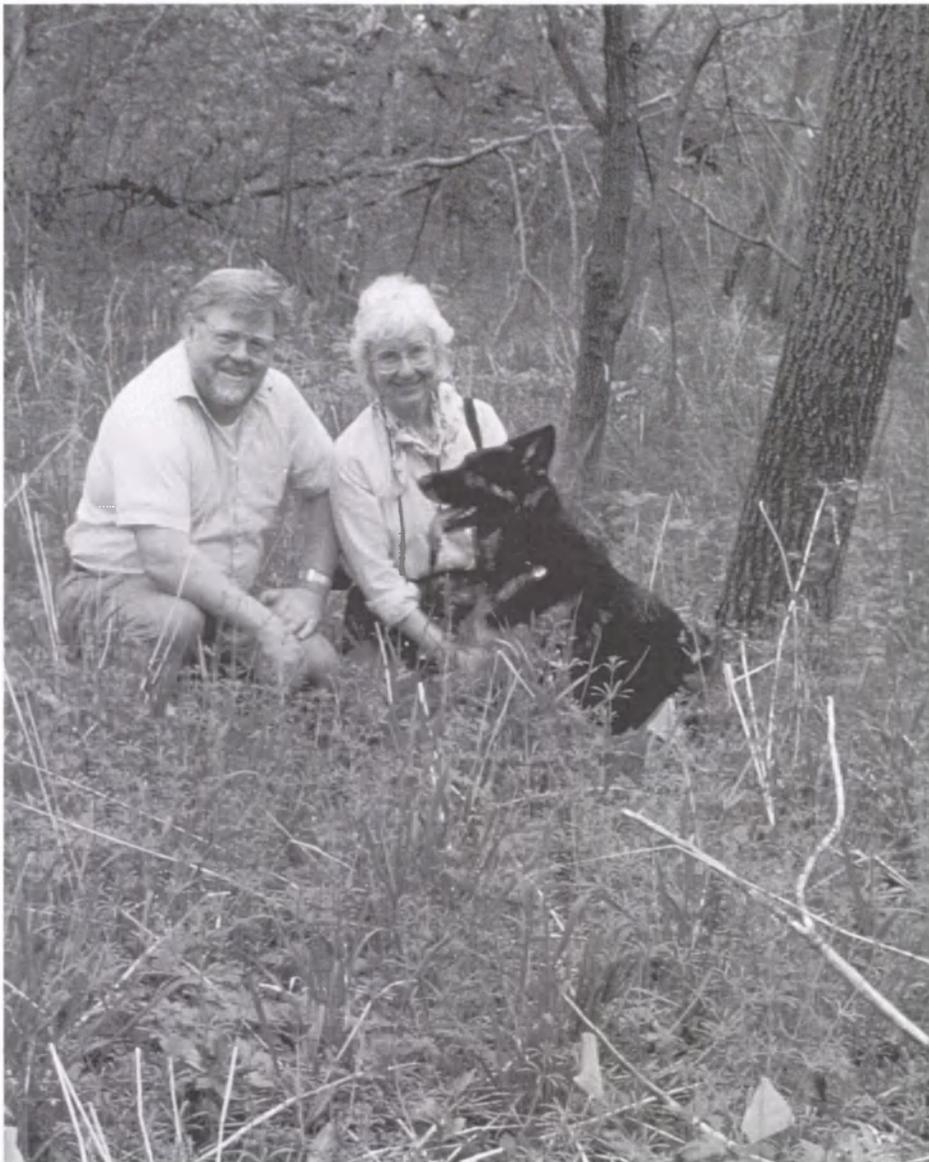


ENDANGERED *Species* BULLETIN

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*P*riate landowners have played an essential role in the conservation of plant and animal resources since our Nation was founded. Many rare species survive partly or entirely on private land due to careful stewardship. As growth and development place increasing demands on wildlife habitat, property owners often face difficult choices when seeking to balance the use of their land with the Nation's conservation goals.

Recognizing that wildlife laws affect land management, the Departments of the Interior and Commerce have issued a set of 10 principles designed to ease impacts on private landowners and create incentives for continued cooperation. This edition of the Bulletin features cooperative initiatives that are being carried out with private landowners in various parts of the country.



photo by Mike Blair/Kansas Department of Wildlife & Parks

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On the Cover
Paul and Rosie Schluter take pride in the endangered wildflowers on their land. Flags at the lower right indicate two of the wildflower sites.

**photo by Lisa Mueller, Minnesota
Department of Agriculture**

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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Making the ESA Work Better

Ten principles to Improve ESA Implementation

**Treat landowners fairly
and with consideration.**

**Minimize social and
economic impacts.**

**Create incentives
for landowners to
conserve species.**

**Provide quick, responsive
answers and certainty
to landowners.**

**Base ESA decisions on
sound and objective
scientific information.**

**Prevent species from
becoming endangered
or threatened.**

**Promptly recover and
delist threatened or
endangered species.**

**Provide State, Tribal, and
local governments with
opportunities to play a
greater role in carrying
out the ESA.**

**Make effective use
of limited public and
private resources by
focusing on groups of
species dependent on
the same habitat.**

**Promote efficiency and
consistency in the
Departments of the Interior
and Commerce.**

*T*en principles to improve implementation of the Endangered Species Act (ESA) were announced March 6 by Interior Secretary Bruce Babbitt and Dr. D. James Baker, Under Secretary of Commerce. The changes are designed to: improve the species recovery rate while minimizing impacts of the ESA on landowners, grant more authority to State and local governments, require greater scientific scrutiny of endangered species decisions, and make implementation of the ESA more efficient.

Some of the principles can be carried out administratively or through the rulemaking process. Others, however, would require amendments to the ESA. "As changes to the law come under consideration," Babbitt said, "a key need is to balance species protection with the rights of private property owners. These principles build on our initiatives to reduce the conservation burden on small landowners and show the Administration is serious in its efforts to balance the rights of individual landowners with the community's right to a healthy environment."

Easing Impacts on Landowners

The Fish and Wildlife Service (FWS) and National Marine Fisheries Service (NMFS) will propose regulations designed to ease the impacts of the ESA on private landowners. For species listed as threatened, the agencies would allow land uses that result in incidental take, provided that such activities have no lasting effect on the survival and recovery of the species. "Small landowners should be exempted from endangered species conservation burdens on the basis of fairness and biology," Babbitt said. In particular, the following would not be regulated under this proposal:

- ☛ activities on tracts of land occupied by a single household and used solely for residential purposes;
- ☛ one-time activities that affect 5 acres (2 hectares) or less of contiguous property if that property was acquired prior to the date that the species was listed; and
- ☛ activities that are identified as negligible.



photo by Jim Clark

The ESA allows flexibility in the management of species listed as threatened. Congressional authority would be needed, however, to grant such exemptions involving endangered species.

Minimizing Social and Economic Effects

Both the FWS and NMFS will take additional steps to minimize any negative social or economic impacts resulting from ESA activities. For example, once the agencies scientifically identify the recovery needs of a listed species, they will involve affected individuals and groups in developing and implementing recovery actions. Diverse areas of expertise will be represented on recovery teams.

Creating Incentives for Conservation

Landowners often are interested in managing their lands in ways that are compatible with, or actually improve, habitat for wildlife, including endangered and threatened species. However, some are reluctant to do so because of concern that subsequent activities that may damage the improved habitat could result in a violation of the ESA. To create incentives for voluntary habitat improvement on private lands, one of the new proposed policies would insulate landowners from ESA restrictions if they enhance habitat for listed species on their property and later need to return the land to its previous condition. The proposed policy would apply in cases where it is possible to measure a conservation benefit to a species from habitat improvements.



FWS photos

Providing Prompt Information

Earlier notifications Due to concern that delays and uncertainty in ESA decisions frustrate development and land use, the FWS and NMFS will provide more information to landowners at the time a species is listed. Both agencies will identify, to the extent known, specific activities that are exempt from, or unaffected by, provisions of the ESA.

Habitat Conservation Planning Under section 10 of the ESA, the FWS and NMFS can grant permits for the incidental take of listed species during otherwise legal activities, provided the effects of such take are minimized and mitigated as part of an approved habitat conservation plan. Both agencies recently published a draft conservation planning handbook for public review and comment. It is intended to provide more consistent answers to applicants for incidental take permits.

"No surprises" Under the "no surprises" policy, landowners who develop an approved habitat conservation plan for any listed species will not be subject to any later demands for a larger commitment, even if the needs of the species covered by the plan increase over time. No additional mitigation requirements will be required beyond those specified in the plan.

Sound and Objective Science

By law, ESA decisions must be based on the best scientific information available. Because of concern in some quarters about the quality of this information, the FWS and NMFS require independent scientific peer review of all listing proposals and draft recovery plans. These reviews will be accomplished within the timeframes specified in the law for ESA implementation.

The FWS and NMFS also have proposed tougher, uniform standards for evaluation of listing petitions. Further, petitioners would be required to furnish more proof that the petitioned action is warranted.

Preventing the Need to List

Because prevention is preferable to a cure, the FWS and NMFS are working with other agencies and interests to conserve species before need ESA protection:

Federal/State conservation The Forest Service, Bureau of Land Management, National Park Service, FWS, and NMFS have signed an agreement with the International Association of Fish and Wildlife Agencies to cooperate in efforts to reduce, mitigate, and potentially eliminate the need to list species under the ESA.

Pre-listing conservation The FWS and NMFS have published draft guidance that encourages and sets standards for the development of pre-listing conservation agreements with other parties. Again, the goal is to assess the status of listing candidates and take action to prevent the need for ESA protection.

Increasing Recovery and Delisting

The overall goal of the endangered species program is to recover listed species to the point where they no longer need ESA protection. To help speed the process, the FWS and NMFS have adopted a policy that requires completion of a draft recovery plan within 18 months of listing and a final plan within 12 months of the draft plan. Additionally, 14 Federal agencies recently entered into an unprecedented agreement to improve recovery implementation. Each agency agreed to identify opportunities for recovery and to use existing authorities toward that end.

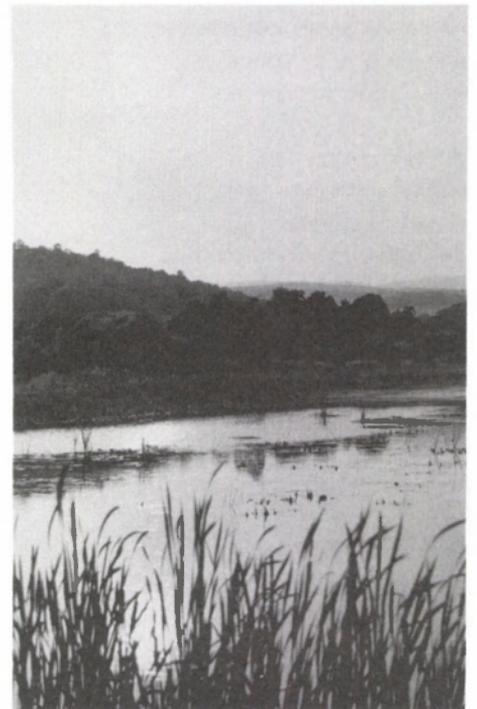
To make recovery plans more than discretionary blueprints, Babbitt and Baker called for more certainty in recovery implementation. They asked Congress to require appropriate Federal and State agencies to develop one or more specific agreements to implement a recovery plan. Upon approval of an implementation agreement by each of the involved agencies, it then would be legally binding. Both recovery plans and implementation agreements would be reviewed and updated on a regular basis.

Another proposal requiring Congressional action is to modify the timing of critical habitat designations. Areas to be proposed as critical habitat would be identified through the recovery planning process. Critical habitat would be designated at the time the recovery plan is approved rather than when the species is listed.

Strengthening Partnerships

Recovery Building new partnerships and strengthening existing ones with State, Tribal, and local governments is essential to achieving species recovery in a fair and effective way. The FWS and NMFS will encourage States to take a greater role in the development and implementation of recovery plans. Further, Congress will be asked to give States the opportunity to assume lead responsibility for developing recovery plans and any associated implementation agreements. For cases in which a species' range extends over several States, a mechanism would be needed to ensure that each State may be involved. Under this proposal, the FWS and NMFS would approve State-developed recovery plans unless the Secretary determines that a plan does not meet ESA standards.

Listing petitions Another proposal needing Congressional approval would give States greater influence over the evaluation of listing petitions. Such petitions would be sent to each affected State wildlife management agency. If a State recommends against proposing a species for listing or delisting, the FWS and NMFS would be required to accept that recommendation. The only exception would be for a case in which the Secretary finds, after conducting independent scientific peer review, that the species does need ESA protection.



Habitat Loss

by Sally Valdes-Cogliano

Historically, the first species to be endangered by man were those killed directly for food or skins, or because they were viewed as competitors. Today, habitat loss and degradation are the greatest threats to wildlife. Some ecosystems, like the tall grass North American prairie, have essentially disappeared. Other habitats have been so fragmented that they cannot support the number and variety of species found in larger blocks.

Simplification of ecosystems also can result in habitat degradation. For example, removal of standing dead wood in a forest degrades the habitat from the perspective of species such as cavity-nesting birds that rely on the dead tree microhabitat.

Pollution can be an obvious or subtle degrader of habitat quality. Organic pollution can rob fresh water of oxygen. Solid waste pollution is a serious problem in many marine environments, where entanglement in and ingestion of wastes can be a significant threat to wildlife. Finally, chemical pollution in the food chain can have obvious effects, such as fish kills, but more commonly results in chronic health and reproductive problems.

Sally Valdes-Cogliano is a biologist in the FWS Division of Endangered Species, Washington, D.C.



FWS photo

Habitat conservation Currently, habitat conservation plans and incidental take permits are approved by the FWS or NMFS. The Secretaries have requested Congressional authority for States to assume responsibility for issuing such permits. This would apply to areas within a state that have been identified for such assumption in an approved recovery plan or areas within an approved habitat-based program.

Focusing on Species Groups

To make more effective use of limited public and private resources, the FWS and NMFS have been shifting from an emphasis on individual species to a focus on groups of species and their habitats. This trend will continue as both agencies give even greater priority to multi-species listings, recovery actions, and habitat conservation plans whenever possible. (For more information on taking an ecosystem approach to wildlife conservation, see *Bulletin* Vol. XX, No. 1.)



photo by Jim Clark

Saving Room for Ocelots

Most people think of brush as merely something to be cleared, but it is vital habitat for many species of wildlife. Secretive animals like the ocelot (*Felis pardalis*) and jaguarundi (*Felis yagouaroundi*) particularly depend on dense vegetation for shelter. In southern Texas, an innovative agreement is making the conservation of brushland habitat compatible with irrigation for agriculture.

Fortunately, South Texas is becoming a friendlier place to both endangered cats, thanks to a voluntary agreement between Bayview Irrigation District 11 and the U.S. Fish and Wildlife Service (FWS) to conserve brushy habitat. District 11 owns approximately 100 miles (160 kilometers) of irrigation and drainage ditches in Cameron County, the heart of the ocelot's remaining U.S. range. Brush growing along these ditches is important cover and dispersal habitat for the region's isolated ocelot populations. In the past, much of this habitat was lost when banks were cleared during the removal of silt and debris from the ditches. Under the agreement, District 11 modified its maintenance procedures. On previously cleared ditches, the District is allowing one bank to revegetate where practical and conducting its cleaning work from the other side. The resulting regrowth of brushy habitat provides vital corridors for the endangered cats and other wildlife.

This new method increases time and costs for ditch maintenance, according to Gordon Hill, general manager of the irrigation district, "but we did it to ensure that we protect our wildlife." Steve Thompson, manager of the nearby Laguna Atascosa National Wildlife Refuge (NWR), says the

agreement has wide support in the region. "We hope other irrigation districts and private landowners will take a look at this agreement and give the cats a helping hand."

Brush growing along irrigation ditches in south Texas complements the habitat managed for ocelots at Laguna Atascosa NWR, which supports the State's largest remaining population. A few miles to the south, additional habitat for the endangered cats, as well as a wide variety of birds and other wildlife, is being conserved within the Lower Rio Grande Valley NWR. Recently, local citizens proposed establishing another refuge near Harlingen, which would protect valuable habitat bordering the Arroyo Colorado. One reason the people of south Texas are so interested in conserving their rare wildlife is tourism. The region supports an unusually diverse birdlife, including a number of species found nowhere else in the United States. Birders from throughout the country flock to south Texas to observe this unique resource. Together, local refuges and parks annually attract more than 500,000 visitors who pump millions of dollars into the regional economy.

The ocelot and jaguarundi once inhabited a variety of environments from Argentina to the southern United States, but both species have declined over most of their range due to habitat loss. The ocelot also was exploited for its attractive spotted fur. An estimated 50 to 100 ocelots remain in south Texas within remnants of thornscrub brush, and the jaguarundi—if it survives in the State—is even rarer. Their prospects for survival are tied to the conservation of brushlands.



photo by John & Karen Hollingsworth

Telemetry from radio-collared ocelots has provided FWS biologists studying this species with vital information on the cat's habitat needs.

Safe Harbors

by Diana Hawkins

A number of private landowners have expressed interest in joining the Safe Harbor program. First in line was the 100-year-old Pinehurst Resort and Country Club, located on 2,000 acres about 75 miles south of Raleigh, North Carolina. The resort operates seven golf courses, including the world famous Pinehurst No. 2, which hosted the 1994 U.S. Senior Golf Championship and will host the U.S. Open in 1999.

Brad Kocher, director of the resort's golf course and grounds maintenance, says that Pinehurst is excited to be the first private landowner ready to sign on to the proposed new habitat conservation plan. "We knew that golfers liked our courses, but we were happy to learn that woodpeckers find them a good substitute for their disappearing natural habitat," he said. Pinehurst president Patrick Corso added, "We view this as a common sense approach to protecting wildlife and endangered species."

Jim Bilyak, president of the Sandhills Area Chamber of Commerce, applauded the move. "A few years ago, you might not have seen a businessman nodding in agreement with the U.S. Department of Interior, the U.S. Fish and Wildlife Service and the Environmental Defense Fund," he said. "Times are a-changing. "

It was designed as "a deal too good to turn down." Secretary of the Interior Bruce Babbitt proposed a new habitat conservation approach on March 1, 1995, that was a conservation coup—not only for the endangered red-cockaded woodpecker (*Picoides borealis*) but also for private landowners. Dubbed the "Safe Harbor" proposal, the new approach demonstrates the flexibility of the Endangered Species Act in balancing species protection with the needs of landowners. It may also serve as a model for other habitat conservation plans being developed around the country.

While the plan encourages landowners to practice good stewardship that will attract endangered species to their land, it also allows them freedom to convert the land to other uses, without penalty, if they change their minds at a later date. The only provisions are that

the landowners 1) cannot destroy nesting sites of endangered birds that were present on a site prior to the Safe Harbor improvements, 2) cannot develop the land during the nesting season, and 3) must allow the U.S. Fish and Wildlife Service (FWS) the option



photo by George Gentry

Woodpecker nesting tree on golf course at Pinehurst Resort and Country Club.

to relocate the protected species if the habitat is to be adversely affected by subsequent alteration.

The plan grew out of a conference held in September 1992 at Fort Bragg, North Carolina. Co-hosted by FWS and the U.S. Army, the meeting was convened to develop a long-term program for recovering the red-cockaded woodpecker in the North Carolina Sandhills. Fort Bragg was a fitting site for the conference since this large base is home to a significant population of the woodpeckers. Discussions specifically addressed woodpecker protection needs on private lands and the necessity for a multi-agency effort to conserve this endangered species.

FWS biologists convened a meeting in March 1993 to establish a working group of representatives from public agencies, conservation interests, community groups, and private landowners to work together for the woodpecker in the Sandhills region. The group included biologists Janice Nicholls and David Horning from the FWS Asheville and Raleigh, N.C., field offices, and representatives of the U.S. Army at Fort Bragg, the North Carolina Wildlife Resources Commission, the North Carolina Natural Heritage Program, North Carolina State University, and the Sandhills Area Land Trust. Former Fort Bragg biologist Mark Cantrell joined the FWS team when he became the red-cockaded woodpecker recovery coordinator for the Sandhills region in June 1994.

It soon became clear that the key to encouraging private landowners to join in this effort was in developing suitable incentives. One idea to encourage voluntary protection of the woodpeckers by private landowners was put forward by group member Marsh Smith. Smith is a member of the Sandhills Area Land Trust, a grass roots organization established to conserve woodland, other natural areas, and farmlands in the area. He suggested that private landowners

may be persuaded to provide suitable habitat for endangered species if the FWS could assure them that they would not be penalized if later they decided to convert the land to some other use not necessarily favorable to the resident species. Smith's idea became known as the "Safe Harbor" proposal.

"Some private landowners were concerned that they would be subject to restrictions under the Endangered Species Act if woodpeckers were to take up residence on their property," Nicholls said. "If we were able to remove this concern, landowners could then be encouraged to maintain old growth pine forests and attract woodpeckers to their land."

The next critical task was to determine how to implement the Safe Harbor idea. Michael Bean of the Environmental Defense Fund developed a set of possible approaches and met with FWS Atlanta Regional Office representatives. One option that emerged at that meeting was the idea of using the Habitat Conservation Plan (HCP) provisions of the Endangered Species Act to accomplish the Safe Harbor result. Together, Bean, Nicholls, and Cantrell drafted the HCP and submitted it to the FWS Atlanta Office in February 1995. The proposal was published in the February 24, 1995, *Federal Register* for public comment. After considering all comments submitted, FWS will decide whether or not to approve the HCP.

Ralph Costa, the FWS rangewide red-cockaded woodpecker recovery coordinator, calls the HCP based on the Safe Harbor proposal a "win-win" proposition. "Even if the landowner decides not to continue participating in the program, the favorable habitat conditions created will not necessarily vanish." If they do, he noted, the FWS has an opportunity to capture the affected birds and move them to another location. "Either way, we will have more woodpeckers than we have now," Costa said.



photo by John & Karen Hollingsworth

The red-cockaded woodpecker, listed in 1970 as endangered, once was abundant in the pine forests of the southeastern United States. Today, however, fewer than 4,500 family units remain scattered across an area that totals only about 1 percent of its original range. It can be found in 13 southeastern States and as far west as parts of Texas and Oklahoma. The bird is imperiled by the destruction of longleaf pine forests, its preferred habitat, which once covered 92 million acres but now total less than 4 million acres. Most of the species' remaining habitat occurs on Federal lands, but 21 percent of the birds are found on private property. The North Carolina Sandhills Region supports one of the species' largest populations.

The Shaw Family Pines

Brothers John and Frank Shaw of Fayetteville, North Carolina, and their sister Marie Shaw Dee, of Washington, D.C., have dedicated their 200 acres of long-leaf pine forest in Cumberland County, North Carolina, to protecting a number of rare species. The family's decision was driven by its desire to preserve this habitat remnant for the enjoyment of future generations and contribute to the overall recovery of endangered species in the Sand Hills of North Carolina.

Long-leaf pine forests once covered the Piedmont from coastal Virginia to Texas, but almost all have disappeared. The Shaw property, which has been owned by the family for over 150 years, is one of few tracts of this habitat remaining in the United States. Its unique characteristics are critical to the survival of the endangered red-cockaded woodpecker. The property has been recognized by the State of North Carolina as the Bonnie Doone Natural Area. The Shaws' decision will help protect habitat not only for the red-cockaded woodpecker but an array of other species, including the bog spice bush (*Lindera melissifolia*), an endangered plant.



photo by George Gentry

Red-cockaded woodpeckers are good neighbors in Southern Pines, North Carolina. This RCW nesting cavity tree is within a few feet of a private residence.

FWS biologists who assisted in the development of this new-generation style HCP are pleased with the accomplishments of the working group. "I'm really proud to be a part of this group," Cantrell said, noting that he has gained a better understanding of how to make use of the great flexibility in the Endangered Species Act.

Nicholls summed it up nicely, saying "Development of this HCP is an excellent example of the kind of cooperation and creativity of numerous individuals committed to three common goals: recovery of the woodpecker, conservation of the longleaf pine

ecosystem, and consideration for landowners' rights."

In addition to the "Safe Harbor" program, the FWS is negotiating 10 separate HCPs for the red-cockaded woodpecker and has signed three memoranda of agreement with industrial forest landowners. Two others are nearly completed and two more are being negotiated.

Diana Hawkins is on the Public Affairs staff in the FWS Atlanta Regional Office.

Living with Wildlife in Texas Hill Country

by Ruth A. Stanford

A community planned for construction in Georgetown, Texas, by the Del Webb Corporation will be home not only for people but two endangered species, the Bone Cave harvestman (*Texella reyesi*) and the Coffin Cave mold beetle (*Batrissodes texanus*). Both invertebrates occur only in caves near Austin and surrounding communities in the Texas Hill Country. At the same time, the Sun City Georgetown development will add \$1.4 billion in taxable property to Williamson County over the next 20 years.

Early in project planning, Del Webb employees met with U.S. Fish and Wildlife Service (FWS) officials to design a development that would not result in "take" of the endangered invertebrates. Sun City planners worked with biological, geological, and engineering consultants and used the information they gathered to produce a community design that is sensitive to the environment and preserves the biological integrity of caves on the Sun City property. The plan was reviewed by the FWS, which suggested several minor changes and concurred that the proposed development would not take the endangered invertebrates.

Del Webb's master plan includes preserves around 29 caves supporting endangered species and provides for their long-term management, including protection from non-native fire ants, which have become a major threat to the species. The interconnecting network of cave preserves provides a protected recovery area for each of the endangered species. The plan also provides protection for groundwater in the area, since several of the caves provide recharge to the northern segment of the Edwards Aquifer, an

enormous underground natural reservoir that supplies water for much of the state. Additionally, Del Webb will conserve native vegetation and two riparian creekbeds within the Sun City Georgetown project.

"This development is a classic example that shows how quality-of-life concerns are linked to environmental goals," said Interior Secretary Bruce Babbitt. "It also demonstrates the Interior Department's commitment to work with developers and communities to design projects that protect natural resources and benefit local economies."

In addition to the conservation measures for endangered species caves, two large, isolated areas will be set aside for research purposes, and a display showing the nature of the caves and significance of the cave habitat will be developed as an educational exhibit. Sun City Georgetown will include four golf courses, a multi-million dollar recreation complex, and hiking and biking trails, along with homes designed for those age 55 and older.

Ruth A. Stanford is a biologist in the FWS Austin, Texas, Field Office.

Connie Watson of the Del Webb Corporation and FWS biologist Ruth Stanford examine the entrance to Argo Cave at Sun City Georgetown.

photo by Hans Stuart

"Del Webb is committed to protecting the beauty and natural resources of the Texas Hill Country," said Bob Wagoner, the company's vice president for land development. "Our corporate policy is to be sensitive to environmental issues in our development activities. Rather than destroy cave habitat, our intent was to design a community in harmony with the Hill Country environment." Sun City Georgetown will include the construction of 9,500 single family homes on 5,300 acres of land, creating more than 1,000 construction jobs.



by Larry Dean

Lending a Helping Land



photo by Ann B. Swengel

Above
Karner blue butterfly

Right
dwarf lake iris

Below
prairie bush clover



FWS photo

Voluntary participation, rigorous respect of landowners' rights, and a personalized educational approach are three important features of Wisconsin's successful landowner contact program. Initiated in 1991, the State's effort seeks to protect endangered plants and animals that occur on private lands. This goal is carried out under a signed Memorandum of Understanding (MOU) between the landowner and the Wisconsin Bureau of Endangered Resources. So far, 73 such MOU's have been signed. The following examples show how this approach works well in a variety of situations.

More than 300 miles to the east, on the cool Lake Michigan shore, grows a striking but rare plant, the dwarf lake iris (*Iris lacustris*). In this summer resort area, lakefront summer homes abound, development is big business, and realtors are busy. Yet 27 landowners and land managers in this part of Wisconsin have signed iris protection

MOU's. Perhaps even more exciting is the recent cooperation of real estate agent Richard Kielpikowski. Representing a seller on whose property the iris grows, Mr. Kielpikowski agreed to alert any potential buyer of the presence of this threatened species. He views the iris both as a species he wants to protect and as a valuable feature of the property that might make it more attractive to potential buyers.

The prairie bush clover (*Lespedeza leptostachya*) is found only in dry

prairies in certain areas of Wisconsin, Minnesota, Illinois, and Iowa. The owner of one site is a church in River Falls, Wisconsin. An isolated cemetery prairie owned by the church provides a home to this threatened plant species. Parishioners and priests alike have joined forces, signed an MOU and pledged themselves to reaching this conservation goal.

In sandy central Wisconsin, the endangered Karner blue butterfly (*Lycaeides melissa samuelis*) finds its home amid wild lupine patches growing in a "barrens" habitat. After one area landowner signed an MOU, she



FWS photo

suggested that the Bureau contact her neighbor, Bob Welch, whose land also supports this species. After he signed an MOU, yet another neighbor was approached. The result is a cluster of properties where the butterfly is protected and the landowners are cultivating a community pride in their commitment to conservation.

Larry Dean is in the Region 3 Public Affairs Office.

The Lilies of Schluters' Woods

by Lisa Mueller

If you were a Minnesota dwarf trout lily (*Erythronium propullans*), you would probably like to live in the Schluters' woods. Paul and Rosie Schluter, who own a 40-acre farm near Cannon Falls, Minnesota, have been voluntary caretakers of this endangered wildflower on their maple-basswood, floodplain forest land since the species was discovered there in 1991.

In early spring of 1991, Paul and Rosie worked with biologists from the Minnesota Department of Natural Resources and a team of volunteers to search their woods for this species. Their efforts led to the exciting discovery of three dwarf trout lily colonies,



FWS photo

Unlike many flowering plants, the dwarf trout lily almost never produces seed. Instead, flowering plants produce a single underground offshoot bearing a new bulb.

which the team marked with pink flags for ease of identification and mapping.

This dwarf trout lily species occurs nowhere in the world but southeast Minnesota, and has been reduced in range to three counties. It is one of a group of spring ephemeral plants that make their living by capitalizing on the peak light available on the forest floor just after snow melt, before the trees close the forest canopy with their new leaves. The leaves of the Minnesota dwarf trout lily are speckled brown and green, resembling the pattern on the back of a trout, hence this part of its name.

The Schluters are not alone in their dedication to "doing the right thing" for the benefit of a rare plant or animal. The Minnesota Department of Agriculture's Endangered Species Protection Program works with hundreds of private landowners who are willing to adopt certain land use practices, including restrictions on pesticide use on their farms, to benefit a rare species. In a national survey commissioned recently by The Nature Conservancy, private landowners were asked whether they consider it good or bad news that they have a rare plant or animal on their property. A full two-thirds responded that they thought of this as good news. In fact, the highest positive response rate to this question was among rural residents, with 7 out of 10 saying it was good news to hear they have a rare species on their land.

Lisa Mueller is the Endangered Species Program Manager for the Minnesota Department of Agriculture.

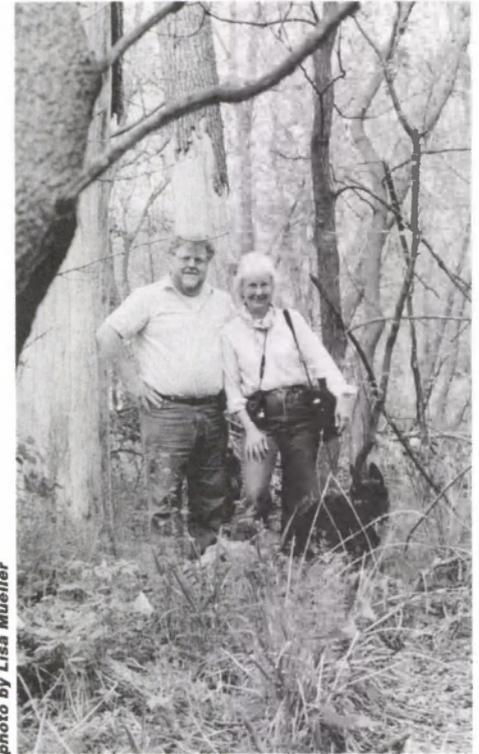


photo by Lisa Mueller

Paul and Rosie Schluter understand the scientific significance of the find and are comfortable with the "responsibility" that goes along with being the owners and managers of such a rare and fragile species. The Schluters feel that the presence of such a rare species on their land is a privilege.

Metropolitan-Bakersfield HCP



After years of cooperative planning by representatives of the Fish and Wildlife Service (FWS), California Department of Fish and Game, City of Bakersfield, and Kern County, implementation of the Metropolitan-Bakersfield Habitat Conservation Plan (MBHCP) has begun. The MBHCP allows the City and County to implement conservation and urban development activities within the Metropolitan Bakersfield 2010 General Plan (2010 Plan) area while mitigating the take of four federally listed species. It also is intended to conserve other species that are listed or listing candidates under State and Federal endangered species laws. The MBHCP will be funded through the collection of mitigation fees paid on all new construction taking place within the 2010 Plan area.



On August 24, 1994, a permit was issued under the MBHCP to allow incidental take of San Joaquin kit fox (*Vulpes macrotis mutica*), giant kangaroo rat (*Dipodomys ingens*), Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), and blunt-nosed leopard lizard (*Gambelia silus*) by the City of Bakersfield and Kern County in a 408-square-mile (105,672 ha) area. Federally listed plant species expected to benefit from the plan include the Bakersfield cactus (*Opuntia treleasei*), San Joaquin woolly-threads (*Lembertia congdonii*), Hoover's woolly-star (*Eriastrum hooveri*), Kern mallow (*Eremalche kernensis*), and California jewelflower (*Caulanthus californicus*). Federal listing candidates



covered by the MBHCP, include the short-nosed kangaroo rat, San Joaquin antelope squirrel, San Joaquin pocket mouse, slough thistle, recurved larkspur, Bakersfield saltbush, Tulare pseudobahia, and striped adobe lily.

The MBHCP established an Implementation Committee, which will include an FWS representative, to guide the plan's progress and evaluate additional parcels to be purchased. A FWS employee is a member of the Committee that is evaluating additional

parcels to be purchased. The Committee is emphasizing large parcels to fulfill the species' long-term conservation needs. Thus far, approximately 2,000 acres (800 ha) have been purchased in an agency-preapproved area highlighted in the plan.

Vicki Finn is Chief of the Division of Consultation and Conservation Planning, FWS Region 1 Office in Portland, Oregon.



photos by B. "Moose" Peterson/WRP

FWS officials expect that development would have significant impacts on kit fox and cactus populations. Such impacts are compensated and mitigated for by the purchase of habitat for both species, which also provide habitat for a number of other animals and plants. A 1- to 3-acre area (0.4 - 1.2 ha) will be purchased, enhanced, and managed in perpetuity for every acre developed, depending on the ecological value of the land prior to development. Projections are that about 700 acres (283 ha) per year will be acquired and the types of impacts anticipated. The permit expires in 20 years or when 15,200 acres (6,151 ha) of natural lands or 43,000 acres (17,402 ha) of open lands are developed.

Top

blunt-nosed leopard lizard

Bottom

Tipton kangaroo rat

Opposite page

Bakersfield cactus

San Joaquin kit fox

Project SHARE

by James M. Sweeney and Paul Nickerson

Project SHARE was modeled, in part, on the Black Bear Conservation Committee (BBCC), which has been very successful in responding to the management needs of the black bear in Louisiana. Like the BBCC, Project SHARE is based on the principle that participation is open to all stakeholders that can contribute to the conservation goals of the organization. The keys to successful cooperation are a focus on the resource and mutual respect for the interests of all Project SHARE participants.

Editor's note:

On March 14, 1995, the FWS and National Marine Fisheries Service announced their finding that the petition to list the Atlantic salmon throughout its entire range in New England is not warranted. However, both agencies will continue to examine data on Atlantic salmon in seven Maine rivers for possible future listing under the Endangered Species Act, and are seeking more information to determine if salmon in four other Maine rivers warrant protection.

Atlantic salmon (*Salmo salar*) once inhabited freshwater rivers on both sides of the North Atlantic. In North America, they occurred as far south as the Housatonic River in Connecticut, and in at least 33 rivers in Maine (MacCrimmon and Gots 1979, Thorpe and Mitchell 1981, Beland 1984). By the early 1900's, however, over-harvest, habitat loss and destruction, and pollution had eliminated this important resource from most of its range (ND&T and Ritzi 1994, Netboy 1968). Concerted efforts since the mid-1900's to restore Atlantic salmon to rivers in the region so far have met with only modest success.

Sharp reductions in commercial harvest of Atlantic salmon during the marine portion of the species' life cycle offer hope for increasing the spawning runs in Maine rivers. But conserving this nursery habitat also is critically important. The "down east" rivers of Maine offer great potential for a successful habitat conservation, in part because of the relative lack of obstruction along

these rivers and the presence of willing, cooperative landowners.

A New Approach

In 1993, the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service were petitioned to list the naturally spawning Atlantic salmon as endangered throughout its known historic range in the U.S. In response, both agencies initiated a status review and began to seek public input.

In April 1994, the forest products industry hosted a workshop on the Atlantic salmon and the Endangered Species Act listing process. This meeting included presentations from the involved government agencies and various private landowners in down east Maine. The FWS encouraged a cooperative approach to salmon conservation, a point upon which all parties agreed.

Following the April workshop, three of Maine's major forest landowners—Baskahegan Company, Champion International Corporation, and Georgia-Pacific Corporation, with combined



FWS photo

The Atlantic salmon historically has been an important natural resource in the northeast U.S. Its complicated life history presents unique management and restoration challenges. The Atlantic salmon spends 2 or 3 years of its life in fresh water and 1 to 3 years in the ocean.

ownership of more than 1 million acres (405,000 hectares) in the region—initiated a voluntary public/private approach to Atlantic salmon conservation and enhancement. Invitations went out to a broad list of potential interests for an inaugural meeting of Project SHARE (Salmon Habitat and River Enhancement), held June 27, 1994.

Project SHARE has grown to include at least 25 members, including forest landowners, agricultural landowners, State agencies, research and conservation groups, local businesses, and representatives of academia. The FWS has been an active cooperator from the start.

The objectives of Project SHARE fall into three general areas: habitat management, research, and education. Cooperators are identifying habitat restoration/enhancement needs in the down east rivers, prioritizing them, and assembling the resources needed to address them. Information gaps in river habitat management and survey techniques, as well as land-use/forestry/fishery relationships, are being identified, and research is being developed to fill those gaps. Members have developed Geographic Information System (GIS) maps for the Narraguagus River, delineating the various types of salmon habitat along the river course. Also, Project SHARE has instituted an education program to train members and the general public alike about the Atlantic salmon and its habitat needs.

Progress to Date

Project SHARE has held five meetings and is now formally organized as a non-profit corporation. Management projects completed or under way include the development of GIS maps delineating salmon habitat along other rivers, the removal of natural blockages to spawning areas, repair or replacement of specific water control facilities, and the installation of temporary population monitoring stations in selected streams. Research projects currently under design include:

- 1) literature review of relationships between land use activities and salmon habitat,
 - 2) monitoring of potential factors limiting salmon production,
 - 3) energy input (coarse particulate matter) to salmon streams.
- A number of education projects also have been initiated, including training sessions for land managers, development of an educational facility at the Pleasant River Hatchery, video tapes on Atlantic salmon, and a logo contest for children.

Given the wide enthusiasm and support, Atlantic salmon will undoubtedly benefit from Project SHARE. But the larger benefit will be the lasting standard of cooperation that is established for dealing effectively with endangered species concerns. The resource, the ESA, and Maine's economy will be the better for it. We are hopeful that the trust established among the Project SHARE cooperators will extend to the conservation and use of other resources in Maine and throughout the United States.

James Sweeney is Manager of Wildlife Issues for the Champion International Corporation, Washington, D.C. 20006. Paul Nickerson is Chief of the Division of Endangered Species, Northeast Regional Office, U.S. Fish and Wildlife Service, Hadley, Massachusetts 01035.

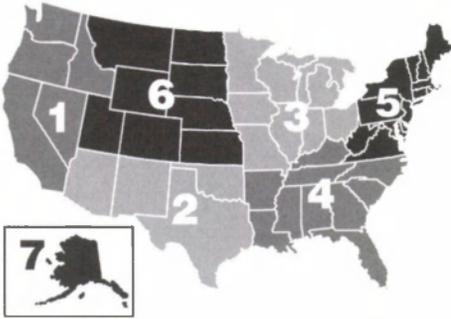


Photo by John and Karen Hollingsworth

Young hatchery—raised Atlantic salmon at the Lamar National Fish Hatchery, Maine

Literature Cited

- Beland, K. F. 1984. Strategic plan for management of Atlantic salmon in the state of Maine. Maine Atlantic Sea Run Salmon Comm., Bangor.
- MacCrimmon, H. R., and B. L. Gots. 1979. World distribution of Atlantic salmon, *Salmo salar*. J. Fish. Res. Bd. Can. 33:2616-2621.
- ND&T and Ritzi. 1994. Summary of information relevant to management of the Atlantic salmon in New England. Northrop, Devine, & Tarbell, Inc. Portland, Maine, and Charles Ritzi Assoc., Redfield, Maine. 168pp + appendices.
- Netboy, A. 1968. The Atlantic salmon: A vanishing species? Houghton Mifflin Co., Boston.
- Thorpe, J. E., and K. A. Mitchell. 1981. Stocks of Atlantic salmon (*Salmo salar*) in Britain and Ireland: discreteness and current management. Can. J. of Fish. and Aquatic Sci. 38:1576-1590.



Region 1

Staff of the Fish and Wildlife Service's (FWS) Northern Idaho Field Office recently accompanied Forest Service staff on a caribou (*Rangifer tarandus*) monitoring flight in the Selkirk Mountains. The primary purpose of this flight was to observe evidence of caribou harassment by snowmobilers. Several days earlier, the Forest Service received a report that snowmobilers had been chasing caribou in the vicinity. During the flight, there was ample evidence of snowmobile tracks overlapping caribou tracks. The incident occurred outside of the area closed by the Forest Service last year after two separate incidents of caribou harassment. Both agencies are evaluating the situation to determine the best response.

Amazon Park is a city park maintained and managed by the city of Eugene in Lane County, Oregon. Habitat for native Willamette Valley plants, including the endangered Bradshaw's lomatium (*Lomatium*

bradsbauii), occurs on several acres of the park. The park also is heavily used for recreation and exercise. The Eugene Track Club recently provided funding and labor to install lighting around a popular jogging path. Unfortunately, the Club inadvertently used unauthorized equipment and caused damage to several areas known to contain Bradshaw's lomatium. The FWS, the Emerald Chapter of the Native Plant Society of Oregon, and city personnel met on-site and agreed to cooperate in establishing a Conservation Agreement. The city will conduct a comprehensive native plant survey and wetland delineation within the entire park, and to create a plan for managing the native wet prairie and woodland habitat remnants.

Region 3

On February 14, 1995, FWS Region 3 delivered a Biological Opinion on the Great Lakes Water Quality Guidance to the Environmental Protection Agency. The guidance provides water quality criteria and implementation procedures that are generally more stringent than existing guidelines and are intended to be consistent throughout the Great Lakes watershed. "No jeopardy" determinations were made for species considered in the Biological Opinion. EPA will conduct toxicity tests for endangered freshwater mussels to ensure that water quality criteria will protect these species. It also will gather more information and monitor bioaccumulative contaminant loads to ensure the protection of listed wildlife species.

In light of a recent discovery of the world's only known reproducing population of the purple cat's paw pearly mussel (*Epioblasma obliquata obliquata*), the FWS is working with the Ohio Division of Wildlife and Ohio Department of Transportation to conduct species surveys and bridge replacement activities in Coshocton and Wayne Counties of Ohio. Purple cat's paw pearly mussels were discovered in Killbuck Creek of Coshocton County last fall. Surveys for this mollusk and others will be conducted in Killbuck Creek in 1995, and all Ohio Department of Transportation bridge sites will be reviewed carefully before construction occurs.

Region 5

FWS biologists from Regions 4 and 5 met in late 1994 with the Dismal Swamp southeastern shrew (*Sorex longirostris fisheri*) recovery team to discuss new information about the possible distribution of this threatened subspecies. Preliminary morphometric investigations by one researcher indicate that the Dismal Swamp southeastern shrew may be more widespread on the North Carolina coastal plain than previously thought, which could lead to its delisting. These data, however, have not been substantiated, creating uncertainty as to whether North Carolina shrews should be regarded as the listed subspecies—*S. l. fisheri*—for the purposes of permitting and ESA section 7 consultations. The consensus of those at the meeting was that North Carolina coastal shrews should be regarded as unclassified until a published study undergoes peer review by the scientific community. The recovery team prepared a written position to this effect and developed a detailed research proposal. A study to determine conclusively the status of North Carolina shrews, including genetic analyses, is being initiated. In the interim, *S. l. fisheri* will continue to be considered endemic to the historical Dismal Swamp in southeastern Virginia and the northeastern corner of North Carolina.



Members of the Native Plant Society of Oregon conduct an on-site visit
photo by Laura Todd

Items for Regional News and Recovery Updates are provided by endangered species contacts in FWS regional and field offices.

Region 1

Christ's Indian paintbrush (*Castilleja christii*) The Idaho Department of Parks and Recreation (IDPR) has voted to approve the draft Conservation Strategy for this plant, a category one listing candidate. The strategy has not generated much controversy since it occurs only on Federal land managed by the Sawtooth National Forest and is threatened primarily by recreational activities. However, there was discussion on: (1) costs to the State that may be associated with implementing conservation actions for rare plants (particularly federally listed and candidate species) in the future, and (2) potential impacts of Federal listing on private landowners and the public's traditional uses of Federal lands. The Director of IDPR personally expressed support for the Service's pre-listing and candidate conservation program.



Robert Moseley/Idaho Conservation Data Center

Castilleja christii

The Sawtooth National Forest is interested in implementing protection measures for the Christ's Indian paintbrush via a Conservation Agreement (CA) between the Idaho State Office and the Forest. The CA will address specific threats to this species, including scheduled road construction and powerline installation projects that could impact the Christ's Indian paintbrush population. Recreational use of the site has been increasing, and hang-gliding competitions now are staged at a rangetop within paintbrush habitat. Finalizing the CA, reducing and/or eliminating threats, monitoring impacts, and establishing the proposed Mount Harrison Research Natural Area (which cur-

rently includes 23 percent of the Christ's Indian paintbrush population) are priorities for the next several months. If protection measures specified in the CA are fully implemented by the Forest, it might be possible to reduce the need for Federal listing of this rare endemic species.

Region 3

Higgin's Eye Pearly Mussel (*Lampsilis bigginsi*) The recovery team for this endangered mollusk met in Minnesota to identify and prioritize work items for 1995. The team discussed the need for a literature search and analysis of all data compiled since 1980, the date the original recovery plan was written. Other potential work elements include: recovery plan revision, development of mussel handling and relocation techniques, mussel survey guidelines, additional site characterizations, and genetics studies.

Region 5

Piping Plover (*Charadrius melodus*) In February, the FWS released for public review and comment a draft revised recovery plan for the Atlantic Coast population of the piping plover. On the basis of data gathered over the past 7 years, the revised plan calls for increasing the recovery and delisting target to a more appropriate number (from 1,200 breeding pairs to 2,000). At the same time, investigators proposed a program to allow additional management flexibility and reduce the impacts of plover protection on beach recreation.

Swamp Pink (*Helonias bullata*) Wetland habitat supporting a large, vigorous population of this showy plant has been purchased for inclusion into the Edwin B. Forsythe National Wildlife Refuge in New Jersey. This is the first swamp pink site to be included in the refuge system. The swamp pink, a perennial lily, is the only species in its genus. It was listed in 1988 as threatened, due primarily to habitat loss and resulting population declines.

Cherokee Clubtail Dragonfly (*Gomphus consanguis*) In early March, Leroy Koch of the FWS Southwestern Virginia Field Office met with two landowners regarding the possibility of cooperative habitat protection for this category 2 listing candidate. This species of dragonfly is endemic to the upper Tennessee River drainage, and in recent years has been recorded only from two locations in southwestern Virginia. One of these sites, a spring-fed stream near the town of Abingdon, is being damaged by cattle. Landowners are

receptive to the idea of fencing cattle from the stream if an alternative water supply can be provided. Field office staff are attempting to locate additional partners and funding for the project.

American Burying Beetle (*Nicrophorus americanus*) The FWS and Oklahoma Biological Survey recently hosted the first rangewide recovery coordination meeting for this endangered insect. FWS Region 5 has lead responsibility for recovery of the



Photo by David Snyder

Helonias bullata

American burying beetle, which once had a very wide distribution throughout the lower 48 States. Currently, the species is known to occur in four States—Rhode Island, Oklahoma, Arkansas, and Nebraska. A remnant population also may exist in Iowa. Adding to the challenge of coordinating protection and recovery efforts, all five States fall within different FWS administrative regions.

More than 40 participants attended the 2-day meeting. Included were representatives of all five involved FWS regions, agency and university researchers from several States, Federal agencies such as the Forest Service and Department of Defense, and large landowners such as the Weyerhaeuser Company. They discussed a wide variety of research and management issues. Although many questions remain about why the beetle disappeared from most of its range and what can be done to reverse the decline, substantial progress toward a better understanding of this rare and unique creature is being achieved.

Final Listing Rules February/March

The Fish and Wildlife Service published final rules during February and March 1995 listing 15 species—13 plants and 2 animals—as endangered or threatened species:

Twelve California Plants Twelve plant taxa restricted to serpentine soil outcrops in the San Francisco Bay area were listed February 3. The classification of endangered went to the 10 most immediately vulnerable plants:

Endangered:

Pennell's bird's beak (*Cordylanthus tenuis* ssp. *cappilaris*), an herbaceous perennial in the snapdragon family (Scrophulariaceae);
Tiburon paintbrush (*Castilleja neglecta* ssp. *affinis*), a semi-woody perennial in the snapdragon family;



photos courtesy of California Native Plant Society

Tiburon paintbrush

Tiburon jewelflower (*Streptanthus niger*), an annual herb in the mustard family (Brassicaceae);
Presidio clarkia (*Clarkia franciscana*), a annual herb in the evening-primrose family (Onagraceae);
fountain thistle (*Cirsium fontinale* var. *fontinale*), a perennial herb in the aster family (Asteraceae);
San Mateo wooly sunflower (*Eriophyllum latilobum*), a perennial in the aster family;
white-rayed pentachaeta (*Pentachaeta bellidiflora*), a small annual in the aster family;
coyote ceanothus (*Ceanothus ferrisae*), an evergreen shrub in the buckthorn family (Rhamnaceae);

Santa Clara Valley dudleya (*Dudleya setcbellii*), a low-growing perennial in the stonecrop family (Crassulaceae); and

Metcalf Canyon jewelflower (*Streptanthus albidis* ssp. *albidis*), an annual herb in the mustard family.

Threatened:

Tiburon mariposa lily (*Calochortus tiburonensis*), a perennial in the lily family (Liliaceae), and
Marin dwarf-flax (*Hesperolinon congestum*), an herbaceous annual in the flax family (Linaceae).



Tiburon mariposa lily

cies; independent organizations; and individuals.

Puerto Rican Shrub *Gesneria pauciflora*, a small Puerto Rican shrub with no common name, belongs to the family Gesneriaceae. This species was listed March 7 as endangered due to its low numbers, restricted range, and vulnerability to habitat loss.

Southwestern Bird The southwestern willow flycatcher (*Empidonax traillii extimus*) is a small bird restricted to remnants of riparian habitat in southern California, southern Nevada, southern Utah, Arizona, New Mexico, western Texas, southwestern Colorado, and extreme northwestern Mexico. Due to population declines, this bird was listed February 27 as threatened.

Appalachian Arachnid The spruce-fir moss spider (*Microbexura montivaga*) is a tiny arachnid with a specialized habitat: damp mats of moss growing on rocks within mature, high-elevation spruce-fir forests in the Appalachian Mountains. Four populations are known to occur in western North Carolina and eastern Tennessee. Deterioration of the forest canopy is desiccating the moss, thereby threatening the spider's survival. It was listed February 6 as endangered.

Protection and Recovery

Among the conservation benefits authorized for Threatened and Endangered plants and animals under the Endangered Species Act are: restrictions on take and trafficking; a requirement that the FWS develop recovery plans and take conservation actions; authorization to seek land purchases or exchanges for important habitat; and Federal aid to State and Commonwealth conservation departments with cooperative endangered species agreements. Listing also lends greater recognition to a species' precarious status, encouraging other conservation efforts by Federal, State, and local agen-

Section 7 of the Act directs Federal agencies to use their legal authorities to further the purposes of the Act by carrying out conservation programs for listed species. It also requires Federal agencies to ensure that any actions they fund, authorize, or carry out are not likely to jeopardize the survival of any Endangered or Threatened species, or to adversely modify its designated Critical Habitat (if any). When an agency finds that one of its activities may affect a listed species, it is required to consult with the FWS to avoid jeopardy. If necessary, "reasonable and prudent alternatives," such as project modifications or rescheduling, are suggested to allow completion of the proposed activity. Where a Federal action may jeopardize the survival of a species that is *proposed* for listing, the Federal agency is required to "confer" with the FWS (although the results of such a conference are not legally binding).

Additional protection is authorized by section 9 of the Act, which makes it illegal to take, import, export, or engage in interstate or international commerce in listed animals except by permit for certain conservation purposes. The Act also makes it illegal to possess, sell, or transport any listed species taken in violation of the law. For plants, trade restrictions are the same but the rules on "take" are different. It is unlawful to collect or maliciously damage any Endangered plant on lands under Federal jurisdiction. Removing or damaging listed plants on State and private lands in knowing violation of State law, or in the course of violating a State criminal trespass law, also is illegal under the Act. In addition, some States have more restrictive laws specifically prohibiting the take of State or federally-listed plants and animals.

Endangered Species Training

The Fish and Wildlife Service's (FWS) National Education and Training Center is offering three one-week technical courses related to the Endangered Species Act (ESA): Section 4—Listing and Candidate Conservation; Section 7—Consultation; and Section 10—Habitat Conservation Planning. Due to high FWS demand for these courses, space currently is limited for non-FWS personnel. However, as the training program continues to expand, interested people outside the FWS and Federal government will be encouraged to attend.

Brief course descriptions are provided below. Details can be found in the FWS Catalog of Training. For information on dates and locations of specific courses, contact the Environmental Conservation Training Section, National Education and Training Center, Route 3, Box 49, Kearneysville, West Virginia 25430, or telephone 304/725-8461 ext. 358 (fax 304/728-6772).

Section 4

Designed for FWS biologists involved with listing actions or candidate conservation activities, will cover such topics as:

- ▣ determining if a species should be listed, delisted, or reclassified
- ▣ determining if critical habitat is prudent and determinable
- ▣ the steps (including the petition process) to place a species on the candidate species list
- ▣ developing a conservation agreement for candidate species
- ▣ National Environmental Policy Act as it relates to section 4 of the ESA.

Section 7

Provided for FWS biologists responsible for reviewing potential impacts of Federal actions on proposed, listed, or candidate species. Lecture and in-class exercises will address subjects such as:

- ▣ responsibilities of FWS and other Federal agencies under section 7
- ▣ the application and limitations of section 7 when proposed activities may affect listed or proposed species and associated critical habitat
- ▣ types of consultations (including early, emergency, formal, informal)
- ▣ the major components (data needs) of biological assessments
- ▣ the relationship of section 7 to other functions of ESA and NEPA
- ▣ the difference between biological and legal perspectives

Section 10

Intended for FWS biologists responsible for assisting in the development of Habitat Conservation Plans (HCPs) under section 10(a)(1)(b) of the ESA. Topics include:

- ▣ legal authority for FWS role in HCPs
- ▣ the major steps involved in processing HCP permit applications
- ▣ the relation of HCPs with other environmental laws and other sections of the ESA
- ▣ incidental take permits and associated issuance criteria
- ▣ developing a minimization/mitigation strategy and alternative analysis.

In early April, Congress passed a moratorium on listing species under the Endangered Species Act through the end of fiscal year 1995. The measure, which prohibits final determinations listing species as endangered or threatened (including emergency rules) and designations of critical habitat, was attached to a Department of Defense supplementary spending bill signed by the President April 10. 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.

BOX SCORE

Listings and Recovery Plans as of April 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	70
 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
ANIMAL SUBTOTAL	325	520	111	39	995	300
 FLOWERING PLANTS	406	1	90	0	497	200
 CONIFERS	2	0	0	2	4	1
 FERNS AND OTHERS	26	0	2	0	28	12
PLANT SUBTOTAL	434	1	92	2	529	213
GRAND TOTAL	759	521	203	41	1,524*	513**

TOTAL U.S. ENDANGERED: 759 (325 animals, 434 plants)

TOTAL U.S. THREATENED: 203 (111 animals, 92 plants)

TOTAL U.S. LISTED: 955 (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.

ENDANGERED
Species
BULLETIN

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

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U.S. DEPARTMENT OF THE INTERIOR
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