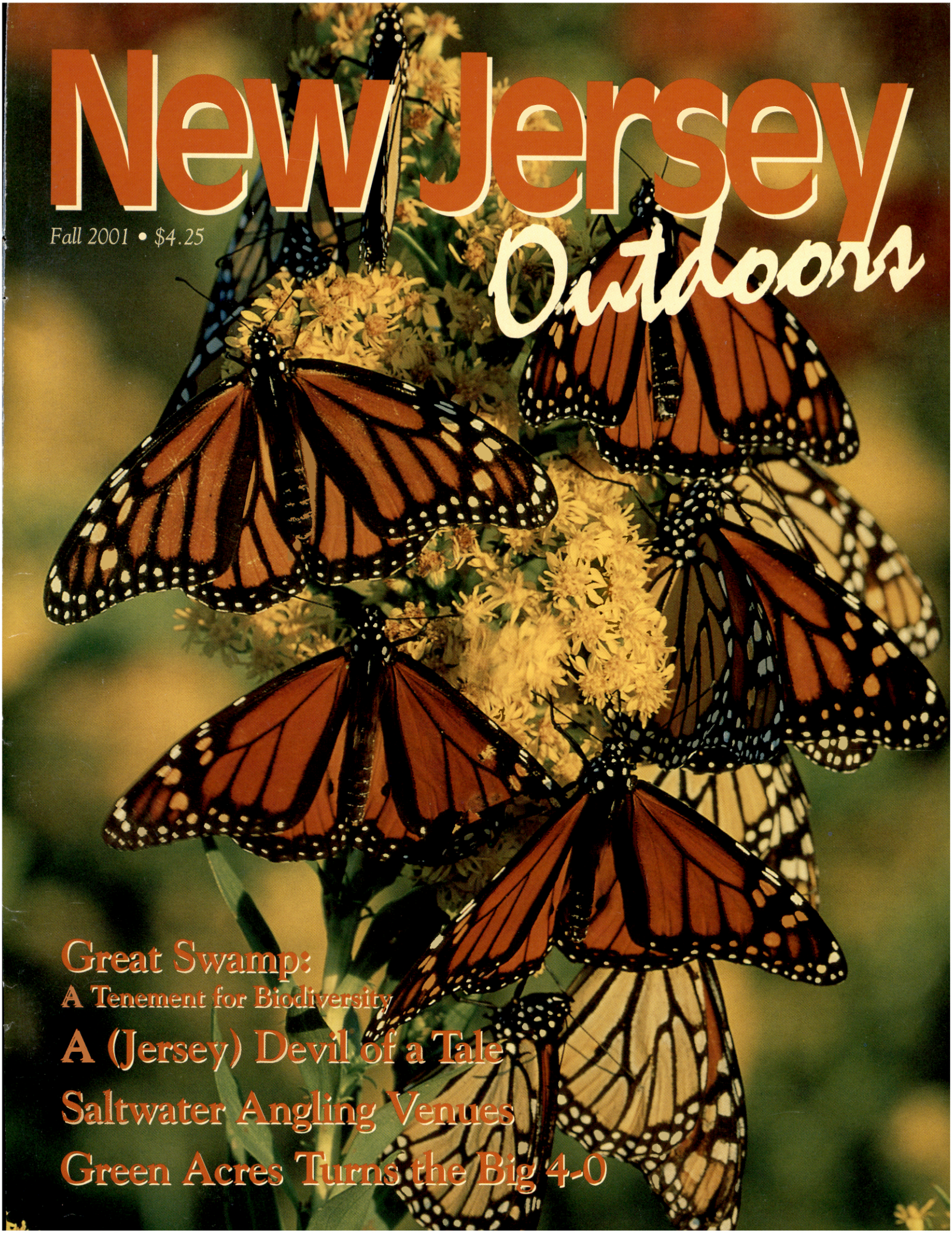
New Jersey Outdoors

Fall 2001 • $4.25



Great Swamp:
A Tenement for Biodiversity

A (Jersey) Devil of a Tale

Saltwater Angling Venues

Green Acres Turns the Big 4-0



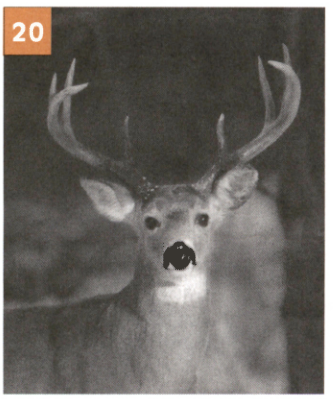
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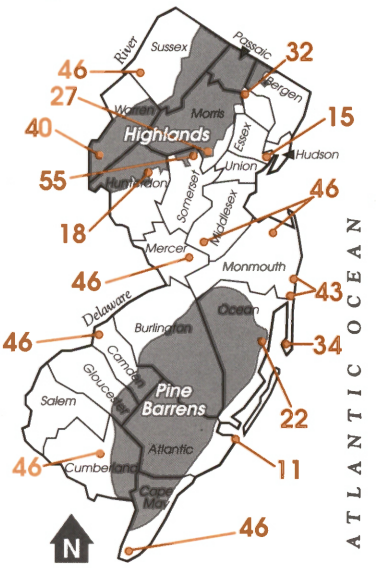
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Monkarch Butterflies © Joseph Carpenter

Inside Front Cover

See **More Than One Way to Jump a Duck** on page 40 for out-of-season hunting alternatives and more images such as this mallard drake. © Clay Myers

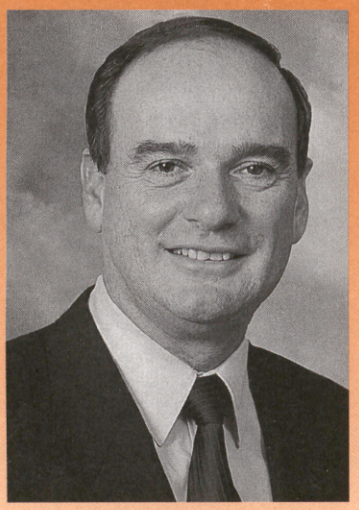
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The muskrat is the subject of the Wildlife in New Jersey profile on page 64. © 2001 Gene Feller

Back Cover

Tackle one of the venues in **A Saltwater Angling Primer** (page 34) and the catch of the day might be yours. © Fred Cantor

From Acting Governor Donald T. DiFrancesco



Donald T. DiFrancesco,
Acting Governor

For folks who vividly remember the Mantle-Maris home run chase of 1961, 40 years has passed like the blink of an eye. But 40 years has been long enough to see the home run record eclipsed. Long enough to see nine presidents occupy the White House. Long enough to see New Jersey's population increase by nearly 39 percent.

I'm proud that in these years New Jersey has become a national leader in land preservation. Since the Green Acres program began in 1961, our citizens have overwhelmingly approved bond issue after bond issue for this purpose. More than a million acres of land have been permanently preserved—with almost as many still to be preserved over the next decade.

I applaud our citizens for the tremendous success of New Jersey's open space programs. From Green Acres to Farmland Preservation to the Garden State Preservation Trust, we have made sound investments in our state's future—and led 19 counties and 146 municipalities to establish their own open-space funds.

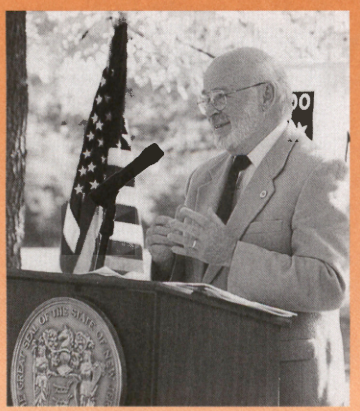
In preserving a field, farm, or forest, we save both a parcel of land and a piece of our heritage. In declaring these acres off-limits for development, we protect the environment, promote a higher quality of life, and encourage smart growth.

We have made great progress since 1961, but our work continues. If you want to sell or donate your land to Green Acres, please call 609/984-0500 to find out how.

As more states consider land preservation within their own smart growth efforts, they will gain insight from our experience and inspiration from our success. Like Roger Maris in his day, we've set the standard. It's good to know that 40 years from now our grandchildren and their children will take pride and pleasure in the Garden State that our generation helped to preserve.



From Commissioner Robert C. Shinn, Jr.



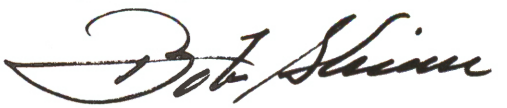
Robert C. Shinn, Jr.,
Commissioner

The next time you're in an urban setting look around the vicinity and see if you can locate any green spaces. Are there parks and trees? Do you notice any recreational areas? Trenton, Bayonne, Jersey City, Long Branch, Perth Amboy, and other New Jersey cities take pride in the green areas, promenades, parks, and waterfronts they've developed for the public to enjoy.

In late July, I participated in an urban conference that brought together individuals and groups who promote the greening of urban landscapes. At the conference I had the pleasure of presenting the DEP's Eagle Award to an exceptional organization—The Weequahic Park Association of Newark—people who joined together to save their neighborhood park, which had fallen into disrepair. Their vision, commitment, hard work, and the creative partnerships they formed have resulted in a rehabilitated park that features a 2.2-mile rubberized running surface—the longest in the world. They've also restored the shoreline of the park's 80-acre lake, a rose garden, playgrounds, picnic grounds, and more.

Their level of involvement and commitment is a testament to the kind of cooperation that makes a park part of a neighborhood. And their efforts raised awareness of the importance of parks and recreation programs throughout the Essex County Park system.

According to the Trust for Public Land, a city's green space defines almost everything about it: the planning, the real estate values, the traffic flow, public events and even civic culture. Green cities attract investment, which enhances the economic, environmental, and cultural elements of urban areas. The creation and protection of green spaces are essential for providing a healthy environment for residents and visitors, young and old, and for offering recreational opportunities for the public. I encourage you to get involved with your community's greening initiatives.



On behalf of Commissioner Bob Shinn, the staff of New Jersey Outdoors magazine, and the employees of the Department of Environmental Protection, I offer sincere sympathy to all who lost family members or friends in the horrific events of September 11, and pray that all who were hurt in any way will heal quickly.

The Editor

NJO Mailbox

Better Late . . .

Since the piece I am writing about appeared in the Spring 2000 edition, this is probably the latest response you have ever received to one of your articles. The article was Decoration Day in Lumberton and it was not until May 28, 2001, that I was given a copy of your magazine.

I was born and raised in Lumberton but have lived in North Carolina since 1979 and came back to Lumberton to deliver the main address at the 2001 Memorial Day ceremonies. A charter member of the "Last Man's Club" mentioned in the article, I was in charge of arranging the annual parade for about 25 years prior to my moving south.

Your article made me doubly proud—first, as a resident of Lumberton, and secondly for being a member of the "Last Man's Club"—and I wish to commend John Chitester for his fine article.

It was not only well written but very accurate, unlike many such stories that mix a little fact with a lot of fiction.

Weldon R. Storey
Charlotte, NC

A Tip for Crabbers

I have enjoyed *New Jersey Outdoors* for more than 30 years and found many good tips on hunting and fishing in New Jersey. I think hunting in New Jersey is the best-kept secret in the U.S. When I talk to hunters from other states they can't believe how long our seasons are and the amount of deer in the state.

My wife and I have been crabbing for several summers now and often find that people do not know the legal size for crabs. Of those who do, most guess on the size or try a ruler if in doubt. Here's a simple device I make from scrap wood. *(See illustration below.)* I cut out a 4°-inch piece. If the crab fits between the space it goes back; if it is larger, it goes in the bushel basket—no guess work and no bitten fingers.

Thomas Lienhard
Westfield



Unmasked

No, we didn't divest baby raccoons of their masks for the story in the summer issue; images of baby opossums were inadvertently published. Thanks to all of our sharp-eyed readers who let us know they noticed, especially those who did so with a touch of humor.

State of New Jersey
Donald T. DiFrancesco
Acting Governor

Department of Environmental Protection

Robert C. Shinn, Jr.
Commissioner

Jane F. Kelly
Assistant Commissioner
Legislative and External Affairs

Sandy Huber
Administrator, Office of Publications

New Jersey Outdoors

Fall 2001, Vol. 28 No. 4

This publication is dedicated to promoting and encouraging the wise management and conservation of our natural, cultural and recreational resources by fostering a greater appreciation of those resources, and providing our residents with the information necessary to help the Department protect, preserve and enhance them.

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Pheasant/Quail Stamp

New Jersey hunters who pursue pheasant or quail on any of the Wildlife Management Areas stocked by the Division of Fish and Wildlife are required to obtain a $40 pheasant/quail stamp. Proceeds from the sale of the stamp fund the rearing and stocking of approximately 55,000 pheasants and the purchase and stocking of approximately 11,000 quail each year. The Division of Fish and Wildlife selects the artwork for the annual stamp from submissions to an art contest. Entries must be received by May 1. Winning artists receive $500 for each winning design and will be sent 50 free stamps after the stamp expiration date of December 31. For more information regarding the contest, call 609/292-2965.

And the 2002 Winner Is . . .

Jeffrey Klinefelter of Etna Green, Indiana, submitted the artwork chosen for New Jersey's 2002 Pheasant/Quail Stamp. In Indiana and throughout the nation, Jeff is becoming widely known as a talented wildlife artist. A graduate of Indiana University's Herron School of Art, he primarily paints wildlife and landscapes, with waterfowl as a favorite subject.

Although unable to devote full time to painting, Jeff has compiled an impressive list of wins in wildlife art stamp competitions. In addition to the 2002 New Jersey Pheasant/Quail Stamp, he has won the 1996 and 2001 Nevada Duck Stamp Art Contest; 1996 New Hampshire Waterfowl Art Competition; 1997 Delaware Duck Stamp Contest; 1993, 2001 and 2003 Indiana Duck Stamp Contest; 2000 Florida Waterfowl Contest; 2000 North Dakota Duck Stamp; 2001 South Carolina Waterfowl Contest; 2002 Ohio Duck Stamp Contest; and 2003 Indiana Gamebird Stamp Contest. He also won the Upland Gamebird Stamp contests in both Florida and Oregon, as well as the Trout and Salmon contests in Delaware and Indiana. He is most proud of placing in the top 10 of the Federal Duck Stamp Contest.

His paintings have appeared on the 2000 Massachusetts Deer Hunting Stamp print, the 1999 Oregon Upland Gamebird Stamp print, and various states' waterfowl contest prints and calendars.

Jeff spends hours each spring and fall studying and photographing waterfowl in their natural habitat. He is a member of The Nature Conservancy and Indiana Wildlife Artist Associates and is a director of the Potowatomi Wildlife Park.

A Brace (or More) of Birds Awaits You

Jim Ackerman, superintendent of the Division of Fish and Wildlife's Rockport Game Farm, reports this year's successful pheasant hatches have us on track to produce a record number of birds for the 2001 pheasant season. The birds are the result of seven hatches staggered through the spring and early summer.

As they mature, the birds are moved to the 34 acres of outdoor pens. Here they grow under the protection of a thick cover of sorghum and sunflowers. If this year's production target of 55,000 birds is realized, it will be a record for the farm. The pheasants will be stocked on 25 Wildlife Management Areas (WMAs) throughout the state.

The birds raised at the Rockport facility are a special strain of pheasant developed through a 20-year breeding program by game farm personnel. They are an engineered blend of the English ring-necked pheasant, the Korean green pheasant, the Mongolian pheasant, and black-necked pheasant. The best traits of each breed were selected to produce Rockport's current strain, which holds well for dogs and has a heart-stopping explosive flight as well as a remarkably handsome appearance. Their rapid flight has earned them the well-deserved sobriquet of *Rockport Rockets* among those who hunt them.

These birds will be stocked on wildlife management areas across the state beginning in early November for the pheasant season opener on November 11. The last stocking will occur on December 29. (See sidebar for stocking locations and schedule.)

These stockings provide almost two months of opportunity for the upland hunter. Hunters must have a pheasant/quail stamp in possession in addition to the regular firearm-hunting license to hunt for pheasants on the stocked areas. The purchase of the $40 stamp provides more than six weeks of hunting birds that are stocked three days each week on most of the 25 WMAs. This stocking regimen amounts to 16 stocking days at a cost to the individual hunter of $2.50 per stocking day.

For this miniscule daily cost, the stamp buyer not only gets a place to hunt that has been stocked with one of America's finest strains of game farm pheasants, but also has the opportunity to pursue 11,000 quail that are purchased and stocked on 17 days spread over two months. The quail are stocked on two South Jersey WMAs, Peaslee and Greenwood Forest, where portions of the areas are managed specifically for quail.

Those concerned about crowding should schedule their hunts after lunchtime (when most other hunters have gone for the day) or on the days when birds are not stocked. Surveys show that opening time hunters on stocking days take only 50 percent of the birds that were stocked for that day, so there should be enough birds to provide rewarding outings for afternoon hunters and those hunting non-stocking days. Take advantage of this quality hunting experience and New Jersey's best hunting bargain by purchasing a pheasant/quail stamp and hunting the stocked WMAs this season.

by Joe Penkala, supervising wildlife biologist, NJDEP Division of Fish and Wildlife

The Season & Stocking

The hunting season for pheasant and quail is as follows: from November 10 to December 1; December 10 and 11; and December 13 through February 18, 2002. Hunting hours begin at sunrise (except on opening day—November 10—when hunting starts at 8 a.m.) and last until a half-hour after sunset. The daily bag limit on stocked WMAs is 7 quail and 2 pheasants of either sex. (Please see the 2001 Hunting Issue of the *Fish and Wildlife DIGEST*, available on-line at www.njfishandwildlife.com and in print from license agents, for daily bag limits for pheasants taken on non-stocked areas.)

The Wildlife Management Areas (WMAs) and federal properties listed below will be stocked with pheasant or quail as indicated. Individuals aged 16 and over hunting or possessing pheasant or quail on these areas must have in their possession a current Pheasant and Quail Stamp. (Free youth hunting licenses include the stamp.) The hunter must sign the stamp across the face in ink.

The Assunpink, Berkshire Valley, Black River, Clinton, Colliers Mills, Dix, Flatbrook-Roy, Glassboro, MacNamara (Tuckahoe), Millville (Bevans), Nantuxent, Pequest, Port Republic, Walpack, and Whittingham WMAs, as well as Fort Dix Military Reservation, will be stocked with **pheasants** for the following dates:

- Nov. 10, 13, 15, 17, 20, 22, 24, 27, 29
- Dec. 1, 15, 18, 20, 22, 27, 29

The Heislerville, Howardsville, Mad Horse, Manahawkin, Medford, Stafford Forge, and Winslow WMAs, as well as the Delaware Water Gap National Recreation Area, will be stocked with **pheasants** for the following dates:

- Nov. 10, 17, 22, 24
- Dec. 1, 15, 22, 27, 29

The Greenwood Forest and Peaslee WMAs will be stocked with **quail** for the following dates:

- Nov. 10, 13, 15, 17, 20, 22, 24, 27, 29
- Dec. 1, 15, 18, 20, 22, 27, 29

Hunter Education 2002

The New Jersey Division of Fish and Wildlife is proud to announce a major program change scheduled to take effect January 1, 2002. The traditional hunter education program will now be offered as a modified home-study video based course, with testing and field sessions conducted at centralized teaching locations throughout the state.

The Hunter Education Unit has developed a videotape/workbook series designed to cover the shotgun, muzzleloading/modern rifle and bow and arrow courses. The video will cover all information currently provided in the traditional course, with additional topics designed to stimulate thinking for situations where ethical, safe/unsafe and shoot/don't shoot decisions must be made. Videotapes, workbooks, and a schedule of field course dates and testing sites for the entire year will be available at local license agents and all division field offices.

This innovative program will allow students to learn the classroom material at their leisure and select a one-day course, for archery, shotgun, rifle/muzzleloader or all three classes on a date which best suits their own schedule. A review of the home study material will be offered before the mandatory written test. After successful completion of the written exam, the student will be placed with an instructor to complete an extensive field walk and live-fire session where they will learn new information in addition to being tested on information covered in the video.

New Jersey's hunter education program is recognized as one of the top programs in the country, and this new program will ensure that hunting will remain one of the state's safest outdoor recreational activities. To learn more about becoming an instructor with this new program, download an application at www.njfishandwildlife.com, or call 877- 2HUNTNJ and request an application. Remember: **Pass on the tradition; take a kid hunting.**

Web Kudos

The N.J. Division of Fish and Wildlife's website garnered third place honors at the 2001 Association for Conservation Information (ACI) national conference, held July 8-12 in Cape May.

ACI is an international network of professional natural resource conservation communicators from the U.S. and Canada, including representatives from state and federal agencies as well as private organizations. Founded in 1938, it is the oldest and largest association of its kind in the country.

"It is extremely gratifying to be recognized by the national Association for Conservation Information," said Division Director Bob McDowell. "We have put a lot of time and effort into making our website an informative, fun and user-friendly experience. It is a valuable learning tool that enables us to reach a vast audience with news and information about wildlife in New Jersey."

Highlights of the website include monthly feature articles, the latest news releases, on-line fishing license sales, current regulations, places to fish, endangered species information, and a wealth of educational resources, as well as links to other environmental websites.

The website provided daily reports and photos of the work of division Endangered and Nongame Species biologists on a recent Arctic expedition to study migratory shorebirds. Another recent highlight was a live web-cam featuring a birds-eye view of nesting peregrine falcons high atop a building in Jersey City.

To learn more about the state's wildlife and opportunities to enjoy it, visit www.njfishandwildlife.com.

Tundra Swans Featured on New Waterfowl Print

The NJ Division of Fish and Wildlife is proud to announce the second print in its Landmark Series of three Hautman brother waterfowl prints. The print, *Tundra Swans at Barnegat Bay*, features the division's historic Sedge House in the background and was designed by award-winning wildlife artist Bob Hautman.

The first of the Landmark Series featured canvasbacks flying past the Statue of Liberty and was created by his brother, Joe. The final print of the Landmark Series, which will be released next year, was done by their brother, Jim. It portrays wood ducks at the Delaware Water Gap.

The sites selected for the prints are representative of public open lands where visitors can observe the depicted species. The Sedge House is on 22-acre Sedge Island, located in Barnegat Bay about a mile west of the bayshore at the southern end of Island Beach State Park. The area offers a pristine natural environment for numerous bird species, including migrating tundra swans.

Sedge Island has a great deal of historical significance. The island's main building, the Sedge House hunting lodge, was built in 1919 and has been used for a variety of purposes, from family retreats to hunting and fishing camps. President Woodrow Wilson is reported to have signed a migratory bird conservation treaty at the house and both Babe Ruth and Lou Gehrig visited there on hunting excursions. The hunting lodge, which could accommodate 18 people, is considered to be the best remaining example of the many commercial hunting camps that formerly existed on Barnegat Bay.

The Division of Fish and Wildlife restored Sedge House, converting it for use as a natural resource education center. The island and the center are managed within the Sedge Island Wildlife Management Area and provide numerous educational programs for groups and teachers.

The Hautmans were chosen to do New Jersey's Landmark Series because of the uncompromising quality and expertise displayed in their artwork. The brothers are the only siblings to ever win the prestigious Federal Duck Stamp Competition and, since 1990, have won it five times.

This year's artist, Bob Hautman, won the 1997 and the 2001 Federal Duck Stamp competitions. In 1995, he finished second to his younger brother, Jim. Bob's designs also were selected for the 1995 Minnesota Pheasant Stamp, the 1992 and 1988 Minnesota Duck Stamps and the 1989 Nevada Stamp.

New Jersey's Waterfowl Stamp Program was initiated in 1984, after the State Legislature required that state waterfowl hunters obtain annual stamps. The division currently administers the program for the purpose of purchasing wetlands for waterfowl habitat. To date, proceeds from the sale of New Jersey's duck stamps and prints have raised more than $3.7 million to acquire wetlands for waterfowl habitat and public use. More than 11,700 acres of waterfowl habitat have been purchased or donated.

To view or order a print, collector duck stamps or a souvenir stamp card, see page 8. For more information on how to purchase a print, collector duck stamps or a souvenir stamp card, send a self-addressed, stamped envelope to: Waterfowl Stamp Advisory Committee, NJ Division of Fish and Wildlife, PO Box 400, Trenton, NJ 08625-0400. Items may be viewed in color on the web at www.njfishandwildlife.com by clicking on **PRODUCTS**.

A Lunker Laker

A new state record lake trout was taken from Round Valley Reservoir in Hunterdon County on July 16. Walter Neumann, of Cliffwood Beach, caught the 26-pound laker, which weighed 1 pound, 2 ounces more than the previous record holder, taken from Round Valley in 1994.

Neumann was trolling from his boat when he landed the trout on 15-pound test. The fish measured 37 inches in length with a 23-inch girth. He took it to the Division of Fish and Wildlife's Lebanon Fisheries Lab in Hunterdon County for verification.

The lake trout is one of four trout species found in New Jersey. This fish, much like a brook trout, is characterized by red or pale spots over its body. Unlike the brook trout, however, lakers have a deeply forked tail. The species prefers deep-water lakes during the spring and summer, and moves to shallow water in the fall and winter seasons.

Lakers were introduced into New Jersey in 1977 when the Division of Fish and Wildlife stocked them in Round Valley Reservoir. They quickly took to Round Valley and began to spawn. As early as 1985, young lake trout without the clipped fins that identify stocked fish began to appear as proof that natural reproduction was occurring in the reservoir.

The only other water body that is deep and large enough to support lake trout in New Jersey is the Merrill Creek Reservoir in Warren County. Lake trout were also stocked here in the 1980s, soon after the reservoir was built. Merrill Creek has been yielding legal sized lakers for quite a number of years now and has proven to be another permanent New Jersey home for the species. The Division annually rears and stocks lake trout to supplement the populations in Merrill Creek and, to a lesser extent, Round Valley.

The Record Fish Program revolves around a specific list of eligible freshwater and saltwater species. It honors the largest fish caught in the state and is based on weight alone; there are no line classes. Scale certification documentation and a weighmaster's signature are necessary. Other rules apply. For more information or to request an application, call 609/633-7768. Visit www.njfishandwildlife.com for a complete list of state record fish.

Gift Gallery

Perfect for giving in any season, for any reason.

New Jersey & You *Perfect Together* Gear

All items (except tote bag) are white; all sport the logo at left.
Price does not include tax (applicable to mug and tote bag) or S&H.
To order, call 866/NJPROMO.

Sweatshirt $19.95
50% cotton/50% polyester; M, L, XL

T-shirt $9.95
100% cotton; M, L, XL

Polo Shirt $24.95
100% preshrunk cotton knit; M, L, XL

Multilingual T-shirt
$9.95
100% cotton; features slogan in nine languages; M, L, XL

Coffee Mug $5.95
Oversized china mug

Baseball Hat $10.95
Canvas cap with adjustable strap

Boater Tote Bag $14.95
Natural canvas with outside pocket; blue handles and trim

Special License Plates





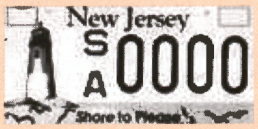
















The designs shown above support the preservation of New Jersey's natural or historic resources. The new ***Meadowlands*** plate helps land preservation and conservation in the Hackensack Meadowlands and River Watershed. The new ***Liberty State Park*** plate helps celebrate and support the re-creation of this area into a modern park. ***Treasure Our Trees*** helps communities nurture, protect and manage their local tree resource. ***Pinelands*** helps acquire land for the Pinelands National Reserve. ***Discover New Jersey History*** helps preserve historic structures, documents and artifacts. ***USS New Jersey*** helps turn the famous battleship home into a floating educational museum. ***Baymen's Heritage*** helps preserve the legacy of the Jersey Shore baymen. ***Shore to Please*** helps clean our beaches and improve water quality. ***Conserve Wildlife*** helps restore endangered wildlife and create a statewide network of wildlife viewing areas. *Note: if ordering a Conserve Wildlife plate by mail, be sure to specify which design (woodpecker or eagle) you want.*

Special license plates are available at any Motor Vehicle agency or you can call 888/486-3339 toll-free in New Jersey or 609/292-6500 from out of state for a mail-in application. The initial purchase price is $50; the annual renewal fee is $10 ($15 for *USS New Jersey*). You also can personalize your plates with up to five characters for an initial fee of $100.

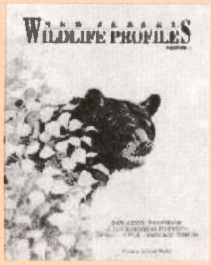
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Gift Gallery/Fish and Wildlife Products

Most of the following items may be purchased by mail or at the division's Trenton office (501 East State Street); the Pequest Trout Hatchery and Natural Resource Education Center (Route 46, Oxford); or the Southern Regional Office (220 Blue Anchor Road, Sicklerville). For details, please call 609/292-9450. Please note that a shipping and handling fee will be added to mail orders.

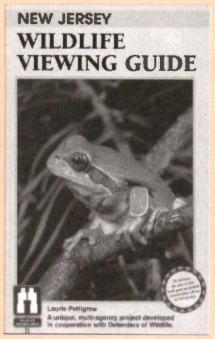
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Wildlife Profiles

This full-color, 112-page, hard cover book features more than 50 paintings of New Jersey wildlife by artist Carol Decker, accompanied by a detailed species information and statewide distribution map. $23.95

New Jersey Wildlife Viewing Guide



Experience the amazing diversity of New Jersey's wildlife and habitats at 87 of the state's best Wildlife Viewing Areas. The 165-page guide is full of color photos and illustrations. It provides directions to each site and information on site facilities, best viewing seasons, and which animals and habitats can be seen. The guide also features 20 Wildlife Diversity Tour sites. In each of four regions, expanded information is provided on five sites that, when experienced through a 2-3 day trip, provide a deeper understanding and appreciation of the ecosystems and wildlife found there. $10.95

New Jersey's Wild Places & Open Spaces:

A Wildlife Enthusiast's Guide to Finding and Using Public Open Space in the Garden State



This "road map" offers a wealth of information on locating and exploring New Jersey's open spaces in a compact and easy-to-read format. It not only contains valuable information on division wildlife management areas and the variety of wildlife present, but includes state parks, forests and much more. Showcasing a full-color map of New Jersey on one side, public areas are highlighted with an accompanying wildlife and activity grid for each on the opposite side. $3

Pine Barrens Treefrog Sculpture



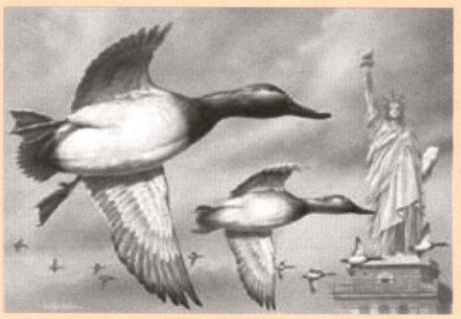
This limited edition bronze sculpture of the Pine Barrens treefrog comes with a certificate of origin, a display card containing natural history notes and a letter acknowledging your contribution to the Wildlife Conservation Fund. ($130 of the $325 purchase price benefits the Endangered and Nongame Species Program.) Call 609/292-1244 for additional information.

Habitat 2000 Landmark Series New Jersey Waterfowl Stamps

(See page 6)



Tundra Swans at Barnegat Bay (2001)



Canvasbacks and the Statue of Liberty (2000)

The 2001 and 2000 New Jersey waterfowl stamps, designed (respectively) by siblings and noted wildlife artists Bob and Joe Hautman, are available at license agents. Cost is $5 for a resident stamp and $10 for a non-resident stamp.

The 2001 and 2000 New Jersey waterfowl print souvenir cards, signed and numbered by the artist and with mint condition resident and non-resident stamps are available for $245 framed or $180 unframed. A Limited Edition Habitat 2000 Souvenir Stamp Card, featuring the three artist-signed resident stamps (one for each year of the series) is $114 framed or $53 unframed.

For an order form or information, call 609/292-7349.

Gift Gallery/Fish and Wildlife Products, cont.

Limited Edition

Waterfowl Stamp Collector's Knife

Made by Imperial Schrade. Comes in a laser engraved wooden box with a pewter medallion featuring this year's stamp design inside the lid. Each knife is numbered on the bolster (the part where the blade hinges). Edition limited to 500. Sold by mail only; $94 (includes S&H).



Limited Edition

Centennial Osprey Print



Wildlife artist Nancy Quinn's limited edition print of a nesting osprey commemorates 100 years of fish and wildlife conservation in New Jersey. For more information call 609/748-2050. Mail order only; $78

Commemorative Deer Classic Poster

(not pictured)

This limited edition poster of wildlife artist Carol Decker's *Legend Maker*, a white-tailed buck, commemorates the First Annual Garden State Deer Classic. $2.50

Third Edition NJ Deer Hunter's Knife

(not pictured)

Offered by the Partnership for Wildlife Volunteerism, this handsome $4^1/_2$-inch carbonized steel Old Timer Buzz Saw Trapper knife features a locking straight blade, pick, tweezers and saw blade. The knife sports a Division of Fish and Wildlife logo and the year 2000 on the saw blade. The division's name appears on the straight blade. Comes with a leather sheath and lifetime warranty. A hot/cold travel mug sporting the division's logo is free with each purchase. A portion of the proceeds supports the Division's Volunteer Wildlife Conservation Corps. Call 908-654-5159 to place an order.

Adopt-A-Species

Adopt peregrine falcons, bobcats, bald eagles, ospreys, barred owls, Pine Barrens tree frogs, bog turtles, timber rattlesnakes, and Mitchell's satyr butterflies for a donation of $25, $50, $100 or $250 per species. Each species adoption helps ENSP biologists build nest structures to aid in the recovery of raptors; attach radio transmitters to bobcats and other animals to identify important habitats; study contaminants that threaten wildlife; and create programs that explain the value and effects of wildlife conservation on our quality of life.

An information sheet about the chosen species and the Conserve Wildlife quarterly newsletter are sent to individuals who contribute $25. Anyone who contributes $50 also receives an adoption certificate and the *Wild Places – Open Spaces* map, while those who donate $100 are sent all of the foregoing plus a Conserve Wildlife tote bag. Donors of $250 will also receive the *New Jersey Wildlife Viewing Guide* and their name will be listed for one year on the Adopt-a-Species bulletin board on the Conserve Wildlife Foundation website (www.conservewildlifenj.org/).

Adopt a species yourself, or as a gift for a friend or loved one. For more information, or to receive a brochure that provides program details plus interesting facts about the various species, call 609/984-6012.

Just send your (or, if a gift, the recipient's) name, address and species preference, with a check or money order, to Adopt-A-Species, Endangered and Nongame Species Program, PO Box 400, Trenton, NJ 08625-0400.

Parks & Forestry Products

These items may be purchased at State Park Service field offices. For ordering information, please call 609/984-0370 or 800/843-6420. Please note that a shipping and handling fee will be added to mail orders.

Barnegat Lighthouse Poster $5

State Park Pass

Affixed to your vehicle, the pass provides entrance to State Park Service facilities that charge walk-in or parking fees. Pass holders may visit as often as they like for the entire calendar year. $35 for first pass; $25 for second (for a vehicle registered to the same address).

To purchase the following books, send your request with a check made payable to NJ Forest Service, to: Forest Resource Education Center, 370 E Veterans Hwy, Jackson, NJ 08527.

New Jersey's Big Trees

Forty pages of color photos, species facts, details on measuring and more. $6

Trees of New Jersey and the Mid-Atlantic States

An illustrated 112-page field guide describing 146 frequently encountered species; maps and related info included. $10

Gift Gallery/Artificial Reef Association Products

The Artificial Reef Association (ARA) is a group of 40 party and charter boat captains and marina owners dedicated to raising funds for the construction of artificial reefs along the New Jersey coast. Funds generated through the sale of ARA products are earmarked for the Division of Fish and Wildlife's Artificial Reef Program and have helped enable the division to build dozens of ocean reef sites from old ships and other structures. Make checks payable to the ARA and mail to: Artificial Reef Association, P.O. Box 16, Oceanville, NJ 08231. For more information call 609/748-2020.



A Guide to Fishing and Diving New Jersey's Reefs

The ultimate reef book, available by mail and at bait and tackle shops statewide, this 64-page reef guide is made of waterproof and tear-proof plastic pages. It contains LORAN C and DGPS charts of New Jersey's 14 ocean reef sites, depicting the locations of more than 1,200 reefs for use by anglers and divers, LORAN C and DGPS coordinates of all named reefs, information on how reefs are colonized by marine life, details on how to sponsor a reef, and additional sources of reef information.

The guide is an invaluable aid to anyone who fishes or dives on New Jersey's reefs. The cost is $17.95 (plus $2.05 postage and handling if applicable).

Limited Edition Prints

Limited to 500 numbered and signed prints.



Marine Life
by Kathy Johnston
18" x 24" (1995)



Stripers on the Rocks
by Diane Peebles
18" x 24" (1996)



Blues on the Beach
by Diane Peebles
18" x 24" (1997)



Yellowfins in the Canyon
by William Hopkins
16" x 20 7/16" (1998)

Mail order cost is $65.

... and the deep blue sea

Text © 2001 by Kevin C. Shelly
Illustrations by Kim Habel

A cool wet wind smacked the back of my neck like an unwanted kiss, startling me awake.

Remaining alert in a duck blind on the deserted bay is tough. Without a partner along, it is impossible when the birds don't fly.

I'd been here alone on a quivering sliver of not-quite terra firma dividing the bay's gunmetal waters to the east and the endless green and brown woodlands known as the Pine Barrens to the west since 2:40 p.m. Now the sun was edging toward dusk on the final day of October. I had nothing in the bag to show for a chilly boat ride out of Absecon Creek, across Reeds Bay, followed by a tramp across the marsh. The blind, a snug elevated platform built on an otherwise inaccessible bend of a shallow salt marsh creek, sheltered me from the cutting wind. Miles of barren bay, vast marsh meadows and uncountable scrub pines surrounded me. Hard to believe I was in New Jersey.

As my focus returned, I sensed something nearby.

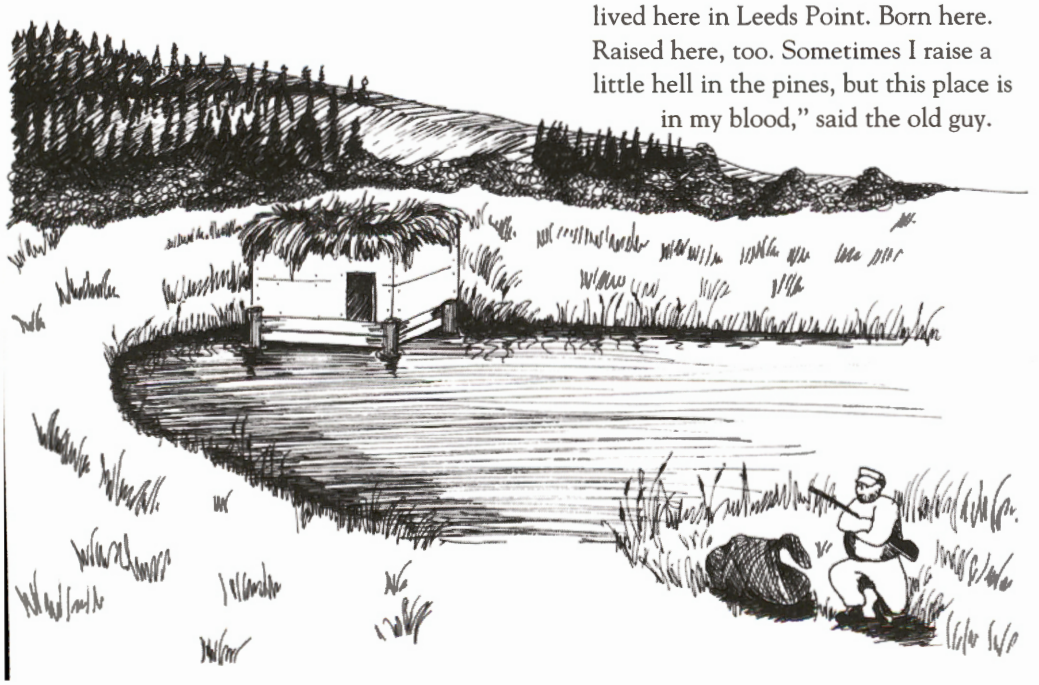
A man, small, stooped and old, cradling a worn side-by-side shotgun in his stubby arms, stood 12 yards from the blind. He stared my way. Dressed in rough woolens from head to foot, the little man looked as though he belonged in a vintage photograph of professional market hunters from a century ago. A bulging burlap sack sat next to him.

"Afternoon. How long I been asleep?" I asked, attempting a cheery tone. But I uneasily stood and peered nervously over the side of the brush-covered blind to get a better sense of the old fellow. His stealthy approach—unseen and unheard—made a fool of me, supposedly a wary hunter.

"Least 10 minutes I know of," croaked the old fellow, shifting his weight from one leg to the other. Instead of the waterproof chest-high waders worn by most duck hunters, his feet were encased in stout mud-spattered leather boots that came halfway to his knee. Not ideal for slogging across muddy marshes or wading small salt creeks lacing through its meadows like capillaries.

"How'd you get here?"

"Live round here. Always lived here in Leeds Point. Born here. Raised here, too. Sometimes I raise a little hell in the pines, but this place is in my blood," said the old guy.



"What I meant was how'd you get out here across all the water and mud in those low boots?"

"Oh, I got my ways, my secret ways. You don't live as long as I have without learning a trick or two. These cricks are as familiar to me as the hallway of your home is to you," said the old man, stroking his creased face with the hammer-like fingers of his right hand. His cobbled left hand grasped the old gun as though it were a part of him.

"See you came across in one a Tip's ol' boats," he said, gesturing toward my tiny Barnegat Bay sneakbox. The boat was safely run up on the muddy meadow at the mouth of the creek.

"Tip?"

A crooked smile played across his weathered face.

"Yes sir, Tip, that's what we called young Hazelton Seaman on account a how many times he spilled over the side while duckin', clammin' and fishin' not too far from here, up Barnegat Bay. Got so he spent more time in the water than a fish. Tip—jus' seemed to fit'm! Didn't like being called Tip at first, but nicknames has a way a growin' on you, I know that."

I wanted to ask his name or his nickname, but once he got rolling there was no stopping the old chatterbox, who went on rapidly as the truly lonely often do.

"Course, after I helped Tip with that first boat he quit spending so much time overboard," he continued. "Told him the secret to floating on a mud puddle just as easily as it were the deep blue sea was all around him. Jest had to look harder. That's when he started studying the shape of ducks sitting pretty out here, floating on a teaspoon of algae in the middle of a high marsh meadow. Put that knowledge together with all the buoyant Atlantic white cedar growing along the streams in the piney woods and you got a winner. Oh, he was grateful, too, Tip was. Named that first

boat he built over there in West Crick after me," said the old man, his voice rising, seemingly stronger and less stooped.

"You helped invent a boat first produced around what, say 1850?" I asked incredulously, remembering a bit of the boat's long history. "And if it was named after you then your name must be what, Sneakbox?" deciding to goad the old gent a bit.

"Actually, Tip laid up the first one in 1836," he corrected me. "That one wasn't called a sneakbox, though. That name came later after some other fellas had a go at the design," he said firmly.

"So what was the first sneakbox called?"

"Devil's Coffin," he said, slow but clear.

"The devil you say!" I responded, trying to sound as though I was in on his joke.

"Yes sir, I do," he said flatly, his eyes narrowing as he turned to face me dead on. He somehow seemed taller and more vigorous now as I squinted toward him. We stood facing each other. Silence. I didn't know what more to say as the rust red of his ancient gun barrels caught the low slant of the sun's fading rays. The cool wind picked up again, ruffling the back of my neck. I felt an involuntary shiver.

"So that makes your name what, the Jersey Devil?" I said, deciding to play along—for now.

"That's just my nickname. Didn't pick it. That's what I got called by people who didn't really know me, just knew of me. Hated it at first. Don't mind it much anymore, though. The name, my real name, is Leeds," said the man, sounding stronger than he had when began his yarning.

Leeds. Of course. The family name of the legendary Jersey Devil, the 13th son of Mother Leeds. Cursed by his mother in childbirth, the unwanted and misshapen infant, part beast, part human, or so the tale goes, disappeared up the flue, taking to the woods and waters around Leeds Point, terrorizing the locals known as Pineys.

"Leeds?"

"Lemuel Leeds. Friends, 'specially my duck hunting partners, call me Lem. I'm in need of new gunnin' partner, so you can call me Lem, too," he said. "You'd make a fine partner."

"OK then Lem, you got me," I smiled, deciding to humor him, keeping one eye on him and the other on my shotgun. "So if you won't tell me how you got here, how about telling me what's in the sack?"

"Why sure!" said my new buddy. "Hunting rig. A nice set of cedar dekes. About two dozen black ducks and a scattering of shorebirds."

"Shorebirds? Hasn't it been illegal for decades to hunt shorebirds?" I asked.

"That's what the law says," agreed Lem. "I shoot what I want, though. But there ain't much call for shorebird feathers now that none of the ladies wears a hat."

"So why do you carry shorebird decoys?"

"Well, what the hell would I do with 'em? All you young gunners got them plastic ducks nowadays. Not much market for hand-carved wooden blocks anymore. Not in this world," said Lem.



"Well, maybe not for hunting. But for collecting, there's a big market if they are good likenesses and in decent shape. Let's see what you got," I said. As he leaned over and undid his sack, I moved slowly toward the corner of the blind, as though hoping to get a better look. But I was thinking only of my shotgun, wondering if the safety was on, as it was supposed to be, or off, as I hoped. Couldn't tell which in the growing gloom of early evening.

"Like 'em? Always thought these Shourds' black ducks were a bit on the scrawny side, but the birds seem to like 'em. Nice paint, too," said Lem, pulling out a black duck with one hand and a red knot shorebird in the other.

"Shourds? You mean you hunt over decoys carved by the guy down in Ocean View? Collectors love his stuff. Way too expensive to hunt over."

"Not that young fella," he said. "He's the grandson. I mean his granddaddy, the original Harry V. Shourds, the one from Tuckerton."

Baffled, I was. The first Shourds had hand-carved a staggering 70,000 or so ducks, brant, and shorebirds around the turn of the last century. Today his carvings went for thousands. Now here was Lem claiming to have a sack full of his decoys.

Lem strode to the blind. He handed me a black duck.

I'd seen old Harry V. Shourds' works in books and museums, even bought a decorative decoy from his grandson, but I was no expert. Still, it did have that distinctive dainty character that I recalled from the museum pieces. I turned it over and noticed the lead fitted in a slot under the keel. That was just the way the elder Shourds had tucked the weight safely away, instead of clamping it to the keel, where it tangled on things or came loose, as most his contemporaries had.

"We like a decoy that floats nice, even if that's not what it's gonna do," I remember the younger Shourds telling



me in a high singsong voice when I'd bought the decoy for my mantel. "My grandfather's birds were thin, my dad's fat, and I'm in between. But we all like to do a good job with the paint," he had said, summing up his family's work.

"Nicely done. Even has the lead in a slot," I said as I studied the black duck, carved from hollowed out cedar and fitted with a soft pine head, making it easier to replace a damaged head after rough handling.

"Oh yes, that stumped him for a while. I told ol' Harry it was time to bury it," said Lem, his voice swelling with pride. "Didn't get it at first. Just stared at me as though I was crazy. But he caught on and started carving a little grave on the belly of each bird to hold the lead. Floated real nice, too."

"So you helped with his carving?"

"Well, hell! Course I did! How do you think he carved all them birds with them ol' hand tools a his? Course the shorebirds didn't need no weights. Just stuck 'em on a cedar stick on the mudflats. The cedar looked just like their skinny little feet!" he said with a brisk laugh, handing me over a beautiful little red knot shorebird.

Then he reached into the sack again. He rooted around as I inched closer to my gun. Out of the sack came a herring gull, a confidence bird, placed among the duck decoys to reassure incoming flocks that all was safe. It was a thing of beauty. An original Shourds' gull recently sold for $200,000, I recalled.

"Wow!" I said. "Lots of detail."

"The devil's in the details!" he cackled, delighted—too delighted—at his lame joke. "It's yours, partner," he said, handing it over the top of the blind.

"Thanks." I carefully placed it on he ledge made to hold shot shells, then changed the subject.

"Is that a Parker shotgun?" I asked, noticing now that he was close that the metal had fine engraving etched all over its metalwork.

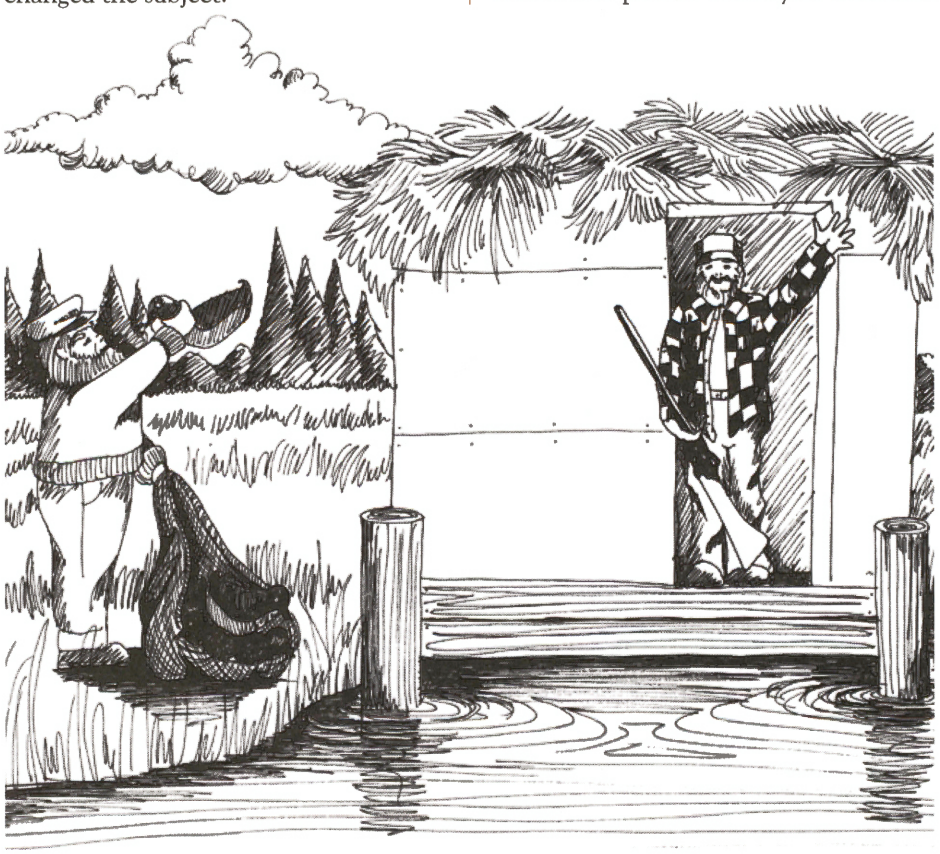
"No sir. A local gun. Ansley made it," he said flatly.

"Ansley?"

"Yep, Ansley Herman Fox. You might know him better as A. H. Fox, the name he puts on his shotguns—the finest ever made. Least that's what I tol' him after we came up with his design. He liked hearing it so much he put it on his catalogs, made it his slogan. Very inventive fella. Good shooter, too. Likes chasing black ducks and brant. Has a house over on Lakes Bay in West Atlantic City, not too far south a here. Has an eye for pretty guns and pretty women," a sly smile crinkling across his now young looking face.

"Ansley Fox died more than 50 years ago," I stammered.

"Don't say? Wonder why I haven't seen much more a him around here lately? We're famous friends. Fox was my last duckin' partner before you" said Lem.



"So Ansley H. Fox was your partner?" I asked, trying to mask the fear and skepticism I felt as I edged closer toward my gun.

"Every true duck hunter is a friend of the devil. Duck hunters: Out before the dawn. Back after dusk. Nothing but lies in between. Oh yes, the devil and duck hunters are kindred spirits. Didn't you ever wonder how come so many famous duck gunners come to live here at the Jersey shore?" said Lem, my unease growing as he enjoyed his strange running joke more than he should.

"Say, would you like to see my gun young fella?" he said, turning the shotgun barrels in my direction enough so that I felt my pulse jump.

"I never pick up someone else's loaded gun," I said, worrying now that Lem's odd jesting might turn into something more menacing.

"Not a problem. Never keep mine loaded unless I'm aimin' to shoot. Damn shells swell up and stick in the chamber out here in all the wet," he said, breaking open the action to show it was empty.

"I never have that problem with shells sticking," I said. "What sort do you shoot?"

"Peters #6 duck loads," he said, referring to a company that hadn't been around in decades. "Always keep a few in the breast pocket since it is so far above the waterline," he said, chuckling and fumbling at his jacket pocket with his free right hand.

An ancient waxed paper shotgun shell, the likes of which hadn't been seen on this marsh in more than 40 years, fell from the clubby fingers of his right hand and disappeared into the mat of wet mud and grass below the blind.

"Damn! I need me a new partner!" he bellowed, stooping over to grope for the shell, still with the open shotgun in his left hand.

Worried that the cartridge might end up chambered and the gun aimed at me when he popped back up, I took my cue as he disappeared behind the blind's wall of greenery. I grabbed my loaded gun.

The safety slipped forward as I struggled to bring the long gun to my shoulder in the narrow confines of the blind.

Blam! Blam! Blam! went the autoloader as the gun came up.

The shots should have ripped him apart. Instead, he was gone. His gun and his sack, too, all in just a second.

All I felt and heard was my heart and my breath as I searched the gathering darkness for some sign of his leaving or a last second warning of his return.

Nothing. And more nothing. Just a cool wet wind sending a quiver across my clammy skin.

The tide was coming in. My very own Devil's Coffin was swinging from its anchor line in the rising current of the salt creek. I hurriedly left all my gear, even the gull decoy, just where it was. Quickly I moved toward the small boat, carrying my shotgun—safety still off—ready for action at port arms.

An armed crazy person wandering the marsh, Lemuel Leeds, the Jersey Devil—whoever he really was, whatever his name really was—wasn't in the boat, as I'd half worried.

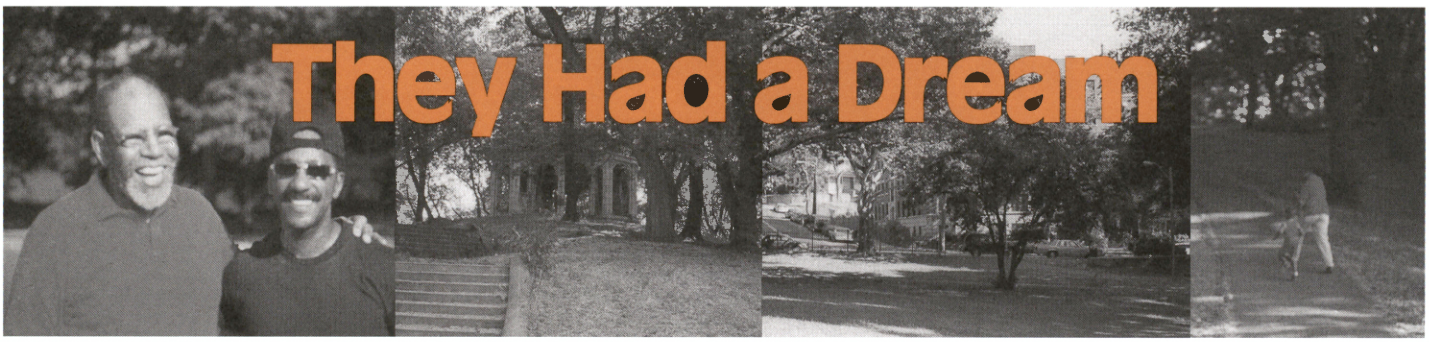
I clambered aboard and cast off. The little outboard motor whined to life with one tug of the starter cord. I shoved off into the enveloping darkness. Running at full-throttle, I steered with the tiller firmly grasped in my right hand and the loaded shotgun still clenched in my left, resting across my shaking knees.

If luck held, I'd be home in 15 minutes, just as full night fell, just in time to greet eager little Halloween trick or treaters demanding their due from homeowners on Bay Avenue.

I'd have the next day, All Saints Day, to consider retrieving the gull decoy. And cutting a deal for more ducks.



Absecon resident Kevin Shelly, a widely published outdoor writer, is the environmental coordinator and assistant city editor for The Press of Atlantic City. This is his second contribution to **NJO**; *his first,* ***In New Jersey****, appeared last fall.*



They Had a Dream

"It's a shame. Look at this building, all this graffiti and broken benches. This used to be a beautiful area back here."

A decade has passed since the runner who routinely used the pitted track in Weequahic Park made that comment. But it has not passed without action.

The speaker was one of a group of Newark men, all distance runners, who gathered in the park early on Saturday mornings to train for their sport. Feet pounding a measured beat, they would walk, jog, and run through Weequahic Park, galloping around a lake, down slopes, into valleys, and through thickets along Route 22. In those days, the lake was polluted with oil and debris, the slopes were barren of grass, the valley, devoid of flowers, and the thickets, overgrown. Nary a bird or squirrel could be seen. Litter was everywhere.

On the day the comment was passed, the runners—Raheem Ali, Shelby Garrett, Darryl Bowen, Ronald Joseph, Jeff Jefferies, Allen Little, Cyril Reed, Quintin William and Wilbur McNeil—had happened upon a graffiti-covered plaque, nailed to the remains of a dilapidated building that stood on top of a hill. It read, in part:

Before the coming of the white man this hill and nearby stream marked the boundary between the lands of the Hackensack and the Raritan tribes of the Lenni-Lenape . . . May 20, 1668 . . . Representatives of Newark and Elizabeth gathered here and fixed the same boundary to separate the two young settlements. The stream called by the Indians Weequahic was thereafter known as Bound Brook Creek and this eminence was named Divident Hill . . .

Intrigued with the story of the area's history, the young runners mourned the decay of Weequahic Park, once the jewel of the Essex County park system. The very land on which Native Americans had hunted, fished, and slept now was a neglected and polluted repository for trash. It fell far short of providing area residents with a safe and beautiful open space for rest and recreation.

An Olmsted Design

With 311 acres, Weequahic Park is the second largest in Essex County's 22-park system. It was designed in 1901 by the firm founded by Frederick Law Olmsted, who is often called the father of American landscape architecture. The park featured a half-mile trotting track, a grandstand, a 9-hole golf course—the first public golf course in New Jersey—ball fields, tennis courts, gardens, playgrounds, and an 80-acre lake.

In the park's heyday, harness races attracted thousands of spectators and the grandstand was the focal point for urban activities. The pristine lake was the venue for rowing and canoe races. In the evenings, the sounds of gospel and jazz filled the air. In 1969 the golf course was enlarged to 18 holes, but within a year the park itself began to decline. It then suffered decades of neglect.

In 1992, the runners took matters into their own hands. They dared to dream about restoring the park for future generations. Then they went to work to turn that dream into reality.

"Our goal was to develop the best park in the county. From the worst to the best," commented McNeil.

They drew up a petition listing all the problems of the park, including poorly paved walkways, eroded hills, a deteriorating stadium, the insufficient availability of sanitary facilities and refreshment stands, playgrounds in need of repair, and a polluted lake. The petition also requested that repairs and improvements be made to rehabilitate the park. The runners solicited support from park users who wanted to make a difference, obtaining more than 300 signatures in a week. By summer's end, they had formed the Weequahic Park Association, elected Wilbur McNeil as president, and sent their petition to the director of parks, with copies to county and municipal officials.

Above, left to right:

WPA president Wilbur McNeil and Achan Bey, leader of the Park Ambassadors program, which involves neighborhood students in leadership. *Judy Shaw*

The pergola *Sandy Huber*

Park view of the city *Sandy Huber*

Sayyid Ali and Wilbur McNeil enjoy the new track. *Judy Shaw*

We Hear You

Essex County responded with a $4 million grant to restore the park. In 1995, the association signed a partnership agreement with the county to rebuild a playground and field house, resurface roads, upgrade the golf course, and refurbish seven ball fields.

Then they mobilized forces, garnered support from elected officials, and headed to Washington to lobby for federal funding. In 1998, the U.S. Environmental Protection Agency awarded the association a $3 million

grant. The funds would support restoration of the lake through completion of the perimeter path, revegetation of the shoreline, construction of detention ponds and water quality improvement techniques.

On May 19, 2001, the Weequahic Park Association officially reopened the 2.2-mile track that encircles Weequahic Lake, marking the completion of the first phase of the lake restoration project. The path features state-of-the-art materials: used tires and sneakers were recycled into the rubber product that forms its base; a liquefied urethane binding layer ensures the adhesion of the bright orange surface layer containing rubber granules. The track—the longest of its kind in the world—was designed to provide a rubberized running surface for joggers and to stabilize the perimeter of the lake.

The second phase of the lake restoration project involves the installation of more than 140,000 plants to stabilize the shoreline, prevent erosion and filter runoff. The plants are placed at the shoreline in biodegradable rolls of coir, a fiber obtained from coconut husks. As the coir decomposes, the root systems of the plants act to stabilize the shore.

The final phase of the lake restoration project is monitoring the lake to establish a baseline of data to determine amounts of pollution in the lake and from the runoff that feeds into the lake. Monitoring results will indicate the effectiveness of applying non-urban lake management BMPs (Best Management Practices) in an urban setting.

"The lake restoration project is the first (of its kind) in the nation—it's a model for other urban restoration projects and will foster an absolutely essential public understanding of clean water," comments McNeil.

Expanding the Dream

Weequahic Park is returning to its turn-of-the-century luster. Nearly a million people attended its golf tournaments, tennis and basketball camps, and festivals, and participated in softball, cricket and soccer leagues during the past year. More than 1,000 runners routinely use the track. And visitors enjoy 20 different species of birds, turtles, four kinds of fish, turtles, chipmunks, and squirrels—a testament to improving ecological health of the park and its lake.

Members of the Weequahic Park Association continue to meet every Saturday morning, and they continue to dream. Their goal is an ambitious $100 million park improvement plan, featuring a luxury hotel, restaurant, and conference center at the golf course, a boathouse, fountain, and cricket and soccer fields with grandstands. The restoration of Weequahic Park pays homage to the past and lays a path for the future.

The author gratefully acknowledges the cooperation and assistance of Wilbur J. McNeil, from whose book (*The Weequahic Park Story*) this article is loosely adapted, and Weequahic Park Association staff.

Sandy Huber is administrator of the DEP Office of Communications. No stranger to urban life, she has served as the manager of an inner city library and litter prevention coordinator for Norfolk, Virginia, where she worked with community groups to clean and revitalize deteriorating neighborhoods.

Below, left to right:

A section of the Weequahic Park playground *Judy Shaw*

Jewel Mack (left) and Theresa Whitten, the "grandmothers who cared," designed the playground. According to the dedication plaque, the most important material used to build the playground was love.

Courtesy of Weequahic Park Association







KUDOS, KUDOS, AND MORE KUDOS



Clockwise, from above left:

The track offers runners a lake view. *Sandy Huber*

The return of wildlife signals improvements in the health of the park's ecosystem. *Courtesy of Weequahic Park Association*

Raheem Ali and his son, Sayyid, flank their four-legged runner, Chinaman. *Sandy Huber*

Candy Williams and Allen Little take advantage of the park's new track. *Judy Shaw*

Sayyid Ali and Wilbur McNeil stretch their legs on a run through the park. *Judy Shaw*

Once established, the root systems of these plants will stabilize the lake's shoreline. *Courtesy of Weequahic Park Association*

These area youngsters are obviously happy with the park's restoration. *Sandy Huber*

Members of the Weequahic Park Association (WPA) would be the first to say that the payoff for all they've done can be found in the restored beauty and facilities of the park itself, and on the faces of those who use it. But their dreams and dedicated efforts have also won them recognition at both local and national levels.

Among the honors:

- Newark Municipal Council presented its award for Outstanding Community Service to the WPA in January 2000.
- The Association, the Weequahic Lake Restoration Project, and Wilbur McNeil, founding member and president of the WPA, were recognized as Best Practices nominees in the community development area at the Governor's Urban Summit in June 2000.
- In February 2001, the Newark Preservation and Landmarks Committee recognized the association's work with the Donald T. Dust award, the highest honor bestowed by the committee.
- Commissioner Bob Shinn presented the NJDEP's Eagle Award to the WPA at the July 2001 *Greening the Urban Landscape* Conference

In addition, McNeil was tapped to chair the membership committee of the National Association of Olmsted Parks and the WPA will host the organization's semiannual meeting in May 2002.





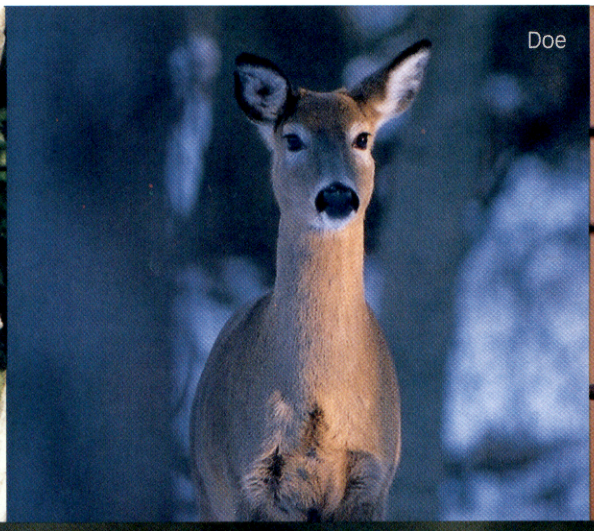




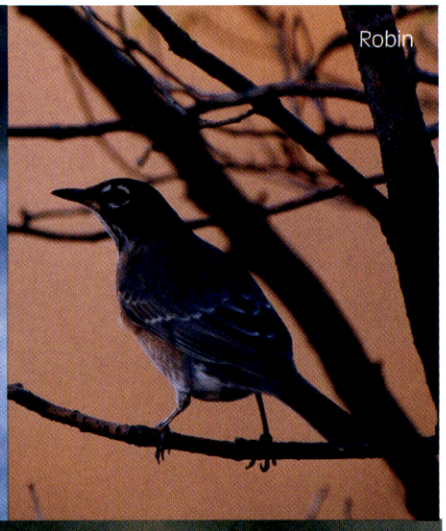




Eagle



Doe



Robin

Eight-point Buck

Images of Round Valley

by Mike Merola

The 5,291 acres of Round Valley Recreation Area, some 4,000 of them underwater, attract a quarter of a million people annually. The most popular activities at this recreational oasis, which is located in Clinton Township (Hunterdon County), are swimming, fishing, picnicking, and mountain biking. Depending on the season, however, visitors can also enjoy boating, ice boating, snorkeling, scuba diving, snowboarding, duck hunting, cross-country skiing, hiking, sailboarding, sledding, horseback riding, ice-fishing, and camping.

Included among the area's amenities are a life-guarded beach open Memorial Day through Labor Day, restrooms, showers, a first-aid station, playgrounds, volleyball nets, a concession building, and picnic areas with tables and grills.

Round Valley is the only state recreation area to offer wilderness camping, although it also is available at Wharton State Forest. Round Valley's campsites, available for families of up to 6 people and groups of 7 to 25 , are not accessible by vehicle.

Naturally, where there's wilderness, there's wildlife—and many of the park's visitors enjoy birding and wildlife watching. One of them is Pittstown's Mike Merola, who not only watches, but captures Round Valley's fauna on film throughout the year. Here he shares some of his favorite images of Round Valley.


Doe
Mourning Dove
Red-winged Blackbird
Painted Turtle
Canada Goose
Egret



Old Gray Face
(Eight-point Buck)



Muskrat



Beaver



Great Blue Heron



Red-tailed Hawk



Newborn Fawn

Round Valley

Round Valley Recreation Area
1220 Lebanon-Stanton Road
Lebanon, NJ 08833-3115
908/236-6355

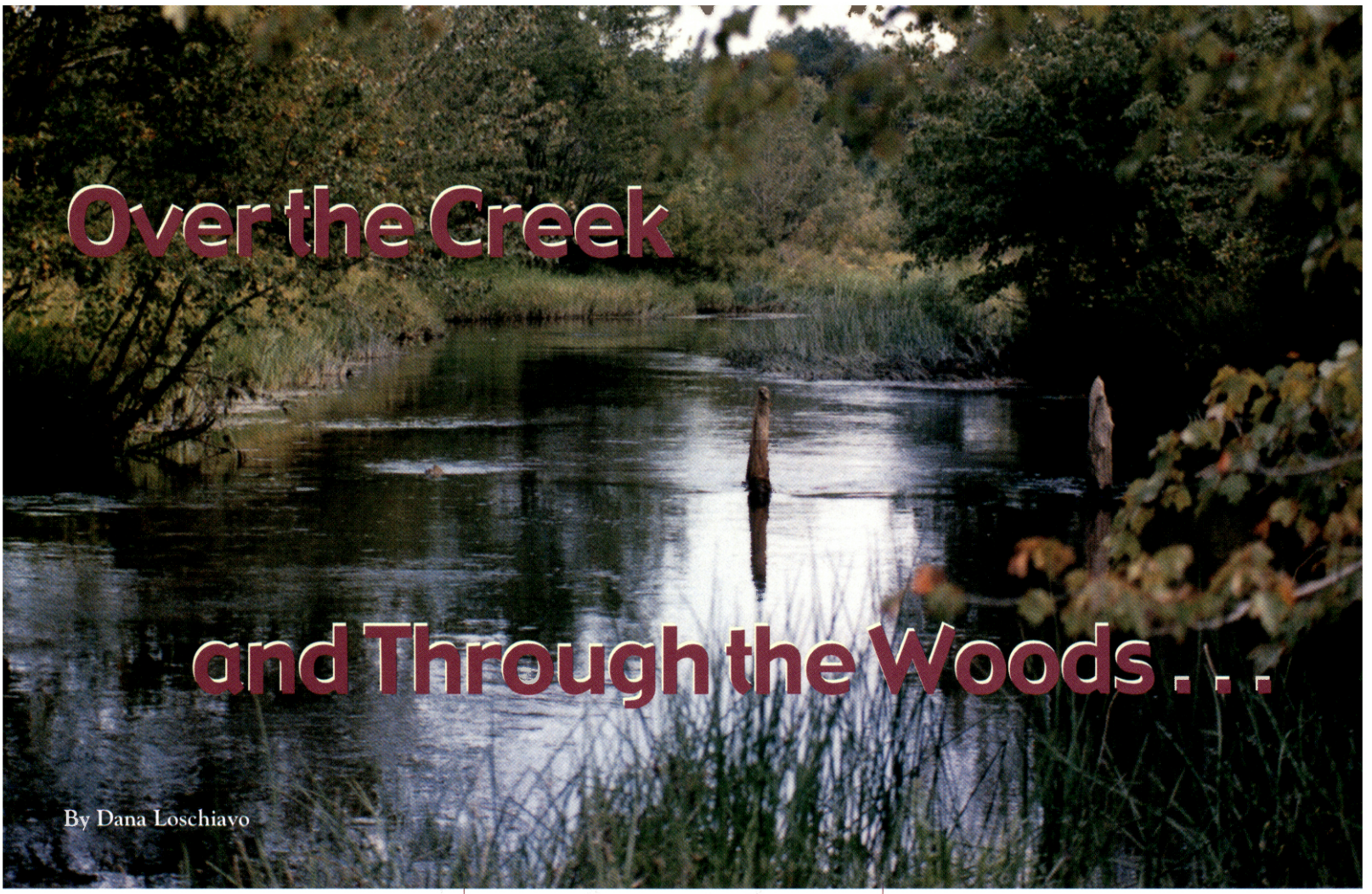
Hours

Oct. and March: 8 a.m. to 6 p.m.
April to Memorial Day; Labor Day thru Sept.: 8 a.m. to 7 p.m.
Nov. thru Feb.: 8 a.m. to 4:30 p.m.
Memorial Day thru Labor Day: 8 a.m. to 8 p.m.

Wilderness Campsites

2001 Fees—Family site: $8/night; Group site: $.75/person/night

Open April through October



Over the Creek and Through the Woods . . .

By Dana Loschiavo

The Pine Barrens is a beautiful, haunting area of unbroken forest straight from a fairy tale. Deep in the woods, you half expect to see Little Red Riding Hood on her way to her grandmother's house. But the big bad wolf is nowhere to be seen as the forest opens to reveal the once bustling cranberry community of Double Trouble Village.

Known as the "window into the Pinelands industries," the little village of red berries is part of a larger tract of cedar swamps and cranberry bogs, encompassing more than 5,000 acres in Berkeley and Lacey townships. Double Trouble Village is set upon an area of high ground between two great bogs, Gowdy Bog to the east and Old Mill Pond Bog to the west. The tawny-colored Cedar Creek passes 700 feet from the village; originally it fed both Gowdy Bog and Old Mill Pond Bog, but the latter now is dry.

The Pine Barrens is thick with legends and lore. Just as stories abound about the Jersey Devil, believed to inhabit the Pines' misty wetlands and venture into the woodlands during the night to frighten people with a piercing cry, there also are tales about the origin of Double Trouble.

Double Trouble probably owes its name to the confluence of two branches of Cedar Creek. Local legend, however, attributes the name to a group of muskrats that burrowed through the earthen dam gates that were built to supply waterpower to the sawmill. The Rev. Thomas Potter and his wife had to summon neighbors to repair the dam. Once when the muskrats dug through twice in one week, the Reverend exclaimed, "Here's double trouble!"

The land that is now Double Trouble was first owned by Anthony Sharp, an Irish Quaker and woolen merchant, who was one of the proprietors of East Jersey. Historically, the village represents the strong ties of the people to the Pine Barrens. The earliest recorded use of Double Trouble Village was for timber operations. In 1765 the property contained a sawmill along Cedar Creek. From 1806 to 1904, much of the Double Trouble tract was owned by Captain William Giberson and his sons. By 1866, they had a considerable settlement with two water-powered sawmills harvesting Atlantic white cedar to produce shingles, laths and timbers for sailing ships. Lumber from the mill was used to build the Presbyterian and Methodist churches in Toms River; the Bergen Iron Works in Lakewood; and the first houses in Long Branch.

Once upon a Bog

Years of timber harvesting resulted in exposed depressions and bogs throughout the area. The wet, spongy ground was ideal for cultivating cranberry vines. As the swamps were emptied of timber, they were planted with cranberries. In 1904 Captain Edward Crabbe of Mays Landing purchased the mill site. He continued the sawmill operation until 1909, when the mill burned.

The Crabbe family assembled more

than 1,500 acres of bog and timberland and incorporated it under the name of the Double Trouble Company. As the cranberry and milling industries grew, so did the village of Double Trouble. Several company houses were built in addition to a general store and a one-room schoolhouse. For the children who lived in the village, the school year started after the harvest. Other buildings scattered throughout the village included outdoor privies, a salt house and a barn.

In the early days of dry harvesting, the berries were picked by hand. The harvest generally began the day after Labor Day and continued through Thanksgiving. Often entire families gathered to harvest the fall crop. In return for their labors, the workers were paid in food and supplies from the general store.

The dry harvests were labor intensive efforts. Scooping in the fields not only hurt the workers' backs, but also the berries and the plants. Local growers invented much of the equipment used, from the earliest hand-held toothed cranberry scoops to the modern mechanical picking machines.

A cranberry sorting and packing house and a new sawmill were built around 1916. The new sawmill had a gas-powered engine, so it did not require the water from Cedar Creek. Lumbering operations were conducted during the off-season.

Both the sawmill and the packing house were designed with metal siding, rather than cedar shingles or clapboard like the rest of the village. As the Pine Barrens region is often plagued with fires, this precaution was taken to protect the valuable equipment inside. The packing house was built on a slope, possibly to maintain cooler temperatures and to facilitate the movement of the cranberries.

Previous page:
Cedar Creek at Double Trouble
© John R. Adams



Cranberry Frog
© Steve Greer

Life's a Bowl of Cranberries

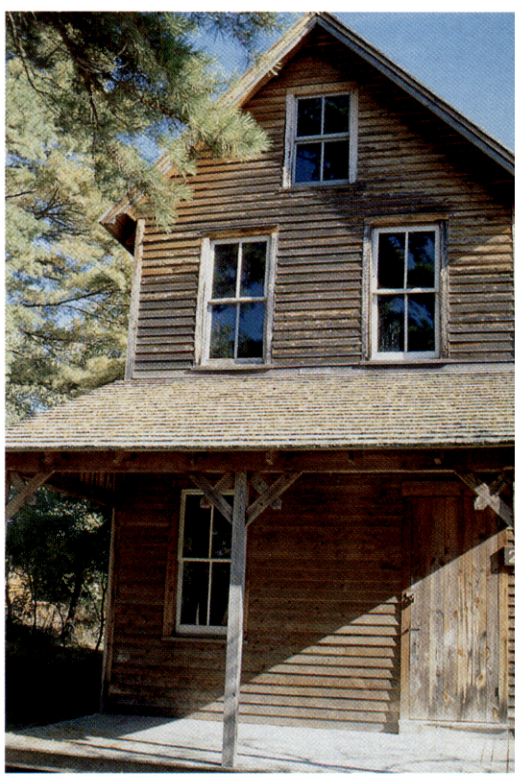
By 1926, the company had planted more than 225 acres of new cranberry vines and had become one of the leading cranberry producers in the state. "There aren't too many families from the area that don't have a relative who worked at Double Trouble at one time or another," says George Burke, a park maintenance specialist with the State Park Service who had charge of the water operations of the cranberry production for a period of time under the Crabbe family ownership.

Burke's father, David, brought the family to Double Trouble Village in 1937 and, except for a brief stint in the Navy, George Burke lived there until last year. His parents eventually moved from the village, though they didn't go far; their farm was located within the lands of Double Trouble. The house that Burke grew up in—a two-story, cedar-shingle house with no running water or dependable electricity—still stands in the village.

As a child living in the village there were plenty of opportunities for fun. Burke spent the summer playing in the woods, building huts and forts and, of course, swimming in Cedar Creek. By the time he was 13 years old, he was working in the bogs after school and all summer long. Usually his payment came in the form of candy and gum.

Asked if he was fond of cranberries as a child, Burke claims he appreciates them much more as an adult. "When you are surrounded by cranberries you get tired of eating them," he says.

Cranberry fields were still being hand-picked when Burke's father was the foreman in charge of cranberry sorting and packing. But the discovery that marketable cranberries would bounce had already prompted the development of mechanical separating equipment, and Hayden and Bailey separators had been installed in the packinghouse in 1927. (Originally, the cranberries were cleaned and separated by rolling them over screening racks.) Later, an engine house was added to provide a power source for the sorting and separating equipment.



Burke House, home of the cranberry operation's foreman and his family.
© Cornelius Hogenbirk

Cranberry Culture

The Lenni Lenape Indians were the first to harvest cranberries in New Jersey. They valued the red berries as a symbol of peace, and taught early settlers to use them as food and medicine.

It was the Pilgrims, however, who contributed the indigenous fruit's current name. As its pinkish-white flower petals open and twist backward, they reveal a part of the flower that resembles the head and bill of a crane. The Pilgrims called it, logically enough, *crane berry*, which later was shortened to cranberry.

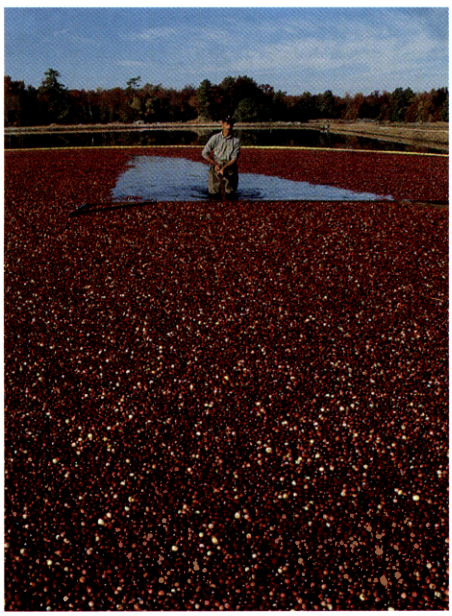
Cranberry cultivation in New Jersey pre-dates the Civil War. Cranberries were often sold to ship merchants, as the vitamin C contained in the cranberries helped ward off scurvy, a disease that plagued many seafarers on long voyages.

The 1850s brought a cranberry craze. Swampland soared in value as land was cleared and cranberry plants moved in. It was during this time that the bogs at Double Trouble were established. The real estate boom lasted for 10 years until overproduction reduced prices and the creation of new bogs ceased. Today, New Jersey ranks third in national cranberry production, behind Massachusetts and Wisconsin.

Cranberry growth and survival depends on a unique combination of sand, acidic peaty soils, the right climate, and a large supply of water. Cranberries need not be replanted each year; the perennial vines, if carefully tended, will continue producing. Although new bogs take three to five years to bear a large quantity of fruit, it is not uncommon to find a 100-year old bog still in production.

Because an ample fresh water supply is so essential, up to 15 additional acres—from uplands to wetlands to water bodies—may be needed to support each acre of cranberry bog. This "cranberry wetland system" ensures the preservation of more of the wetland ecosystem than just fields in production and helps to recharge groundwater and control flooding. The cranberry wetland systems in New Jersey's Pine Barrens also provide habitats for a huge variety of plants and animals, including indigenous species such as the pine barren bellwort, curly grass fern, and the Pine Barrens treefrog that are rarely, if ever, found elsewhere.

Harvest Memories



Once they were plucked from the vines, the cranberries began their journey through the packing house. They were unloaded onto a conveyor belt and transported up to the first floor. The humming and clanking of the separator machines created a rhythmic song as the cranberries bounced along, isolating the good from the bad and the other debris. The women had the tedious job of hand-sorting the berries according to color and shape before they were packaged. Burke remembers hearing the women singing hymns to pass the time. The green cranberries were also saved, as they would ripen with time.

As the cranberry bogs grew so did the need for extra help. Several families lived in the village year-round, but during the harvest the foreman hired an additional 50 to 100 workers, mostly Italian immigrants from Philadelphia. The single workers lived in the bunkhouse and those with families were housed in the cottages.

The sweet scent of cranberries permeated the village during the harvest, yet one of the more memorable aromas for Burke came from the migrant workers' cookhouse. Whiffs of tomato sauce wafted from the house, tantalizing his olfactory nerves, as the cook prepared spaghetti for the single workers' dinner.

When the cook wasn't in the kitchen, he would stroll around the village playing his concertina (a small version of an accordion), Burke says. On Friday and Saturday nights during the harvest, the migrant workers would have dances and live entertainment. They celebrated with big meals and Italian wine. Many of the workers traveled from harvest to harvest with their families, following the crops through the country.





Above:
A sea of ripe cranberries
© Steve Greer

Left:
Workers' house at Double Trouble
© Cornelius Hogenbirk

Right:
Workers' shower building at Double Trouble
© Burt Lipman

When the harvest was over there was still plenty of work to be done in the village. All construction and renovation work was accomplished during the off-season: maintaining the bogs, repairing equipment, and fixing up the buildings. With the growth of the cranberry production at Double Trouble, the use of the sawmill declined, although lumber continued to be milled for use in the village.

The Advent of Change

The lands of Double Trouble remained in the Crabbe family for more than 60 years. In 1964, the family sold the land and the Double Trouble Company to the State of New Jersey and it became Double Trouble State Park. Although there were only a few people left living in the village by the time the state bought the property, cranberry production continued under a lease to a private cranberry grower.

In 1965 the cranberry harvesting method was changed. The bogs were flooded and a water reel, which resembles a large eggbeater, would move rapidly through the water, freeing the berries from the vines. The bogs became a sea of red as the cranberries floated to the surface. The berries then were directed to one side of the bog, where they were deposited directly into 1,000-pound boxes for transport to the Ocean Spray processing plant in Bordentown. The sorting house was no longer used except for packing limited quantities of handpicked berries for local restaurants and markets. The last major cranberry harvest at Double Trouble was in 1972, although some of the bogs were leased and farmed by the Jersey Devil Cranberry Company until last year.

A Window on the Pinelands' Past

By 1978 Double Trouble Village was listed on the State and National Registers of Historic Places. Today, it is also an important site along the National Park Service's New Jersey Coastal Heritage Trail Route.

The park features more than 5,000 acres of distinctive Pine Barrens habitats. Cedar Creek is an excellent stream for canoeing and for catching glimpses of otters, beavers, bluebirds and deer. Nature trails offer an opportunity for hiking, biking and horseback riding. In the spring, the air is fragrant with the scent of azalea and sweet bay magnolia blossoms.


Raking in the harvest © Steve Greer

Above: Harvesting by water wheel at Double Trouble © Cornelius Hogenbirk

Currently, Double Trouble Village is in the process of being restored. The Division of Parks and Forestry has already invested more than $2 million to restore the sawmill and the sorting and packing house, and to stabilize other existing buildings in the village. The planning and future development of the village is a cooperative partnership between the division, the National Park Service and the Pinelands Commission.

With a restored village and plans for the development of a visitor center, Double Trouble will truly become a "window into the Pinelands industries," affording visitors the opportunity to walk back in time to an early 1900s company town in the Pine Barrens.

For more information about the park or to arrange for a tour of the village call 732/341-6662.

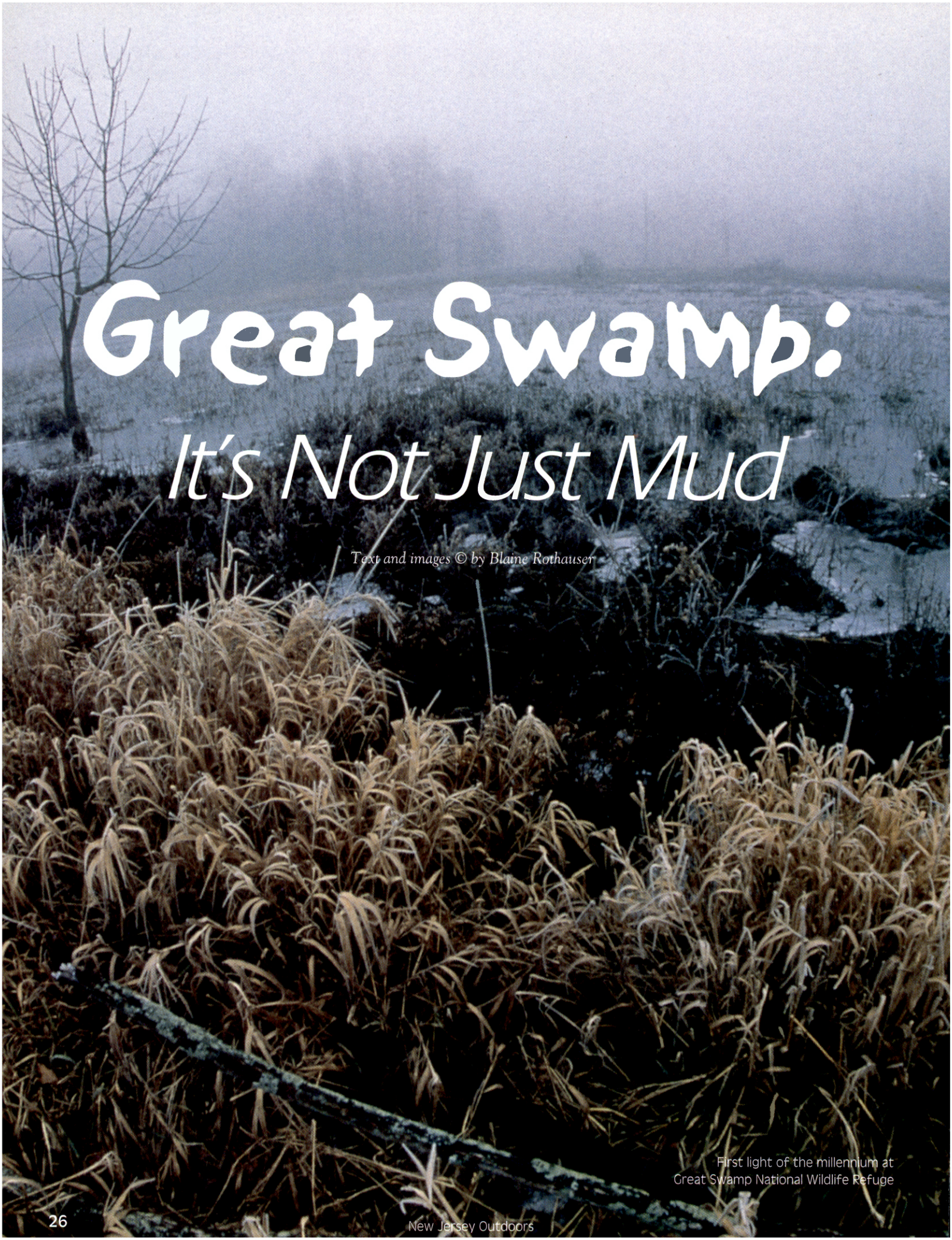
Dana Loschiavo is the communications coordinator for the Division of Parks and Forestry. While interning with the Department of Environmental Protection several years ago, she authored ***Elizabeth at the Crossroads of History****, which appeared in the Fall 1996 issue of* **NJO**.

The sour tartness of cranberries straight from the vine is somewhat of an acquired taste. While the only thing Burke's mother made from the fruit was relish, there are recipes in almost all categories—from starters and sides to entrees, baked goods, and beverages—that feature cranberries. Here's one we hope you'll enjoy.

Cranberry-Orange Cookies

- ½ cup fresh butter, softened
- 1 tsp vanilla
- 1 tsp baking powder
- 1 tsp orange peel
- 1 cup light brown sugar
- ⅓ cup dairy sour cream
- ½ tsp baking soda
- 1¼ cup pecans, chopped
- 1 large egg, beaten
- 2½ cups flour
- 1 tsp nutmeg
- 1¼ cups fresh cranberries, chopped

Preheat oven to 375° F. Line several cookie sheets with baking parchment paper. Cream the butter and sugar, then beat in egg and vanilla. Mix in sour cream and set aside. Combine flour, baking powder, baking soda, nutmeg, and orange peel, then stir into batter until blended. Mix in pecans and cranberries, then drop by heaping teaspoonfuls on a cookie sheet, spacing to allow for some spreading. Bake for 10 to 12 minutes, one cookie sheet at a time, on a rack in the middle of the oven. Cool on cookie sheet for a couple of minutes, then remove to a rack to cool completely. To finish, glaze with a mixture of 2 tbs orange juice, 2/3 cup powdered sugar, and 1 tsp orange peel. Store covered.



Great Swamp: It's Not Just Mud

Text and images © by Blaine Rothauser

First light of the millennium at Great Swamp National Wildlife Refuge

I enter the swamp as a sacred place, a sanctum sanctorum.
—Henry David Thoreau

The mere mention of the word swamp conjures up a whole cavalcade of negative connotations. Put the word great in front of it and, well, God knows what you will think . . . rats the size of German shepherds, blood-sucking mosquitoes festering with malaria, snakes dangling from branches like earrings, quicksand waiting to engulf those who wander off the trails—maybe even the Swamp Thing that emerges, algae strewn, on moonlit nights. I hope these images will be but a memory when you finish this piece.

Granted, the Great Swamp National Wildlife Refuge (GSNWR) does not boast the scenic vistas of the Grand Canyon, nor does it have some spectacular attraction like the giant sequoias of the Sierra Nevadas in California. That type of "eye candy" may work for your average Winnebago-traveling vacationers but if you're a true nature junkie the swamp is where it's at. Pond for pond—I mean, pound for pound—the GSNWR holds its own in terms of the biodiversity found within.

I cannot think of another 7,300 acres in America that hold more flora and fauna during a four-seasoned year. The sweet bells of natural wonders ring out like a 5-year-old's Christmas list to Santa: 1,006 plant species, 18 species of reptiles and amphibians, 24 fish species, 204 avian species, 30 species of mammals and countless invertebrates call this place home. Imagine all these life forms within a 30-minute ride from downtown Manhattan!

A Multitude of Habitats

The ecological significance of this area cannot be understated. Fourteen threatened and endangered species, including the great blue heron, barred owl, northern harrier, Cooper's hawk, American bittern, blue-spotted salamander, bog turtle, and wood turtle, find asylum on the refuge.

As a naturalist who has spent countless hours in the GSNWR, I recognize the swamp in broader terms, ecologically speaking. The swamp is certainly important in the role it plays as a home for threatened and endangered species, but for those of us who visit this place throughout the seasons it is much more. To a migrating bird the swamp is analogous to a truck stop along the highway (one of only a few in its size class) at which it can refuel and rest its weary self.

Many species of songbirds stop here during spring and fall migrations. Palm warblers (a neotropical songbird) are always seen in small flocks, in April, foraging throughout the swamp's woodlands. Short-eared owls have been seen here in winter, taking advantage of the ubiquitous microtine voles in the cut fields of the management area. Ospreys feeding on fish in the Great Swamp's many ponds in early spring, late fall, and winter.

There isn't a winter's day that goes by that you cannot find a northern harrier "mousing" in a field. Most winters you will find a northern shrike hunting for small mammals along Pleasant Plains Road, a big attraction for bird watchers.

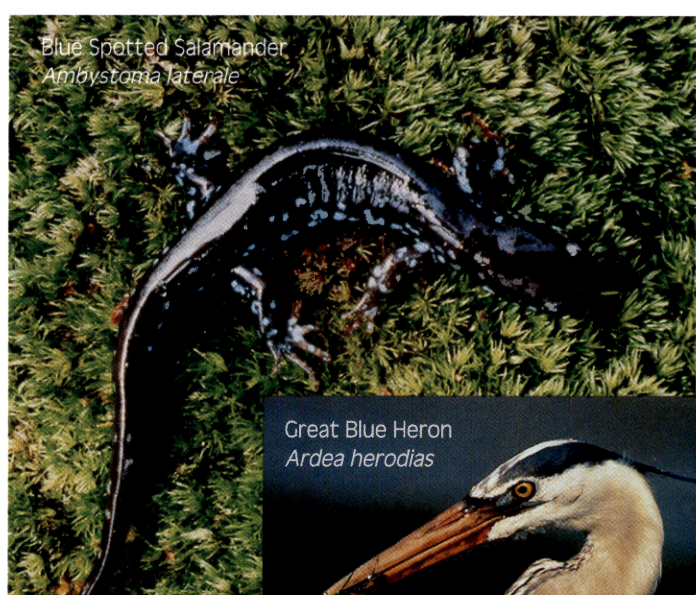

Bog Turtle
Clemmys muhlenbergi

Bobolink, a threatened songbird in our state, will sometimes nest in the management area's plowed fields.

Ducks of all flavors—pintail, wood, bufflehead, widgeon, blue- and green-winged teal, and mallard, just to name a few—all take advantage of the swamp's food supply and cover during their long migration along the Atlantic Flyway. On more than one occasion I have seen juvenile bald eagles feeding on the carcass of a deer hit by cars. There's a multitude of avian migrants that stop here—snipe, yellow-legs, water thrush, spotted sandpiper, and so many more. I cannot even begin to fathom where all these transient creatures would go if this place had not become a wildlife refuge.

Bipeds Benefit, Too

Let's forget for a moment the importance of the GSNWR as a tenement house for biodiversity and ponder the benefits to us bipeds. The Great Swamp, with its 7,300 acres of open space, is a great carbon sink and natural air purifier in one of the most densely populated areas of our state. For the towns that surround it, the swamp acts like a giant sponge, filtering out nonpoint source water-borne pollution that comes into the swamp via the five tributaries that run through it. Removing excess nutrients, hydrocarbons, and toxic substances, controlling floodwater, recharging aquifers, restoring soil fertility, inviting recreation, nurturing fisheries, and supporting evolution are just a few of the free services provided by this freshwater ecosystem.


Blue Spotted Salamander
Ambystoma laterale

Great Blue Heron
Ardea herodias







Clockwise on this page, from above, are a screech owl chick *(Otis asio)*, pearl crescent *(Phyciodes tharos)*, jumping spider *(Salticidae spp.)*, blue bird *(Sialis sialis)*, blue flags *(Iris versicolor)*, Northern water snake *(Nerodia sipedon)*, and Southern flying squirrel *(Glaucomys volans)*







Nestled precariously within the borders of 10 Morris and Somerset County towns, the GSNWR truly epitomizes what makes New Jersey special: diversity! The refuge itself is a mosaic of many different habitat types—deciduous uplands, wet meadows, marsh (technically, a treeless wetland), floodplain, and, of course, swamp (technically, a forested wetland). With this diversity of habitats comes a diversity of plants and animals. I recall days in the swamp that have put me in an opium-like state, drugged by nature. I remember a winter day, just this year, when I witnessed six different northern harriers hunting in open fields while a lone rough-legged hawk stood guard from a dead snag. Bluebirds were working the hedgerows, pulling berries from multiflora rose. A northern shrike was working this very same hedgerow, although he had small mammals on his mind. If the day ended there I would have had my fill of "nature hits" for the month.

But it wasn't over yet; the grand finale came while leaving the refuge via Pleasant Plains Road. Something long and fat crossed the road—another feral cat fattening himself on white-footed mice I thought. As I approached the spot where it crossed I looked into the marsh. To my delight, I found two eyes starring back at me. This was a river otter, the reticent denizen of the swamp. Within a moment he turned and splashed off through a patch of cattails and arrowhead plants. In many such encounters these animals behave like specters, appearing and disappearing in mere glances. I point to this day because of the variety of sightings, and the fact that it was a day in the dead of winter during which I never left the comfort of my warm car. Imagine the possibilities that await the student of nature who would dare to hike the 20 miles of trails that lace the refuge and the two county parks that make up the complex.

A Long Time Coming

Geologically speaking, the potpourri of life forms found here did not happen by accident. The refuge is located in what amounts to the bottom of a geological basin. The northwestern side of the basin was created early in geologic time (220 million years ago) when Africa collided with North America to create the super continent Pangaea. This event gave rise to the Appalachian Mountains.

At the onset of the Jurassic era, 190 million years ago, the southeastern side of the basin was formed in response to lava flows that created a series of three small mountain ranges, the Watchungs. For those who wonder if dinosaurs took up residence here, the answer is *yes*. The fossil remains of a 6-foot dinosaur called *Syntarsis* was found buried in rock from the third Watchung range. Anyone who has been watching movies lately will find it interesting that this dinosaur was a small predatory raptor terrorizing other denizens of the time.



The area remained relatively static until 18,000 years ago when the last of a series of four ice advances occurred. The last of these, the Wisconsin glacier, poured over North America like a backhoe on steroids, piling up glacial till and creating a moraine that makes up a significant portion of the eastern side







of the basin. As the ice melted a great lake was formed—Glacial Lake Passaic (30 miles long by 20 miles wide). Retreating at a sluggish rate of a just a hundred feet a year, the glacier's recoil took nearly 1,000 years before draining the lake. Spear points found throughout the region indicate that the first Native Americans lived here about 12,000 years ago. Today remnants of the lake are evidenced by a series of wetland complexes: Black and Lee Meadows, Troy Meadows, Great Piece Meadows, Hatfield Swamp, and the largest—and may I say grandest—of all, the Great Swamp.

Paul Becker, a technical specialist with the Somerset County Park Commission who lectures on the subject, puts it best, "People who visit this place seldom realize that all this nature that they bear witness to is a direct result of habitat diversity, underpinned by very ancient, and oftentimes cataclysmic, geologic upheavals." It amazes me when I'm lost in the reeds and look up to the sky, that just 18,000 years earlier I would have been sitting on the bottom of a lake 220 feet deep with chunks of icebergs grazing my head!

Clockwise on this page, from upper left, are a downy woodpecker *(Picoides pubescens)*, little brown bat *(Myotis lucifigus)*, red-tailed hawk *(Buteo jamaicensis)*, dew-laden spider web, painted turtle *(Chrysemys picta)*, green heron *(Butorides striatus)*, short-eared owl *(Asio flammeus)*, and crab spider *(Misumena spp.)*.

A Helping Hand

Where geology has left off, the U.S. Fish and Wildlife Service has taken over. The agency manages the refuge, which is divided into two sections, enhance wildlife habitat on half of the site, aptly named the management area. Except for two trails, a car path, and an area to view one of the most magnificent great blue heron rookeries in the state, human visitation is prohibited here. On this land the managers for Fish and Wildlife maintain wood duck and blue bird boxes; keep fields mowed at different successionary stages of growth; direct water levels through a series of dikes and impoundments; control invasive plants by biological means; invite research studies; and perform trail maintenance.



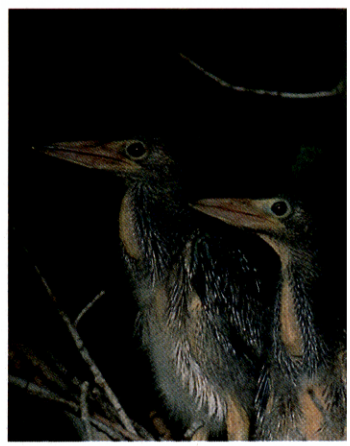
Thanks to their efforts, the management area is one of the best places in the state to see a bluebird, wood duck, or a flock of common snipe. But it's what we don't see that probably matters most. Through their habitat management practices the Great Swamp has benefited to a point that the average passerby cannot comprehend. When you see a pearl crescent butterfly nectaring off of orange milkweed, a coyote working the meadows for prey, or woodcock performing their beautiful aerial nuptials, it is then that you must shake the hands of the wildlife managers. You see it is wildlife management that invites, in large part, the diversity of life that you behold in the Great Swamp.



The other half of the refuge was designated by Congress in 1968 as the first National Wilderness













Area. Here is a place to experience open space as it was meant to be—unhindered, unchecked, and unconstrained. No permanent structures, motorized vehicles, or equipment of any kind are allowed here. Passing through hill, swamp, and dale can only be achieved on foot—even bikes are prohibited. For those who want to be taken back to more primitive times, this is the place for you. Eight and a half miles of trails lace the Wilderness Area, taking the visitor through lush uplands as well as low bottomlands, many imbedded in a sea of ferns and native wetland vegetation. Many rare plants can be seen by the person whose naturalist skills are sharp–bottled gentian, ragged green fringed orchid, hepatica, lady's slipper, and cardinal flower are just a few examples of what one may find. I've spent many enjoyable moments photographing rare plants and animals here against a backdrop of primordial wilderness.



Witnessing the Wonder

If you spend any amount of time here you start to understand the swamp in terms of a complete ecological system, fully equipped with all the interactions that have made places with bigger names famous. How do I know this? I—and others—have witnessed it first hand. I've seen barred owls preen each other (ornithologists call this allopreening) coming off an active nest to strengthen their pair bond. This single moment will live indelibly in my heart for reminding me that animals and humans can at times share an evolutionary thread that we mistakenly discount as a quirk in animal behavior.

Paul Becker recounts a moment during one of his many jaunts through the swamp. It was a winter's day and a rustle in the wood turned his head where he witnessed a natural act that I have only read about. A great blue heron was scavenging the leaf litter, poking around not for crayfish or frogs, but white footed mice! Now that's one resourceful bird.

Craig Bittler, a wildlife biologist with the U.S. Fish and Wildlife Service, recalls a mallard duck splashing frantically in the water, seemingly injured and dying. Well, this was almost the case. As he approached the scene the duck suddenly flew off in a veil of water droplets. Upon closer inspection the primeval-looking head of a snapping turtle appeared in the wake. Apparently this predator had snatched the leg of its prey, but in the mêlée the duck struggled free.

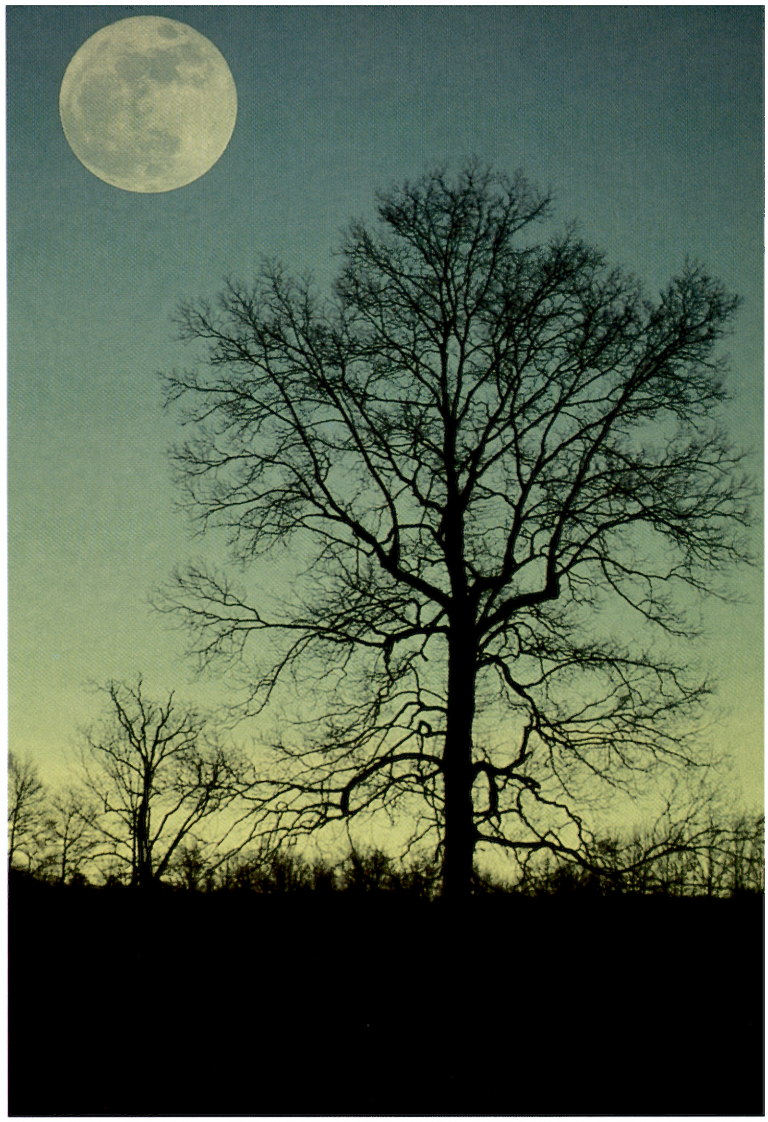
Marc Payne, a naturalist and wildlife rehabilitator, once told me of a late night incident along White Bridge Road, a thoroughfare that cuts through the refuge. As he was driving, an unidentifiable flying object fell awkwardly out of the trees directly in front of his car. He quickly stopped and moved to the shoulder of the road. When he got out of his vehicle he was greeted with a gift from the naturalist gods. A baby barred owl was wobbling about directly in the middle of the street. He guessed that this was the owlet's maiden flight. Moments later an adult flew into the middle of the road, chattered a bit as if to say, "what the heck are you doing; I said fly *across* the street not *onto* it," whereupon they took off into the trees together. Marc was astonished to hear the very un-owl-like racket of a family group thrashing through the treetops, ranting and babbling until they finally moved out of earshot.

Pictured across the top of this page are a sedge reflection, American goldfinch *(Carduelis tristis)*, great horned owl *(Bulbo virginianus)*, marsh wren *(Cistothorus palistris)*, and green pond hawk *(Gomphidae sp.)*.

Above is a solitary sandpiper *(Tringa solidaria)*.

Clockwise from upper left on the next page are a coyote *(Canis latrans)*, the last full moon to ascend over the refuge in the last millennium, and Great Swamp as seen by the last light of that millennium.





Accounts of these come directly from what Thoreau has called a *sanctum sanctorum*. My favorite is from naturalist Sue Manchard, who teaches at the Morris County Outdoor Education Center in Chatham. Quite by chance one day, Sue looked out the window of her office to see a mother teaching her child to bend to the ground and touch and smell a wildflower that was growing in the thickets. It seemed to Sue that the mother was making it crystal clear to the little girl that you must not be afraid of life, no matter how alien or far removed from the human world it may seem. It is in this natural act that I find a glimmer of hope that people may come to nurture all natural places that they have been bred to fear. Please, come visit the swamp, relish in her playground and you, too, may come to the realization that the Great Swamp is *not* just mud.

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Blaine Rothauser, chief biologist and naturalist for a South Orange environmental consulting firm, lectures throughout the state about the ecological significance of Great Swamp National Wildlife Refuge. Although new to the pages of ***New Jersey Outdoors****, his images have been featured in exhibits statewide, as well as in brochures, calendars, and other magazines.*

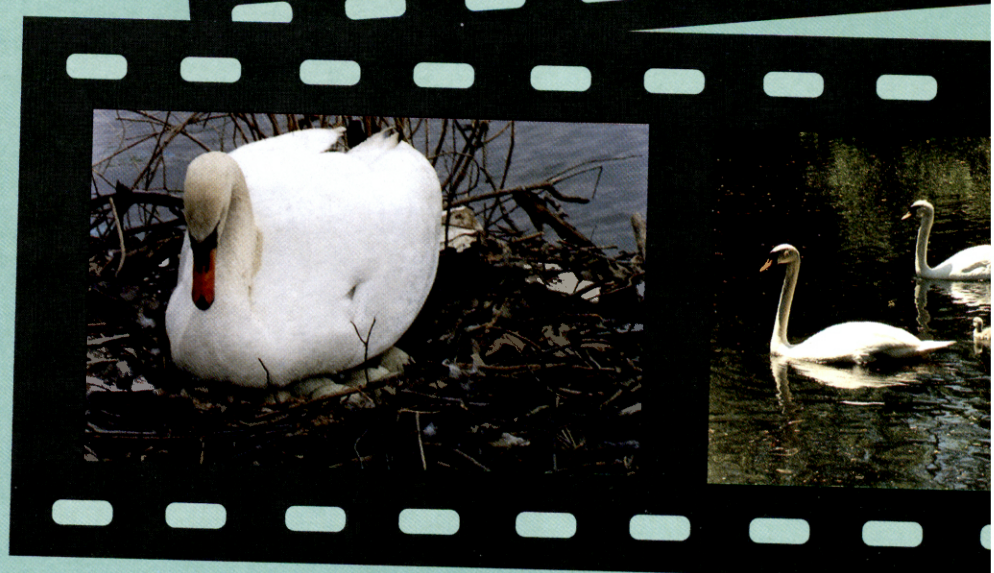


New Jersey State Library

The Making of a Swan Family







I am a self-taught photographer—don't know an F-stop from a bus stop—who has lived at Packanack Lake (Wayne) for over 50 years. For the past 10, I've been photographing the swans, from nest building until fall, when the young ones fly away. The nest is about 5 feet off of a friend's back yard, giving me wonderful access for photos.

This year I was fortunate to be able to photograph the laying of an egg! With her back toward me, the "expectant mother" lifted her tail, exposing a wet, green egg just starting to come out! I couldn't believe my eyes, but with the zoom extended, I kept snapping away. The pictures tell the rest of the story.

Thea Hoyt



PS There are now seven fast-growing cygnets (one egg of the 10 laid didn't hatch, and snapping turtles apparently got two the first week).



A Saltwater Angling Primer

Text and photos by Paul "Pete" McLain

Where can you fish the ocean's surf, the back waters of the bay, the rock jetties, sod banks, and tidal marsh creeks and ditches, as well as from an elevated fishing pier hanging out over the ocean? These saltwater fishing opportunities are all within in a few miles of one another at Island Beach State Park in Ocean County and its immediate vicinity. And there are excellent motels, restaurants, and tackle shops in Seaside Park and Heights adjacent to the park.

And if there is a best time of the year to fish this area, it just has to be in the fall months, from September to December, when Indian summer and the early winter bring schools of a dozen species of saltwater sport fish to these waters.

Peerless Fishing

A good place to check out and possibly start fishing is a **public fishing pier**—a sturdy wooden structure that extends out over the ocean sometimes 400 feet or more. Such piers allow anglers to drop their lines down into the ocean water well beyond the surf casting distance of the average beach angler, putting the angler right on the trail of fish in the deeper water.

There is a very nice fishing pier just a few minutes north of Island Beach State Park. The Fun Town Pier, the last such pier in New Jersey, is on the boardwalk in Seaside Heights. There's a daily or nightly charge of $7 to fish from the pier.

There are usually rod and reel rentals available at public fishing piers, as well as bait, food concessions, and benches were you can relax and take in the sun as you wait to take the fish. You'll meet a nice crowd of dedicated pier fishers who are always ready with advice for a beginner.

Boat fishing from private or commercial craft offers the angler a morning, afternoon, full day, or half night on the Atlantic Ocean when the fish are ready and willing to take both artificial and fresh baits. Boats sail out of Barnegat Inlet on the south and Manasquan Inlet on the north. Charter and open party boats usually supply both tackle and bait. All you need to do is get on board and go fishing. At this time of the year, bluefish, striped bass, weakfish, and fluke are looking for a free meal, which just might be on your hook.

From Ocean to Bay and Beyond

The nine-mile stretch of the Atlantic shoreline at Island Beach State Park is known as one of the best **surf fishing** beaches on the East Coast. It offers plenty of elbowroom to cast your lure and, hopefully, fight a prize-winning fish. If you'd prefer to take your 4-wheel drive vehicle on the park's sandy beach, you can fish a designated surf area after acquiring a beach buggy permit at the park office. If there was ever a place to learn about surf fishing and enjoy this unique type of angling, Island Beach is it.



The **shoals and deep water** of Barnegat Bay, behind the park, provide both fall fishing opportunities and solitude. The summer boat traffic is gone and you can spend hours with a fly rod or spinning rod, casting lures for striped bass, bluefish, and weakfish. The bay is accessible from the park's western boundary and the bay bottom is hard sand. If you fish at night you may wind up standing a mile out in the bay in waist-deep water, so be sure to carry a flashlight of some sort to let the occasional passing boat know you're there.

One of the most unique fishing opportunities is the rock **jetty** at Barnegat Inlet at the southern end of Island Beach Park. This jetty is constructed of huge rocks and extends the length of the inlet. Anglers are permitted to walk out on the rocks to cast lures and bait into the ocean on one side of the jetty and into the inlet water on the other. This is a tremendous fishing area when schools of sport fish use the rock jetty area for feeding and resting.

However, it's extremely important to have the right equipment to safely fish from a rock jetty. You will need waders, spiked or cleated boots or clamp-ons to ensure good footing on the slippery rocks. Before heading out on a jetty it's a good idea to see what the local anglers are wearing and the equipment they're using.

Directly across Barnegat Inlet, at the town of Barnegat Light, the south jetty of the inlet offers a superb fishing jetty that has a safety rail and has been paved for the first 1,000 linear feet. This is an excellent location for beginning anglers. The remainder of the jetty is rocked, similar to the north jetty on the Island Beach State Park side of Barnegat Inlet.

Fishing tackle for inlet fishing should be medium to heavy 8- to 10-foot surf rods with 12- to 20-pound test line. There are stripers in the 40-pound class roaming the inlets and if you hook into a big fish you will need to fight it to the rocks.

The southern boundary of Island Beach follows the inlet past Barnegat Light and to the west. This narrow sandy beach provides a couple of miles of excellent **bank casting** opportunity into the channel waters where the weakfish, stripers, bluefish, blackfish and other sport fish roam.

A little further along this sand strip there is a 600-acre tidal marsh with a number of small **creeks** and **ditches** where the light tackle crowd seek out the stripers, weakfish and blues that lie in wait for small baitfish to come drifting along with the tide. This is exciting fishing, and it can be done by walking the sod banks or from a small boat such as a canoe or kayak.

For this type of fishing you can't beat a fly rod or a light spinning rod with surface poppers, streamers, or swimming plugs. Care must be taken when wading these ditches as there are deep holes into which you may step unexpectedly.



A Few Final Pointers

A frequently asked question is, "When is the best time to go fishing?" The obvious answer is, "Whenever you can get away." To be more explicit, the best times to fish are at dawn and near dusk, when most of the saltwater fish really turn on. The best tide is frequently determined by local conditions, which you need to study.

Generally, one of the best fishing times is on the slack tide or the change of tides. During this time the baitfish move and the fish tend to feed. If you can locate a depression or hole in the bay bottom, this is a good place to try. If you see terns feeding on the surface, try fishing under them as they may be feeding on baitfish being chased by larger fish.

Opposite page: Proper gear is important on slippery rocks pounded by waves.

Above: Public fishing piers attract many anglers.

Below, left: For some anglers, charter or party boats are the way to go.

Below, right: Rock jetties offer anglers a bit of solitude.







Left: Even a line cast from a small boat can hook a big fish.

Below: Bays and tidal waters offer some great fishing venues.

Bottom left: The rewards of surf fishing go beyond a day at the beach.

Bottom right: The best time to fish? Anytime!



Sport fishing for both freshwater and saltwater fish is one of the most popular forms of outdoor recreation in the United States. If you are a veteran angler, you know all this, but if you're a beginner, there's a great new recreational world out there waiting for you.

Take the time to learn to fish—find out where and when to go, what equipment is required, and how to use it. A library is loaded with fine books on fishing that will answer many of your questions almost before you ask them. Bait and tackle shops, when they are not overly busy, are willing to help a neophyte angler get into the fishing game and will get you started with the proper tackle and lures. When you are on the beach, a fishing pier, or anywhere lines are being cast or dangled, most anglers will gladly give you a helping hand and advice. Finally, local saltwater fishing clubs are always looking for new members and can be a direct link to some skilled fisherfolk.

But learning to fish is primarily being out there and fishing as long and often as you can. There are precious few instant experts in the fishing game.

Pete McLain, an outdoors writer from Toms River, is a long-time contributor to NJO. An avid fisherman and dedicated friend of the coastal environment, he's always willing to share his angling knowledge.





Eyes Peeled for Polypores

by Dorothy Smullen

Have you ever come across, as you walked through a wooded area, a group of unusually durable fungi growing on the side of a tree or log? Known historically as polypores, you can find them at any time of the year—in snowy winters or during summer droughts—as many of them are the visible perennials of the fungi kingdom.

The word *polypore* means *many openings* in Greek. It refers to the small openings on the underside of the cap or shelf through which microscopic spores are dispersed in order for the fungus to reproduce. Though most can be seen by the naked eye, some pores are so small you would need a magnifying glass to see them. In other species, the pores may be gill-like or look like a maze. Certain species of polypores are stalked and/or come from buried wood but most are found whole cap attached to the side of a standing tree or fallen log, hence their common names: bracket fungi and shelf fungi.

Along with other fungi and bacteria they are the recyclers or decomposers in the ecosystem. They play a valuable role in our forests, breaking down the cell wall materials of wood and plant matter into simpler compounds to be used again. Some polypores are, in fact, parasites on living trees, causing damage to the timber industry.

Whether the fungi are growing on dead or living material, the shelf (bracket), is called the *fruiting body*. Its purpose is reproduction. Millions of spores may be produced by one fruiting body. The rest of the organism is made of microscopic threads called *hyphae* that have penetrated the cells of the host for food. If you pick a bracket fungus, you do not destroy the organism. It is similar to picking an apple from a tree.

New Jersey has hundreds of polypore species. Some of the more common and interesting ones are described below.



© Neal MacDonald

Ling zhi, or **reishi**, is the species *Ganoderma lucidum*. Used in folk medicine in China and Japan for more than 4,000 years, it has been used in the treatment of hepatitis, hypertension, arthritis, bronchitis, and asthma. Reportedly, it also may have anti-tumor properties. This polypore's name means shiny skin. It is usually stalked and grows on hardwood. Its rust colored surface looks varnished and there is usually a paler, yellowish margin.



© Dorothy Smullen

The **birch polypore** (*Piptoporus betulinus*) is found on dead birch trees. When it is very young, it looks like someone stuck a wad of white bubblegum on the tree. This fungus was found on the 5,000-year-old Iceman discovered in the Alps. Scientists believe that it was used for medicinal purposes.



© Sam Ristich

The **tinder polypore** (*Fomes fomentarius*) may also have been found on the Iceman. It was, as its name implies, used as a fire starter. Also known as *amadou*, this hoof-shaped fungus's brown pore surface is sliced and used to dry feathered flies used in flycasting.

Found on the ground, growing from buried roots of conifers, *Phaeolus schweinitzii* is called the **dye maker's polypore**. Many colors, from yellow and golden brown to olive green and dark brown, can be obtained, depending on the mordants (chemicals used to "fix" dyes) used in the dye process. This fungus was named in honor of Lewis David von Schweinitz (1780-1834), a pastor of the Moravian Church who laid the foundations of American mycology (the study of fungi).



© Dorothy Smullen

The **chicken mushroom** or **chicken of the woods** (*Laetiporus sulphureus*) has many overlapping, orange-yellow shelves with a yellow pore surface underneath. When young, the soft margins of this fungus have the texture of chicken and are edible when cooked.

WARNING: Never eat any wild food unless it has been identified by an expert. None of the old wives' tales about which mushrooms are edible are true. If you wish to explore the diversity of fungi, join the New Jersey Mycological Association (www.njmyco.org) or take the survey course offered at Rutgers University.

References

If you'd like to learn more, read one or more of the following books.

Barron, George. 1999. *Mushrooms of Northeast North America.* Edmonton, AB: Lone Pine Publishing.

Bessette, Alan E., Arlene R. Bessette and David W. Fischer. 1997. *Mushrooms of Northeastern North America.* Syracuse, NY: Syracuse University Press.

Hobbs, Christopher. 1999. *Medicinal Mushrooms: An Exploration of Tradition, Healing & Culture.* Loveland, CO: Interweave Press.

Lincoff, Gary. 1981. *The Audubon Society Field Guide to North American Mushrooms.* New York, NY: Knopf



Wool and dye maker's polypores
© Susan Hopkins

The **artist's conk**, *Ganoderma applanatum*, is very common shelf fungus and a true perennial. In the growing season, it grows a new pore layer that has a white surface with brown spore-producing tubes underneath. When you scratch or etch the white surface, the brown layer beneath shows up. Once the bracket is dried, the design remains permanent.



© Neal MacDonald

One of the most common shelf fungi found on fallen limbs or stumps is *Trametes versicolor* or **turkey-tail**. The thin, tough, velvety overlapping caps show zones, or bands, of alternating colors of various shades of brown and amber. Older, weathered specimens have a gray appearance. This fungus is commonly used in dried flower arrangements, and can be used to make a craft paper. In Japan, clinical studies using chemical derivatives from *T. versicolor* in combination with other anti-tumor medicines have been successful.

Although only seven polypores are listed here, you can create your own checklist—similar to those for birds and butterflies—to include the many other polypore species by consulting a mushroom field guide (see sidebar). Some of the items to record might be date, location, abundance, and tree association.

The next time you wander along a woodland trail, keep your eyes peeled for polypores.



© Cornelius Hogenbirk

Millington resident Dorothy Smullen is a high school science teacher and past president of the New Jersey Mycological Association. This is her first contribution to ***New Jersey Outdoors****.*

Bernice Fatto's etchings of raccoons, turkey, deer, horses, and geese on artist conks are pictured below. The photos were taken by her husband, Ray Fatto.



More Than One Way



Mallard Duck (Drake), © Clay Myers

To Jump a Duck

by Robert Elman

I'm old enough to remember Havilah Babcock's first book of hunting stories, *My Health Is Better in November*, published back in the 1940s. Dr. Babcock, a professor of English at the University of South Carolina, had found a perfect title: a six-word sentence evoking every hunter's sense of blessed well-being when most of the seasons open.

I'm also old enough to feel uneasy waiting for Novembers that may or may not come for me—or even for the special seasons that arrive as early as the harvest moon. I therefore take comfort in something else Dr. Babcock said: "I just go when I want to go, where I want to go . . ."

Getting a Jump on Hunting Season

Waterfowl seasons haven't yet opened as I write this, yet I hunted wood ducks a couple of weeks ago. No month goes by that I don't hunt, traipsing around seeking birds or whatever. The week before last, I carried only my 10 x 40 binoculars—not even a camera—but I was hunting nevertheless, jump-hunting. Not jump-shooting this time; jump-*hunting* sufficed, and a fine hunt it was. Jumped a trio of woodies no more than 30 yards away, and in my head I brought down two with one shot apiece, doubling my normal ratio of birds bagged to shells emptied.

Granted, the rewards could have been greater if I'd waited awhile. I like watching a dog retrieve. I like eating duck. I like to stroke and marvel at a woody drake's plumage: white, velvety black, bronze, green, purple, dusky brown, vermilion, smoky blue, chestnut, violet, buff—a cosmos of beauty concentrated in a small, plump miracle. I like everything about waterfowl, but most of all I love *hunting* them, whether or not I can shoot.

Many years ago, Charley Waterman summarized this love in another perfectly titled book, *The Part I Remember*. While we remember our best shots and some of the worst, what we remember most vividly is a tapestry of woods, waters, sky, wild creatures and their surprising actions, our own reactions, the dynamics of flight, things like that and a symphony of sounds other than shots. If birds are present, there are parts to remember. And where I live, some are present every month of the year.

I did, however, act as if I carried my gun on that last hunt. The surest way for me to see and hear game up close is to hunt as if I'll bag it. Not just pretend but focus so intently that my hands come up, mounting a gun I'm not carrying when something squawks or flutters. I believe hunters generally become better wildlife observers than most people because they move with intense concentration, their success dependent on purposeful reactions.

A Chance to See It All

Up near Merrill Creek Reservoir I ambled through mixed hardwoods where the mast attracts woodies and mallards, squirrels, deer, turkeys, jays, songbirds, and chipmunks; then through scattered brambles and raspberry tangles and a swath of pines; down farther where dogwoods spread haphazard crowns; across a boot-sucking hollow, looking for the arrow-arum ducks love; and finally to the bedraggled blow-downs screening the shoreline.

Stopping to watch and listen, I've jumped woodies and mallards, and several times I've seen a doe, alone or with a fawn. Once I watched a gray fox quit mousing to stalk a squirrel—an exercise in futility that ended with the squirrel high in a tree, chattering curses while the fox loped off in resignation or embarrassment.

I've watched chipmunks here, raccoons, possums, skunks, turtles, garter snakes, cardinals, jays, goldfinches—a changeable feast. This time I saw only sparrows and a tufted titmouse, and heard only a clamor of crows and gulls. When I reached the reservoir, I scanned it with my binoculars. Against the far shore, pale clumps dotted the surface, gulls by the hundreds, a string of white blobs broken near the center by a dark smudge. I refocused. The smudge was a black duck, head turned back to preen between its wings.

Few black ducks come to my home waters these days, and sightings are rare this early in the year. But there it was, *mine*, imprinted on my soul and memory. Already I'd had a successful hunt.

At dusk I flushed three wood ducks in the bottoms. Then, up on the open field, I heard faint cheeps followed by the flight call—*hoowett, hoowett*—and a veil of woodies flitted over, their wingbeats very fast, like somewhat oversized teal. At least a couple were drakes. Shooting is prohibited here, but when the time comes I know a place nearby where gunning is legal and almost as good as my wildest preseason fantasy.

The Real Thing

Then I'll carry only my gun. My decoys will stay in the attic. Not that I have anything against decoys (when someone else sets out and picks up), but I won't need them, nor will I need a manmade blind. I can pause against a tree or sit on a hummock in the brush, sometimes accompanied by a friend whose lifetime mission is to teach me to use a call convincingly. Decoying ducks is like fishing from an anchored boat. Although it has profound blessings—many parts to remember—sometimes I favor the peculiar exhilaration of jump-shooting.

The benefits are practical as well as exhilarating, costing fewer shells. I shoot poorly more often from a blind than when jumping ducks. One reason I miss from a blind if birds pass high—or come in over decoys—is overeager shooting, coupled with vague range estimation even when the stool is used to mark distance. My journal becomes a confessional, for I have sinned repeatedly: stood up too soon and swung (but not far enough) on a duck that looked (to me) like it would collide with the blind.

Have you noticed that some of your best shots involve birds that take you by surprise, coming from behind and demanding a hurried swing? That explains my second difficulty in a blind. When I have plenty of time to mount the gun and swing, I sometimes lock into a too-long sustained lead and send the shot string way out in front of the target or, in a tardy attempt to correct myself, stop my swing



Black Duck, © Clay Myers

and shoot *behind* the bird. Jump-shooting seldom allows those errors. Mostly, I have to swing and fire almost as quickly as if waterfowl were grouse. I follow through but there's no time for overswinging.

An afternoon of scouting (no need to rise before dawn) may turn up six or eight woodies on a beaver pond, slough, or stream, and mallards often tip up in the shallows or waddle ashore for assorted snacks. A couple of mallards may linger for the evening, while shortly before legal shooting hours end the woodies begin heading for nearby roosts in bottomland hardwoods.



Male Wood Duck, © Clay Myers

When I return to hunt, my rambling has much in common with hunting grouse and woodcock. To reach one favorite spot, I take a leisurely route through oaks and beeches above a pond. The hunt begins before I reach the woods, in a cornfield across the county road from the timber, where I have permission to shoot. Ducks feed in the stubble, and geese often come in, skein after skein. If no corn is left standing, I crawl between stubble rows, as low as I can get, until I see black, chin-bibbed heads over the broken stalks. A couple of geese invariably have their heads up, but with care and luck I'll have at least two shots when the flock erupts into the air.

On days following bright nights, the geese will more likely be on the river or pond, but a few ducks may dawdle in the field. I try to get close to the sound of their chatter before showing myself. On overcast or drizzly days following moonless, starless nights, I've come well within 40 yards of ducks as well as geese before they rise with a great clatter of wings.

Easy Does It

I'm too old and stiff to stand quickly (a waste of time in any event). I merely push myself upright, my knees in the muck, to try for the next-to-closest bird—unless it rises at too awkward an angle—and then for the closest. One bagged is success, a double is cause for celebration. After carrying my birds to the car or the farmer's house, I work down through the woods. When I have a dog along, he stays at heel. There's something akin to still-hunting in this procedure. I've flushed feeding ducks from the brush, and more often had shots as birds darted over the treetops.

One old friend liked to imitate the vocalizations of woodies, but I don't recall that it brought him birds. He also blew a teal whistle. Vanity, vanity. A mallard call, used with restraint to render their stuttering mealtime chatter, can sometimes turn woodies as well as mallards. I never try this myself unless I'd rather practice calling than shoot, but I like a companion who calls well. Thus, my jump-hunting includes elements of shooting from a blind.

Another companion refused to shoot while in the woods, since it might chase away any birds on the pond we approached. I argued that a bird in the hand is worth two theoretical ones beyond the bush, and I bagged a tree-topping mallard before we were close enough to the pond to alarm the birds there. Our noisy approach through brush fringing the water did spook them, but when they jumped my friend dropped a woody drake right on the bank.

If I spook birds prematurely, I hunker in the brush to await their return. After bagging one—or my limit—I unload and leave the gun open, hunting with no intent to shoot, just wanting to watch the birds splash down and resume loafing, preening, chattering, feeding. With my binoculars I can see their eerie beauty in detail.

Variety Spices the Hunt

Jump-shooting takes many forms, of course. I've canoed a small New Jersey river where success required silent drifting, using the paddle only to steer, and on readiness when nearing each curve that might conceal ducks. For the sake of silence, fairly high water helps and aluminum canoes do not. Much as I enjoy solitude, I tried this alone only once, and ended up holding the paddle when I needed my gun. It's better to take shooting turns with a partner.

Hunting amid standing corn—or where a pond or creek can be glassed from concealing hills—is equally suspenseful. Once I crawled over a small dam, and the birds on the water rose in clusters, scattering like mallards released at a tower shoot.

Your way may not be mine; what matters is the mental perspective in jump-hunting. Expectation is constant even without a gun. Covering ground isn't *better* than waiting in a blind, merely *different*, but now and then I think it puts more of the hunt into my hunting.

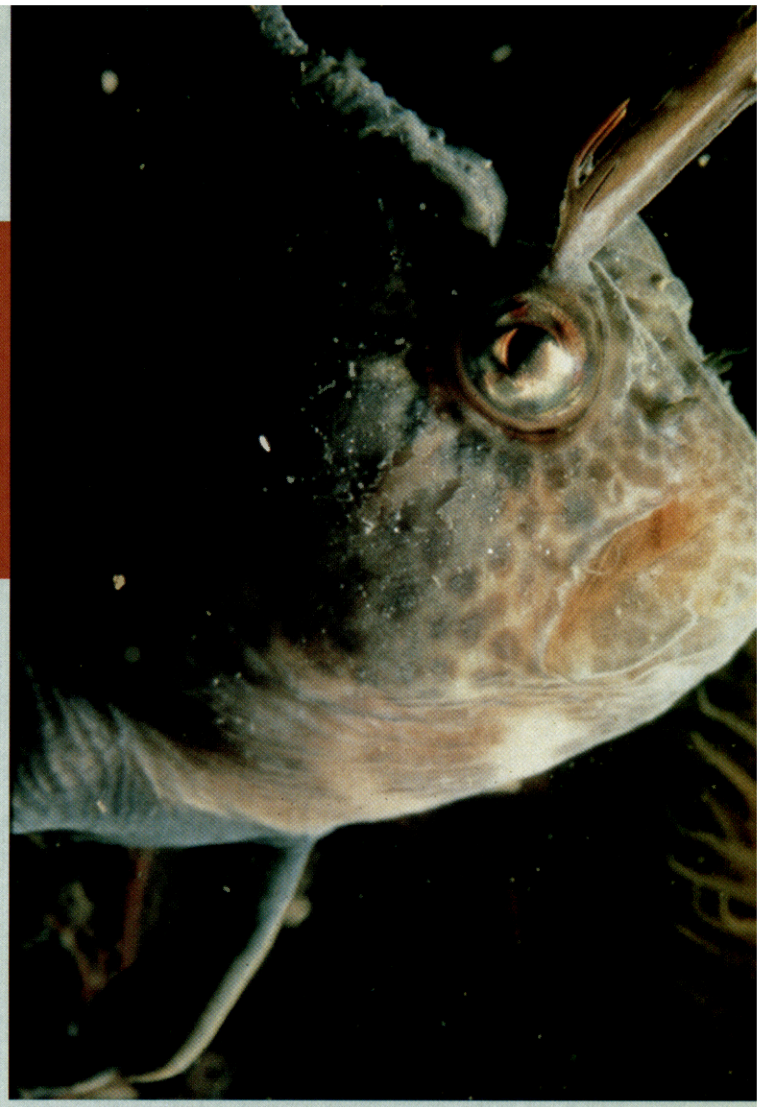


Above: Mallard in flight, © Clay Myers

Preening Golden Eye (left), © Melinda Nye

New Jersey Outdoors *notes with sadness that Mr. Elman, whose words have been featured in* ***Field & Stream, Sports Afield, Outdoor Life,*** *and other national magazines, passed away in November 2000. His* ***Being There with Dad*** *appeared in our Spring 2000 issue, and we thank Mrs. Ellen Elman for graciously allowing us to share this story.*

A Visitor to Local Shores



Text and images © 2000 by Joseph Albanese

Time flies. It's already six years since I put away my dive gear and hobby of underwater photography. Of higher priority nowadays are commitments of time and money to family and increasing work obligations. Recently, however, I had an opportunity to do a slide show of my underwater photographs for my son's Boy Scout troop.

So, now I had an excuse to take time to dust off my slides. For my presentation I concentrated on subjects photographed in the local littoral waters of New Jersey. Their interest could be held best by revealing for them the things that live beneath the waves of the Jersey shore where they swim, fish, and play in the summer.

I arranged the slide show starting with lower life forms that usually do not require much stealth or patience to approach—seaweed, hydroids, coral, anemones, urchins and mussels; you know, the sessile (attached) and real slow moving stuff. I worked my way up to the fish that are normally considerably less cooperative photo opportunities.

I found a few fish slides that I am particularly happy with because their quality represents a degree of proficiency and the modicum of skill that I had evidently acquired over the years. The level of exposure, focus and composition seem right to me. Some of these good slides were of an interesting fish I spotted on two separate occasions while diving in the Manasquan River Inlet.

Because I always labeled my slides by dive number I could open my logbook and read my notes from the related dives—my 134th and 135th dives—to refresh my memory.

Looking Back

Before donning dive gear at local inlet dive sites, we usually test the water visibility by tossing a small, lightly colored pebble or shell into the water off the rock jetty and watch it flutter towards the bottom. On my 134th dive, back on July 31, 1992, visibility was going to be only 3 to 5 feet. I remember an earlier dive in Shark River Inlet where we watched half a clamshell settle on the bottom about 35 feet below the surface! However, visibility of 10 to 15 feet is more the norm.

Due to the poor visibility I decided to take close-up photographs to minimize the amount of debris between camera and subject. Particulates hanging in the water column reflect the light from the strobe's flash and create a disturbing glare. Usually such "back-scatter" distracts the viewer from the intended subject of the photograph.

One exception is when doing macro photography of comb jellyfish. In this case the subjects appear like celestial bodies in a galaxy of stars. Herb Segars' photographs in the Summer 1999 issue of *NJO* are excellent examples.

I always made it a practice to start a dive with a fully loaded camera but usually I've finished the entire roll by mid dive. More often than not that's just when the most interesting things would be right smack in front of my useless camera. This phenomena is typical of the novice or undisciplined underwater photographer with limited amount of free time to pursue diving anxious to get the most out of every dive.

Anyway, I was a lot more disciplined on my 134th dive. In my logbook I noted that I resisted the temptation to photograph the usual. I figured I would just save the film for some topside photographs after the dive. With my 1:3 macro extension tube I took some very nice pictures of fish, including young fluke that were probably on their way to sea for the first time and some spot fin butterfly fish, but I was very conservative in the usage of film.



A Good Thing, Because . . .

Just before exiting the water with an air tank pressure gauge reading down near 500 PSI and the tide change underway, I noticed a little fish poking its head out of a hole. It was in the middle of a just started mussel bed in the rocks along the bottom of the concrete seawall of the north side of the south jetty, the Point Pleasant side of Manasquan Inlet.

I hovered in the water and inched forward to try and capture its image on film. Naturally my subject disappeared into its home. But I figured I would wait patiently—and it paid off. Time and again the little guy poked his head out to see if I was still there. This behavior was more territorial than curiosity. I captured photo after photo and used up the roll of film hoping that one shot would be good enough to brag about.

When I returned for my 135th dive a few days later, on August 3, I was hoping to find "my" little fish again and get even closer than before. I was not disappointed. More than once the fish came out to position itself between the uprights of my 1:1 extension tube framer. I had never seen this kind of fish in New Jersey before, but I knew it was either a goby or a blenny.

Later on, with developed slides in hand, I was able to identify the fish as a feather blenny, *Hypsoblennius hentzi*, from a drawing in *Life in the Chesapeake Bay* by Jane and Robert Lippson. Reportedly it can grow to a length of four inches.

Further proof of its identity came from the photograph and description provided by the Audubon Society's *Field Guide to North American Fishes, Whales and Dolphins*. The extended range for this fish is the coastline from Nova Scotia to Mexico but it is more commonly found in tropical waters, so I do not know if it would have survived the winter. Did our little visitor settle in and set up residence or did he perish in the icy waters?

Well, for me, I am proud of my photos of the feather blenny. They are near the pinnacle of my underwater photography to date. In a few more years, when my two boys get a little older, I hope they will get certified and we can be dive buddies together. Then I can pick up the sport and hobby of underwater photography in New Jersey right where I left off.

Joe Albanese's interest in marine biology, stimulated by watching the TV episodes of Jacques Cousteau, lead to his completion of a degree in biology and an active pursuit of SCUBA diving and underwater photography as a hobby. Although Joe was once published in the **Underwater Naturalist**, *the American Littoral Society's quarterly national magazine, this is his first contribution to* **New Jersey Outdoors**.



Diving New Jersey's Inlets

I often prefer inlet or occasional jetty dives to long boat rides to offshore wrecks. I might not find any artifacts or too many legal sized "bugs" (lobsters) but I will enjoy longer bottom times because of the shallower water, have a better chance of seeing tropical fish brought in by the Gulf Stream, and save some money as well.

I especially enjoy diving the Manasquan River Inlet from the Point Pleasant side. There is metered parking close to where we enter the water and when the dive is completed I can always join my family on the boardwalk. Underwater diving is permitted in the inlet only in the area east of an imaginary line drawn across the inlet from Ocean Avenue in Point Pleasant Beach to First Avenue in Manasquan. Because the tide changes every six hours, you get two chances a day to catch the high tide at its peak in Manasquan River.

Shark River Inlet is closed to diving between 8 a.m. and 5:30 p.m. from May 1 to October 1. So between those dates you usually get only one chance per day to catch the high tide just right. Diving there is permitted in the area that lies east of an imaginary line extending from the northwest end of A Street in Belmar to the southeast end of First Avenue in Avon.

Besides the Shark and Manasquan river inlets, one can also dive in Barnegat Inlet, although I've never dived there. All of these sites have an abundance of marine life to see.

Before going diving check with a local SCUBA club or dive shop to familiarize yourself with parking and diving restrictions and regulations. Or, visit the web site of the New Jersey Council of Diving Clubs at http://www.scubanj.org. On their site they have a listing of all clubs and shops in New Jersey and information on local diving sites.

Pick up a current tide table and plan your dive adventure to coincide with the thirty minutes before and after slack high tide. This can be calculated from the tide table following the instructions provided. Arrive early and be ready to enter the water as soon as the inward rush of seawater begins to slow down.

The reason to dive high tide is because the water depth is greater, approximately 25-30 feet for Manasquan and a little deeper for Shark River Inlet. Be sure to stay in sight of the rocks. It is not safe and it is illegal to dive in the center of the inlets. You must stay within 25 feet of the rock jetties in Shark River Inlet and 50 feet of the rocks in Manasquan River Inlet. I have heard of a diver being killed by the propeller of a ship coming through the inlet because he surfaced in the middle, so stay by the rocks—that's where most everything living in the sea will be anyway.

Always display a dive flag and stay within 25 feet of it to identify your location to boaters and anglers. Buddy diving is generally considered to be a safer situation than diving alone. Failure to comply with regulations may close down inlet diving.

Anglers along the jetty usually are respectful of your right to share the waterway. Often they are curious to know what fish you have seen and ask about SCUBA diving. Being courteous continues to build good will between divers, anglers, and boaters.

It is desirable to start your inlet dive heading east to the open ocean. In Manasquan Inlet, if you don't dally, you will probably be able to reach the dolos and the end of the breakwater before having to start back. (Dolosse are those large concrete objects that look like the "jacks" tossed in the familiar children's game.)



A cluster of blue mussels

A sea anemone

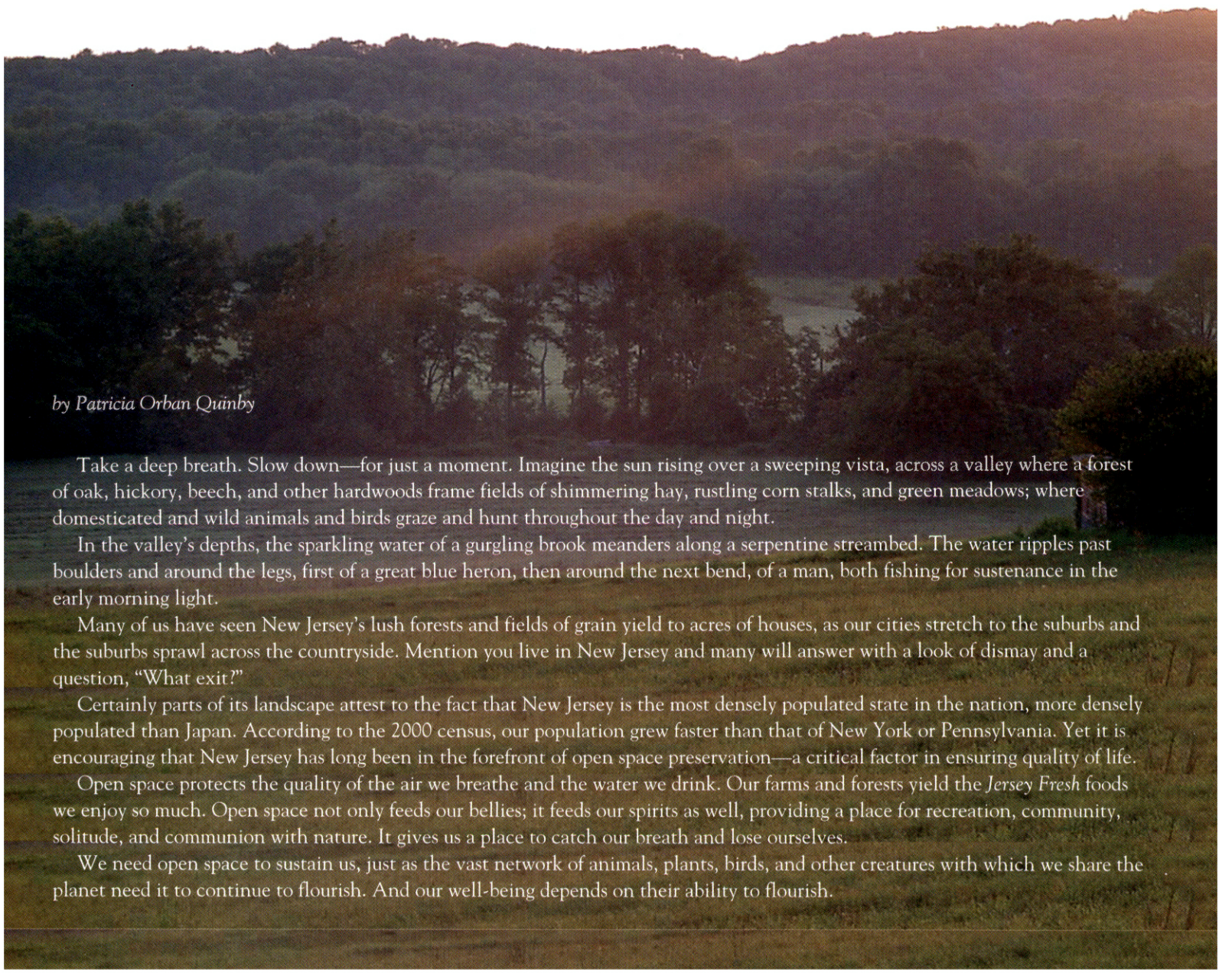


Once the tide starts to ebb you will have to swim upstream to return to your starting point to exit the water. It can be a very strenuous swim if you do not begin your return trip 30 minutes into your dive. This is especially true at Shark River, because a whole lot of water being drawn back to the sea is forced though the inlet's much narrower channel.

Another great site to dive is Gull Island. This is a very small park inland of the Manasquan Inlet with free parking just off the Route 25 bridge as you enter Point Pleasant. It is a less challenging dive with less water movement, and in the fall you'll have a better chance of capturing small tropicals either on film or for the home aquarium. Because of the relative ease of this dive site you will often find dive shops there giving open water lessons to new divers.

Joe Albanese

40 Years of Land Preservation Success



by Patricia Orban Quinby

Take a deep breath. Slow down—for just a moment. Imagine the sun rising over a sweeping vista, across a valley where a forest of oak, hickory, beech, and other hardwoods frame fields of shimmering hay, rustling corn stalks, and green meadows; where domesticated and wild animals and birds graze and hunt throughout the day and night.

In the valley's depths, the sparkling water of a gurgling brook meanders along a serpentine streambed. The water ripples past boulders and around the legs, first of a great blue heron, then around the next bend, of a man, both fishing for sustenance in the early morning light.

Many of us have seen New Jersey's lush forests and fields of grain yield to acres of houses, as our cities stretch to the suburbs and the suburbs sprawl across the countryside. Mention you live in New Jersey and many will answer with a look of dismay and a question, "What exit?"

Certainly parts of its landscape attest to the fact that New Jersey is the most densely populated state in the nation, more densely populated than Japan. According to the 2000 census, our population grew faster than that of New York or Pennsylvania. Yet it is encouraging that New Jersey has long been in the forefront of open space preservation—a critical factor in ensuring quality of life.

Open space protects the quality of the air we breathe and the water we drink. Our farms and forests yield the *Jersey Fresh* foods we enjoy so much. Open space not only feeds our bellies; it feeds our spirits as well, providing a place for recreation, community, solitude, and communion with nature. It gives us a place to catch our breath and lose ourselves.

We need open space to sustain us, just as the vast network of animals, plants, birds, and other creatures with which we share the planet need it to continue to flourish. And our well-being depends on their ability to flourish.

Visionaries and Voters

Since the 1950s, New Jersey has lost nearly one million acres of farmland, forests, meadows, and wetlands to development. The rapid loss of open space threatens the health of our environment and quality of life.

As development pressures increased, a cry for land protection arose from the people, and a clear and urgent vision unfolded from those who lead. The Green Acres Program was created to meet New Jersey's growing recreation and conservation needs. In November of this year, the Department of Environmental Protection's (DEP) Green Acres Program celebrates its 40th anniversary.

Since 1961, New Jersey voters have approved nine bond issues totaling more than $1.4 billion. These funds have protected nearly one half million acres of open space, bringing the statewide total of protected open space to 1.4 million acres. The funds also provided for the development of hundreds of recreation facilities in communities across the state. Still, more needs to be done.

In 1997, the Governor's Council on New Jersey Outdoors recommended that an additional one million acres of open space be protected in the next decade to conserve biological diversity, preserve farmland, protect watersheds, create greenway corridors, and provide opportunities for outdoor recreation.

Led by former governor Christine Todd Whitman, the State Legislature and citizens voted overwhelmingly to preserve an additional million acres and to constitutionally dedicate $98 million dollars a year from existing state revenues to open space and farmland acquisition, recreational development, and historic preservation. In June 1999, the Garden State Preservation Trust Act (GSPTA) was signed into law. The GSPTA also authorized the issuance of bonds to provide more than $1.6 billion dollars over the next 10 years for land protection and recreation development.

With strong, broad roots, New Jersey's commitment to open space continues to be an important initiative under the administration of Acting Governor Donald T. DiFrancesco. Since the initiative began in May 1997, New Jersey has protected an additional 241,000 acres of open space and farmland, bringing the total of preserved land in the state to 1.145 million acres. This represents more than 20 percent of the state's land area. When the million-acre goal is achieved, approximately four out of every ten acres in New Jersey will be protected and every New Jersey resident will have access to protected open space within minutes of their home.

Funding Opportunities for NJ Communities

The most significant role the Green Acres Program plays statewide is as a planning consultant and financial partner to municipalities, counties, and nonprofit land trusts. The program is organized into teams by geographic region. Each team works with the local officials in their region to coordinate land preservation across geopolitical boundaries.



Opposite page: Werts Farm in the Hopewell Valley
Patti Orban Quinby

Above: Alpha Grasslands Farm
Patti Orban Quinby

Below: Children's Garden at Ulysses S. Wiggins Waterfront Park, Camden
John S. Watson, Jr.

Bottom left: Princeton Battlefield Spring House
Patti Orban Quinby

Bottom right: The Musconetcong River
Patti Orban Quinby















Top left: Lapinski Park, Trenton
John S. Watson, Jr.

Top center: Milford Bluffs along the Delaware River in Hunterdon County
Patti Orban Quinby

Top right: Camden City
John S. Watson, Jr.

Above: The Institute Woods in Princeton
Patti Orban Quinby

Below: The Trail at Milford Bluffs
Patti Orban Quinby



In addition, Green Acres provides financial assistance by way of grants and low interest (2 percent) loans to municipalities, counties, and nonprofit organizations to acquire open space and develop outdoor recreation facilities. More than 80,000 acres have been protected and hundreds of recreation development projects have been financed through the Green Acres local and nonprofit funding program.

Green Acres also partners with the DEP Environmental Infrastructure Trust Program (EIFP) to provide loan funding for land preservation projects that provide a water quality benefit. This brings more state money to the table and helps local governments stretch their open space dollars to protect more land. The EIFP has helped to protect nearly 1,000 acres of open space through these partnerships.

Nineteen of New Jersey's 21 counties, as well as 146 of the 566 municipalities in the state, have a dedicated open space tax fund. These funds provide nearly $90 million annually for land preservation and enable communities to leverage their resources and protect more land. Additionally, they help to stretch the state's land preservation resources, enabling us to protect more land.

The Green Acres Planning Incentive Program provides grant and loan funding to local governments who have adopted an open space tax and who have an approved open space recreation plan. Participants in the program are eligible to receive the highest grant percentage awards and have the greatest flexibility in applying those funds for land acquisition and recreation development in their communities.

West Windsor Township (Mercer County) is a leader among municipalities in open space preservation in New Jersey. Since 1978, the township has had a dedicated municipal open space tax fund. Most recently, its citizens voted to increase their open space tax to seven cents per $100 of assessed property value. The township government, working with volunteers, has saved an additional 1,480 acres of open space and farmland in the past eight years. Significant areas of West Windsor Township have been established as parks, recreational facilities, farmlands, and nature preserves by state, county, and municipal governments and private organizations. Most recently, West Windsor partnered with Green Acres, the DEP's Environmental Infrastructure Funding Program, and Mercer County to protect 202 acres of prime open space in the watershed of Duck Pond Run.

Partnerships Are Key

Green Acres successes would not have been possible without the tremendous effort of our municipal, county, and nonprofit partners. Protecting large parcels is costly, complicated, and often involves many public and private partners bringing resources to the table.

In 1993, Green Acres accomplished its first cooperative preservation effort when it partnered with Wayne Township and the Nature Conservancy to protect more than 1,150 acres at High Mountain Park Preserve in Passaic County. One of the largest tracts of protected woodlands and wetlands in this part of New Jersey, High Mountain Park is a natural oasis amid suburban development.

Four years later, Green Acres was one of many partners contributing resources totaling $13 million to permanently protect the 589-acre Institute Lands, a well-known natural area adjacent to the Princeton Battlefield in Princeton Township, Mercer County. The preservation initiative was led by the land conservancy Delaware & Raritan Greenway and included several nonprofit organizations, county and local governments, the landowners, and many private donors.

An example with a different twist was the effort to protect the 15-acre Stillwater Grist Mill site in Sussex County. The site includes an historic mill, the adjacent miller's house, and several outbuildings. While the site was clearly worthy of protection, its management

was not in the scope of either Parks and Forestry or Fish and Wildlife. Green Acres acquired the site and then worked with the Ridge and Valley Conservancy to develop an outside managing committee to maintain the site. The committee consists of a diverse mix of organizations, including the conservancy, a recreation area association, a historical society, a watershed association, and the Heirloom Seed Society. The committee signed a five-year renewable lease with Green Acres, and it will pursue historical landmark status for the site as well as oversee restoration of the mill.

More recently, DEP Commissioner Robert C. Shinn Jr. announced the signing of an agreement to permanently protect a 416-acre tract in the Swimming River Greenway in Holmdel Township (Monmouth County), saying, "The Green Acres Program partnered with the county and township governments, Monmouth Conservation Foundation, Friends of Holmdel Open Space, DEP's Environmental Infrastructure Funding Program, and the State Agriculture Development Committee (SADC) to consummate the deal at a purchase price of $19 million. This complicated deal would not have been possible without the partners and a willing seller. The landowners, JP Morgan Chase, donated a portion of the appraised market value of the land, demonstrating their good corporate citizenship and enabling the land to be protected for generations to come."

Recreation Development

Well-planned open space can promote community investment, educate citizens about the environment, contribute to a community's unique character, and link surrounding resources to create a sense of place. Parks and open spaces add economic, social, environmental and aesthetic value to our communities and play an important role in sustaining New Jersey's high quality of life.

Recreation needs are as diverse as the people who play. To meet these needs, Green Acres funds different types of recreation development in a variety of settings. Examples range from smaller projects, such as basketball courts and tot lots, to expansive waterfront parks and plazas.

Green Acres supports the purchase of open space in New Jersey's cities, where such opportunities are extremely limited and generally quite expensive. The program provides both grants and loans to urban municipalities for acquisition and park development and embraces the opportunity to partner in neighborhood and economic revitalization projects, providing sorely needed funds to our urban communities. Many urban dwellers lack transportation to visit suburban and rural open spaces and parks, making close-to-home recreational facilities even more critical.

For example, Green Acres provided state and federal Land and Water Conservation Funds to the County of Camden, the City of Camden, and a nonprofit organization, The Cooper's Ferry Development Association, to develop the Ulysses S. Wiggins Waterfront Park on the Delaware River in Camden. Green Acres funding was an important catalyst for a successful ongoing partnership that not only developed a promenade, but also continues to revitalize the community and attract other facilities. The site includes The Tweeter Center, a privately operated performing arts center, the Camden Children's Garden and Visitors Center, the Thomas H. Kean NJ State Aquarium and the Battleship *USS New Jersey*, which will be permanently docked and opened as a floating museum. The waterfront also includes a new minor league stadium that will be home to the Camden Riversharks.

The promenade transformed a former industrial site, which was vacant at the time the project began, into a permanent, publicly accessible, recreational facility and scenic corridor along the river.

In addition to the projects in Camden, Green Acres has helped to revitalize and stabilize many of our urban communities. Examples include Bayonne's Kill Van Kull Park, Jersey City's Exchange Place Pier Park, Hoboken's Frank Sinatra Park, Perth Amboy's Marina Waterfront, Trenton's Waterfront, Long Branch City's Ocean Promenade, Elizabeth City's Arthur Kill Park, and Millville's Waterfront Park.

Green Acres Buys Land

As the land acquisition agent for the DEP, Green Acres administers funds provided under the Garden State Preservation Trust Act. Green Acres purchases land from willing sellers. The land then becomes part of the system of

A Statewide Vision for Open Space and Greenways

The Green Acres Program is working in partnership with New Jersey Conservation Foundation (NJCF) to create *Garden State Greenways*, a statewide vision for open space and greenways. The vision will identify a statewide system of interconnected open space—a "green infrastructure" of open space hubs and connecting greenway corridors.

The vision will help government agencies and nonprofit organizations to coordinate across geographic and organizational boundaries and will provide a geographic framework to guide land preservation in a manner that preserves and enhances New Jersey's green infrastructure and minimizes negative ecological and cultural impacts of sprawl and landscape fragmentation.

Creating the Garden State Greenways vision has been a multi-year effort. With input from a broad base of constituents and stakeholders, existing, proposed, and potential open space was inventoried and digitally mapped, using Geographic Information System (GIS) technology. Additional "layers" of environmental information about the landscape are being added to the GIS mapping. The results will be published in a preliminary Garden State Greenways vision due out in early 2002.

New Jersey State Library

state parks, forests, natural areas, and wildlife management areas (WMAs) managed by the Division of Parks and Forestry or the Division of Fish and Wildlife. These include state parks such as 14,880-acre High Point in Sussex County, 1,211-acre Liberty in Hudson County, and 5,154-acre Double Trouble in Ocean County, as well as the 3,000-acre Wildcat Ridge WMA in Morris County and 4,915-acre Union Lake WMA in Cumberland County.

Green Acres targets land along waterways, environmentally sensitive land, recreational land, trails and trail connectors, and historic resources. The program also seeks to expand state holdings and to link green spaces to form greenways. By preserving these resources, Green Acres provides for the continued enjoyment of New Jersey's natural and recreational resources by millions of residents and visitors each year.

A Plethora of Preservation Projects

Examples of Green Acres preservation project areas include shore points such as Barnegat Bay, one of the state's most widely used recreational resources; Cape May, where tourists flock each spring and fall to witness the spectacular migrations of warblers and raptors; and the Delaware Bayshore, an area of global ecological significance. Millions of shorebirds and thousands of raptors rely upon the bays and shores for food and habitat for their survival during migration. These ecosystems are fragile; their healthy existence depends on the preservation of the waterways that feed them, and the surrounding coastal islands, uplands and wetlands.

Along New Jersey's western shore, the Delaware River Greenway stretches 115 miles, revealing dramatic palisades, forested islands, rolling hills and valleys, towns, historic villages, and farms. Efforts are underway to secure greater public access to the river, broaden the width of public holdings within the corridor, and protect the scenic and historic resources.

Across the center of the state, Green Acres has identified multiple greenway project areas that protect resources and give residents and visitors a sense of place. The Delaware and Raritan Canal State Park is a 66-mile-long linear park stretching from Bordentown north to New Brunswick and from Trenton north to Frenchtown. The state's goal is to link the D&R Canal State Park to protected lands in the surrounding region.

From West to East

Also in central New Jersey, Green Acres is developing the Capitol to the Coast Greenway, which will link the state's Capitol in Trenton to the Atlantic coast. Lands are being acquired to connect an existing trail from Manasquan through Allaire State Park, to Mercer County and the D & R Canal State Park in Trenton.

Sweeping across the north central portion of New Jersey, nearly a million acres of forests in the Highlands surround and protect the source waters for one-third of New Jersey's citizens. Serving as a spectacular green belt around some of the nation's most densely populated cities and suburbs, the majority of the Highlands mountains, ridges, forests, and fields are privately held and therefore vulnerable to development. Preservation of the greenbelt is critical to ensuring the integrity of New Jersey's water supplies and maintaining the state's biodiversity.

The Pinelands region, the only nationally designated reserve of its kind in America, is home to plant and animal species found nowhere else in the world. Its sandy soils filter rainfall into New Jersey's largest drinking water aquifer. The Pinelands comprise one million acres, the majority of which are privately held. Permanent protection of open spaces in the Pinelands will ensure excellent water quality, ecosystem integrity, sustainable agricultural production, and the continuance of resource-based recreation such as canoeing, hunting, and camping.

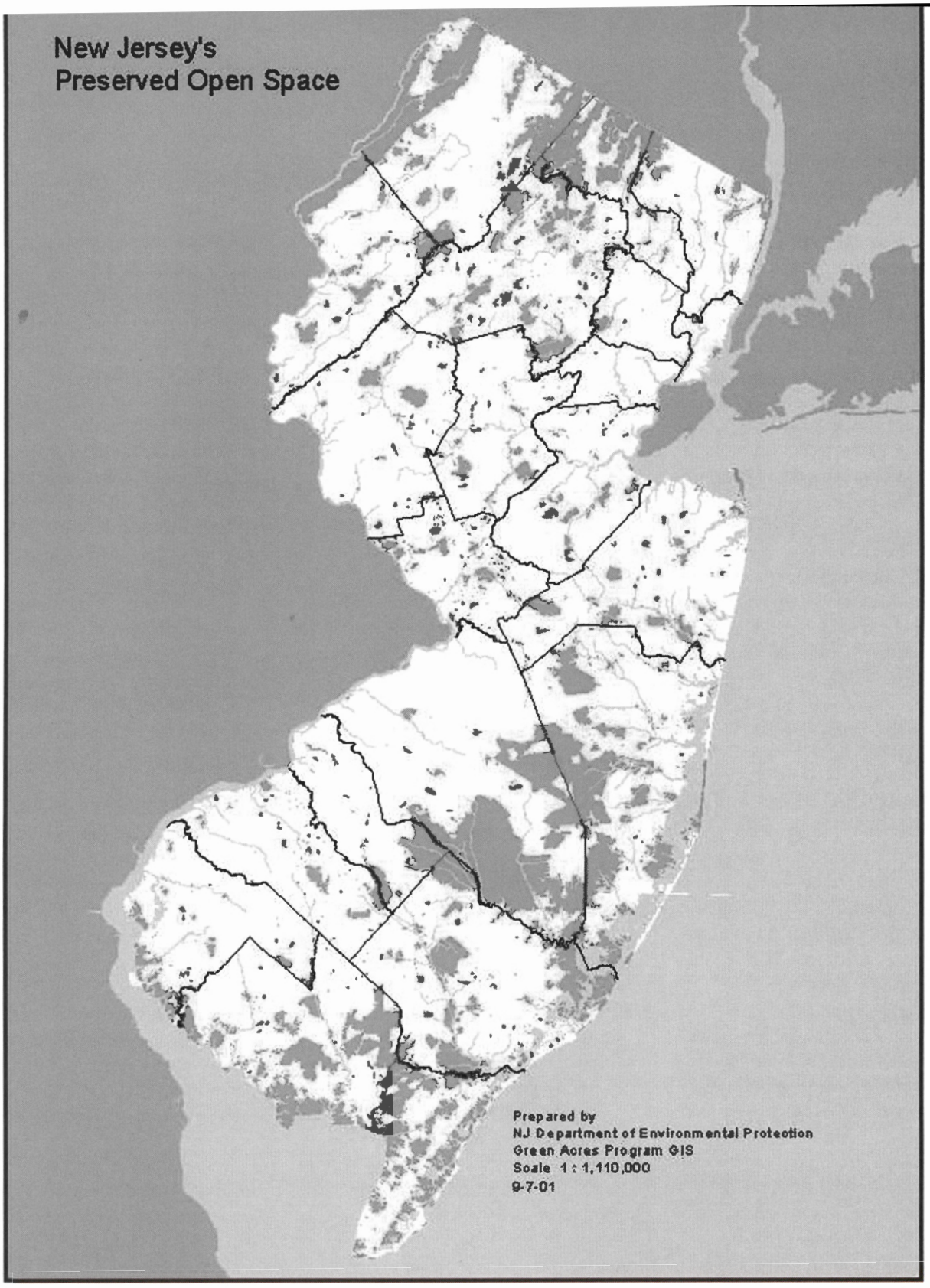
The New York/ New Jersey Harbor Estuary Program is a unique regional partnership of federal, state, interstate, and local agencies, citizens and scientists working to protect and restore the natural resources of the estuary. Land along the Arthur Kill, Hudson River, Raritan Bay, and in the Hackensack Meadowlands is being preserved.

Saving Slices of History

Another initiative, the Crossroads of the American Revolution, traces the footsteps of American Revolutionary War soldiers across the state. More Revolutionary War battles took place in New Jersey than in any other state. Remarkably, many vestiges of the Revolutionary War era still remain—mines, mills, soldier's footpaths, revolutionary leaders' homes, encampment sites, battlegrounds, and barracks. Many of these sites are already preserved in public ownership; many more can still be preserved. What is even more remarkable, though, is that much of the landscape over which Washington's army crossed en route from battle to battle is still open land. Green Acres is working with public and private partners, and national and local agencies, to preserve these historic lands.

New Jersey's exciting past comes alive at other historic sites across the state: battlefields and barracks; Native American and early immigrant archeological sites; factories and farms; mines and mills, canals and patriots' footpaths; industrial barons' mansions and humble poets' homes; lighthouses that guided schooners to safe harbors and safe houses that harbored slaves on the path to freedom. By protecting and linking sites of historic significance in Paterson, Camden, Trenton, and throughout the state, and by preserving adjoining buffer lands, the historic landscapes of our state can be enjoyed by generations to come.

Natural areas often protect threatened and endangered animal and plant species. Green Acres is committed to protecting and expanding these environmentally sensitive natural areas throughout the state, ranging geographically from Woodbine Bogs in Cape May County, to Strawberry Hill in Mercer County, to Ramapo Lake Natural Area in Bergen and Passaic counties.



The Green Acres Program has long recognized the importance of protecting watershed lands and has worked to protect headwater areas and the sensitive resources of rivers, streams, lakes, reservoirs, wetlands and associated buffers, and coastal waters. Watershed lands protect ecological resources and water quality, provide water-based recreation opportunities, and serve as linear open space linkages.

Green Acres also is actively seeking to protect youth camps across the state through conservation easements. Providing overnight group camping is historically a state responsibility unless nonprofit camps provide the opportunity.

"It's a win-win for everyone," explains Tom Wells, administrator of the Green Acres Program. "The land is protected from development; the proceeds from the sale of the land help strengthen the camps by providing funds for the camps to reinvest in their programs; and our children continue to have access to natural areas and the benefits of an outdoor youth camp experience."

Additionally, the easements ensure that the land will remain open, allow for continued operation of the camp, and provide public access to the natural resources associated with the camps.

Green Acres seeks to acquire land that is in close proximity to existing state parks and wildlife management areas; land that includes sensitive natural areas, threatened or endangered species; land that protects waterways or provides links in greenways; and large properties. Willing sellers are encouraged to contact the program for more information and an offer application. Green Acres encourages landowners to provide information about the environmental and historical attributes of their property to help the program better evaluate the preservation potential. For more information, landowners can call 609/984-0500 or visit www. state.nj.us/dep/greenacres.

Land Stewardship

To ensure the ongoing integrity, adequate public access and maintenance of the lands protected by Green Acres, the program monitors all sites acquired and developed with Green Acres funds. It also monitors lands protected through conservation easements, to ensure consistent land stewardship.

The land preserved by Green Acres could not be protected without landowners who are willing to act on their desire to protect their land. Green Acres works only with willing sellers and does not condemn land for preservation. Landowners who donate or sell their land for preservation contribute to the quality of life we enjoy in our state and leave a significant legacy for future generations of New Jerseyans.

Many landowners who protect their land are motivated by the love of that land. They want to see the land remain as it is today. Christina Frosztega, of Cranbury, shared some very poignant words earlier this year after she protected her 30-acre farm through the Green Acres Program and a regional nonprofit land trust.

"The Green Acres Open Space Program appealed to me the most. I would not really lose the land that I owned for almost half a century," she said. "I could still go there and walk on it and enjoy what it has to offer (without trespassing), and so could my two sons, and maybe their children; also all the people in Cranbury and beyond. So it is with great pleasure and satisfaction that I relinquish my stewardship of this lovely piece of land to Cranbury Township, its inhabitants, Delaware & Raritan Greenway, and the State of New Jersey."

Opportunities for Landowners

Though it may be the love of their land that motivates landowners to protect it, many gain significant estate and income tax benefits as a result of that land protection. They achieve these benefits through full or partial donation of the land's value.

For example, a landowner with an appraised value of land of $10,000 per acre could sell his or her rights through a bargain sale for $5,000 an acre and take a charitable deduction for the donation of the remaining $5,000 per acre. This would give the landowner the benefit of receiving an amount of money from which retirement income could be derived, along with a charitable deduction that would offset a portion of the capital gains tax on the land sold.

Landowner Ethel Mae Theriault, of Hopewell Township, made a partial donation of her land value when she preserved a portion of her 110-acre farm through the Green Acres Program with a bargain sale of a conservation easement to Delaware & Raritan Greenway. In return, she received a lump sum payment and an income for life through an annuity D&R Greenway purchased with part of the proceeds.

Mrs. Theriault explains, "I placed a conservation easement on my farm to permanently protect the land. I just didn't think the land could support any more houses. The conservation easement allows me to continue to live in my home and my son and daughter-in-law to continue to farm and raise miniature horses on the land. And the bargain sale to D&R Greenway enabled me to receive an income. "

"This isn't just for the wealthy," she says. "Everyone can take advantage of it. I want others to know this opportunity is accessible to them."

If a landowner wants to keep the land and make sure that it will always be preserved, he or she might want to consider donating an easement. With a donation of a conservation easement, the landowner still owns the land but gives up certain development rights. The value of the easement is the difference between what the land is worth unrestricted, and what it's worth after it has been deed restricted to prevent development. Since the landowner still owns the land, he or she can sell it at any time. The deed restrictions are permanent and will remain in force when the land changes hands. The terms of the easements are spelled out in agreements that can be tailored to the personal and financial needs of the landowner.

An easement could prohibit all development on a property; it could allow limited development, such as the construction of a single house; or it could apply to only a portion of the property, leaving open the option to sell the remainder, free from restriction.

One of the biggest advantages of donating an easement has to do with estate planning. For federal estate tax purposes, the donation of an easement reduces the size of the estate based on the full value of the easement. This reduces the estate taxes the heirs have to pay. It can make the difference between whether the heirs can hold onto the land and whether they're forced to sell to pay the estate taxes.

Donations Gratefully Accepted

A full donation can be an attractive choice for landowners in many circumstances, and also help New Jersey stretch the state's preservation dollars and protect more land. Landowners may want to consider a full donation if they have no

heirs or if they have highly appreciated property. Donated land generally can represent an income tax deduction equal to the land's fair-market value, whereas land that is sold could be subject to substantial capital gains taxes on the appreciation, a realtor's commission, and other costs associated with a sale.

Landowners also might want to consider donation if they have many real estate holdings and want to reduce future estate taxes, or if they have land they no longer use or want the responsibility of managing.

Using traditional financial planning tools, landowners are able to preserve their land through a full or partial donation and receive some immediate income, possibly a steady income for retirement, and lifetime rights to continue living on the land. They may also receive a charitable deduction.

Landowners could also donate their development rights to a charitable remainder trust and continue to own the land. They could receive an income tax deduction, decreased estate tax, eliminate capital gains; and get an income for life. The same opportunity is available to landowners who wish to donate their land. They may also have a life-right to continue to live on the land.

Save Time, Money, Land

In addition to the significant estate and income tax benefits, a number of other benefits accrue to landowners who protect their land through the Green Acres Program. Dennis Davidson, deputy administrator of the program, explains, "Landowners who sell their land to the state are exempt from the five percent state tax, pay no realty transfer tax, are not subject to rollback taxes, and pay no realtor's commission if the property is unlisted. In addition, the Green Acres Program normally purchases land with few contingencies and none that are dependent on the approval of others."

"More than 90 percent of our transactions take place in less than 18 months, and can happen even faster if the landowner can provide some of the documentation needed for purchase. Green Acres is continually refining the process to make purchases happen as quickly as possible," he says.

The Green Acres Program has achieved noteworthy land preservation results in its first 40 years. With strong, broad-based support from New Jersey citizens and elected officials, the program will continue to have a positive and lasting impact on the quality of life we enjoy in the Garden State.

Patricia Orban Quinby is well-known in land preservation circles, having worked for 6 years with Delaware and Raritan Greenway, where she established broad based outreach programs for the Hamilton/ Trenton Marsh and D&R Green-way. She currently serves as communications coordinator for DEP's Green Acres Program

The ABCs of Land Preservation

Agreement of Sale: A legal agreement that defines the terms and conditions of a conservation purchase.

Appraisal: Professional assessment by a qualified appraiser of property value based on land attributes, market conditions, and zoning.

Bargain Sale: A sale to Green Acres at less than fair market value. The difference between the sale price and the appraised fair market value qualifies as a tax deductible, charitable contribution and may entitle the owner to significant income and estate tax benefits.

Bequest: A gift of land through a person's will.

Charitable Donation: An outright gift or contribution, with charitable intent. The donor may receive significant federal and state income and estate/inheritance tax benefit.

Charitable Trust: A gift of land as the benficiary of a living trust or charitable remainder trust.

Conservation Easement: The legal instrument by which a landowner (a) limits, without relinquishing ownership, the development potential of property that has significant natural resource, open space, or habitat value and (b) grants the right to conserve those values. The landowner and all subsequent owners are bound by the restrictions of the easement.

Fee: The greatest ownership interest one can have in real property, being unqualified, of indefinite duration, freely transferable, and inheritable.

Life Estate: An interest in land, the term of which is limited to the life of a person.

Survey: A description and mapping of the metes and bounds that define a property's boundaries.

Title: Indicates "fee" position of ownership and right to property; the "bundle of rights" possessed by an owner.

Green Acres Program
Comparison of Property Sale Options

This is a basic sale comparison demonstrating the potential benefits of a conservation sale. There is more to consider than the price per acre. Numbers shown below are for comparison purposes only and are not specific offer values. Please consult your attorney and tax advisor to determine your personal benefits.

Property: 60 acres (land only)*

	Sell Land for Development	Sell Land for Conservation
Price per acre (land only)	$1,500	$1,000
Total sale price	**$90,000**	**$60,000**
** **Federal capital gains tax** (20%)	($18,000)	($12,000)***
** **State capital gains tax** (5%)	($4,500)	$0
Time value of money—Lost revenue from net after taxes of conservation sale for 1 year additional time required ($48,000 @ 6%)	($2,880)	$0
Rollback tax (estimate)	($1,800)	$0
Realty transfer tax	($315)	$0
Realtor commission	($9,000)	$0
Total taxes / commissions	**($36,495)**	**($12,000)**
Net after taxes	$53,505	$48,000
Charitable donation		
Tax value of charitable donation	$0	$9,000
Proceeds to family (land only)	**$53,505**	**$57,000**
Increased benefits with conservation sale		**$3,495**

* Value of house not included; would add value to estate remaining in the family under both scenarios.
** Adjust for basis in property.
*** Would be reduced with an annuity.
NB: This chart is for illustrative purposes only and is not a guarantee of the benefits reflected.

Green Acres Fast Facts

Acres of Open Space and Farmland Preserved
Since the million-acre goal initiative began: 211,574
Total acres preserved: 1,115,110

Benefits of Preserving Land through Green Acres
Save Time
Save Money—Make Money
Save Land

Green Acres Program
501 East State Street
PO Box 412
Trenton, NJ 08625-0412

Tel: 609/984-0500
Fax: 609/984-0608
Web: www.state.nj.us/dep/greenacres

Call us today!

Werts Farm in the Hopewell Valley
Patti Orban Quinn

The Shattered Buck

by Donald B. Louria, M.D.

Fifteen years ago, purely by good luck, we were able to trade our house in a suburban New Jersey community for a modest house and five glorious acres on Bernards Mountain in central New Jersey. When my wife Barbara saw the property for the first time, as she drove slowly up the long driveway past the one-acre pond, she knew we were truly *home*.

"Shangri-la", she said.

And, so it is. Every day, no matter what the season, the first thing we do is look out from our bedroom window and marvel at the beauty of the pond and the woods that surround it—and our good fortune.

When we first moved in, we wanted to give our acreage a name that reflected our feelings about it. We tried for weeks to find one or two words that, for us, summarized these feelings. Finally, thanks to the American Indian Museum, we found our name—*Awoffagamme*. It is a Delaware Indian word and, like many words in the Native American lexicon, it has multiple connotations. It means *peace*, *tranquility*, and *heaven*, all wrapped in one.

Of course, we share our five acres with a lot of others who seem to find it as appealing as we do. The pond is filled with wide-mouthed bass, and there are always ducks—sometimes as many as 120. There is also a herd of deer that makes its home in our woods. Geese would like to join the menagerie, but they make too much of a mess so we don't let them stay. We did relent once, and let a goose couple stay; indeed, we became quite attached to them. That came to a sad ending as I wrote in a short story called **Tale of the Goose** (*New Jersey Outdoors*, Winter 2000).

The Buck

Last summer we looked out early one morning and there, silhouetted against the pond, was a lone buck. He was a magnificent creature, fully plumed with eight-point antlers. Bucks are very skittish and not often seen in the open when humans are nearby. But there he was, clearly the dominant member of our deer herd, head up at the slightest sound, even those emanating from inside the house. As soon as he saw us, he would invariably trot off into the protection of the woods.

He was there all summer, virtually every day. As he became accustomed to seeing us, his dash into the woods became more leisurely. Weeks later on seeing us, he would amble halfway across our front open space, stop, turn towards us, and just stand there for a while before disappearing into the woods. Finally, by the end of the summer, he became so acclimated to us that he would stand at the edge of the pond, still enough for us to take a lot of pictures. He even allowed us to approach as close as 100 feet before he would move away.

Often, he and others of the herd came, uninvited, to share corn I distributed each morning to the ducks. Everybody gets fed, and everybody steals everybody else's food. The ducks covet the fish food; the deer regard the ducks' corn as their dessert; even the squirrels, chipmunks, blue jays, and crows get into the act.

We devise all sorts of tricks to try and see that the food gets to those for whom it is intended, but we really don't mind all the chaos. It's part of the *Awoffagamme* and the *Awoffagamme* is virtually perfect.

It was in November that it happened. We had not seen the buck for a week or more. We were at breakfast; Barbara was adjusting the plants on the windowsill overlooking our backyard.

Shattered

"Oh my God", she exclaimed.

There was the buck. His antlers had fallen off. That was not surprising. It was his leg that caused Barbara's agonized exclamation. His left front leg appeared shattered at the mid-shaft; it just flapped, totally useless. He limped slowly and unsteadily towards the protection of the woods.

"He's been shot", said Barbara. Actually, he probably had not been, but whatever the cause, he was severely incapacitated. It appeared likely that, with winter coming, he would not



survive. Barbara called the animal warden, who said that almost certainly he would fall and break the other leg, assuring a slow, painful death. He offered to send expert marksmen who would try and find the buck and shoot him. He said he hated to do it, and he knew it sounded cruel but, given the circumstances, it was much kinder. We thought long and hard about that solution. It was so final—and just suppose the game warden was wrong. Just suppose he could manage on three legs. Suppose it was a mild winter and he didn't fracture his other leg. With his antlers gone, he was less of a target for hunters and, besides, in the area in which we live, very little deer hunting is permitted.

In the end, we made our decision, in large part, on pure emotion. We just could not bring ourselves to authorize somebody to kill him, even though we knew we might be condemning that buck to slow starvation. But, there was another factor in that decision. We had always believed that with nature and our environment, if you have serious reservations about whether the intervention might make the situation worse, don't intervene; leave nature alone.

Laissez-faire

Winter came sooner than usual, and it was more severe than any winter in recent years. There were multiple snowfalls and plenty of ice, and it was heavy snow. We lost more tree branches than we had in the last ten years combined.

December, January, and February were agonizing. We saw the buck almost every day, though occasionally he was not around for a few days or even a week. His leg remained useless, but he seemed to somehow manage on three legs and, surprisingly, even at the end of February, although he had become thinner, he was not emaciated.

When there is snow on the ground, I clear away an area adjacent to our house and put out cracked corn or whole corn kernels for our herd of about thirteen deer. The buck had dominated that herd, but clearly the injury had emboldened the younger bucks. As I cleared the ground and threw a bucket of corn around an area that would suffice for the entire herd, our buck would watch warily. Then, after I started walking away, he would limp down and eat at the fringes of the herd.

I would also clear an area close to the pond and feed the approximately 120 ducks. Sometimes, after they were fed, he, as well as other deer, would finish the little the ducks had left uneaten.

In January, word spread among the area deer population that food was available at the *Awoffagamme*. That brought unfamiliar deer and a buck with large antlers. Our battered buck was no match for him. Fortunately, deliberate withholding of corn for 48 hours during the next snowfall resulted in the interlopers' departure.

February was ice month. After I cleared the ground as well as I could and deposited the corn, the deer would literally slide down an embankment from the woods to feed. Each day as I walked away, I would look back unsure that our wary buck, as always at the back of the pack, would be able to negotiate that embankment without falling and breaking the other leg. But he needed the food, and negotiate the icy embankment he did. That was one tough buck.

Then it was March and still snowy, but with clear signs of spring. He was there each day and, one morning as I watched him limp across the yard, I could not believe what I was seeing.

Time Heals

"Barbara, come quick. He's putting weight on that leg".

And so he was. It wasn't much, but, ever so gingerly, he was putting a little weight on what still appeared to be a flail leg. Thereafter, almost weekly, you could see him put a little more weight on that leg until, by early June, the three-legged deer was a four-legged deer with a decreasing limp and a firm swelling indicating healing at the midway point where the break had occurred.

As his physical abilities increased, apparently so did his feelings of safety and confidence; his skittishness decreased. Once again, he clearly dominated the herd and no male inside or outside his own group challenged that dominance.

In June, we always see less of our small herd. There is plenty of food and they tend to stay in the woods, eating and waiting patiently to pounce on any unprotected flowers and vegetables we plant.

We got occasional glimpses of our buck, but nothing more. This year, spring and summer were particularly lovely, abetted by plentiful rain. It was early in July that I saw him trot across our front lawn to the edge of the pond with only an almost imperceptible limp. Barbara and I went out to get a good look at him, walking to within about 30 feet before he even bothered to look up. Then, he raised his head, we stopped, and the three of us stood—silent, staring.

There he was, once again, fully antlered—tough, resilient, proud. We must have stood there gazing at each other for at least a minute. He never moved; nor did we. We said nothing. But, we didn't have to. We had followed the admonition of non-intervention if the intervention could make the situation worse. We had let nature take its course and, almost miraculously, it had turned out well; and, we knew that, once again, everything was alright at the *Awoffagamme*—and that means virtually perfect.

Donald and Barbara Louria have lived in Bernardsville for the past 15 years. Dr. Louria is Chairman Emeritus of the Department of Preventive Medicine and Community Health of the New Jersey Medical School in Newark.

Events

General information is provided here for frequently mentioned event sponsors. The bold-faced name is all that will appear in an event's description unless contact information differs.

Albert Hall—Albert Music Hall, 125 Wells Mill Rd (Rte 532), 1/4 mile west of Rte 9, Waretown; www.alberthall.org; 609/971-1593; ♿; $

Allaire—Allaire State Park, Farmingdale; www.allairevillage.org; 732/938-2253 (park), 732/938-6707 (visitor center), 732/919-3500 (village), 732/938-2003 (interpretive center), or 732/938-5524 (Pine Creek Railroad); parking fee

Batsto— Batsto Village (in Wharton State Forest), Route 542, eight miles east of Hammonton; www.batstovillage.com/; 609/561-0024 (village), 609/567-4559 (interpretive center)

Belleplain—Belleplain State Forest, County Rte 550, Woodbine; 609/861-2404

Bull's Island—Bull's Island Recreation Area, Rte 29, Stockton; 609/397-2949

Cape May—Mid-Atlantic Center for the Arts (MAC) sponsors cultural and historical tours and events in Cape May throughout the year; www.capemaymac.org; 609/884-5404 or 800/275-4278

Cape May Point—Cape May Point State Park, Cape May Point; 609/884-2159

Cheesequake—Cheesequake State Park, Gordon Road, Matawan; www.cheesequakestatepark.com/; 732/566-2161, 732/566-3208 (interpretive center)

D&R Canal—Delaware & Raritan Canal State Park (includes the Griggstown and Blackwells Mills complexes, both in Franklin Twp, and Prallsville Mills, Rte 29, Stockton); www.dandrcanal.com/park_index.html; 732/873-3050

Flat Rock—Flat Rock Brook Nature Center, 443 Van Nostrand Ave, Englewood; www.flatrockbrook.org/registration.html; 201/567-1265; $; ✎

Fort Mott—Fort Mott State Park, Fort Mott Rd, Pennsville; 856/935-3218

Hacklebarney—Hacklebarney State Park, Hacklebarney Rd, Chester; 908/638-6969 (Voorhees State Park)

Hermitage—The Hermitage Education & Conference Center and Museum, 335 N Franklin Tpk, Ho-Ho-Kus; 201/445-8311; www.thehermitage.org; ♿; $

High Point—High Point State Park, Rte 23, Sussex, NJ; 973/875-4800, 973/875-1471 (interpretive center)

Howell—Howell Living History Farm, Valley Rd (just off Rte 29, 2 miles south of Lambertville), Hopewell Twp (Mercer County); 10am-4pm; children's craft program offered 11am-3pm; 609/737-3299; ♿; $ for craft program

Kittatinny—Kittatinny Valley State Park, County Rte 669 (Limecrest Rd), Andover; 973/786-6445

Liberty—Liberty State Park, Morris Pesin Dr, Jersey City; 201/915-3403; 201/915-3400, 201/915-3409 (Interpretive Center), 201/985-8000 (marina)

Pequest—The Pequest Trout Hatchery and Natural Resource Education Center, Rte 46, Oxford (9 miles west of Hackettstown); 10am-4pm daily; www.njfishandwildlife.com/pequest.htm; 908/637-4125

Pinelands—Pinelands Preservation Alliance, 114 Hanover St, Pemberton; sponsors Pinelands educational programs; www.pinelandsalliance.org; 609/894-8000; $; ✎

Ringwood—Ringwood State Park (Ringwood Manor, Skylands Manor and NJ State Botanical Garden), Morris Rd, Ringwood; www.njbg.org/; 973/962-7031 (Ringwood), 973/962-9534 (Skylands); $ to enter Skylands Manor

Trailside—Trailside Nature & Science Center, 452 New Providence Rd, Mountainside; 908/789-3670

Voorhees—Voorhees State Park, Route 513, Glen Gardner; www.njaa.org/voorheespark/index.html; 908/638-6969, 908/638-8500 (NJAA Observatory)

Washington Crossing—Washington Crossing State Park, Washington Crossing-Pennington Road, Titusville; 609/737-0623, 609/737-9303 (visitor center/museum), 609/737-0609 (interpretive center)

Wheaton—Wheaton Village, 1501 Glasstown Rd, Millville; closed on New Year's, Easter, Thanksgiving and Christmas, and on Mon and Tues from Jan through Mar; 10am-5pm; www.wheatonvillage.org; 856/825-6800, 800/998-4552; ♿; $

Whitesbog—Whitesbog Village, mile marker 13 on Rte 530, Browns Mills (Pemberton Twp); www.whitesbog.org/; 609/893-4646

***Note:** Information listed was accurate at the time it was listed. Before traveling to an event, please call the number listed to confirm the information provided and obtain any additional information desired.*

Events Symbol* Key:

- ♿ Handicapped accessible
- $ Fee or donation
- ✎ Preregistration required

* Symbols are shown where information was provided by event sponsor.

Ongoing

Pequest Trout Hatchery and Natural Resource Education Center
Learn how and see where trout are raised for stocking public waters, visit the exhibit hall, hike, picnic, and more; **Pequest**

Sundays except Christmas, New Year's and Easter
Planetarium Show
Shows at 2 and 3:30 PM; ages 6 and up, although some 3:30 shows are for ages 4 and up; **Trailside**; $

Sundays through December
Family Nature Program
2 PM; **Trailside**

First Saturday of Every Month except January, February, and December
Trail Maintenance
Bring lunch and help maintain/repair hiking trails; 9:30 AM to 12:30 PM; **Trailside**;

December

1
Trees and Weeds in Winter
1:30 to 3 PM; **High Point**

Trail Hike
10 AM; Footbridge Park, Paulinskill Valley Trail, **Kittatinny**; 908/852-0597

Christmas Candlelight House Tour
Self-guided tour, caroling and strolling musicians, warm beverages and home-baked goodies, shuttle service on heated trolleys, and more; 5:30 to 8:30 PM; **Cape May**; $

Christmas on the Farm
Festivities include a visit from St. Nick, cutting and decorating a Christmas tree, and hot apple cider and cookies; **Howell**

1 and 2
Holiday Open House
Tour the Cream Ridge Winery and shop for the holidays to the sound of carolers; 11 AM to 5 PM; Route 539, Cream Ridge; 609/259-9797

Christmas at Craftsman Farms
10 AM to 3 PM; Craftsman Farms, Route 10 W & Manor Lane, Morris Plains; www.stickleymuseum.org; 973/540-1165; $

Wilderness Survival Overnight
(Prerequisite: Basic Wilderness Survival; Gain confidence by practicing skills and learning more; **Pinelands**

Christmas at Allaire
Noon to 3:30 PM; Historic Village, **Allaire**; $

24th Annual Christmas Express
11 AM to 4 PM; Pine Creek Railroad, **Allaire**; $

Victorian Christmas
Noon to 6 PM; Ringwood Manor, **Ringwood**; ♿; $

Holiday Open House
11 AM to 6 PM; Skylands, **Ringwood**; ♿; $

Art Exhibit and Sale
6 to 9 PM Friday, 10 AM to 5 PM Saturday, noon to 5 PM Sunday; Blackwells Mills Canal House; **D&R Canal**

2
Nature Boutique
Craft show with crafts of natural materials or nature theme; door prizes and light refreshments; 11 AM to 4 PM; **Trailside**; ♿

Basic Backpacking
1 PM; Interpretive Center, **Cheesequake**; ♿

American Army's Retreat through Princeton A reenactment of the closing of the university, living history demonstrations, and exhibits at Bainbridge House; noon to 4 PM; Princeton; 609/921-6748

2 through 4
Dickens Christmas Extravaganza
Enjoy the sights, sounds, tastes, and scents of Dickens' era with lectures, performances, tours and feasts; **Cape May**; $

7
Russ Juelg's Jersey Devil Hunt
Gather 'round a campfire for music, hot dogs and marshmallows (BYO food), then search for the area's infamous denizen; 7 to 10 PM; **Pinelands**

Solstice Hike
5 to 7 PM; **High Point**

8
Christmas Decorating Tour
4 PM; **Whitesbog**; ♿;

The Music of Christmas
1 to 4 PM; Indian King Tavern Museum, 233 Kings Highway East, Haddonfield; 856/429-6792

Holiday Wreath Making
1 to 3 PM; Interpretive Center, **Washington Crossing**; $;

Winter Birds of Allaire
2 PM; Interpretive Center, **Allaire**; ♿

Christmas Lantern Tours
5 to 8:30 PM; Historic Village, **Allaire**; $;

Papermaking
10 AM to noon; Interpretive Center, **Liberty**; ♿

Christmas Candlelight House Tour
Self-guided tour, caroling and strolling musicians, warm beverages and home-baked goodies, shuttle service on heated trolleys, and more; 5:30 to 8:30 pm; Cape May; $

8 and 9

Christmas at Craftsman Farms
10 am to 3 pm; Craftsman Farms, Route 10 West and Manor Lane, Morris Plains; www.stickleymuseum.org; 973/540-1165; $

24th Annual Christmas Express
11 am to 4 pm; Pine Creek Railroad, Allaire; $

Victorian Christmas
Noon to 6 pm; Ringwood Manor, Ringwood; ♿; $

9

4th Annual Jingle Bells 5k Run
Early evening foot races, kiddy dash, 1-mile run, and 5k race, plus DJ music, door prizes, and food; Washington Street, Toms River; 732/349-0220

Navigating the Pinelands
Enjoy nature lore as you trek through distinctive area habitats practicing orienteering and dead reckoning; 8 am to 4 pm; Pinelands

Kids' Christmas at the Seashore
1 to 2:30 pm; Cape May Point; ♿

Christmas Decorating Tour
4 pm; Whitesbog; ♿; ✎

Autumn Nature Crafts
1 pm; Interpretive Center, Cheesequake; ♿

British Occupation of Princeton
Children's activities and exhibits at Bainbridge House, and living history demonstrations; noon to 4 pm; Princeton; 609/921-6748

13

LBI Garden Club Christmas House Tour
Visit festively decorated homes; Long Beach Island; 609/492-6541

13 through 23

Christmas at Batsto Village
10:30 & 11:30 am, and 12:30, 1:30, 2:30, & 3:30 pm; Batsto; 609/561-3262; $

15

Holiday Show
Live stage presentations of bluegrass, country, old time, and folk music; 7:30 to 11:30 pm; Albert Hall

Big Swamp Cougar Hunt
Examine remote Pinelands sites as you search for signs of cougar habitation; 8 am to 4 pm; Pinelands

Candlelight Tours
6 to 8 pm; Somers Mansion, Somers Point; 609/927-2212

Pinelands Nature Hike
Hike 2 to 4 miles; 10 am; Interpretive Center, Batsto

Holiday Wreath Making
1 to 3 pm; Interpretive Center, Washington Crossing; $; ✎

Explorer Hike
10 am; Footbridge Park, Paulinskill Valley Trail, Kittatinny; 908/852-0597

Christmas Lantern Tours
5 to 8:30 pm; Historic Village, Allaire; $; ✎

Christmas Candlelight House Tour
Self-guided tour, caroling and strolling musicians, warm beverages and home-baked goodies, shuttle service on heated trolleys, and more; 5:30 to 8:30 pm; Cape May; $

15 and 16

Christmas at Craftsman Farms
10 am to 3 pm; Craftsman Farms, Route 10 West and Manor Lane, Morris Plains; www.stickleymuseum.org; 973/540-1165; $

24th Annual Christmas Express
11 am to 4 pm; Pine Creek Railroad, Allaire; $

16

Acorns, Bark and Buds
1 pm; Interpretive Center, Cheesequake

20

Birds of Winter
9 to 10:30 am; Kittatinny

21

Solstice Hike
10 am to noon; Kittatinny

22

Winter Storytelling
11 am and 2 pm; Visitor Center, Allaire; 732/938-6707; ♿; ✎

25

Christmas Day Crossing
1 to 2:30 pm; Washington Crossing (PA and NJ); 215/493-4076; ♿

29

Crossing and March to Trenton by Original Route
7 to 11 am; Washington Crossing; 609/396-1776; ♿

Winter Storytelling
11 am and 2 pm; Visitor Center, Allaire; 732/938-6707; ♿; ✎

30

225th Anniversary Reenactment of the Battle of Princeton
11 am to 4 pm; Princeton Battlefield State Park, Princeton; 609/921-0074; ♿

31
New Year's Eve Horse Ride
BYO horse; Paulinskill Valley Trail, Kittatinny; 908/725-9649

2002
January

1
New Year's Day Open House
1 to 4 pm; Blackwells Mills Canal House, D&R Canal

17th Annual New Year's Day Hike
10 am; Footbridge Park, Paulinskill Valley Trail, Kittatinny; 908/852-0597

First Run of the New Year
Noon; Pine Creek Railroad, Allaire

6
New Year's Hike
1 pm; Interpretive Center, Cheesequake

Washington's Arrival in Morristown
Reenactment; Morristown Green; www.morristourism.org; 1 to 5 pm; 973/361-5151

7, 14, and 21
Introduction to Landscape Design
Learn how symmetry, balance, scale and other basic concepts relate to landscape design at this class offered by the New York Botanical Garden; 6:15 to 9:15 pm; Flat Rock; $

9 through March 31
It's a Man's World
Exhibit; 9 am to 4 pm; Batsto; 609/561-3262

10
19th Century American Gothic Literature
A lecture; 7:30 pm; Hermitage; ♿; $

13
Cabin Fever/Animal Tracking
Explore the outdoors; 1 pm; Voorhees

Bats Are Your Friends
1 pm; Interpretive Center, Cheesequake; ♿

16
Nature in Winter
10 to 11:30 am; Kittatinny

19
Pinelands Nature Hike
Hike 2 to 4 miles; 10 am; Interpretive Center, Batsto

Winter Trails Snowshoe Event
9 am to 3 pm; Cross-Country Ski Center, High Point; 973/702-1222

Conservation Connection
10 to 11:30 am; Kittatinny

Winter Birds of Allaire
2 pm; Interpretive Center, Allaire; 732/938-2003; ♿

20
Kids' Winter Wildlife
1 to 2:30 pm; Cape May Point; ♿

Lost in the Woods
Survival training; 1 pm; Interpretive Center; Cheesequake; ♿

26
Shady Flower Gardens
Find out what thrives in the shade at this class offered by the New York Botanical Garden; 10 am to 2:30 pm; Flat Rock; $

27
Carnival of Insects
1 pm; Interpretive Center; Cheesequake

28 through February 3
National *Take Your Daughter to the Snow* Week
Ski resorts such as Mountain Creek, in Vernon, will participate in this grassroots event designed to promote girls' and women's participation in all snow sports; www.snowlink.com will provide details as the dates draw near.

February

2
Preschool Groundhog's Day
1 to 2:30 pm; Cape May Point; ♿

Animal Tracks & Signs
10 to 11:30 am; Kittatinny

Trail Hike (or X-C Skiing)
10 am; Footbridge Park, Paulinskill Valley Trail, Kittatinny; 908/852-0597

2 through March 9 (Saturdays)
Winter Tree Identification
Learn basic techniques of woody plant identification at this class offered by the New York Botanical Garden; 9:30 - 11:50 am; Flat Rock; $

3
Horse Ride
BYO horse; Paulinskill Valley Trail, Kittatinny; 908/725-9649

5-Mile Winter Hike
10 am; Interpretive Center, Allaire; 732/938-2003

Hoot, Hoot, the Owls of Cheesequake
1 pm; Interpretive Center, Cheesequake; ♿

7
Early Development of Ridgewood and Its Relation to The Hermitage
A lecture; 7:30 pm; Hermitage; ♿; $

9

Identifying Trees & Weeds in Winter Walk

1 PM; **Voorhees**

10

Identifying Trees & Weeds in Winter Walk

1 PM; **Hacklebarney**

Winter Nature Crafting

1 PM; Interpretive Center, **Cheesequake**; ♿

11

Gardens, Camera, Lenses, Film

Learn how equipment, films, composition, depth of field, and light modification techniques are used by professional horticultural photographers at this class offered by the New York Botanical Garden; 6:15 to 8:15 PM; **Flat Rock**; $

16

Pinelands Nature Hike

A 2- to 4-mile hike; 10 AM; Interpretive Center, **Batsto**

17

Maple Sugaring

1:30 to 3 PM; Interpretive Center, **Washington Crossing**; ♿

1830s George Washington Birthday

Noon to 3 PM; Historic Village, **Allaire**

Salute the Bears

1 PM; Interpretive Center, **Cheesequake**

23

Frozen Critters

10 to 11:30 AM; **Kittatinny**

Winter Birds of Allaire

2 PM; Interpretive Center, **Allaire**; 732/938-2003; ♿

Discover Cape May Houses Tour

Self-guided walking tour, with insights by innkeepers; noon to 3 PM; **Cape May**; $

24

Gardening with Children

Discuss age-appropriate projects, tools, safety issues, and more at this class offered by the New York Botanical Garden; 6:15 - 8:15 PM; **Flat Rock**; $

The Nature Show

A quiz game; 1 PM; Interpretive Center, **Cheesequake**; ♿

March

1

Astronomical Observing

Sunset to 11:30 PM, weather permitting; **Washington Crossing**; 609/737-2575; ♿

2

Trail Hike (or X-C Skiing)

10 AM; Footbridge Park, Paulinskill Valley Trail, **Kittatinny**; 908/852-0597

30-Mile Full Trail Hike

Paulinskill Valley Trail, **Kittatinny**; 973/334-0181

Nature Discovery Day

10 AM to noon; Interpretive Center, **Liberty**; ♿

3

Skylands Manor Guided Tours

Noon to 4 PM; Skylands, **Ringwood**; ♿

Turtle Tales

1 PM; Interpretive Center, **Cheesequake**; ♿

Maple Sugaring

1:30 to 3 PM; Interpretive Center, **Washington Crossing**; ♿; ✎

6

The White Garden

See formal and informal gardens of white blossoms, and learn what's required to grow them at this class offered by the New York Botanical Garden; 6:30 to 9:30 PM; **Flat Rock**; $

8 through 10

Sherlock Holmes Weekend

Cape May; $

9

***Crazy for Conifers* Walk**

1 PM; **Voorhees**

10

Maple Sugaring

1:30 to 3 PM; Interpretive Center, **Washington Crossing**; ♿; ✎

***Crazy for Conifers* Walk**

1 PM; **Hacklebarney**

1830s St Patrick's Day Celebration

1 to 3 PM; Historic Village, **Allaire**

Tracks 1 PM; Interpretive Center, **Cheesequake**

14

Lecture: *Ghosts, Witches, Monsters and Martians*

7:30 PM; **Hermitage**; ♿; $

15

Sky Watch

7:30 PM to midnight; **Belleplain**; 856/293-1584; ♿

16

The Heirloom Garden

Learn what these versatile old plants are, how to grow them, and where to use them at this class offered by the New York Botanical Garden; 10 AM to 1 PM; **Flat Rock**; $

Pinelands Nature Hike

A 2- to 4-mile hike; 10 AM; Interpretive Center, **Batsto**

The ABCs of Rock Gardening
10 AM to noon, Skylands, **Ringwood**; ♿; $

17

Maple Sugaring
1:30 to 3 PM; Interpretive Center, **Washington Crossing**; ♿; ✎

Winter Tree Walk
2 to 4 PM; Skylands, **Ringwood**

Habitat Hike
1 PM; Interpretive Center, **Cheesequake**

20

Equinox Hike
10 AM to noon; **Kittatinny**

23

Practical Pruning
Learn proper techniques, scheduling, and tools for pruning evergreens, deciduous trees, and shrubs at this class offered by the New York Botanical Garden; 10 AM to 2:30 PM; **Flat Rock**; $

Commemoration of the Hancock House Massacre
Hancock House, **Fort Mott**; 856/935-4373; partially ♿

Let's Get Outdoors!
10 to 11:30 AM; **Kittatinny**

Signs of Spring Walk
1 PM; Interpretive Center, **Allaire**

Beach Walk
12:30 to 2 PM; Interpretive Center, **Liberty**

24

Bat Mania
1 to 2:30 PM; **Cape May Point**; ♿

Trail Hike (or X-C Skiing)
10 AM; Warbasse Junction, Paulinskill Valley Trail, **Kittatinny**; 908/852-0597

Funeral of Frances Allaire
1 to 3 PM; Historic Village, **Allaire**

Scavenger Hunt
1 PM; Interpretive Center, **Cheesequake**

25

Annual Extravaganza
Explore ways to add uncommon plants to commonly available annuals for special effects, and discover seed sources and growing techniques at this class offered by the New York Botanical Garden; 10:30 AM to 3 PM; **Flat Rock**; $

28

How to Grow an Herb Garden: Workshop
Propagate for home planting a selection of herbs from seeds and cuttings at this class offered by the New York Botanical Garden; 10 AM to 2:30 PM; **Flat Rock**; $



29

Astronomical Observing
Sunset to 11:30 PM, weather permitting; **Washington Crossing**; 609/737-2575; ♿

30

Early Spring Sampler
6 to 8 PM; **High Point**

31

Easter Sunrise Service at the Village Chapel
6 AM; Historic Village, **Allaire**

April

13

Youth Turkey Hunting Day
WWW.NJFISHANDWILDLIFE.COM

June

16

Antique Bottle Show & Sale
Wheaton

Call for Entries . . .

New Jersey Outdoors 2002 Photo Contest



This *New Jersey Outdoors* photo contest will feature eco-tourists, outdoor recreation enthusiasts, history buffs, and others enjoying our state's abundant natural and historic resources. Examples include: people fishing, birding, sailing, skiing, hiking, and watching reenactments or living history demonstrations.

Images of individuals and groups of all ages are eligible. Pictures may have been taken anywhere in New Jersey, indoors or outdoors, at any time from December 2001 through November 2002.

Photo Contest Rules

- The contest is open to any New Jersey resident or visitor, except Department of Environmental Protection employees and their immediate families.
- Images should show people enjoying New Jersey's natural or historic resources. Both interior and exterior shots are eligible, and pictures may have been taken at any time from December 2001 through November 2002.
- Signed releases are required for entries showing identifiable people or (from the artist) works of art.
- Only unmatted, unframed prints (no larger than 8" x 10") may be entered. Images must be crisp and in focus, except where depth of field applies. Images should not be under- or overexposed.
- Dated images are not eligible, nor are images that have been stapled, torn, written on, or marred in any other way.
- A completed entry form must be taped to the back of each image. (The form on this page may be reproduced as needed.)
- All entries become the property of the Department of Environmental Protection and may be published or displayed for any purpose, such as illustrating a story or advertising *New Jersey Outdoors*.
- Images will not be returned.
- **Entries must be received no later than December 31, 2002.**
- Mail entries to:

New Jersey Outdoors
PO Box 402
Trenton, NJ 08625-0402

Categories, Prizes, and Publication

- Eligible entries will be placed into a seasonal category based on when the image was taken. There will be a first, second and third place winner in each category (assuming a sufficient number of entries).
- Prizes will include camera gear, subscriptions to *New Jersey Outdoors*, and more.
- Winning photographs will be featured in the Spring 2003 issue of *New Jersey Outdoors*.

NJO 2002 Photo Contest Entry Form

Name _____

Address _____

City _____ State _____ Zip _____

Daytime phone (____) _____

E-mail (optional) _____

Where taken _____

When taken _____

Description _____

_____

Form may be photocopied if needed.

The Muskrat

by Bob Byrne, updated by Paul Tarlowe

To some people, the muskrat (*Ondatra zibethicus*) is a cute, furry animal. Others believe that no animal with *rat* in its name can possibly have any redeeming qualities. Resource managers, however, see the muskrat as an animal with tremendous economic and recreational value that can also serve as an indicator of environmental quality and ecosystem productivity.

It is commonly thought that the yellowish, musky smelling substance muskrats produce is responsible for their name. However, it is interesting to note that the Algonquin word for the critter is *musquash*, a name still in use in England. Muskrats are also known as 'rats, marsh rats (probably the most appropriate descriptive moniker for these inhabitants of both freshwater and tidal wetlands), and mushrats. Their fur products are sometimes marked as *Hudson seal.*

Muskrats are found throughout most of North America. They occur in all 21 New Jersey counties, but are most successful in the coastal salt marshes along Delaware Bay, where it is not uncommon for populations to reach 20 'rats per acre. In fact, the muskrat enjoys a special status in the culture of South Jersey, with *Muskrat Crossing* signs in Cumberland County and well known muskrat roasts in Lower Alloways Creek (Salem County) and elsewhere in the region. Trapping muskrats has a long tradition in the area, but has declined in recent years.

Muskrats usually weigh from 2 to 4.5 pounds, with males averaging from 0.5 to 1 pound heavier than females. Their overall length ranges from 15 to 27 inches, a full third of which is tail. The rat-like tail is long, thin, scaly, and vertically flattened, and no doubt contributed to the critter's name.

Like other rodents, muskrats have large orange-colored incisor teeth in the front of their jaws and flattened grinding molars in the back. This tooth structure identifies the muskrat as primarily vegetarian, or herbivore. Most of their food supply comes from the roots, stems, and leaves of many different aquatic and semi-aquatic plants. Cattails, bulrushes, burreeds and arrowhead are the most important food plants, but the muskrat's diet is so diverse that almost any plant living close to water can and will be consumed. And as is common with many forms of wildlife, availability of food sources dictates the diet, and muskrats may also feed on animal matter such as fish, freshwater mussels, clams, insects, crayfish, and snails.

Muskrats are rarely seen because of their nocturnal nature, though nighttime boaters or anglers often see them during the summer. They are also easily spotted sitting on the edge of the melting ice at ice-out during the spring.

The odorous musk is found in glands located at the base of the tail. This heavy, sweet-smelling scent is most pervasive in the breeding season when males mark their streambank or lakeside territories, depositing musk at the base of lodges and along travelways to attract females. In diluted concentrations the musk has an agreeable odor that is sometimes used in expensive perfumes and colognes.

The breeding season for muskrat begins in mid-February or early March, and mating continues through spring and summer. At the height of the breeding season—usually in late March—the males frequently fight over females and territories. Fights rarely result in serious injury, but numerous bites and cuts are exchanged.

Muskrats have a very high reproductive rate. It is not unusual for a female to have three or more litters per year with an average of five or six young per litter. The young of the first litters are capable of reproducing before the summer ends.

Well adapted to aquatic life, muskrats are never found far from water. Their soft, velvety fur consists of a waterproof underlayer, and a long, coarse, glossy overlayer of guard hairs. Although the color ranges from sandy brown to jet-black, it is commonly chestnut brown. Muskrats' short hind feet are partly webbed, and their tail is used as a rudder when swimming. They can live in any slow moving body of water that is deep enough to allow an underwater entrance to their den.

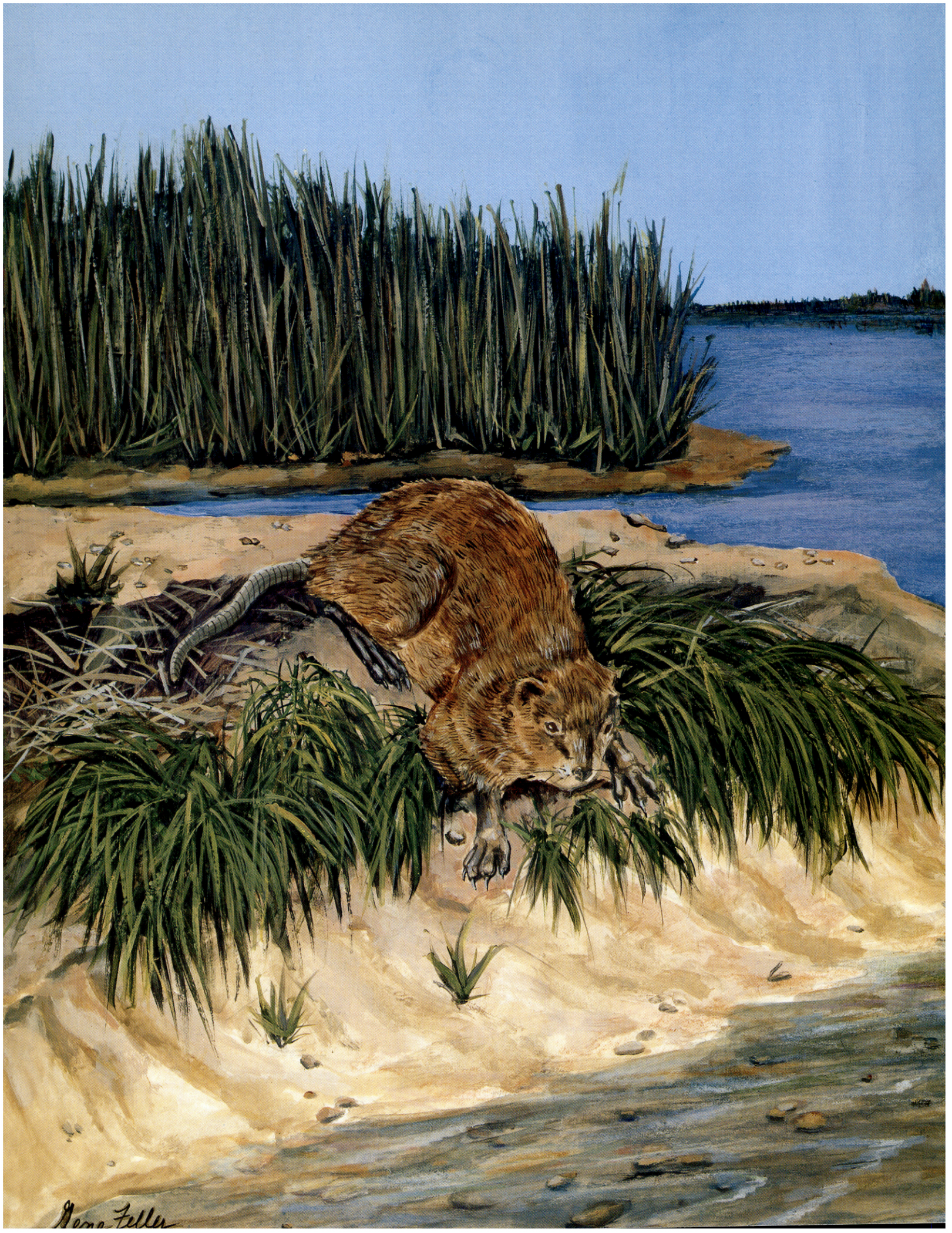
Muskrats construct two types of dens. The bank den is a simple tunnel dug into the stream or lakeside, usually under a convenient tree. The roots of these trees are sometimes used as an emergency food source. The lodge, or *push-up*, is made of mud, roots, and aquatic plant stems and resembles a small beaver lodge. Push-ups are more common in shallower marshes.

The muskrat's dense fur, widely sought by furriers to make long-lasting functional clothing, gives it economic value, estimated to be in the hundreds of millions of dollars nationwide. Muskrats can have a negative value too, though, when their burrows weaken dams or undermine the shorelines of ponds.

Trapping has had little or no effect on the overall muskrat population. The annual death rate of the population is between 60 to 80 percent, a loss that can be easily made up by muskrats' extremely high reproductive rate. The large turnover is related to the seasonal changes in food, cover, and water. Quite simply, the annual population increase cannot be supported by the reduced amount of food and cover available in January and February. From a numbers standpoint, the muskrats removed during regulated trapping season are roughly equal to the number that would otherwise die from the lack of adequate habitat.

The future of the muskrat in New Jersey roughly parallels the future of other wildlife and environments in the state. Muskrats are extremely tolerant of human disturbance as long as they have adequate food, cover and water. As with all wildlife, habitat is the key to survival, and management and land-use decisions will have to provide for these needs.

Bob Byrne is a former wildlife biologist with the Division of Fish and Wildlife; Paul Tarlowe is currently a wildlife education specialist and maintains the agency's Web site, www.njfishandwildlife.com.


Gene Feller

