

## The Water Imperative

*“When you look out the other way toward the stars you realize it’s an awful long way to the next watering hole.”*

Loren Acton, Astronaut, *Challenger 8*, July 1985

Wherever the human race has roamed, be it across oceans, continents, or into the depths of space, we are forever searching for the presence of water: clean water, plentiful water. In its abundance, civilizations have flourished. In its absence, life has withered.

Should it not amaze us that Earth alone is the only planet for several million light years in any given direction that has the right combination of water, atmosphere, and proximity to its sun to support life? As far as we’ve yet been able to see: we’re it. If you want a cold drink, stay close to home.

### Degraded water sources a prevalent problem

Unfortunately, for many of us, our local water supplies need help. Some have been dwindling due to prolonged drought or from population expansion and development without thought of resource availability. Many of our lakes, streams, and rivers are less than pristine, polluted with the byproducts of industry, agriculture, and our daily actions.

Securing clean, high quality water is a basic necessity, yet according to the World Health Organization 1.1 billion people do not have access to improved drinking water services and 2.2 million people die yearly from diseases associated with lack of safe drinking water, inadequate sanitation, and poor hygiene. We’ve been spoiled in North America: 99.9-percent of us have access to clean water and sanitation. Still, when the price

of 16 ounces of bottled water costs more than a gallon of gasoline, it’s time to ask some questions. When our reservoirs look like mud flats and our streams run full with sediment or bacteria, it’s time to make some changes.

liter plastic bottles? Should water, like air and sunshine, remain an essentially free, shared common good? What is the price of keeping water clean, of repairing aging infrastructure, and protecting water supplies? What will it take for us to change our water use habits and eliminate wasteful practices and pollution?

These are questions of sustainability. Our ultimate challenge is keeping water healthy and plentiful to sustain life in all its spectacular variety. Are we willing to make a commitment to achieve that end?

As an organization dedicated to helping people help the environment, Audubon International has set water conservation and water quality protection and improvement among its highest priorities. We ask our members to do the same.

Together, we have restored and protected wetlands, lakes, and aquifers that store water and recharge water supplies. We have

helped people monitor water quality and clean up local waterways. We have sought alternative supplies and helped people increase the use of wastewater to reduce demand for potable water. Now, we must redouble our efforts to achieve sustainable water systems.

We think it can be done: one household, one stream, one watershed at a time.



Jean Mackay

*Audubon International has set water conservation and water quality protection and improvement among its highest priorities.*

### A question of sustainability

Is access to water a basic human right? Should water be a privately owned commodity, removed from one area and sold to another by transnational corporations, with the help of diversion dams, tankers, pipelines, and one

# Audubon International Vision

## Water, Water... Everywhere?

I've been thinking a lot about water lately. It's one of those things that you don't really think about until it's not around or is undrinkable. Much of the Eastern U.S. is in a state of drought due to a mild, uneventful winter. Being on a well at home, when I open the faucet for a glass of water, I worry that nothing will come out. In response to this worry, many communities are asking citizens to conserve water—no car washing, minimum use for watering lawns, etc. That makes sense, right? Yet, why should I conserve water when I see my neighbor sprinkling his petunias? My flowers need a drink too.

This is a classic example of the "Tragedy of the Commons" at work. In this parable of environmental degradation, a common grazing field—home to many surrounding farms—is overgrazed because it's in each of the neighboring farmers best interest to use the resource for his own herd. There's no regulation or incentive to manage the use of this limited resource. Individual greed, not the collective good, drives resource use. In the end, the field is destroyed and the herds of all the farmers are damaged with the lack of food.

Individual leadership, environmental stewardship, and voluntary actions and education could have curtailed that tragedy—the same is true in my neck of the woods. Whether conserving water or improving water quality itself, we ask for members to take a leadership role as stewards of the environment in your area. Show your neighbors what you're doing to voluntarily preserve and protect one of our most basic resources. Take steps to protect your local watershed and then work with others to take those steps as well. In this way, you too will be helping people help the environment.



Kevin A. Fletcher  
Director of Programs and Administration

## Ahead of the Game

*Delaware golf facilities achieve 100% participation in the Audubon Cooperative Sanctuary Program*

The Delaware State Golf Association (DSGA) reached 100-percent participation in the Audubon Cooperative Sanctuary Program (ACSP) for Golf Courses in February 2002. In the strongest show of support to date for any state golf association, the DSGA has agreed to fund membership dues for all of the superintendents in the state of Delaware. Delaware is the first state to have statewide participation in the program for golf courses.

"Delaware superintendents would like to send the message that they want to be the best possible stewards of the land. By joining the ACSP as a group, the entire state is sending the same message," said Kevin Mayhew, Golf Course Superintendent at Newark Country Club, who helped spearhead the venture as part of his participation in the DSGA Green Section. "All of the superintendents believed in the program and wanted to join, but saw the yearly dues as

a hurdle. The idea of having the DSGA Green Section fund the dues was presented to our golf association and was immediately endorsed."

"We are thrilled that the DSGA has taken such a positive leadership role in preserving our environmental future," stated Ronald Dodson, President and CEO of Audubon International. "I hope that the initiative that the DSGA has taken will now be replicated in states and regions throughout the country."

"By working with Delaware superintendents individually and as a group, we can accomplish more for the environment," stated Joellen Zeh, Staff Ecologist for Audubon International. The Delaware superintendents will have a stronger network for working with each other and can collaborate on larger projects, such as water quality monitoring at a watershed level. They also plan to take advantage of seminars offered by Audubon International that will help the entire group succeed.

"We saw this as a natural progression. There is no better way for golfers of the state to keep courses up-to-date with the latest programs to protect and enhance wildlife and environment," said J. Curtis Riley, Executive Director of DSGA.



Members of the Delaware State Golf Association announced their full support for the ACSP during February's GCSAA Conference and Show.

"We are willing to continue this funding each year and hope that other states join us. This is a first for Audubon International and it is fitting to be coming from the *First State*."

## ACSP's Top Five

The following states have the greatest percentage of members enrolled in the Audubon Cooperative Sanctuary Program for Golf Courses:

Delaware	100%
Colorado	25%
Connecticut	22%
New Jersey	22%
Illinois	21%

For more information about getting your state on par with Delaware, contact: Joellen Zeh at (518) 767-9051, extension 14 or via email at [jzeh@audubonintl.org](mailto:jzeh@audubonintl.org).

## Preserving Wetlands Right

Preserving wetlands sometimes involves more than just protecting the land that's wet. For wetlands to be most beneficial, they have to be connected to other habitats so that a variety of creatures can creep, slither, walk, and fly safely to them from neighboring habitats.

Wetlands not only are relied upon by wildlife that live in the water, but also are vital to species that use them to carry out part of their needs, such as feeding, drinking, or breeding. Thus for most animals, wetlands and uplands must be connected together for both habitats to serve the year round needs of wildlife.

Yet government regulations rarely stipulate that these connections be preserved when permitting a new development. They merely require that the wetland itself be protected.

"That cuts off the ability of many creatures to get to the wetland," states Larry Woolbright, Ph.D., Director of Research for Audubon International. "For instance, many species of frogs and salamanders move between wooded uplands, where they spend much of the year, and wetlands, where they breed. Protecting only the wetland and developing all around it reduces or eliminates the ability of frogs and salamanders to reproduce—and that can spell the end to once thriving populations."



Kraig Marquis

*Audubon International staff conducted a field visit for Watermark Communities Inc.'s Sun City Center Ft. Myers in Florida, an Audubon Signature Program member enrolled at the gold level for sustainable design. During the visit, Ron Dodson, President (left), Larry Woolbright, Ph.D., Director of Research (right), and Kraig Marquis, Sustainable Communities Coordinator for Florida verified wetland areas and conducted necessary field work to set conservation priorities that were incorporated into the conceptual design for the property.*

“

We want to protect wetlands right, so that they continue to provide wildlife habitat, absorb storm water, filter pollutants, and recharge groundwater.

”

## Going Beyond Minimum Requirements

Audubon International seeks to help its Signature members go beyond what the government requires in regard to the “lines” it draws around wetlands. Through on-the-ground site surveys and careful analysis of design plans, the Audubon Signature Program team works with developers to establish corridors of upland preserves that are linked to wetlands. In addition, they delineate core habitat areas and small habitat patches throughout a property to minimize habitat fragmentation and maximize the wildlife value of protected natural areas.

“We want to protect wetlands right, so that they continue to provide wildlife habitat, absorb storm water, filter pollutants, and recharge groundwater,” says Woolbright. “We know it can be done—our Certified Audubon Signature Sanctuaries are living proof of what can be accomplished when developers make conservation and good environmental stewardship integral to a project.”



Ronald Dodson

*Karen Childress, Environmental Stewardship Manager for WCI Communities, Inc., Eric Dodson, Director of Management Information Systems for Audubon International, and Kraig Marquis, Sustainable Communities Coordinator for South Florida enjoy a stroll along a boardwalk designed to educate residents about Sun City Center's unique cypress wetland and oak hammock.*

## Landscape Smart to Save Water

**D**id you know that outdoor landscapes can put the greatest demand on our water supply, often accounting for as much as 50% of all the water used for home consumption? That's right; your water use may double from April to September.

Take a look at your most recent water bill. Usage is generally measured in cubic feet of water, not gallons (1 cubic foot equals 7.5 gallons). So if you use 2000 cubic feet during a four month billing cycle, that means that you've used 15,000 gallons of water. Some households may spike to as high as 8,000 to 10,000 cubic feet of water used—or a whopping 60,000 to 75,000 gallons—in the spring and summer alone.

Much of the East Coast, from Florida to Maine, is now experiencing moderate to extreme drought, according to the latest National Weather Service U.S. Drought Monitor. Even if we get significant rainfall this spring and summer, it will take quite a while for reservoirs to reach even normal levels.

### Getting beyond green

When it comes to saving water outside, lawns are a primary target. With an estimated 25 million acres of lawn under cultivation in the United States, Americans collectively spent about \$22.7 billion dollars in 2001 on lawn care products and services (*American Landscape and Nursery Association*). In a drought year, homeowners tend to use *more water*, not less, on lawns and outdoor landscaping. With less rainfall to keep lawns and gardens at their best, we rely more heavily on irrigation, placing added stress on already limited water supplies.

While many people enjoy having a lovely lawn, drought requires that we make priorities about what we value most. Can you tolerate a less than perfect lawn this year for the sake of ensuring that water supplies are adequate for all user needs, as well as emergencies? Can you water less frequently and more efficiently so that the storage capacity of our reservoirs can begin to be recharged? Can you alter your landscape to incorporate plants that require minimal or no supplemental watering?

The collective impact of the day-to-day actions that each of us can take to conserve water can add up to significant water savings. Here are a few suggestions for saving water outside:

**Design Smart!** Good landscape design can help you maintain an attractive property, while minimizing the amount of supplemental irrigation you need. Start by making a simple sketch of your outdoor landscape, including buildings, lawn, garden, walkways, play areas, etc. Note any slopes, drainage problems, existing plants and trees, or other factors that will determine landscape needs. In selecting plants that are right for your site, you'll also need to note which areas are in full sun, or shaded, and which areas need to be irrigated.



Innsbrook Resort and Conference Center, MO

*Coneflowers and coreopsis, displayed here at ACSP Business member Innsbrook Resort and Conference Center in Missouri, are among the many native perennials that look good with little supplemental watering.*

Evaluate what you have. *Too much lawn?* If your yard is a sea of grass with few trees, shrubs, or garden areas, consider making a change in your landscape. A combination of lawn, landscaped areas, and natural areas creates greater interest and beauty. Greater plant diversity also results in greater wildlife diversity—so you can expect to see more songbirds at your feeders. Once established, a more diverse landscape requires less water.

**Choose the right plants.** Some plants need lots of water to thrive, while others are hardy and look good with little or no supplemental watering. By making smart decisions at your local nursery, you can save a lot of water.

Some of the best examples of plants that require less water are found in our native prairies and meadows. These plants have adapted over thousands of years to thrive on little or erratic water input, and include coneflowers, blazingstars, coreopsis, black-eyed

Susan, and asters, as well as many ornamental native grasses, including Indian grass, big bluestem, and little bluestem. In the Southwest, a long list of native desert wildflowers, cacti, and shrubs are well adapted to dry conditions. A horticulturist at your local nursery should be able to advise you about drought-tolerant plants that are best suited for your site.

**Reduce your need for supplemental watering.** Select and group plants together according to their sunlight and water needs. Use your site plan to designate distinct zones, including:

- **Natural Zones**—Plants in these areas live on rainfall alone. Plants that are native to your area generally will be better adapted to your specific site conditions.
- **Low-Water Zones**—Plants in these areas will be able to survive primarily on rainfall, but sometimes may require a little additional watering in times of drought.
- **Moderate Water Zones**—These areas will require regular watering and should be limited to focal areas, such as entryway flower gardens, vegetable gardens, and functional lawn areas.

**Limit the use of annuals that need daily watering.** Hanging baskets, window boxes, and container gardens filled with annual flowers need almost daily watering. Perennials can go without water for much longer periods and may be a better choice in a drought year.

**Use mulch.** Organic mulches help retain moisture, cool the soil, and reduce weed establishment when used in a 3”–5” thick layer. Mulch landscaped beds, borders, and gardens at the start of the season.

**Improve your soil.** Dig some compost into existing garden beds and add a generous amount of compost to new landscape beds and borders. Compost improves the structure of the soil, enabling sandy soils to better retain moisture and keeping clay soils from hardening and cracking during drought. Contact a compost supplier in your area or start a backyard compost pile to generate a steady supply.

**Accept less than perfect.** There’s more to life than perfect grass. Many homeowners never irrigate their lawns. During drought, it’s normal for grass to go dormant (or “brown out”), but that doesn’t mean the lawn is dead. Turfgrass is resilient and will turn green again with adequate moisture. Keep your mowing height high—about 2½ to 3 inches—to help prevent the grass from being baked by the sun.

**Naturalize part of your lawn to reduce water use.** Consider converting part of your lawn into a natural meadow. There may be a back corner of your yard, a hard to maintain slope, or another area of your property suited for transformation from lawn to meadow or shrubby area. This is a terrific way to save water, reduce routine maintenance, and add habitat for birds, butterflies, and other wildlife.



Shawnee Inn and Golf Resort, PA

*Replacing turfgrass with wildflowers, meadow grasses, or other native plants can result in dramatic reductions in water use. Shawnee Inn and Golf Resort in Pennsylvania naturalized 10 acres of turfgrass to create attractive, low maintenance areas throughout the property.*

## Environmental Stewardship Contribution

Throughout the United States, many communities are facing problems of degraded water quality, loss of freshwater habitats, and increased demands on water supplies. On the map, you can see the conservation status of freshwater eco-regions in the United States. Each region is made up of many watersheds, or drainage areas, and its health is measured in terms of various indicators, such as water quality degradation, habitat fragmentation, alteration of surface waters, and the likelihood of future threats.

What is the status of your area? As you can see, the majority of Audubon Cooperative Sanctuary Program (ACSP) members live within regions that have been rated endangered or threatened.

The message is clear – a collective effort must be undertaken to protect and rehabilitate our watersheds. Audubon International assists its members in becoming actively involved in protecting water quality, conserving water, and enhancing aquatic habitats. The following examples give testament to the fact that good stewardship can make a dramatic contribution to sustaining our water resources well into the future.

### Northwest

**Restoring Streams**—Logging operations, agricultural runoff, polluted stormwater, and dams are among a host of problems that can make streams unsuitable for wildlife, recreation, and drinking water. Restoring streams to health includes our efforts to protect spawning grounds, stabilize banks from erosion, and naturalize shorelines.



Steve Kealy and Richard Steadman of Glendale Country Club, WA

At Glendale Country Club in Bellevue, Washington, Superintendent Steve Kealy and his staff have gone to great lengths to help restore salmon populations in Kelsey Creek, which runs across the property. Working in conjunction with the Washington State Fish Hatchery in Issaquah, Kealy and his staff now raise about 30,000 Chinook salmon eggs per year in remote incubators next to the stream. After hatching, the fish live in the incubators for 60–70 days until they are large enough to be released. The normal survival rate is one percent, which amounts to about 300 fish per year.

### Southwest

**Protecting Water Quality**—Water quality is a primary concern for all of us. Whether our focus is environmental impacts in a watershed, irrigation suitability, or consequences for downstream users, we all have a vested interest in protecting water quality.

At The River Course at Keystone, in Keystone, Colorado, the Snake River winds its way through the property just one mile upstream of Lake Dillon, a drinking water supply reservoir.



Tony Peterson, The River Course at Keystone, CO



Source: Adapted by Peter Bronski from Figure 4.10 Final Conservation Assessment by Abell, Olson, Dinerstein, Hurley, et. al., Island Press: W

# Routes to Watershed Protection

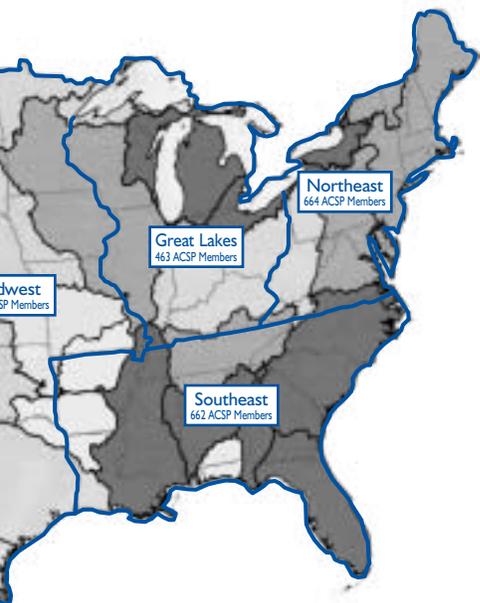
The Snake River also provides excellent trout habitat. Superintendent **Craig Belcher** employs best management practices and maintains a 25-foot buffer of short grass prairie species around water features to protect water quality. Natural vegetation along the banks of the Snake River provides a corridor for wildlife species and shades the water so that trout continue to thrive. The course's design measures and management practices have led to a 20-percent reduction in phosphorus loading and are helping to ensure that residents of Summit County continue to enjoy the benefits of high quality water.

## Great Lakes

**Creating Aquatic Habitat**—*The stewardship efforts of individual homeowners can help keep common species common. Frogs and other amphibians, as well as a variety of birds, benefit from backyard conservation actions.*



Shari and Vince Gullo



Conservation Status in Freshwater Ecoregions of North America; A Conservation Status Report. U.S. Environmental Protection Agency, Washington D.C. 2000. ACSP membership numbers are as of 3/14/02.

**Shari and Vince Gullo** live in the suburban neighborhood of Lake Zurich, Illinois, situated just a few miles from two wildlife refuges. As part of their participation in the Backyard Program, the Gullo family took steps to carefully manage water resources and attract an increased diversity of wildlife to their property. After replacing much of their lawn with flowers to attract hummingbirds, the Gullos built a small pond among the natural vegetation. The pond has become a focal point for wildlife activity, including regular sightings of frogs and an exciting close up glimpse of a Great Blue Heron.

## Southeast

**Managing Water Resources**—*Our water resources are constantly in demand—for wildlife, recreation, irrigation, and drinking. Large scale community planning is an excellent way to coordinate activities within an entire watershed and ensure that demand and use can be sustained.*

Audubon International has been working with the City of Eufaula, Alabama since 1997 to catalyze and coordinate strategic planning to help the city become a sustainable community. The entire 70 square miles that make up the corporate limits of Eufaula have been registered in the Audubon Cooperative Sanctuary Program. Among the community's most prominent environmental features are 45,200-acre Lake Eufaula and the 15,000-acre Eufaula National Wildlife Refuge. Plans for Eufaula's sustainable future are intricately linked to ensuring that the lake continues to support a diversity of uses, including drinking water, wildlife habitat, fishing and other recreation, and barge traffic on its way to the Gulf of Mexico.



Ronald Dodson

## Conserving Water

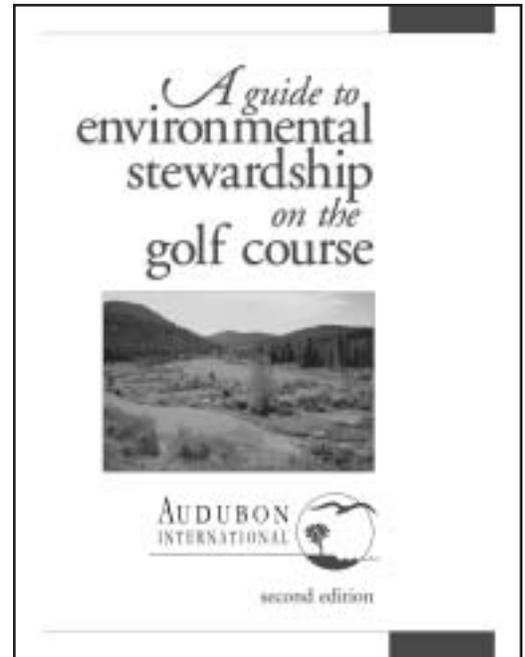
Above normal temperatures this past winter combined with below normal precipitation has left the East Coast facing moderate to severe drought conditions. For example, by the end of March, reservoirs that would normally be at 90% capacity were at 50% or less in New York State, with no appreciable snow melt to recharge them. As we move into the summer, water conservation will be a primary concern for residents. It will be up to all of us to ensure that we use water judiciously and responsibly.

Stewardship  
IN ACTION

## 2002 Edition of *A Guide to Environmental Stewardship on the Golf Course* now available!

Our newly revised, 2002 edition of *A Guide to Environmental Stewardship on the Golf Course* is now available from Audubon International. The guidebook is designed to help superintendents and others interested in environmental management to blend environmentally responsible practices into the day-to-day operations of golf course management. The 128-page book builds upon information provided in our 1996 guide, offering greater detail, new case examples, and plenty of reference material to help golf courses achieve their environmental goals and obtain certification in the ACSP. An excellent resource for turf professionals, students, and members of the ACSP! Cost: \$25.00.

To obtain a copy, contact Jennifer Batza, Membership Secretary at (518) 767-9051, extension 12, or email [jbatza@audubonintl.org](mailto:jbatza@audubonintl.org). The guide can also be ordered from our online store at [www.audubonintl.org/store](http://www.audubonintl.org/store). New members of the ACSP will receive a copy of the guide as part of their new member packet.



## Red, White, and Green

### *ACSP for Vineyards and Wineries takes environmental stewardship to winemaking and grape growing industries*

Building on long-standing relationships with members of the wine industry and the agricultural community, Audubon International is proud to announce the launch of a new pilot program, the *Audubon Cooperative Sanctuary Program for Vineyards and Wineries*. Designed to promote sustainability at the vineyard through environmental stewardship, social responsibility, and economic viability, the *Audubon Cooperative Sanctuary Program for Vineyards and Wineries* offers grape growers and vineyard managers educational resources to help them implement sustainable practices at the vineyard. In recognition of outstanding environmental management, it also awards them with national and international recognition for their achievements through certification of the vineyard as an Audubon Cooperative Sanctuary.

“The wine and grape industries have had a long and rich history of connection to the land and stewardship of our natural resources,” stated Peter Bronski, Staff Ecologist for the Audubon Cooperative Sanctuary Program. “This new program is an effort to enrich that history through the promotion of sustainable principles at the vineyard.”

Bronski will be working directly with a select group of vineyards and wineries throughout the United States to develop and refine educational resources and program components specific to sustainable viticulture. The pilot program for vineyards and wineries is a first step towards developing a new segment of the Audubon Cooperative Sanctuary System that directly addresses the unique needs and challenges of agriculture—a major national and inter-

national industry with incredible potential for improvements in environmental stewardship. Based on results of the pilot program, Audubon International will launch a complete program by next year.

For more information about this new program, contact Peter Bronski, Staff Ecologist, at (518) 767-9051, extension 24, or email [pbronski@audubonintl.org](mailto:pbronski@audubonintl.org).

## Sherry-Lehmann Makes Long-Standing Contribution to Conservation

For more than 10 years, Sherry-Lehmann Wine and Spirits Merchants has supported the conservation efforts of the Audubon Society of New York State (ASNY). Each year, Sherry-Lehmann donates a portion of the proceeds from the sale of Bald Eagle wines to ASNY as a symbol of their commitment to preserving the Bald Eagle and other wildlife species in New York State.

“Sherry-Lehmann’s yearly contribution has supported habitat protection, water quality improvements, and education programs that benefit New York’s rich wildlife diversity,” remarked Fred Realbutto, Director of ASNY. “We extend our sincere thanks to Sherry-Lehmann for its faithful and continuing support.”

## Audubon's 15th Year of Loon Conservation in New York State Underway

The wild and tremulous call of the Common Loon will soon be heard across lakes in New York's Adirondack region as these beautiful birds return to breed and raise their young. On the lookout for loons will be more than 110 Loon Rangers, citizen volunteers trained by the Audubon Society of New York State (ASNY) to track the success of loon breeding.

This year's research results will be bolstered by ASNY's participation in the **Adirondack Cooperative Loon Program**, a cooperative research and education project studying the



natural history of the Common Loon and the effects of contaminants and human interaction on loon populations in the Adirondack Park. ASNY joined with the Northeast Loon Study Workgroup, the Wildlife Conservation Society, the Natural History Museum of the Adirondacks, the NYS Department of Environmental Conservation, and the Biodiversity Research Institute to create the Adirondack Cooperative Loon Program last year. The collaboration will foster improved sharing of resources, information, and results among the groups.

## U.S. Open Championship to be Hosted by Certified Audubon Cooperative Sanctuary Golf Course at Bethpage State Park

When the nation's top golfers tee off for one of the most esteemed tournaments of the year, they'll have the privilege of golfing at a Certified

Audubon Cooperative Sanctuary golf course. The Black Course at Bethpage State Park, located in Farmingdale, NY, will be hosting the U.S. Open Championship this June.

The Black, Red, and Green Courses, members of the ACSP since 1997, have recently been designated as Certified Audubon Cooperative Sanc-



Bethpage State Park

tuaries. Bethpage's Yellow and Blue Courses are working toward certification.

"This special designation underscores our commitment to protecting the natural environment at Bethpage State Park while offering outstanding recreational opportunities for our golfers," remarked NY State Parks Commissioner Bernadette Castro. "We are particularly proud that the Black Course, the site of the 102nd U.S. Open Championship, has achieved this distinction."

## Keep Those Cameras Clicking

We love receiving photographs that demonstrate your efforts to help the environment. Photos not only help us see how your projects are progressing, but we also use them in educational publications, presentations, and on our web page.

Of particular use are photographs showing adults or children actively involved in projects. We also need photos that show how you've incorporated natural areas into your landscape, and of the wildlife you've attracted.

In order for us to be able to use your photos, they must be of good quality, not color copies or low-resolution digital

files. Please send photographic prints, slides, or digital images on a disk. Include the name of the photographer and the property name so that we may credit you properly. Please note that we cannot return any photographs sent to us, so you should keep copies for yourself.

**Send photographs to:**  
Joellen Zeh  
Audubon International  
46 Rarick Road  
Selkirk, NY 12159

*In Canada, send to:*  
Scott Martin  
ACSSC  
115 First St., Suite 116  
Collingwood, Ontario L9Y 1A5

## Digital Images Now Accepted for Certification

Audubon International will now accept digital images with certification requests. Images should be submitted on disk along with certification request forms. When possible, send a few high resolution images (300 KB) of your best projects so we may use them in our print publications.

## Turning a Liability Into an Asset

### *Audubon Signature Program Helps the Town of North Hempstead Reclaim a Former Sand Mine*

Imagine owning 324 acres of historically disturbed land, the site of a former sand mining operation. The property is bordered by a capped solid waste landfill to the south and a 200-foot bluff to the west. How best to reclaim the land and deal with stormwater runoff and erosion are the tasks at hand. The environmental challenges of such a project are many, the options often few.

Such was the actual scenario facing the Town of North Hempstead on Long Island, New York, several years ago. Finding the support and the avenue to accomplish a land reclamation project of this nature is not easy for a municipality. But with community involvement and technical assistance from Audubon International, the town was able to turn a liability into an asset.

### From wasteland to community recreation facility

The Town Department of Parks and Recreation began by evaluating the environmental constraints in physically reclaiming the land and involving the community in determining how the reclaimed land should be used. The consensus was to turn the site into 27 holes of golf, a miniature golf facility, practice range, and athletic fields.

To accomplish this end, the town sought help from Audubon International. The Audubon Signature Program's proven track record in working with developers and municipalities to design and construct development projects that minimize environmental impacts and maximize environmental benefits would serve as a valuable asset in turning the sand mine into a place for community recreation.

### Water is key

Among the chief challenges of the reclamation project was securing irrigation water for the athletic fields and golf course, now named Harbor Links. Tapping limited local groundwater supplies was not a preferred option. But Audubon International staff and the town identified ways solve the problem creatively—with help from the neighboring landfill.

The town created a pump-and-treat facility to collect leachate from the landfill, clean it up, and store it in a retention pond. By pumping this water to an irrigation supply pond on the golf course, the town is able to use this wastewater, rather than return it to the ground. Storm-



Harbor Links, NY

water runoff from the capped landfill is also diverted to the retention pond. This landfill water system provides 300,000 gallons daily to irrigate the golf course and athletic fields.

The course drainage system was designed to collect water from the natural drainage patterns flowing across the golf course. This water recharges five acres of existing and created wetlands on the property. Stormwater from the bluffs to the north and west also is directed into the wetlands and other water features. Harbor Links planted native grasses to stabilize the bluffs and filter runoff. Thus, erosion has been reduced and stormwater runoff is cleaned up as it moves onto the property.

"I have had the pleasure of working with Audubon International over the past four years. In that time they have not only helped develop this property, but have educated the entire staff on responsible environmental management practices," commented Craig Schleider, Superintendent of Harbor Links.

By looking for opportunities and making environmental quality a top priority, Audubon International and the Town of North Hempstead improved water quality, found a valued use for landfill runoff and leachate, and turned a degraded landscape into a recreational asset for the community. Harbor Links was designated a Certified Signature Sanctuary in 2001.

# membership NEWS

## Audubon Cooperative Sanctuary Program

### New Members

#### Golf Program

##### Arizona

Torres Blancas Golf Club, Green Valley

##### California

Centre Hills Golf Course, Aurora  
Springhill Golf Course, Aurora  
William Land Golf Course, Sacramento

##### Delaware

Back Creek Golf Club, Middletown  
Bethany Bay, Millville  
Christiana Country Club, Newark  
Cripple Creek Golf & Country Club,  
Bethany Beach  
Eagle Creek Golf Course, Dover A.F.B.  
Frog Hollow Golf Course, Middletown  
Garrison Lake Country Club, Smyrna  
Heritage Golf Course, Rehoboth  
Jonathon's Landing, Magnolia  
Kings Creek Country Club, Rehoboth Beach  
Mapledale Country Club, Dover  
Rock Manor Golf Club, Wilmington  
Salt Pond Golf Club, Bethany Beach  
Seaford Golf & Country Club, Seaford  
Three Little Bakers Golf Course, Wilmington  
Vandergrift Golf Course, Middletown

##### Florida

Audubon Country Club, Naples  
Cooper Colony Golf & Country Club,  
Cooper City  
Hawk's Nest Golf Club, Vero Beach  
Laurel Oak Country Club, Sarasota  
Victoria Hills Golf Club, Deland

##### Hawaii

Big Island Golf Club, Kailua Kona

##### Illinois

Cary Country Club, Cary  
Chicago District Golf Assoc. Foundation  
Short Course, Lemont  
Edgewood Golf Club, Auburn  
Fox Valley Golf Club, North Aurora  
The Glen Club, Glenview  
Marriott Lincolnshire Resort, Lincolnshire  
Rivers Edge Golf Course, Granite City  
Rockford Park District—Ingersoll Golf  
Course, Rockford  
Seven Bridges Golf Club, Woodridge  
Short Hills Country Club, East Moline

##### Indiana

Delaware Country Club, Muncie

##### Louisiana

Audubon Park Golf Course, New Orleans

##### Maryland

Eisenhower Golf Course, Crownsville

##### Massachusetts

IGM—Widow's Walk Golf Club, Scituate

##### Michigan

Midland Hills Country Club, St. Paul  
Thousand Oaks, Grand Rapids  
Washtenaw Country Club, Ypsilanti

##### Nevada

Incline Village Championship Golf,  
Incline Village

##### New Jersey

Coakley Russo Golf Course, Basking Ridge  
Fairways Golf Center, Piscataway  
River Winds Golf Course, Thorofare

##### New York

Rogues Roost Golf & Country Club,  
Bridgeport  
West Hill Golf Course, Camillus  
Whippoorwill Club, Armonk

##### North Carolina

The Governors Club, Chapel Hill  
Heritage Golf Club, Wake Forest  
Highlands Country Club, Highlands  
Old Chatham Golf Club, Durham

##### Ohio

Golf Club at Legendary Run, Cincinnati  
Portage Country Club, Akron  
Sylvania Country Club, Sylvania

##### South Carolina

Oldfield, Okatie

##### Tennessee

Richland Country Club, Nashville  
Smyrna Golf Course, Smyrna

##### Virginia

Fort Belvoir Golf Club, Fort Belvoir  
Heritage Oaks Golf Course, Harrisonburg

##### Washington

Bellingham Golf & Country Club, Bellingham  
Spokane Country Club, Spokane

### Business Program

##### Hawaii

Kapalua Land Company, Kapalua

##### Missouri

Big Cedar Lodge, Ridgedale

##### Nevada

Incline Village G.I.D. Parks, Incline Village

##### New Jersey

Shearon Environmental Design, Inc.,  
Hopewell

##### Pennsylvania

New Community Church, Wexford

##### Wisconsin

Carthage College, Kenosha

### School Program

##### Florida

St. Vincent Ferrer, Delray Beach

##### Illinois

Dennis Nature Science Magnet School,  
Rockford  
Nashold School, Rockford

##### Virginia

Fauquier Outdoor Lab, Warrenton

### Backyard Program

##### Colorado

Lisa A. Dickman, Colorado Springs

##### Florida

Cindy Geiger, Lakeland

##### Kentucky

Nancy E. Richardson, Henderson

##### Maine

Patrick and Linda Lewis, Falmouth

##### New York

Bill Banks, Monsey  
Mary Durand, Webster

##### North Carolina

Bob and Cathy Fisher, Highlands

##### Pennsylvania

Edward Bantlow, Philadelphia

### Recently Certified Audubon Cooperative Sanctuaries

Bethpage State Park: Black Course,  
Farmingdale, NY

Bethpage State Park: Green Course,  
Farmingdale, NY

Bethpage State Park: Red Course,  
Farmingdale, NY

Jester Park Golf Course, Granger, IA  
Killearn Country Club, Tallahassee, FL  
Kingwood Country Club, Kingwood, TX  
Mohonk Golf Course, New Paltz, NY  
Smock Golf Course, Indianapolis, IN  
Three Nines Golf Course at Resort at  
The Mountain, Welches, OR

Treestdale Golf & Country Club, Gibsonia, PA

### Recertified Audubon Cooperative Sanctuaries

IGM—Willow Run, Pewaukee, Wisconsin,  
*certified since 2000*  
TPC at Southwind, Memphis, Tennessee, *cer-*  
*tified since 1995*

### Audubon Signature Program

### New Signature Members

Bull's Bridge Golf Club, Kent, CT  
Lost Marsh Hammond Golf Course & George  
Lake Enhancement Project, Hammond, IN

### Recently Certified Signature Sanctuaries

Barona Creek Golf Club, Lakeside, CA  
The Club at TwinEagles, Naples, FL  
Quinta da Marinha Oitavos Golfe—Cascais,  
Portugal—*First Gold Signature Sanctuary in*  
*Europe*  
Raptor Bay Golf Club, Bonita Springs, FL—  
*First Gold Signature Sanctuary Resort*  
Robinson Ranch Golf Club, Santa Clarita, CA

### Recertified Signature Sanctuaries

Granite Bay Golf Club, Granite Bay, CA,  
*certified since 1998*

### Audubon Cooperative Sanctuary System of Canada

#### New Golf Members

##### Alberta

Pinebrook Golf and Country Club,  
Calgary

##### Ontario

Highland Glen Golf Club, Priceville  
Loyalist Golf Club, Bath  
Richmond Centennial Golf Club,  
Richmond  
St. Clair Parkway Golf Course, Corunna

Taboo Golf Course at The Muskoka  
Sands Resort, Gravenhurst

##### Quebec

Le Maitre de Mont Tremblant, St. Jovite

#### New Backyard Members

##### Ontario

Brian and Laura LaDuke, Lunenburg

## A Sparkling Blue and White Jewel



Apollo 16, 1972; NASA

**A**stronaut Edgar Mitchell described the earth from space as “a sparkling blue and white jewel.” The presence of water brings Earth alive—good stewardship of our planet’s water resources is essential to keeping water clean, abundant, and accessible in the 21st century. Learn how Audubon International is addressing challenging water issues and find out how you can help... *in this issue.*

# STEWARDSHIP news

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

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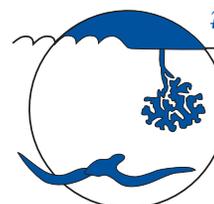
## ACSS QUICK TIP

It's Not too Late to Participate in the North American Birdwatching Open—May 11, 2002

If you'd like to participate in this year's 24-hour bird count, open to all ACSP members, please visit our website to register and download rules, information, and a bird checklist: [www.audubonintl.org/projects](http://www.audubonintl.org/projects).

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*Helping people help the environment*



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