Conservation Incentives

C ENVIRONMENTAL DEFENSE finding the ways that work

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The Center for Conservation Incentives Environmental Defense 1875 Connecticut Ave, NW Washington, DC 20009 (202) 387-3500

CCleditor@environmentaldefense.org

Pennsylvania project aims to improve Chesapeake Bay watershed quality

griculture offers one of the best **L**opportunities to address many pressing natural resource concerns, especially water quality, in major watersheds such as the Chesapeake Bay. And, though the standard farm-by-farm approach has benefited many watersheds around the country, it's increasingly clear that more coordinated partnerships and improved tools and technologies are also needed to meet the critical challenge of excess agricultural nutrients. That's the approach of Lancaster Farms, a new project in the Susquehanna River basin of Pennsylvania. That area is part of the Chesapeake Bay watershed, where declining water quality has severely impacted the nation's largest and most biologically productive estuary, as well as

its fish and shellfish industries.

With local farmer leadership and essential partners, the Center for Conservation Incentives at Environmental Defense launched Lancaster Farms this spring. The project is using innovative tools and cooperative efforts to improve nutrient use efficiency and correct the nutrient imbalance in Lancaster County, Pennsylvania. Partners include the county's Conservation District, the local Cooperative Extension, Lancaster Farmland Trust, the Lancaster County Agricultural Preserve Board, USDA Natural Resources Conservation Service, local farmers and a University of Connecticut soil fertility expert. The goal is to achieve Continued on page 2



Dave (left) and Matt Young of Red Knob Farm participate in the *Lancaster Farms* project. As well as working on more efficient nutrient use, the brothers and Matt's son Andy have practiced no-till farming for more than five years.

Pennsylvania project

Continued from page 1

30% or greater improvement in agricultural nitrogen use efficiency countywide without increasing soil phosphorous levels or lowering farm incomes.

Well known both for its Amish community and robust agricultural economy, Lancaster is the most productive non-irrigated county in the nation with a strong animal agriculture sector. However, this productivity has created serious challenges. Significantly more agricultural nutrients enter the county in fertilizer and feed than leave in food and fiber. Lancaster produces more manure nutrients than the entire county's farmland can use, and the excess nutrients contribute to water quality problems that eventually reach the Chesapeake Bay. If the county and state are to meet water quality goals mandated by the Chesapeake Bay Agreement Tributary Strategies, it's essential to move toward a nutrient balance.



The Chesapeake Bay watershed extends from New York south into Virginia, encompassing portions of five states. Lancaster county is highlighted in red.

In pilot projects with farmers this year, the partnership launched two key Lancaster Farms components: spring and fall nitrate tests to improve nutrient use efficiency and farmer-led discussion groups to further the successful use of these and other nutrient use efficiency tools and conservation practices. Both the tests and discussion groups focus on one of farming's biggest challenges: Many factors affect how crops use nitrogen, creating considerable risk and uncertainty for farmers trying to decide how much nitrogen fertilizer to apply to plants. Understandably, most farmers deal with this inherent variability by applying a sizeable nitrogen buffer above what the crop may need. Usually this buffer is not needed and does not increase yields. More likely it's lost to the environment, which in Lancaster County means sending more excess nitrogen into the Chesapeake Bay.

> So what is the alternative? New precision agriculture technology such as the fall cornstalk nitrate test, pre-sidedress nitrate test (PSNT), variable rate application technologies and tools can help farmers better assess the specific nitrogen needs of their crops and thus reduce buffer applications of nutrients. The benefits? Reduced fertilizer costs, significantly improved nutrient use efficiency and less nitrogen in the Chesapeake Bay.

In 2004, the Lancaster Farms project introduced the PSNT and cornstalk nitrate tests to more than 30 farmers in the county, on both non-Amish and Amish farms. This pilot project collected about 400 PSNT soil samples and conducted 400 cornstalk nitrate tests. Funded through a cooperative agreement between the Natural Resources Conservation Service in Pennsylvania and the Center for Conservation Incentives, the project offered the tests to farmers free of charge and with full confidentiality. The two organizations then brought the farmers together to discuss the tests, the results and the implications for farm management.

Farmers gave the project high marks. "I think this project has tremendous potential," said Matt Young of Red Knob Farm in Peach Bottom, Pennsylvania. "It will help us properly apply nutrients to the right place so we get the full yield potential [from crops] without excess levels causing a negative environmental impact."

Lancaster Farms hopes to expand to as many as 300 farmers in 2005. Project partners plan to launch an innovative incentives program for nutrient use efficiency and are discussing both a manure brokering program to improve nutrient distribution within the county and a countywide strategy to treat and export excess manure nutrients for appropriate and beneficial use outside the county. An overarching long-term goal of *Lancaster* Farms is to serve as a model not only for improving water quality in the Chesapeake Bay watershed, but also to demonstrate that a broad partnership approach and innovative technical tools can benefit both natural resources and farm income in nutrient-impaired watersheds nationwide.

> -Suzy Friedman scientist and agricultural policy analyst Center for Conservation Incentives Environmental Defense

Utah group uses WHIP to restore sagebrush rangelands

A few miles west of Utah's Capital Reef National Park lies the vast Awapa Plateau, where a progressive group of ranchers, state and federal land managers, researchers and other conservationists has joined forces to improve rangelands that support local human and natural communities with the help of the USDA Wildlife Habitat Incentives Program (WHIP).

The Awapa Plateau, known to locals as Parker Mountain, is rarely a tourist destination in an area rich in scenic beauty. At 7,000 feet above sea level, this high desert plateau is a stark, rolling landscape dominated vegetatively by the low-growing black sagebrush and the taller-growing big sagebrush. With over a quarter million acres of contiguous sagebrush, it is not surprising that Parker Mountain supports one of Utah's largest populations of greater sage-grouse (Centrocercus urophasianus), as well as remnant populations of the federallythreatened Utah prairie dog (Cynomys parvidens) and a burgeoning population of pronghorn (Antilocapra americana). The mountain is a mix of public lands managed by the U.S. Bureau of Land Management, U.S. Forest Service and Utah School and Institutional Trust Lands Administration, with ranchers leasing most of the land for seasonal sheep and cattle grazing. Since over 90% of the land in this area is owned by the state or federal government, rural communities depend heavily on public lands such as Parker Mountain to help support their economies.

At a 1998 gathering, concerned citizens and land managers acknowledged that rangeland health on Parker Mountain was declining. Recognizing that poor rangeland health, declining sage-grouse populations and future livestock production were inextricably linked, more than a dozen governmental and non-governmental organizations formed the Parker Mountain Adaptive Resource Management (PARM) Working Group to address these issues. The group outlined a strategy to improve Parker Mountain's rangeland health and thus ensure the viability of both wildlife and livestock production. An important element agreed upon by the coalition was an adaptive management framework within which research and monitoring would guide the decisionmaking process.

One factor leading to poor rangeland health on Parker

Mountain was the high percentage of sagebrush with few understory grasses or forbs (wildflowers). This rangeland condition is not uncommon in the West and is thought to be caused by a combination of factors such as fire suppression and improper livestock grazing. The PARM Working Group believed the lack of diversity in plant composition and structure was detrimental to both the sagegrouse and livestock. In 1999, the Parker Mountain livestock permittees were awarded WHIP financial assistance to conduct rangeland restoration treatments on the state-owned lands. WHIP is an incentive program, funded through the 2002 Farm Bill and administered by the Natural Resources Conservation Service (NRCS), that helps fund landowners or livestock permittees who improve wildlife habitat on non-federal lands.

The Parker Mountain restoration project was conducted in cooperation with Utah State University researchers in an experimental fashion to learn from the manipulations. Chemical and mechanical brush treatments were applied on 100-acre blocks of land to reduce the amount of sagebrush and



On the high desert plateau known as Parker Mountain, NRCS biologist Jeremy Maestas (left) and NRCS district conservationist Tom Jarman are looking at the response of young plants of the species big sagebrush to mechanical treatment. Encouraging growth of non-sagebrush plants on Parker Mountain can benefit both livestock and declining wildlife.

encourage growth of grasses and forbs. Treatments were replicated in four separate areas, and a control site with no brush treatment was also included. Vegetation and sage-grouse were then studied to determine the effectiveness of each treatment.

Thus far, study results are promising, with rangeland health improving for both wildlife and livestock. Forbs and grasses have responded well to the treatments, and sage-grouse appear to prefer the treated areas over the untreated control area. While researchers, conservationists and land managers are gaining insights on which treatment types yield the most benefit, they are also exploring ways to improve the timing and intensity of livestock grazing in order to maintain a healthy mix of grasses, forbs and shrubs. Monitoring of treatment sites will continue, providing critical information for decision-making on Parker Mountain for years to come.

The PARM Working Group got another boost this year when the livestock permittees on the mountain were awarded \$350,000 additional WHIP cost-share

Forestry expert is the gopher tortoise's best friend

D andy Browning is an expert in thin-Ring forests, setting prescribed fires, controlling invasive vegetation with herbicides and using large equipment to prepare cut-over forests for tree planting. He spends much of his workday advising private landowners, and helping them write and implement forest management plans. You might think that he works for a forest products company, but you'd be wrong.

Browning, who hails from Texas but now calls Mississippi home, is employed by both the U.S. Fish and Wildlife Service and the Mississippi Fish and Wildlife Foundation, a local conservation group that uses innovative strategies to protect the state's natural heritage. He is also the best friend the gopher tortoise, a federally threatened denizen of the longleaf pine ecosystem, ever had.

thinning, scalping and dozing to restore longleaf pine, a fire-dependent tree that evolved in open forests maintained by wildfires. Some 70 to 90 million acres of longleaf pine once blanketed the southern coastal plain from southeastern Virginia to Florida and west to eastern Texas. Decades of unsustainable forest practices, agricultural conversion, fire suppression, commercial pine forest

development and urbanization have reduced the longleaf pine forest by more than 95%. The gopher tortoise and at least 20 other endangered and threatened species rely on longleaf forests for their existence.

The restoration, conservation and management of those

of which occur on private lands, are critical to the survival of these rare species. In its official recovery plan for the gopher tortoise, the U.S. Fish and Wildlife Service notes that, "Private lands contain the vast majority of forest



Randy Browning (right) and Lamar County, Mississippi landowner Orby Wright are using an increment borer to determine tree age in a dense stand of longleaf pine on Wright's property. This information enables them to thin the forest for optimal longleaf management.

containing gopher tortoises. Accordingly, maintenance of the [gopher tortoise] population is not possible without some significant successes on privately owned timberlands." Though the species was listed as threatened in Louisiana,

"...maintenance of the

[gopher tortoise]

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timberlands."

-FWS gopher tortoise recovery plan

Mississippi and extreme southwestern Alabama in 1987, efforts on private lands have languished until recently. The change is due in large part to Randy Browning and the landowners working with him.

Browning is on the front line of a unique effort to use conservation incentives

to protect and restore the gopher tortoise, the black pine snake and a suite of rare birds on private lands. In his dual role with the Fish and Wildlife Service and the Mississippi Fish and Wildlife Foundation, Browning works alongside the American Forest Foundation, which promotes and certifies sustainable forest management on private lands, and Environmental Defense's Center for Conservation Incentives, which helped initiate the effort.

With funding from the U.S. Fish and Wildlife Service's Private Stewardship Grants (PSG) Program, Browning provides financial incentives to landowners to help cover habitat restoration costs. Over the last 18 months, that funding has totaled nearly \$200,000 in cost-share monies to landowners to restore habitat on more than 2,000 acres. In addition, Browning shares his technical expertise on planting longleaf pine, reintroducing fire into longleaf forests and controlling cogongrass, an invasive plant that threatens the tortoise and the entire ecosystem.

The American Forest Foundation has also used PSG funding for landowner outreach. Last fall it hosted a workshop for about 75 Mississippi tree farmers and

forests, about two-thirds

Browning is planting, herbiciding,

foresters and another is planned for this winter in Mississippi. With help from the American Bird Conservancy, the American Forest Foundation has published the *Pine Ecosystem Conservation Handbook* to provide information to family forest owners and others on the management of southern pine forests for both timber and wildlife benefits.

Safe Harbor and similar regulatory assurances for candidate species are an important part of this effort as well. Many longleaf landowners fear that managing their lands for the gopher tortoise or other endangered species might result in increased regulation under the Endangered Species Act. Such concerns should not be an issue. By entering Safe Harbor Agreements for the tortoise, the endangered red-cockaded woodpecker or the black pine snake (a candidate for listing) as part of their habitat restoration efforts, landowners ensure that their good deeds will not bring them increased legal responsibilities.

The first Safe Harbor Agreement for the tortoise is expected to be signed soon by Dr. John Lambert, a retired veterinarian and owner of 750 acres near Sumrall, Mississippi. Lambert, who hosted the American Forest Foundation's first workshop, is a former Mississippi Tree Farmer of the Year who is managing his lands for both timber production and longleaf restoration. And, not surprisingly, Randy Browning is there to help him get the job done.

The American Forest Foundation's web site has more information about the gopher tortoise project at www.treefarmsystem.org/cms/pages/56_21.html. To read more about Safe Harbor, go to www.environmentaldefense.org/article.cf m?contentid=156. The draft application notice for Dr. Lambert's Safe Harbor Agreement is at http://a257.g.akamaitech.net/7/257/2422/14mar20010800 /edocket.access.gpo.gov/2003/pdf/03-18415.pdf.

> -Robert Bonnie managing director Center for Conservation Incentives Environmental Defense

The gopher tortoise: Keystone species of an imperiled ecosystem

The gopher tortoise (Gopherus polyphemus) is named for its burrowing skills. Its shovel-shaped forefeet dig burrows up to 40 feet long that shelter and house not only tortoises, but a virtual zoo. By one count, an astonishing 362 animals take refuge in these burrows, from gopher frogs and burrowing owls to an array of snakes and invertebrates, some species depend entirely on them. If we lacked the scientific concept of a keystone speciesone with an impact far beyond that expected from its numbers—we'd need to create it for the gopher tortoise, given its importance in the longleaf forest ecosystem.

But the tortoise needs more protection than a burrow can provide. In 1987, after decades of habitat loss and human predation, tortoises in Mississippi, Louisiana and west of the Tombigbee and Mobile Rivers in Alabama were designated as threatened by the U.S. Fish and Wildlife Service. Numbers are not as low in Florida, Georgia and South Carolina, but many populations are also declining. Two invasive, non-native species, cogongrass and fire ants, pose more recent threats.

The gopher tortoise is found only within the historical range of longleaf pine, the dominant tree of the oncevast forests of the southern coastal plain. When logging, fire suppression and conversion to agricultural, commercial and residential use reduced longleaf forests to a fraction of their former range, the tortoise also declined. Tortoises were also captured as pets and even for food, particularly during the Depression when many a hungry household knew them as "Hoover chicken."

The "gopher," as it is nicknamed, is the Southeast's only indigenous tortoise. Its gray-brown carapace (top



Longleaf forests offer gopher tortoises herbaceous plants for food and sandy soils for burrowing. Where longleaf habitat is not maintained or lost entirely, tortoises occupy fields, vacant lots and roadsides and are less likely to survive.

shell) measures about 6 to 15 inches in length. Like most tortoises, it is terrestrial, foraging for grasses, fruit and other plant foods, as well as fungi. The average lifespan is 40 to 60 years, but individuals may survive a century.

Today, gopher tortoises can thrive in well-maintained longleaf forest. There, well-drained, sandy soils are ideal for burrowing, and the abundant sunlight streaming through the open canopy incubates eggs, fosters a dense herbaceous ground cover for food and provides warmth for basking, a major tortoise activity. Longleaf forest owners willing to conduct prescribed burns or otherwise control invasive hardwoods can help the gopher tortoise retain its role as a keystone species of the longleaf ecosystem.

The gopher tortoise is one of the species featured in Environmental Defense's Back from the Brink campaign. For more information, see www.backfromthebrink.org.

> -Margaret McMillan endangered species specialist Center for Conservation Incentives Environmental Defense

Conservation bank offers security to a rare tortoise

Four years ago, another endangered species "train wreck" appeared imminent, with landowners and wildlife on a collision course in Mobile, Alabama. Where county inspectors found occupied habitat for the federally-threatened gopher tortoise, they denied building permits to landowners and developers. But even these curbs on development weren't rescuing the tortoise: Populations continued to decline as the tortoise's longleaf pine ecosystem habitat was lost to urbanization, fire suppression and invasive species.

Then Art Dyas, forester for the Mobile Area Water and Sewer System (MAWSS), stepped forward with an idea. MAWSS owns several thousand acres of upland habitat around Converse Lake, the City of Mobile's source of drinking water. Dyas suggested that MAWSS restore degraded longleaf pine forest for the tortoise and sell conservation credits to landowners and developers seeking building permits. Development could proceed, while the gopher tortoise would have longleaf pine habitat set aside and managed for it.

Dyas, MAWSS, gopher tortoise experts, the U.S. Fish and Wildlife Service and Environmental Defense developed a conservation plan for the tortoise, and in 2001 the Mobile gopher tortoise conservation bank opened for business. Landowners with tortoises on small parcels of isolated habitat can for \$3,500 purchase a gopher tortoise credit which will allow them to proceed with development. After tortoises are tested for disease, they are transferred to the



Translocated gopher tortoises at the MAWSS conservation bank are fitted with radio transmitters and monitored to determine if they are staying on the bank site. Monitoring also tracks their reproductive success.

MAWSS bank site, where habitat is permanently set aside and managed for the benefit of each tortoise.

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Conservation Announcements

USDA awards Conservation Innovation Grants

On September 15, USDA Secretary Ann Veneman announced the winners of the first year's funding for Conservation Innovation Grants (CIG). Awards for the new program went to 41 projects in 29 states for a total of \$14.25 million. When cost share contributions from non-federal partners are included, the total investment in these projects tops \$63 million. The grants will fund the development and adoption of innovative conservation technologies and approaches through pilot projects and field trials. The CIG program is part of the Environmental Quality Incentives Program, administered by USDA's Natural Resources Conservation Service. Selected from nearly 150 proposals, the funded projects address such issues as agricultural air emissions, water quality improvement, water management, livestock nutrient management and marketbased approaches to conservation. Grant recipients include 13 universities, 10 nongovernmental organizations, eight agribusinesses, four state governments, two resource conservation and development councils. two conservation districts and two individuals. The selected proposals receive grants of up to 50% of the total project cost and must provide nonfederal matching funds of at least 50% of the project cost. The list of selected projects and funding awarded is posted on CIG's web site at www.nrcs.usda.gov/programs/cig.

SWCS calls for papers for 2005 symposium

The Soil and Water Conservation Society (SWCS) has issued a call for papers for the 2005 SWCS Symposium to be held in Rochester, New York July 30-August 4, 2005. The conference will address four key topics in plenary and concurrent sessions, symposia, poster sessions and exhibits. The topics are: 1) Managing landscapes for environmental quality; 2) Assessing and communicating the effectiveness of conservation and environmental programs; 3) The growing debate around water use; and 4) Consumer demand and policy effects on agricultural resources. Details are available at www.swcs.org/t_what _callforpapers05TOPICS.htm

Abstract submissions are due November 29. Final decisions on acceptance of abstracts will be made by January 8, 2005. SWCS encourages interested individuals to review submission process details on its web site and take part in the 2005 SWCS annual conference. Submission of abstracts at www.swcs.org/t_what_callforpapers05.htm is preferable, but they may also be faxed to 515-289-1227; mailed to the SWCS office (945 SW Ankeny Rd., Ankeny, IA 50021); or emailed to abstract@swcs.org. For more information, call 515-289-2331.

Scioto River CREP to benefit Ohio's largest, most biologically diverse watershed

n October 18, USDA approved a new \$207 million Conservation Reserve Enhancement Program (CREP) to improve water quality, restore threatened and endangered species habitat and reduce soil erosion in the Scioto River watershed in Ohio. Since 1997, USDA has offered state and local governments the opportunity to create CREP agreements that partner state, local, nongovernmental organization and federal Conservation Reserve Program resources to address agricultural-related environmental concerns of national significance in a highly targeted way at the local level. These programs focus and tailor the Conservation Reserve Program to meet local needs and often use the nonfederal funding to extend environmental benefits through easements or to offer further incentives for instituting practices that are especially beneficial, like restoration of habitat for at-risk species.

Farmers and landowners who choose to participate in this CREP will be paid to restore up to 70,000 acres of wetlands, bottomland hardwood floodplain forest and riparian buffers within the 31 counties of Ohio's largest and most biologically diverse watershed, the Scioto. Permanent conservation easements will be available in five critical subwatersheds. Among them are Big Darby Creek and Little Darby Creek, designated State and National Scenic Rivers, and



Landowners who volunteer to enroll cropland or marginal pastureland in the new Scioto River CREP can receive incentive payments, as well as cost-share money for instituting beneficial land practices.

home to over 100 freshwater species, including federally listed endangered fish and mussels. The Nature Conservancy (TNC) selected the two creeks as a Last Great Place and has worked to conserve them for over a decade.

The water quality benefits of this program should extend as far as the Gulf of Mexico. The CREP conserva-

tion practices, such as restoring wetlands and restoring forested streamside buffers, will help reduce nutrient and sediment flow from the Scioto River watershed, Ohio's largest contributor to hypoxia (low dissolved oxygen levels) in the Gulf of Mexico. Nutrient-rich runoff drains into the Gulf from the Mississippi and Ohio River systems, overfeeding algae that consume the majority of available dissolved oxygen in the water and creating a dead zone devoid of aquatic life.

Other expected water quality benefits include improved drinking water for the City of Columbus, and improved water quality for at-risk, threatened and endangered aquatic species.

The new CREP also pioneers a new approach to addressing subsurface polluted runoff from heavily drained agricultural fields that contributes to high nitrate levels in drinking water supplies. Two USDA agencies, the Farm Service Agency and the Natural Resources Conservation Service, will partner to fund the installation of agricultural drainage management control structures that will treat water to reduce nitrogen loss from those fields by 30 to 60%.



The Scioto River (shown here near Circleville, south of Columbus) and its tributaries cover a 6,300-square mile (4,170,000 acres) area of southern and central Ohio, including portions of 31 counties. Nearly two million people live in the watershed.

The Environmental Defense Center for Conservation Incentives played a critical role in the development of this program. When a state budget crisis stalled the CREP proposal, the Center helped the state restructure the non-federal match while achieving the maximum conservation benefit. The Center worked closely with TNC, a long-standing CREP partner that provided scientific expertise and funding for the permanent conservation easements. Gary Moore of TNC's Ohio field office said, "[Environmental Defense] was absolutely crucial in reviving the project and moving it forward to the signing agreement...." Environmental Defense will continue working to implement the program and recently awarded a grant to Pheasants Forever, another CREP partner, to help conduct outreach to landowners about the new CREP.

For more information on the Scioto River CREP, see www.dnr.state.oh.us/ soilandwater/sciotocrep/execsum.htm.

> -Terry Schley Noto attorney/consultant Center for Conservation Incentives Environmental Defense

Utah WHIP

Continued from page 3 assistance through NRCS. When the agency announced the funding in the small town of Loa near Parker Mountain in August, Senator Bob Bennett, R-Utah, chairman of the Senate Agriculture Appropriations Subcommittee, and



Incentive programs and cooperative efforts are crucial for helping the declining greater sage-grouse. The U.S. Fish and Wildlife Service is reviewing whether the bird should be listed under the Endangered Species Act, and its decision is due in December. Deputy Secretary of Agriculture Jim Moseley were present to applaud and further encourage the PARM Working Group's efforts. The ranchers hope to leverage their first restoration project's success by investing in the same types of treatments where needed over their entire 104,000-acre state land allotment. The PARM group believes applying the treatments in small patches throughout the landscape will create a mosaic of vegetation that will help restore rangeland health and expand suitable habitat for all species that occupy the mountain, including the threatened Utah prairie dog. NRCS hopes the PARM effort will serve as an example that encourages other ranchers to use Farm Bill programs to help solve difficult resource problems on working rangelands.

Conservation Incentives thanks Jeremy Maestas, wildlife biologist, Natural Resources Conservation Service, Salt Lake City, Utah, for this article.

Conservation bank

Continued from page 6

Landowners like the concept, and the tortoises appear to be doing well. The 220-acre bank site began with 12 tortoises, and today there are nearly 60. An intensive monitoring program shows that translocated tortoises are remaining on the site, and that, for the first time in many years, they are reproducing. MAWSS is also pleased with the bank and considering enlarging it.

For the gopher tortoise and other species, conservation banking has transformed an endangered species from a regulatory nuisance into a marketable asset. Although the gopher tortoise is still struggling to survive throughout its range, the conservation bank ensures that the tortoise and its native ecosystem will remain a part of Mobile County's natural heritage for a long time to come.

More information about the MAWSS gopher tortoise bank is at www.mawss.com/gopher.htm

> -Robert Bonnie managing director Center for Conservation Incentives Environmental Defense

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ENVIRONMENTAL DEFENSE

finding the ways that work

The Environmental Defense Center for Conservation Incentives

The Environmental Defense Center for Conservation Incentives was launched in 2003 with major support from the Doris Duke Charitable Foundation to further the conservation of biodiversity on U.S. private lands through the use of incentives. The Center works with landowners, conservation organizations and government agencies to develop place-based projects that demonstrate the utility of incentives in conserving habitats on private lands. The Center also works to influence the development and implementation of national and state incentive programs and policies. Headquartered in the Washington, DC office of Environmental Defense, the Center also has staff in all of the regional offices. We thank the Doris Duke Charitable Foundation and Robert Wilson for their generosity in funding this work.

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> The Center for Conservation Incentives Environmental Defense 1875 Connecticut Avenue, NW Washington, DC 20009 (202) 387-3500

Michael Bean & Tim Searchinger, co-directors Robert Bonnie, managing director Margaret McMillan, newsletter editor Ann Karpinski, newsletter designer and subscription manager

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