



Conservation Profiles:
Landowners Help Imperiled Wildlife



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Texas rancher Bob Long (at right) lent a helping hand to the endangered Houston toad under a Safe Harbor Agreement. Since successfully restoring ponds on his property, he's heard the male toads calling to the females.



In the three decades since the Endangered Species Act became law, we've become more aware of the crucial role landowners play as stewards of our country's natural resources. According to *Precious Heritage*, a report by The Nature Conservancy and the Association for Biodiversity Information (now NatureServe), two-thirds of the species federally listed as endangered or threatened have habitat on private land. Most landowners are good stewards of the land. They're not just reaping the benefits of the land; they also care about the land itself.

The purpose of this brochure is to introduce some of the landowners who are using two innovative conservation tools: Safe Harbor Agreements and Candidate Conservation Agreements with Assurances. Although these tools only came into use within the last decade, and many landowners are not yet familiar with them, they already have demonstrated benefits for both landowners and imperiled species.

A brief explanation of how these conservation tools work and how they can benefit landowners follows, but more can be learned about the agreements from the participating landowners themselves, a few of whom are profiled in this document. These pages introduce only a tiny segment of the diverse group of landowners currently participating in these programs. They range from residential landowners who own only an acre to large corporations with thousands of acres. They include private forest owners, ranchers, and golf course operators. What they have in common is a willingness to lend a hand to imperiled wildlife while continuing to manage their land.



Photograph courtesy of Jenny Lord, USFWS



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What is a Safe Harbor Agreement?

The basic idea behind Safe Harbor Agreements is to help private and other non-federal landowners conserve threatened and endangered species on a voluntary basis in exchange for legal assurances from the Fish and Wildlife Service that no new Endangered Species Act-related restrictions will be placed on the use of their land as a result of their voluntary beneficial measures.

An increasing awareness of three basic facts led to the creation of the Safe Harbor approach:

- Private landowners are crucial for the recovery of endangered species that occur mostly or even solely on privately owned land.
- Most landowners are good stewards of their land, and they don't want their species conservation efforts to result in more legal restrictions on how they can use their land.
- The ESA does much to prevent harm to endangered and threatened (listed) species, but until recent years it offered few incentives for landowners who want to help them. In fact, landowners who put out the welcome mat for listed species were sometimes "rewarded" with increased legal restrictions. In some difficult cases, landowners destroyed habitat for listed species to avoid potential restrictions on the use of their land.

A Safe Harbor Agreement alleviates the perceived fear of increased restrictions by freezing the landowner's ESA responsibility to the existing conditions (or baseline) present when the agreement is signed. Depending on the species involved, the baseline may be determined by numbers of a listed animal and/or by acres of habitat. If the landowner's voluntary actions will likely result in a net conservation benefit for the covered species, an ESA permit is issued that enables the return of the enrolled property to baseline conditions if the landowner chooses to do so.

The terms of the Safe Harbor Agreement, what management activities are appropriate, and how long it remains in effect vary according to the species involved and the landowner's situation.

The non-profit organization Environmental Defense and the Service together developed the Safe Harbor concept in the 1990s. The first agreement was signed in 1995 when landowners in the North Carolina Sandhills area agreed to manage long-leaf pine forest lands to benefit the endangered red-cockaded woodpecker. The Service issued an official Safe Harbor policy in 1999.

By March 2005, more than 325 landowners had enrolled over 3.6 million acres in 31 Safe Harbor Agreements. Another 60 agreements are under development. Over half of the Safe Harbor Agreements have several participating landowners, with a state agency, conservation group, or other entity holding the permit that allows landowners to receive Safe Harbor assurances. In other Safe Harbor Agreements, a single landowner works directly with the Service. Among the 35 listed species covered by Safe Harbor Agreements are the northern aplomado falcon, red-cockaded woodpecker, California red-legged frog, San Joaquin kit fox, and Schaus swallowtail butterfly.

What is a Candidate Conservation Agreement with Assurances?

Like Safe Harbor Agreements, Candidate Conservation Agreements with Assurances are designed to provide incentives to landowners willing to make a voluntary commitment to aid imperiled species. Again, as is the case with the Safe Harbor program, a CCAA participant can be any non-federal landowner, such as a private landowner, a local or state agency, a tribal government, or a non-governmental organization.

Candidate Conservation Agreements with Assurances target species that are candidates for listing or are likely to be candidates for listing in the near future. The ultimate goal is to conserve these species so they no longer need protection under the ESA. Candidate species are defined by the Service as species for which there is enough information to support a listing proposal, but which have not yet been proposed due to higher priority listing activities. Species likely to become candidate or proposed species in the near future also are eligible to be addressed in a CCAA.

Under a CCAA, property owners voluntarily agree to take management actions that address specific threats to a species on their land. The Service enters into an agreement when it determines that the benefits of these management actions, when combined with benefits that would be achieved if these actions also were taken on other necessary properties, would preclude or remove the need to list the species under the ESA. In return, the Service provides regulatory assurances that if the species is later listed as endangered or threatened, the landowner's responsibility to protect it will not go beyond what is already specified in the agreement. In other words, a landowner's obligation under the ESA is frozen at the level spelled out in the agreement. The terms of the CCAA, what management activities are required, and how long it will remain in place vary depending on the species involved and the landowner's situation. CCAAs are an outgrowth of Candidate Conservation Agreements, under which landowners voluntarily agree to management activities to help vulnerable

species. The added benefit is the regulatory assurances it provides to non-federal landowners. The CCAA policy and associated regulations were issued in 1999.

As of March 2005, 10 CCAAs had been approved, covering 24 species, and others are being developed. Examples of species covered by these agreements include the southern Idaho ground squirrel, Washington ground squirrel, lesser prairie-chicken, Oregon spotted frog, the Colorado River cutthroat trout, and the greater and lesser Adams Cave beetles.

The following websites offer more information about Safe Harbors and CCAAs:
<http://endangered.fws.gov/recovery/harborqa.pdf>
<http://endangered.fws.gov/listing/cca.pdf>
<http://endangered.fws.gov/policy/cca.htm>
http://endangered.fws.gov/policy/safe_har.htm
www.environmentaldefense.org/go/SafeHarbor/

Photograph courtesy of Dr. Thomas Emmel

Schaus swallowtail butterfly



red-cockaded woodpecker



2. San Joaquin kit fox

© Derrick Hamrick

Photograph courtesy of Moose Peterson, WRP



southern Idaho ground squirrel



lesser prairie-chicken



robust redhorse

Photograph courtesy of wildlifedepartment.com

Illustration courtesy of Carrie Straight

Photograph courtesy of Joe Hinson



Illustration courtesy of Carrie Straight

The Saga of the Robust Redhorse

"You don't want to go there," muses Mike Nichols, when asked how it all started. Nichols, the Georgia Power Company's Environmental Laboratory Manager, faced a serious conundrum about 10 years ago: how could his employer get along with a recently discovered "mystery fish"? In 1991, state biologists discovered an unusual fish in central Georgia's Oconee River. Its characteristics included reddish markings, a rotund body, and distinctive molar-like teeth. Follow-up research revealed that this rare species, now called the robust redhorse (*Moxostoma robustum*), existed in two other rivers in Georgia—rivers also used by a number of hydroelectric dams and other structures.

To discuss the fish's uncertain future, a group of 14 federal, state, industry, and non-governmental interests formed the Robust Redhorse Conservation Committee. The robust redhorse gained state-listed endangered species status. The U.S. Fish and Wildlife Service then identified it as a candidate species, indicating a possible future listing under the federal Endangered Species Act.

With possible restrictions if federal listing were to occur, could a hydroelectric power producer, such as committee member Georgia Power, co-exist with an imperiled fish species?

"No one wanted to see this fish listed. The agreement provides more flexibility. Moving an imperiled species [referring to establishing a new fish population using fish from another river—a component of the agreement] is still troublesome, but it's much easier to do it as an unlisted species. It just does not generate the controversy."
—Jimmy Evans

Taking a positive approach to a possible dilemma, Georgia Power signed a Candidate Conservation Agreement with Assurances in 2002 with the Georgia Department of Natural Resources and the Service. This agreement, the nation's first for an aquatic species, serves as a model for conserving vulnerable species before the need to invoke the protective measures of the ESA.

A sampling team headed by Jimmy Evans, a fisheries biologist for the Georgia DNR, first collected the robust redhorse more than a decade ago. "It was bizarre. How could a fish nearly 30 inches in length and over 15 pounds exist undiscovered in some of the most heavily sampled rivers in the United States?"

The robust redhorse was first discovered over a century ago. In 1869, famed naturalist Edward Cope observed a rotund, or robust, fish swimming in North Carolina's Yadkin River. Inexplicably, notes and specimens, as well as knowledge of the fish's existence, disappeared for over a century.

Considering the effects of historical farming practices, researchers say the survival of the robust redhorse is surprising. Beginning in the late 19th century, deforestation and decades of subsequent erosion silted over gravel beds essential for robust redhorse reproduction.



Photograph courtesy of Jimmy Evans

Although water quality has improved in recent years, questions about the fish's long-term survival remain. Hydroelectric dams need specific water flows and reservoir capacity to ensure power production. Structures and water withdrawals may limit access to spawning sites or reduce available habitat. Could catastrophic changes cause extinction? What water flow rates must be ensured for survival? These were important questions to consider as Committee goals included establishing six populations across the historic range. Evans points out that introducing an aquatic species has unique considerations. "Fish have hundreds of miles of access and many potential stakeholders."

To address landowner concerns, a new policy under consideration by the Service was introduced to the Robust Redhorse Conservation Committee in 1996. While still unofficial, the draft CCAA policy offered a way to provide regulatory assurances to landowners, including significant stakeholders on the Ocmulgee River, Georgia Power and the Lloyd Shoals Dam. For Mike Nichols, such an agreement was ideal. "Whoever wrote this could not have come up with a better solution. Whenever you have a rare species you want to conserve, you want boundaries to the commitments should the species be listed. It was a great fit for us."

As Evans remembers, creating an agreement was not easy. Twists, turns, and repeated revisions followed the initial draft agreement submitted in 1996 by Georgia Power. "We realized that we were covering new territory," says Nichols, "and that we had to go over several issues several times." He points out it was all part of exploring innovative ideas. The Robust Redhorse CCAA may serve as a model for other power companies.

Georgia Power continues to work with the Service, Georgia DNR, and the Robust Redhorse Conservation Committee as the introduction of this fish continues in the Ocmulgee River. Along with employee time, Georgia Power has provided funding for research to determine preferred robust redhorse habitat, introduction criteria, and population estimates. Additional support comes from environmental groups, the University of Georgia, the U.S. Geological Survey, the Georgia DNR, and the Service.

"I think it really is a major benefit to the state. Georgia Power and DNR work well together on a variety of projects," states Jimmy Evans as he lists DNR contributions to the robust redhorse conservation effort, including collecting brood fish, setting up temporary hatcheries, sampling, harvesting, tagging, monitoring, and providing administrative support.

Georgia Power also supports propagation efforts in other state rivers and additional research into robust redhorse status and life history. For example, for optimal spawning conditions in the Oconee River, a new flow regime has been implemented at the Sinclair Dam.

"The CCAA is a great tool to lay out both commitments and how you are going to handle risk when you're dealing with rare species. If we had an opportunity to use it again, we would certainly pursue it."
—Mike Nichols



Photograph courtesy of Jimmy Evans

Photograph courtesy of John & Karen Hollingsworth



Family Forestry and the Spotted Owl

Approximately half of all private timberland in Humboldt County, California, is managed under uneven-aged silviculture strategies, forestry practices that promote timber stands with trees of varying ages and habitat suitable for the federally threatened northern spotted owl (*Strix occidentalis caurina*).

Tim Gill, president of Forster-Gill, Inc., describes the significance of the Safe Harbor program for the protection of northern spotted owl habitat. "The government, through Safe Harbor, seems to say, 'Thanks for letting the critters use the habitat that you as a landowner have and will allow to continue to grow, or that you assisted Mother Nature to create. Since you as a landowner have allowed this benefit for the critters to occur on your property, then at the end of the Safe Harbor Agreement you will not be penalized.' You can reap the beneficial uses whether it is converting cellulose material to cash or leaving it for future generations."

Forster-Gill, Inc. is a small family-owned and operated investment corporation engaged in practicing forestry within the range of the northern spotted owl. Tim Gill's preferred style of harvest is low intensity, individual tree selection that promotes the growth of large trees while maintaining a continuously forested landscape.

"I feel the most important thing in regard to Safe Harbor is that the landowner is not penalized for growing habitat."
—Tim Gill (at left)

While growing timber stands with large trees of various ages, Forster-Gill is promoting habitat characteristics favorable to the owl. As a result of its timberland stewardship, Forster-Gill provides suitable habitat that is likely to attract northern spotted owls.

Anticipating that an owl pair might eventually be attracted onto his property, Tim Gill's forestry consulting firm contacted the local U.S. Fish and Wildlife Service office to discuss the possibility of a Safe Harbor Agreement.



Photographs courtesy of Ken R. Hoffman



As anticipated by Tim Gill, a spotted owl pair moved onto Forster-Gill's Blue Lake property after his Safe Harbor Agreement took effect. Even with owls inhabiting its property, Forster-Gill's harvest operations are proceeding according to plan. The company's silviculture continues to maintain and create habitat characteristics suitable for the owl by converting a young, relatively homogenous, even-aged timber stand into an uneven-aged stand with large timber commonly associated with owl habitat.

Since the Service encourages uneven-aged management on privately owned timberland for spotted owl habitat, the Service was interested in pursuing a Safe Harbor Agreement. Through the agreement, Forster-Gill will enhance and maintain approximately 216 acres of forested habitat. At the end of the 80 year Safe Harbor Agreement, when the terms have been met, Forster-Gill has assurances that the property can be returned to baseline conditions, including authorization for the incidental "take" of spotted owls.

"When a person or company realizes that the land and its resources outlive our short time as a guest on the planet, we feel that it becomes easier to take a philosophy of trying to leave the world a better place than when we came into it."
—Tim Gill

A Resort Puts Butterflies on Par with Golf

Cheeca Lodge, an oceanside golf resort on Upper Matecumbe Key, and the endangered Schaus swallowtail butterfly (*Papilio aristodemus ponceanus*) both could have used a safe harbor in 1998 when Hurricane Georges slammed the Florida Keys. South Florida suffered widespread property damage. Native wildlife habitats were also affected. The butterfly was hit particularly hard, with much of its little remaining habitat in the Keys destroyed or significantly altered.

Hurricanes have become a greater threat to the butterfly as its habitat declines. Only six years before Georges, the Schaus swallowtail came precariously close to extinction when Hurricane Andrew pounded the Keys. Fortunately, Dr. Thomas Emmel, of the McGuire Center for Lepidoptera and Biodiversity (part of the Florida Museum of Natural History at the University of Florida), had already begun a captive breeding effort. He was able to restore some populations before Georges struck.

Following Hurricane Georges, the U.S. Fish and Wildlife Service, Cheeca Lodge, and the McGuire Center responded to the butterfly's plight by creating a Safe Harbor Agreement that provided for the restoration of Schaus swallowtail habitat on Cheeca Lodge property. This Safe Harbor Agreement is part of the Service's continuing effort to work in partnership with private landowners to aid federally listed species.

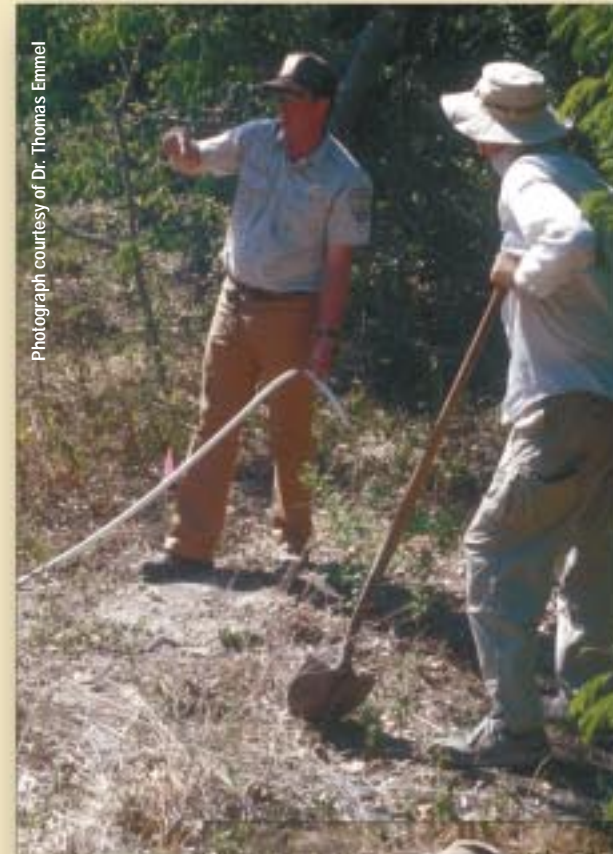
"Much of the habitat for threatened and endangered species in the southeast and throughout the country occurs on private land," says Sam Hamilton, Director of the Service's Southeastern Region. "We need the direct involvement and support of private landowners, like Cheeca Lodge, to assist in conservation and recovery efforts for species like the Schaus swallowtail."

"We are thrilled to be involved in such a positive project. We hope that the trees we plant will someday attract Schaus swallowtail butterflies to our beautiful golf course and grounds. This agreement allows us to help the butterfly and provide educational opportunities to our customers and staff without worrying that we'll be liable later. If our situation changes drastically in the 10 years that the agreement is in effect, we can remove all or part of the trees we planted without penalty, even if it means that any butterflies present will be lost. This gives us complete flexibility in our operations and makes it easy for us to justify our participation."

*—Julie Olsen,
Public Relations Director
for Cheeca Lodge*



Photograph courtesy of Cheeca Lodge



Photograph courtesy of Dr. Thomas Emmel



Photograph courtesy of Dr. Thomas Emmel

The Safe Harbor Agreement, signed in 2001, is expected to contribute to Schaus swallowtail recovery by restoring habitat for butterflies that disperse from the remaining populations in the upper Florida Keys. By providing places for dispersing butterflies to feed and rest, habitat restored through this agreement could help them reach other suitable but unoccupied habitat in the lower Florida Keys.

Under the Safe Harbor Agreement and with a \$65,000 grant from the National Fish and Wildlife Foundation, Cheeca Lodge and the McGuire Center purchased and planted native trees and nectar plants that the Schaus swallowtail uses for food and resting places. About 600 trees were planted in late 2001, including wild-lime and torchwood, which are important caterpillar food plants. Over 1,000 nectar plants were added for the adult butterflies. Dr. Jaret C. Daniels of the McGuire Center reports that almost 99 percent of the trees are thriving. He credits the high rate of survivorship to the dedication and enthusiasm of the Cheeca Lodge staff and members. Akers Pence, a Ph.D. candidate at the University of Florida, also applauds Cheeca Lodge staff, and believes that someday Schaus swallowtails might use the site not only as a stopover, but also as a breeding site.

The agreement covers Cheeca Lodge's entire 27-acre golf course and resort. Although no butterflies currently live on the property, there are more than 30 other species flying to the flowers and using the trees.

"Birds follow insects. Quite a little ecosystem has been built at the Cheeca Lodge since they started the habitat restoration program there."

—Dr. Thomas Emmel (far right)



Photograph courtesy of Dr. Thomas Emmel



Photograph courtesy of Dr. Thomas Emmel

Enhanced butterfly habitat and interpretive sign

Stewardship in the Epicenter of Extinction

Hawai'i is often called the "endangered species capital of the world." With its rich diversity of native animal and plant species, which evolved over eons in the archipelago's geographical isolation, Hawai'i has proved vulnerable to human-related habitat destruction, invasions of nonnative plant species, diseases spread by introduced mosquitoes, predation by nonnative animals, and habitat degradation by feral livestock. Many of its unique creatures have already been lost, and many others could follow them into extinction. But a ranching operation is taking steps to restore habitat for some rare birds and plants while improving the property's economic value. For over a century, the 2,000-acre Umikoa Ranch on the "Big Island" of Hawai'i was used for intensive cattle grazing, which left the native koa forest a degraded pasture. However, through the efforts of the ranch managers and their partnerships with the State of Hawai'i, the Natural Resources Conservation Service, Ducks Unlimited, and the U.S. Fish and Wildlife Service, some of the damage is now being repaired.

To further their restoration efforts, the ranch managers signed a Safe Harbor Agreement with the Service and the Hawai'i Department of Land and Natural Resources Division of Forestry and Wildlife in December 2001. Under the regulatory protection of the agreement, the

ranch is restoring and maintaining wetland and associated upland habitats for two endangered waterfowl species, the nene or Hawaiian goose (*Branta sandvicensis*) and the koloa or Hawaiian duck (*Anas wyvilliana*).

Other activities include:

- 1) excluding cattle from some habitats;
- 2) allowing controlled grazing in other areas to maintain open, short-grass habitat needed by the nene;
- 3) preventing the establishment of nonnative invasive plant species;
- 4) controlling nonnative predators in and around newly created habitats for koloa and nene;
- 5) prohibiting hunting in areas managed for koloa and nene; and
- 6) controlling the introduction of nonnative waterfowl in order to stop hybridization.

"We believe that we are only stewards of the lands, and it is our responsibility to care for the land while it is under our stewardship. We hope that 10 percent of the land in diversified agriculture (green tea, coffee, and vineyards) can support 90 percent of the land in managed conservation habitat."

—David Matsuura (at left)



koloa

nene

Photograph of nene (Hawaiian goose) courtesy of John and Karen Hollingsworth



USFWS Photo



haha

Photographs of (left to right): haha, Hawaiian hoary bat and Hawaiian hawk © Jack Jeffrey



Hawaiian hoary bat



Hawaiian hawk

David Matsuura has been general manager for Umikoa Ranch since 1990. He convinced the owners to include conservation measures in the management of the ranch. The concept of stewardship, where diversified agriculture and conservation management can benefit each other, has become the ranch's management objective.

Working with the State of Hawai'i Forest Stewardship Project, the ranch has restored over 800 acres of degraded grazed pastures to native forest trees. Restoration of koa forests increases soil-water retention capacity and provides nesting and foraging habitat for Hawaiian forest birds. With now flourishing young koa stands, Umikoa Ranch expects to provide high-value lumber through the selective harvesting and milling of unhealthy and declining trees. Sustainable ranching and ecotourism also are encouraged under the Safe Harbor Agreement.

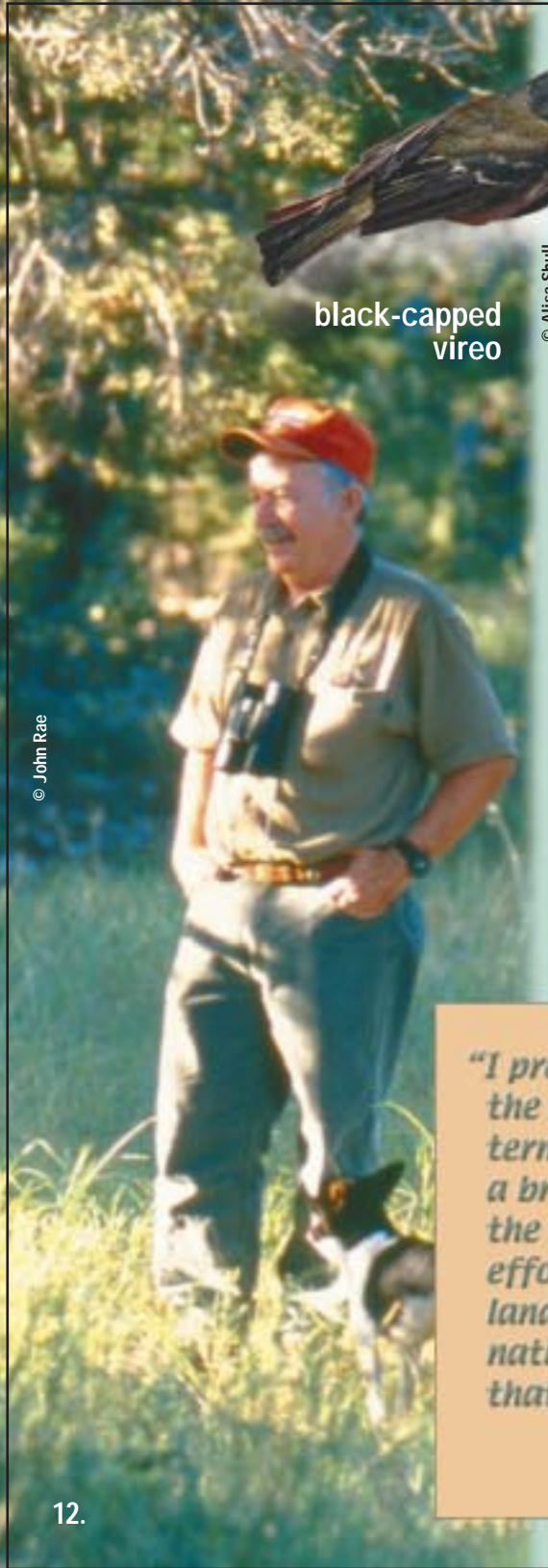
Koloa have begun reproducing on the ranch's Safe Harbor acreage. Matsuura is so pleased with the results of the Umikoa Safe Harbor Agreement that he is working with the Service to manage additional habitat that may support other endangered animals, such as the Hawaiian hawk or 'io (*Buteo solitarius*), and the Hawaiian hoary bat (*Lasiurus cinereus semotus*). The management actions will also benefit listed plants, including the haha (*Cyanea shipmannii*), 'oha wai (*Clermontia lindseyana*), and kipunapona (*Phyllostegia racemosa*).

"This partnership will help the ranch to restore and manage more areas of habitat to protect threatened and endangered species for the next generation. I hope that my children will be able to live in a Hawai'i that still harbors many of the unique plants and animals found nowhere else in the world."

—David Matsuura



USFWS Photo



black-capped vireo

© Alisa Shull

Ranchers and Songbirds in the Texas Hill Country

Like the golden-cheeked warbler (*Dendroica chrysoparia*), Kerry Russell is a native of the beautiful Texas Hill Country. Because his family's 130-acre ranch near Austin has prime habitat for the warbler and potential habitat for another endangered bird, the black-capped vireo (*Vireo atricapilla*), the U.S. Fish and Wildlife Service wanted to purchase it for inclusion within an adjacent national wildlife refuge. However, Russell wanted to keep his family's land.

The Service and Environmental Defense then offered him another idea: the Safe Harbor program. By enrolling in a Safe Harbor Agreement for the vireo, Russell found a way to restore wildlife habitat on a portion of his ranch while remaining in control of his land.

Kerry Russell's ties to his ranch reach back several decades. In the late 1960s, he bought the property in partnership with his father, a Marine Corps World War II and Korean War pilot, and his uncle through the Texas Veterans Land Program. His parents lived on the ranch in the late 1980s and early 1990s. The Russell Family Trust now holds the property, with a goal of improving it and keeping it for fishing, hunting, and other family recreational use.

His participation in the Safe Harbor program began when Texas Parks and Wildlife Department biologist Terry Turney introduced him to Environmental Defense biologist David Wolfe. Since Russell wanted to restore native habitat on the ranch and repair damage from overgrazing that occurred while he attended law school in Wyoming, he recognized the Safe Harbor concept as "a wonderful opportunity." The Russells were the first landowners in the area

"I prefer to help the birds on my own terms. Safe Harbor is a breath of fresh air—the first concerted effort to work with landowners by a national organization that I've seen."
—Kerry Russell

to enroll, "greatly improving the prospects of the vireo by restoring high-quality habitat," according to Wolfe. As with all Safe Harbor Agreements, the Service provides Russell with assurances that his Endangered Species Act responsibility will be limited to the amount of existing habitat, or "baseline," present on the enrolled acreage when the agreement was signed. If habitat improvements attract black-capped vireos to the Safe Harbor acreage during the duration of the agreement, the presence of these birds will not restrict the Russells' use of the enrolled 20 acres beyond the agreed upon voluntary conservation actions.



© Greg Lasley

The Service issued Environmental Defense the permit for both the black-capped vireo and the golden-cheeked warbler for the Texas Hill Country Safe Harbor in December 2000. Landowners like Russell who enroll with Environmental Defense's Safe Harbor Agreement, through certificates of inclusion, may be from any of 25 counties in the Texas Hill Country, as long as they provide a net conservation benefit for either or both species and

don't drop below the baseline set when the property was enrolled. The Hill Country is where virtually all the world's golden-cheeked warblers and most of the black-capped vireos breed. Some of the counties are also close to the city of Austin, where rapid growth has accelerated the habitat loss that is one of the primary causes of the warbler's and vireo's declines. Both species are vulnerable to nest parasitism by brown-head cowbirds. Cowbirds don't build nests but instead lay eggs in the nests of other species, which unknowingly raise cowbird offspring that out-compete the other nestlings.

Since more than 94 percent of the land in Texas is privately owned, landowner involvement is crucial to warbler and vireo survival. Protecting the land from development isn't enough to save the birds; land management is also essential. For the black-capped vireo, that means creating what biologists call "early successional habitat," in this case, shrubland or open wooded area with shin oaks and other shrubs no taller than six feet. At one time, periodic wildfires swept through the Hill Country, maintaining this kind of habitat for the vireo. Today wildfires are suppressed, and when the vegetation matures to older woodland, the vireo disappears. The bird's future now depends in part on landowners willing to conduct prescribed burns or other management actions that recreate early successional habitat.

The golden-cheeked warbler has different habitat requirements. This brightly colored songbird nests in stands of mature Ashe juniper (known as "cedar" in Texas) mixed with oaks and other deciduous trees. With increasing urban and sub-urban development in the Hill Country, it's difficult

for the warbler to find suitable nesting spots. Texas Hill Country Safe Harbor landowners can aid the warbler by allowing the regeneration of hardwood trees, which attract insects the warbler eats, as well as letting Ashe junipers grow to maturity.

The Russell family ranch offers suitable habitat for the warbler and in time will have suitable habitat for the vireo. In his Safe Harbor Agreement, Russell has agreed to undertake several management actions, including removing excess brush, excluding cattle from bird nesting areas, controlling cowbirds, and planting oak trees, shrubs, and other plants to provide nesting and feeding sources. Although the agreement extends over 30 years, he has already seen benefits from his land management activities, with more wildlife and less damaging erosion.

In addition to enrolling his own property, Russell has become an ambassador for the Safe Harbor approach, encouraging his neighbors to join the program. As of March 2005, seven Hill Country landowners had enrolled a total of 2,106 acres in the Texas Hill Country Safe Harbor Agreement.

"The flexibility of this program made this a much easier decision. We hope that by participating in the Safe Harbor program, we can demonstrate to other landowners that endangered species management can be compatible with good ranch management."
—Kerry Russell

David Wolfe, Environmental Defense biologist



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Sharing a Pond with Chub

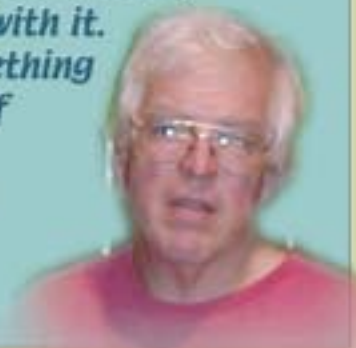
Bob Russell's land is tucked along the Mohawk River within Oregon's Cascade foothills. The Mohawk Valley is a stunning expanse of rolling hills, forested lands, homesteads, and small timber farms. In 1938, a U.S. Bureau of Fisheries' survey described the Mohawk as "not a good salmon stream," but its tributaries were native habitat for a less charismatic native fish: the Oregon chub (*Oregonichthys crameri*).

The Oregon chub is a small minnow found only in western Oregon at lower elevations within the Willamette River drainage. It is adapted to slow-moving backwater areas, such as sloughs and beaver ponds. Landscape changes, including dam construction, stream channelization, wetland filling, and loss of riparian or streamside vegetation have resulted in a loss of backwater habitats typically used by the chub. In addition, altered flooding and temperature patterns throughout the watershed have created conditions favorable to nonnative predator fish, such as bass, that were originally stocked for sport fishing. This loss of native or natural habitat and a high susceptibility to predation have drastically reduced Oregon chub abundance and distribution. In fact, only five viable populations were known to exist when the fish was federally listed in 1993 as an endangered species.

A decade of Oregon chub surveys reveals that management and protection of existing populations, and introductions of chub into suitable habitats, more than doubled the number of known viable populations. Paul Scheerer, an Oregon chub expert with the Oregon Department of Fish and Wildlife, believes recovery of this species is something that can be accomplished during his career. Since over 65 percent of the Willamette drainage is in private ownership, a major focus of chub recovery has been to work with private landowners like Bob Russell to introduce chub into small ponds and wetlands that are free from nonnative predator fish.

"I always thought it would be nice to have a pond big enough to put fish in. First I thought of trout, but someone shot that down—not cold enough. Then I thought bass but never got around to it. The truth is, I really don't like to fish. We used to swim in the pond, but we never really did anything much with it. I wanted to do something to help the status of endangered and threatened wildlife in Oregon."

—Bob Russell



When Russell bought his land in 1972, a friend helped him build three ponds, and he began haying and light sheep grazing on small portions of the property. More than 20 years later, Russell heard about the Oregon chub recovery effort and thought that maybe his ponds would be a good home for the endangered fish. In 1999, Russell called the Oregon DFW, and soon Scheerer came out to look at the ponds.

Scheerer found that at least one of the perennial, spring-fed ponds was suitable habitat for chub. Ponds don't have to be large to support the chub; at less than 9,000 square feet and a maximum depth of 6 feet, Russell's pond had the potential for a self-sustaining population.

Russell worked with Scheerer and U.S. Fish and Wildlife Service biologist Amy Horstman on the terms of a Safe Harbor Agreement to provide long-term assurances that Russell's typical land uses would not be restricted by Endangered Species Act regulations. Russell found the Safe Harbor policy to be a flexible tool that afforded him assurances without restricting his primary land uses. "The conditions that Paul and the Service put on the whole agreement were things I could easily live with," says Russell. Scheerer agrees, saying, "There wasn't anything that was objectionable. We set up a buffer around the pond that restricted activity but it didn't restrict anything Bob was doing anyway." Activities limited within the buffer area include pesticide application or soil disturbing practices that could harm the chub's habitat.

Given the ease of relocating Oregon chub, a clause was inserted into the agreement that if Russell wanted to stock bass or carry out some other action that could be harmful to the chub population, he would notify the Service and Oregon DFW, and the chub could be moved to a different location.

A total of 500 Oregon chub were introduced to Russell's pond in October 2001 and May 2002. The chub were taken from a natural population to provide a backup or "refugium" population as insurance against a catastrophic decline of the natural population. Some of the relocated chub spawned in 2002, and they appear to be doing very well in their new home.

Chub recovery relies on establishment of populations in the three main sub-basins of the Willamette River system. The species should be able to flourish in many of the created ponds and wetlands that are abundant on private lands, and Safe Harbor Agreements can be an ideal tool for gaining landowner support. The Oregon DFW hopes that more landowners in the Santiam, mainstem Willamette, and Middle Fork Willamette river drainages who are interested in helping with Oregon chub recovery will enroll in Safe Harbor Agreements.



“Caddyshack Meets Bonanza”

southern Idaho ground squirrel



Working through a Candidate Conservation Agreement with Assurances, responsible landowners, coupled with traditional land uses, are helping to ensure the survival of a small animal in southwest Idaho. Soulen Livestock, a family owned sheep and cattle operation headquartered in Weiser, Idaho, has welcomed nearly 200 southern Idaho ground squirrels (*Spermophilus brunneus endemicus*) relocated from sites where populations have been imperiled because of the decline of its sagebrush and bunch-grass habitat. The company and its federal and state partners hope the relocated squirrels will thrive, making it unnecessary to list this subspecies as threatened like its close relative, the northern Idaho ground squirrel (*Spermophilus brunneus brunneus*).

The southern Idaho ground squirrel is found in only three counties in western Idaho and is considered a candidate for listing. Along with its other close relatives, it has been declining in numbers for perhaps two decades.

“Accepting the squirrels wasn’t a hard step. We already had some on the ranch and, through our arrangement with the Fish and Wildlife Service, we would develop a Candidate Conservation Agreement with Assurances to protect our operation if the species were ever listed. Nothing about the squirrels would seem to hinder our operation. They may eat a little hay, but what worries us more is the uncertainty that we would face over restrictions to our operation if the species were listed as threatened or endangered.”

—Margaret Soulen Hinson

Like many ranch operations in the West, Soulen Livestock operates on a mixture of federal, state, and private lands. In the vicinity of the squirrels, the company owns some 43,000 acres of range-land and leases approximately the same amount of Bureau of Land Management and state land.

Soulen Livestock is one of the largest range sheep operations left in the state, with 8,000 ewes tended by Peruvian herders who stay year-round with the sheep over an extensive range. The company also has 1,000 cow and calf pairs.

Margaret Soulen Hinson is a partner in Soulen Livestock with her father, Phil, and brother, Harry. Her husband, Joe, is a former timber industry executive and now a partner in a natural resource consulting firm. “Joe’s knowledge of the Endangered Species Act and his experience with such plans as Candidate Conservation Agreements with Assurances was a real advantage,” she says. “This is complicated business,” Margaret notes.

Now, based on the experiment on the Soulen operation, Joe’s firm, in cooperation with Environmental Defense, U.S. Fish and Wildlife Service, Idaho Department of Fish and Game, and the Idaho Governor’s Office of Species Conservation, is working with other local ranchers on similar agreements. The Leopold Stewardship Fund—an initiative of the Sand County Foundation and Environmental Defense that is dedicated to conserving rare species on working private lands—is helping fund this work. Thanks largely to the example set by Soulen Livestock, an “umbrella” Candidate Conservation Agreement with Assurances was signed in March 2005, covering the four counties thought to be the historic range of the species.

Most of the squirrels relocated to the Soulen ranch came from a golf course in Weiser, home of one of the largest southern Idaho ground squirrel populations. “As you can imagine, we became the object of a lot of good-natured jokes about taking squirrels off the golf course and letting them roam free on the ranch. We sometimes refer to the whole effort as ‘Caddyshack Meets Bonanza’.”



Some people speculate that, with the loss of their native habitat, these squirrels use artificial habitats, such as farms and golf courses, because these man-made grasslands provide abundant grass for food and enough people to discourage raptors, badgers, snakes, and other predators.

“My family, and certainly Joe and I, all share a love of wildlife and the out-of-doors. It is, in fact, why we all got into this business, and we want to see all the wildlife for which we have some responsibility do well through the way we run our operation.”

“While few may ever notice or perhaps care about southern Idaho ground squirrels, it’s important to us to show that they, too, can have a home on the land that we manage.”

—Margaret Soulen Hinson (at left)



International Paper and the Red-cockaded Woodpecker

Not many years ago, a large forest products company and a major conservation group were as likely to meet in a court of law as in a loblolly pine forest. That's no longer true today, when such organizations discover that they can achieve more through cooperative efforts than by courtroom combat.

Such a partnership was demonstrated in 2001, when the International Paper Company enrolled in the Virginia Red-cockaded Woodpecker Safe Harbor Agreement, which is administered by The Nature Conservancy. IP, the world's largest paper and forest products company, became the first Virginia landowner to enroll in a Safe Harbor Agreement.

From the beginning, the concept of cooperation was as much a part of this Safe Harbor as the landowner and the endangered bird. Before landowners were able to enroll, four parties—TNC, the U.S. Fish and Wildlife Service, the Virginia Department of Game and Inland Fisheries, and Environmental Defense—met repeatedly to work out the details of the agreement. The goal was to encourage landowners to take voluntary actions to protect and increase the tiny population of endangered red-cockaded woodpeckers (*Picoides borealis*) in southern Virginia.

Nowhere are the woodpeckers rarer than in Virginia, where a 2003 census counted only 24 individuals in 6 groups. Nearly all of them are found on TNC's 2,600-acre Piney Grove Preserve in Sussex County.

Long before there was an endangered species list or Safe Harbor Agreements, red-cockaded woodpeckers were a common sight in the longleaf and other pine forests that dominated the southeast. John James Audubon noted that the bird was "found abundantly" from Texas to New Jersey and inland into Tennessee. Since Audubon's time, the red-cockaded woodpecker has become rare, losing nearly all its preferred open, old-growth southern pine habitat to timber harvesting, agriculture, development, and fire suppression.

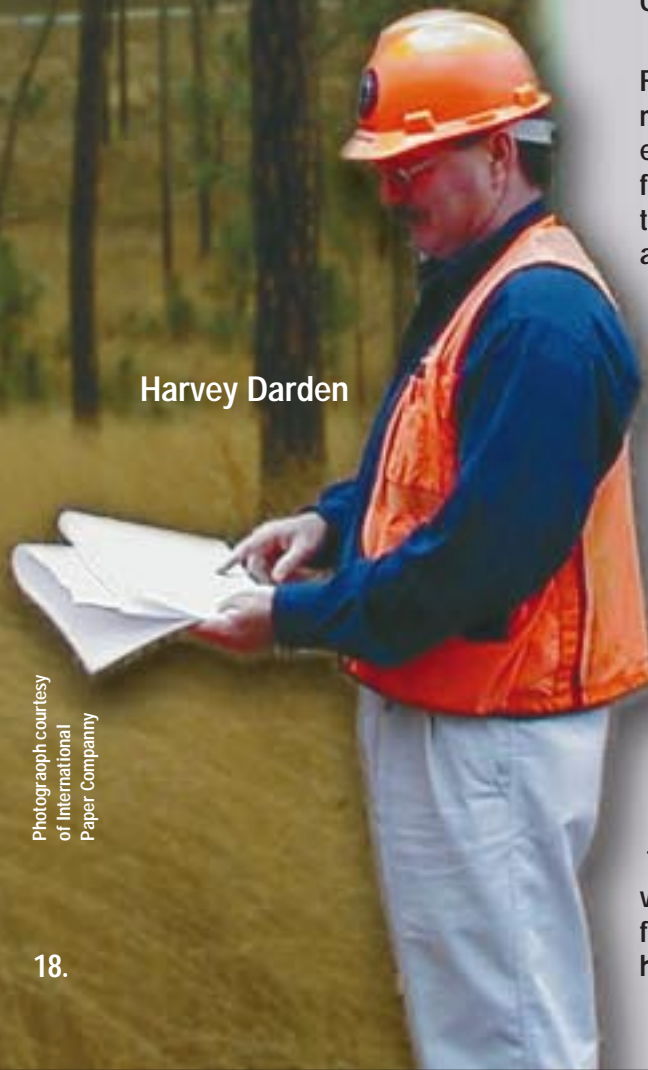
The woodpecker was listed as an endangered species in 1970, but its decline continued, particularly on private lands. The ESA prohibits harming or harassing the bird without a permit, but until the development of Safe Harbor, the ESA offered no incentives to encourage landowners to restore the bird's nesting and foraging habitat.



Illustration by John James Audubon

Red-cockaded Woodpecker

Harvey Darden



On IP's Safe Harbor property, restoring habitat is the job of Harvey Darden. As the company's Forest Operations Team Leader for Virginia, he oversees the 286 acres enrolled in the Safe Harbor Agreement. Darden has worked for the company for 25 years and is responsible for the management of IP's Virginia lands. His Virginia roots go back even further. A native of Southampton County, he has a lifelong love of the land and says that "being a good steward of the land is very near and dear to me." Advancing IP's Sustainable Forestry Initiative program, with its mission of conserving forest resources for future generations, fits well with his personal commitment to sustainable forestry.

To implement IP's 33-year Safe Harbor Agreement, Darden is restoring and enhancing the woodpecker's foraging habitat by thinning pine stands, removing the hardwood understory, and regenerating the pine forest.

In the past, periodic wildfires maintained the open park-like structure of these forests, which meets the nesting and foraging habitat requirements of the birds. Today, wildfires are suppressed, and without management actions that mimic those fires, such as prescribed burns or other means of hardwood control, woodpeckers abandon overgrown forests.

In return for IP's beneficial actions, the Safe Harbor Agreement provides assurances that at the end of the agreement, the company can return to the baseline population of woodpeckers—in IP's case, zero—present when the agreement was signed.

Darden says that the Safe Harbor Agreement meshes perfectly with IP's sustainable forestry goal. When asked why IP chose to participate in a Safe Harbor Agreement, his answer is simple: "Because it's the right thing to do."

Other Virginia landowners within a 40-mile radius of Piney Grove Preserve are eligible to enroll in the Safe Harbor Agreement. By encouraging neighboring landowners to improve habitat for the woodpecker, The Nature Conservancy hopes to enlarge the Virginia population and secure its future in the state. Recognizing that the bird's future in Virginia depends on having enough foraging and nesting habitat, TNC's Virginia State Director Michael Lipford says, "Forging partnerships with private landowners is essential. International Paper's commitment to Safe Harbor sets an admirable example that we hope other landowners will follow."

Darden notes that voluntary Safe Harbor participation does not mean that a landowner relinquishes control or ownership of the land, nor does it restrict all activities on the land. Instead, he says, "It is certainly a win-win proposition for everyone."

"It gives us increased management certainty and offers the opportunity to improve habitat for a federally listed species. The Safe Harbor plan frames the habitat conditions we have agreed to provide, and through it, International Paper demonstrates our commitment to sustainable forestry."

—Jimmy Bullock, International Paper's Manager of Sustainable Forestry and Wildlife



A Statewide Approach for Red-cockaded Woodpeckers

As soon as the South Carolina Statewide Safe Harbor Agreement was announced in March 1998, landowner interest spread like fire in a longleaf forest. As of March 2005, 104 landowners and 398,911 acres were enrolled in the statewide program.

The agreement built upon the success of the nation's first Safe Harbor, the North Carolina agreement launched in 1995 for the red-cockaded woodpecker (*Picoides borealis*). The South Carolina Safe Harbor was developed by the U.S. Fish and Wildlife Service, South Carolina Department of Natural Resources, South Carolina Forestry Commission, South Carolina Red-cockaded Woodpecker Conservation Coalition, Westvaco Corporation, and Environmental Defense. The Service granted SCDNR an "umbrella" Safe Harbor permit, under which the state agency enrolls individual landowners. The following profiles only hint at the diversity of landowners enrolled in this Safe Harbor Agreement.

Donald Dyches

Donald Dyches's 891-acre Hampton County property is a mix of pine plantation, hardwood forest, mature river bottom, open pineland, and isolated wetlands. But there's one thing missing that he wants to have on his land: red-cockaded woodpeckers.

Dyches purchased his land in pieces, originally intending to use it for deer hunting, but his interests have expanded to include forestry and land restoration. Due to the condition of the property when he bought it, Dyches had to restore isolated wetlands that had been ditched and drained, regrow old-growth pines, and clear invasive hardwoods. When he learned about the state's Safe Harbor umbrella permit, it appealed to him as a way to protect both the bird and the landowner. He enrolled in 2002, and now he recommends it to "anybody and everybody" as a win-win situation.

Turkey Hill Plantation

H. Stro Morrison, III, was ready for a Safe Harbor Agreement when he learned of the program. As a registered forester and manager of Turkey Hill Plantation, he was well aware that the prescribed burns that encourage quail and red-cockaded woodpeckers could also bring Endangered Species Act regulation. Although Turkey Hill had already welcomed a nesting pair of bald eagles, the plantation's burning schedule had been slowed to avoid "woodpecker problems."

However, Morrison no longer sees red-cockaded woodpeckers as a problem since enrolling the 17,500-acre plantation under the state's umbrella Safe Harbor Agreement. He is eager to pursue environmental protection and management, and is considering ecotourism possibilities to supplement Turkey Hill's quail hunts. Under the agreed upon conditions of the Safe Harbor, he says, Turkey Hill can "do what we wanted to do," and practice the environmental management under which everybody wins.

Brosnan Forest and Norfolk Southern
Long before the Safe Harbor program came along, the Norfolk Southern Corporation was managing its 16,000-acre Brosnan Forest to benefit the red-cockaded woodpecker. The rail transportation company had established the property as a conference and recreation center, as well as an employee vacation retreat. Managing for quail hunting also created habitat attractive to red-cockaded woodpeckers.

Mark Clement, Brosnan Forest's General Manager of Facilities, explains that Safe Harbor "makes it a lot easier to do the right thing." It "takes away our liability for encouraging growth of the woodpecker population," allowing the company to attract woodpeckers and still meet its fiscal responsibility.

All of Brosnan Forest was enrolled in the state's Safe Harbor Agreement in 1998, with an identified baseline of 67 groups of birds. One major management action Brosnan Forest has undertaken has been to install artificial nest cavities for the woodpeckers, which saves the birds 3 to 12 years labor required to drill a cavity. In 2004, the number of groups on Brosnan Forest was up to 76.



Mark Clement
in Brosnan Forest



Photograph courtesy of USFS

Friendfield Plantation

Throughout his 30 years at Friendfield Plantation, Virgil Dugan has faced an endangered species dilemma. Managing the plantation for quail meant inadvertently managing for red-cockaded woodpeckers, and Dugan was concerned about the potential restrictions. Beginning in the mid-1970s, just a few years after the bird was listed as an endangered species, he participated in state meetings and other discussions. "Everyone was a little distraught," he remembers.

By enrolling Friendfield's entire acreage in a Safe Harbor Agreement, Dugan has found a way to maintain the property's mature longleaf forest without fear of increased regulation. The woodpeckers seem to be happy, too; they've increased from 9 to 12 groups.

Photograph courtesy of Michael Keys

Photograph courtesy of Phillip Jordan

Photograph courtesy of Ralph Costa, USFWS

A Statewide Approach for Red-cockaded Woodpeckers



Photograph courtesy of Mike Lemartz, USFS

Good Hope Plantation

When Good Hope Plantation enrolled 11,000 acres in the Safe Harbor Agreement in 1999, consulting forester Al Epps had been managing the property for almost 20 years. He found it a challenge to deal with the potential red-cockaded woodpecker presence on the quail and timber plantation. He recognized the potential of a Safe Harbor even before the agreement was announced.

Epps sees no disadvantage in the Safe Harbor Agreement, which has worked very well for Good Hope. "Incentives are key," he explains, saying that he's looking forward to more cost-share programs, particularly for small landowners, and that money would be well spent to provide assured funding for management activities such as prescribed burns.



Photograph courtesy of Mike Lemartz, USFS

Hobcaw Barony and the Belle W. Baruch Foundation

After New York financier Bernard Baruch created a winter home and hunting retreat from an area once used for rice plantations, he opened it to such guests as Winston Churchill, General Pershing, and President Franklin Roosevelt. Now owned by the Belle W. Baruch Foundation, the 17,500-acre property is dedicated to research, education, and conservation. Among the wildlife species finding a home there is the red-cockaded woodpecker. Clemson University researchers have studied these birds since the 1970s, and in 1999 Hobcaw Barony became one of the first enrollees in the state's umbrella Safe Harbor Agreement. About 8,000 acres of Hobcaw Barony were enrolled, with an identified baseline of 23 woodpecker groups.

Enrolling in Safe Harbor was a wise decision, according to plantation manager George Chastain. Under the agreement, he uses prescribed fire and mechanical means to restore the pine woods to the natural open state of a longleaf forest, and installs cavity inserts to assist nesting woodpeckers. Chastain explains that Safe Harbor "works well with what we do." Although the foundation is a non-profit organization, he says that, like any private landowner, he is responsible for paying the bills and needs some assurance that the property will stay financially secure.



Photograph courtesy of Peter V. Campbell, USFWS



Photograph courtesy of Ralph Costa, USFWS

Photograph courtesy of Les Saucier

Resources and Contacts

To learn more about enrolling in a Safe Harbor Agreement or Candidate Conservation Agreement with Assurances, call Environmental Defense's office in Washington or one of the organization's regional offices.

**Capital Office
Wildlife Program**
1875 Connecticut Avenue, NW
Washington, DC 20009
202-387-3500

National Headquarters
257 Park Avenue South
New York, NY 10010
212-505-2100

California Office
5655 College Avenue
Oakland, CA 94618
510-658-8008

Rocky Mountain Office
2334 North Broadway
Boulder, CO 80304
303-440-4901

North Carolina Office
2500 Blue Ridge Road
Raleigh, NC 27607
919-881-2601

Texas Office
44 East Avenue
Austin, TX 78701
512-478-5161

Massachusetts Office
18 Tremont Street
Boston, MA 02108
617-723-2996

For information about Safe Harbor Agreements or Candidate Conservation Agreements with Assurances, contact the U.S. Fish and Wildlife Service office for your state.

Headquarters
1-703-358-2105
<http://endangered.fws.gov/>
Arlington, Virginia, and Washington, DC

**Pacific Region
(Region 1)**
1-503-231-6118
<http://pacific.fws.gov/>
Hawaii, Idaho, Oregon, Washington, American Samoa, Commonwealth of the Northern Mariana Islands, Guam, Pacific Trust Territories

California/Nevada Operations
1-916-414-6464
<http://pacific.fws.gov/>
California, Nevada

**Southwest Region
(Region 2)**
1-505-248-6654
<http://southwest.fws.gov/>
Arizona, New Mexico, Oklahoma, Texas

**Great Lakes, Big Rivers Region
(Region 3)**
1-612-713-5343
<http://midwest.fws.gov/>
Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, Wisconsin



Information is also available at <http://endangered.fws.gov/>

**Southeast Region
(Region 4)**
1-404-679-7313
<http://southeast.fws.gov/>
Alabama, Arkansas, Louisiana, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Florida, Tennessee, Puerto Rico, U.S. Virgin Islands

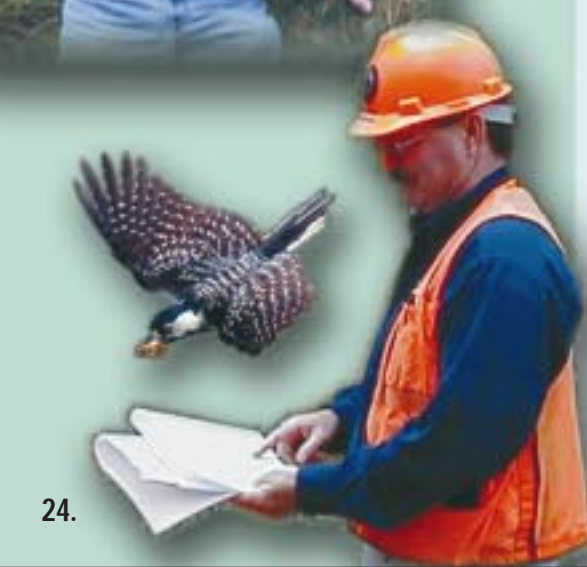
**Northeast Region
(Region 5)**
1-413-253-8627
<http://northeast.fws.gov/>
Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Virginia, West Virginia

**Mountain-Prairie Region
(Region 6)**
1-303-236-4258
<http://mountain-prairie.fws.gov/>
Colorado, Kansas, Montana, Nebraska, North Dakota, South Dakota, Utah, Wyoming

**Alaska
(Region 7)**
1-907-786-3868
<http://alaska.fws.gov/>
Alaska



Information is also available at www.environmentaldefense.org/go/conservationincentives.





The U.S. Fish and Wildlife Service is responsible under the Endangered Species Act for conserving and recovering our nation's rarest plant and animal species and their habitats, working in cooperation with other public and private partners.

Environmental Defense, a leading national non-profit organization, represents more than 400,000 members. Since 1967, Environmental Defense has linked science, economics, law and innovative private-sector partnerships to create breakthrough solutions to the most serious environmental problems.