



## Town of Williamston, North Carolina, Earns Audubon Green Community Award

BY PETER BRONSKI

The Town of Williamston, NC, (population: ~6,000) has earned the Audubon Green Community Award, an important milestone in Audubon International's Sustainable Communities Program. The Award recognizes the community's efforts to protect its natural environment.

Three years ago, Williamston joined the Sustainable Communities Program, seeking assistance from Audubon International in revitalizing the local economy, and in protecting the natural environment and rural heritage of the region. Those two goals were a perfect fit with Audubon International's emphasis on sustainability—the idea that environmental

protection, economic vitality, and quality of life are intimately connected to one another, and are the foundation of truly great communities.

“The program has made us realize that we, the citizens of Williamston, are responsible for our future,” says Dr. Tom Ward, Williamston's sustainability coordinator. “As our small town seeks to compete in today's global economy, we've increased our focus on the pillars of sustainability: our environment, our economy, and our people. We've realized that two of our significant strengths are our caring community and our undisturbed natural resources. As a result, we want to take care of our land, water, wildlife, and air as never before, because they will define our future.”

Since joining the program, Williamston's accomplishments include:

- Hired a sustainability coordinator to direct the Town's efforts;
- Adopted environmentally-responsible management practices and policies on Town-owned land,
- Conducted a community education campaign that has included an information kiosk in the downtown, more than twenty public seminars, and a regular column on sustainability in the local newspaper;
- Obtained more than \$30,000 in grant money to complete environmental demonstration projects at Williamston High School;
- Restored nature trails;
- Passed water conservation ordinances and implemented incentives programs for homeowners;
- Encouraged more than 230 community leaders and residents to take Audubon International's Treasuring Home Survey and Pledge, which provided valuable feedback about the community's opinion on local environmental issues and called them to action by pledging to be good environmental stewards.

Williamston has made tremendous strides in raising public awareness about sustainability, and in demonstrating on-the-ground results that will have a real and positive effect on the community and its residents. The Town should be rightfully proud of earning this well-deserved award.

The Town will now move forward into Stages 2 and 3 of the Sustainable Communities Program, during which Williamston will define a long-term community vision, revise its strategic plan, choose sustainability indicators as a mechanism for fostering action and measuring success, and implementing its plan. ●



Festivals, workshops, and beautification projects are helping to revitalize the Town of Williamston, NC, as it focuses on becoming a more sustainable community.

SUZANNE STOTESBURY, THE ENTERPRISE, INC.

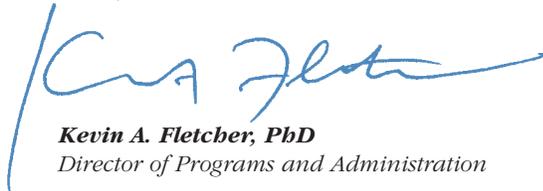
## Dear Members and Supporters,

*Heavy Lifting? Let us lighten the load.*

One of our members once contacted us to ask about a wildlife habitat improvement project. After our staff provided information and advice to help the project along, he said, "You know, I'm already doing the heavy lifting to get this done, but you just helped to lighten the load."

I think that sums up Audubon International's approach to environmental stewardship. Protecting and caring for the natural environment takes a little heavy lifting, but it's a lot easier when we do it as a team. We help by providing access to knowledgeable staff, leading you to great information and resources, and doing some lifting ourselves from time-to-time. In this issue, we have two great examples of "lightening the load" from an elementary school in Virginia and a town in North Carolina. Each of these member stories highlights the partnership we want with all our members and the ways members can partner with others throughout their communities. If you're ready to get your hands dirty and start lifting, give us a call. We're here to help lighten the load.

Yours,



**Kevin A. Fletcher, PhD**  
Director of Programs and Administration

## In this issue...

- 4 Getting Started on Stewardship:** *Butterfly Gardening 101*—Start planning now to make your gardens come alive with butterflies next spring and summer.
- 6 Green at School:** *Guardians of the Garden*—Learn how students at Mountain View Elementary in Virginia combined creativity and good stewardship to create an impressive student garden.
- 8 The Nature of Golf:** *Water Quality Testing: the Agony and the Ecstasy*—Water quality testing might seem like one of the tougher aspects of certification, especially before you try it.
- 10 On the Road...for Stewardship:** *Rest Stops*—Long distance travels for both people and wildlife are made easier with places to rest and refuel.



Make your property a welcome rest stop for migratory wildlife; see page 10.

- 11 Membership News:** Welcome to our newest members and congratulations to our recently certified sanctuaries.



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](mailto:jmackay@auduboninternational.org)

### ADMINISTRATION

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

### AUDUBON COOPERATIVE SANCTUARY PROGRAMS

**Jennifer Batza**, Membership Coordinator  
**Peter Leuzinger**, Great Lakes Field Office  
**Jeremy Taylor**, Staff Ecologist  
**Shawn Williams**, Staff Ecologist  
**Joellen Zeh**, Program Manager

### AUDUBON SIGNATURE PROGRAM

**Nancy Richardson**, Director  
**Linda Snow**, Administrative Assistant

### 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  
**Russ Bodie**, Project Manager  
**Rich Henderson**, Business Manager  
**Susana Morais**, Director of Operations—Portugal  
**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

### SUSTAINABLE COMMUNITIES PROGRAM

**Peter Bronski**, Manager

## Audubon International Certifies First Signature Sanctuary in Asia

We are pleased to announce that Lake Malaren Golf Club, located outside Shanghai, China, has been named the first Certified Audubon Silver Signature Sanctuary in Asia. Since joining the program in 2004, the staff at Shanghai Real Estate, the project's developer, has worked tirelessly to meet Audubon International Signature standards and transform the once highly degraded agricultural lands into two top-notch

Peter Thompson-designed golf courses. Nearly 70,000 trees were planted on the private Forest Course, while the public Lakes Course features interconnected lakes, landscaped with native buffers and aquatic plants.

Among the highlights of this project is the creation of a water-filtering system that improves the water quality in the Malu River for use in irrigation. Learn more about this exciting project in our next issue of *Stewardship News*.



Native plants along a lake edge at the Lake Malaren Golf Club help protect water quality and provide a wildlife habitat.

## Seminars Offered to Help People Help the Environment

Audubon International staff will participate in several environmental working groups and speak at a number of conferences in the coming months. We look forward to helping people help the environment as a result of these outreach efforts.

- North American Association for Environmental Education, St. Paul, MN, October 12; *Treasuring Home*
- Urban Land Institute and the ULI Sustainable Development Council, Denver, CO, October 17-20
- Northeast IPM Center, Community IPM Working Group, Annapolis, VA, November 1-3
- Northeast IPM Center Advisory Council, Chelmsford, MA, November 8-9;
- 2006 Empire State Green Industry Show, Rochester, NY, November 14; *Environmental Upgrades for the Maintenance Facility, Environmental Monitoring, Wildlife and Habitat Management*
- Rocky Mountain Turfgrass Association, Denver, CO; December 5-6; *Developing an Environmental Plan, Wildlife and Habitat Management*
- Golf Industry Show, Anaheim, CA, February 19-24; *The Ecology of Golf; Wildlife Management and Habitat Conservation*
- 1000 Friends of Florida, Gainesville, FL; Audubon International President Ronald Dodson recently spoke at a gathering of representatives from governmental agencies and NGOs working to provide resources for landowners, administrators, and anyone interested in preserving natural habitat in Florida. We are pleased to join the Technical Advisory Committee that is focusing on the development of "Wildlife Habitat Planning Strategies, Design Features and Best Management Practices for Florida Communities and Landowners." If you are interested in keeping up with things as they progress, check out the following web page: [www.floridahabitat.org/](http://www.floridahabitat.org/).



"Birding by Sight and Sound" is among the many seminars offered by Audubon International. To obtain a list of seminars or schedule a presentation for your group, contact Jen Batza, Membership Coordinator, [jbatza@auduboninternational.org](mailto:jbatza@auduboninternational.org), or call (518) 767-9051, extension 10.

## Make a Year-End Gift to Support Audubon International

As a program member or supporter of Audubon International, we appreciate your commitment to take action where you live to help protect the environment. As 2006 comes to a close, we hope that you'll also consider making a tax-deductible contribution to help us engage more people in sustaining our land, water, wildlife, and natural resources. Donate online at [www.auduboninternational.org](http://www.auduboninternational.org) or send your tax-deductible donation to: The Earth Fund c/o Audubon International, 46 Rarick Road, Selkirk, NY 12158. (Please make checks payable to Audubon International.)

# Butterfly Gardening 101

BY JEAN MACKAY

Planting an abundance of nectar-producing flowers is your ticket to a successful butterfly garden.



CHRIS PEKAREK

Creating a welcome refuge for butterflies on your property is a simple and rewarding conservation project that literally brings landscaped areas and gardens to life. Butterfly gardening can be done successfully on nearly any site—from an urban rooftop to a suburban schoolyard, from a landscaped island at a business to an expansive golf course garden. Imagine if we all did it? Our landscapes would not only be more beautiful, they would also provide corridors of habitat to sustain native butterfly populations—especially those that migrate long distances.

Plants that attract butterflies can be added to annual beds, perennial borders, containers, hanging baskets, and general landscaping. You can also create a

special garden just for butterflies by planting nectar-producing flowers for adult butterflies and host plants for caterpillars.

## Getting Started

### Step 1: Choose a sunny, sheltered location.

Butterflies, like all insects, are cold blooded. They rely on the sun to raise their body temperature and metabolism so they can fly. Therefore, be sure to locate your butterfly garden in the sun for most of the day. You can also add light colored rocks to your garden where butterflies may warm themselves in the early morning, before they begin feeding, breeding, or flying about.

Butterflies use most of their energy flying to and from food sources and breeding sites. You can make it easier for them to perform these daily tasks by locating your

garden in an area that is protected from wind, such as the edge of woods or near a backdrop of shrubs.

### Step 2: Provide an abundance of nectar plants.

Butterflies aren't fussy eaters, but they do seek out brightly colored flowers with numerous flower heads and large petals. These provide a good surface area for butterflies to balance on while feeding. Flowers that have a center surrounded by a ray of petals, such as asters, purple coneflower, and black-eyed Susan are good choices. Butterflies also prefer flowers with small clusters of blossoms, such as butterfly weed, lantana, and mints. Stick with fragrant, old fashioned varieties of annuals, including marigolds, zinnias, and cosmos. These tend to produce more nectar than double-flowered varieties.

The best way to arrange plants in your garden is in stair-step formation: short plants in the front grading to taller plants in the back. A simple design that includes masses of a few nectar flowers is an attractive way to meet the needs of butterflies.



### Step 3: Include host plants for caterpillars.

Unlike adult butterflies, caterpillars often have strong food preferences. Butterflies lay their eggs on the plants preferred by their young—called host plants—so that a convenient meal is waiting when they hatch from the egg. Identify several butterflies species that are common in your area and provide their preferred host plants.

Avoid pesticide use in and around your garden. Butterflies are susceptible to pesticide exposure at all stages of their lifecycle. Expect to see chewed leaves on your host plants and use organic gardening techniques to manage insect problems, if they arise. An integrated pest management program should be standard practice on larger properties to reduce the need for pesticides.

### Step 4: Add finishing touches.

In addition to nectar flowers and host plants, you can include a few flourishes to set a welcoming table for butterflies. A small patch of mud or wet sand will provide needed water, amino acids, and salts. Children may enjoy leaving a few pieces of rotting fruit on a tray off the ground, though you may opt to omit this enticement if other creatures become a problem.

If you have space, leave several wild patches of taller grasses and wildflowers, as well as shrubby undergrowth in wooded areas. These will provide needed protection from predators and adverse weather.

Several mail-order companies and wildlife specialty stores offer butterfly shelters—wooden structures about the size of a bird house with slatted openings that allow butterflies to enter. While we have seen no definitive research on the value of butterfly boxes, they may make an attractive addition to your garden. ●



Clubhouse gardens at Beaconsfield Golf Club, a Certified Audubon Cooperative Sanctuary in Quebec, include a profusion of blooms for butterflies. Butterfly flowers and host plants can be added to landscape beds and borders, or grown in a specialty garden for butterflies.



Getting a closer look at a variety of butterflies is part of the enjoyment of a butterfly garden. This small comma butterfly was photographed by Chris Pekarek, assistant superintendent at Village Links of Glen Ellyn, a Certified Audubon Cooperative Sanctuary in Illinois.

### Resources

There are excellent books, field guides, and children's literature available, as well as numerous Web sites. An extensive list of nectar-producing plants and host plants for specific butterflies is available on our Web site at [www.auduboninternational.org/e-Source/](http://www.auduboninternational.org/e-Source/). Also check out these sites for plant lists, educational curriculum, butterfly checklists, and more.

- Butterfly Conservation Initiative: [www.butterflyrecovery.org](http://www.butterflyrecovery.org)
- The Butterfly Web Site: <http://butterflywebsite.com>
- Milkweed Café: [www.milkweedcafe.com](http://www.milkweedcafe.com)
- Monarch Watch: [www.monarchwatch.org](http://www.monarchwatch.org)
- North American Butterfly Association: [www.naba.org](http://www.naba.org)

### Butterfly Garden Basics

- Sunny location
- Shelter from wind
- Nectar plants for adults
- Host plants for caterpillars
- Rocks or stones for basking
- Plants in stair-step formation
- Shallow water source
- Avoid pesticide use

### The Butterfly Lifecycle

All butterflies go through dramatic changes before becoming the beautiful winged creatures we recognize. Butterflies start out as eggs, most often laid on the underside of a leaf or branch. Caterpillars are born with a hearty appetite and often eat their shells as their first meal.

Caterpillars molt as they grow, shedding their outer layer of skin at least five times before they become suspended in a cocoon or chrysalis. They may remain within this waxy pupal case for weeks or months, until they finally emerge as adult butterflies.

The average life of a butterfly ranges from a couple of days to around six months. During this time they are looking for mates and places to lay their eggs. Some butterflies don't eat at all as adults, but those who do are looking to dine on the sweet nectar that comes from flowers.

**Audubon Partners for the Environment** complete at least one environmental improvement project each year and report their results to Audubon International. This enables us to track the success of our efforts and pass along good ideas to other participating schools. Teacher Connie Balkcom sent this report describing a school garden project at Mountain View Elementary, a public K-5 school serving 680 students in Haymarket, Virginia. Balkcom's exceptionally good ideas and outstanding results are worth repeating! We hope you enjoy hearing about this project as much as we did.

## Guardians of the Garden

BY CONNIE BALKCOM

As a teacher, I'm always looking for ways to enrich my students' education and make each topic come alive. Our Audubon Partner project gave me the opportunity to do just that as we restored our school's butterfly garden. The garden is about eight years old, but had been neglected for many years. Involving my second grade science classes and our "learning buddies" in Mrs. Michelle Sampsell's fourth grade class guaranteed an enthusiastic gardening force. Work in the garden included many projects designed to make our garden a healthy habitat for butterflies, songbirds, and hummingbirds, as well as provide an outdoor learning space for students.

We implemented this project over the course of many months. Here's a snapshot our goals and how we accomplished them.

- **Creating a safe path through the garden**—We accomplished this by spreading mulch and making stepping stones with our fourth grade friends. We made stepping stones using pizza box frames, marbles, glass stones, and a thick layer of quickcrete. The stepping stones

are unique and make our garden path beautiful. The children enjoy searching for their team's square. In addition, other classes in first grade joined the fun and added their own stepping stone creations to the garden pathway!

- **Weeding and replanting annuals**—

This isn't a one shot deal! We weed weekly. We are enjoying our sunflower seedlings that we started in the classroom. Unfortunately, the drier weather we had last spring was too traumatic for our zinnia seedlings.

- **Planting new perennials to fill in empty spaces**—

To avoid bankrupting my garden budget (\$300), which the PTA generously earmarked for us, I enlisted students and their parents to send in plant donations in the spring. I gave the students the Audubon plant list for butterflies, songbirds, and hummingbirds and highlighted the plants that we already had in the garden. Many students donated plants and enjoyed placing and planting the contributions. I then purchased additional plants as needed.

- **Adding a bird bath to the garden as a water source for songbirds**—

We decided to add this element due to construction going on in our neighborhood. We actually watched deer race across our playground one day as they fled the large bulldozers and dump trucks clearing the woods next to our school. This gave us a new awareness of the effects of a diminishing habitat. While providing a garden for the deer is not our goal, the children and I determined that we should become more attuned to the needs of the birds that would need fresh water and food.

- **Painting the existing trellis for weather protection and to make the garden aesthetically more kid friendly**—

My goal was to provide a nice place for our honeysuckle and passion vines to grow for hummingbirds, while giving the children an



Plant labels, a painted trellis and bird feeders, hand-made stepping stones, and an attractive sign make Mountain View's garden fun and welcoming.



*"I hear and I forget. I see and I remember. I do and I understand." — Confucius*  
Under the direction of teacher Connie Balkcom, students learn by doing in their school garden.

active sense of ownership for the structural appearance of the space. The posts were quick to paint with stripes, dots, and squiggles, as only 2nd graders can do, and they are a colorful addition to our garden!

- **Removing the old butterfly house that attracted paper wasps and was a health hazard for students—**

I enlisted my husband's help with this one after hours so that he and I would be the only ones needing the Benedryl. No worries... we did find a large wasp nest from the previous summer and an old bumble bee, but the buzzing creatures weren't around to do any damage yet. I saved the nest in a zipped baggy for the children to enjoy on our science shelf.

- **Installing a large bird feeder—**

One of the students worked with his dad to put the post and the bird feeder together one weekend. The children and I were amazed to see their wonderful handiwork on Monday morning. They spent two hours working on this on a Sunday afternoon! The birds have kept us enthralled and entertained as we peek out our classroom window. It's not uncommon for a student to shout out in class, "The cardinals are back!"

- **Installing a feeding platform for larger birds—**We noticed large brown headed cowbirds, crows,

blue jays, and morning doves that really needed a big place to stomp around while they fed, and the bird feeder pavilion wasn't really made for them. I told my class about the problem, noting that I once saw a piece of plywood perched on a fence with seed for the birds and it seemed to work well. I considered aloud if we should try the same thing. One of my science students went home that evening and worked with his father to build a 12" x 12" platform with raised sides and drain holes for the birds! We mounted it to the top of the post that once held the decrepit butterfly house and have enjoyed the parade of feathered friends stopping by for a meal ever since. We really see groups of birds feeding together on this feeder.

- **Adding plant stakes to label the larval and host plants for our butterfly life cycle study—**We

are still working on this project because we are continually adding more plants. We have found that wooden paint sticks work well and are free from Lowe's paint center.

- **Creating a garden map to identify our plants and trees—**Our 4th grade

friends worked on this project and did a wonderful job. This map will help other classes to learn the names and locations of our plants. Also, it will help us to envision our garden in the winter when it goes dormant once again.

## Our Results

Adopting the garden as our special project has had many beneficial results. While waiting for the last frost we began studying butterflies native to Virginia and writing research reports so we would be ready to identify the butterflies that could flitter by for a visit. Our hard work paid off when we spotted the first tiger swallowtail and the students shouted out its name before I did! The children are becoming experts at identifying larval plants as well, and can spot milkweed in our garden immediately.

The results of our efforts are also evident as we watch many groups of children parade through the garden with their teachers, exclaiming over the new flowers or the tiny creatures living among them. Our collaborative efforts with Mrs. Sampsell's fourth graders have been both rewarding and insightful, as the older students learn to work cooperatively with the younger children.

While the science students in second grade use the garden as part of units on plants and life cycles, other classes are able to visit the garden to enrich their curriculum as well. A great example of this was when we witnessed the release of the butterflies by a kindergarten group. Our school community is also enriched as the Brownie Troop has gotten involved in maintaining the pathway and weeding. This increases their community involvement while providing a valuable service to our garden.

It has been especially rewarding for me and my students to watch birds, butterflies, and our fellow schoolmates visit our garden—and to know that our efforts have made a difference in improving our school and our immediate environment. That, no doubt, is one of the best lessons a child can learn. ●

*Connie Balkcom teaches second grade science at Mountain View Elementary in Haymarket, Virginia. The school is participating in the Audubon Partners for the Environment Program, thanks to financial support provided by Robert Trent Jones Golf Club.*

# Water Quality Testing—The Agony and the



Water quality monitoring is easier and more fun when you have someone to assist you. Here, Marlee Forsthoffer checks a sample at Wintonbury Hills Golf Course.

Several years ago, when my hometown of Bloomfield, CT, decided to build a golf course on an old farm property, the Town engaged my services to do a wildlife census to monitor the environmental impact of the course. The farm was on a beautiful piece of land, with several extensive wetlands, a small Army Corps of Engineers flood control reservoir, an irrigation pond, open meadows, and upland second-growth forest. The course was constructed with the aid of an environmental consultant to ensure that the highest standards of care were employed to protect the natural habitats on and around the layout. Once the course was completed and management turned over to Billy Casper Golf, Inc., they, in turn, hired me to continue the project and take the additional major step of having the course certified as an Audubon Cooperative Sanctuary.

My background as an expert birder and semi-knowledgeable naturalist

allowed me to document the wildlife on the course over a two-year period, finding 153 species of birds, 19 mammal species, and numerous insects, reptiles, and amphibians. I carefully followed the ACSP for Golf Courses and enjoyed working my way through the certification requirements for the Site Assessment, Environmental Case Study, Wildlife and Habitat Management, Chemical Use Reduction and Safety, and Outreach and Education. But when it came to Water Quality Management, I ran into a wall.

## Wanted: Chemist, no previous experience required

We had taken careful steps to employ the Best Management Practices around the course to protect the local watershed and water sources. But when it came time to actually test the water on and around the course, the task seemed daunting. My previous experience in chemistry

was in high school, limited to sticking a piece of Litmus Paper into a tube of some unknown liquid, for reasons I can't recall. I couldn't possibly do the complex tests that were required for certification!

I contacted the University of Connecticut about having some agronomy students do the testing as part of their curriculum. After many months of correspondence and delays, no takers. I asked the State of Connecticut if they could do the testing. Not interested. I wrote to the Environmental Consultant. No help. In desperation, I re-contacted Shawn



Williams, Staff Ecologist at Audubon International, who recommended that I purchase a LaMotte "Water Quality Educator Monitoring Outfit" and do the testing myself.

When the package arrived, it contained an impressive looking hard black case lined with molded material to hold all the test kits, tubes, measuring devices, chemicals, pills, and reagents in place. There was also a separate plastic jar, filled with cellulose, gently holding a bottle of sulfuric acid, containing terrifying warnings as to what horrors might befall the user if proper precautions were not taken. The book of instructions at first seemed much too large and complex for my meager abilities. Then I slowed down and took a

# Ecstasy

BY SAM FRIED

careful look. Each test kit (dissolved oxygen, pH, alkalinity, phosphates, nitrates, turbidity, temperature) contained its own set of instructions and was written in comprehensible English. Perhaps I could do this after all.

## Wading in

I was fortunate to have an assistant working with me, Marlee Forsthoffer, a delightful young student/golfer majoring in Environmental Studies at Nova Southeastern University in Florida. Between the two of us, we managed to carefully go through each test. Only once did we misunderstand the directions and ruin the test, but the error was easily corrected. In fact, after the first set of tests on the irrigation pond, we did them the second time on the reservoir in about one-half the time. After the initial run, each set of tests can be performed in about one hour.

We wore protective eyewear and rubber gloves when handling the

Learning the history of your course can be very important in evaluating the results you obtain, as well as seeing the changes that occur over several testing periods.

caustic chemicals and we took turns wading in for water samples, collaborating on evaluating the results. It was extremely helpful to have two people doing the testing, as one of us would carefully read the directions while the other worked with the materials. It actually turned out to be a lot of fun once we got the hang of the test procedures. I always liked the “magic” of making a purple tube of liquid suddenly go clear with a few drops of some reagent, making me feel like I was “Mr. Wizard” on the TV program from my youth.

Many of the tests were fairly straightforward, others more complicated. The key was to follow the directions to the letter and then record your results on a test chart that you can make up for your specific course. Perhaps the most demanding was the test for dissolved oxygen, which has 13 steps, including one with the fairly dangerous sulfuric acid. Simplest had to be the test for turbidity—put some water in the tubes and look at it. More interesting and possibly subjective were the tests for pH, nitrates, and phosphates, where you have to compare the color of the final sample in its test tube with the opaque color sample windows in fixed containers, holding them up to the light for an accurate evaluation.

When finished, we had to wash all the test equipment carefully, using the supplied bottle brush, to make sure that no contaminants were left that could affect future tests. This is not rocket science, but for the chemically challenged such as me, it is definitely a task that requires full attention.

## Evaluating the results

Although every body of water will have different results from the testing, the feedback is very useful to learn the baseline conditions at your course and the effect implementation of Best Management Practices has on your overall water quality. The numbers from our in-and-out irrigation holding pond were quite different from those of the small stream-fed reservoir, but everything except phosphate levels were within acceptable limits.

Evaluating the results has to be done with consideration of prior land uses. For example, our course was a heavily fertilized farm for 100 years, probably leaving massive amounts of nitrates and phosphates deep in the soil, which can then account for high levels in testing that have nothing to do with course management. Learning the history of your course can be very important in evaluating the results you obtain, as well as seeing the changes that occur over several testing periods.

How do I rate the overall experience? Surprisingly fun! So if you're stalling on certification because of water quality testing, I recommend you get yourself a test kit, put on some rubber boots, and wade right in. It's easier each time you do it and the knowledge you gain can make your course a better place to live for the creatures, people, and plants that make it their home. ●

**Sam Fried** is the golf course naturalist at Wintonbury Hills Golf Course in Bloomfield, CT. He can be reached at [magesfried@aol.com](mailto:magesfried@aol.com).

The LaMotte “Water Quality Educator Monitoring Outfit” can be purchased from a variety of suppliers, including LaMotte, Ben Meadows, Carolina Biological Supply Co., Forestry Suppliers, SK Science Kit & Boreal Labs, and others. The kit costs roughly \$350 and contains supplies for 50 tests of the various types necessary to perform the water quality assessment required for certification.



## Rest Stops

BY RONALD DODSON

As I write these lines, it is just past Labor Day—the official end of summer and beginning of fall. I've been traveling a lot lately, making several trips from New York to the Southeast. So, as the trees along the road to my house begin to have a tinge of color in their leaves, it seems only natural that my thoughts turn toward the long-distance journeys that other creatures—particularly birds—make each year.

With another breeding season over, birds are starting to gather in flocks that seem to grow in size with each passing day. Over the eons, they must have learned that there is strength in numbers. And so they gather once again for their migration south to warmer climes.

### Here, there, and in between

Due to concerns about the population levels of migratory birds, many people and organizations focus attention on making sure that nesting grounds for migratory birds are cared for. Of course, this is extremely important. Without adequate opportunities to raise the next brood of waterfowl, warblers, or shorebirds, species will certainly face a dismal future. And, if we don't secure adequate food, water, and cover for these same species during the long winter months when they are in the southern portions of their "home range," they will not be able to survive the winter.

While the focus on each end of the migratory routes is vital, we also need to be mindful about what's happening in between. Most migratory species don't just wake up one morning in the Adirondack Mountains of New York and fly directly to South America. Migration is most often a series of starts and stops as birds travel hundreds or thousands of miles over a period of weeks or months. A bird may fly several hundred miles in one day and then



Natural areas, such as this one at ACSP member Gro Horticultural Enterprises in Union, IL, offer a welcome rest stop to migratory birds and butterflies.

spend a few days in one area, resting, feeding, and building strength to move another few hundred miles farther south. It is this vast area "in between" the summer and winter grounds—where the lives of many species end. There are many perils along the way, ranging from starvation to exhaustion to impacts with tall buildings or the front grill of a passing automobile.

### What you can do

As the year transitions from summer to fall to winter in your area, take the time to think about the birds that are slowly gathering and winging their way south. Do you think you could make a non-stop drive from New York to Florida? Thank heaven for those nice clean rest stops along Interstate 95 where you can use the facilities, get some water, and eat a snack. Much like people who "migrate" south to spend the winter, migratory birds also look for safe places to refuel along the way. You can manage your property to offer a welcome rest stop.

Many of the small songbirds that migrate do not come to birdfeeders.

They need to find other sources of food, such as the berries of shrubs or the last of the insects before winter sets in. Shrubs and small thickets also provide valuable cover. Are there places on your property where you can add a few berry-producing shrubs or leave some protective cover?

Many of the smaller migrants use large amounts of energy winging their way south and north again in spring and just need places to rest without fear of predators lurking about. Unfortunately, cats are one of the top killers of birds. So, as much as we love our feline pets, keeping cats indoors during this time of year is especially important.

Your efforts can make a big difference to the health and well-being of these species on the move. With a little bit of effort in creating a management plan for your property—whether it is as small as a suburban backyard or as large as a golf course—your property can be a refuge as important as the nesting grounds of the Adirondack Mountains and the wintering home of the tropical forests. ●

## AUDUBON COOPERATIVE SANCTUARY PROGRAMS

### NEW MEMBERS

#### Golf Program

##### International

International Management Services de Mexico/las Caras de Mexico, San Felipe, Mexico

Penticton Golf and Country Club, Penticton, BC, Canada

Salt Spring Island Golf Club, Salt Spring Island, BC, Canada

Silver Brooke Golf Club, Lisle, ON, Canada

The Rock, Minett, ON, Canada

##### Arizona

Stonebridge Meadows Golf Club, Fayetteville

##### California

Alta Vista Country Club, Placentia

Ashwood Golf Course, Apple Valley

Bing Maloney Golf Course, Sacramento

Birch Hills Golf Course, Brea

Haggin Oaks Golf Course, Sacramento

The Course at Wente Vineyards, Livermore

##### Colorado

Cherry Creek Country Club, Denver

Englewood Municipal Golf Course, Englewood

##### Florida

Ballantrae Golf & Yacht Club, Port St. Lucie

Evergreen Golf & Country Club, Naples

Long Marsh Golf Club, Rotonda West

##### Georgia

Reynolds Plantation Creek Club, Greensboro

Traditions of Braselton Golf Club, Jefferson

##### Hawaii

Turtle Bay Resort (Palmer Course), Kahuku

##### Illinois

Evanston Golf Club, Skokie

Downers Grove Golf Course, Downers Grove

Dwight Country Club, Dwight

Woodstock Country Club, Woodstock

##### Nevada

Canyon Gate Country Club, Las Vegas

##### New York

Blue Hill Golf Course, Pearl River, NY

Broadacres Golf Club, Orangeburg, NY

##### North Carolina

Great Smokies Sunspree Resort, Asheville

Methodist College Golf Course, Fayetteville

##### Oklahoma

Stonebridge Golf Club, Claremore

##### Pennsylvania

Lederach Golf Club, Harleysville

##### Texas

Hackberry Creek Country Club, Irving

Oakmont Country Club, Corinth

Park Ridge Golf Course, Lake Worth

Willow Creek Golf Club, Spring

##### Virginia

Glen Mauray Park & Vista Links Golf Course, Buena Vista

Piedmont Club, Haymarket

River Creek Club, Leesburg

##### Washington

Wing Point Golf & Country Club,

Bainbridge Island

### Business Program

#### International

Firma Calvo Osio & Assoc. S.C. (FICAO),

Estado de Mexico, Mexico, C.P, Mexico

#### United States

Bandelier Trading Company, Los Alamos, NM

City of Fort Collins Parks—Edora Park, Fort Collins, CO

City of Fort Collins Parks: "City Park"

Community Park, Fort Collins, CO

Great Smokies Sunspree Resort, Asheville, NC

Davis Cemetery District, Davis, CA

Evergreen Marriott Conference Resort, Stone Mountain, GA

Pearl Valley Organix, Inc., Pearl City, IL

White Sands Trading Company, Alamogorda, NM

### RECENTLY CERTIFIED AUDUBON COOPERATIVE SANCTUARIES

Crandon Golf at Key Biscayne, Key Biscayne, FL

Eglin AFB—Eagle and Falcon Courses, Niceville, FL

Harbour Town Golf Links, Hilton Head Island, SC

Loyalist Country Club, Bath, ON, Canada

Quail Run Golf Course, Sun City, AZ

RiverBend Golf Club—Community, London, ON, Canada

State College Elks Country Club,

Boalsburg, PA

### RE-CERTIFIED AUDUBON COOPERATIVE SANCTUARIES

#### Certified for 10 Years or more

Robert Trent Jones Golf Club, Gainesville, VA

#### Certified for Five Years or more

Greenbrier Resort, White Sulphur Springs, WV

Maple Leaf Golf and Country Club, Port Charlotte, FL

Old Tabby Links at Spring Island, Bluffton, SC

Portland Country Club, Falmouth, ME

Whitlock Golf and Country Club, Hudson Heights, QC

#### Certified for Two Years or More

Beaconsfield Golf Club, Pointe Claire, QC

Birnamwood Golf Course, Burnsville, MN

Lake Tahoe Golf Course, South Lake Tahoe, CA

Presidio Golf Course, San Francisco, CA

Teton Pines Country Club, Jackson, WY

## AUDUBON PARTNERS FOR THE ENVIRONMENT

### NEW MEMBERS

Oak Forest Elementary, Humble, TX

### ENVIRONMENTAL STEWARDSHIP AWARD

Farnsworth Middle School, Guilderland, NY



Farnsworth Middle School, under the direction of science teacher Alan Fiero, recently received an Environmental Stewardship Award for its outstanding Butterfly Station and Pine Bush Education Project. The school has been an Audubon Partner for the Environment since 1996, thanks to funding support from Pinehaven Country Club.

## AUDUBON SIGNATURE PROGRAMS

### NEW SIGNATURE MEMBERS

The Parks at Meadowview, Raleigh, NC

### RECENTLY CERTIFIED SIGNATURE SANCTUARIES

Lake Malaren, Shanghai, China

### RE-CERTIFIED SIGNATURE SANCTUARIES:

The Villages of Marion, The Villages, FL, certified since 2002

The Villages of Sumter I, The Villages, FL, certified since 2005

The Villages of Sumter II, The Villages, FL, certified since 2005

WCI—Venetian Golf & River Club, Venice, FL, certified since 2004

## Environmentally Friendly Yards and Landscaping

**GreenScaping: The Easy Way to a Greener, Healthier Yard** (Document EPA530-K-06-002)—This publication helps homeowners plant right for their site, conserve water, reduce yard waste, and use pesticides wisely. The information in this brochure as well as other valuable tips and resources can be found on [www.epa.gov/greenscapes](http://www.epa.gov/greenscapes).

**Environmentally Beneficial Landscaping** (Document EPA530-K-05-003)—This brochure describes EPA's GreenScapes program and provides cost-efficient and environmentally friendly solutions for large-scale landscaping.

To order free copies of either of these EPA publications, please order online from the National Service Center for Environmental Publications (NSCEP), [www.epa.gov/epaoswer/osw/publicat.htm](http://www.epa.gov/epaoswer/osw/publicat.htm). You can also contact NSCEP by e-mail at [ncepimal@one.net](mailto:ncepimal@one.net), by phone (800) 490-9198 or (513) 489-8190.

**A Guide to Florida Friendly Landscaping**, published by the Southwest Florida Water Management District, is an excellent new resource for homeowners in Florida. The guide covers all the basics, including how to choose the right plants, attract wildlife, conserve water, and maintain your yard. Excellent teacher resources on water related topics are also available. Check it out at [www.swfwmd.state.fl.us/publications/](http://www.swfwmd.state.fl.us/publications/)

**Tips for a Better Environment** is a publication of the Lawn and Environment Initiative that offers environmentally friendly tips for saving water, applying fertilizer, and welcoming wildlife. Available from [www.lawnsandenvironment.org](http://www.lawnsandenvironment.org).

## Stewardship News

Audubon International publishes *Stewardship News* six times a year. Inquiries, contributions, or letters to the editor should be addressed to:

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

Or sent via e-mail to:  
[jmackay@auduboninternational.org](mailto:jmackay@auduboninternational.org)

**Layout and Design:** 2k Design,  
Clifton Park, NY

**Printing:** Benchmark Printing,  
Schenectady, NY

Audubon International is a non-profit environmental organization dedicated to fostering more sustainable human and natural communities through research, education, and conservation assistance. Programs seek to educate, assist, and inspire millions of people from all walks of life to protect and sustain the land, water, wildlife, and natural resources around them. Funding is provided by memberships, donations, and program sponsorship. The ACSP Golf Program is sponsored by The United States Golf Association.

*The newsletter is printed on recycled paper.*

**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 [jbatza@auduboninternational.org](mailto:jbatza@auduboninternational.org)

Audubon International  
46 Rarick Road  
Selkirk, New York 12158  
Phone: (518) 767-9051  
Web Page: <http://www.auduboninternational.org>  
e-mail: [acss@auduboninternational.org](mailto:acss@auduboninternational.org)



AUDUBON  
INTERNATIONAL

Non Profit Org.  
U.S. Postage  
PAID  
Permit No. 55  
Delmar, NY 12054