



Stewardship

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News

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Audubon Partners for the Environment Set for an Exciting Year

BY JEAN MACKAY

In the months ahead, Learning Manager Eleanor Grinnell will lead a select group of high school students from Community Based Occupational Education/Triumph High School in Cheyenne, Wyoming, in conducting water analysis, runoff monitoring, and bird counts at Cheyenne Airport Golf Course, a Certified Audubon Cooperative Sanctuary. If a grant from the Laramie County Conservation District goes through, students will also build an osprey platform.

Midway across the continent, 425 elementary students at Hinckley Elementary in Hinckley, Ohio, under the guidance of Principal Stacie Rastok and her staff, will be feeding birds and planting gardens for wildlife. And in Eufaula, Alabama, 400 students at Bluff City Elementary School are planning a "Favorite Places Art Show" and ABC book to build awareness about their local environment and community.

These projects are just a small sampling of what is in the works this year as nearly 60 schools across the country gear up for participation in the Audubon Partners for the Environment program. The new program, which is replacing the Audubon Cooperative Sanctuary Program for Schools, is geared toward helping students not only *learn about* the environment, but also *care for* wildlife, water, plants, and natural resources close to home. Participation teaches respect and responsibility, while boosting science



Students at Bluff City Elementary School in Eufaula, AL, have participated in environmental stewardship projects since 1998, in partnership with Audubon International and local sponsor Johnson Outdoors. This year, the school will continue its efforts as an Audubon Partner for the Environment.

learning and environmental knowledge.

Audubon Partner schools (and youth organizations) choose from environmental projects that cover five themes: wildlife, water, environmental education, eco-efficiency, and community. Each school agrees to complete at least one environmental improvement project during the school year and document its results. Audubon International provides educational and project information and staff support, as well as awards and recognition for completed projects.

Seventy-five percent of Audubon Partner schools are able to participate thanks to the generosity of another critical partner: golf courses and businesses enrolled in the Audubon Cooperative Sanctuary Program. These often unsung heroes recognize

the need for greater environmental education and agree to sponsor a local school. But many go much further than paying the school's registration fee. They routinely donate equipment, labor, and know-how to help schools get started on environmental stewardship projects.

A good example is Ron Conard, superintendent at Cheyenne Airport Golf Course, who has been working with Community Based Occupational Education since 2000. Conard offers the golf course as a "learning lab" where students put science learning into action. At the same time, they help Conard obtain data that fulfills ACSP certification criteria. Everyone benefits.

We look forward to reporting on the progress of Audubon Partner projects as schools get started and document their results. After all, *positive results*—for students and schools; for wildlife, water, and the environment; for partner organizations; and for Audubon International—are *our aim*. Together, we can achieve far more than any of us can do alone. ●

To find out more or to adopt a local school or youth organization, contact Jean Mackay, director of educational services, at jmackay@auduboninternational.org or (518) 767-9051, ext. 13., or visit www.auduboninternational.org/programs.

Dear Members and Supporters,

The news from the Louisiana, Mississippi, and Alabama Gulf Coast on the devastation in the wake of Hurricane Katrina has been overwhelming. Our hearts and best wishes go especially to our colleagues, members, and friends who have been displaced or whose homes, offices, golf courses, or businesses have been damaged or destroyed.

We think of the storm as a natural disaster, but many of its impacts can be laid to human activity or neglect. Years of draining, filling, and building on wetlands along the Gulf Coast, for example, destroyed the natural buffers that store and absorb stormwater and protect uplands from catastrophic storms. As Audubon International has said for years, we all can do better and must start now. In New Orleans actions should have been taken years ago; many warnings went unheeded.

A disaster like Katrina or 9/11, whether natural or man made, is a wake up call; but too often we simply hit the snooze button after a few weeks and go back to sleep. We lull ourselves into believing everything will be OK; technology—or “government”—will fix everything. As we can see, they won't. We need to wake up, get out of bed, and get busy re-thinking how we manage our lives, country, communities, neighborhoods, businesses—our environment and our futures.

Audubon International promotes the concept of “sustainable communities.” Put simply, sustainability is the *ability to keep oneself or one's business or community going*. New Orleans can't without an enormous injection of artificiality. Yes, there are many things about New Orleans that I treasure and I hope the best of it lives again. But surely we can rebuild in a more sustainable manner and in the process rebuild some human lives in a more sustainable manner.

Your participation in an Audubon International program and commitment to make sound economic and environmental decisions are important steps down the path of sustainability. I hope you never suffer a disaster like Katrina. Ask yourself, “If my home, my property were subject to a disaster, have I done everything I can to be able to sustain them and resiliently ‘bounce back’ from catastrophe?” Don't wait to see yourself on the news. Get up tomorrow and start taking action right where you live and work. Get involved in your community and be a catalyst for sustainable community-wide management. Your future just may depend on it.

Regards,
Ronald G. Dodson

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46 Rarick Road
Selkirk, New York 12158
(518) 767-9051
www.auduboninternational.org

You can reach our staff via e-mail by typing the person's *first initial, full last name @ auduboninternational.org*. e.g., jmackay@auduboninternational.org

ADMINISTRATION

Ronald Dodson, President
R. Eric Dodson, Manager, Sustainable Communities Campaign
Kevin Fletcher, Director of Programs and Administration
Howard Jack, Vice President
Mary Jack, Executive Assistant to the President
Paula Realbuto, Executive Assistant for Operations

AUDUBON COOPERATIVE

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Peter Leuzinger, Great Lakes Field Office
Jeremy Taylor, Staff Ecologist
Shawn Williams, Staff Ecologist
Joellen Zeh, Program Manager

AUDUBON SIGNATURE PROGRAM

Nancy Richardson, Signature Program Director
Linda Snow, Administrative Assistant, Signature Program

AUDUBON SOCIETY OF NEW YORK STATE

Fred Realbuto, Director

EDUCATION DEPARTMENT

Jean Mackay, Director of Educational Services

ENVIRONMENTAL PLANNING DEPARTMENT

Sarah Anderson, Natural Resource Manager
Natalie Archambault, Project Administrator
Rich Henderson, Manager
Alicia Oller, Director of Technical Services
Charles Peacock, PhD, Senior Scientist
Miles (Bud) Smart, PhD, Director of Environmental Planning
Larry Woolbright, PhD, Director of Wildlife Conservation Services

MIS DEPARTMENT

Alicia Karas, Manager of Computer Services

SUSTAINABLE COMMUNITIES PROGRAM

Peter Bronski, Coordinator

University of Florida Achieves Designation as a Certified Audubon Cooperative Sanctuary

The University of Florida has recently been awarded designation as a Certified Audubon Cooperative Sanctuary from Audubon International. It is the first university to achieve this high honor for its environmental achievements.

"Through the combined energy and wisdom of many, the University developed a Master Plan that emphasizes the values of academic excellence, sustainability, and community partnership," states Fred Cantrell, Associate Vice President for Finance and Administration at the University of Florida. "What the University was doing seemed to fit seamlessly with the goals and objectives of the Audubon Cooperative Sanctuary Program."

The University of Florida's latest accomplishment expands on a partnership with Audubon International that has been growing for several years. The University of Florida Program for Resource Efficient Communities (PREC) and Audubon International co-hosted summits in 2003 and 2005 to engage a variety of stakeholders and strengthen efforts to foster sustainable development in Florida. PREC has also been helping to launch Audubon International's Sustainable Communities Campaign in the state. ●



The University's Conservation Area Land Management Work Group comprised of faculty, staff, community members, and students, inventoried the conditions of each conservation area on campus to establish goals for wildlife and habitat conservation.

ClubCorp Agrees to Purchase Cleaner Electricity

Longtime Audubon International supporter ClubCorp is now greener than ever. In addition to the management company's commitment to enroll its golf course in the Audubon Cooperative Sanctuary Program for Golf Courses, it announced recently that it is purchasing cleaner electricity to power its golf courses and clubs in South Texas. The electricity will be purchased from Austin based Green Mountain Energy Company, and will make ClubCorp the first company in Texas to power its golf courses using cleaner electricity. Thirteen clubs and golf courses in South Texas will be using the electricity, including ACSP members Atascocita Country Club, Bay Oaks Country Club, The Club at Cimarron, The Club at Falcon Point, and Kingwood Country Club. Combined, they will reduce carbon dioxide emissions by more than 3.3 million pounds each year, the equivalent of not driving 3.7 million miles per year. ●

Dodson to Serve on Urban Land Institute Sustainable Development Council

Audubon International President Ronald Dodson has been appointed to serve on the Urban Land Institute Sustainable Development Council. The Urban Land Institute (ULI) promotes responsible leadership in the use of land in order to enhance the total environment, which is a perfect fit with Audubon International's emphasis on stewardship and sustainability. The council provides a forum for land use and development professionals, working in the public and private sectors, to exchange ideas on how to improve state and local land use policy and development practices. In November, Audubon International staff Ron Dodson, Rich Henderson, Nancy Richardson, and Bud Smart will attend ULI's Fall Conference and trade show in Los Angeles to showcase the Audubon Signature Programs and Sustainable Communities Campaign. ●

Nest Box Survey Results 2004

2004 was a good year for birds that use nest boxes on Audubon members' properties according to our 2004 nest box survey (surveys from 2005 are still coming in). Reports from 1,467 nest boxes on 86 properties revealed the highest rate of nest box success ever reported, with 79 percent of young birds successfully fledged. Members recorded a total of 5,069 young, including bluebirds, swallows, wrens, and chickadees.

Look for your 2006 Nest Box Survey in March. We encourage everyone to participate! Whether you have one box or 100 boxes, your data is valuable to us as we measure our collective success. A variety of information regarding building, mounting, and monitoring nest boxes can be found in our online fact sheet library *e-Source*, at www.auduboninternational.org/esource/index.htm. ●

Sound Environment, Smart Marketing

BY JEREMY TAYLOR

In today's business climate, it never hurts to have an advantage over your competitors. Marketing plays a big role in attracting and keeping clientele; and, while some spend millions of dollars in their marketing campaigns, that is not always possible or necessary. Membership in Audubon International programs can help with marketing, and may even generate free publicity for your organization.

"Marketing is a big advantage of being involved with the Audubon Cooperative Sanctuary Program," says Jason Snyder CGCS, Chief Operating Manager at Short Hills Country Club in northwest Illinois. "In today's environment, being environmentally responsible is of major importance in every business and achievements in this area are newsworthy accomplishments. For a private club marketing is tricky. However, when your club is praised for your efforts in the paper, it is a goldmine of free advertising."

The best marketing starts with environmental action and good results. Otherwise, your organization runs the risk of being accused of *green washing*—talking the talk without actually walking the walk. Short Hills Country Club garnered positive attention because it has a lot to show. The club achieved designation as a Certified Audubon Cooperative Sanctuary in 2003 under the leadership of Snyder, who was superintendent at the time.

Snyder and his staff undertook a number of projects that enhanced the wildlife habitat value of Short Hills and protected the local natural resources. Projects ranged from attracting bluebirds, purple martins, bats, and bees with nesting structures to enhancing fish habitat to improving water quality by buffering lake shorelines. The lake buffers resulted in savings of approximately \$400 per year in reduced labor and equipment

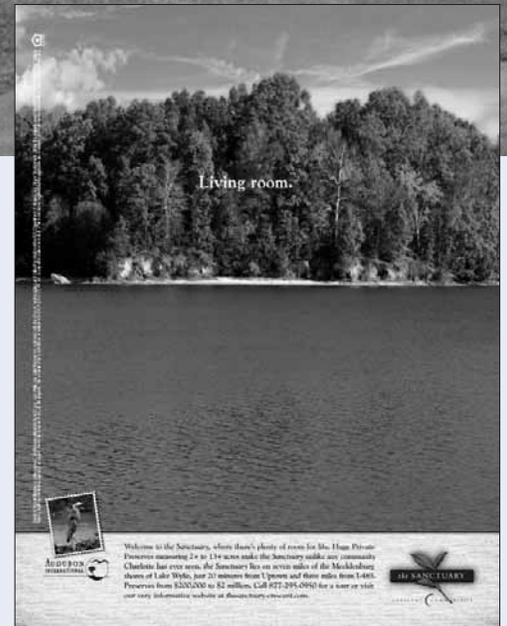


Members of Audubon International programs can turn their environmental accomplishments to market advantage. Short Hills Country Club in Illinois recently garnered positive media coverage for its outstanding environmental practices.

wear and tear costs—which provided another excellent story to share with club members and media alike.

Snyder's efforts garnered attention from two local newspapers and *Outlook*, a publication of the Club Manager's Association of America. His experience is not unique. Last year, Audubon International members were featured in numerous local and national publications, including: *The New York Times*, *Wisconsin Trails Magazine*, *Builder Magazine*, *the Gainesville Times*, *Golfdom*, *Charlotte Daily Progress*, *Platinum Coast Golf*, *Gold Coast Sun*, and *The Sydney Morning Herald* (Australia), to name a few.

In addition, Audubon International program members often use their brochures, Web sites, yardage books, advertisements, and other promotional materials to capitalize on their rela-



Advertising

Members of Audubon International programs may use their environmental accomplishments to attract clients. WCI's Evergrene, in Palm Beach Gardens, FL, and Crescent Resources' The Sanctuary, in Charlotte, NC, both Certified Audubon Gold Signature Sanctuaries, are specifically marketed to home buyers looking to live in concert with the environment. "The environment is a cornerstone of our positioning for The Sanctuary," says Paige Grisette, Marketing Director for Crescent Resources (The Sanctuary's developer). "Incorporating Audubon International into our message and graphics is a third-party endorsement that piques interest and adds credibility to our nature-sensitive promotion."

tionship with Audubon International and showcase their environmental achievements, while trying to attract new clientele. Members that have achieved certification and Audubon Green Leaf Eco-rated hotels can go a step further by advertising their ratings and membership status to attract governmental organizations and business clients that are required to utilize environmentally-friendly facilities.

“I think that the biggest positive of the program is the tremendous sense of pride and value that it adds to my job and to the jobs of the rest of the staff involved in the various projects,” reflects Snyder at Short Hills. That’s reason enough for most of our members to participate. But turning that participation into market advantage that enhances your organization’s reputation and value is a smart move, too. ●

A Family Tradition

Founded in 1943 by John L. Griffin, Griffin Industries is a family owned and operated company. Headquartered in Cold Spring, Kentucky, Griffin Industries is a recognized international manufacturer of bio-degradable and renewable resources used in chemical, agri-cultural, and industrial markets.

With over 30 plants and 1,000 employees, Griffin produces superior products through stringent quality control standards meticulously followed on site laboratories and thru the art Central Laboratory. Dependable quality is the hallmark of Griffin Industries. For over 40 years, Griffin proudly produces customers the quality they expect and the peace of mind only the strict demanding quality assurance program can deliver.

Renewable America

Innovative products developed from renewable raw materials are certain commercial chemicals as long as they are produced in a responsible manner. Regulations to eliminate changes in non-compliance as high performance formula components, the Vol methyl esters are non-toxic, compliant. As a domestically sensitive product, VersaGen oriented and cost-effective tomorrow's challenges today.

Environmental Leadership

Griffin's commitment to product and service excellence is further supported by a proactive approach to environmental stewardship. In the 1990s, Griffin approached Audubon International with an interest in establishing a blueprint for environmental excellence. As a result of those discussions, Griffin certified all operations as Audubon Cooperative Sanctuaries, recognizing the company as a model for successful environmental stewardship.

FOCUS ON STEWARDSHIP
The Environment

Environmental Stewardship is a vital part of Griffin Industries' business philosophy. As a leading provider of insect and herbicide products, Griffin has for over 40 years practiced the principles of sustainability. This commitment to the environment is extended through state-of-the-art manufacturing practices into products such as Nature Safe® Natural & Organic Fertilizers.

ENVIRONMENTAL STEWARDSHIP
To validate the company's stewardship practices, Griffin Industries has certified its plant locations through Audubon International's Cooperative Sanctuaries System (CSS). Like thousands of golf courses and other properties that are members of ACS, Griffin believes that sustainable resource management is not only an environmental responsibility, but also sound business.

RECOGNITION
Property managers are recognizing that great business decisions can also have positive impacts on the environment. To further promote this recognition, Nature Safe continues an award-winning campaign, recognizing others of their environmental stewardship practices. Ask your Nature Safe distributor for details.

AUDUBON COOPERATIVE SANCTUARY SYSTEM
Your facility can play a significant role in enhancing and protecting wildlife habitat and natural resources. The ACS provides an advisory information service to help you identify sensitive environmental projects and achieve greater recognition for your efforts. Together with the ACS you can improve the quality of the environment through stewardship. Nature Safe has sponsored the above mentioned signs further detailing the benefits of becoming an Audubon member.

ACS BENEFITS

- Associates with a program that is improving the quality of the environment by actively involving stewardship activities.
- Provides ongoing technical support for implementing environmental projects.
- Improves customer relationships as your property becomes a showpiece for environmental excellence.
- Keeps you publically proud for you and your business along with a price to follow ensuring your support.
- Helps turf managers recognize and avoid their environmental activities.
- Becomes part of a stewardship network.
- Protects and improves land, water and air for future generations.
- Having natural resources taken into account.

TO OBTAIN MORE INFORMATION CONTACT:
Audubon Cooperative Sanctuary System
c/o Audubon International
40 Ranch Road
Suffolk, New York 11778
Phone: (516) 767-9051
Fax: (516) 767-9076
www.audubonintl.org

Nature Safe
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A Division of
Griffin Industries, Inc.
4221 Alexandria Pike
Cold Spring, NY 11724
(800) 232-8121
www.naturesafe.com

Audubon International Certification

Signature Certification is awarded to new developments, which are designed, constructed, and maintained according to Audubon International's precise planning standards and environmental disciplines.

Audubon International is an environmental organization whose mission is to improve the quality of the environment through research, education and conservation. To become certified, we were required to design and implement a Natural Resource Management plan for the property by addressing Wildlife Conservation and Habitat Enhancement, Visitor Quality Monitoring and Management, Integrated Pest Management, Water Conservation, Energy Efficiency, and Waste Management. For further information on the Audubon program, log on to www.audubonintl.org

AUDUBON INTERNATIONAL
Certified Signature Sanctuary

Bullwinkle Golf Club is Canada's First Audubon International Certified Signature Sanctuary.

Web Sites

Many Audubon International program members take advantage of their Web sites to help promote environmental efforts at their facilities and attract new clientele. Web sites include information about Audubon International membership and achievements, and may also feature the unique wildlife, plant communities, and environmental projects at member properties. This Web page from Ballantrae Golf Club, in Ballantrae, Ontario, highlights its status as a Certified Audubon Bronze Signature Sanctuary, and the first Audubon International Certified Signature Sanctuary in Canada.

Indian River Club
BIRD EXPEDITION CERTIFICATE

This certificate entitles BEARER to attend one Audubon Bird Expedition. Expeditions are held once a month at the Indian River Club. Please call Sandy Young at 772-270-2135 to make arrangements. Certificate valid October through April.

4/30/05
Authorization: _____ Expiration Date: _____

AUDUBON INTERNATIONAL
Certified Signature Sanctuary

Special Promotions

Here's a creative idea from Indian River Club, a Certified Audubon Bronze Signature Sanctuary in Vero Beach, FL. The club distributed these Bird Expedition Certificates to guests and participants of charity events and to local schools, allowing non-members to participate in Indian River's monthly bird walks. The certificates are a subtle way to introduce people to the club and how it offers sanctuary to local wildlife.

LOGO USE: When an Audubon International member achieves designation as either a Certified Audubon Cooperative Sanctuary or a Certified Audubon Signature Sanctuary, it receives an Audubon International logo to use in its marketing and promotional efforts. Members use the logo in a variety of ways, including displays, signage, brochures, posters, yardage books, newsletters, Web sites, and business cards. **The privilege of logo use is reserved for certified properties only to show that Audubon International environmental standards have been met.**

Out of Control

BY JEAN MACKAY

Think kudzu vines stretching from the ground to the tree tops, strangling everything in sight. Think miles of zebra mussels clogging water intake pipes in the Great Lakes. Think hemlock woolly adelgid, the single greatest threat to the health and sustainability of hemlocks (*Tsuga species*) in eastern North America. Think Eurasian watermilfoil, hydrilla, water chestnut, Japanese knotweed, melaleuca...the list of invasive exotic species now established in North America goes on and on and on.

Originally from some place else in the world, they arrive and then transform their new homes. They're like getting served a large baked potato with Chinese chicken chow mien or Italian sausages cooked with curry. Add an ingredient that doesn't belong, and it changes the flavor of the dish. Add an exotic invader and it literally changes the nature of the place it's in.

In many ways, invasive exotic species are plant and animal champions, able to out-compete, out-produce, out-number, and eventually overtake fellow members of the natural communities in which they show up. For a variety of reasons, they live within their bounds where they originated, but run amok when established elsewhere.

So what's so bad about these ultimate survivors? For one thing, they're costing us billions. According to Cornell University researchers, the United States spends an estimated \$138 billion per year on major environmental damages and losses from non-indigenous species. Control of invasive weed species in lawns, gardens, and on golf courses leads consumers to consume \$36 billion worth of chemicals per year.

But we also pay a hefty price in



Originally from Brazil and Argentina, tropical soda apple has invaded millions of acres of Southeastern pastures and lawns. Like many invasive species, it reproduces prolifically. Each plant can produce more than 50,000 seeds; it can also reproduce vegetatively from old crowns, root segments, and branches.

terms of the loss of biological diversity. About 42 percent of the plants and animals on the threatened or endangered species lists are at risk primarily because of competition with and predation by non-indigenous species.

How do invasives get here?

Look no further—people have brought most non-native plant and vertebrate animal species here intentionally. Exotic species have been introduced for food, fiber, ornamental landscaping, biological pest control, sport, and pets. Many never become problematic, but those that do can cause serious damage.

Unintentional invaders, including the majority of invertebrate and microbe introductions, are often accidental travelers carried in ship ballast or via plants or soils. Fire ants, Formosan termites, zebra mussels, and European green crabs are prime examples of this group. Though points of entry are strictly monitored and controlled by the Department of Agriculture, identifying these pests often amounts to finding a needle in a haystack—and that's all it takes to begin a new invasion.

Global economy and travel, coupled with the alteration and

simplification of many natural environments, have enormously increased the potential for species invasion. That leaves land managers scrambling to stop the spread of invasives and restore native plant communities.

What can be done about invasive species?

Prevention is the most cost effective and environmentally-safe method to manage invasive and exotic species. Short of that, detection, control, and eradication are the chief methods of dealing with invaders. National and state/provincial governmental and non-profit organizations identify noxious species, research control methods, and educate the public about halting their spread. But land managers are key to working on the front lines to identify and control the spread of invasive species.

Removing invasive exotic species is all in a days work for many Audubon program members (see related article on page 7). But all of us can help by learning more about the native plant communities that make our corner of the world unique, and doing our part to protect and enhance their health and diversity.

CASE STUDY:

Tropical Soda Apple Takes a Hit with the Help of a Tiny Herbivore

BY ALICIA OLLER AND KELLEY PETERMAN

Many of Audubon International's Signature and Sanctuary Program members are very familiar with invasive species and the time, labor, and money it takes to control them. Members in Florida, in particular, seem to have more than their fair share. The significant impact that agriculture and development have had already on Florida's unique natural communities leaves them especially vulnerable. And the state's climate, nearly year-round growing season, and abundant rainfall give many invasive species a leg up.

Thus, it was no surprise to find a growing invasion of tropical soda apple (*Solanum viarum*) and Chinese tallow (*Sapium sebiferum*) on 1,217 acres of former citrus grove and pasture in Orlando, slated to become the Eagle Creek Golf Club and Community. The project is enrolled in the Audubon Silver Signature Program and exotic species removal is part of the management plan for the natural areas that will be preserved on site.

Eagle Creek representatives mechanically girdled most of the Chinese tallow trees and treated them with herbicides, which is a typical management strategy for many invasive plants. While successful with Chinese tallow, this approach hasn't been very effective with tropical soda apple, due to the enormous number of seeds each plant produces. As an alternative, the United States Department of Agriculture (USDA) approved the tortoise beetle (*Gratiana boliviana*) for field release in Florida in 2003 as a biological control for tropical soda apple.

The biological control of invasive plant species is based on the principle that a plant in its native region is kept in check by insects or other plant-eating organisms. The tortoise beetle's job is to feed on the leaves of the tropical soda apple and,



The adult female tortoise beetle (top) rapidly reproduces, generating an average of 300 eggs in its short life cycle. The larva and adults feed on the leaves of the tropical soda apple and, ultimately, destroy the plants (above).

ultimately, decimate the plant. After experiencing only marginal success in our two years of controlling tropical soda apple with herbicides at Eagle Creek, we released 800 leaf beetle adults and 200 larvae on 20 host plants in a five-acre enhancement area in June 2005.

Dr. Julio Medal, University of Florida, Institute of Food and Agricultural Sciences (IFAS) extension is assisting us in this effort and monitoring our results closely. Each month, we record plant height, diameter, percent defoliation, number of adult and larval beetles observed, and fruit production on each of the twenty release plants. Every 10 days we place an insecticide on five plants in the vicinity of the release to serve as a control group. Eventually, we will formalize and present our

data to the University of Florida, IFAS extension to add to their knowledge base about the effectiveness of this biological control.

As the first privately-held project in Florida to secure use of the beetle, we are pleased to participate in research that may help others control the spread of tropical soda apple. Our initial results seem promising, and we look forward to the day when our preserve areas are thriving natural habitats. ●

Alicia Oller is Director of Technical Services for the Audubon International Environmental Planning Department. Kelley Peterman is Associate Ecologist for Glattig Jackson Kercher Anglin Lopex Rinehart in Orlando, FL.

When the Well Runs Dry: Williamston's Water Crisis

BY PETER BRONSKI

At first glance, the town of Williamston, North Carolina, hardly seems a community in the midst of a water crisis. The flowing Roanoke River, the lush green vegetation blanketing the landscape, the rich Cypress-Tupelo swamps, the 50 inches of annual rainfall, and even the estimated twelve inches of rain dropped on eastern North Carolina by Hurricane Ophelia, all suggest abundant local supplies of water. Yet they offer a false impression, disguising a crisis lurking just below the surface.

North Carolina's Central Coastal Plain—in which Williamston is squarely centered—is a region utterly dependent not on surface water, but on groundwater aquifers. And those aquifers are in peril.

Communities in eastern North Carolina developed a dependence on groundwater aquifers thanks to the aquifers' high quality water and ease of development. Over time,

communities tapped into a maze of overlaying aquifers for their water supplies, including the Cretaceous Aquifer System (comprised of multiple related aquifers like the Black Creek and Upper Cape Fear), which has become their primary aquifer source.

Today, groundwater aquifers supply more than two-thirds of the water for a 15-county area of the Central Coastal Plain, accounting for more than 64 million gallons of water per day—nearly half of which is for residential use. But beginning in the early 1990s, rising consumption and a growing population increased demand until it exceeded the aquifers' ability to replenish. Now, those aquifers are drying up and otherwise changing in ways that spell disaster for communities like Williamston.

Understanding the Problem

As groundwater withdrawals continued to increase throughout the 1990's, a number of serious problems began to emerge. By 1998, water levels in the aquifers were dropping by as much as eight feet per year. In some places, the water level had already dropped to 150 feet below the surface of the aquifer. Freshwater aquifers were also being overrun by saltwater intrusion—as communities pumped more and more water from their freshwater aquifers, the freshwater-saltwater boundary line marched steadily inland from the Atlantic Ocean and from Albermarle and Pamlico Sounds. At the turn of the millennium, 44 of the 122 public water systems were in danger of sustaining permanent damage as a result of these changes.

And there was little sign that things would get better. According to an estimate from the North Carolina Rural Economic Development Center, by the year 2020 the average daily water demand for the 15-county area

was expected to increase by 54 percent, reaching 147 million gallons per day. Without substantial changes in consumption and withdrawal, the balance of water supply and demand was only going to get worse.

Finding a Solution

In 2002, the Water Resources Division of North Carolina's Department of Environment and Natural Resources stepped in to regulate the problem. The Division's strategy was to force mandatory reductions in groundwater withdrawals aimed at halting, or perhaps even reversing, the damage that had already been done to the aquifers.

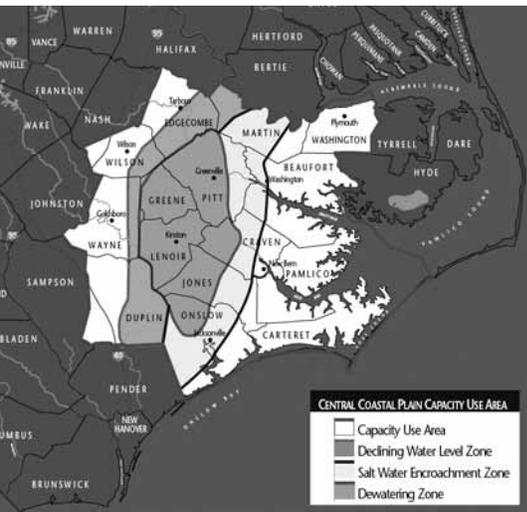
Williamston's Martin County was hit with some of the tightest restrictions, forced to reduce withdrawals by 75 percent, or 3.4 million gallons per day, by the year 2018. It doesn't help that, mandatory withdrawal reductions aside, Williamston's current water supply is projected to run a 2.84 million gallon per day deficit by 2020.

Naturally, everyone's attention has shifted to finding a solution to such a pressing problem. A town without water is a town that cannot exist. The North Carolina Rural Economic Development Center stepped up to the plate, studying a myriad of options, such as tapping into additional groundwater aquifers, developing surface water features like rivers, and developing brackish water sources with reverse-osmosis technology (desalinating salty water).

The Center published its findings in the report, "Water Woes in Eastern North Carolina: Facing the Facts, Reaching Solutions." Unfortunately, that report didn't offer encouraging news for Williamston. In a matrix of fifteen possible solutions, only seven applied to Williamston. Of those seven, four were considered entirely unfeasible on economic, regulatory, or environmental grounds, and



The Roanoke River forms the northern boundary of the Town of Williamston and plays an important role in the local environment and the cultural history of the region. But it's the water under the ground, and how residents use it, that holds the key to the future of the community.



another option did not have the capacity to meet the town's needs. Even if the town chose to attempt the "unfeasible" solutions, the anticipated cost of those projects was expected to hit \$12-30 million, or roughly \$2,000-4,000 per resident.

Such an economic burden was an impossibility for Williamston residents. Unemployment rates in 2001 in Martin County were 8.2 percent; the median household income just under \$29,000; and as of 1999, 20 percent of the population was living in poverty.

That left only two possible solutions: conservation and reuse.

Towards a More Sustainable Williamston: Audubon International's Role

As Audubon International and Williamston began working together through the Sustainable Communities Program, water immediately figured as a prominent focal point, not just as an environmental issue, but also as a core of the long-term health of the community. And while local leaders clearly understood this importance, two questions remained: Did the community at large understand the magnitude of the problem? And if so, were they willing to do anything about it?

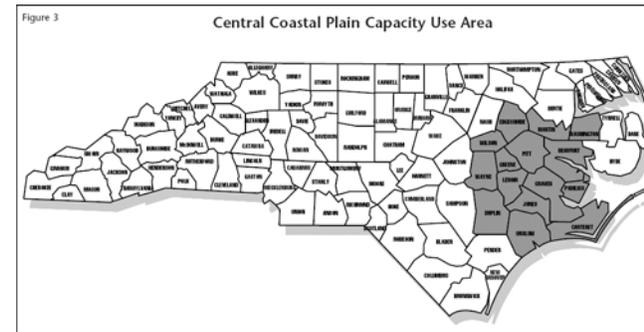
Audubon International's "Treasuring Home Pledge" helped to provide the answers. Residents throughout Williamston were surveyed about

The 15-county Central Coastal Plain of eastern North Carolina is home to more than 900,000 people, most of whom rely on dwindling and impacted groundwater aquifers for their water supply.

what they consider to be the most important environmental concerns facing their community and asked to pledge their commitment to a variety of conservation practices. Surveys continue to come in, but already, the answer is abundantly clear. Greater than one out of every three Williamston residents consider water—either water quality or the availability of a dependable supply—to be the most important issue facing their town (respondents answered "water" three times more often than the next most popular answer).

This is good news. Residents are aware of the impending water crisis and willing to make adjustments at home to help the town save water.

Audubon International and the Town of Williamston are taking things a step further by implementing a variety of projects, policies, and other activities designed to address the town's water needs. The town is



Serious problems like declining water levels and saltwater encroachment plague the groundwater aquifers of the Central Coastal Plain, threatening the future of towns like Williamston.

consumption, Williamston's greatest demand for the resource.

Solutions will take time to implement, but already momentum is growing rapidly. If things evolve according to plan, by 2020 the water situation will look much different

A town without water is a town that cannot exist.

kicking off an education campaign that includes demonstration and environmental restoration projects designed to showcase water conservation techniques and aid in groundwater recharge. Town facilities will be switching to water conservation devices, such as low-flow faucet fixtures and half-flush toilets, and the town is investigating an incentive and rebate program to help homeowners do the same. Audubon International and Williamston are also working with researchers from Cornell University to build a model green home to showcase ways to dramatically reduce residential water

than it does today—per capita demand for water will be down thanks to a commitment to conservation, and the town will derive its water from sources that, rather than being depleted, will be stewarded in ways that will sustain the town for the foreseeable future. Most importantly, Williamston is facing the problem. It's by addressing issues like water supply and demand today that communities like Williamston can plan for a better tomorrow. ●

Truckee, California

BY RONALD DODSON

President and CEO Ron Dodson travels extensively on behalf of Audubon International and its programs. His reports from the field inspired our first newsletter, *Field Notes*, and will now resume as a regular column in *Stewardship News*.



Old Greenwood blends championship quality golf with a spectacular natural environment.

The sky was robin egg blue, the air was crisp, clear, and refreshingly cool, and four hardy Audubon International staffers were in Truckee, California, to tour two Audubon Gold Signature projects and visit with the leadership of East West Partners, a Colorado-headquartered development company that is spearheading the projects.

Truckee is about 45 minutes west of Reno, Nevada, but from an ecological point of view it might as well be a thousand miles. While Reno sits squarely in the desert, Truckee is in the Sierra Nevada range of mountains, about 30 minutes north of Lake Tahoe. It is a snow skiing Mecca and a hikers dream.

On this trip, Audubon staff

Alicia Oller, Sarah Anderson, Pete Bronski, and I were touring the Old Greenwood and Gray's Crossing community developments. Old Greenwood is a golf course community development of striking beauty that recently became the first Certified Gold Signature Project in California. Gray's Crossing is also a golf and residential community development that has just started construction activities.

Visiting the Truckee area and the two projects was a grand experience. The beauty of the area made it hard to decide which way to look. From the towering Jeffrey pines around the golf course to the craggy snow covered peaks in the distance, the area was a visual buffet of greens, grays, golds, and a variety of shades



Sarah Anderson and Peter Bronski were among the Audubon International staff who toured Old Greenwood and Gray's Crossing and discussed future projects with the developer, East West Partners.

that defy interpretation. Joel Blaker, Director of Agronomy, and Jon Moulton, Natural Resource Manager, for both Old Greenwood and Gray's Crossing have done masterful jobs in blending championship quality golf with the natural environment.

The beauty of the region is a far cry from the historically significant events that occurred in the 1880's when the infamous Donner Party attempted and failed in their efforts to cross the mountains just about five miles to the west of Old Greenwood. We drove up to the area, now known as Donner Pass, to take a look around. Again, we were struck by the rugged beauty of the place. By mid-October the roads will be closed for the winter and the snow will start falling, accumulating to more than 300 inches.

Congratulations to all that are involved in the East West Partner projects in Truckee. We are proud of their outstanding environmental efforts and accomplishments and we look forward to many return visits to Truckee, California. ●

AUDUBON COOPERATIVE SANCTUARY PROGRAM

This list includes membership activity from July 19 through September 26, 2005.

NEW MEMBERS

Golf Program

International

Garibaldi Springs Golf Resort, Garibaldi Highlands, British Columbia
New Ashburn Golf Club, Halifax, Nova Scotia
Old Ashburn Golf Club, Halifax, Nova Scotia
Smugler's Glen Golf Course, Landsdowne, Ontario

Arizona

Lake Powell National Golf Course, Page
Quintero Golf and Country Club, Peoria

California

Swenson Park Golf Course, Stockton
Van Buskirk Golf Course/Lyons Golf Course, Stockton

Colorado

Glacier Club, Durango

Connecticut

Club at River Oaks, Sherman
Indian Hills Country Club, Newington

Florida

Country Club at Boca Raton, Boca Raton
Lake Jovita Golf and Country Club—North Course, Dade City
Lake Jovita Golf and Country Club—South Course, Dade City
Links at Greenfield Plantation, Bradenton
Okeehelée Golf Course, West Palm Beach
Wycliffe Golf & Country Club, Lake Worth

Georgia

Meadow Links at George T. Bagby Golf Course, Social Circle
Summit Chase Country Club, Snellville

Illinois

Eagle Ridge Resort and Spa, Galena

Maine

Cape Arundel Golf Course, Kennebunkport

Maryland

Atlantic Golf at South River, Edgewater

Massachusetts

Green Hill Municipal Golf Course, Worcester
Needham Golf Club, Needham

Minnesota

Mississippi National Golf Links, Red Wing

New York

Garrison Golf Club, Garrison

North Carolina

Connestee Falss Golf Course, Brevard

Tennessee

Champions Club at Hampton Creek, Doltewah



Congratulations! Minnesota Valley Country Club in Bloomington, under the direction of Superintendent Michael Brower and Assistant Superintendent Troy Lang, has been a Certified Audubon Cooperative Sanctuary for 10 years. The course's bluebird nest box trail fledged 116 young birds in 2004!

Virginia

Old Trail Golf Course, Crozet

Washington

McCormick Woods Golf Course, Port Orchard

West Virginia

Pinewood Golf Club, Margantown

Wisconsin

Lac La Belle, Oconomowoc

Business Program

Alaska

University of Alaska Fairbanks, Fairbanks

Indiana

National FFA Organization, Indianapolis

Cemetery Program

New Jersey

Brigadier General William C. Doyle
Veterans Memorial Cemetery, Wrightstown

RECENTLY CERTIFIED AUDUBON COOPERATIVE SANCTUARIES

Bakery Feeds (Watts), Watts, OK
Crown Colony Golf and Country Club, Ft Myers, FL
Jackson Hole Golf & Tennis, Jackson, WY
Renaissance Pineisle Resort, Lake Lanier Islands, GA
Torreon Golf Club, Show Low, AZ
Tualatin Country Club, Tualatin, OR
University of Florida, Gainesville, FL

RECERTIFIED AUDUBON COOPERATIVE SANCTUARIES

Certified for 10 Years or More

Minnesota Valley Country Club,
Bloomington, MN

Certified for Five Years or More

Bakery Feeds, Inc. (Marshville), Marshville, NC
Brooklake Country Club, Florham Park, NJ
Izatys Golf & Yacht Club, Onamia, MN
Lords Valley Country Club, Hawley, PA
Minisceongo Golf Club, Pomona, NY
Old Marsh Golf Club, Palm Beach Gardens, FL

Ridgewood Country Club, Paramus, NJ
TPC at the Canyons, Las Vegas, NV

Certified for Two Years or More

Biltmore Country Club, North Barrington, IL
Coyote Moon Golf Course, Truckee, CA
Echo Lake Country Club, Westfield, NJ
Hammock Dunes Club—Links Course,
Palm Coast, FL
Laurel Creek Country Club, Mt. Laurel, NJ

AUDUBON SIGNATURE PROGRAM

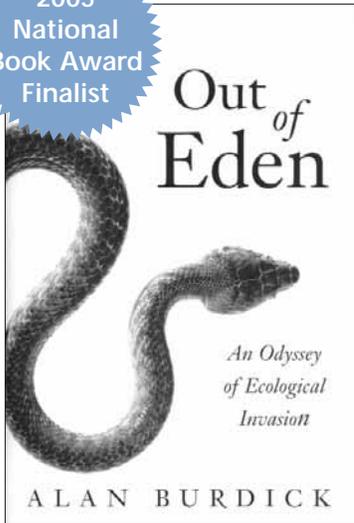
NEW SIGNATURE MEMBERS

Baird's Cove, Woodfin, NC
Campo de Golfe da Costa Terra,
Grandola, Portugal
Cedar Lake, Raleigh, NC
Wolf River Boulevard Extension,
Germantown, TN

RECENTLY CERTIFIED SIGNATURE SANCTUARIES

Old Greenwood, Truckee, CA

2005
National
Book Award
Finalist



Invasive species

Want to delve further into the subject of invasive species? We recommend:

Out of Eden: An Odyssey of Ecological Invasion by Alan Burdick

More and more as the sphere of human travel widens, exotic animals and plants are making their way into new habitats around the world, insinuating themselves into the fabric of evolution and quietly unraveling it. Indonesian pythons now breed outdoors in Florida; Asian snakehead fish gobble their way through East Coast ponds; pernicious European zebra mussels have overtaken the Great Lakes. *Out of Eden* is a firsthand journey through this strange and shifting landscape. Partly it's a grand outdoor adventure; partly it's a science documentary, as author Alan Burdick

follows biologists around the globe in search of the alien species they study. Mostly, it's a reflection on our complicated, ever-changing relationship to nature. As Burdick states: "*Out of Eden* is about what the best journeys are ultimately about: our native origins, or, rather, our home—the struggle to find it, to attain it, and, finally, to go about beginning to live in it." Additional information can be found at www.ecoinvasion.com (Published 2005, Farrar Straus and Giroux) ●

Stewardship News

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Jean Mackay, Editor
Audubon International
46 Rarick Road
Selkirk, NY 12158

Or sent via e-mail to:
jmackay@auduboninternational.org

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Help us to keep up to date!
If you have a change of address or contact person, please let us know.
Call (518) 767-9051, ext. 12 or
E-mail jbataza@auduboninternational.org

Web Page: <http://www.auduboninternational.org>
e-mail: acss@auduboninternational.org

Phone: (518) 767-9051

Selkirk, New York 12158

46 Rarick Road

Audubon International



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