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NEW JERSEY Outdoors

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Learn What It Takes to Lifeguard • Unravel the Mysteries of Webb's Mill Bog
Follow the Pelican's Return to New Jersey • Discover the Lure of Fishing for Fluke
Explore Efforts to Preserve the Delaware Watershed

A late afternoon summer storm approaches a field adjacent to the Delaware River in Hunterdon County.

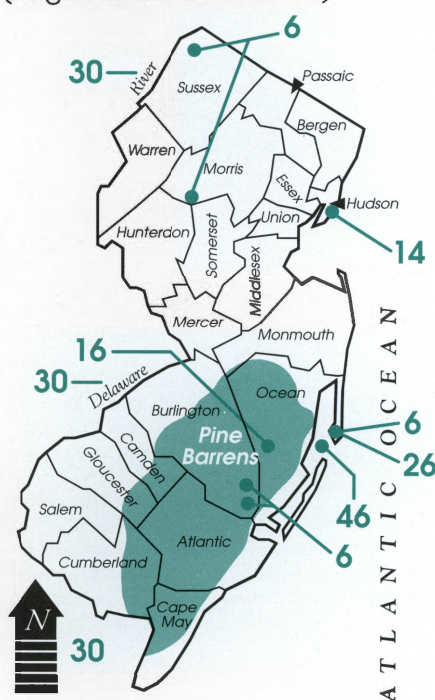


MICHAEL BAYTOFF

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Photo by Walter Choroszewski

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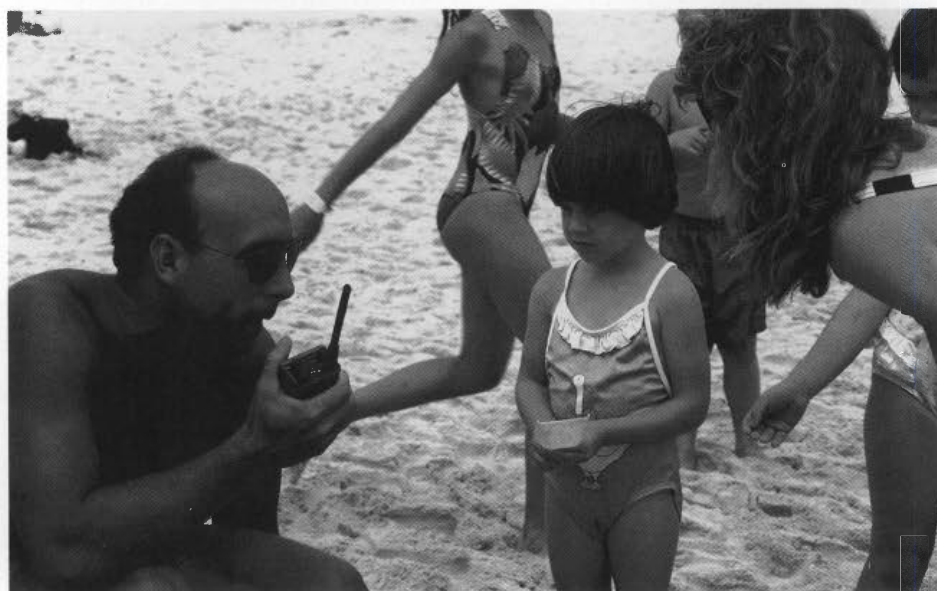
Whether you call them summer flounder or fluke, fishing for this summer staple provides rewarding sport and good eating.

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Once endangered, the brown pelican is recovering, moving northward into the Garden State and may eventually reproduce here.

All in a day's work: an Island Beach State Park lifeguard uses his radio to help reunite a lost child with her parents — who were located moments later. For more on lifeguarding, see page 26.



PETE McLAIN

Editorials



Jim Florio
Governor

Cherishing the Jersey Shore — Now and for the Future

This summer, the Jersey Shore is a vibrant center of tourism again thanks to the countless heroes of last year's brutal winter storms. Visitors from the entire region are flocking to our sparkling beaches and splashing in the clean ocean water of our magnificent Jersey Shore.

The devastation that stripped our shore communities of dunes, boardwalks and beaches had a silver lining. The storms focused the eyes of the *whole* state on the issues facing the Jersey Shore: coastal development, water quality, stable funding, pollution prevention, beach replenishment and economic growth.

Now, people all across New Jersey are asking for solutions that protect our coastal areas beyond the next storm into the next century. So the dollars we invest at the shore yield the best return in jobs, tourism and quality of life.

The Department of Environmental Protection and Energy is seizing the momentum to craft a storm response emergency plan for the shore. We're working to rebuild our communities so that they are stable in any weather. We've already pumped \$44 million into beach restoration programs. We're investing more than \$1 million from our Economic Recovery Fund in new shore protection technologies. And we're aiding 94 local communities all along the shore with funds to upgrade their storm sewers. So that a heavy rain storm no longer means sewage pollution and beach closings.

We all have a stake in the Jersey Shore. It's our pride, our joy and our children's inheritance all wrapped up in 127 fragile miles. Together, we need to ensure that the great strides we've made in rebuilding for this summer are just the start of an all-out effort to preserve and protect the Jersey Shore for generations to come.



Scott Weiner
Commissioner

Working Together to Keep Our Coastline Clean

As the summer beach season swings into full gear, I want to thank everyone who made our April shoreline cleanup a success under the new Adopt A Beach program. Volunteers, who joined together to "adopt" nearly 40 beaches along our shore, enthusiastically attacked beach litter on ocean, harbor, bay and river fronts.

Debris and litter on the beach not only mar our enjoyment of the shore. When washed out to sea at high tide, they can jeopardize water quality and harm fish and other marine life.

In addition to thanking all the volunteers, I want to thank Clean Ocean Action. The Adopt A Beach program builds on this dedicated organization's nearly decade-old tradition of volunteer beach cleanups. And, of course, thanks must also go to the sponsors of the legislation that established the program, state Senators Joseph Palaia and James Cafiero and Assemblymen Michael Arnone and Frank LoBiondo.

New Jersey DEPE's existing shore protection efforts, such as the Cooperative Coastal Monitoring, Coastal Surveillance and Operation Clean Shores programs, are among the best in the nation. The Adopt A Beach program is an important addition. Not only will it help make our beaches shine, but it will highlight the fact that *everyone* — not just government — has a vital stake in caring for the shore.

It is certainly not too late to join the Adopt A Beach effort. We are encouraging volunteers to visit their adopted beaches during the year to hold cleanups as necessary. And the second yearly statewide Adopt A Beach cleanup day will be held this fall. To find out how to help, call the DEPE's Adopt A Beach hotline: (609) 29-BEACH.

State of New Jersey
Jim Florio
Governor



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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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Covering Up?

In the Winter 1993 issue of *New Jersey Outdoors*, on page 37, the caption to a photograph describes its subject as "The last covered bridge in New Jersey." There is at least one other. As you can see from the enclosed slide (see right), there's a covered bridge located in Cherry Hill, appropriately enough on Covered Bridge Road. We enjoy your magazine immensely.

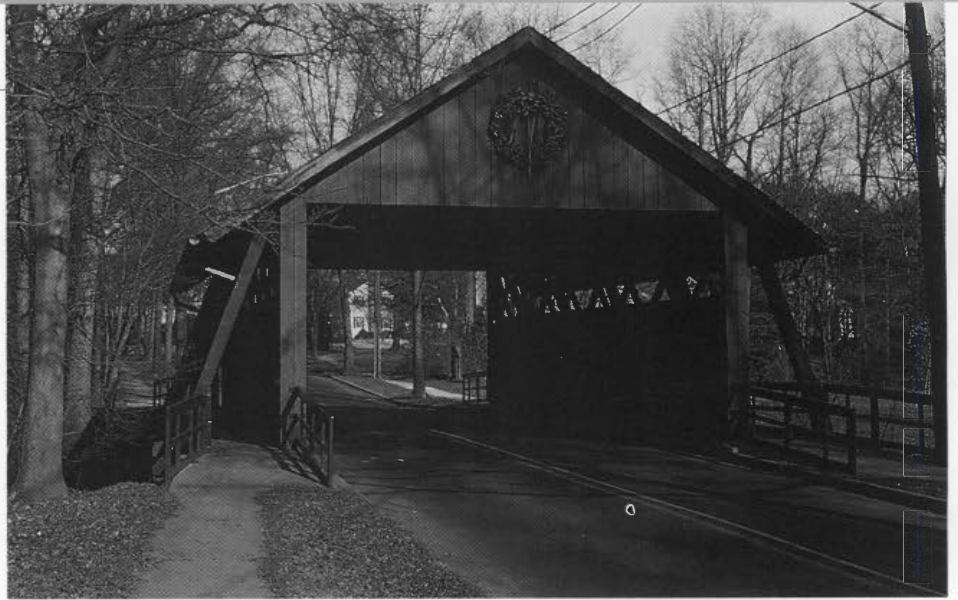
Norm and Linda Davis
Haddonfield

Editor's note: Terry Karschner, a historic preservation specialist in the DEPE's Historic Preservation Office, responds: Located between Sergeantsville and Rosemont in Hunterdon County, Green Sergeant's bridge is the only covered bridge in the state that can be considered a historical structure. It is therefore often called the "last" of New Jersey's 75 covered bridges because it preserves an original structure. Built in 1872 by landowner Green Sergeant, the bridge today still contains parts of the original span and remains on the site where it was originally built. In 1961, Green Sergeant's was refurbished by the New Jersey Department of Transportation, allowing the bridge to remain on its historic site. Cherry Hill's covered bridge cannot claim such a historical distinction. It was built during the 1970s as a modern reproduction of a covered bridge for the Barclay Farms residential development. Thanks for calling attention to this distinction. Obviously, both structures are covered bridges. But Green Sergeant's is the last remaining "original" in the state.

Hunting for Hunting

Regarding your Spring 1993 issue of *New Jersey Outdoors*: As a naturalist, I really enjoyed the article entitled, "Another

New Jersey Outdoors welcomes letters to the editor. Please include your name, address and daytime telephone number. Our address is NJO, NJDEPE, CN 402, Trenton 08625-0402. We reserve the right to edit letters for length and clarity.



Cherry Hill's covered bridge, built in the 1970s.

World Just Behind the Dunes." As a canoeist, I thought that "Paddling the Paulinskill," was just great. As a gardener, I was pleased to read the article, "Gardening with Deer." As a fisherman, the article, the "Origins of Trout in New Jersey," was welcomed. But as a hunter, I was somewhat disappointed. Not one article on hunting.

Please, you are doing a great job, but hunting is still part of the New Jersey outdoor heritage, and let's try to represent it in the state outdoor magazine. An article on the spring turkey hunting season or something on the results of the past fall or winter deer seasons would have been nice.

George A. Kirschbaum
Indian Mills

Editor's note: There's no question that hunting is part of our state's outdoor heritage and that it will be represented in this magazine. Several hunting articles are now in the works, including a piece on gun dog trials that will appear next issue. Thanks for your comments.

Bikes Take a Hike?

I'm a little worried by your article on mountain biking (NJO, Spring 1993). I'm apprehensive about any encroachment of machinery onto trails specifically designed for hiking.

I'm an avid hiker of New Jersey's trails and already I've had to jump out of the way of a mountain bike heading for me at full speed. I don't like it. I don't like off-

road vehicles either, and I don't like the tendency of our culture to promote outdoor recreation for the sake of selling new "toys." It's not about enjoying the outdoors anymore; it's about using the outdoors to enjoy machines.

Mark Hillringhouse
Little Falls

Editor's note: Richard Barker, assistant director of the Division of Parks and Forestry's State Park Service responds: I'm sorry you had a near run-in with a mountain biker who did not adhere to the rules of the trail. As the article in the Spring NJO pointed out, mountain bikers should yield to hikers when sharing a path. In our densely populated and diverse state, people with many interests use and enjoy our parks in many different ways. The State Park Service tries to accommodate as many interests as possible, while maintaining our natural resources and the highest quality park experience possible. Specific to accommodating your concern, we are currently reassessing our trail system that designates two types in the state parks: the first for foot travel and hiking only; the second for "multi-use," which could include hiking, mountain bikes, horses and so on. We have completed an inventory of state park trails and hope soon to unveil a proposal for their eventual designations. Ultimately, each multi-use trail will be posted as to which specific uses will be allowed on it. We will be holding public meetings this fall to get input from interested trail groups and trail users. I invite you to participate. For more information, call (609) 292-2772.

Trees to Keep Summer Blooming

The forsythia is a standard for launching spring's colorful start. The flowering cherries and crabapples vary the palette, and of course dogwoods are the very essence of spring.

All too often this panorama of trees will fade into a fluttering sea of green until the autumn chill brightens things up again. But this need not be the case. Tapping into the assortment of trees that bloom in summer's heat is easier than most people think. The selection is varied and most are readily available.

The first season extender is the kousa dogwood (*Cornus kousa*) from Japan. It blooms in June with some varieties lasting late into the month. The bracts are white but extremely prolific and the tree is resistant to many of the problems that plague our earlier blooming native dogwood. In one or two places a pink variety has been offered, but it is not considered as attractive as the white. The kousa dogwood grows to a maximum of about 20 feet and is more upright than the native dogwood (*Cornus florida*).

From late June through most of July, the smoke tree (*Cotinus coggygria*) provides summer color. It is not the flowers that do much for us, but the seeds. Since male and female flowers are produced on different trees, it is important to get a female to have the smoky effect. The variation in color ranges from gray to pink with a few selected varieties being reddish or purple. The small trees (10 to 12 feet) usually produce so many airy, translucent clusters of fluffy seeds that at first glance they do appear to be smoldering away.

An absolute show-stopper is the southern catalpa (*Catalpa bignonioides*). Its explosion of flowers appears in July. Each flower is bell shaped with yellow spots on the upper lobes and purple on the lower. The pyramid shaped clusters are on the tips of the branches. A mature tree grows no more than 50 feet tall, but when it is covered with its prolific blossoms, it is breathtaking. Even when not in bloom,

the heart-shaped leaves and the long bean pods make this tree interesting all season long. Unfortunately, the wood is weak, and it takes six to eight years before it blooms. Planted where it has room, away from the house, it is worth the wait.

Chestnut trees are not particularly colorful, but the off-white clusters of flowers look like long bushy pipe cleaners. The effect is so unusual that a chestnut can easily become a focal point of the July garden. It is truly sad that our American chestnut is with us no more. Lost to the chestnut blight, this tree is said to have produced the best of all nuts for eating. Most of what is available today are hybrids of the Chinese chestnut. They do not produce fruit by themselves, so if you want the nuts, plant two.

Koelreuteria paniculata reaches about 50 feet — all of which is covered in large clusters of tiny yellow flowers in July. There are so many blossoms that the trees appear to be covered in a yellow lace veil. Later, the fruit develops into brown,

papery pods that are pointed and puffy. They certainly add to the appeal of this tree and they can be used to make unusual dried flower arrangements. You may prefer to call this tree its colorful common name: golden rain tree.

The beautiful white blooms of the Stewartia (*Stewartia pseudo-camellia*) appear in July and can reach 2.5 inches across. Each flower resembles a single camellia but has the added advantage of being fragrant. If this is not enough to pique your curiosity, the bark on older trees is reddish and peely so it adds winter interest to your landscape as well.

Rose of Sharon (*Hibiscus syriacus*) is a much maligned plant. It is often squeezed into places where its bushy growth and abundant seed production can become a problem. Pruning can often make the situation worse since a tree tends to get bushier every time it is cut back. Planted in a spot where it can just be left to grow, mowing will take care of most of the seedlings. At its maximum height of about 15 feet, rose of Sharon will make a perfect hedge. The white, pink or lavender flowers keep coming all summer. It is

Petals of the kousa or Japanese dogwood.





A peegee hydrangea in August bloom.

difficult to argue with their dependability.

A real beauty, that still needs to be tested north of New Brunswick, is the crape myrtle (*Lagerstroemia indica*). This southern regular grows into a small tree that puts out panicles of flowers ranging from pale pink to intense raspberry. Look for the show in August but also enjoy the smooth light brown bark that flakes to reveal the lighter underbark. In areas where this may not be hardy as a tree, it will often die to the ground and come back each year as a bush. Since crape myrtle blooms on new wood, you still get to enjoy its flowers.

The peegee hydrangea (*Hydrangea paniculata grandiflora*) is a tree-like relative of the common snowball bush. The white clusters of flowers seem to last forever. In actuality, they can be cut and dried — so they do last for years. The flowers first open in

August and can often still be found on the tree well into winter. The trees reach 25 feet but can be kept down to size by severe pruning in the early spring.

The franklinia (*Franklinia alatamaha*) is a true native American. It was first discovered in 1765 in a tiny grove at the southern end of Georgia. It was last seen in the wild in 1790. Luckily for gardeners everywhere, it has been perpetuated through cultivation. The flowers are camellia-like, similar to the stewartia, but appear in late August and continue until frost. With a bit of luck there may still be a pretty white flower to set off the brilliant red leaves as they turn in the fall.

Though perhaps some of these trees and their summer blooms are under appreciated, none of them is hard to find. Check with your local nursery, where prices can range from \$15 to \$100, depend-

Extending the colorful season with trees that bloom in summer

ing on the species and the size of the tree.

We expect to see trees flowering all spring. With a little planning, the display can continue almost as brilliantly all summer long.

by Pegi Ballister-Howells, a freelance writer, horticulturist and former county agent for the Rutgers Cooperative Extension Program

Building a 'Noah's Ark' for New Jersey's Natural Areas

Long before "endangered species" was a household word, members of the New Jersey Legislature understood that the state could not ensure the wise use and careful management of its unique plants and animals and diversity of habitats simply by purchasing land. With this in mind, in 1961, the legislature conceived the New Jersey Natural Areas System. The idea was to create a kind of Noah's Ark for the natural features of the state, setting aside certain ecologically significant areas with a stricter set of rules than those governing other state-owned lands.

Since then, 42 natural areas throughout the state totaling almost 30,000 acres

have been designated as part of the Natural Areas System. Most of these areas — which range from the coastal tip of Cape May Peninsula to the ridges of Sussex County — are parts of state parks, forests, and wildlife management areas and are easily accessible to the public. The system contains many habitats, including pristine coastal sand dunes, lush green Atlantic white-cedar swamps and protective floodplain forests.

The goal for each of these areas is simple: to protect and manage in perpetuity those state-owned lands that support endangered and threatened plant and animal species, unique and significant natural

ecosystems, and exemplary habitats for New Jersey's wildlife.

The system's natural areas enjoy an exceptional degree of protection. System lands may not be sold, leased or exchanged without an act of the legislature. Although boundary revisions are possible, only legislation may remove an area from the system. Protection is combined with an array of public uses, including scientific research, education, hiking, bird-watching, hunting, fishing and boating. In addition, the scientific community is encouraged to perform research that will contribute to the understanding and management of these lands.

Key to the success of the Natural Areas System is the commitment of the DEPE to the careful monitoring, management and stewardship of the land and its many species. For this reason, legislation establishing the system mandated that a management plan be formulated specifically for each natural area. This was designed to ensure that features that the natural area was originally created to protect are actually preserved.

Staff members from the Office of Natural Lands Management (ONLM) in the Division of Parks and Forestry work collaboratively with the division's other field offices as well as with those of the Division of Fish, Game and Wildlife to design appropriate management techniques for each area. For example, a management plan may specify that a particular trail not be widened because an endangered plant species grows alongside of it. Or a plan may indicate that hunting be prohibited at a certain location in a natural area during the nesting season of a sensitive bird population. Each management plan must be reviewed by the Natural Areas Council, an advisory body to the commissioner of DEPE. Ultimately, the commissioner must approve all plans before they are adopted.

ONLM has completed management plans for 13 natural areas. Among these are the spectacular Tillman Ravine Natural Area located within Stokes State Forest, Sussex County. Tillman supports a

West Pine Plains Natural Area, Bass River State Forest, Burlington County.



PHOTOS BY ROBERT J. CARTICA



cool, shaded evergreen forest of eastern hemlock, a species ideally suited for the steep slopes cut by the Tillman Brook. This forest ecosystem also supports the timber rattlesnake, an endangered species in New Jersey and the barred owl, a threatened species in the state.

Strathmere Natural Area, located in

Corson's Inlet State Park, Cape May County, is populated by three state endangered species of beach-nesting birds, including the piping plover, least tern and black skimmer. The piping plover also has the dubious distinction of being a federally threatened species. To maintain and enhance the suitability of Strathmere's natu-

Oswego River Natural Area, Wharton State Forest, Burlington County.



Tillman Ravine Natural Area,
Stokes State Forest,
Sussex County.

ral dune habitat for these birds, the DEPE is coordinating its resources to protect their nests and feeding zones.

Based on recommendations from the Division of Fish, Game and Wildlife's Endangered and Nongame Species Program, management at Strathmere includes installing string and post fencing in season

to reduce human disturbance, constructing enclosures around piping plover nests to discourage predation and closing the area at night to allow for night feeding.

The ONLM is currently formulating a management plan for the Oswego River Natural Area located in the heart of the Pinelands at Wharton State Forest,



Burlington County. Here, the meandering Oswego River and its surrounding floodplains and savannahs provide critical habitat for a host of state endangered plants and animals. At least three populations of the globally rare and striking bog asphodel, which exists nowhere else in the world except in the New Jersey Pinelands,

occur within or adjacent to the natural area. The curious curly grass fern, long a symbol of the Pinelands, is also found here.

The Natural Areas System is founded on the belief that the survival of all species and natural ecosystems is critically important. Recent discoveries, such as the medicinal value of substances derived from

Hacklebarney Natural Area,
Hacklebarney State Park,
Morris County.



rare plants and animals, underscore the wisdom of New Jersey's three-decades' old attempt to preserve portions of our natural habitat that contribute immeasurably to our quality of life, but might otherwise be lost.

For a Natural Areas System brochure and directory, please contact the Office

of Natural Lands Management, c/o NJDEPE, Division of Parks and Forestry, CN 404, Trenton, NJ 08625-0404.

by Robert J. Cartica, a supervising planner in the Office of Natural Lands Management, Division of Parks and Forestry

Island Beach North Natural Area,
Island Beach State Park,
Ocean County.

Profile

Hooking a New Generation on Conservation

On a cold, snowy afternoon, Al Sitarski sits quietly in the living room of his Allamuchy, Warren County, home musing over his life as a "conservationist" — a term he insists is a much too broad and glorified description of him. He insists that his life-long commitment to the outdoors is nothing more than that of an average angler concerned with today's environment.

However, as anyone who delves a little deeper soon discovers, this hard working and determined environmentalist's unwavering commitment has brought about changes that benefit all New Jerseyans. Sitarski has, in fact, dedicated his whole life to fostering environmental awareness and responsibility in the Garden State.

Sitarski, 72, spent his working years in a successful career at the Exxon Corporation. While not the typical training ground for an environmentalist, his years as Exxon's legislative representative in Trenton provided him with invaluable contacts. Sitarski's relationship with Dr. Lewis Applegate, former head of the New Jersey Education Association and former vice president of the New Jersey Chamber of Commerce, for example, proved instrumental in helping launch one of the state's most influential nonprofit environmental foundations: The Common Wealth of New Jersey, Inc. (formerly the Natural Resources Education Foundation). As Richard Sullivan, New Jersey's first state environmental commissioner and president of The Common Wealth notes, "Al's retirement allowed him to pursue the environmental interests he had always had."

As a founding trustee and current board member, Sitarski has helped raise thousands of dollars for The Common Wealth. This money has been channeled to such environmental education facilities as the Pequest Trout Hatchery and Natural Re-



Al Sitarski instructs a neophyte angler in the fishing arts.

source Education Center, operated by the DEPE's Division of Fish, Game and Wildlife in Warren County, and the Interpretive Center at Liberty State Park in Jersey City. With a smile, Sitarski reflects back on the days when he was "knocking on doors" to solicit funding for the fledgling foundation.

For eight years, he served on the Liberty State Park Advisory Commission, donating time and effort to making the park a truly natural showcase and ensuring that its development will benefit its thousands of visitors. According to Frank Gallagher, chief of interpretative services at the park, "Al was the legs and heart of getting the interpretive exhibits installed at Liberty State Park."

Of his decision last winter to leave the park's advisory commission, "It's time to focus more attention on my family," Sitarski says. "There are few things I enjoy more than my new grandson and looking forward to the day when he's old enough to go fishing," he adds, eager to pass on the Sitarski family tradition of appreciation for the outdoors.

Sitarski's involvement with the DEPE now centers on his participation in the Wildlife Conservation Corps, the volunteer wing of the Division of Fish, Game and Wildlife, and also on his role as liaison between the division and The Common Wealth. The Pequest center, only a short drive from his home, is the focal point of his efforts.

Since the Pequest center opened in 1985, Sitarski has played an integral part

in shaping its educational programs. He helped arrange funding from The Common Wealth and spearheaded the development of the interactive exhibits at the center. Most recently, he has been guiding the progress of a new 16 by 6-foot mural donated by The Common Wealth depicting the range of New Jersey's habitat types, which will complete the center's interpretive displays.

Sitarski will tell you that his most enjoyable — and in his mind most important — contribution comes as a volunteer fishing education instructor at Pequest. In this capacity, he helps teach first-time anglers the techniques, art and ethics of freshwater fishing. "Introducing youngsters to the sport of fishing also gets them thinking about water quality and the overall health of the environment," he says.

Despite the enjoyment he derives from fishing and his new grandson, Sitarski insists he will find the time to remain active. "There's much to accomplish if we're going to leave the Earth a healthy place for our children and grandchildren," he says. "I've been fortunate to have been able to contribute in a small way toward reaching that goal."

by Kathy Previte, a public information specialist for the Division of Fish, Game and Wildlife, and Paul Tarlowe, coordinator of the public and school programs at the Pequest Trout Hatchery and Natural Resource Education Center

Volunteers

Preparing for Careers Off the Beaten Path

"A Tree Grows in Brooklyn." Or so a novelist once wrote. If that book were written today, students from Newark could add a chapter or two. That's because for the past two years they have trekked from their metropolitan environment to help preserve dunes at Gateway National Recreation Area in Brooklyn, clear hiking trails at Shenandoah National Park in Virginia and otherwise conserve environments quite unlike their own back home.

Since 1991, the Student Conservation Association (SCA) Conservation Career Development Program in Newark and four other metropolitan areas has shown more than 1,340 students that they can pitch a tent and survive in the woods — and do more. They can also enter a six-year training program leading to careers in environment-related fields that they might not have otherwise considered. As the environmental field burgeons as a source of new and challenging jobs in the

1990s, the SCA is helping these student volunteers — high school juniors to college seniors — learn about potential careers in natural resources management, environmental law and engineering.

For nearly four decades, the New Hampshire-based SCA has enlisted students and adults who have a volunteer ethic and a commitment to the environment to help preserve parks, forests, wildlife refuges and other natural areas. The organization, which has chapters nationwide as well as in Canada and Mexico and is regarded as "the oldest and largest provider of full-time conservation volunteers," also trains natural resource professionals and conducts foreign exchange programs. Its public education outreach to urban young people is the focus of its Newark office.

So far, according to SCA regional coordinator Robert Robinson, the career development program has had little trouble putting city kids in the wilderness. On his recruitment visits to secondary schools and community agencies in Newark and surrounding urban areas of Essex County, the response has been enthusiastic.

The real test will come when Robinson and SCA determine whether they have put the wilderness in the city kids. Key to the program is a two-way commitment.

Life in the outdoors
often becomes
an eye-opening
experience

First, the program demonstrates the value of repairing, restoring and preserving sensitive environmental areas. The fees paid by the parks and forests for these services are one way SCA supports itself.

But in return, the program demands a strong commitment by the students who sign on. Robinson makes it clear that this is not just a walk in the park. The high school juniors know that for the next six years, they will be expected to work — and learn.

"I don't just go into schools and talk about our program," Robinson says. "I talk about the natural resources conservation field and what's involved and what's happening to it. I tell them they're in for a six-year experience and if they go through our program and stay with it all six years, they will become some of the most qualified people in the field."

The students dedicate a minimum of one weekend a month to the Conservation Career Development Program in addition to participating in a six-week project in the summer, though members of the Newark group meet informally each week. The students maintain this schedule for the last two years of high school and during their four years of college education. At home, the group works on neighborhood beautification projects with the Improve Newark Program, Inc., as well as taking weekend trips.

This year, 23 students are participating in SCA's career development program in Newark. Robinson acknowledges that his students are among the most-motivated in the area and predominantly from schools such as Newark's University High School, Science High School and Seton Hall Prep.

A beach walkway—the product of a Student Conservation Association career development summer project.



Even given that limited advantage compared with the urban student body at-large, Robinson says the Conservation Career Development Program fills a gap in the options normally available to these students.

"The New Jersey Job Corps teaches 'usable skills,'" he says, "and conservation isn't one of them. But that is changing. Also, students in the city are often given family responsibilities at a far younger age than kids in the suburbs. That's one purpose for a modest educational stipend that is part of the program." With the stipend, amounting to only a few hundred dollars a year, parents are often more willing to allow a student to participate in the program instead of taking an after-school job to help support the family, he says.

The career development program provides about 1,300 hours of training, mentoring and field experience during the year. Often, training focuses on basic skills of survival in the wild. Sometimes, a lesson will be about something as simple as how to use a shovel.

"It may be embarrassing to them, but later on, if they get out on a project and have to do some trail work, they have to know how to use a shovel. When you're out in the woods, it's too late to learn the basics," Robinson says. "When we get to a campsite, the first thing we do is dig a trench. Sometimes, we may be lucky enough to be at a campsite that has flush toilets, but the first time they're out on a project and the leader says, 'This is your tent,' and points to a wooded area and says, 'this is the bathroom,' that won't be the first time they say, 'Oh, latrine.' Students come back and say they cannot believe the things they did and the things they learned."

In the summer, students are assigned to various conservation projects around the country. Even then, despite having mastered the rudiments of wilderness survival, life in the outdoors often becomes an eye-opening experience.

"Our college students, for instance, may turn out to be not only the first minority person working in a particular park, but the first in that town," Robinson says.



Conservation Career Development Program participants at work at a beachfront project.

"Part of our training program teaches our students how to deal with that and work with the people they're going to be with."

So far, students say the benefits of the Conservation Career Development Program outweigh the possible discomforts of being away from more familiar urban surroundings. Stefon Harris, who just graduated from St. Benedict's Prep in Newark, joined the program in 1991 after learning about it through the local Boy's Club. Last summer, he helped clear trails at Shenandoah National Park.

"At first I really didn't want to go," says Harris, who hopes to study engineering in college. "At home, I really enjoy watching TV and playing video games, but after the first couple of days away you get used to not having them. Now I enjoy myself. I enjoy nature." If he has trouble getting used to anything in the wild, it's the bugs, he says. "I don't like bugs very much at all."

Yasmine Hernandez will be a junior at Newark's Science High and is interested in oceanography. She joined the SCA ca-

reer development program after hearing Robinson speak to her school's environmental society and also accompanied the group to Shenandoah last summer.

Of her first camping trip with the program, Hernandez says, "I loved it." She admits to missing home comforts such as the radio a little. But she did not feel at all like "some kids who said, 'Oh, I can't wait to go home.'" When asked her favorite things about camping and working outdoors, Hernandez says, "You get to dress 'bummy' and nobody cares. It's green, it's nature, it's just being there."

SCA hopes understanding about "just being there" and working in nature will carry over throughout the students' careers and lives. It has already had an effect at home. As a result of one of the students' city beautification projects and plantings, several more trees now grow in Newark.

by Ron Shapella, a freelance writer who lives in Trenton



A section of the Hudson River Waterfront Walkway at Newport, Jersey City.

Giving the River Back to the People

The New Jersey side of the Hudson River, nearly abandoned by the shipping and manufacturing industries for generations, is verging on revitalization. From the weathered remnants of old docks and railroad yards will rise up a new urban center — a “river city.”

Some see this renaissance as the opportunity to create an accessible, lively public waterfront. Others envision an exclusive “gold coast” filled with private condominiums and private views of the river. Despite these differing views, most people agree that this portion of upper New York bay, which lies closer to downtown and midtown Manhattan than most of New York City itself, could become one of the world’s great waterfronts.

Along with this potential comes the opportunity to give back to the public

something they have not had for decades, unrestricted access to points along the Hudson. Before much of the area’s industry moved away from the riverfront, residents of crowded urban areas like Hoboken and Jersey City had not been fully able to realize the value of their natural surroundings.

“People had grown up in waterfront towns and had never seen the waterfront because they’d been walled off by factories and railroad tracks,” says John R. Weingart, assistant commissioner of Environmental Regulation at the Department of Environmental Protection and Energy. Weingart headed the Hudson River Planning and Development Commission during the late 1970s, when a series of hearings with area residents took place to determine the waterfront’s fate.

Residents who attended these hearings reached the conclusion, in Weingart’s words, that “Linear public access along the Hudson would be a wonderful thing.” Their sentiments were echoed in the commission’s 200-page report, published in 1980, which recommended that New Jersey’s Hudson waterfront, with view and location “unparalleled anywhere in the world,” be made accessible to the public.

The Hudson River Waterfront Walkway, a proposed public route along the 18 miles of riverfront from Fort Lee to Bayonne, represents the realization of the commission’s recommendations. Running as close to water’s edge as possible, the series of walks and parks is intended to serve as the prime pedestrian link to the new shops, offices and apartments planned for the waterfront and to provide recreational

opportunities for biking, walking, fishing and just sitting.

Existing segments of the walkway include a 1.2-mile stretch through Liberty State Park in Jersey City and several smaller sections alongside coastal commercial and residential developments.

"Our goal is to get people from Bayonne to the George Washington Bridge while remaining along the waterfront as long as possible," says Bill Neyenhouse, a supervising environmental specialist in DEPE's Office of Environmental Regulation. Through its process of granting coastal zone permits, the DEPE requires private developers along the waterfront to build pedestrian walkways along with any new coastal construction. Neyenhouse is part of a team of planners and environmentalists working with developers to integrate the walkway into their designs.

Instead of displacing other waterfront uses, Neyenhouse says the walkway will complement whatever design scheme builders suggest. DEPE guidelines call for developers to set aside a 30-foot-wide easement along the river, with a minimum of 16 feet to be used for the path. The remaining area can be landscaped with trees and other foliage to create a natural screening from nearby residences.

One of the most popular privately constructed links of the walkway, the Lincoln Harbor segment in Weehawken, has successfully met these guidelines, achieving a careful balance between the site's commercial use and the surrounding environment. A landscaped thoroughfare bordering the river's edge, with uniform paving, adequate lighting and benches, Lincoln Harbor has become a haven — where employees from the adjacent office complex spend their lunch hours — and an attractive, publicly accessible riverside park.

Not all segments of the walkway can be made as accessible as Lincoln Harbor. In fact, industrial shipping facilities make direct access nearly impossible along some portions. Along other portions, some private residential developers are threatening the walkway's continuity. According to

Neyenhouse, residential builders are often wary of the possible security issues associated with public access.

"When you get into strict residential use there can be an exclusionary feeling among residents," he explains. "They may feel threatened by the public." Indeed, feelings such as these among riverfront residents have resulted in areas where walkways exist but public access is blocked. "Violations have been issued to those developers," Neyenhouse says. Such violations require the builder to allow for public access to their walks or face fines and even court action.

In other areas, strong resistance has prevented any walkway construction whatsoever. "I hope that there's still room to negotiate with those developers," says Leah Healey, president of the Hudson River Waterfront Conservancy, a private group based in Jersey City that is trying to keep after developers and the state so that walkway regulations are enforced.

According to Healey, the trouble lies in persuading builders that the walkway is advantageous to the site, an amenity that will add prestige and value to the surrounding properties.

"The walkway doesn't have to be an obstacle," she reasons, "if you can convince builders that it is an asset to their development." One way of doing this, says Healey, is by telling a would-be developer about other projects that have benefited from the walkway's presence as is the case at Lincoln Harbor.

Touting these successful links is often combined with some creative salesmanship. Adds Neyenhouse: "Sometimes it's just doing a sell for enhancing opportunities at the site. It creates a very positive image for the site if people have a chance to get out there and enjoy a park setting by the waterfront."

A panorama that includes the Manhattan skyline on one side, the rugged cliffs of the Palisades on the other and the mighty Hudson in between is certainly one worth promoting. "What makes the development there special is the view," says Weingart, the person most responsible for

A view and location "unparalleled anywhere in the world"

the walkway concept. Still, this vista has a long way to go to be accessible in a continuous pedestrian route.

"I'm disappointed with the pace of walkway progress," says Weingart. "We issued permits for large sections of the walkway to be built but many of those projects were never realized."

"Had all the developments that had been promised come to be, then significant sections of the walkway would now be in place," he says.

Although many conflicts over public access remain unresolved, Weingart is confident that a significant stretch of uninterrupted walkway will eventually be in place. "I can pretty easily envision that there will be a continuous walkway all the way from Liberty State Park into West New York," he says, "once the economy begins to improve and development projects, perhaps scaled back from their earlier designs, get underway." However, he sees some remaining segments of the proposed 18-mile route as "problematic because of narrower land and potential conflicts with residential developments."

While the walkway's final appearance and route depend largely on negotiations among private developers, local governments which own waterfront property, and the DEPE, proponents of the project have been concentrating their efforts on creating a positive image for a public walkway. Progress has been slow, but giving the Hudson waterfront back to the people certainly will not be an overnight effort. It is one that could take a generation to accomplish.

by Marc Iskovitz, a journalism intern from Cook College, Rutgers University

Unraveling the Mysteries of Webb's Mill Bog

Rain dripped down the windows of our crowded van as we sputtered through endless roads bordered by twisted pitch pines and rust-colored scrub oaks. On a cool, damp day in October, as part of a college course, a group of students ventured far into the depths of the Pine Barrens of New Jersey to explore and study one particular spot among the myriad of ecological experiences the area offers.

The van pulled off the side of Route 539, somewhere between Route 70 and Route 72. We smeared the condensation off the windows. A large

wooden sign read "Greenwood Forest Wildlife Management Area." We piled out, dragging our rain gear and field journals

wrapped in plastic. The roadside gravel crunched under our feet until we filed into a trail laden with whisper soft pine needles and entered a place known as Webb's Mill Bog.

On first glance, the bog did not look particularly striking, just a conglomeration of muck and mire. But we soon learned otherwise.

Dark green cedars lined the bog's edges as we entered on a narrow wooden walkway. Rare and unusual plants sat perched upon hummocks of sphagnum moss that fingered out into the shallow cedar water.

Despite its outward similarity to many other bogs we had visited in southern New Jersey, something was different. There was an empty feeling — as if something were missing. Indeed, something was. Bare white sand gleamed from beneath the ice-tea colored water. Where were the deep accumulations of peat, otherwise known as "sponges," that are common to other southern bogs? What had happened here that made this area unique?





The boardwalk at Webb's Mill Bog.

Webb's Mill Bog had a story to tell, perhaps as mysterious as the Pinelands themselves. Pacing along the walkway of this peculiar area, we felt compelled to delve further into this riddle.

We returned to explore more fully in June. The bog now teemed with life. Insects buzzed all around us, to the delight of the eastern kingbird that darted to and fro between a tasty meal and his nearby perch. Flickers of yellow appeared as pine warblers went about their daily business amidst the fragrant boughs fringing the area. Thousands of thread-leafed sundews glistened in the afternoon sun, broken only by tiny spots of brightly colored orchids that dotted the mossy hummocks. Enjoying the sights and sounds of the wetland in early summer, we imagined a much different scene, drifting back more

than 300 years in time.

We pictured ourselves within an immense stand of Atlantic white-cedar as early Americans would have first viewed it. In our mind's eye, huge trunks over six feet in diameter towered a hundred feet above, blocking the light and seeming to close in from all sides. The cedar scent was strong and the silence eerie as our feet sunk into rich beds of sphagnum moss.

Our reverie ended and we recalled the true fate of the once-massive cedar forests. Cedar wood was so highly prized for its decay-resistant quality that the immense trees and forests were quickly cut down to provide wood roof shingles for homes all along the East Coast. (See page 50 for a related article about Atlantic white-cedar.)

Yet, cedar swamps were not the only areas affected by people. It has been esti-

mated that the entire Pinelands area has been cut over, perhaps two to three times since the colonists first arrived. The wood from the area has fueled just about everything, from the fireplaces of the pioneers, to the bog iron furnaces that supplied iron cannon balls to patriots of the Revolutionary War. The native vegetation of the Pinelands has shown an incredible ability to bounce back. Essentially living within a tinder box, any plant species that lives in this fire-plagued ecosystem must reestablish itself quickly, or cease to exist.

The cool, moist cedar swamps and bogs are the few areas within the Pinelands that are seldom touched by fires. Without frequent disturbance, the resulting ecosystem can become stagnant and take much longer to recuperate when the system is disrupted. Webb's Mill Bog is no exception.

Yet, the cedar harvest could not account for the telltale absence of the thick layers of organic mucks and peat found in similar bogs of the Pinelands. Our minds traveled back again, this time to the bustling industries of the Pine Barrens in the 18th and 19th centuries.

Two hundred years ago, charcoal was the only fuel source capable of creating a furnace fire hot enough for the bog iron and glass industries of the area. Charcoal-ing involved the stacking of kindling and cord wood, such as pitch pine. After stacking was completed, sod was laid upon the heap. Sands were piled as the final layer. The heap was then lit from the central core.

The purpose of the sod and sand layers was to keep the oxygen supply to the inner core at a minimum. The resulting slow burn over a period of 10 days allowed for the reduction of wood to its charcoal state. Heat of such intensity could burn through thick layers of peat moss to the underlying sands. Perhaps it was just such an operation that transformed this typical bog into a more barren landscape.

There are other possibilities. People

may have mined the area for the peat moss, which can be used for potting soil. Or perhaps a raging wildfire penetrated the barrier of moisture and swept across the bog burning clear to the sandy soil.

For whatever reasons, the bog was left with a sterile area of wet sand. This sets the stage for one of the most fascinating aspects of Webb's Mill — the ability to view the different stages of bog succession and regeneration as the area slowly recovers.

We observed the slow-growing sphagnum moss creeping into new open areas. The dark brown moss strengthens its foothold by growing upon itself. Moss underneath chokes out and eventually dies, releasing nutrients to the new moss growing above. This continual layering process formed the hummocks that surrounded us. Hummocks create ideal habitat for Atlantic white-cedar seedlings. The young cedars stabilize the hummocks as they grow, forming a structure upon which more moss can accumulate. Looking to the future, Webb's Mill may again be a cedar forest.

In addition to initiating growth in the bog, sphagnum moss reduces competition from other plants by releasing acid into

the surrounding water, making nitrogen and calcium difficult to obtain. Still, there are certain plants that are adapted to the acid environment and take advantage of the lack of competition. We could see many of these acid tolerant species growing among the hummocks of Webb's Mill.

Insectivorous plants supplement their nitrogen by capturing and digesting insects. We watched as a northern pitcher plant (*Sarracenia purpurea*) attracted its prey. Sweet-smelling juices lie at the bottom of the plant's curved modified leaf, shaped like a small water pitcher. Hundreds of tiny hairs that line the inside of the "pitcher" prevent the victim's escape. Insects eventually drown in a pool of rainwater and digestive juices at the bottom of the "pitcher" and are broken down and absorbed by the plant.

Peering into the moss hummocks, we could see the tiny green curls of a very ancient plant, the curly grass fern (*Schizaea pusilla*). This rare northern plant reaches its extreme southern range in bogs of the Pinelands, where it is isolated hundreds of miles from the nearest population in Nova Scotia. Here in the bog it can usually be

The northern pitcher plant, one of the insect-eating natives of the bog.



BRIAN STURTEVANT

Webb's Mill Bog
has a story
to tell — perhaps
as mysterious
as the Pinelands

found in close association with another ancient plant, the Virginia club moss (*Lycopodium virginianus*).

Orchids are also native to the bog. The first to attract our attention was the rare arethusa (*Arethusa bulbosa*). Its bright magenta-pink petals contrast sharply with the dark browns and greens of the bog. The lower lip of the flower is enhanced with purple spots and a crest of yellow hairs, resembling its other name, the dragon's mouth. We ravaged through the pages of our *Newcomb's Guide* for a positive identification. Nearby, the delicate form of the grass pink (*Calopogon pulchellus*) rose above the damp moss.

The easy accessibility of Webb's Mill Bog allows you to experience nature's recovery process at work. When visiting the bog, stay on the already existing trails and boardwalks provided by the Department of Environmental Protection and Energy's Division of Fish, Game and Wildlife and Project USE. By doing so, the ecological entities of the bog can be appreciated and understood and the recovery process can continue. Who knows? Over time, if the native environment remains intact, not only will the endangered species survive, but the mystery of the peat-less bog will solve itself.

Webb's Mill Bog is in the Greenwood Forest Wildlife Management Area in Lacey Township, Ocean County near milepost number 20 on Route 539 north of State Highway 72. The entrance to the bog is across the road from the sign for the wildlife management area.

by Brian Sturtevant, a graduate student in wildlife biology at Utah State University, Logan, Utah, and Nicole Griscom, an environmental specialist in the Department of Environmental Protection and Energy's Bureau of Water Allocation

Sturtevant and Griscom first visited Webb's Mill Bog as students in a Cook College, Rutgers University, course entitled *Natural Landscapes of New Jersey*.



Rare curly grass fern, at Webb's Mill Bog.

The flower of the northern pitcher plant.



CORNELIUS HOGENBIRK

BRIAN STURTEVANT



QUILTS

Uncover a Rich Patchwork of History

By Dory Devlin

QUILT PHOTOS BY CHIP GREENBERG

Perhaps quilt lovers would recognize the Oak Leaf and Reel design as one of the more familiar appliqué patterns found in New Jersey in the mid-1800s. But what they could never know just by looking at the symmetric leaf and bar pattern is that it was created by the hands of one of two Quaker sisters who — to the chagrin of their religious community — liked to dance.

Lydia Evans crafted the quilt in 1856, the year her sister Rachel was married. Both Burlington County sisters were quilters, and their sewing projects were completed at a time when both seem to have been pulling away from their Quaker heritage.

"The sisters liked to dance," says Rita Erickson, vice president of the Heritage Quilt Project of New Jersey and guest curator of an exhibit of New Jersey quilts now traveling to museums in the state. And family history tells that when they went to dances in their community, they liked to take off their Quaker hats and capes to enjoy the dancing frowned upon by their religion.

After Rachel's marriage to a Baptist named Jesse Braddock, Lydia came to live with the couple and helped to raise their children. Both sisters were buried in Baptist cemeteries.

The quilts in the traveling museum exhibit, "New Jersey Quilts, 1777 to 1950: Contributions to an American Tradition," display the beautiful patterns and intricate needlework that have made quilts popular recently. But many, like Lydia Evans' Oak Leaf and Reel quilt, also carry family stories and tales of local history that are not immediately obvious to the casual viewer.

From 1988 to 1991, volunteers for The Heritage Quilt Project of New Jersey traveled throughout the state and recorded quilts made in all of the state's 21 counties. From the more than 2,100 quilts the project recorded, 183 were selected for the book that serves as the catalog for the museum exhibit and 33 were chosen for the exhibit itself. During the four years that the project recorded quilts in the state, its members were particularly interested in preserving the family stories that the quilts carried, as well as photographing quilts for the archives which will be housed eventually at Rutgers University.

"We see the quilts as part of a social history," says Erickson, "and the museum exhibit highlights the quilts' historical importance as well as their artistic value." In contrast, one of the first

museum displays of quilts, a 1971 show at the Whitney Museum of Art in New York, removed the quilts from the bedroom and placed them solely in the realm of art. What was missing from the exhibit, recalls Erickson, was the family history that accompanied them.

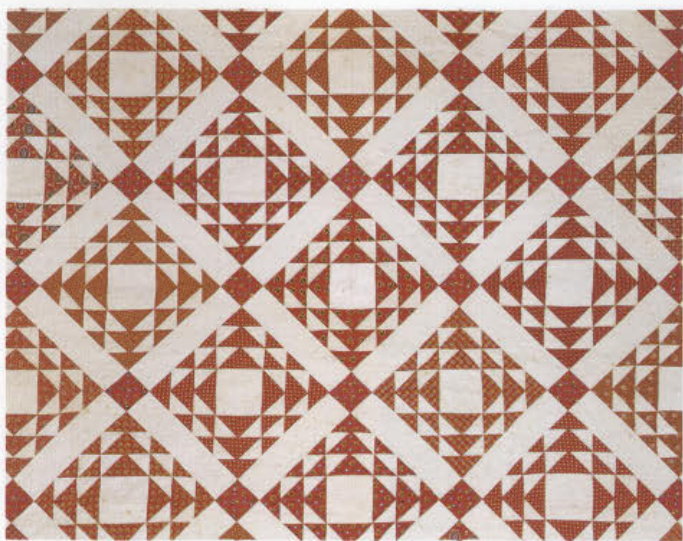
The New Jersey quilts, which hung in the Morris Museum in Morristown during the winter and the Jersey City Museum during the spring (and which will be on display at the Noyes Museum in Oceanville through August, and will move to the Monmouth Museum in September), provide a window into the lives of the women who crafted them. And, in two cases, the men.

According to Sheila Marines, curator of history at the Morris Museum, it's more than women that some quilts tell stories about. It's also families.

Detail of Lydia Evans' Oak Reef and Reel quilt (left). Martha Emily Buck Dawson's quilt, Bricks (1939, Cumberland County), made from samples of baseball uniform fabric (below).







Detail (above) of Rambler Variation, 1856, a quilt by Rachel Evans Braddock, who, along with her sister, Lydia Evans, made quilts that demonstrated both their Quaker heritage and their pulling away from it.

Floral Quilt (left), circa 1880, demonstrating the outstanding embroidery work of quilt maker Hannah Elizabeth Hughes of Monmouth County.

Rachel Evans Braddock and her daughter, Mary (right), born in 1858.



One of the male-crafted works in the exhibit is a crazy quilt made in the 1890s by a man who had tuberculosis, Ephraim Watson. Unable to work on his family farm, Watson made seven quilts, one for each of his children. On the quilts for the boys, he sewed appliqué representations of rakes, hoes and other tools; for the girls, he cut pieces resembling household appliances and sewed them onto a dark wool background.

A 1930 quilt made of seersucker, flannel, wool and cotton was crafted by a Mays Landing man, Clarence Lashley, and his wife,

Anna. Lashley, who learned to quilt from his mother, would bring home fabric remnants from the Mays Landing Water Power Company, the state's last manufacturer of sheeting and toweling from raw cotton, where he worked. He would cut and piece the blocks of fabric and Anna would sew them together to form the red and white checkerboard-background quilt with small baskets.

"I think these quilts provide vibrant snapshots" of lives in New Jersey, says Erickson. "Some quilts go back to the 1840s and 1850s and not everything is remembered about them. But when you put

Garden State Contributions to Quilt Culture

New Jersey's innovations and contributions influenced and enriched American textile culture. Early New Jersey quilts have a distinctive style with no borders, limited use of white backgrounds, and diagonal design arrangements, and are avidly sought by collectors and museums. By the

late 1800s, New Jersey's textile manufacturing industries were able to provide everything American home sewers needed to pursue their craft, from Coats & Clark thread, which was available in the 1860s, and Wiss scissors made in Newark at mid-century, to sewing needles and machines made in the 1870s by the Singer Company in Elizabethport. The use of a tan-and-green binding tape, called "Trenton tape" after the city in which it may have

been manufactured, is a distinctive element in quilts of the Civil War era. Other regional characteristics include the use of ink signatures, block style rather than medallions, use of natural leaf shapes, and piecing of material preferred to appliqué.

The range of fabrics and trim used throughout the state included calicoes and cotton prints, 1830s chintz, Quaker silks, hat linings and cigar bands, 1940s baseball uniform samples and industrial

scraps, such as cuttings from pajama and lingerie factories. These materials reflect the wealth of fabrics and creative influences supplied — and inspired — by Garden State industry. Whatever the materials, quilt makers in New Jersey and elsewhere turned them lovingly by hand into intimate artifacts imbued with American folklore and experience.

by Susan Miles, membership coordinator for the Jersey City Museum, Jersey City



A log cabin-style quilt, circa 1880, pictured in front of its namesake at the Clinton Historical Museum, Hunterdon County. The quilt maker is not known.

them together, they make an interesting composite picture.”

Erickson says she was most surprised by how many stories of relationships between sisters the quilts revealed.

A quilt entitled “Mexican Feathers,” dated circa 1935 and made by Elizabeth Galbavy Moravek, tells the tale of two Ohio sisters of Czechoslovakian descent. The sisters learned to quilt from their neighbors in Ohio, since it was not one of their mother’s skills. When Elizabeth married and moved to New Jersey, the sisters corresponded often, writing in detail about the quilts they were working on at the time and sharing patterns. Despite the distance, their relationship continued and grew, and they would visit one another, particularly during the summer.

“Mexican Feathers,” listed as a Manville, Somerset County quilt, is now owned by Millie Matyola, Elizabeth’s daughter, who chose it as a wedding present from among those her mother had completed.

Many of the quilts on exhibit were made as engagement or wedding presents. Some, such as the 1918 Morristown quilt with five-pointed blue stars surrounded by embroidered names, were made to raise funds; this one brought in money for the Red Cross with 10-cent donations for each embroidered signature.

None of the quilts on display is merely utilitarian, says Erickson. All of them — especially the ones dating to the mid-1800s and still in good shape — were made as showpieces, she says.

The exhibit is also designed to highlight the distinctions setting apart New Jersey’s quilts from other states’. Diagonal strips of material crossing through quilts, binders known as “Trenton tape” for the city where the tape was likely manufactured, and signatures on quilts are some of the characteristics ascribed to New Jersey quilts, says Marines.

The quilt project organizers, who hailed mostly from North Jersey, learned a great deal about the role of the Quakers of South Jersey in quilt making in the state, Erickson concedes.

“Some of the most outstanding quilts in New Jersey were made by Quakers,” says Erickson.

Though they lived simple lives because of their religious values, the Quakers’ regard for quality materials is apparent in the fabrics with which some of their quilts were made, says Marines. Many were made of silk and other expensive materials, though the colors were subdued, often drab.

A visit to the exhibit also provides a glimpse into the lives of Lizzie Stillwell, originally from Allendale, Illinois, and Wesley Charles Mason, a Monmouth County farmer, who met and corresponded through the mail for two years before marrying in 1895 and settling in Holmdel. The current owner of the quilt made by Lizzie and on display is the couple’s grandson, Wayne Mason, who is also restoring the farmhouse where his grandparents lived. (See accompanying article.)

Also displayed is the work of a freed slave, Charity Morris, who made the wool and flannel Log Cabin quilt in 1910 for Edna Palmer Flint, her employer’s daughter upon her marriage. The groom was from New Jersey, where the couple and the quilt moved after the wedding. Morris came from the South with the assistance of the Freedman’s Aid Society to work for the family.

“This has really been a once-in-a-lifetime experience,” says Erickson of the quilt project’s effort to find historical pieces of needlework, many rich with stories to tell, and patch them together in an informative exhibit.

Dory Devlin, of Basking Ridge, is a reporter for Morris County bureau of The Star-Ledger.

The “New Jersey Quilts 1777 to 1950,” exhibit is at the Noyes Museum in Oceanville until August 22. For directions and exhibit hours, call (609) 652-8848. The exhibit opens on September 12 at the Monmouth Museum in Lincroft, where it will run through November 28. For information, call (908) 747-2266.



Stitching Together Generations

When Wayne Mason, 35, and his wife Cheryl Wolf, 34, moved into his grandparents' nearly century-old farmhouse in Holmdel in the mid-1980s, it literally changed the fabric of their lives. "We found three or four quilts in the house," Mason says, left there by his grandmother, Elizabeth (Lizzie) Stillwell Mason. One of these quilts, "Blazing Star Variation," which dates to around 1895, is currently touring with the New Jersey Quilts exhibit.

That's not all they found. Apparently left undisturbed by the bachelor uncle from whom he took over the house were old fabrics, assorted sewing notions and old quilt squares, all nearly 100 years old.

"Every quilt maker starts

something that they leave unfinished," Mason says. "They leave things tucked away for some later time when they think they'll get back to it."

It was Wolf who got back to it. "Finding the quilts in the house made me want to have some to use," Wolf says. Trained as a graphic artist and interested in color and form, Wolf says, "I decided to try to make one." She has continued the family tradition by crafting a half-dozen quilts with "three more in progress at any time."

Wolf's interests in women's history and the Mason family and her connection with local quilt groups in Monmouth County led to the submission of Lizzie Stillwell Mason's Blazing Star Variation to the Heritage Quilt Project of New Jersey and its subsequent selection for the statewide exhibit.

Mason, a mechanical engineer with NCR Computers, and Wolf, a furniture restorer,

Elizabeth "Lizzie" Stillwell Mason's Blazing Star Variation quilt (top left), circa 1895. Cheryl Wolf and Wayne Mason (below left) in front of one of Wolf's handiworks. Wayne Mason's grandparents, Elizabeth Stillwell and Charles Wesley Mason (below), with their children, including Wayne's father, Ray W. Mason (seated in front).



have been restoring the family's farmhouse since they moved in. Although they are both only in their 30s, Mason says he's witnessed "dramatic changes" in his lifetime near their homestead as suburbia has rapidly encroached on what was once predominantly farmland. Living in the space occupied by his grandparents, who, in 19th century fashion, courted through the mail for two years before finally meeting face-to-face, Mason and Wolf have had their sense of historical perspective broadened and more than piqued.

"Wayne and I both are interested in history and decorative arts and the way people lived," Wolf says. Through reading the two-year's worth of the grandparents' courtship letters, which they found in a trunk in the attic, and through their day-to-day surroundings, they have absorbed lessons about the rural way of life —

and the way it was changed by industrialism — a century ago.

"People have images of musty dark old farmhouses," Wolf says of that era. "But it wasn't like that. They had lots of patterns and colors in their houses and lives. We both wished we had learned about all this in school. It's like a lost part of American history," she says.

Lizzie Stillwell Mason's quilt and the others in the New Jersey quilt exhibit provide a welcome way to begin reclaiming this "lost history." And what of grandmother Mason's quilt, when it finishes its rounds of the state's museums?

"When it comes home, the quilt will go into storage," Mason says, noting that the quilt's timelessness has its limits. "If you tried to use it as a bed spread, it would go to pieces in a short time." They may bring it out for display on occasion, Mason says, but unlike many quilt aficionados, they have no plans to reproduce it.



Lifeguards launching a 17-foot surfboat.

Guardians of Good Times at the Shore

by Pete McLain

Forget the old image of the Adonises and Aphrodites of the lifeguard stand: sun-bronzed gods and goddesses with whistles at the ready, dark wraparounds over white-smudged noses, playing to adoring throngs on the beach. Lifeguarding is tough work. And training to become a lifeguard is even tougher.

Proof of that can be found right here in New Jersey which boasts one of the finest lifeguard programs in the nation. Most public beaches along the state's 127 miles of ocean shoreline, which provide millions of hours of seaside recreation and ocean bathing, are protected by professionally trained lifeguards. These lifeguards must complete thorough training in both water instruction and the classroom.

The New Jersey Department of Environmental Protection and Energy's Division of Parks and Forestry lifeguard program at Island Beach State Park, though typical of those at other state park facilities, is the only program geared specifically to ocean swimming. Park superintendent Bill Vibbert, who heads up the program, calls it "a professional operation that puts a premium on training and preparation."

This training and preparation pay off. During the course of a typical summer, depending on surf conditions and other factors, about 120 assists and 20 rescues are made at Island Beach State

Thousands of people on the beach and in the water mean lots of responsibility for Island Beach lifeguards.

Park. During one weekend last year before the season opened, Vibbert notes that 25 saves were made. "Those swimmers violated the number one rule: don't swim in unprotected waters." (See the accompanying article for tips on safe ocean swimming.)

The Island Beach lifeguard program is a model for the state. And the Division of Parks and Forestry's 78-page *Lifeguard Manual for State Operated Ocean Beaches* is the bible of the state's lifeguard training and operational programs. Municipalities all along the shore that maintain lifeguard staffs often use the expertise of the park's program and the manual to train their own lifeguards and become aware of the most up-to-date equipment.

Jim "Shoe" Handschuch, captain of the lifeguards at Island Beach State Park, who has the day-to-day responsibility for supervising the park's swimming program, echoes Vibbert's emphasis on preparedness. "A good lifeguard is a dry lifeguard," he says. Handschuch, a science teacher in Brick Township in the "off season" who's in his 16th summer at Island Beach, emphasizes that being a lifeguard is 90 percent prevention and only 10 percent rescue. As captain, he conveys this philosophy to the two lieutenants and six sergeants who supervise the lifeguard staff of 45 charged with watching over the park's bathers eight hours a day, seven days a week from early June to September.

How do you become a lifeguard in a state park? Applications for employment are available from the park offices in May, and in June, the applicants, averaging about 30 to 40 men and women each year at Island Beach State Park, arrive for their initial water test. This test consists of a 400-yard swim in the ocean — 200 yards out and back — when the water can still be as cold as 50 degrees and the seas may be rough. Applicants who cannot complete the swim in eight and one-half minutes are eliminated from further consideration. The swim is followed by two more tests of physical ability, a run-swim-run (a 25-yard run followed by a 50-yard swim, followed by another 25 yard run) and a 200-yard beach run. The run-swim-run must be completed in under one minute and 15 seconds and the beach run must be completed in under one minute.

The next step is a personal interview with Handschuch and his lieutenants. They question the applicant carefully about his or her experience, attitude toward the program, ability to take orders and willingness to serve the public. The applicant is also advised of requirements to undergo an initial 20 hours of classroom and 60 hours of intensive lifesaving instruction, coupled with written exams (based on the *Lifeguard Manual for State Operated Ocean Beaches*) and, once hired, daily lifeguard practice that continues throughout the entire bathing season.

"The constant training helps make you more aware of the ocean," says Eric Friberg of Toms River, in his ninth season as a lifeguard at Island Beach, his first after a promotion to lifeguard sergeant. "You have to spend time in the ocean to understand it. Any natural environment changes and you have to be ready for change."

According to Friberg, a substitute teacher and high school coach, the training is vital because, "You have to be able to swim



and use the equipment in all conditions, in different tides and big swells. It's just like being in a sport. The more you play, the more you learn the fine points and the more you get out of it. And the more you know, the better you can protect people."

Paige Glasgow of Toms River, in her fourth summer as a lifeguard, also praises the training. "If something happens in the water, I get a rush of adrenaline, but I don't get flustered," she says. "The training is so good, you know you can handle whatever comes along."

Glasgow, who is entering her junior year at East Carolina University as a health and fitness major, says the guards' well-drilled teamwork also instills confidence. "If a swimmer starts to go down, there's always a sergeant or lieutenant or someone to back you up" and help with a save.

As Vibbert and Handschuch repeatedly point out, though, a lifeguard's value and ability in protecting people is not determined by how many "saves" he or she makes in a day or season. The best lifeguards are those who *prevent* the necessity of a save by watching their assigned area constantly and anticipating possible problems before they occur. Lifeguards must be continually alert to possible rip currents, undertows and sudden holes or bottom drop-offs — and they must keep bathers out of these areas of danger. The lifeguard's eyes and attention are always on the water and the bathers. That's the name of the game.

How do lifeguards learn these skills? The training they receive is varied and comprehensive. First, they must be trained and tested for certification from the American Red Cross in cardiopulmonary resuscitation (CPR) and standard first aid. They must be strong swimmers and capable of using all the prescribed lifesaving equipment. Much of the lifeguard training focuses on proper use of these lifesaving tools.

Probably the most useful single piece of equipment is the plastic torpedo (originally made of cork) or "torp," and the line, which is a 24-inch by 8-inch float with 1,000 feet of line attached. If a rescue is required, a team of three lifeguards work together. One swims out to the bather in distress, pushes the torp to him and grabs the person from behind, pinning him against the torp.

Two lifeguards sprint into the water with "torps" at the ready to practice a rescue.



Then, with a hand signal, he motions to the guards on the beach to pull them to shore. Occasionally, a guard may be required to make a save using only the torp and swimming the victim to shore. But the greatest number of rescues are made using the torp and line.

Guards also learn to use the 12-foot surfboard to pick up bathers in trouble. They are also fully trained in launching, rowing and beaching the classic 17-foot lifeboats.

Every year, new life saving techniques and equipment are developed. Recently at Island Beach, the motorized jet ski with a guard in tow on a body board has been added to the lifesaving arsenal; this summer the lifeguards began using light surf kayaks. Island Beach also has a four-wheel drive truck with a jet ski and other lifesaving equipment constantly at the ready to move up or down the beach at a moment's notice.

Another fairly recent innovation is two-way radio communication between the 15 elevated beach platforms and the main office. Vibbert and Handschuch, whose own offices are next to each other for ease of communication, can constantly keep in touch with all sections of the beach. This allows the office and guards to communicate about surf conditions, accidents, lost children and emergencies. Portable radios have made instant communication possible anywhere in the park and have greatly reduced response time to any emergency. In addition, Vibbert notes that Island Beach complements this communication system with trained emergency medical technicians available at each of the beach's pavilions.

But the individual lifeguard is still the heart of the program.

Getting into the Swim at New Jersey's State Parks

Although Island Beach State Park provides the only ocean swimming in New Jersey's state parks, freshwater swimming is available in 14 other state parks, forests or recreation areas, and pool swimming is available at Liberty State Park in Jersey City. According to Susan Herron, coordinator of the Division of Parks and Forestry's Office of Park Programs, the 16 statewide swimming areas employ approximately 200 lifeguards and are visited by more than 5 million people each year. That makes their swimming safety record all the more impressive. Last summer, there were only two deaths by drowning at all the state swimming facilities while lifeguards were on duty.

Following is a list of state-run swimming facilities by region. Depending on the facility, an entry or parking fee may be charged. Please call the parks for more information:

South Jersey

- ❑ Bass River State Forest, New Gretna, (609) 296-1114
- ❑ Belleplain State Forest, Woodbine, (609) 861-2404
- ❑ Island Beach State Park, Seaside Park, (908) 793-0506
- ❑ Lebanon State Forest, New Lisbon, (609) 726-1191
- ❑ Parvin State Park, Elmer, (609) 358-8616
- ❑ Wharton State Forest, Atsion Recreation Area, Hammonton, (609) 561-3262

Central Jersey

- ❑ Cheesequake State Park, Matawan, (908) 566-2161
- ❑ Liberty State Park, Jersey City, (201) 915-3400
- ❑ Round Valley Recreation Area, Lebanon, (908) 236-6355
- ❑ Spruce Run Recreation Area, Clinton, (908) 638-8572

North Jersey

- ❑ High Point State Park, Sussex, (201) 875-4800
- ❑ Hopatcong State Park, Landing, (201) 398-7010
- ❑ Ringwood State Park, Ringwood, (201) 962-7031
- ❑ Stokes State Forest, Branchville, (201) 948-3820
- ❑ Swartswood State Park, Swartswood, (201) 383-5230
- ❑ Wawayanda State Park, Highland Lakes, (201) 853-4462

Tips for Safe Dips

Living near the coast makes ocean swimming one of life's most accessible luxuries. But there is no reason to add unnecessary risks to a pleasant dip in the sea. Island Beach State Park Superintendent Bill Vibbert, who works closely with the park's lifeguard program, offers the following tips for enjoying the ocean safely:

❑ **Don't swim in unprotected waters.** Although this seems fairly obvious, Vibbert calls this "the number one rule." Most drownings at the shore occur when people swim without lifeguards on duty.

❑ **Pay attention to the lifeguards and water conditions.** Lifeguards are there for your safety and their warnings must be obeyed. In addition, at Island Beach State Park, the

guards post a system of flags to signal swimmers about potential problems. A red flag means that the water is dangerous and that swimming is prohibited and there are no lifeguards on duty. At the other end of the spectrum a green flag over a green flag means that the water is safe and lifeguards are on duty. A green flag over red means to swim with caution and usually signals the presence of a rip-tide or undertow. Be aware of water temperature, especially in the early season, when the ocean may be colder than expected in contrast with the air.

❑ **Watch out for riptides.** According to Vibbert, most ocean drownings result from bathers getting caught in riptides. Riptides occur when wa-



ter drains quickly away from the shore through an opening in a sandbar structure and can reach 5 to 8 knots per hour. Swimmers can learn to identify riptides which are often a darker color than the rest of the water and may look more rippled on the surface. If caught in a rip-tide, don't swim against it. Rather, swim parallel to the shore until you can start back in. The guards at Island Beach State Park monitor riptides vigilantly and close the swimming area if a rip-tide poses a danger.

❑ **Always swim with another person.** Swimming with a "buddy" increases your mar-

gin of safety.

❑ **Don't attempt a rescue yourself.** Unless your swimming ability and training are up to it, attempting a rescue can tire you out to the extent that you too could get in trouble. Be aware of your limitations.

❑ **Don't rely on flotation devices.** Inner tubes, rafts and boogie boards are fun, but you may get separated from them. Therefore, don't go out or swim beyond your ability, even with a swimming aid.

❑ **Watch your children.** If you are the parent of a small child, you should always keep the child close enough to be within your grasp.

While on the lifeguard stands, the guards constantly communicate with one another — and the bathers — with a series of hand and arm signals and their ever-present whistles. In the unlikely event lifesaving equipment is not readily available, every guard is trained to approach a person in trouble in the water, make contact with the victim and conduct the save without endangering either himself or herself or the person involved.

Make no mistake about it. State lifeguards must conform to exact rules and standards, maintain themselves in perfect physical condition, take orders without question, follow the state's lifeguard manual to the letter, know how to react quickly to emergencies and, above all, take their lifeguard duties seriously. And what do the lifeguards get for their efforts? The pay starts at \$5.50 an hour and tops out at \$10.50 an hour.

Lifeguards at Island Beach range in age from 16 to 39 years, with the average age running in the mid-20s. Some, like Handschuch and Friberg, are school teachers; others, like Glasgow, are college or high school students. The work must be rewarding. Handschuch says he consistently gets good people and that guards come back summer after summer with the return rate running around 75 percent.

Lifeguarding at the ocean — at inland lakes or a swimming

pool — is literally a life-and-death proposition. Despite the responsibility and the rigors of training, the Island Beach lifeguards agree that there's something special about working at Island Beach State Park. Friberg, a graduate of landlocked Penn State University, says he can't see himself spending summers in the middle of the country or stuck in a city.

"Most of us aren't in it for the pay, but there are other benefits," Friberg says. "I enjoy being on the beach for the sunrises and sunsets and being able to see all the different weather patterns. And I couldn't guard on a beach where there were houses behind me," he adds.

Glasgow also says her love for the outdoors and ocean keeps her coming back. "Also, the people at the park — both the staff and the people on the beach — are special," she says.

When asked why he comes back, year after year, Jim Handschuch hardly thinks a minute. "I love it," he says. "I enjoy doing a good job. And there's something about just being down on Island Beach. When I drive down to the park, it's like part of me is in that road." When all of you is in the surf, rest easy thinking of that kind of dedication.

Pete McLain is an outdoors writer who lives in Toms River.

Preserving the Delaware's Living Past for Tomorrow

by Michael J. Thomas

The Delaware River watershed teems with biological oddities, some well-known, others obscure. The horseshoe crab, a living fossil, is one of the better-known. Every spring the armored crabs paddle shoreward in the lower Delaware Bay, depositing thousands of eggs in tidal stretches of beach near Cape May. Massive flocks of migratory birds, including red knots and ruddy turnstones, on their way from South America to the Arctic, make a feast of the eggs. This feast, in fact, provides an essential "pit stop" to fuel the remaining days of the birds' journey.

More than 40 percent of the United States population lives within a day's drive of the 13,000 square-mile Delaware watershed that covers parts of New Jersey, New York, Pennsylvania and Delaware. Yet, because it was never dammed, much of the river's ancient life forms endure, surviving decades of pollution and other human abuses. Many of these species are little known. In northern New Jersey, in limestone uplands and glacier-born swamps that feed the Delaware's tributaries, globally rare populations of the small whorled pogonia orchid and the northern metalmark butterfly hang on to precarious existences.

A northern metalmark butterfly in Sussex County.



TOM BREDEN

On the central portions of the river, an abundance of unusual plants grow upon the dry Milford bluffs. Rose stonecrop, chamisso's miner's lettuce and the hairy lipfern live in the crevices of the red shale cliffs.

Along the Manumuskin River in Cumberland County (a tributary of the Maurice River that empties into Delaware Bay), the world's largest remaining population of the globally endangered sensitive joint-vetch, a flowering member of the pea family, and some of the state's remnants of tall thickets of wild rice survive.

Miniature populations of similar natural relics are scattered throughout the Delaware River watershed.

The 700,000-member Nature Conservancy, regarded as the foremost private land conservation group in the country, has devised a plan for saving critically important habitats that harbor rare species within the Delaware watershed. In its efforts, the Conservancy's New Jersey's chapter — along with chapters in Delaware, Pennsylvania and two in New York — is working side by side with the Natural Heritage Program in the Department of Environmental Protection and Energy's Division of Parks and Forestry as well as with the Endangered and Nongame Species Program in the Division of Fish, Game and Wildlife, which have helped identify endangered species and their habitats.

Through the Campaign for the Delaware, launched last fall, the Conservancy hopes to raise \$15 million during the next four years to protect 150 sites. So far, more than 7,300 of the 16,000 acres already protected through the campaign are in New Jersey.

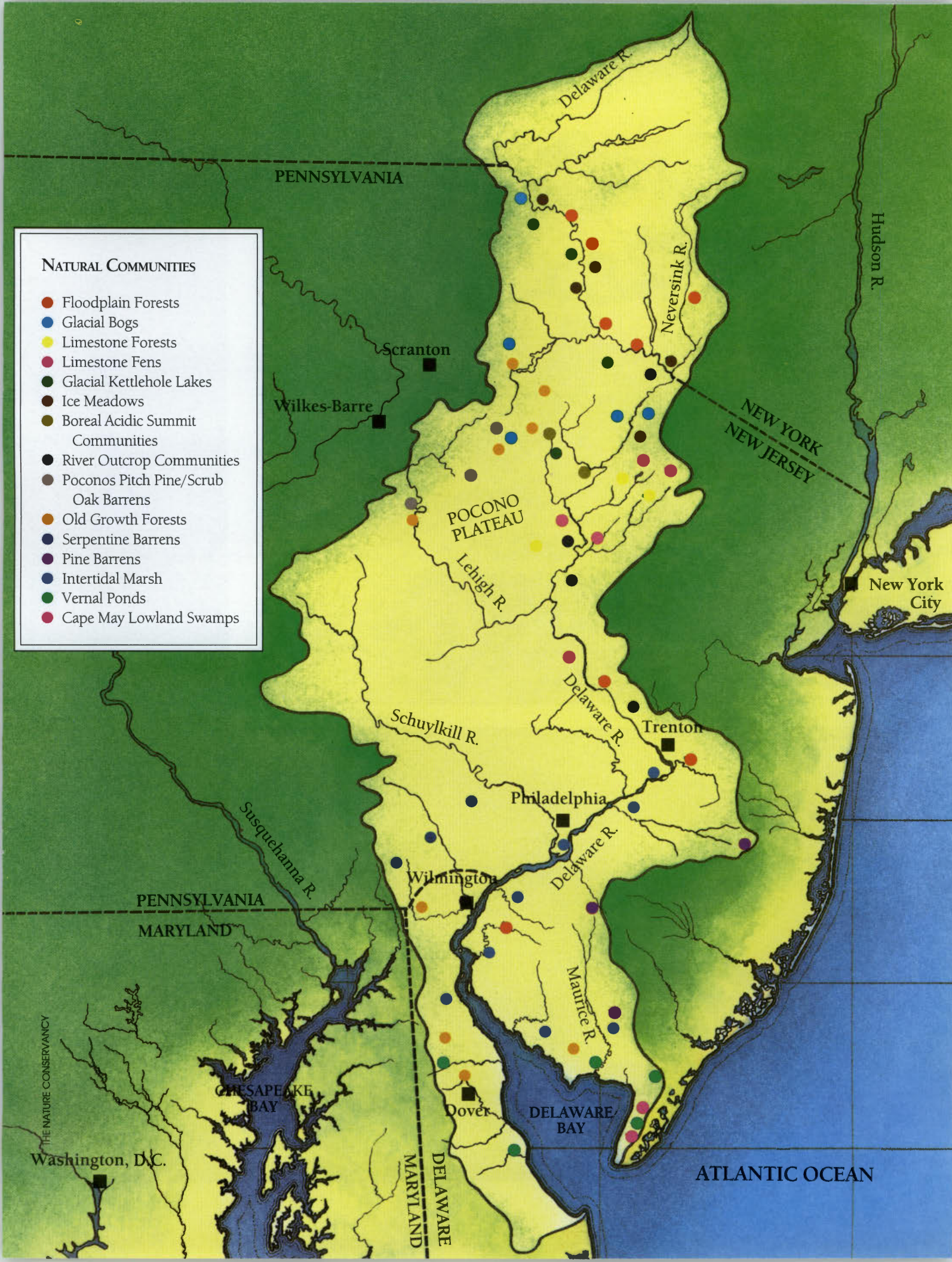
Ultimately, the group hopes to purchase 50 of the 150 sites it wants to safeguard. The remainder will be protected through the Conservancy's natural area registry program through which private landowners voluntarily agree to protect their lands in cooperation with the organization. By linking purchased preserves and registered private lands, Conservancy officials hope to protect habitats increasingly threatened by development.

As a private agency, the Conservancy can acquire lands — or protect them by agreement — with fewer complications than the state. "We work with private dollars, they work with public dollars," says Michael Catania, executive director of the New Jersey Chapter of the Nature Conservancy. "We can do things that they can't and they can do things that we can't."

Although the state can acquire land under its Green Acres Program or by exercising the right of eminent domain, Catania says it

NATURAL COMMUNITIES

- Floodplain Forests
- Glacial Bogs
- Limestone Forests
- Limestone Fens
- Glacial Kettlehole Lakes
- Ice Meadows
- Boreal Acidic Summit Communities
- River Outcrop Communities
- Poconos Pitch Pine/Scrub Oak Barrens
- Old Growth Forests
- Serpentine Barrens
- Pine Barrens
- Intertidal Marsh
- Vernal Ponds
- Cape May Lowland Swamps



Wildlife denizens
and visitors bring
diversity to the
Delaware Bay

Migratory shorebirds take flight
on Delaware Bay.

Horseshoe crabs mating along
Delaware Bay (far right).

A blue claw crab (below)
resting on grass in a wetlands.



MICHAEL BAYTOFF



MICHAEL BAYTOFF





may be easier for the Conservancy to develop creative arrangements that may better meet the needs of private property owners while still protecting open space.

"Very often people prefer to deal person-to-person with a small conservation group," he says. "It's a residual feeling. Justifiable or not, people are often leery of government and more easily drawn into dealing with a private nonprofit group."

Nonetheless, government has played a key role in the Campaign for the Delaware. The sites to be protected were picked by the DEPE's Natural Heritage program using an inventorying method invented by the Conservancy (see sidebar). To maximize preservation efforts, imperiled plant and animal communities are identified, and then preserves — fashioned out of public and private lands — are designed to protect them.

This eclectic style of habitat preservation is well-suited to the Delaware. The watershed retains many of its original and distinct natural communities because, unlike other major eastern rivers, it was never dammed. (The once-proposed Tock's Island Dam in the vicinity of the Delaware Water Gap — which gave way to great opposition — would have resulted in an eastern version of Lake Tahoe and an environmental disaster for the wetland communities that depend on the river's natural flow for sustenance.)

Although not dammed, the Delaware was greatly harmed through the mid-1900s. (The first survey of pollution in Philadel-

phia harbor, in fact, dates to 1799.) Pollution from raw sewage and industrial waste was once so profuse that by the late 1950s the river emanated a stench so rich it was said that airline pilots could smell it. In those days, oxygen levels in the vicinity of Philadelphia often dipped near zero, causing massive fish kills and blocking migrating shad, stripers and sturgeon from traveling upstream. Water quality was so bad that ships lying in harbor for more than a few days were in danger of needing their hulls repainted. Fortunately, conditions began to turn around in the 1960s with the establishment of the Delaware River Basin Commission (DRBC), a federal, multi-state regulatory agency, and stricter federal and state regulations that ended the dumping of untreated sewage and raw industrial effluents in the river.

The river's past mistreatment is even more unforgivable when you consider how many people depend on it. Some 20 million people, most of them from New York and Philadelphia, drink its waters. Power plants use the river for cooling. Its revived waters now provide many different types of recreation for boaters and anglers of all kinds.

No part of the river has suffered more than its wetlands, which seemed destined for abuse from the beginning, according to Alfred Schuyler, a botanist and associate curator at the Academy of Natural Sciences in Philadelphia. "We had an attitude problem," Schuyler says. "Wetlands were thought to exude poisonous gases

A canoeist enjoys the upper Delaware.



MICHAEL BAYTOFF

A remnant of the Delaware Bay's industrial past: tracks to a long-gone pier, Cumberland County.

that caused sickness." Thus, even before this century, wetlands were being deliberately eliminated, he says.

Back then, few foresaw the future population growth within the watershed. Pioneering botanist Kenneth MacKenzie, upon discovering a rare plant species, the Labrador tea in a Morris County bog in 1918, pronounced optimistically that its home, Palmer's Bog, "will remain in all probability permanently undisturbed." Today the former habitat of the now extinct Labrador tea is somewhere beneath the Rockaway Mall.

This is a familiar story in New Jersey. The state has lost 34 plant species within this century, according to Thomas Breden, coordinator of the Natural Heritage Program at the DEPE. Many have gone the way of the Labrador tea — unwittingly buried beneath suburban development.

By concentrating on the Delaware, the Conservancy is bringing protection to the western and southern parts of New Jersey where significant stretches of unspoiled habitat still remain and



MICHAEL HOGAN

Identifying Sites Where Biodiversity Is Threatened

In the early 1970s, The Nature Conservancy began to focus its preservation efforts on some of New Jersey's most threatened species. Such well-known endangered species as the bald eagle and such less celebrated rare plants and insects as the sensitive joint-vetch and the precious underwing moth cried out for attention.

The Conservancy's efforts prompted development of a standardized "Natural Heritage" method for inventorying biodiversity. (Biodiversity is the variety of life and its many processes.) Instead of just investigating currently available real estate to see if the land contained imperiled animals and plants, this methodology first identified all lands where the most threatened species occur and live. Subsequently, The Nature Conservancy sought to preserve the best of those lands through various strategies including contracting with landowners, creating

conservation agreements and directly purchasing lands.

New Jersey's Natural Heritage Program, which was established jointly in 1984 by the then-Department of Environmental Protection and The Nature Conservancy, identifies the state's most significant habitats by compiling a comprehensive statewide inventory of rare plant and animal species and of representative natural communities. It ranks species and natural communities according to their rarity both in New Jersey and worldwide and gathers data on locations, threats, biology and management needs, focusing on the most imperiled species and communities first. One of the products of this inventory is the identification of priority sites for species preservation. These are sites that contain plants and animals whose disappearance would threaten continued biological diversity. This catalog of priority sites is

used by private conservation groups, such as The Nature Conservancy, and by the Department of Environmental Protection and Energy's land acquisition programs.

The Nature Conservancy has worked with state governments and conservationists in foreign countries to establish Natural Heritage Programs. In less than two decades, a network of Natural Heritage Programs has been established that covers every state in the U.S. and more than a dozen countries in the western hemisphere. In New Jersey, the cooperatively founded Natural Heritage Program was ultimately transferred to the state and found a perfect home in the Division of Parks and Forestry's Office of Natural Lands Management (ONLM), which maintains the State Endangered Plant Species List. The ONLM is also responsible for identifying lands and developing management plans

for a system of specially protected natural areas (see article on page 6) and for the nature preserve system of the state's Natural Lands Trust.

Within the DEPE, the Natural Heritage Program has developed a partnership with the Division of Fish, Game and Wildlife's Endangered and Nongame Species Program to incorporate data on endangered and nongame animals into the Natural Heritage database of all rare and plant and animal species and natural communities.

The program's database has grown to include more than 7,000 occurrences of rare species and natural communities and has identified more than 350 priority sites for preservation of natural diversity. The Nature Conservancy's Campaign to Save the Delaware will preserve many of these sites.

by Tom Breden, coordinator of the DEPE's Natural Heritage Program

where new development is most threatening.

A number of the targeted areas are in Sussex County's limestone belt, a network of swamps and creeks set between the boulder ridges and outcroppings left behind after the last great ice sheet retreated more than 10,000 years ago.

Sussex County, which sits along the Interstate 80 transportation corridor, is among the fastest growing counties in the state. Commuters and retirees have been pouring into the rural areas of Pennsylvania and New Jersey surrounding the Delaware Water Gap National Recreation Area, according to Beth Johnson, a research director for the recreation area.

This is among the reasons Conservancy officials are concentrating on striking arrangements with private landowners in this and other northwestern counties. This landscape of steep boulder ridges and steep valleys with swamps and creeks, created by the retreating glaciers of the last ice age, is rich in rare and isolated species. The limestone uplands contain some of the last state populations of Hooker's orchid, putty root orchid, wood lily and purple clematis, according to Liz Johnson, director of science for The Nature Conservancy's New Jersey office.

Tony Miragliotta is one of 10 Sussex County landowners who have volunteered not to develop their lands through an agreement with the

Conservancy. Miragliotta owns more than 140 acres around his plastics factory in Springdale Swamp, south of Newton. In all, the 10 landowners, including the New Jersey Division of Fish, Game and Wildlife, have dedicated a total of 1,600 acres at Springdale for preservation through voluntary management agreements.

A spry 80-year-old Italian immigrant, Miragliotta is not a stereotypical environmentalist. But his long-time attachment to the land is one of the reasons the Conservancy's type of conservation program can be successful. "This land is going to remain as God created — right down the line," he says, adding that his heirs share his commitment to leaving the land undeveloped.

Conservancy officials say that a land ethic such as Miragliotta's is key to the success of their program. When, during the 1970s, a lumber company offered him \$1,000 apiece for his walnut trees, he said no. Whenever neighboring landowners have asked him if he's interested in buying their property, he has said yes. His paternalistic attitude toward the land may be the best hope for the snapping turtles, wild turkeys and Canada geese that rely on these isolated bands of wood-bordered wetlands for survival.

In rural townships facing development pressures, getting involved with environmental groups sometimes can be viewed as controversial. As the population grows and land values rise in the



MICHAEL BAYTOFF



MICHAEL J. THOMAS



MICHAEL J. THOMAS

A great blue heron in a Delaware watershed wetlands (far left).

Two participants in voluntary protection:

Debra Natyzak and her son Andy at her home on Johnsonburg Swamp, Warren County (above).

Tony Miragliotta at his property on Springdale Swamp, Sussex County (left).

state's remaining rural communities, local populations tend to become factionalized and labeled either pro- or anti-development.

Debra Natyzak, one of the participating natural registry landowners with property on Johnsonburg Swamp, Warren County, says that some people become jittery when they hear about private landowners' agreements with environmental groups such as the Conservancy.

"A lot of people are scared of these things," she says. "They think another environmental group is going to come into town and take a bunch of properties off the tax rolls. Some others panic and think they're going to lose their land. It's crazy."

Such irrational resistance is countered by a wealth of preservation efforts aimed at the Delaware River and its tributaries in the last two decades. A number of groups, from the state's Natural Lands Trust to the private New Jersey Conservation Foundation, buy lands for conservation. The New Jersey Conservation Foundation and the state Audubon Society are co-sponsors of the Delaware Bay Tributary Greenway program, mapping and devising a plan to link protected lands together along the rivers and streams attached to the lower bay. There are many other programs, but few as visible as the Conservancy's campaign.

"The Nature Conservancy program is absolutely invaluable, but we've got to do even more," says Cynthia Poten of the Watershed

Association of the Delaware. "We can't preserve our living habitat by putting a fence around the most valuable part and gobbling up the rest. It's one big whole. We've got to learn how to preserve common species that live outside these borders or they'll be gone too."

For this reason, some of the campaign funds will also go to protecting habitats and developing management strategies for neotropical songbirds in Latin America, many species of which migrate through the Cape May National Wildlife Refuge.

The Conservancy, which has protected more than 6.4 million acres in 50 states and Canada and has established more than 1,600 preserves during the past 40 years, has raised \$9 million so far during the Campaign for the Delaware. The William Penn Foundation of Philadelphia kicked off the drive with a \$1 million contribution. Tobacco heiress Doris Duke donated a thousand-acre parcel in Sussex County known as the Mashipacong Bogs, worth an estimated \$2.75 million. "We've got a lot of work to do," says the Conservancy's Catania, "but I'm sure that with this kind of generosity, we're going to make it."

Michael J. Thomas is a freelance writer who lives in Highland Park

Protecting the Delaware Estuary

Preserving critical acreage and species through The Nature Conservancy's Campaign for the Delaware is one means of protecting threatened portions of the river's ecosystem. On a broader scale, according to Dr. Mary Downes Gastrich, National Estuary Program Coordinator for the New Jersey Department of Environmental Protection and Energy, the Delaware Estuary Management Conference is taking a comprehensive approach to managing the river's entire estuarine system from the falls at Trenton to the mouth of the Delaware Bay.

Established by federal law in 1987 and administered by the Environmental Protection Agency, the National Estuary

Program is designed to identify and protect significant estuaries. Estuaries — where rivers meet the sea and fresh water mixes with salt — are among the earth's richest and productive habitats. They serve as the principal spawning grounds and nurseries for at least two-thirds of the nation's commercial fisheries, provide irreplaceable recreational opportunities and enjoyment and are home to valuable and diverse species of fish, shellfish and wildlife.

For more than a year, beginning in fall 1991, the Delaware Estuary Management Conference, made up of public officials and citizens from Delaware, New Jersey and Pennsylvania, met to draft a Preliminary Conservation and

Management Plan for the Delaware estuary. The preliminary plan that resulted from this public process proposes a total of 25 actions in six categories to address problems in the estuary. The six categories are concerned with:

- ☐ Preserving habitats
- ☐ Ensuring that "point sources" of potential pollution (such as discharge pipes and outfalls) comply with anti-pollution regulations
- ☐ Providing for public access
- ☐ Reducing nonpoint source pollution
- ☐ Fostering sustainable development that balances environmental protection and the economic uses of the estuary
- ☐ Educating people about the estuary

In January, the management conference held public hearings on the preliminary

management plan. Comments on the preliminary plan will be incorporated into the Comprehensive Conservation and Management Plan for the estuary, which the management conference is developing for submission to the administrators of the two EPA region offices that are overseeing the project. Building on the preliminary plan for the estuary, the comprehensive management plan will also address longer-term issues in the estuary and propose ways to monitor the project's progress.

For more information on the Delaware Estuary Management Conference or the national program, contact Dr. Mary Downes Gastrich, National Estuary Program Coordinator, DEPE, CN 409, Trenton, NJ 08625-0409. Telephone: (609) 292-1895.

Get Ready to Go — WILDERNESS CAMPING

by Art Lackner



NEW JERSEY DIVISION OF TRAVEL & TOURISM

Camping in the secluded Pinelands.

Wilderness camping? Right here in New Jersey? When Henry David Thoreau ventured out into the wilds of Massachusetts nearly 150 years ago, the face of America was quite different. We were still a rural and agrarian society and even the industrialized Northeast had its share of truly pristine places. Walden Pond was not a unique site. But today?

Well, yes. And right here in New Jersey. In fact, there are several sites within the borders of the Garden State where one can still enter the woods and spend a few days communing with nature. And all with no organized campground, no electrical hook-ups, no flush toilets and no noisy neighbors carting with them all the comforts of home.

Wilderness camping is not for everyone, but for those self-reliant individuals among us, a true nature experience awaits — and it's right around the corner.

The key to an enjoyable wilderness camping trip is proper packing. And the key to proper packing is balance. You'll want to pack everything you'll need for the duration of your trip, but you can't pack more than you can carry comfortably on your back. Once you leave your car and enter the wilderness, you could hike a great distance before discovering your personal Walden.

So let's start with the backpack. A good sporting goods store will have a variety of styles — external frame, internal frame — but it all comes down to comfort. Choose a backpack from a reputable manufacturer that fits you well. What fits the salesperson perfectly might jab into you like a Bowie knife. Come to think of

it, try to find a salesperson who fits *you* well — preferably someone who can draw on his or her own camping experience.

Good, lightweight hiking boots are a must. Most backpackers have replaced their heavy, all-leather boots with nylon and Gore-Tex ultralights. They're infinitely more comfortable on you and much kinder on the terrain. Your feet and Mother Nature will thank you. However, if you plan to be gone for weeks at a time, some experts still recommend well-broken in and waterproofed leather for durability and protection.

Beyond the backpack and boots, your packing list should include clothing for all types of weather. Be prepared for wind, rain, cold and heat. Don't rely on the weather report. Deep in the woods is no place to be cursing Willard Scott because you neglected to bring along rain gear. Do avoid cotton. Wet cotton clothing on a cold day can cause hypothermia, as it sucks heat from your body. Instead, choose to dress in layers with wool and polyester clothing, which draws wetness from your skin, leaving you drier and warmer. Depending on the season and your budget, a nylon windbreaker or a Gore-Tex or other waterproof jacket is always a good idea. If your jacket isn't waterproof, a lightweight plastic poncho provides good rain protection.

Sleeping gear. You'll need a sleeping bag appropriate for the season, and an insulating pad and groundsheet will add to your comfort. Down bags may be too warm for summer camping in the East and they do not keep you warm when wet the way polyester fibers will. Bags come in "mummy" and straight styles, rated for different temperature ranges and in different weights. Base your

choice of style and material on whether you're buying the bag to use year-round and whether its weight is critical to the total load you'll be carrying. As in many things, sometimes less is more. The lightest weight, warmest bags may be the most expensive. Include a blow-up pillow from the camping store, and you'll be the envy of your peers.

Your tent. While tents come in a variety of shapes and sizes, most modern tents will keep out rain, wind and insects. Pick a good quality backpacking tent that is large enough for your party, yet light enough to carry with ease. Here again, look for a well-known brand at your local outdoors or camping emporium.

Kitchen things. A small gas stove is a must. Don't rely on wood fires for your cooking. Bring along a couple of pots, pot holder, enough fuel and plenty of waterproof matches. Don't forget a cup, plate and utensils. Many camping outfitters supply these items in compact units.

Pack plenty of food. You'll work up quite an appetite exploring the woods all day. Choose food that is nutritious, yet lightweight. Freeze-dried food from the camping store is convenient, but very expensive. You can probably find all you need at the supermarket at a fraction of the cost.

Common sense items. Make sure you pack a flashlight, extra batteries, a pocketknife, a candle, around 50 feet of nylon cord, a topographi-

cal map of the area, a compass, tooth care items, toilet paper, sunscreen, sunglasses, insect repellent, tweezers (for tick removal), and a first-aid kit.

Drinking water is available in some wilderness areas, but not all. So you may have to lug water along with you. If necessary, water from local streams can be consumed if boiled for 8 to 10 minutes or treated with portable filtration units — also available at camping outfitters. If in doubt about the availability of water, or anything else, just call the park rangers before starting out. They can answer any questions you may have.

One last thing. Pack plastic bags for your disposables, and carry them out of the woods when you depart. Leave your campsite as pristine as you found it, ready for the next camper seeking the serenity of Walden.

Art Lackner is a freelance writer and media consultant from Eatontown.

Wilderness camping is alive and well in New Jersey

Ah, Wilderness!

Wilderness camping is alive and well, even in a densely populated state like New Jersey. Check out the following:

The Appalachian Trail.

Our nation's oldest scenic trail cuts through 70 miles of New Jersey public land, and primitive camping sites dot the way. The Delaware Water Gap National Recreation Area offers "dispersed camping," where, within guidelines, campers can choose their own locations. The Appalachian Trail also passes through Worthington State Forest, Stokes State Forest, High Point State Park, Wawayanda State Park, and Abram S. Hewitt State Forest. Camping in the state facilities

is confined to seven lean-tos along the trail, and there are privies here and there. Camping along the Appalachian Trail is free, with a maximum of 10 in a party. Open fires are not permitted, so bring a gas stove or eat cold food. Although registration is not required, Anne Lutkenhouse, assistant director of the NY-NJ Trail Conference, strongly suggests you check in with park rangers before hitting the trail. It's certainly to your advantage if they know who you are, where your car is parked, how long you plan to camp, etc. For more information on the Appalachian Trail, call the NY-NJ Trail Conference at (212) 685-9698.

Round Valley Recreation Area. This spot, located in the

Clinton-Flemington area, features a sparkling reservoir surrounded by wooded hills. There's a trail around the reservoir, and wilderness campsites begin three miles down the trail. There are 106 sites, each of which is a 20 foot by 20 foot clearing in the woods, plus four group sites. Most are well-secluded, winding down the trail for three more miles. The campsites can also be reached by boat — a one to three mile run across the reservoir. Sailboats, canoes, and motor boats up to 10 horsepower are allowed. Drinking water is available at wells and sanitary facilities are nearby. Fires are permitted. There is an \$8 per night fee, payable when you register at the park office. For more information, call Round Valley at (908) 236-6355.

Wharton State Forest.

New Jersey's largest state forest, made up of 109,000 acres in the heart of the Pine Barrens, offers wilderness camping at two remote sites. Both can be reached either by canoe or on foot. The Mullica River Wilderness Campsite, located 5.5 miles from Batsto, can handle up to 100 people. It has outhouses, and drinking water is available. The Lower Forge Wilderness Campsite is seven miles from Batsto. There are outhouses at this site, but no drinking water. Lower Forge can handle a maximum of 50 people. Fires at both sites are permitted at night, unless the forest is in a fire ban. There is an \$8 per night fee to camp at Wharton State Forest. To find out more, call the office at (609) 561-0024.



It's No Fluke (or is it?) — These Fish Are Fun

by Pete McLain

You may call them summer flounder, fluke or flatfish, but in the fish market you call them flounder at about \$6 a pound. If you are a coastal angler, you'll call them one of the best sport and most popular table fish that swims.

Just so we're certain we're talking the same language, let's get the nomenclature straightened out right away. The summer flounder is called a fluke north of North Jersey's Long Beach Island up to Massachusetts. South of Long Beach Island to Cape Hatteras, North Carolina, this same fish suddenly becomes the summer flounder. It's sold in fish markets as a member of the "flounder" group.

No matter what the name, if there is one fish that local and visiting anglers seek in New Jersey bays, rivers, estuaries and inshore ocean waters, it's the summer flounder, which we will call the fluke, if for no other reason than it saves words.

What makes the fluke the most popular saltwater sportfish? Several things. First, it is present in good numbers. It strikes almost any bait. It's easy to catch and it's right at the top of the local seafood popularity list. The white, not-too-fishy, sweet meat can be prepared in dozens of mouthwatering ways.

Outsmarting the “Left-handed” Fish

While fluke are not hard to catch, there are some important tricks in knowing how, when and where to fish for the flatfish. It's also important to use the proper fishing tackle and equipment to make your fishing more productive and exciting.

A knowledge of fluke basics may help you understand your catch's behavior. The fluke is a “left-handed” fish. That simply means it's a flatfish that lies on the bottom on its right side with both eyes and the mouth full of sharp teeth on the left. (If you happen to catch a flatfish with the eyes and the dark side on the right, and the fish's mouth is small and toothless, you have the winter flounder — see sidebar.) The fluke is a bottom-dwelling fish that lies in wait for its dinner to cruise by. It is white on the underside and various shades of brown, gray and almost black on the top, depending on the color of the bottom the fish is found on.

In New Jersey, a one- to three-pound fluke would be an average size catch, a three- to five-pound fish would be a big one and anything over six pounds would be a bragging “doormat.” Fluke over 22 pounds have been caught, but a fluke over 12 pounds in New Jersey would be a real trophy.

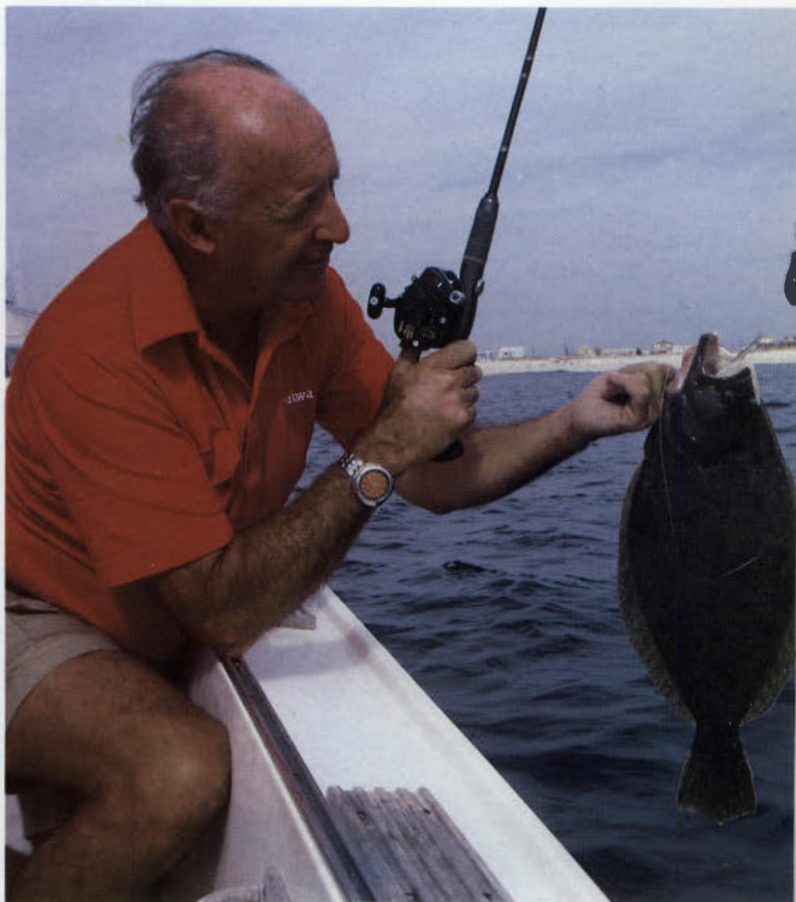
Fluke spawn in the fall and winter as they migrate from the inshore waters to their wintering grounds in the deep waters of the Continental Shelf in the ocean. In early spring they begin to move toward the beach and the tidal estuaries, where they spend the late spring and early summer months. By late September they are moving offshore to spawn and spend the winter. The fluke that hatch in the ocean drift into the tidal estuaries where they rely on the rich coastal tidal marsh ecosystem as a nursery ground to feed and grow the first summer of life. Adult fluke rely on coastal rivers, bays and estuaries as their summer homes.

Basics of Flatfish Catching

The legal fishing season for fluke runs from May 24 to October 9. Your fluke must be at least 14 inches long from the tip of the tail to the mouth and you may not possess more than six fluke a day. In addition, anglers cannot fillet fluke at sea (and potentially evade the size limit). These requirements went into effect in January 1993. (The previous size limit was 13 inches and there was no daily catch restriction.)

These new regulations have not pleased all New Jersey anglers — and that's especially true for the charter and party boat industry. But the restrictions were put into place to allow a larger number of fluke to survive and spawn by reducing the sportfishing fluke harvest by 40 percent. Fluke are not boundless and the goal is to increase fluke numbers and protect the fish as a long-term resource.

There are many fishing techniques for catching fluke. You can travel offshore in a large open party boat, where the captain takes the anglers to the best ocean fluke fishing area, provides the baits and even rents rods and reels. Almost every port along the Jersey coast has a fleet of these fine fishing boats.



The author displays his catch (above).

Landing a fluke on a party boat (opposite page), one of many ways to enjoy fluke fishing.

The best part of
fishing is
catching the fish.
The second best
is eating it.



If you have your own boat, you can fish the inshore ocean waters and the bays, rivers and inlets along the coast. Trailered outboards will find launching ramps available all along the coast and many ports have a number of private day charter fishing boats that may carry up to 10 anglers.

There also is usually good fluke fishing from ocean piers and rock jetties, as well as along bulkheads at the inlets and tidal waterways. In addition, a fair number of fluke are caught by surf anglers right from the beach.

If you fish for fluke by boat, the channels and shallow water bays and flats reasonably close to inlets and river mouths are good spots to try. If there is a strong tide or river current, many anglers prefer to drift fish their baits and lures along the bottom and edges of channels where the fluke lie in wait for their food to come drifting by. If you are a surf, jetty or bulkhead angler, you select a spot, cast out your bait, and wait for the action.

No matter where you fish for fluke, you will need a lead sinker which is just heavy enough to keep your baited hook on or near the bottom. From one to six ounces of sinker will usually do the job, depending on the current or tidal flow and the water depth. The trick is to use just enough weight to hold bottom.

The "Drop Back" Technique, Rods, Reels, Etc.

Another real trick to hooking the fluke is to use the "drop back" technique. A fluke will usually strike a lure or bait and hold it in its mouth a few seconds. If it feels the resistance of a heavy sinker, it may drop the bait or the bait may be pulled out of its mouth. Use a light-weight sinker or a sliding sinker. And the instant you feel the strike or the pick up, drop your rod tip and allow line to freeflow off the reel for a few seconds. Then drop your rod tip and slowly begin to reel in line, feeling for the first sign of weight. Then, with a fast, upward sweep of the rod tip, strike hard to set the hook.

Thousands of fluke are lost every year because the angler pulls the bait away from the fluke or doesn't recognize the feel of the fluke picking up the bait.

The advent of sensitive graphite fishing rods with light tips and heavy butt sections has helped fluke fisherman recognize when the fluke picks up the bait. It's important to learn to recognize a fluke's strike and react instantly.

Rods and reels for fluke take every form. Generally, a medium action six-foot-long graphite spinning rod and reel with 6- to 10-pound monofilament line is ideal in the shallow tidal estuaries. Many anglers prefer a baitcasting rod. For offshore rods and reels, you may want a conventional sturdy six-foot boat rod and conventional reel with 17- to 30-pound line. You will be fishing deeper water and more sinker weight will be required. For fishing bridges, piers, bulkheads, jetties and surf, an eight-foot light surf spinning rod with 17-pound line may be required to cast out into the current and handle the fish against a strong tide or ocean current.

When it comes to selecting bait for fluke, it's best to use fresh or live bait, or lures which approximate what the fluke are feeding on. Fortunately, Mr. or Ms. Flatfish will take just about any type of bait fish that comes along. Some of the best are small killie fish, four-inch-long strips of squid and mackerel, whole spearing, sand eels, strips of sea robin or shark bell, and smelt — just to name a few. A good trick is to observe what other anglers — at least the ones pulling in fish — are using for bait or to ask at a local tackle shop.

As for terminal tackle for fluke, you can purchase factory-made fluke rigs with leaders, sinkers, spinners and the proper size hooks. You can also make up your own fluke rigs with barrel, three-way swivels, leader material and number 2/0 to 3/0 hooks for fluke up to three pounds and hook sizes 4/0 to 5/0 for larger fluke. Remember to rig your bait so it lies flat on

the hook and moves along the bottom or just above it in a natural fashion. If your bait starts to spin or bunch on the hook, replace it.

Finding the “Honey Holes”

If you have an electronic depth finder or fish locator, it's wise to identify some type of “structure” or bottom configurations such as the slope of a channel, a slightly deeper area where the fish may congregate out of the main current, the edge or cut in an underwater sandbar, or other spots where fish may be waiting for a passing meal. Some anglers carry a plastic gallon jug with a line and weight attached. If they catch a couple of fluke in an area, they will drop the marker on it and repeatedly drift or slowly troll in that area. The bay bottom is not paved with fish and the trick is to explore until you find the “honey holes” loaded with fish.

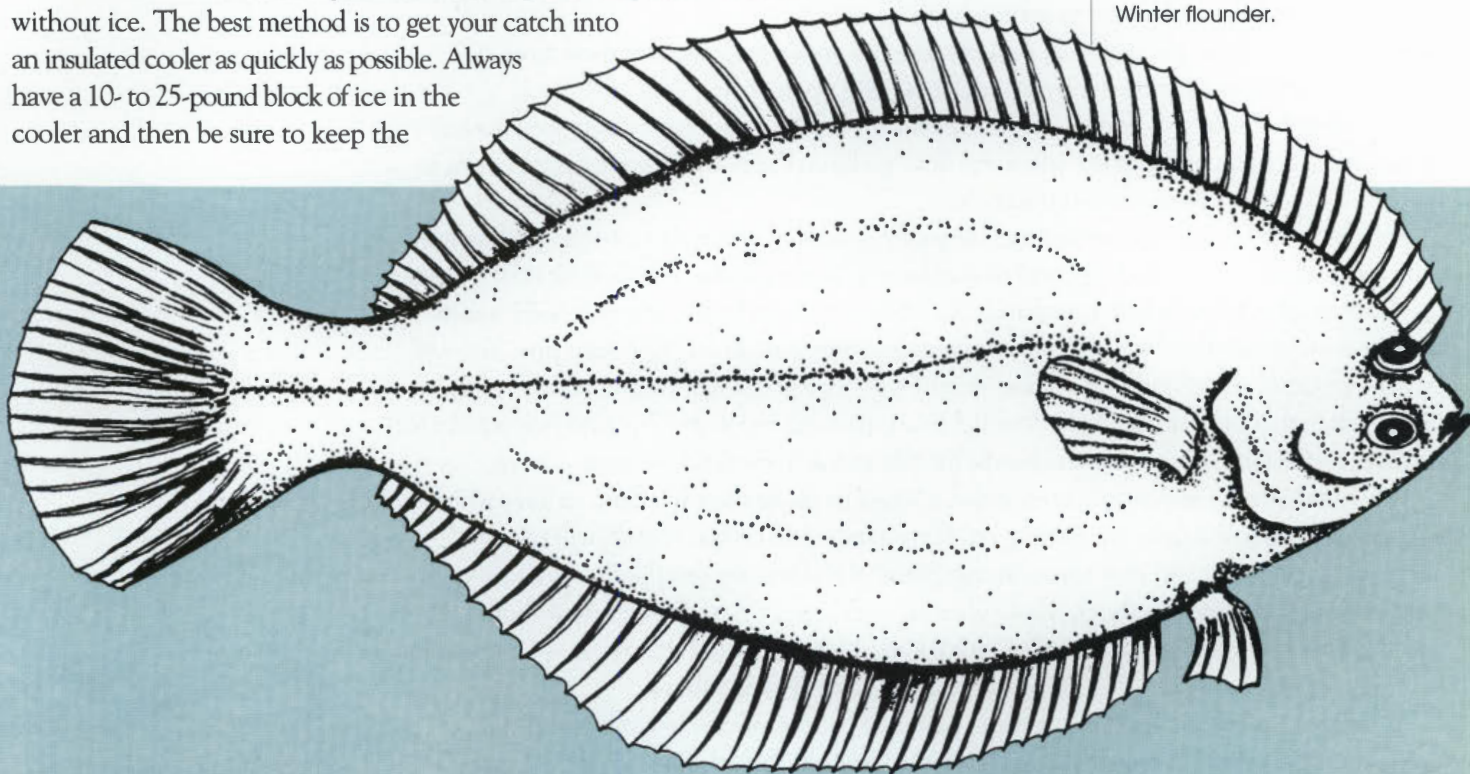
Never forget to carry a long-handle landing net on your fluke trips. Many times your hook will be lightly set in the hard area of a fluke's mouth. As you pull it to the surface, the pressure on the hook will keep it in place. But at the boat's side, as the tension is relaxed, the fish may shake free. (Rest assured, this will always happen with the largest fish of the day.) When you land a fish with a net, always approach it so the fish's head goes into the net first. If it shakes the hook, the fish will swim into the net.

Caring for Your Supper

The best part of fishing is catching the fish. The second best is eating it. The ultimate quality of your catch is directly related to how well you treat the fish from the hook to the table.

Never store fish in a five-gallon bucket, in plastic bags or in a cooler without ice. The best method is to get your catch into an insulated cooler as quickly as possible. Always have a 10- to 25-pound block of ice in the cooler and then be sure to keep the

Winter flounder.



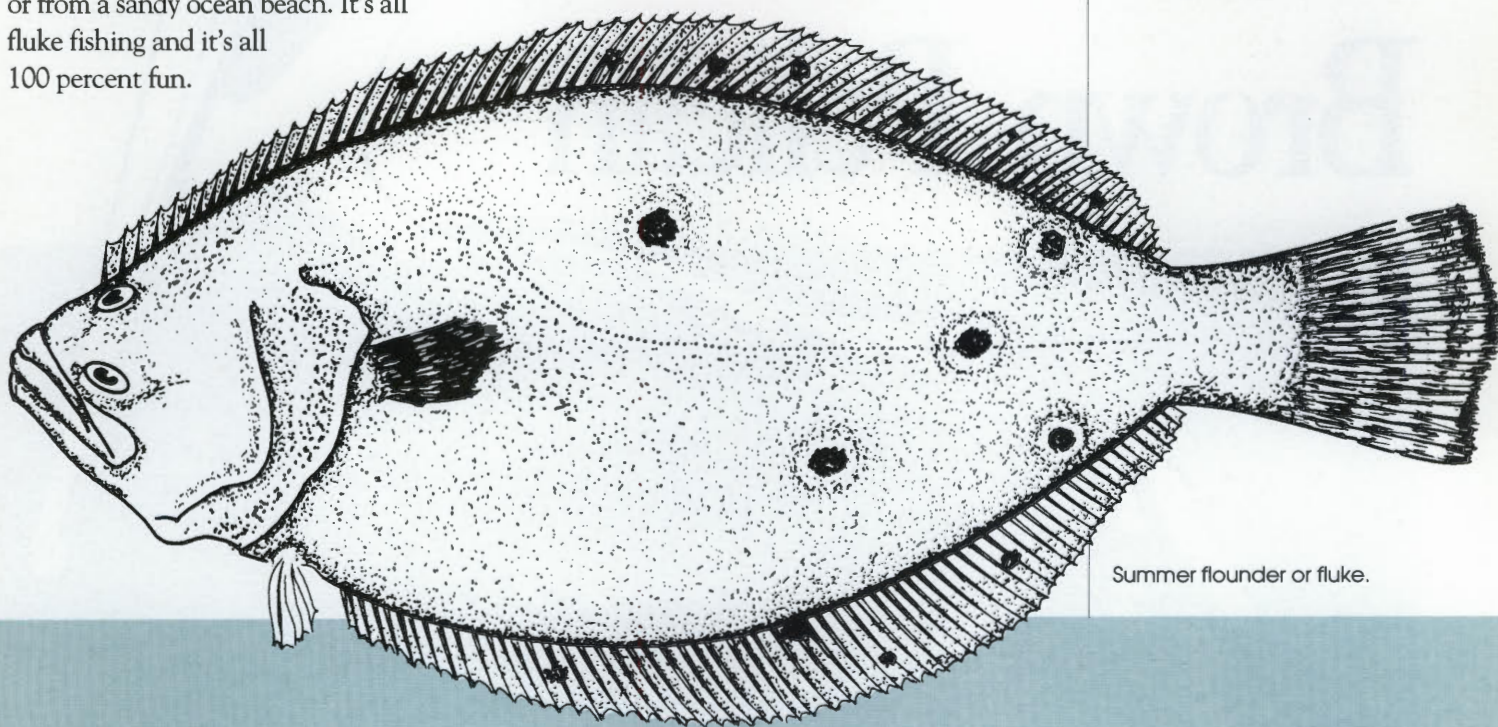
cooler out of the hot sun. Some anglers place their catch on a metal or rope stringer and keep the fish alive overboard in the water. However, sooner or later, you will motor or walk off and risk losing your stringer of fish.

Some people like to clean and scale their fish and cook them whole. Most anglers prefer to fillet both sides of the fluke, being careful to avoid including bones. A sharp filleting knife is the safest and fastest way to fillet any fish.

Fluke freeze well and will last a year or more if you freeze the fillets in a water-filled quart milk carton, so the fillets are protected from freezer burn and drying by the surrounding ice.

Fishing for fluke — as well as cooking them up for dinner — is like life. There are more ways to go about it than I can possibly detail here. You can dabble — or take it seriously. You can teach yourself from one of the hundreds of books on the subject — or learn from the experts on a party boat or a charter. Or you can just relax and fish along a bulkhead, jetty, inlet or from a sandy ocean beach. It's all fluke fishing and it's all 100 percent fun.

Pete McLain is an outdoors writer who lives in Toms River.



Summer flounder or fluke.

Floundering Around with Flatfish, Winter and Summer

The summer flounder or fluke — two names for the same left-handed flatfish, depending where you are (generally “summer flounder” south of Long Beach Island and “fluke” north of Long Beach Island) — has its eyes, a large mouth with well-developed sharp teeth all on its left side. The fish is called

“summer flounder” (when it is called that) because it is the flatfish which visits the bay, river and inshore ocean waters during the late spring, summer and early fall.

The smaller winter flounder, which might be confused with the summer flounder, is right handed and has its eyes and mouth on the

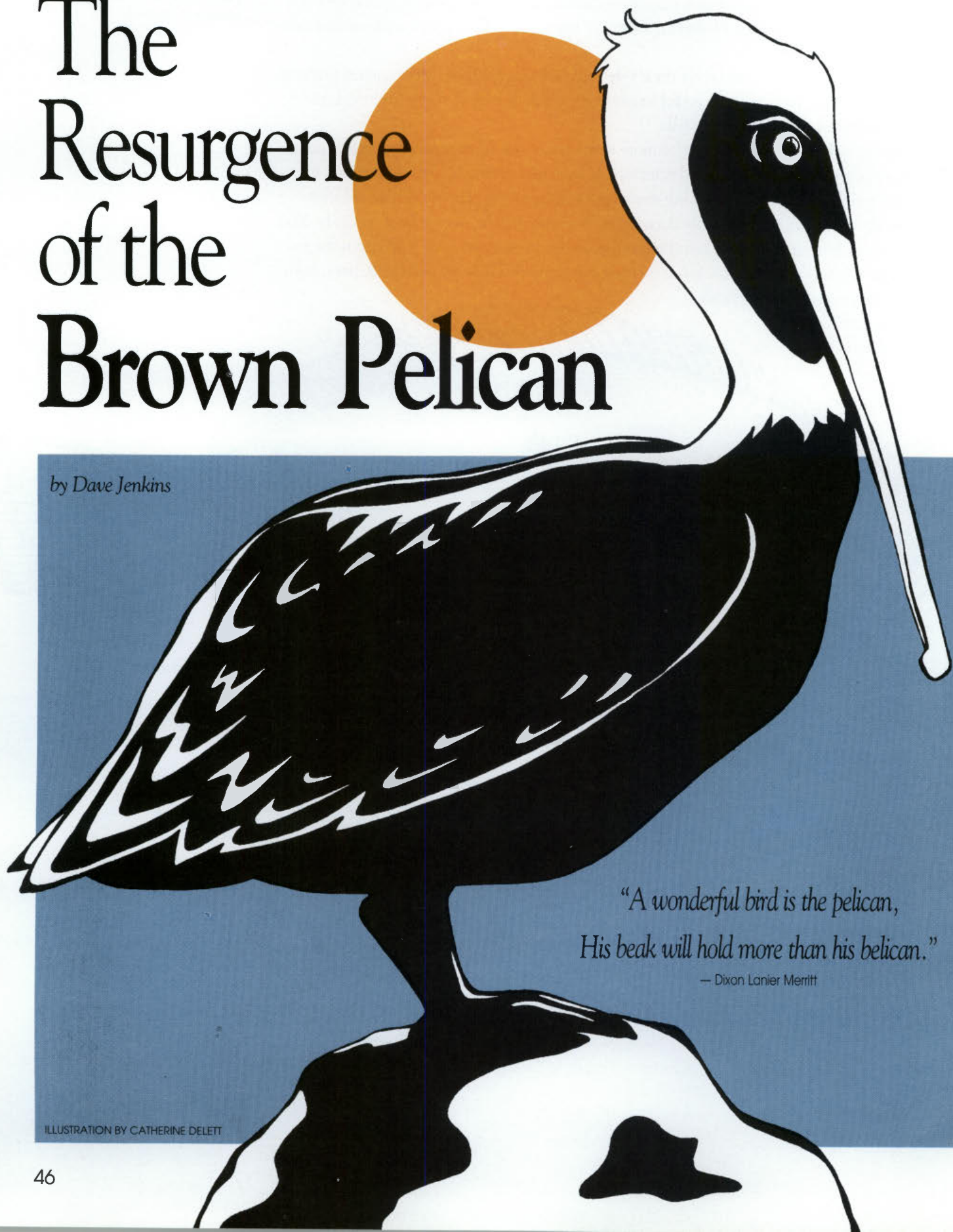
right side. The winter flounder’s mouth is small and rubbery looking and lacks teeth. The winter flounder is present inshore from November to April. The winter flounder is also excellent table fare but is much smaller than fluke, usually weighing less than two pounds.

To complicate things

further, New Jersey also is home to the sundial flatfish, a left-handed flatfish that is occasionally caught by anglers. The sundial flatfish is much thinner and rounder than any other flatfish and is transparent when held up to the sunlight.

The Resurgence of the Brown Pelican

by Dave Jenkins



*"A wonderful bird is the pelican,
His beak will hold more than his belican."*

— Dixon Lanier Merritt

ILLUSTRATION BY CATHERINE DELETT

A brown pelican flying along the Atlantic Coast.

Every week for the last 18 years, Dr. Joanna Burger has made the rounds of Barnegat Bay to survey populations of common terns, least terns, black skimmers and other waterbirds. Last June, Burger, a professor of biology at Rutgers University, found something new.

"As part of my research on waterbirds, I look at all the islands in the bay," she says. "Last summer, I began to see a lot of pelicans." She waited until the birds were clear of a small island in the inlet where she had observed them before she investigated further.

"We found 17 stick nests on the island, 5 to 15 inches off the ground," Burger says. "They were two- to three-feet across and revealed lots of bird droppings." The nests' configurations and the fact that the droppings indicated birds were using them pointed to an inescapable conclusion.

The brown pelican had arrived — or, perhaps more properly, had returned — to New Jersey.

Brown pelicans, famous for headlong, water-crashing dives to fill the large crescent-shaped pouches under their bills with fish, are usually associated with more southerly climes, especially the waterways of Florida. But the birds, which have a wingspan of more than seven feet, weigh up to eight pounds and measure more than four feet from the tip of their bills to their tails, are now visitors to more northerly habitats.

Historical records show that brown pelicans once bred as far north as North Carolina. During the early part of the century, sightings were relatively common in New Jersey. According to Whitmer Stone's *Birds of Old Cape May*, pelican sightings were reported during the summer months at many locations along the New Jersey coast.

Rutgers' Burger points out that the fact pelicans are recognized by local place names, such as Pelican Island, located in Barnegat Bay, also attests to their likely past presence in the Garden State.

However, the number of birds observed over the past four or five years seems unprecedented. In fact, if you are along New Jersey's inland waterways this summer keep a lookout for these large birds. Adults are white or yellow and white around the head and neck, have grayish brown bodies and the tell-tale pouch. Younger pelicans have dark heads and bodies.

There is little question why the pelican population declined along the East Coast and in New Jersey. Reasons for the birds' welcome resurgence and spread northward are not as easy to pinpoint.

Pelicans Take a Dive

In the early 1900s, pelicans were hunted for their plumes. This threat just hinted at a more insidious human intrusion on the birds' existence which came later in the century in the form of pesticides, especially DDT, which were sprayed prodigiously on America's coastal marshes. Absorbed by the birds, DDT and other organochlorine pesticides caused thinning of the birds' eggshells, so the eggs could not support the weight of incubating mothers. By the 1970s, many bird species, including ospreys and bald eagles, were also affected and their populations went into serious decline throughout the nation. The brown pelican's decline was so precipitous



MICHAEL BAYTOFF

that it became one of the first species to receive federal protection. In 1973, Atlantic coast populations were listed by the U.S. Fish and Wildlife Service (USFWS) as "threatened," while populations along the Gulf and Pacific coasts were listed as "endangered."

Ascendant Again — And Moving North

After the banning of DDT and related pesticides in 1972, pelican populations went on an upswing. Biologist Burger points to improved water quality and clarity along the eastern seaboard and increased production of forage fish, such as menhaden, as possible factors in the birds' restoration. By 1985, the increasing populations prompted the USFWS to remove the Atlantic coast pelican population from the threatened species list.

Older pelicans tend to chase away younger pelicans, so the younger birds routinely look for new territory to colonize. Some of them have obviously looked north. By 1987, pelicans had nested in Maryland and Virginia, marking the first time in recent history, and possibly the first time in recorded history, that the species has nested so far north.

David Brinker, a colonial waterbird biologist with the Wildlife Division of Maryland's Department of Natural Resources, reports that six breeding pairs set up housekeeping in 1987 among herons and egrets on an isolated island in Chincoteague Bay near Ocean City, Maryland. "Pelicans don't mind the presence of other colonial waterbirds," Brinker says. "In fact, they may be attracted by the social activity of other species that live in colonies." The population dipped to four nesting pairs in 1990, the result, he says, of an early and cold winter at the birds' southerly wintering grounds. The population quickly rebounded to 23 pairs last summer.

More importantly, according to Brinker, the pairs are producing an average of 1.5 to 2 young per nesting attempt. He notes that this is the

A brown pelican
casts a watchful eye.

most northern documentation of brown pelican breeding on record.

Just slightly further south, Virginia is also home to breeding pelicans. "They're one of the few really big success stories we've had in Virginia," says Karen Terwilliger, head of that state's Department of Game and Inland Fisheries' Nongame and Endangered Species Program. Last summer, she notes, three different colonies of pelicans produced young in Virginia. "We had nearly 200 breeding pairs and another 1,000 or so birds just using our waterways to loaf and forage, but not to breed."

Terwilliger says that more pelicans probably don't breed because they prefer nesting in shrub thickets, deserted beaches or dredge-spoil sites, and there isn't enough of that type of habitat available in Virginia. It also takes brown pelicans a while to get comfortable in a new environment. Typically, they occupy a site for one to several seasons before actively breeding.

Return to Pelican Island

New Jersey wildlife officials are hoping that will be the course of events with the pelicans that have set up housekeeping in Barnegat Bay. This summer or next, they hope the birds will feel enough at home to lay the two to three white eggs — each optimally slightly smaller than a baseball — per nest that will signal the beginning of the reproduction cycle.

The island site discovered by Rutgers biologist Burger seems eminently suitable. Its sandy 12-acres are created from dredge spoils — materials taken from the bottom of an inlet to deepen a channel for shipping. This site and an adjacent larger one, also created from spoils, are already home to black skimmer and least tern colonies, as well as nesting American oystercatchers, herring gulls, great black-backed gulls and a variety of migrating shorebirds. The islands are free of most of the pelicans' normal predators, such as foxes, skunks, rats, fisher crows, great horned owls and raccoons.

But a number of challenges lie ahead.

Because they are large birds that cannot quickly leave and return to their nests when disturbed, pelicans are extremely sensitive to any disturbances. In addition, they normally incubate their eggs for at least four weeks and when born, their young are helpless for an extended period. The young do not "fledge" or leave the nest to fly for up to 9 to 13 weeks. In Barnegat Bay, the chief potential candidates for disturbance are boaters and people who might stop on the islands to dig clams or picnic.

The New Jersey DEPE's Division of Fish, Game and Wildlife (DFGW) is working to take authority for managing the two dredge spoil islands and turn them into a refuge. The DFGW has already posted a protective boundary around the islands and is patrolling the area during the pelican nesting season. The division is also wary about identifying the pelicans' exact location in order to minimize human attention that might jeopardize the birds' habitat.

Larry Niles, head of the New Jersey DFGW's Endangered and Nongame Species Program, is hopeful that humans and pelicans can once again coexist and that pelicans can prosper — and produce young — in New Jersey waters.



MICHAEL BAYTOFF

"If we can limit human disturbance," Niles says, "the pelicans' success will in large part depend on the weather — which we can't control. Warmer weather over the past few years is probably a factor in the pelicans being here in the first place," he says. "But the nesting and fledgling period is so long that the birds need warm weather for the young to survive. A frost in the early fall that could affect the young birds' beaks, for example, would put them at a real disadvantage for survival," according to Niles.

Ultimately, the length and consistency of the warm season — that can stretch from April to September in New Jersey — will determine how far north the brown pelicans will nest and reproduce.

Maryland biologist Brinker is closely watching developments in New Jersey. "Right now, we've got the northernmost colony of breeding pelicans," he says, "but I think the record's going to fall to New Jersey."

As a senior zoologist with the Division of Fish, Game and Wildlife's Endangered and Nongame Species Program, Dave Jenkins is in charge of New Jersey's efforts to protect and nurture the brown pelican.

Wildlife Management Challenges Posed by Pelicans

- ☐ Very sensitive to human disturbance
- ☐ Very long nesting period (takes four weeks or longer for eggs to hatch)
- ☐ Young are helpless (born without feathers, can barely fly at 9- to 13-weeks old)
- ☐ Nests are on ground — easily prone to disturbance by humans or predators

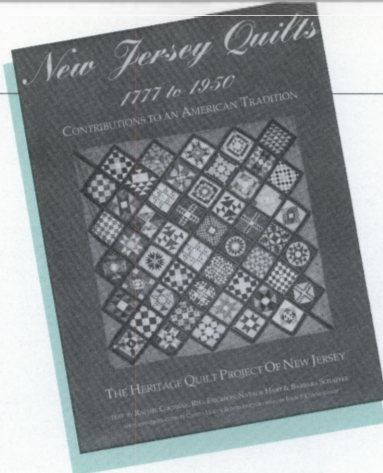
Bookshelf

The **DEPE Literature Guide** is a listing of annual reports, newsletters and other publications issued by the New Jersey State Department of Environmental Protection and Energy. The guide includes information on how to order publications and other resources from the department. Available free from the DEPE Public Access Center, CN 402, 401 East State Street, Trenton, NJ 08625-0402, or by calling (609) 777-DEPE.

The **Environmental Manual for Municipal Officials**, written and published by the Association of New Jersey Environmental Commissions and the New Jersey Department of Environmental Protection and Energy, provides comprehensive information on a broad array of environmental issues and describes the role of government agencies in addressing them. Written in a "user friendly" format, the manual is designed for those who may not have a background in environmental protection. Available free from the DEPE's Office of Environmental Services at (609) 984-0828.

Gardening on the Eastern Seashore, by R. Marilyn Schmidt, published by the Barnegat Light Press, is a coastal gardener's guide for handling the problems of sand, salt and wind, and an aid in selecting plants that will thrive under seashore conditions. The 202-page spiral-bound reference includes landscaping and maintenance information, a complete plant directory and illustrations. Cost is \$12.95 (paperback). To order, send a check for \$12.95 plus \$2 for postage and handling to Barnegat Light Press, P.O. Box 305, 26 W. Third Street, Barnegat Light, N.J. 08006.

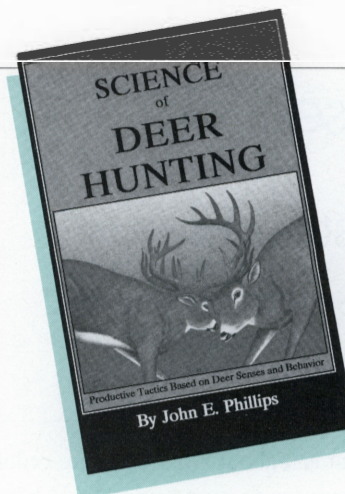
A Guide to New Jersey's Lighthouses, by R. Marilyn Schmidt, published by the Pine Barrens Press, is an illustrated sightseer's guide to the nine New Jersey lighthouses. The book features historical information, directions for visitors and hours of operation in a compact, 22-page design. Cost is \$4.95. To order, send a check for \$4.95 plus \$2 for postage and handling to Pine Barrens Press, P.O. Box 305, 26 W. Third Street, Barnegat Light, NJ 08006.



The New Jersey Highlands: Treasures at Risk, by Alison E. Mitchell, published by the New Jersey Conservation Foundation, outlines the full spectrum of endangered resources in the thousand-square-mile highlands region, from rare and precious wilderness to a threatened wealth of historic and archaeological assets. The 152-page book includes analysis of population projections and future growth patterns. Cost is \$10, plus \$2.50 for postage & handling. Available from NJCF, 300 Mendham Road, Morristown, NJ 07960. For more information call (201) 539-7540.

New Jersey Lake Survey Fishing Maps Guide '92, compiled and published by Steve Perrone, contains 112 maps of surveyed lakes illustrating contours, depths, bottom characteristics, shorelines and lake vegetation. A total of 62 "Fishing Tips" and "Bass'n Notes," written by sportsmen and outdoor writers, supply anglers with lure and technique information characteristic to specific bodies of water. Cost is \$8.95. To order, add \$1.55 for postage and handling and send a check to New Jersey Sportsmen's Guides, P.O. Box 100, Somerdale, NJ 08083.

New Jersey Quilts 1777 to 1950, Contributions to an American Tradition, by Rachel Cochran, Rita Erickson, Natalie Hart and Barbara Schaffer, published by the American Quilter's Society, presents a collection of color photographs and essays surveying the range of contributions made by New Jersey to the ever-developing tradition of quilting in America. More than 180 quilts are represented. (See related article on page 20.) Cost is \$29.95. To or-



der, send a check for \$29.95 plus \$1 for postage and handling to the Heritage Quilt Project of New Jersey, P.O. Box 341, Livingston, NJ 07039.

1993 Conservation Directory, published annually by the National Wildlife Foundation, lists the organizations, agencies and officials concerned with natural resource use and management. Organized in an easy to understand format with publication, name and subject indexes. Cost is \$18 plus \$4.85 for postage and handling. Available by calling NWF at 1-800-432-6564. Ask for item #79560.

The Science of Deer Hunting, by outdoor writer and photographer John Phillips, published by Night Hawk Publications, is a pictorial volume of successful deer hunting methods from one of the field's leading researchers. Cost is \$11.95. Available by sending a check for \$11.95 to Night Hawk Publications, Box 375, Fairfield, AL 35064 or by calling 1-800-627-4295.

Urban Turkey — Hunting Spring Gobblers Close to Civilization, by Rich Faler, published by Beaver Pond Publishing, offers practical systems of turkey hunting for various urban habitats. This 96-page how-to guide includes the techniques and special methods necessary to bag gobblers close to home. Cost is \$10. To order, add 60 cents for sales tax and send a check for \$10.60 to Beaver Pond Publishing, P.O. Box 224, Greenville, PA 16125.

Restoring Jersey's Atlantic White-cedar

What is it about Atlantic white-cedar that arouses such strong emotions? Opinions about managing the species have ranged from leaving it alone entirely to converting its habitats to other uses entirely. At times, people's responses to the potential loss of white-cedar trees have been violent. Proposed harvests have been "spiked" — with large nails driven into trees to inflict harm to sawmills and their operators. On the other hand, areas where research to reestablish the trees is taking place have been vandalized, as if for some devious purpose. To understand these divergent feelings and the current research efforts to restore this disappearing resource, it is necessary to examine the characteristics and history of the tree itself.

The Atlantic white-cedar (*Chamaecyparis thyoides*) occurs along a coastal belt 50 to 130 miles wide, from southern Maine to northern Florida and westward to Mississippi. In New Jersey it is found mostly in the state's southern counties.

White-cedar wood is very light, soft, even-grained, fine-textured and wonderfully fragrant. Although comparatively weak, the heart wood is extremely durable and resistant to moisture, decay and insects. The wood is used for poles and posts, siding, shakes, shingles, lath, boat building, pails and tanks, logs for cabins, canoes and duck decoys. In the last century, most of the houses in Philadelphia and Wilmington were built with cedar shingles from southern New Jersey's swamps. In 1911, more than 669,000 board feet and more than 20 million shingles were cut in New Jersey. Today, cedar continues to be an important timber resource in southern New Jersey with a reported harvest in 1982 of 250,000 board feet.

As a result of the wood's many uses, cedar acreage started declining steadily before the turn of the century. By 1974, there were



White-cedar is so durable and valuable, in the 1920s, logs like these were mined from peat bogs and put to a wide variety of uses.

fewer than 50,000 acres of white-cedar in New Jersey. Recent aerial photo interpretation by the Bureau of Forest Management shows that there are currently 41,690 acres of white-cedar. Of these, 26,136 acres are composed of more than half cedar.

Cedar habitats have generally been lost in two ways. First, the trees' habitats have been taken over for other uses. This usually results in permanent loss. In the 1960s and early '70s, for example, many coastal areas where the trees thrived were converted to housing developments on lagoons or to other uses, such as cranberry bogs. In addition, for some coastal cedar, there may have been a reduction in suitable sites as a result of the long-term rise in sea level.

The second way cedar is lost is through the partial or total conversion of a habitat site to hardwoods. These areas have the potential of being converted back to cedar.

The conditions under which white-cedar grows make it particularly susceptible to crowding out by hardwoods. The cedar is a

pioneer species found on open peat soils underlain by sand. Cedar seedlings require strong sunlight and are intolerant of shade. Stands develop only after an area has been opened up by severe disturbance, such as fire, wind storm, ice damage, timber harvesting, or cranberry bog abandonment. In the past, for instance, beaver colonies that constructed and abandoned dams created conditions ideal for cedar to prosper.

As a cedar stand develops, it maintains a closed canopy at tree-top level and an open understory lower down. As it matures, openings occur in the canopy and a hardwood understory develops. Over time, these hardwoods will flourish and supplant the cedar. There are extensive areas of hardwood swamps that were once cedar — and can again be cedar in the future. However, research has shown that if Atlantic white-cedar is left alone, it is replaced over time by hardwoods. It requires natural disturbance — or human intervention — to continue its existence.

People's attachment to the trees may be intensified by the fact that several endangered and rare wildlife species are associated with white-cedar swamps, including the Pine Barrens tree frog, the bog turtle, the four-toed salamander and the timber rattlesnake. In addition, a number of interesting and beautiful plants, including several insectivorous species and the rare curly grass fern, several species of orchids, milkworts, sedge and cotton grasses are often found in association with cedar. Like the cedar, most of these species are also found in association with disturbed areas. Several of these plants require disturbance that creates relatively open-bog conditions, such as past mining of bog-ore, deep-burning fires, or the removal of shrub stems and roots (also known as "turf") to stabilize slopes and road cuts and fills. Plants favored by such conditions include pitcher plants, sundews and curly-grass fern. Many of the native orchids occur primarily in openings created by past disturbances, such as the types mentioned above, including logging and the abandonment of logging roads.

A more purposive form of disturbance is human intervention — on behalf of restoring the white-cedar. In 1989, Stockton State College requested and received a small grant for a pilot project in cedar restoration from the Bureau of Forest Management in the New Jersey Department of Environmental Protection and Energy's Division of Parks and Forestry. This pilot project established study sites and identified potential techniques for a future large scale white-cedar regeneration project. Since then, Stockton has expanded its leadership of the project and Rutgers

In 1911, more than 20 million cedar shingles were cut in New Jersey



GEORGE PIERSON

Against a stand of established white-cedar, Prof. George Zimmermann and research technician Lisa Spaziano from Stockton State College examine the progress of new growth.

University's, Cook College, as well as private companies such as Land Dimensions, are contributing research to the project. Funding to continue the project for a five-year period is being provided by the USDA Forest Service and the DEPE's Bureau of Forest Management and Division of Science and Research. The Bureau of Forest Management is coordinating these projects and will implement a plan for cedar restoration based on the findings.

The project's two objectives are to explore ways to restore white-cedar under different conditions and to provide updated and new techniques that may be used to manage the species. The situations being examined include a five-year-old cedar clearcut (or cutting of an entire stand of trees) that failed to regenerate, recent clearcuts, and the conversion of hardwood stands to cedar. Techniques being used include the release of cedar seed dormant in the soil, seed collected at other locations and sown on site, and the planting of

seedlings and rooted cuttings.

One of the factors inhibiting cedar regrowth with which the project is dealing concerns the threat to the species from deer. Deer browsing causes severe damage to cedar seedlings and is so extensive in many areas that new stands cannot form. To control deer, electric fences, chemical deer repellents, a ten-foot-tall metal woven fence and an alternate food-patch (designed to divert deer from browsing on the cedar), are being used. These techniques are employed separately or in tandem in carefully designed experiments. Both batteries and solar panels are being examined for their ability to provide power for the electric fences.

A federally approved herbicide that affects only those plants that compete with cedar was used to control vegetation at several study areas. At Penn Swamp in Wharton State Forest, an experiment was set up in and outside the woven deer fence to study the effects of different levels of logging slash — i.e., the residue branches,

twigs and stems of trees discarded when a site is harvested by logging — on cedar growth. There are conflicting reports by scientists as to the effects of this slash on the establishment, growth and survival of cedar. Initial data indicate that while logging slash may inhibit the germination and early development of seedlings, it may enhance the long-term survival of the cedar.

A number of Stockton scientists and their students have, on a volunteer basis, studied other important components of the ecosystem affecting cedar. Some of these projects involve an analysis of the water characteristics — or hydrology — at the sites, aerial photo interpretation providing land-use and disturbance history, three dimensional modeling of the peat layers, and numerous seed germination experiments. The ability of diverse groups of scientists to tackle

ecosystem problems in a team atmosphere has been one of the project's strong points.

Tremendous amounts of information have been gathered in the first few years. Some results to date are obvious. The severe effects of deer on cedar regrowth have been very dramatic and can probably explain many of the failures to regenerate cedar in New Jersey in recent times. At Wharton State Forest's Penn Swamp, for instance, there are no cedar seedlings over two-feet tall outside the fence that has been constructed to keep out deer. Inside the fence, on the other hand, there are thousands of seedlings two-feet tall or taller per acre. This is in spite of vandals who, in the last two years, have twice destroyed hundreds of feet of the fence. Only diligence by Stockton State, the Bureau of Forest Management, park rangers and other state of-

ficials have saved the cedar on the swamp.

The future actions of all people — professionals, private citizens and government officials — toward the cedar should be based on facts not fiction. As more data are collected and analyzed, they will have a profound influence on how cedar is managed. As populations increase, the pressures on our resources demand that we use and manage them wisely, if all living things are to survive. In the case of the magnificent Atlantic white-cedar, survival will also depend on our continued ability to match the strong emotions the species arouses with sound science.

by George Pierson, chief of the Division of Parks and Forestry's Bureau of Forest Management, and George Zimmermann, associate professor of environmental studies at Stockton State College in Pomona



Mining for cedar in the 1920s, Cape May County

A Buried Treasure

Atlantic white-cedar forests were once widely distributed in New Jersey with major stands in the Pine Barrens, the Hackensack meadowlands and at Sandy Hook. The Sandy Hook peninsula was completely stripped of white-cedar for ship building during colonial times. Today, only sun-bleached stumps remain.

As early as 1750, Swedish botanist Peter Kalm reported seeing heavy cutting operations in dense stands of cedar along the Egg Harbor River in Atlantic

County. He believed that if cedar were not available for roof shingles, most of the houses in New Jersey and Philadelphia would have had to have been rebuilt to support the extra weight of shingles made from other materials.

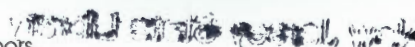
Although as early as 1759, Charles Read sponsored a law to prevent the waste of this valuable timber species, the original cedar forests in Cape May county were largely gone by 1859. At that time, only a few trees more than 100-years-old remained. In the 17th and 18th centuries, many cedar swamps were clear cut, flooded and converted into cranberry bogs. In southern New Jersey, many swamps have probably been clear cut as often as six times since the Colonial period.

In Colonial times, there was a vast stand of white-cedar covering about 30,000 acres on the Hackensack meadows. The thick woods provided numerous hideouts for highwaymen who robbed travelers on the old plank roads, then the major thoroughfares into New Jersey. Some of Captain William Kidd's pirate band reportedly escaped into the dense white-cedar forest near Kearny. In

1797, authorities staged a massive raid to rid the area of pirates preying on vessels in Newark Bay and on the coaches and wagons on the roads. In a fantastic battle, a fire set by volunteers swept through the forest and drove the pirates from their lairs. The fire raged for three days, reaching as far north as Little Ferry. Today, partially submerged trunks and stumps are still visible at low tide in the Saw Mill Creek Wildlife Management Area of DeKorte Park in Kearny.

In 1947, many cedar logs were removed from excavations for highway construction at Secaucus. These were found at a depth of about 10 feet below the surface. The largest specimen was three feet in diameter. Further south, during construction of the Garden State Parkway in the vicinity of the Mullica River, cedar logs were found at levels ranging from 17 to 40 feet below the surface of the marshes.

In the 19th century and again in the 1930s the mining of cedar logs buried under peat deposits flourished in southern New Jersey. These logs were found to be relatively sound and were split into rails and shingles.



Canned Casino a Win-Win?

Recycling and games of chance? An unlikely combination, you say. Anyone who's the least bit environment-savvy knows that recycling is good. But for those of the "what's in it for me?" mindset, one company's gambling that a little incentive may be in order.

The brainchild of a Swiss company, the new "Lucky Can" device is a vending machine crossed with a slot machine. Actually termed a "reverse" vending machine, Lucky Can goes into action when you feed it aluminum or steel beverage cans. After a spinning of wheels Atlantic-City-slot-machine-style, it spits out a ticket informing the recycler what, if anything, he or she has won.

Advertisers sponsor the winnings, by having their product's name or logo imprinted on one of the 16 slots on each of

five wheels. If three, four or five center-line symbols match after a spin triggered by the deposit of a can, a "cents-off" or "free" coupon is generated by the machine.

Lucky Can machines can be found in Austria, England, France, Greece, Italy, Japan, New Zealand, South Africa, Spain, Switzerland and the U.S., where A&P is piloting the concept in its Park Ridge, New Jersey store. The machines, which are being test-marketed in 10 other countries, accept, crush and sort the cans at the rate of 600 per hour. Since each can's volume is reduced by 95 percent, Lucky Can is able to accept more than 2,000 cans before it needs to be emptied.

Though diehard environmentalists certainly don't need the added encouragement of prizes to recycle cans, the Lucky Can people see their machine as a win-win concept. Among its many benefits, the company thinks it will motivate consumers to recycle by supplying the oppor-



A Lucky Can "reverse" vending machine.

tunity to win instant prizes, provide the host store with a competitive edge and promote products that will be perceived as pro-environment. Who knows, perhaps as the machines spread, we'll soon see chapters of "Lucky Can Anonymous" springing up.

Follow-Up

Beluga Christened

Staff members from the Marine Mammal Stranding Center, accompanied by casino executives, recently christened the center's new 25-foot Parker Sport Cabin Boat, the *Beluga*. The boat was donated by the casino industry to further assist the recovery of injured marine mammals and sea turtles off the New Jersey coast. In addition, the vessel was designed with a special watch tower to photograph and videotape the increasing number of marine mammals sighted off the New Jersey coastline every summer. In 1992, more than 2,500 sightings were called in to the center as part of the New Jersey dolphin/whale census program.

If you should see a live dolphin, whale, seal or sea turtle, you can participate in the census program by calling the Stranding Center at 609-266-0538 to report it within 24 hours of the sighting.



Bob Schoelkopf of the Marine Mammal Stranding Center watches as casino executives christen the *Beluga*.

Round up by Denise Mikics
of the DEPE's Office
of Communications.

Anglers and Turkey Hunters Honored

The 1993 Outstanding Garden State Gobbler program awards and the 10th annual Skillful Angler awards were recently presented at the DEPE Division of Fish, Game and Wildlife's Outdoor Writers Workshop dinner. Recognized for their saltwater catches were:

Winner	Hometown	Catch	Weight
Richard Anderson	Flemington	Striped bass	59 lb, 8 oz
Dale Beisel	Barnegat	Bluefish	22 lb, 4 oz
Dave Christian	Beach Haven Park	Mako	412 lb
Tony Cunha	Newark	Sea bass	8 lb, 2 oz
Judy Franckle	Millville	Black drum	78 lb
Tony Horling	South Amboy	Cod	42 lb
Stanley Klimek	Sayreville	Weakfish	13 lb, 4 oz
Gene Makris	Bayonne	Fluke	13 lb, 5 oz
Scott McKay	Primrose, PA	Tautog	14 lb, 9 oz
Paul Minning Jr.	Mystic Island	Kingfish	2 lb, 2 oz*
Robert Zajkowski	Parlin	Winter flounder	2 lb, 11 oz

* New state record

Winning freshwater anglers were:

Winner	Hometown	Catch	Weight
Jim Dondzila	Milltown	Rainbow trout	6 lb, 8 oz
Albert Hill	Orange	Channel catfish	23 lb
Kenneth Hubert	Roseland	Brook trout	4 lb, 6 oz
Herbie Ierardi	Paramus	Chain pickerel	7 lb, 3 oz
Dan Kwasnik	Flanders	Smallmouth bass	6 lb
David Lydecker	Prospect Park	Lake trout	21 lb, 11.5 oz
Ray Puleo	Clifton	Brown trout	14 lb, 1 oz
John Punola	Madison	American shad	7 lb, 10 oz
Ron Russomanno	Barnegat	Largemouth bass	8 lb, 3.2 oz
Tyrone Smull	Phillipsburg	Walleye	8 lb
Gary Trevena	Budd Lake	Northern pike	21 lb
Edward Yurecko	Bayonne	Muskellunge	32 lb, 8 oz

Honored under the 1993 Outstanding Garden State Gobbler program, which recognizes both successful turkey hunters and the quality of the state's wild turkey management efforts, were:

Non-typical Wild Turkey

Winner:	Parker Space
County taken:	Sussex
Beards:	10 10/16" and 9 9/16"
Left spur:	1 3/16"
Right spur:	1 4/16"
Weight	21 lb, 9.6 oz
Score:	86.35

Typical Wild Turkey

Winner:	Thomas Peltack
County taken:	Sussex
Beard:	11 2/16"
Left spur:	1 6/16"
Right spur:	1 8/16"
Weight	20 lb, 12.8 oz
Score:	71.80

Turkeys are scored using the National Wild Turkey Federation's standard measuring system, which adds the bird's weight to double the beard length and ten times the combined spur length. A wild turkey which scores over 50 points is considered an outstanding bird.

Other hunters who bagged outstanding gobblers were William Kinney, whose non-typical 19-pounder scored 69.5, and Bob Eisele (with a 26-pound, 14-ounce bird), Robert Staudt Jr., and Ken Kruppo (both of whom brought down turkeys weighing 21 pounds, 8 ounces. The latter three bagged typical birds and scored 71.375, an even 60 and 58.75, respectively.

For more information about either the Skillful Angler or the Outstanding Garden State Gobbler program, contact the Division of Fish, Game and Wildlife's Information and Education Unit, CN 400, Trenton NJ 08625-0400. Or call, (609) 292-9450.

The '93 Shore Summit Continues Focus on Coastal Concerns

As high beach season rolls into full tilt, we should take a moment to reflect back on a process in New Jersey that is keeping the shore in the spotlight year-round. This past winter, representatives from the public and private sectors met in a second annual Shore Summit to share their ongoing concerns for protecting the New Jersey coast. In fact, the period between this year's summit and the first summit in 1992 saw the enactment of a law providing \$15 million a year as a stable source of funding for shore protection efforts. While credit for the

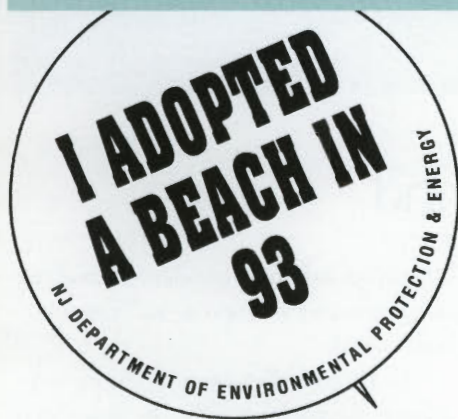
law cannot be attributed solely to the first summit, many people agree that the event added momentum to realizing this new funding source.

The second annual Shore Summit — with a broad cross-section of New Jerseyans interested in the shore in attendance — continued to build on this momentum. Work groups that convened during the first summit to concentrate on six areas (Tourism and Economic Development, Land Use Planning/Regulation, Shore Protection Strategies, Coastal Water Quality Issues, Shore Protection Funding, Marine and Navigational Issues) met again to refocus their concerns for 1993 and beyond.

Many of these concerns were colored by the devastating northeaster of December 11, 1992, that wreaked havoc at the shore. The second summit featured lengthy

discussions among government officials, environmentalists, business people, shore protection experts and members of the public on the need to reform the Coastal Area Facility Review Act (CAFRA) that was originally intended to control development along the coastline. Discussions also focused on how to shape shore protection efforts and respond to storms when they occur.

With the overwhelming approval of the municipal officials present, Governor Florio announced that the state would pay the local share of storm relief costs from the December storm not covered by federal funds. The Governor also signed legislation authorizing a bi-state committee to develop strategies to protect and restore shared New York-New Jersey waters.



Why Not Adopt a Beach?

Do you love the Jersey Shore? Now, you have a chance to give something back. You can volunteer to join the upcoming fall cleanup under New Jersey's new Adopt A Beach program.

This spring, 39 groups rolled up their collective sleeves to participate in the first statewide Adopt A Beach cleanups. The program was created by legislation enacted earlier this year to encourage groups, organizations, businesses and individual volun-

teers to "adopt" and clean portions of the state's shorefront of debris, floatable waste and refuse at least three times a year. As DEPE Commissioner Weiner notes in his editorial, keeping beaches free of debris is not just an issue of aesthetics. Litter imperils water quality and can harm fish and other marine life.

Under the Adopt A Beach law, two of the three yearly cleanups, one each in the spring and fall, are held on days designated by the DEPE for a coastwide cleanup. Volunteers are also encouraged to visit their adopted beaches during the year to undertake additional cleanups as necessary. The program builds on the efforts of the environmental group Clean Ocean Action, which has held successful beach cleanup projects for a number of years.

Participants use data cards to record the amounts and types of debris collected during cleanups. All debris collected is sorted into two categories: recyclables (glass, aluminum, paper,

wood, plastic) and nonrecyclables (all other materials). Adopt A Beach efforts are coordinated with local governments and agencies responsible for disposal or recycling of debris.

As the program develops, it will coordinate efforts with Operation Clean Shores, the cooperative program between the DEPE and the state Department of Corrections in which prisoners help maintain beaches. The Adopt A Beach law also calls for the state Department of Education eventually to develop and distribute information on the effects of pollutants in the marine environment.

At the end of each year, DEPE will issue certificates recognizing participants who honored their year-long commitment to the Adopt A Beach program. Groups may renew or adopt a beach at the beginning of each year. For additional information, to adopt a beach or to find an Adopt A Beach group in your area, call 609-29-BEACH.



DAVID H. WELLS

A Mountain Oasis for the Work of the Hand

Nestled in the Kittatinny Mountains of northwestern New Jersey is a cultural oasis where traditional and contemporary crafts flourish. Peters Valley Craft Center, located in Sussex County in a corner of the sprawling and scenic Delaware Water Gap National Recreation Area, offers an education in what is sometimes called “the work of the hand.”

Located at a crossroads halfway between nowhere and the Delaware River, Peters Valley is sometimes stumbled upon by hikers, cyclists and folks out for a Sunday drive in the country. “A lot of times there’s an element of discovery that’s pretty neat,” says Sandra Ward, assistant director of the Peters Valley Craft Center, adding “I’d like to think that culture’s alive in these hills.”

Culture and discovery are central to

the craft center’s mission of preserving and passing on traditional skills in crafts including ceramics, woodworking, weaving, basketry, quilting and jewelry making.

The heart of Peters Valley is a residency and teaching program for craftspeople who live and work year-round in the buildings that once made up the hamlet of Bevans. In summer classes for pre-registered students, the resident instructors pass along their skills to preserve a means of expression too often overlooked in this era of mass production.

According to Ward, the craft center’s remote location helps the creative process of the craftspeople who work and learn there. Living in the tranquil wooded setting far from the chaos of urban life helps craftspeople focus on their work, she says.

“It enables someone to collect themselves and it provides an inspiration. They just walk outside.”

But Peters Valley exists to inspire and educate the public as well. One way this is accomplished is through a two-day festival held every summer in a hillside meadow.

The 23rd annual Peters Valley Craft Fair will take place July 24 and 25, offering visitors food, music and a chance to see and buy original crafts and talk with the craftspeople who produced them.

The 150 craftspeople selected to participate will be selling traditional and contemporary work, functional and nonfunctional, whether it be in clay, wood, fiber, glass, metal or leather.

Some 13,000 people attended last year’s fair. At this year’s event, jewelry,

leatherwork and other wearable crafts will mingle with sculptural pieces in the fair's complex of tents and booths. Traditional crafts such as handmade brooms and candles are presented side by side with wooden chairs, baskets and musical instruments.

Meanwhile, hourly demonstrations are conducted by the resident craftspeople. Culinary choices range from hot dogs and hamburgers to ethnic fare and vegetarian specialties. Live acoustic, folk and bluegrass music add to the fair's easygoing ambiance.

"All of this has the backdrop of the beautiful Kittatinny Mountains," Ward says.

Peters Valley is worth a trip even when it isn't fair time. Founded in 1970 to promote and encourage excellence in contemporary crafts, the nonprofit Peters organization occupies structures purchased by the federal government for the controversial and now-defunct Tocks Island Dam project on the Delaware River. The area was later turned over to the National Park Service, which allows Peters Valley Craft Center to operate there.

Named for Peter Van Ness, an early settler, Peters Valley later became known as Bevens after a long line of area land-owners. The village flourished in the first half of the 19th century, but buildings used today as studios, classrooms, offices, a store/gallery and homes for the six artists in residence date from as early as circa 1750 to the 1950s.

During the summer, workshops are offered in six broad course areas: blacksmithing, ceramics, woodworking, photography, fibers (including weaving, basketry, paperworking and quilting) and fine metals (which includes jewelry making). Anyone can take classes at the craft center, but certain workshops require a specific skill level.

Although courses take place throughout the week, the Peters Valley studios are open to the public only from 2 p.m. to 5 p.m., June 1 to August 31. Self-guided walking tours maps are available at the craft store so visitors can observe activities in the studios. Resident artists or studio assistants usually are available to answer questions.

Weekend visitors to Peters Valley

might observe a lecture in progress or students "could all be at their workbenches going through their paces," Ward says. A resident craftsperson might be teaching or creating in the studio, and visitors get "an eyeful" of the creative process at work, according to Ward.

Ward calls the center's store and gallery, which are open seven days a week, year-round, the main interpretive point for Peters Valley. Visitors there are "immersed immediately into the world of the American crafts," she says. The store features work from resident artists but is not limited to Peters Valley craftspeople.

A visit to Peters Valley or to the craft fair is particularly well-timed this summer, which marks the Year of the American Craft. This national celebration is "an attempt to pay tribute to the creative work of the hand," says Jeanie Eberhardt, executive director of Peters Valley.

Thousands of crafts events — museums and gallery exhibitions, symposiums and craft shows — will be taking place throughout the United States and Canada to highlight the history of American craftspeople and their work.

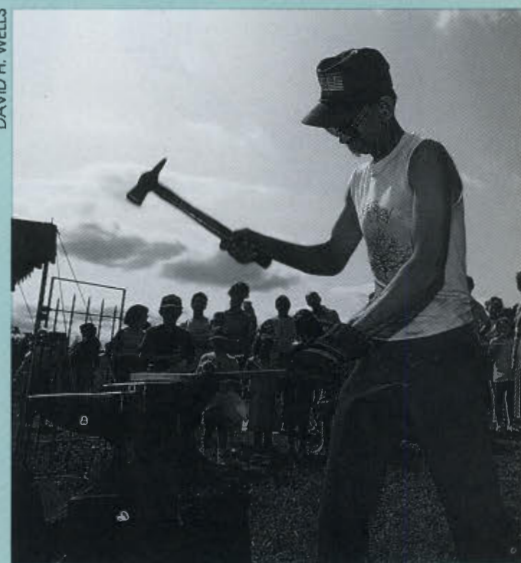
New Jersey plans to celebrate the Year of the American Craft in October. Peters Valley will hold an open house at its studios on October 16, while Eberhardt says the New Jersey State Council on the Arts, in conjunction with the Geraldine R. Dodge Foundation, is producing a calendar of events to take place that month.

The annual Peters Valley Crafts Fair on July 24 and 25 runs from 10 a.m. to 6 p.m. Saturday and 10 a.m. to 5 p.m. Sunday, rain or shine. Admission is \$5. Children under 12 are free.

To get to Peters Valley from Interstate Route 80 west, take Exit 34B to New Jersey Route 15 north to U.S. Route 206 north. Take a left onto Sussex County Route 560 west through the blinking light in the center of Layton onto County Route 640 for approximately one mile. For more information, call the Peters Valley Craft Center at (201) 948-5200.

by Art Charlton, a reporter who covers Warren County for The Star-Ledger

DAVID H. WELLS



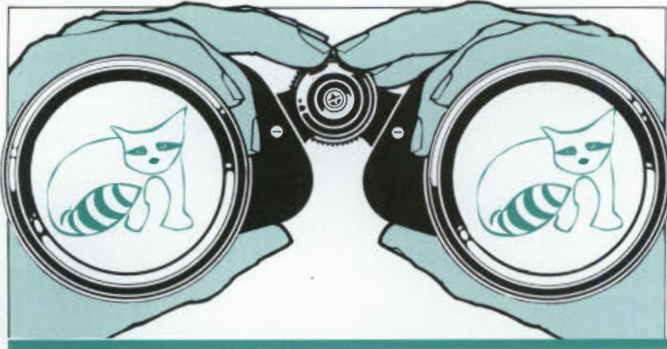
A blacksmith demonstrates his craft at Peters Valley.

More Crafts

New Jerseyans interested in craft making and crafts can visit other sites around the state, including:

❑ Wheaton Village in Millville, Cumberland County, where potters, carvers and glassworkers demonstrate their crafts in traditional and contemporary styles. Wheaton Village is open 10 a.m. to 5 p.m., seven days a week during the summer and includes shops, a working replica of an 1888 glass factory that stood in Millville, and the Museum of American Glass. Admission for adults is \$6, seniors and students are \$3.50. Telephone: (609) 825-6800.

❑ Waterloo Village in Byram, Sussex County, provides exposure to a variety of traditional American crafts, including blacksmithing. Demonstrations take place at the historic village along the Morris Canal. Waterloo Village is open 9 a.m. to 5 p.m. Tuesday through Sunday, and admission is \$7. Telephone: (201) 347-0900.



Explorer

Hey, Explorer!

Let's Go Outdoors!

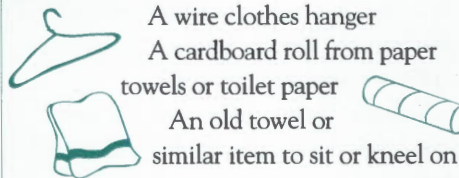
Hey, Explorers! If you enjoy watching television shows about wildlife, reading about nature or if you — and those you live with — would like to spend more time exploring the outdoors, then this "Explorer" column is for you. Turn off the television and computer, close that book and get ready to go outside.

Our state is rich with many types of plants, animals, waterways, shorelines, hills, fields, forests, soils and rocks. While parts of New Jersey support populations of bear, turkey, shellfish, deer, shorebirds, beaver and fox, even the busiest of New Jersey's cities and suburbs are home to many species of birds, insects and mammals. Also, many types of fish, frogs, snails, ducks, crabs, snakes, salamanders and turtles are found in or near New Jersey's streams, rivers, bays, lakes, wetlands and coastal areas. No matter where you live, you should be able to find signs of New Jersey wildlife and beauty. Where to start is easy: let's begin the first trip right outside your door.

How Good Are You At Exploring?

Although everybody goes outside, sometimes you have to learn how to be a successful Explorer. That is, sometimes you need to practice ways in which you can become more familiar with an outdoor place and the animals and plants that live

there. For the first trip, put on some old clothes and comfortable shoes, and gather the following items:



Travel with these items to the nearest yard, field, park, lot or forest and find a place away from other people.



Let's begin with the eyes of a good Explorer. Stand in one place and slowly turn around, looking at whatever is in front of you. Look up and look down. What colors do you see? Is anything moving? Check the area for dangerous objects and lie down on the ground. What might it feel like to be a piece of grass or an ant? Kneel on your hands and knees. What might it feel like to be a rabbit, a fox, or even a boulder? Look up and imagine what it might feel like to be a bird. Stand up and stretch like a tree. Use your eyes to find a pretty object as well as an ugly one. Eyes are important tools to a good Explorer.



Your hands are important, too. Use them to find natural objects that are soft, sharp, cold and fuzzy. Next, bend your hanger into the shape of a square and toss it gently away from you onto the ground. The area within the hanger is now yours to explore! Get down on your knees and use your hands to examine whatever lies atop the leaves, soil or rock — or between the blades of grass. Use your cardboard roll like a microscope to "focus" on any tiny tracks, chewed twigs,

seeds, worms, insects or holes that you may find. What does the soil feel like? Hands are important tools to a good Explorer.



Don't forget to listen. Sit quietly on your towel for 10 to 15 minutes. Using your ears to listen to the sounds around you, count with your fingers each of the different sounds that you hear. Which are made by humans? By animals? What other types of things are making noises? Trace the sounds to their sources. Ears are important tools to a good Explorer.

To sum up: Eyes, hands and ears are vital tools for a good Explorer. Like all tools, you have to learn how to use them well to take the greatest advantage of the outdoors.

Answers

- 1) Preparations for any all-day trip outdoors should include extra food and water, in addition to lunch. Types of food should include high energy and filling items, such as granola bars, raisins and peanuts. Water should be sealed in plastic bottles. It's always better to return home with extra supplies rather than needing them on the trail!
- 2) Sarah was correct in packing rain ponchos in their daypacks. In addition, it would have been appropriate to wear waterproof boots when exploring a wet area, along with bringing an extra pair of shoes and socks. Insulating clothing items, such as wool sweaters, hats, gloves and socks, prevent hikers from getting cold when the weather becomes wet, cold or windy.
- 3) It is very easy to put together an emergency kit to handle many types of situations. Consider including change, pencil and paper, first-aid booklet,

Time For a Before-You-Hit-the-Trail Quiz

Ask your friends or family to spend a half to a whole day with you outdoors exploring a park, field, wetlands or forested area. Good Explorers know how to prepare for such a trip. Before you go, make sure to take the short quiz below. The quiz describes five situations that happened to other people while outdoors. After you and your parent or guardian read each one, discuss what *you* would do or bring in order to avoid this situation from happening to you. Then check your answers with the ones below. As soon as you're ready, grab your empty daypack and think about what needs to go inside.

1) Lorenzo and his older brother made sandwiches and brought cookies and two cans of juice for their all-day walk in a nearby state park. Because they did not eat breakfast, they ate their lunches at 11 a.m. By 2 p.m. the boys got hungry and thirsty

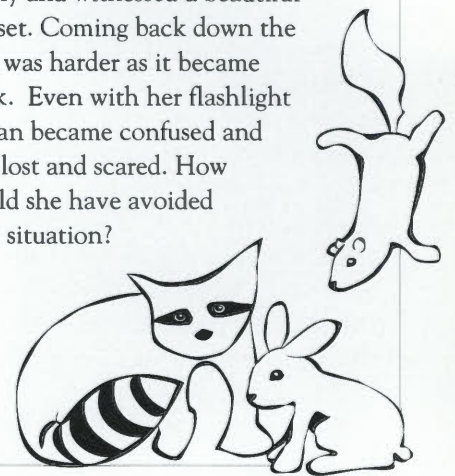
on the trail and they still had three more miles to walk. How could they have been better prepared?

2) Sarah and her father were looking at birds and waterfowl all morning on a cold day in a marsh on the outskirts of town. It rained unexpectedly that morning and Sarah was glad that they had packed their rain ponchos. Because of the heavy rain, a stream they had to cross was wider than usual and the stones to step on were covered with rushing water. Sarah slipped on a stone and both her canvas shoes became soaked. By noon she was chilly and her toes were getting numb. How could she and her father have been better prepared?

3) Juan and his friends walked for hours along the old railroad bed that ran through the city where they lived. After sitting for a few moments to rest on the wooden railroad ties, one of Juan's friends got a large wood splinter in his thigh. The splinter created a wound that started bleeding

and made it harder for him to walk. How could they have been better prepared?

4) Susan was curious to know if she could see a beautiful sunset from the top of the cliffs that were within hiking distance from her family's home. Because the cliffs were on private property, she decided that it was better not to tell anyone where she was going. Susan grabbed her camera and headed up the hill. Though there were no trails, she cut through the woods easily and witnessed a beautiful sunset. Coming back down the hill was harder as it became dark. Even with her flashlight Susan became confused and got lost and scared. How could she have avoided this situation?



tweezers, penknife, bandages of all sizes, antiseptic, toilet paper, a small sewing kit, safety pins, rubber bands, a clean rag or bandanna, large plastic bag, flashlight, matches, candle and whistle. All items should be kept in a watertight plastic container. In the case of Juan's friend, tweezers, antiseptic and bandaids could have helped ease the problem caused by the splinter.

4) There are many ways to prepare for a trip outdoors. First, try to travel with other people and always leave word about where you are going, when you left and when you expect to return. This is especially important if you know that you will be traveling in darkness. Second, it is important to know an area before you explore it. Depending on the place where you are going, talk to people who know the area or obtain information and maps. Susan should have marked a trail for herself at night, during daylight hours. Finally, if Susan had followed the advice given in #1, #2 and #3, she would have had everything she needed to stay warm and dry until found.

Places To Go

There are thousands of acres of protected areas in New Jersey open to the public. Some of them are listed in the article on "Wilderness Camping" on page 38. You can get more information about places to go outdoors from the New Jersey DEPE's divisions of Parks and Forestry and Fish, Game and Wildlife.

Ask the Division of Parks and Forestry for these free brochures:

- *State Parks and Forests in New Jersey*
- *Campgrounds: New Jersey State Parks and Forests*

The division's address is:
CN 404
Trenton, NJ 08625-0404
Telephone: (609) 292-2797

Ask the Division of Fish, Game and Wildlife for its *Guide to New Jersey's Wildlife Management Areas*. Send check or money order for \$7.50 to DFGW at:
CN 400
Trenton, NJ 08625-0400
Telephone: (609) 292-9450

by Tanya Oznowich, supervisor of the Department of Environmental Protection and Energy's Environmental Education Unit

Events

July

Now through July 31 WINE MONTH CELEBRATION The Four Sisters Winery will commemorate Wine Month with weekend celebrations throughout July. Events include wine tasting and free vineyard tours. Food and entertainment will also be available. **Hours:** 11 a.m. to 5 p.m. **Admission:** Free **Phone:** (908) 475-3671 **Location:** Four Sisters Winery, Route 519, Belvidere

Now through August 14 DAY CAMP AT STONY BROOK Discover the wonders of nature during one of nine program sessions. Adventurers in grades 1 through 9 will explore Stony Brook's 585-acre nature reserve while observing wildlife in a variety of habitats. **Hours:** 9 a.m. to 4 p.m. **Admission:** Varies **Phone:** (609) 737-7592 **Location:** Stony Brook-Millstone Watershed Association, Titus Mill Road, Pennington

Now through August 18 EVENING BEACH CONCERTS A series of free music concerts will be held every Wednesday by the setting sun at Sandy Hook beach. Music will vary from country to jazz to rock-and-roll. **Hours:** 6 p.m. **Admission:** Free **Phone:** (908) 872-0115 **Location:** Beach Area D at Sandy Hook, Highlands

Now through August 22 QUILTS OF NEW JERSEY, 1777-1950: CONTRIBUTIONS TO AN AMERICAN TRADITION This exhibition will display 35 quilts made prior to 1951 and gathered from private lenders all over New Jersey (see article page 20). It is co-sponsored by The Heritage Quilt Project of New Jersey, which is also coordinating a number of lectures and special events. **Hours:** 11 a.m. to 4 p.m. Wednesday through Sunday **Admission:** Adults \$3, seniors \$1.50, students/children (ages 5-18) 50 cents **Phone:** (609) 652-8848 **Location:** The Noyes Museum, Lily Lake Road, Oceanville

Now through August 25 SUMMER LECTURE SERIES Liberty State Park in Jersey City holds a series of free Wednesday-night lectures on the history of the Hudson County area. **Hours:** 7:30 p.m. **Admission:** Free **Phone:** (201) 915-3411 **Location:** Liberty State Park, CRRNJ Terminal's Blue Comet Auditorium, NJ Turnpike Exit 14B, Jersey City



Now through August 26 ENVIRONMENTAL LESSONS First- through sixth-graders are invited to study in the outdoor classroom of Schooley's Mountain Park. Located on 393 wooded acres in Morris County, Schooley's 2-1/2-hour lessons teach kids about nature in both outdoor and indoor learning environments. Choose from three different three-day programs. **Hours:** 9:30 a.m. to noon **Admission:** \$20 **Phone:** (201) 635-6629 **Location:** Schooley's Mountain Park, Camp Washington Road, Washington Township

16, 17, 18 BEAVER CREEK POW WOW Dancers will be on hand in full regalia, along with crafters and entertainers, as American Indians come to Matarazzo Farms to share their culture in celebration of "the true caretakers of the land." Food available. **Hours:** 11 a.m. to 7 p.m. **Admission:** Adults \$6, children \$4 **Phone:** (908) 475-3872 **Location:** Matarazzo Farms, Route 519, Belvidere

17 CANOE THE WADING RIVER Bring along your bathing suit for a paddle down one of the Pineland's most beautiful rivers, sponsored by the Pinelands Preservation Alliance. Admission includes canoe rental. **Hours:** 10 a.m. to 3 p.m. **Admission:** Alliance members \$15 (\$5 without rental), nonmembers \$20 (\$10 without rental) **Phone:** (609) 893-4747 **Location:** Mick's Canoe Rentals, Rt. 563 (mile marker #31), Chatsworth

17, 18 BENEFIT POW WOW Featuring Native American dancing, drumming, singing and story-telling, this event benefits the Association of Native American Indian Students. Crafts and foods available. **Hours:** 11 a.m. to 10 p.m. (July 17); 11 a.m. to 6 p.m. (July 18) **Admission:** Adults \$4, children 5-12 & seniors \$2 **Phone:** (908) 525-0066 **Location:** Sallie's Field, Ringwood State Park, Ringwood

21-25 MONMOUTH COUNTY FAIR Featuring amusement rides, a petting zoo, hot air balloon races and live stage entertainment, Monmouth County Park's country fair is also a venue for firefighters' MUD flag football and police officers' volleyball. **Hours:** 11 a.m. to 11 p.m. **Admission:** Adults \$3.50, children under 12 free, seniors free July 23 **Phone:** (908) 842-4000 **Location:** East Freehold Park Showgrounds, Kozloski Road, Freehold Township



Exploring Native American Culture — For a Good Cause

Native American dancers, drummers, singers and storytellers will all bring their versions of American Indian culture to Sallie's Field in Ringwood State Park July 17 and 18 for a charity pow wow benefiting the Association of Native American Indian Students.

Dancers representing 10 to 12 different tribal groups will perform in full regalia and craftspeople from the American Indian community will be on hand selling handmade goods, including jewelry, pottery and clothing. Native American food, from hot chili to traditional fried bread, will also be available.

The pow wow, which is being sponsored by the New Jersey American Indian Center Organization, will run from 11 a.m. to 10 p.m. Saturday July 17 and from 11 a.m. until 6 p.m. on Sunday July 18. Admission is \$4 for adults and \$2 for seniors and children ages 5-12. Admission is free for children under five. Parking will be available at no charge. The event site in Ringwood State Park is accessible from Sloatsburg Road.

All proceeds from the event go directly to the Association of Native American Indian Students, a nationwide support group for American Indians wishing to attend medical school.

In addition to helping these students further their education, the New Jersey American Indian Center seeks to educate anyone who is interested in learning about the traditions of Native Americans. "We're showing our culture to people," says John Running Deer Eleazer, pow wow chairman and treasurer of the American Indian Center Organization.



"We're showing and selling our crafts to them, and we're trying to teach people what we're all about."

Although the pow wow presents two days of arts and entertainment suitable for any age, John Running Deer extends a special invitation to young people. "Bringing young people out is the event's most important function," he says. "Young people are our future, and people need to take the time to teach the young to understand their culture and to respect other cultures."

For more information about the pow wow or other American Indian events, call the Native American Indian Center at (908) 525-0066. The center, located at 1301 Route 9 North in Old Bridge, is open 5 days a week from 11 a.m. to 4 p.m.

Events

24, 25 PETERS VALLEY CRAFT FAIR The 23rd annual Peters Valley Craft Fair offers visitors a chance to see and buy original crafts, talk with the craftspeople who produced them and watch craft making demonstrations (see article on page 56). The 150 craftspeople selected to participate will be selling a wide variety of traditional and contemporary work, including jewelry, leatherwork, sculptural pieces, handmade brooms and candles, wooden chairs, baskets and musical instruments. A potpourri of food choices and live acoustic, folk and bluegrass music add to the easygoing ambiance. **Hours:** 10 a.m. to 6 p.m. (July 24); 10 a.m. to 5 p.m. (July 25), rain or shine **Admission:** \$5, children under 12 free **Phone:** (201) 948-5200 **Location:** Peters Valley Craft Center, Sussex County Route 640, Layton

July 24 through September 5 TO COLOR AMERICA Liberty State Park in Jersey City salutes our country's ethnic origins with a free exhibit depicting the cultural diversity of America. **Hours:** 10 a.m. to 5 p.m. **Admission:** Free **Phone:** (201) 915-3411 **Location:** Liberty State Park's CRRNJ Terminal, NJ Turnpike Exit 14B, Jersey City

26-30 NATURE DISCOVERY CLASS Atlantic County Park presents a week-long program promoting environmental awareness. Hands-on activities. Indoor and outdoor sessions. **Hours:** 9 a.m. to noon. **Admission:** \$20/week **Phone:** (609) 645-5960 **Location:** Atlantic County Park, State Highway 50, Estell Manor

July 30, 31 and August 1 MORRIS COUNTY 4-H FAIR Exhibits, kiddie rides, entertainment, a horse show, petting barn and seeing eye puppy demonstration highlight the three-day event. **Hours:** 9 a.m. to 9 p.m. (July 30, 31) and 9 a.m. to 4 p.m. (August 1) **Admission:** Free **Phone:** (201) 285-8301 **Location:** Chubb Park, Route 24, Chester



2 CAPTAIN KIDD TREASURE HUNT Captain Kidd arrives by boat and leads children to buried treasure, games and gift certificates. **Hours:** 1 p.m. **Admission:** Free **Phone:** (609) 884-9565 **Location:** Convention Hall/Beachfront, 714 Beach Avenue, Cape May

6, 7, 8 MAGIC OF ALEXANDRIA BALLOON FESTIVAL Go up, up and away in a hot air balloon, airplane or helicopter. Watch the aviation show and the fireworks display. Interactive crafts, sporting booths, live stage entertainment and lots of food make this a "soft adventure" for the whole family. **Hours:** 3 to 11 p.m. (June 6); 1 to 11 p.m. (June 7); 7 to 11 p.m. (June 8) **Admission:** \$8.50, children 12 and under free **Phone:** (908) 735-0870 **Location:** Alexandria Field Airport, Airport Road, Pittstown

7 PEACH FESTIVAL Shop at the flea market, watch the great entertainment and eat scrumptious peach desserts. Children are invited to ride on the ponies. **Hours:** 10 a.m. to 5 p.m. **Admission:** Free **Phone:** (609) 451-2188 **Location:** Dutchneck Village, Trench Road, Bridgeton

7 BIKE THE VALLEY Mountain bikes only on this 10-mile ride through our newest state park, Paulinskill Valley Trail. Riders should have some mountain biking experience. **Hours:** Group departs at 10 a.m. **Admission:** Free **Phone:** (908) 925-9030 **Location:** Footbridge Park, Route 94, Blairstown

8 FLY FISHING DEMO Trout Unlimited, a nationwide organization, will pass on its expertise to fishing devotees.

Sponsored by the Morris County Park Commission. **Hours:** 2 p.m. **Admission:** Free **Phone:** (908) 876-3100 **Location:** Schooley Mountain Information Center, Camp Washington Road, Washington Township

14 PIONEER WAYS Games, foods and demonstrations focus on the lives of the Dutch pioneers who settled in New Jersey. Sponsored by the Morris County Park Commission. **Hours:** 1 to 4 p.m. **Admission:** Free **Phone:** (908) 876-3100 **Location:** Schooley Mountain Information Center, Camp Washington Road, Washington Township



14 WHALE WATCH Join a group of dedicated whale watchers at Weis Ecology Center for an air-conditioned motor-coach trip to Plymouth Harbor in Massachusetts, a regular hangout for humpback, fin and minke whales. Once at the harbor, you'll board an 85-foot double-decker boat and enjoy the 4 1/2-hour whale-spotting cruise. Pre-registration necessary. **Hours:** 7 a.m. to midnight **Admission:** \$54/person **Phone:** (201) 835-2160 **Location:** Weis Ecology Center, Snake Den Road, Ringwood

15 MEDICINE MEN Explore how native plants were used for medicinal purposes by the Lenape Indians and Dutch pioneers. Visitors will learn how to make perfume, hand lotion and lip balm. Sponsored by the Morris County Park

September

Commission. **Hours:** Noon to 4 p.m.
Admission: Free **Phone:** (908) 876-3100
Location: Schooley Mountain Information Center, Camp Washington Road, Washington Township

21, 22 BLUEGRASS FESTIVAL

Matarazzo Farms presents an afternoon of nonstop entertainment, highlighted by a chicken barbecue and the Great American Sweet Corn Taste-Off. **Hours:** Noon to 7 p.m. **Admission:** Adults \$6, children under 12, \$3 **Phone:** (908) 475-3872
Location: Matarazzo Farms, Route 519, Belvidere

21, 22 EARLY 19TH CENTURY

TRADES & CRAFTS Coppersmiths, blacksmiths, basket weavers and potters will demonstrate their skills and showcase their crafts. Carriage rides, farm animals that children can pet and the rich smell of open hearth cooking will create a rustic atmosphere. **Hours:** 10 a.m. to 4:30 p.m.
Admission: Free **Phone:** (609) 898-2300
Location: Cold Spring Village, Route 9, Cold Spring

21, 22 ANTIQUE FIRE APPARATUS

MUSTER Don't miss the largest muster in the United States featuring a bucket brigade and battle of the barrel. **Hours:** 10 a.m. to 5 p.m. **Admission:** Adults \$6, seniors \$5.50, students \$3.50, families \$12, children under 5 free **Phone:** (609) 825-6800 **Location:** Wheaton Village, Wade Boulevard, Millville

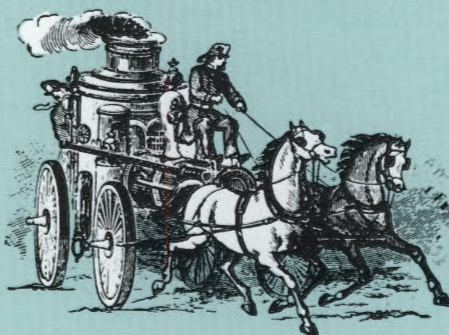
31 MUSIC AT DEY MANSION

This 18th-century museum, which once served as General George Washington's military headquarters, hosts a free outdoor concert by the Waldwick Band, a group whose roots lie in the marching band tradition. Bring your own seating to the lawn in front of the museum and enjoy this patriotic evening celebration in honor of Labor Day. Rain date is September 1. **Hours:** 8 p.m. **Admission:** Free **Phone:** (201) 696-1776 **Location:** Dey Mansion, Totowa Road, Wayne

4, 5 INDIAN WAYS Learn about the Lenape Indians through games, food and demonstrations. **Hours:** 1 to 4 p.m.
Admission: Free **Phone:** (201) 635-6629
Location: Morris County Park Commission's Great Swamp Outdoor Education Center, 247 Southern Boulevard, Chatham

11 WOOD STREET FAIR AND ART

SHOW Antiques, crafts, art works and food will be featured at this event sponsored by the Colonial Burlington Foundation and the City of Burlington Historical Society. **Hours:** 9 a.m. to 5 p.m. **Admission:** Free **Phone:** 386-3993 **Location:** Wood and High streets, Burlington



11, 12 SANDY HOOK SHORE

HERITAGE FESTIVAL Celebrate the heritage of this Jersey Shore town while enjoying crafts and exhibits on topics like wind surfing and decoy making. Maritime, jazz and folk music will add to the festivities. About a dozen local restaurants will provide seafood and other specialties. **Hours:** noon to 5 p.m. **Admission:** Free **Phone:** (908) 872-0115 **Location:** Fort Hancock parade ground, Sandy Hook

11, 12 BELVIDERE VICTORIAN

DAYS Step into the past by touring Victorian homes at this event sponsored by the Belvidere Area Chamber of Commerce. Other activities that guarantee to bring back years gone by include the antique car show, the antique motorcycle parade, the antique auction and the historical slide show. **Hours:** 10 a.m. to 4 p.m. **Admission:** Free **Phone:** (908) 475-2176 or (908) 475-3872 **Location:** Belvidere

12 SPRINT TRIATHLON Take a quarter-mile swim through the ocean, a 13-mile bike ride and finish off the day with a four-mile run. **Hours:** 8 a.m.
Admission: \$25 to participate, free for spectators **Phone:** (908) 842-4000
Location: Seven Presidents Oceanfront Park, Long Branch

12 RAILROADERS DAY CELEBRATION

Every running piece of railroad equipment from the New Jersey Museum of Transportation will be featured during this all-day event, as well as slide shows, shop tours, a parade of trains, exhibits, and antique cars and trucks. **Hours:** 11 a.m. to 5 p.m. **Admission:** Free, train fare \$1.50 per person **Phone:** (908) 938-5524 or (908) 922-3983 **Location:** Allaire State Park, Allaire Road, Farmingdale

September 12 through November 28
QUILTS OF NEW JERSEY, 1777-1950: CONTRIBUTIONS TO AN AMERICAN TRADITION This exhibition will display 35 quilts made prior to 1951 and gathered from private lenders all over New Jersey (see article page 20). It is co-sponsored by The Heritage Quilt Project of New Jersey. **Hours:** 10 a.m. to 4:30 p.m. Tuesday through Saturday, 1 to 5 p.m. Sunday **Admission:** Adults \$2, seniors and children under 12 \$1.50 **Phone:** (908) 747-2266 **Location:** Monmouth Museum on the campus of Brookdale Community College, Route 520, Lincroft



Wildlife in New Jersey

The Sandbar Shark

Most people are familiar with Peter Benchley's thrilling novel *Jaws* or one of the movies it has inspired. The image of a giant shark terrorizing a small resort community is hard to forget. After all, the idea of predators (in this case, people) becoming prey realizes one of our most primal fears. It also makes for exciting reading or viewing.

Fortunately, actual shark attacks are rare. In fact, few species of shark are considered dangerous to man and the poor reputation sharks have earned throughout much of history is born more out of fear and ignorance than scientific fact.

New Jersey's coastal waters harbor a rich diversity of marine life. Included in this diversity are several species of shark, one of which is the sandbar shark.

The sandbar shark (*Carcharinus plumbeus*) — also commonly known as the brown shark — is a small- to medium-sized shark found in temperate and tropical waters worldwide. It is a heavy bodied shark with a large dorsal fin, the vertical height of which exceeds 10 percent of its total body length. Its coloration is dark gray to brown above, becoming almost whitish below. Length at birth is approximately 25 inches, while mature adults average six feet. In New Jersey, a similar shark, the dusky, may be confused with the sandbar shark. But the dusky has a smaller dorsal fin and is significantly larger at maturity.

Estuaries, bays and coastal areas are the preferred habitats of the sandbar shark, which is the most commonly seen toothed shark in our coastal bays. The sharks are bottom dwellers found predominately at depths of 10 to 30 fathoms, but occasionally at depths of more than 100 fathoms. Because they are bottom dwellers and stay away from beaches, the sandbar shark has rarely — if ever — been implicated in an attack on a human.

Sandbar sharks are highly migratory, ranging in North America from New

England to Florida and the Gulf of Mexico. In New Jersey, the sharks occur in highest concentrations during the summer months when they migrate north to their primary nursery grounds. Recently, one tagged specimen was recovered and found to have traveled 2,019 miles from Point

This species . . .
has much more
to fear from humans
than the other way
around.

Judith, Rhode Island, to Mexico. This is the third longest migration reported for a sandbar shark.

Like many predators, sandbar sharks are opportunistic feeders. Their diet is varied, consisting mainly of small fish, crustaceans, mollusks and, in some places, octopuses. While sandbar sharks have large mouths, their teeth are relatively small and this makes it unlikely that they can attack anything larger than the prey on which they feed.

The abundance of sandbar sharks is testimony to their reproductive success. The sharks mate in spring and early summer. After a gestation period of nine to 12 months, pregnant females move to nursery grounds in shallow waters close to shore and give birth to an average of nine pups (anywhere from one to 14 pups is possible). The newborn sharks resemble scaled-down versions of the adults and are on their own to fend for themselves as soon as they are born. At this young age, the sharks' mortality rates are high as larger predators such as tiger and bull

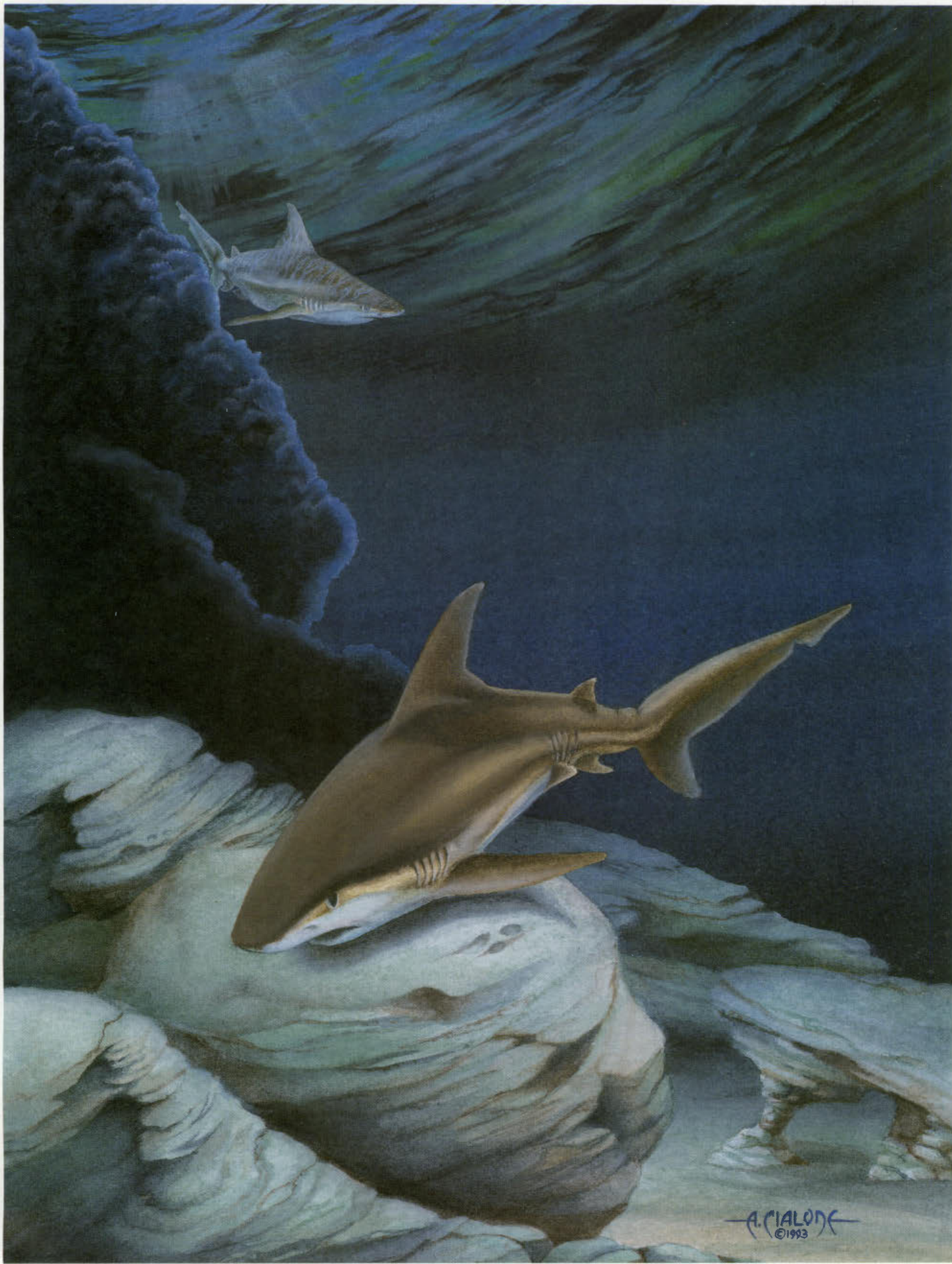
sharks feed upon them. The young sharks will stay in shallow waters until cooler temperatures set in. They then move to deeper waters, possibly forming schools.

Because sandbar sharks are born alive and are large at birth, their survival rates are high — much greater than that of egg laying fishes. In fact, a large fishing industry has developed for them and they are considered one of the most economically important species on the East Coast. Though it is not currently heavily fished in New Jersey, elsewhere both recreational and commercial anglers seek out the shark's palatable meat. In fact, it is reported to be the most abundant commercially valuable shark taken off the southeastern coast of Florida.

Despite their high survival rates, sandbar shark populations are still susceptible to over fishing. This results from the fact that they grow very slowly (only about two inches a year), mature at an old age and bear relatively few young. In fact, sandbar sharks were recently included — along with 21 other species of large coastal sharks — in a new management effort by the National Marine Fisheries Service that for the first time sets commercial quotas and sportfishing bag limits for sharks.

If we are conscious of our actions and sensible in our management, the sandbar shark will always be a part of New Jersey's natural heritage. As both predator and prey, the shark fills a critical niche in the marine ecosystem and in the lives of those who depend on it for their livelihoods. And, unlike the situation portrayed in *Jaws*, this species — and the overwhelming majority of sharks — has much more to fear from humans than the other way around.

By Al Ivany, a naturalist and media specialist with the Division of Fish, Game and Wildlife's Pequest Natural Resource Education Center in Oxford



A. CIALONE
©1993



The first Smokey Bear poster (left). Another early one from the 1940s (right).

In Next Season's Issue

Celebrating 50 Years of Fighting Forest Fires with Smokey Bear
 Getting to Know the Bats of New Jersey
 Field Testing Hunting Retrievers