a variety of introduced animals, including sheep, goats, cattle, donkeys, horses, bison, deer, elk, and pigs. The spread of weedy, non-native plants, which often thrive in disturbed habitats, is another significant threat to the native plant species.

Four Vernal Pool Plants Four native plant species endemic to vernal pools (an unusual type of seasonal wetland) in northern California were listed on June 18 as endangered:

- Contra Costa goldfields (*Lasthenia conjugens*)—a spring annual in the aster family with showy yellow flowers;
- few-flowered navarretia (*Navarretia leucocephala* ssp. *pauciflora*)—a low-growing annual herb in the phlox family;
- many-flowered navarretia (*Navarretia leucocephala* ssp. *pliantha*)—a subspecies related to the above, distinguished by heads of up to 50 white or blue flowers; and
- Lake County stonecrop (*Parvisedum leiocarpum*)—an annual in the stonecrop family.

Habitat loss is the primary threat facing these plants and many other species dependent on vernal pools. Some habitats are destroyed directly by urbanization, while others are degraded by activities such as wetland drainage and agricultural conversion that alter vernal pool hydrology.



Golden paintbrush

Photo by Jon Gilstrom

Golden Paintbrush (*Castilleja levisecta*) A perennial herb in the figwort family, the golden paintbrush is named for its brilliant yellow flowers. This grassland plant is native to Oregon, Washington, and Vancouver

Island, Canada. The succession of grasslands to forest and shrub habitats and the conversion of habitat to agricultural, residential, and commercial uses are the main threats to the golden paintbrush. This species has already been eliminated from Oregon, and it survives at only eight sites in Washington and two in Vancouver. Recovery will depend on rehabilitating grassland habitats. (See "Prairie Habitat Restoration in Western Washington" in *Bulletin* Vol. XXII, No. 4.) On June 11, the golden paintbrush was listed as threatened.

San Francisco Lessingia (*Lessingia germanorum*)

This annual in the aster family was named in honor of the Lessings, a German family of scientists and authors, and for its range, which is restricted to the northern San Francisco peninsula in California. Over 90 percent of its dune scrub habitat has been altered or destroyed. The species survives on the historic Presidio and a single site on San Bruno Mountain. Its remaining habitat is vulnerable to invasive non-native plants, urbanization, sand quarrying, bulldozing, and trampling by pedestrians or off-road vehicles. On June 19, the San Francisco lessingia was listed as endangered.

Guajon (*Eleutherodactylus cooki*) The guajon, a unique and relatively large species of tropical frog, is known only from the mountains of southeastern Puerto Rico. Its unusually large, white-rimmed eyes are said to give this frog a specter-like appearance, which may account for its other common name: *demonio de Puerto Rico* or "demon of Puerto Rico." The guajon is not only limited in range, but its habitat is also restricted to rocky crevices and grottos. Deforestation, the conversion of lands for agricultural or residential use, and road construction have degraded or eliminated much of its habitat, and a proposed reservoir would flood even more. On June 11, the guajon was listed as threatened.

Steller's Eider (*Polysticta stelleri*) The Alaska breeding population of Steller's eider, a sea duck native to parts of the arctic U.S. and Russia, was listed as threatened on June 11. Within the U.S., it was known historically from western Alaska (where it is now essentially extirpated) and the North Slope (where it still occurs). The reasons for its serious decline in range are not understood but apparently do not include habitat loss. Adding to the mystery, the species' status is unknown in the Russian part of its range.

Jaguar (*Panthera onca*) The jaguar, the largest species of cat native to North America, historically occurred from Argentina north through Central America to the southwestern U.S. After a decline in numbers and range caused by habitat destruction and the extensive killing of jaguars for predator control and the fur trade, this species was listed in 1969 as endangered. Due to an oversight, however, it was listed under the ESA only as a *foreign* species and therefore was not protected within the U.S. On July 22, the FWS corrected this oversight by listing the jaguar as endangered throughout its entire historic range, which included Arizona, New Mexico, California, and probably Louisiana. The primary effect of this rule will be to prohibit the killing of jaguars in the U.S. without a permit.



Jaguar
Corel Corp. photo

Although breeding populations of the jaguar apparently survived in the U.S. until earlier this century, none are known to remain. But individuals continue to be sighted. At least 64 jaguars are known to have been killed in Arizona since 1900, most recently in 1986. Two sightings in southern Arizona, both confirmed by photographs, were received in 1996—one from the Peloncillo Mountains along the New Mexico border and the other from the Baboquivari Mountains in south-central Arizona. These animals likely originated from jaguar populations in nearby parts of northern Mexico.

Experimental Populations

Grizzly Bear (*Ursus arctos*) Prospects for the grizzly bear, which is listed in the conterminous 48 States as threatened, may improve if a July 2 proposal to establish an experimental population in the Selway-Bitterroot ecosystem of central Idaho and western Montana is approved. The proposal calls for reintroducing three to five grizzlies each year as a "non-essential, experimental" population. Such a designation allows wider latitude in enforcing ESA restrictions. For example, it establishes procedures to remove bears that are a threat to livestock. Although the population would promote recovery, it is "non-essential" to the species' survival because other populations remain. Additionally, it accommodates the interests of a group of community members who live and work within the proposed reintroduction area. The group, known as Roots, is made up of citizens in the Bitterroot area and representatives of both the timber industry and environmental groups.

Of all the unoccupied grizzly bear habitat south of Canada, the Bitterroot Mountains have the greatest potential to support another population, primarily because of the ecosystem's size. It contains the largest contiguous wilderness area in the lower 48 States, about 5,800 square miles.



Grizzly bear
Corel Corp. photo

Whooping Crane (*Grus americana*) On July 21, the FWS designated the whooping cranes that migrate between Idaho and New Mexico as a non-essential, experimental population. From 1976 to 1988, the FWS attempted to establish a Rocky Mountain whooping crane flock that would migrate between wintering habitat at Bosque del Apache National Wildlife Refuge (NWR) in New Mexico and breeding grounds at Grays Lake NWR in Idaho. Whooper eggs were placed into the nests of sandhill cranes (*Grus canadensis*), which served as "foster parents," raising the hatchlings and teaching them the

migration route. But the whooping cranes became imprinted on the sandhill cranes and did not breed with the other whoopers as intended. They also suffered high mortality during migration. Only three whoopers remain in the flock, and they are not expected to survive more than 10 more years.



Whooping cranes
FWS photo

The FWS now plans to continue experimenting with captive-reared sandhill and whooping cranes in this area to evaluate methods for reintroducing whoopers into the wild where migration is required. Up to seven whooping crane chicks reared in Idaho will be led by ultralight aircraft to wintering grounds at Bosque del Apache NWR, following up on previous work with non-endangered sandhill cranes. (See "Teaching Cranes to Migrate" in *Bulletin* Vol. XXI, No. 5.) If this technique proves successful with whooping cranes, it may be used to reestablish the species within historical nesting habitat in Canada.

Two other wild populations of whooping cranes now exist. About 165 cranes migrate between the Northwest Territories in Canada and Aransas NWR on the Texas coast, and an experimental non-migratory flock being established in Florida now contains over 60 birds. In addition, almost 130 whooping cranes live in captivity, primarily for breeding purposes.



Sandhill crane

Photo by Donna Dewhurst

Withdrawals

Flat-tailed Horned Lizard (*Phrynosoma mcallii*)

This small lizard, characterized by its broad tail and dagger-like head spines, is endemic to regions of the Sonoran Desert in southern California, southern Arizona, and northwestern Mexico. A 1993 proposal by the FWS to give this reptile ESA protection was withdrawn on July 15 after threats to its habitat were reduced and better population data became available. In June 1997, Federal and State agencies in Arizona and California signed a conservation agreement to carry out a rangewide management plan for this species. This plan, which was developed over the past 2 years, established management areas for 437,000 acres (176,800 ha), about 35 percent of

the species' remaining range. The FWS will continue to monitor the status of the flat-tailed horned lizard.

San Bruno Mountain Manzanita (*Arctostaphylos imbricata*)

This low-growing evergreen shrub is endemic to San Bruno Mountain in San Mateo County, California. In 1994, the FWS proposed to list it as threatened by habitat loss and overcollection. Since that time, the manzanita's status under the San Bruno Mountain Habitat Conservation Plan, which was established to protect a number of other plants and animals endemic to this unusual habitat, has been clarified. It is now recognized that the habitat of the San Bruno Mountain manzanita will also be protected under the plan. Further, the threat from illegal collection of this attractive plant does not appear to be as serious as originally thought. Because the species no longer appears to be threatened with extinction, the FWS withdrew the listing proposal on June 19.

Three Channel Islands Plants On July 31, 1997, the same day the FWS listed 13 plants on California's northern Channel Islands as endangered or threatened (see above), it withdrew three other plant taxa that were included in the July 25, 1995, listing proposal. These plants are no longer believed to be in danger of extinction:

- Santa Rosa Island dudleya (*Dudleya blochmaniae* sp. *insularis*)—a succulent perennial in the stonecrop known only from a small site on Santa Rosa Island,
- munchkin dudleya (*Dudleya* sp. nov. "East Point")—a related succulent known from a single population on Santa Rosa Island, and
- island alumroot (*Heuchera maxima*)—a perennial herb in the saxifrage family.

The 1995 proposal cited the effects of non-native animals as the primary threat to these plants. Since the proposal was published, however, the National Park Service (which manages much of the land occupied by these species) has fenced the *Dudleya* sites for their protection. In the case of the island alumroot, field surveys conducted subsequent to the listing proposal have located enough additional populations to make ESA protection unnecessary at the present time.

by Ann Haas and Julia Bumbaca

The Internet has many international wildlife sites for you to browse. Here are some World Wide Web sites to get you started:

U.S. Fish and Wildlife Service, Office of International Affairs

<http://www.fws.gov/~r9dia/>

United Nations Environment Programme, Geneva

<http://www.unep.ch/cites.html>

Info at this CITES Secretariat site includes the complete text of the Convention.

Save the Tiger Fund/National Fish and Wildlife Foundation

<http://www.nfwf.org/newexx.htm>

International Union for the Conservation of Nature and Natural Resources (IUCN)

<http://www.who.ch/programmes/ina/ngo/ngo128.htm>

IUCN/SSC Conservation Breeding Specialist Group

<http://www.cbsg.org>

Wildlife Protection Society of India

A "registered non-profit organisation that has been endorsed by the Indian Government," formed in 1994 to provide support and information to combat the escalating wildlife trade

<http://www.nbs.it/tiger/Tiger3.html>

International Crane Foundation

<http://www.baraboo.com/bus/icf/whowhat.htm>

This private non-profit organization works worldwide to conserve cranes and the wetland and grassland communities on which they depend.













Shark Specialist Group, International Union for the Conservation of Nature and Natural Resources

<http://www.flmnh.ufl.edu/fish/research/IUCN>

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BOX SCORE

Listings and Recovery Plans as of September 30, 1997

GROUP	ENDANGERED		THREATENED		TOTAL LISTINGS	SPECIES W/ PLANS
	U.S.	FOREIGN	U.S.	FOREIGN		
 MAMMALS	57	251	7	16	331	41
 BIRDS	75	178	15	6	274	74
 REPTILES	14	65	18	14	111	30
 AMPHIBIANS	9	8	7	1	25	11
 FISHES	67	11	41	0	119	77
 SNAILS	15	1	7	0	23	19
 CLAMS	56	2	6	0	64	45
 CRUSTACEANS	15	0	3	0	18	7
 INSECTS	24	4	9	0	37	21
 ARACHNIDS	5	0	0	0	5	4
ANIMAL SUBTOTAL	337	520	113	37	1,007	329
FLOWERING PLANTS	514	1	113	0	628	389
 CONIFERS	2	0	0	2	4	1
 FERNS AND OTHERS	26	0	2	0	28	22
PLANT SUBTOTAL	542	1	115	2	660	412
GRAND TOTAL	879	521	228	39	1,667*	741**

TOTAL U.S. ENDANGERED: 879 (337 animals, 542 plants)

TOTAL U.S. THREATENED: 228 (113 animals, 115 plants)

TOTAL U.S. LISTED: 1107 (450 animals***, 657 plants)

*Separate populations of a species listed both as Endangered and Threatened are tallied once, for the endangered population only. Those species are the argali, chimpanzee, leopard, Stellar sea lion, gray wolf, piping plover, roseate tern, green sea turtle, saltwater crocodile, 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.

**There are 475 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.

***Five animal species have dual status in the U.S.

ENDANGERED
Species
BULLETIN

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

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