

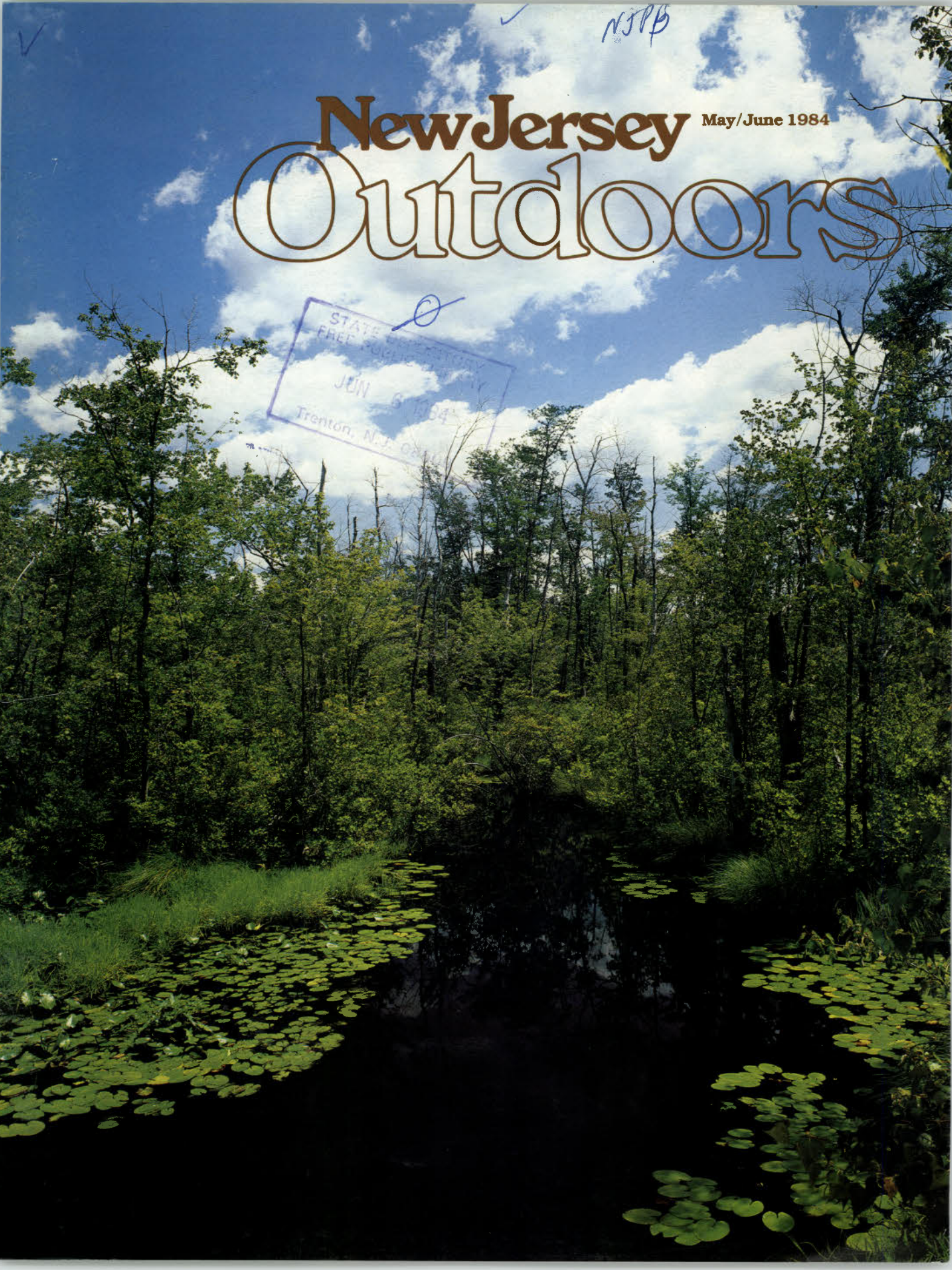
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New Jersey May/June 1984 Outdoors

STATE OF NEW JERSEY
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 Trenton, N.J. 08646



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Computerized typesetting by *Trentypo, Inc.* and printing by *The Lane Press, Inc.*

New Jersey Outdoors (USPS 380-520) is published bi-monthly (six times a year) by the N.J. Department of Environmental Protection. Second-class postage is paid at Trenton, N.J. and additional mailing offices. Subscriptions are \$6.50 for one year, \$11.95 for two years, and \$15.95 for three years payable by check or money order to New Jersey Outdoors Mailing Office, CN 402, Trenton, N.J. 08625. Single copies, if available, cost \$1.50. POSTMASTER: Send address changes to *New Jersey Outdoors* mailing office. Send old and new addresses and the zip code numbers. The Post Office will not forward copies unless forwarding postage is provided by the subscriber. Allow eight weeks for new subscriptions and change of address to take effect. *New Jersey Outdoors* welcomes photographs and articles, but will not be responsible for loss or damage. Permission granted to reprint with credit to *New Jersey Outdoors*. Telephone: Circulation (609) 292-4049 or 292-1939; Editor's Office, (609) 292-2477.

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NEW JERSEY OUTDOORS CREDO

This publication is dedicated to the wise management and conservation of our natural resources and to the fostering of greater appreciation of the outdoors. The purpose of this publication is to promote proper use and appreciation of our natural, cultural, and recreational resources, and to provide information that will help protect and improve the environment of New Jersey.

(Note: Costs of publishing the magazine not covered by subscriptions are met from general revenues available to the Department of Environmental Protection.)

The views and opinions of authors do not necessarily represent the opinion or policies of the Department of Environmental Protection or the State of New Jersey.

FROM THE EDITOR

Vacationing in New Jersey

This morning a radio commercial urged me to hurry and sign up for a 15-day trip to Italy and the French Rivera. The travel pages of last Sunday's newspaper offered "Getaway" vacations to sunny Spain and Portugal too, a 7-day cruise to the Greek Islands and Istanbul, or a week in Hawaii for \$499. And my daughter called me from California and asked me to accompany her and her English husband on a vacation trip to—where else—Great Britain.

What this all means is that Spring has arrived, almost unnoticed. And can the summer vacation season be far behind? And if this is so, then our readers will begin to bombard us with queries about what recreational resources are available in our state. And like all good scouts, we are prepared.

For everything you ever wanted to know about vacations and recreation in our state, make use of the following telephone numbers and addresses:

There is a New Jersey vacation to suit every interest and budget. For more detailed information about specific attractions, ask for:

- VIP Vacation Kit*
(includes 7 brochures listed below)
- New Jersey Overview
- Delaware River Region
- Gateway Region
- Greater Atlantic City Region
- Shore Region
- Skylands Region
- Southern Shore Region
- NJ State Map
- Beach Guide
- Fall Foliage Tour Guide
- Marina & Boat Basin Guide
- NJ Facts/Mini Guide
- Winter Activities Guide
- Campsite Guide

* For mail requests of VIP Vacation Kit, please send \$1.00 toward the cost of postage and handling. For copies of individual brochures (no charge), check appropriate box, maximum of three.

Literature is available free of charge at official Tourist Information Centers throughout the State, or by mail.

Just write:

Division of Travel and Tourism
CN 826
Trenton, New Jersey 08625
(609) 292-2470

A quarterly *Calendar of Events* is also available from Travel and Tourism.

• A year-around guide, "New Jersey Invites You To Enjoy its State Forests, Parks, Natural Areas, Marinas, Historic Sites, Wildlife Management Areas" is available from:

Division of Parks and Forestry
State Park Services
CN 404
Trenton, New Jersey 08625
(609) 292-2797

Park Services also provides brochures of each State Park, State Forests, and Historic Sites, when available.

Three color publications titled,

- Canoeing the Pinelands

- New Jersey's Trails
 - River Recreation
- are available from:
Green Acres Program
CN 404
Trenton, New Jersey 08625
(609) 292-2455



For information on New Jersey camping, send for a free copy of the *1984 Campgrounds Directory*. First copy is free, for additional copies send \$5.50 for postage and handling. Address is:

N.J. Campgrounds Owners Association
RD#1 Box 351
Sussex, NJ 07461

- For the more adventurous, a set of 10 recreation maps (plus canoe safety information) of the Delaware River is available for a fee of \$4.95, third class mail, and \$5.22, for first class:

Delaware River Basin Commission
P.O. Box 7360
West Trenton, N.J. 08628
(609) 883-9500

- For those looking for recreation on the wild side, send for the:
Wildlife Management Area Guide
Division of Fish, Game and Wildlife
CN 400
Trenton, New Jersey 08625
(609) 292-9450

This is a 122-page guide of New Jersey's wildlife management areas—over 150,000 acres of diversified habitat (forests, meadows, salt marshes, lakes and mountains) scattered throughout the state. The guide contains maps, roads, and directions. It sells for \$4.00. If you wish the guide sent first class, send an additional \$1.50 postage.

The following pamphlets can be obtained by sending a stamped, self-addressed #10 envelope (one for each pamphlet).

- New Jersey's Blue Crab
- Guide to New Jersey's Saltwater Fishing
- Marlin and Tuna Fishing in the Mid-Atlantic
- Summary of New Jersey's Marine Finfish and Shellfish

Laws and Regulations

- New Jersey Party and Charter Boat Directory

Address:

Marine Fisheries Administration
CN 400
Trenton, New Jersey 08625

(Continued on page 19)

New Jersey State Library

Steve Penne

Pedaling New Jersey

BY KEVIN COUGHLIN

It's unfortunate that the Garden State no longer proclaims, "New Jersey's Got It."

That was the advertising slogan I sought to ridicule in a 1982 *Paterson News* series as I embarked upon a week-long bottom-to-top bicycle tour of New Jersey. I knew what New Jersey had "got" all right, and sincerely hoped it wasn't contagious. By the trip's third day, companion Steve Oliphant and I realized that much of what the state "got" was indeed contagious—but well worth catching.

We rode the 232-mile High Point to Cape May route, modified from an annual Central Jersey Bicycle Club event, and provided to us by Bill Feldman, the state Department of Transportation's Pedestrian and Bicycle Advocate. Because Steve, a computer systems analyst from Ringwood and a charter member of the Bicycle Touring Club of North Jersey, and I live within an hour's drive of High Point, the state's northernmost corner, we decided to reverse the route, starting from Cape May and biking toward home.

The first week in May we drove south to our starting point. It was a Friday night, late. Around Lakehurst we spied at least a dozen deer grazing by the Parkway. Deer by a highway is certainly worth advertising, if only to warn motorists. Our Cape May motel room was already paid for, however, so we continued on to our starting point.

After a very short night at the Montreal Inn on Beach Avenue, Steve and I loaded our bikes, deposited the car keys with a friend, and posed for a few pictures by the beach.

"Are you taking the fairy to High Point?" politely inquired a senior citizen, noticing our "High Point or Bust" sign. The fairy? "Yes, the ferry... aren't you going to North Carolina?" she asked.

It was tempting, North Carolina, being south, was undoubtedly all downhill, at least one way. We struck a compromise. Facing 232 miles of unknown hills to the north, we quelled our opening day jitters by doing the only sensible thing. We biked south... but only as far as the Cape May Lighthouse.

Charm of Cape May

En route we passed elegant Victorian hotels, eateries and private homes; with more than 600 of them, Cape May is considered the nation's eastern capital of Victorian architecture. We also passed cool, empty beaches where presidents Lincoln, Pierce, Buchanan, Grant, Arthur and Harrison once trod. In 1847 dashing Kentucky Congressman Henry Clay dashed down the beach to escape scissor-wielding women after a lock of his hair. In 1905 young Henry Ford raced one of his early cars on these shores, losing to a Frenchman named Chevrolet. Seeking a better idea, Ford sold his vehicle to raise trainfare for the ride home.

"America's First Resort," Cape May is named for Dutch explorer Cornelius Mey, who checked in with his boat *Glad Tydings* around 1620. The place could conceivably have become Cabot Lodge or Cape Hudson, however, because John Cabot (1498) and Henry Hudson (1609) got there first. Of course, the Kechemeche Indians, a sub-tribe of the Lenni-Lenapes, were there all along.

The 122-year-old lighthouse at Cape May Point was our first tourist stop. Two other beacons preceded this one, the first in 1744. Nearby is spring-fed Lily Pond, a favorite watering hole for pirates. Whether they left any buried treasure is unknown. We preferred mining Cape May diamonds on the beach off Sunset Boulevard. These semi-precious quartz pebbles can be polished to resemble diamonds. At least, that's what they'd like you to believe in the souvenir shop. The biggest haul reportedly weighed more than 14 ounces.

While filling our panniers (bike bags) with wet rocks we marveled at the *Atlantus*, which in 1926 did what one would expect a concrete ship to do: It sunk. The *Atlantus* was a World War I experiment. After the war it broke loose while being towed and ran aground, to the delight of Cape May diamond miners and homeless seagulls.

The weather was gorgeous that first day and would remain so for the entire week. It rained just twice, briefly, when we were safely sealed into a dry tent. Steve and I enjoyed the season's first good sunburn and, happily, saw very few State Birds (mosquitoes) until our final moments on the trip.

The route north from Cape May led us up routes 9, 47 and 50, all flat and easy pedaling but heavily traveled. Our first lunchbreak was on 47 in South Dennis at Pedrick's General Store. Inside, Thelma Pedrick had a pitcher of cool water waiting. A diminutive, pleasant woman, Thelma's been at the cramped little store since leaving Woodbine 30 years ago. We asked where Woodbine was.

"What you want to go there for?" she asked, sounding surprised. Pausing a moment, she seemed pleased to supply the answer. "I know why. Seven tap rooms!"

Business was tougher than usual this winter, Thelma said, attending to a couple regular customers who strolled in to chat about the five-vehicle collision on Route 9 earlier in the morning.

"It's this—what do you call it?—recession," she told us, getting back to business. "No one's having a wonderful time right now."

As the economy's gone down over the last couple years, "housetlifting" has gone up in tiny South Dennis, which, according to Thelma, only stretches "from down that road to this road down here—that's all it is.

"Don't leave a door open," she continued. "As soon as they know you're gone, they're in... Even honest people want things!"

The widow's insurance policy lives in a back room, beyond the counter and the "Beware of Doberman" sign. Thelma renamed the "altered" male from Killer to Dobie to avoid scaring customers. She bought the handsome black-and-tan creature about five years ago, after two pistol-toting masked holdup men shot up the place as she ducked beneath the counter and tripped an alarm. Thelma's had no trouble since, and now chuckles over the incident.

"The first shot went right past me into the trim in the other room," she said. "The next shot went right in there [pointing to the counter], probably because the fellow was too tired of holding up the gun all that time. The alarm must have scared them. They went over to the Hillbilly Inn on 49 and took

KEVIN COUGHLIN





all their wallets. One man wouldn't drop his. So they shot him in the rear!"

We biked 66 miles that day, passing through Denisville, a shipbuilding center of the 1820s and former home of a brisk cedar "mining" industry. Settlers dragged sweet-smelling, weather-resistant old logs from the prehistoric Great Cedar Swamp. "Cape May Cedars" supposedly shingled the roof over Independence Hall at the century's turn, and "miners" once pulled a log from the swamp believed to be 1,000 years old.

Our campground was on the outskirts of Egg Harbor City. The first of two Winnebago Forests we would visit, it came complete with all the wild sounds of the Great Outdoors: Crying children, foul-mouthed adolescents, Bobby Vinton softly blaring from Mom and Dad's portable stereo. There was a snack bar, laundromat, showers and toilets, the latter two facilities just dirty enough to ensure a primitive, "roughing it" ambience. Who would have expected such a wilderness experience in the union's most densely populated state—and all for just \$9.

Jersey Devil

And it was here, on the fringe of the Pine Barrens, that we met the infamous Jersey Devil. This winged fiend was sighted as far back as 1790, when Vance Lerner wrote in his journal:

"It was neither beast, nor man, nor spirit, but a hellish brew of all three."

According to legend, the Jersey Devil was the 13th offspring of a woman named Leeds, who preferred bearing a demon to one more brat. Sightings peaked in 1909. Forty-eight years later bones and feathers of a strange animal were discovered after a forest fire. Some labeled the find a taxidermist's hoax. Others have suggested the creature is *tarsus pteroclastic*, a forerunner of the impala thawed from the Ice Age glacier.

Good guess, but wrong. The Jersey Devil is feathered, all right, and it runs like an impala. But it's much noisier. It is "cockus doodledoous," commonly

known as the campground rooster, and it stalks sleeping bicyclists.

This strutting monster pursued us from Egg Harbor to our next campsite, 60 miles north in a Jackson Winnebago Forest near Great Adventure amusement park in Ocean County. After the second night of crowing persecution (never mind the woodpeckers!) I grabbed my tire pump and sought revenge. A grizzled old Piney appeared with his dog.

"I wouldn't hurt that bird if I was you," the man said gravely. I put my pump away so I may pump another day. Thus, the Jersey Devil escaped to continue its reign of terror

Because Bill Feldman's route instructions didn't list campgrounds, we had to find them ourselves. It's a good idea to phone ahead just to be sure the Jersey Devil hasn't struck recently, and to secure a site. We reached Jackson near sunset, exhausted from a long day of bucking the Pine Barren's persistent southerly breeze. Needless to say, we hadn't bothered to warn anybody of our arrival. It took repeated banging on a campground trailer to draw out a camp official.

"You think I work 24 hours a day?" growled the wrinkled buzzard who came to think of it, resembled the Jersey Devil's savior. "I quit work at 4. I was on since 7 this morning!"

A couple hours later a younger man drove by our dark campsite to apologize for the Rodney Dangerfield treatment. "Me and two other guys just bought this place," he explained. "The old man kind of came along with the deal."

We were then cautioned about the condition of the camp bathrooms. "These people are animals," he said, nodding at the fancy trailers.

The Pine Barrens

It had taken a day to bike through the Pine Barrens. We traveled along Route 563, a well-paved two-lane that skirts the 96,000-acre Wharton State Forest in Burlington County, the tea-colored Mullica and Wading rivers, and abundant cranberry bogs.

Starting point:
Cape May

Beneath the 1.7-million-acre Pinelands sits the 17 trillion gallon Cohansey Aquifer. Because of the region's high water table and sandy, porous soil, the state Pinelands Commission in 1981 imposed strict development restrictions to prevent pollution of the underground reservoir. Burlington County lies within the inner Preservation Area, where development is primarily limited to second generation residents. In the outer Protection Area, varying degrees of development are permitted on minimum lot sizes ranging from 3.2 acres to 15.8 acres. The 15-member commission has outlined a program by which landowners in the Preservation Area may sell "credits" to developers, allowing them to increase housing density in the Protection zones, but some developers are skeptical.

Environmentalists, meanwhile, contend that tight restrictions are necessary to preserve the ecology and natural beauty of the vast Pine Barrens, which cover parts of seven counties and are home to several rare animal species and about 400,000 year-round residents.

But the few natives we encountered appeared more interested in forest fires than development battles. In April 1982 three fires burned about 6,000 acres a few miles east of our route. A strong wind kept the flames from reaching Chatsworth, said a woman at Mick's Canoe Rental. More than 400 fires occur annually in the Pine Barrens; the Chatsworth fire of 1954 consumed 19,500 acres in three days. A storm saved the town on that occasion.

Cycling past the cranberry bogs of Hog Wallow, south of Chatsworth, we admired a blue and yellow biplane roaring overhead. It landed in a dusty clearing off 563, and we pondered taking a closer look. A battered Ford wagon pulled in. The short driver emerged and noticed our curiosity.

"You want better look? Come in close, it's all right!" invited Hipolito Oquendo, a 48-year-old Puerto Rican who has labored on farms in California, New York, Pennsylvania, Massachusetts and the Pine Barrens for the last 15 years. Oquendo was shirtless in the warm sun, which had given his skin a smooth tan color. His hair was deep black and his smile revealed a scarcity of teeth that hindered his halting English.

"This number one cran-berry bog in de world," Oquendo said as the plane replenished its fertilizer supply and took off in a thick cloud of dirt. He said he earns almost six dollars an hour working full-time for a big cranberry company. Bricklaying, carpentry, blueberry picking, packaging in winter—I do everything in company," said Oquendo, who plans to retire with pension at 65.

Across Route 563 stands a neat-looking one-story concrete block house where Oquendo lives with his wife and four children. The company provides the home free, he said, laughing when asked if he preferred this life to Puerto Rico.

"Sure, why not? I live like I rich. The money pretty good, I've got pretty good house, the guys sometimes they teach me things, I live pretty good. I living better here than in Puerto Rico."

Turning to our heavily-loaded bikes, Oquendo asked where we came from. The Paterson area, I replied.

"Paterson!" he exclaimed incredulously. "On *this*? I no believe it!"

If we had a dollar for every Jersey jaw that dropped upon learning our destination, or a dime for every friendly honk we got from passing motorists, we could charter an ocean liner and tour *the world*



KEVIN COUGH

from bottom to top.

Steve and I anticipated our stop at Busby's General Store in Chatsworth would be a highlight of the day's travels. In his fascinating book *The Pine Barrens*, author John McPhee described the 117-year-old landmark as "capital of the Pines." That may be so, but the locals weren't feeling overly loquacious when we arrived. My most vivid memory of that visit is a sub sandwich that nearly torpedoed my bicycling for the remainder of that Sunday afternoon.

*New Jersey
Countryside*

From Cranberry Bogs to the Cranbury Inn

Among the state's visual treats is its widely varied terrain. The flatlands by the shore and cranberry bogs and pine forests of the Pine Barrens yielded to gentle hills and wide-open horse farms in Monmouth County. Our route wound through a pleasant corner of Mercer County, past the Peddie School along Main Street in Hightstown, into Middlesex County.

Cranbury was among the loveliest communities we visited. The dogwoods were exploding in brilliant pinks and whites up and down Main Street, which resembled some quaint New England town. We passed the stately First Presbyterian Church, built in 1734, and stopped across the street to photograph the 202-year-old Cranbury Inn, where George Washington and Alexander Hamilton once dined. The man who shot Hamilton, Vice President Aaron Burr, reportedly hid overnight down the street at the Curtin residence while fleeing the state after his fateful duel.

Settled in the 1680s, the place was originally called Cranberry. In 1746 Presbyterian minister David Brainerd established Bethel, a Lenni-Lenape Indian mission, nearby in what is now Jamesburg. The Indians cleared about 80 acres and kept pretty much to themselves, yet the local white population is said to have harassed them. When Chief Justice Robert Hunter Morris claimed the property, citing a questionable land deal, some Lenapes moved to the Indian Mills reservation and others left the state.

Bunker Hill Road in Somerset County wound by some delightful Griggstown dairy farms before linking with Canal Road, quite possibly the trip's prettiest country lane. At the roads' intersection just over two centuries ago, angry citizens assembled to raze the home of "traitor" John Honeyman, a cattle herder for the British. A letter from George Washington spared Honeyman's family. Actually, Honeyman

was an American spy, whose information on the Hessians' Christmas plans helped the motley revolutionary army achieve its surprise victory at Trenton in 1777. After the war Washington visited the Honeymans to dispel any doubts about their patriotism.

Throughout our week-long odyssey, I was impressed by New Jersey's important role in the nation's struggle for independence. It's a history that rivals that of any New England state; nearly 100 battles were fought here. Although our route had not been plotted with Revolutionary War sites in mind, we still managed to encounter several. In the Pine Barrens we crossed the Mullica River, where American privateers hauled so many captured British ships that the British finally sent a flotilla to destroy Fort Chester. Just beyond Griggstown, over the Millstone River on Route 514, we entered Millstone, site of an infamous British raid on Oct. 27, 1779. British Colonel John Simcoe and the Queen's Rangers torched the courthouse, looted American supply houses, and generally raised hell with the populace before returning to their New Brunswick headquarters. During the British occupation of New Brunswick, Rutgers College (then known as Queen's College) temporarily relocated at the Hardenburg House near Millstone's center on Route 533.

We reached Griggstown in late afternoon after 40 miles of pedaling, and wondered where to spend the night. The area lacks campgrounds and cheap motels, and our route instructions listed no accommodations.

As chilly black clouds crept across the sky we pulled off Canal Road into the Delaware and Raritan Canal State Park in East Millstone to seek advice at the ranger station.

Park Ranger Bud Herald, a 19-year veteran, listened to our predicament and let us pitch the tent on the park's grassy hill, which overlooks the placid Delaware and Raritan Canal.

Dug in 1835 by Irish immigrants (many of whom perished during a cholera epidemic) to transport Pennsylvania coal, the 60-mile canal at its peak saw more barge traffic than the Erie Canal. The rise of the railroads gradually diminished the importance of this engineering marvel, however, and the last mule-drawn barge traversed the Delaware and Raritan in 1932. Today the state-owned canal furnishes water for industry and recreation for fishermen, canoeists and tourists like us who enjoyed admiring the old gate-tender's house and imagining the sound of tin fish horns signalling the arrival of yet another barge.

It was a peaceful setting most unlike our weekend Winnebago Forests. Our East Millstone stay was es-

pecially pleasurable thanks to the hospitality of Bud, his wife, Sue, and their teenaged children, Frank and Linda, who live on the park grounds in a rambling converted boarding house. The Heralds graciously shared their facilities with us, conversed at length about the park and our trip, and offered breakfast the next morning.

Despite miles and miles and miles of spectacular farms—farms growing just about anything you'd care to eat, from corn to wheat to spinach—that filled our trip with visual delights, I most fondly remember the warm people along the way: the gas station attendants who threw in a hearty "good luck" with road directions; the storekeepers who seemed so fascinated by our destination; and the Thelma Pedricks, Hipolito Oquendos and Bud Heralds who made perspiring strangers feel at home on the road.

Clark and Marilyn Benton also belong on that list. Relatives of Steve's, the Bentons feted us on our fourth evening, atop their 900-foot-high apple orchard in Morris County's Chester Township. To get there we had done another 40 miles, including a strenuous climb over Black River Road, a tortuous country byway that inspired nostalgia for the flatlands we left behind in Ocean County.

Schooley's Mountain

After an overnight at the Bentons' Trout Brook Farms, we tackled Schooley's Mountain, an agonizing early-morning climb requiring several "granny stops" to conquer. Our reward was a finger-freezing roller coaster downhill that catapulted us into Hackettstown in Warren County.

A few more downhills waited on Route 517, and Wolf's Corner Road and Route 519 in Sussex County. Very few. The last 67 miles were naturally the longest, snaking up, up, up past rocky dairy pastures that looked like Swiss scenes from a Social Studies textbook.

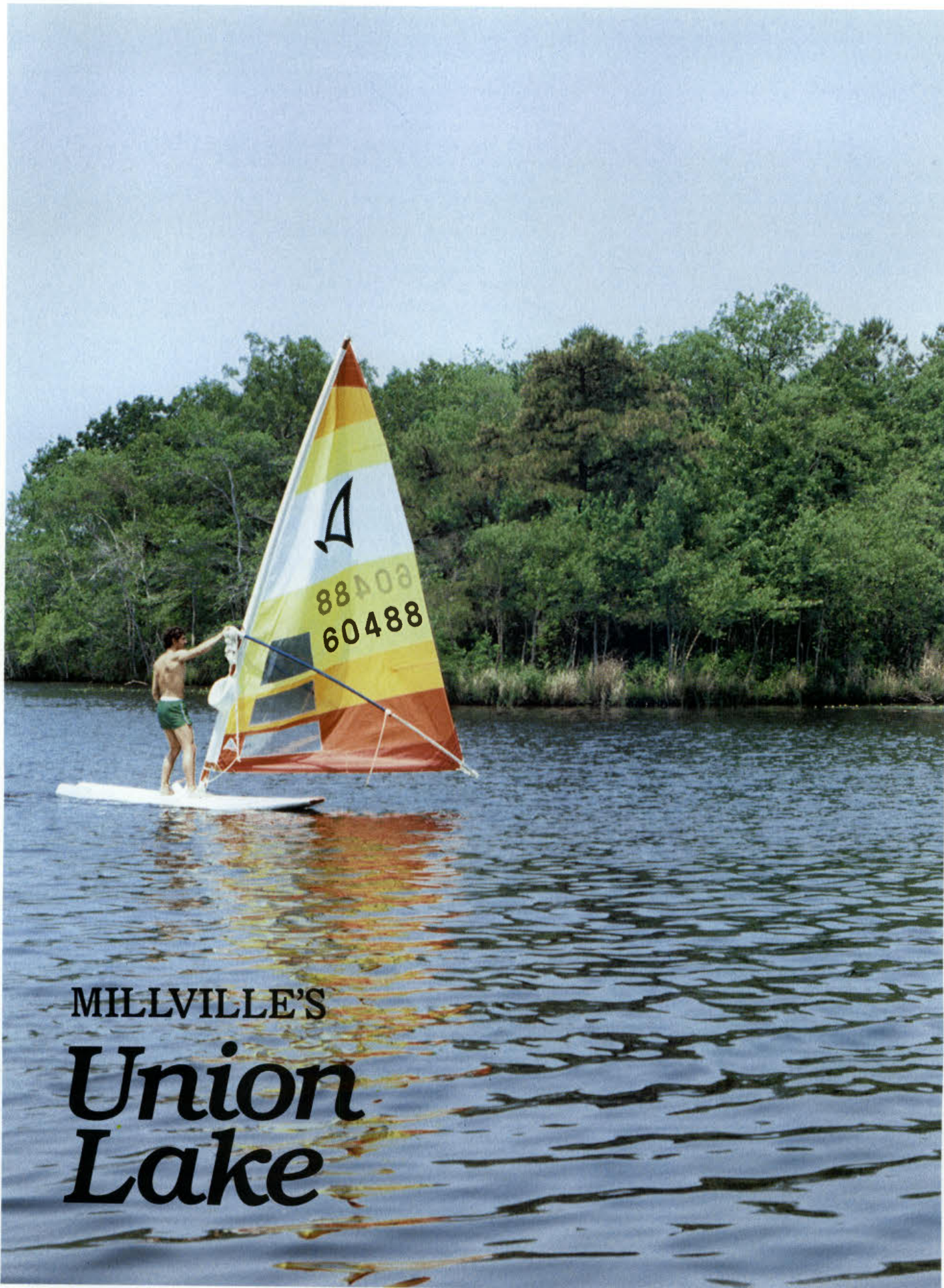
We devoured our last hoagies at Raffaella's Country Deli in Newton. The deli's walls were adorned with prints commemorating the Old West, and a leather saddle stood by a front window. Sitting by another window that day was a spiffy-looking old-timer who might have come with the saddle. He wore a wide-brimmed cowboy hat with a feather, a western-style corduroy sport jacket and a string tie, and he clutched an ornate wooden cane that he said was purchased in Mexico. Several strokes had impaired his speech, but the man's lively blue eyes sparkled like a kid's.

continued on page 33

Victorian
Cape May

KEVIN COUGHLIN





MILLVILLE'S
*Union
Lake*

The picture is pretty: It's a sunny Saturday afternoon and colorful sailboats glide over the wide expanse of blue lake. Rowboats and canoes dot the background. The water is bordered by the green of the surrounding woodlands. This is Union Lake in Millville, the largest lake in South Jersey.

Located in Cumberland County, just miles south of Vineland, the lake has been a popular fishing and boating place for many years. The original dam was built in 1790, and the lake was enlarged to its present size in 1868. Back then the water was used as a power source for mills and industries in Millville. This freshwater lake has an area of 898 acres and a maximum depth of 30 feet. The surrounding Wildlife Management Area—basically an oak-pine stand, with some cedars and maples in the smaller wetlands—consists of 4617 acres.

The state purchased Union Lake and the Wildlife Management Area in 1982 under the Green Acres program for the purpose of protecting open space. With state ownership, the lake is open to the public and the only permits required are the standard hunting and fishing licenses.

"We encourage all legitimate uses of the lake," says Richard Hall, a wildlife biologist with the Division of Fish, Game and Wildlife. "Since we have purchased it, there appears to be a tremendous increase already."

To make access easier, plans are underway to enlarge the parking and boat-launching areas on the west side of the lake. These access areas are reached by dirt roads off Carmel Road. Access on the east side of the lake is limited to Millville residents only. This section, called Union Lake Park is not owned by the state, and includes a swimming area, playground, and boat launching.

Gas-powered boats, with a limit of 10 horsepower, are allowed on the lake. Normally the state does not allow gas-powered boats on its waters, but it makes an exception at Union Lake because such motors have long been used here.

The Bureau of Fresh Water Fisheries is currently involved in an experimental stocking program to establish a fishable population of striped bass in Union Lake. This species, which normally lives in salt water, has been found in the lake—in amazingly large sizes.

In 1978, a Union Lake fisherman caught a 27 lb. 12 oz. striped bass, which holds the state record for freshwater lakes, and this year a fisherman caught an 18 pound striper.

Bob Stewart, Principal Fisheries Biologist and head of the experimental program, explains that the striped bass found in the lake are the result of some being stocked in the 1950's, and of fishermen catching them in the Maurice River below the lake, then purposely throwing them in the lake, near the base of the dam.

Because the fish thrived, the Bureau of Fresh Water Fisheries felt that Union Lake was a good candidate for a program to establish a population of "trophy-size" striped bass. The program began several years ago, and also includes Carnegie Lake in Princeton, and Farrington Lake in Middlesex County.

In 1979 one-inch fry were introduced at Union Lake, but after that they were reared to an average



A nature trail in the Union Lake Wildlife Management Area.

of four inches before stocking. In 1981, 1800 were stocked, in 1982, 8500; and in 1983, 17,000.

"Last year the fish from the first introduction were 10½ to 11 inches," says Mr. Stewart. "Fishermen were actually spotting schools of them and catching them."

The aim of the program is to establish a fishery where striped bass of from 5 to 10 pounds will be caught with some degree of regularity. "Union Lake has definitely shown signs of success," says Mr. Stewart, "while the other two lakes have been a disappointment."

Mr. Stewart adds, "We will continue stocking in the future if the project is successful," noting that it is expensive to raise these fish in a hatchery because the water must be heated. The striped bass will not spawn in the lake.

He is optimistic about the success, though: "Of all the lakes in New Jersey, Union Lake has the biggest and best potential for supporting striped bass."

Largemouth bass are also plentiful at Union Lake, and the local bass clubs hold their competitions here annually. Other fish found here are calico bass, chain pickerel, and sunfish.

Hunting in the Wildlife Management Area is another sport to be enjoyed at Union Lake. There is a good upland hunting, including white-tailed deer, rabbits, quail, and grouse. There is also a beaver population upstream, on the Maurice River.

The trails that wind throughout the woodland are used for hiking and birdwatching. Among the interesting birds sighted here are the hooded warbler and the prothonotary warbler. Raptors such as red-tailed hawks are seen here, and even the bald eagle has been spotted in winter when the lake is frozen. Ducks, geese and other waterfowl are common on the lake, especially such fish-eaters as common mergansers and loons.

Camping and swimming are prohibited at Union Lake, and the area is supervised by conservation officers from the Division of Fish, Game and Wildlife.

To get to Union Lake from northern points, take Route 55 South until you enter the City of Millville. Make a right on High Street, then another right onto Sharp Street, which takes you to the lake.

Elwood W. Bernat, from Philadelphia, with state record striped bass hooked in Union Lake, August 21, 1978. Weight of fish, 27 lbs. 12 oz.





Amusements on the Wildwood boardwalk
Warren Garretson

Vacationing in New Jersey

Beach at Round Valley State Park

William Leather



Canoeing the Manasquan River in Allaire State Park

Cornelius Hogenbirk

Camping is a major summer activity in New Jersey

Warren Garretson

Rockpile fishing at the shore





RAY FISK

Warren Garretson

*One of scores of marinas
along the Jersey coast*

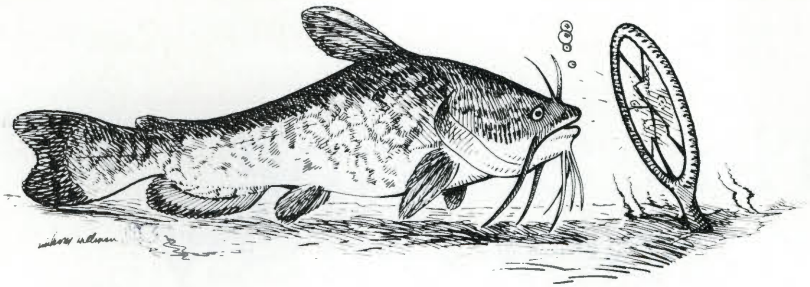


Fishing boat at Barnegat

The Brown Bullhead

BY MIMI DUNNE AND
FRANK E. BOLTON

ILLUSTRATION BY
ANTHONY HILLMAN



The brown bullhead is abundant in most of the lakes and streams of our state, yet it is often overlooked as a food fish and underestimated for its recreational value.

The brown bullhead is a member of the catfish family, which in New Jersey includes the channel catfish, white catfish, black bullhead, yellow bullhead, tadpole madtom, margined madtom, and stonecat. Members of the catfish family are characterized by spiny dorsal and pectoral fins and an adipose or fatty fin located between the dorsal fin and the tail fin. They are scaleless, with flattened heads and wide mouths surrounded by barbels, or chin "whiskers."

The brown bullhead can be distinguished from our other catfish by its jaws, which are nearly equal in length; its rounded or square tail fin; dark-colored barbels under its lower jaw; and deeply barbed pectoral spines.

Warm, weedy waters provide good habitat for brown bullheads. They are generally not found in fast-moving, gravel-bottom rivers or in the tea-colored cedar waters of South Jersey.

Spawning of the brown bullhead in New Jersey waters takes place primarily in May and June. The male constructs a nest in soft substrate where the female deposits some 2000 to 14,000 eggs. During the incubation period, which may last two weeks, the female agitates the eggs to promote hatching while the male guards them from predators.

When the young bullheads finally leave the nest, they swim in an aggregate, or pod, escorted by the parents. If threatened by predators, the young bullheads often dart into the mouth of the male for protection. When they are about one or two inches long, the young become potential food items for even their own parents. Thus, the pods of young are broken up rather abruptly and the individuals scatter independently.

Adult brown bullheads are omnivorous and feed on almost any plant or animal matter. Bullheads prowl lake and stream bottoms using the sensitive barbels on their chins in search of food. Their feeding activity increases greatly at night; however, this does not mean that they cannot be taken during the day. On cloudy days or in murky waters, it is possible to take bullheads all day long.

Any strong-smelling bait ranging from old cheese or liver to aging worms can be used, but live garden worms usually work well. If you do not get a hit within ten minutes or so in a particular spot, you would be wise to move your bait several feet. As long as the fish are in a given area and feeding, they will usually take the bait within a short time.

Just about any type of light tackle can be used to catch brown bullheads. They are taken as easily with cane-pole tackle as with spinning or spincasting gear. Baiting a long-shanked hook with a worm or part of a worm is a standard technique employed by bullhead fishermen. A number six hook is a good size to use since even a small bullhead has a pretty wide mouth. It is best to set the hook when you feel

the first tug to keep the fish from swallowing the bait too deeply.

The bait should be fished on the bottom—holding the bait well above the bottom with a bobber will not usually catch the bottom-feeding bullheads. In still waters the bait should sink down to the bottom without any extra weight, so sinkers are seldom needed.

The brown bullheads usually caught in New Jersey are 6 to 12 inches long with some big ones up to 14 or 16 inches. They seldom weigh more than a pound or two.

Many lakes, ponds, and slower-flowing streams throughout the state provide good bullhead fishing. Worthwhile waters to try for brown bullheads in the northern part of the state include Greenwood Lake and Barbour's Pond in Passaic County; Budd Lake in Morris County; Lake Hopatcong in Morris and Sussex Counties; White's Pond in Bergen County; Pompton Lake in Passaic County; Upper Echo Park Pond in Union County; and Columbia Lake and Mountain Lake in Warren County.

In the central part of the state, such waters as Amwell Lake and Spruce Run Reservoir in Hunterdon County; the Delaware and Raritan Canal in Hunterdon, Mercer, Middlesex, and Somerset Counties; the Delaware River in Hunterdon and Mercer Counties; Weston's Mill Pond and Farrington Lake in Middlesex County; Shadow Lake and Lake Assunpink in Mounmouth County; Colliers Mill Pond in Ocean County; and Spooky Brook Lake and Watchung Lake in Somerset County have good populations of brown bullheads.

In the southern counties, Hammonton Lake in Atlantic County; Crystal Lake and the lower section of the Rancocas Creek in Burlington County; Newton Lake in Camden County; Greenwich Lake in Gloucester County; Dennisville Lake in Cape May County; Cedar Lake and Union Lake in Cumberland County; Parvin Lake in Salem County; and Harrisonville Lake in Gloucester and Salem Counties can provide good bullhead angling.

To ensure the finest flavor of your catch, keep the fish on ice or alive in a bucket of cool water or on a stringer in the water. Bullheads can be prepared skinned or not skinned.

To clean a bullhead, slit from the vent up to the head and remove the entrails and head, carefully avoiding the sharp pectoral and dorsal spines. A cotton work glove on one hand, or a pair of pliers, will aid you in pulling the slippery skin off the fish.

The skinned fish may be filleted or cooked whole. Frying the floured fillets in butter is a popular method of cooking this fish.

If the bullheads are to be prepared with the skin left on, the skin surface should be scrubbed well with a fiber brush under cold, running water. Scaling is not necessary. Fry the same as if skinned. Smoking the fish with the skin left on imparts an excellent taste.

However you prepare them, bullheads are sure to be good eating.



Time Sharing in a New Jersey Meadow

BY LIBBIE JOHNSON
ILLUSTRATIONS BY
DOREEN CURTIN

We put them there as a welcome to bluebirds, sixteen boxes carefully constructed and mounted at a recommended height atop fenceposts which enclose a hay pasture. Did the boxes welcome any bluebirds to our New Jersey farm? Never. But as a home for tree swallows and meadow mice they have been a huge if troublesome success. Troublesome, that is, until I changed my negative attitude toward mice in bird houses and accepted a compromise for double occupancy. Well, not double occupancy exactly; more like a time-sharing plan so popular of late with the burgeoning resort condominiums. As a matter of fact, that is exactly what I have. Sixteen efficiency resort condominiums, with the tree swallows opting for the spring and summer seasons, the meadow mice the fall and winter seasons, and I playing janitor to the lot of them.

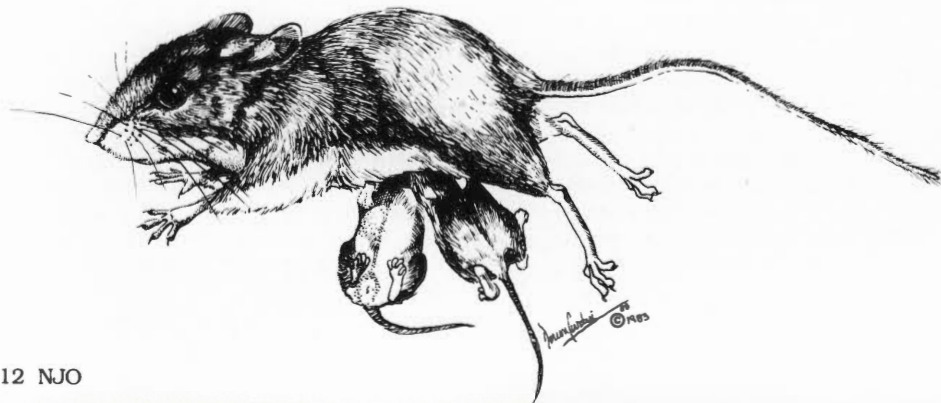
It was a valiant mother mouse who brought about this change to a positive outlook, a mother mouse I had dispossessed with four youngsters clinging to her teats.

Each spring after we had mounted the wooden boxes, I trudged out the lane to the pasture, dressed against the cold, March winds that swept out of the northwest and armed with a screwdriver to open up the front panel of each box and a trowel to clean out the previous year's nesting material. I was bent on having everything in readiness for the bluebirds, and always failing that, the tree swallows. Seldom did I find a telltale mass of loose grasses and white feathers left by last year's departing swallow

parents. Most of the time the raised panel revealed a granary of seeds and soybeans, an oval nest of tightly-woven grasses with a side entrance, and an odor so rank as to set me back on my heels—in short, a well-ensconced family of field mice.

My recognition of the rights of field mice developed slowly. For at least three years my attitude was one of utter annoyance at having to dispossess them, yet appreciation of the fact that these prolific mammals, capable of producing litters of five to seven young every three weeks during warm weather, were breeding tender morsels for the red-tailed hawks that coursed over the pasture. My annoyance turned to amazement at the perseverance of the small mice in the face of my opposition. And I grew to admire the clean beauty of their creamy white breasts and rust-colored backs, the seeming innocence of their large dark eyes.

With experience I grew rather proficient at spring cleaning. I would slide the trowel under a mouse nest complete with mother and young and set it down in the pasture, leaving her to hurry with her brood to the protection of the labyrinth of tiny galleries the mice had fashioned beneath the canopy of red clover and timothy plants. The more troublesome of my janitorial times came when the mother had not yet given birth. Then she and her mate would leave the nest the moment I raised the panel and climb to the top of the box or cling to the back corners, their large brown eyes fixed on me with fright. I would have to chase them as they climbed





the sides, usually having to catch and remove them by hand. The trouble with the eviction of such a pair was that they didn't take me seriously and moved right back in when my back was turned.

On April 18, a flash of white breasts and glossy, greenish-blue backs sailing over the pasture sent me hurrying back the lane to welcome the chattering tree swallows and check to see whether mice had moved back into the boxes since late March when I had cleaned them. I still and always hoped for a bluebird and was compulsive about having the boxes in early readiness.

I studied one particular box through the binoculars, puzzled as to how a swallow could be standing and peering at me from the entrance hole when the bottom of the box was a full six inches below. The answer was simple and one I should have anticipated. The swallow was perched atop an occupied mouse nest. In the three weeks since their eviction a pair had moved back in, built another nest, and produced a litter of four.

So it was back to cleaning. I placed the trowel under the nest, brought it out from the box, and was about to lower it to the pasture, when the mother leaped out from the side entrance of the nest and launched herself into space. Two of the young, clinging to her teats, swung out from her right side, and another two from the left. She wafted down like a miniature flying squirrel and hit the ground running, her four blind and naked passengers still keeping their firm grip as they dragged along the grass.

From that moment I have honored the determination of the grotesquely burdened meadow mouse. She and her kind are welcome to spend a safe fall and winter season inside the boxes. To avoid the trouble of having to evict them twice each spring, I wait until the tree swallows have returned to the meadow before I clean the boxes and send the mice back to some reasonably safe nesting spot on the edge of the meadow. Then when the swallows line up along the utility wires and prepare for their journey south, the mice are welcome to climb back up the fenceposts and claim their share of time in the meadow condominiums.



RARITAN RIVER FRIENDS PLAN TOWPATH TREK

The Raritan River Friends of Clearwater organization is planning its second annual "Towpath Trek" along the Delaware & Raritan Canal. This is the second Memorial Day weekend trek for the Raritan River Friends, a non-profit, environmental group whose purpose is to encourage steps to improve the environmental quality of the Raritan River system. The Raritan River system encompasses 22% of the area of New Jersey.

Last year's trek raised about \$500 for the group, and five hikers completed the entire trip, about 38 miles, from the beginning of the canal in Trenton, to its end at the Raritan River in New Brunswick's Boyd Park. Volunteers are urgently needed to make this year's trek a success, and coordinator Mike Berman stressed "It is not necessary for volunteers to complete all 38 miles of the trek, since sponsors are charged on a per-mile basis."

This year's trek is scheduled to begin on Saturday, May 26, and end on Monday afternoon, May 28.

Organizations interested in sponsoring a hiker, or person interested in hiking or helping out, should call Mike Berman, the coordinator of the Towpath Trek at (201) 249-4450.

N.J. BEACH BUGGY ASSOCIATION HONORED BY WILDLIFE FEDERATION

Sixteen community conservation clubs have been selected by the National Wildlife Federation to receive the Federation's 1983 President's Award for exceptional achievement during the last year. In New Jersey, The New Jersey Beach Buggy Association was honored.

All the clubs belong to a state affiliate of the National Wildlife Federation, the nation's largest conservation organization with over four million members and supporters.

The winners, chosen by NWF President Benjamin C. Dysart from 6,000 eligible clubs in 51 state and territorial affiliates, were cited for accomplishments in effective conservation action and environmental education programs, and for their contribution to their state affiliate.

The 16 clubs were congratulated by Dysart for their "collective efforts which have served to emphasize the importance of an alert, active and aggressive community club as the essential ingredient of an efficient and effective state federation."

Eric: "Hooked on Fishing"

BY BEN VAN VLIET

It was in 1975 when a six-year-old boy standing on the shore of Lake Columbus, Georgia cast a line into its waters. Unfortunately, while the lure made the water, the line snagged in a tree. But all was not lost, for young Eric Avogardo somehow hooked his first fish—a one-pound, two-ounce largemouth bass.

Since that day, Eric has been an avid fisherman who now holds four New Jersey state records for freshwater fish. He also holds state records in both New York and New Hampshire.

Eric now lives in Hawthorne, New Jersey and does most of his fishing in the state, but he also fishes the ponds and streams of Delaware, New York and New England. He says that while New Hampshire has "good fishing, New Jersey is better than New York."

This young man (he's now 15) has become the essence of an inveterate fisherman. In 1983, he landed a total of 1,041 fish, most of which he threw back. How did he get that way?

"Ever since that day in Georgia," he said, "I've been hooked on fishing. They are fun to catch and are a lot of sport. I let a lot of them go, but I just want to catch fish."

Well, he's caught a lot of them (107 fish in one day out of Lake Mohawk*) and he spends about two hours a day, year round with a line in the water. He recently took four pickerel from a pond at Ringwood State Forest through the ice.

"I'm crazy about the sport," he said, "but I am sort of a specialist because I almost always do pond fishing using light spinning tackle."

He has his most success with live bait—either worms or minnows, but he uses commeal for carp and he recently took a three-pound carp from the Passaic River.

There are several things which make Eric the effective, successful fisherman he is. One is that he is very thorough and leaves no stone unturned. Eric fishes places most of us would pass up.

Field surveys by the Division of Fish, Game and Wildlife's Bureau of Freshwater Fisheries have confirmed what Eric has known for years—that those little backyard streams and small ponds can be loaded with fish and these fish seldom see a baited hook. They may not be the glamour species like the trout, although a surprising number of largemouth bass have fallen prey to Eric's offerings.

Also, Eric, by fishing the waters which are generally ignored, has brought home some catfish, perch



and sunfish which dwarf the trout that are caught from some of the famous waters of the state.

Eric essentially goes after panfish, but that's also why he seldom "strikes out" on a fishing trip. He goes after what's available. Many fishermen are foolishly believing that they are "too good" to stoop to catching panfish, and thus often go home with nothing to show for the effort.

But, before you write Eric off as a pan fisherman who's cornered the market on Lake Mohawk's* white perch population, it should be pointed out that he has broad horizons, developing skills as a fly fisherman (he took his first trout at the age of 10), and as an ice fisherman.

His fly fishing experience resulted in two brook trout and a rainbow, both out of a stream in New York. "I love trout fishing," he said, "It's a real challenge trying to get the trout to hit a fly."

Eric caught his first trout at the age of 10, but he still primarily fishes the lakes and ponds for pan fish, and also the Hudson River where he has developed a knack for catching lots of "Tommy Cod."

A lesson that perhaps would do well for anglers, especially those starting out is that Eric has always kept a daily log of the fish he catches. Keeping a log can be extremely helpful in subsequent years as one is then able to check back to see when fish started hitting at one lake and what type of bait or lure was effective. Logs are also great for comparison purposes as well as providing warm memories in the future years.

Eric, who is now a ninth grader at Hawthorne High School, has enough memories to last two lifetimes, but he's still got goals to meet. For example, he's yet to land a walleye, pike, muskie or Lake trout.

And, guess what Eric wants to be when he grows up—you guessed it—a freshwater fisheries biologist. We're sure when Eric gets his first home computer the first program on it will be his daily fish log.



*Lake Mohawk (near Sparta) is a private lake and permission to fish must be granted by owners.

NEW JERSEY STATE RECORD FRESHWATER SPORT FISH

Species	Angler	Year	Lb.	Oz.	Where Caught
Bass, rock	Eric Avogardo	1982	2	5	Saddle River
Bullhead, brown	Eric Avogardo	1983	2	1	Passaic River
Perch, white	Eric Avogardo	1983	2	10	Lake Mohawk
Sunfish, pumpkinseed	Eric Avogardo	1983	1	4	Potake Pond

A Little Sun at Camp Sun'n Fun

Playing basketball: Jeffrey Worlds and Gloria Chambers

Walking in the woods: Carl Green, Danny Sheehan, and Tony Barilaro, with Zsa Zsa Martin

Christmas in July: Santa Jules Kovack greeting Roxann Jackson and Keith Rigg—Veronica Miscel facing camera



BY LINDA SCHNEIDER

When you first pass the sign for Camp Sun'n Fun in Williamstown, New Jersey, it appears as any other camp. But closer inspection reveals that it is indeed extraordinary. Camp Sun'n Fun is for retarded children and adults.

Imagine a child or adult who has never roamed through the New Jersey pines collecting pine cones or just simply enjoying the outdoors. If it were not for this camp, many retarded individuals would never experience this outdoors program because they are often sheltered and protected by their families.

Many parents and the members of the Gloucester County Association for Retarded Citizens realized early what therapeutic value an outdoors facility for the retarded would provide. Other community groups, such as the Gloucester County Jaycees and the Jaycee-ettes also joined in this effort. The dream became a reality when Frances Bothwell donated the estate of George and Frances Bothwell, some 20 acres of woods, fields and water for use as a camp for retarded children and adults.

Programs, provided by professional staff, certified special education teachers, and college special education majors are designed to meet the needs and abilities of each individual. The staff has created an atmosphere where retarded children and adults can venture out with supervision to explore the nature trails provided by CETA (Comprehensive Employment Training Act).

The day camping season runs from July 9 to July 27. Trainable retarded children six years and up, and educable children four and one-half years and up can come together daily to explore the outdoors, play, learn, and develop friendships.

Unique events such as Christmas in July and Special Olympics provide excitement and an opportunity for children to compete. And, win or lose, these special children have a feeling of pride and accomplishment. Christmas in July is celebrated with all the zest associated with the holiday. The camp is decorated and the children collect tree materials and holly to create their own Christmas arts and crafts. Truly a special Christmas for special children!

The retarded adult vacation opportunities start July 29 through August 19 and reservations can be made for one or more weeks. Vacation activities include swimming, barbecues, visiting musical groups, dancing, sports, and nature explorations.

The adults are offered new and exciting learning experiences by visiting nature trails and pine tree farms; and by receiving instruction in identification of plant life native to New Jersey.

The adult program has been such a success that during the off-season Camp Sun'n Fun has been used by the Woodbine and Vineland state schools as well as other adult day training centers for overnight campouts.

The volunteers, parents, community groups, and the Association for Retarded Citizens are to be congratulated. They persevered and proved that the outdoors is for everyone to enjoy. For information, call or write:

ASSOCIATION FOR RETARDED CITIZENS, INC.
Gloucester County
53 Smallwood Place
Woodbury, New Jersey 08096
Telephone: (609) 848-8648





Canal, bridgetender's station and house in Blackswell's Mills

James C. Amon

Architecture along the D&R Canal

BY PATRICIA REARDON

Once it was a bustling trade route, 60 miles of inland waterway dotted with slow-moving, coal-laden barges drawn by "shave-tail" Montana mules. Today this linear area belting New Jersey's narrow "waist" comprises the Delaware & Raritan Canal State Park, and is remarkable not only for its environmental beauty, but also for its historical and architectural significance.

Along the waterway may still be found areas containing cobblestone spillways, stone arched culverts, swing bridges, canal houses, and surviving locks that reflect the technology of the 19th century. A number of historic communities that grew and prospered along the canal are graced by homes and buildings that speak to us of another era. An example of almost every type of architecture prevalent in this country during the 18th and 19th centuries may still be found here: simple Federal, ornate Eastlake and Italianate, graceful Greek Revival, and soaring Victorian Gothic. Although the overwhelming majority of private homes built in this period were vernacular—that is, without any particular conformance with the strictures of a specific historic style—they often "borrowed" from those particular styles then fashionable.

Vernacular houses were structured in response to the needs and tastes of their owners, the competence of their builders, and the character of locally available materials. They may have been wood, brick or stone, modest or ample in size, unadorned or highly embellished. As houses changed hands, new owners frequently added wings, dormers, porches, posts, and decorative cornices in rambling disarray. The end achievement, however, was often one of grace and dignity.

While some rural and small town buildings were designed by local architects, most were taken from

pattern books that enjoyed wide circulation and popularity. Pattern books, available for currently fashionable architectural styles, gave precise instructions for crafting windows, doors, towers, porches, and ornamentation in the desired style and "correct" manner.

Among the historically significant communities along the D&R Canal, Lambertville may be considered the "crown jewel," holding one of the most important collections of 19th century architecture in the state. Fully 80% of the buildings date from the last century. One of the earliest of these is Lambertville House at 32 Bridge Street, built of stone by Captain John Lambert in 1812, the same year as the first wooden bridge construction was completed across the Delaware River to New Hope. As a stage coach stop on the New York to Philadelphia route, the inn was a resting point for many prominent people including President Andrew Johnson, General Ulysses S. Grant, Robert Todd Lincoln, Tom Thumb of circus fame, and Pearl White, "Perils of Pauline" film star.

The original structure was greatly enlarged in 1851 with a stucco addition followed in 1888 by construction of a bracketed cornice section and an Italianate style porch. Now a privately owned restaurant-hotel, the building has been open continuously to the public since its construction.

Another of Lambertville's restaurants, appropriately named Lambertville Station, was once the community's busy railroad station and depot. Located at the end of Bridge Street just overlooking the Delaware River and the canal, this two and one half story edifice, built in the Victorian style in 1873, is affectionately called "Railroad Gothic." It was designed by the noted Philadelphia architect, Thomas Walter.

Also on Bridge Street at 15-17 is the Bridgetender's House constructed in 1830. This two and one half story frame building with center chimney still has the original second floor windows and two arched room dormers. Privately owned, it now houses an antique shop.

Walking along North Union Street, one may observe examples of the Italianate style highly popular in America between 1830 and 1880. Generally eclectic, the style may have been either symmetrical or



Bridge Street, Lambertville, at turn of the century.



Titusville French Second Empire

James C. Am...

asymmetrical. It included low-pitched roofs, broad eaves, tower and bay windows and often verandas. The People's Store, c. 1853, at 30 North Union appears to be the first example of Italianate to appear in Lambertville. At number 119, the William Cowin House is typical of the asymmetrical design of Italianate known as the Tuscan Revival style. Built in 1867 for a wealthy industrialist, this tower house combines all the elements of the style so often found in pattern books of the Victorian period.

Also on North Union Street, three prominent examples of the French Second Empire style may be found: the J.A. Anderson house at 114, built in 1872; the A.H. Holcombe house (now the City Hall) at the northeast corner of York, built in 1873; and the Job Silvers house at number 28, built in 1874 and designed by local architect, Captain James Bird who also fashioned several other of the city's buildings including the eclectic Odd Fellows building at 26 Bridge Street.

Two of the three architecturally significant churches in Lambertville—the Methodist Episcopal Church (108 North Union) and the First Baptist Church (61 Bridge)—are representative of the Romanesque style each with a tower, gabled roof, vertical silhouette, and semi circular arched window and door openings. They were built in 1865 and 1868 consecutively. St. John's Roman Catholic Church (50 Bridge) built in 1892, was the last major 19th century structure erected in the town. It is considered one of the finest examples of High Victorian Gothic Revival in the rural Delaware Valley.

A casual visitor strolling the tree-lined, sun-dappled streets of Lambertville will be rewarded with a glimpse of the past—an architectural view of homes, shops, churches, and public buildings reflecting a comfortable middle class lifestyle. Her residents prosperous but not wealthy, the city never hosted great estates, magnificent hotels, nor expensive, elegant restaurants. Yet the buildings and homes still surviving here clearly reflect diversity, imagination and individuality.

On Route 29 just about eight miles north of Lambertville, the little village of Raven Rock rests opposite Bull's Island, the location of the canal feeder's inlet. Nestling drowsily against a steep, wooded hill, the village consists of twelve houses, the

first of which was built in 1782, and all but two others dating from the mid-nineteenth century.

Saxtonville Tavern (now a private residence) at Raven Rock was once the farmhouse of the area's principal landholder, Nathaniel Saxton. The two and one half story, all-stone structure was converted to a public house in the early nineteenth century and provided room, food, and drink to weary travelers on the old Frenchtown-Lambertville Road. The Tavern was enlarged twice between 1801 and 1835 as it progressed from farmhouse to tavern to hotel, and finally full circle again to private residence.

Also on Route 29, this time south of Lambertville near Washington Crossing State Park, lies the historic district of Titusville, accessible only by bridge, a thin strip of fertile land sandwiched between the Delaware River and the D&R Canal. Isolated and nearly unpopulated in 1776, the area provided an ideal location for General Washington's famous Christmas Day crossing of the Delaware to defeat the Hessian forces at Trenton.

Precipitated by the canal opening in 1834, a sudden flurry of commercial activity took place in Titusville. Joseph Titus (heir to substantial Titus land holdings) operated a log basin, lumberyard, sawmill, grist mill, and a family store. Still standing at 3 River Drive (now a private residence) is the tavern he built in 1835 "for the accommodation of boat men near Titus' Cove." In the same year he also built his own residence (18 River Dr.) in the simple but elegant Federal style with careful attention to the front entrance, windows, and cornice.

Towards the end of the 19th century, when commercial activity began to ebb, the village became increasingly popular as a site for vacation homes, and many summer cottages were built which later were converted into year-round residences. Most are vernacular adaptations of the major 19th century architectural movements with only a few representative of high style. Among these the J. Hart house, c. 1852, at 22 River Drive is in the Greek Revival style; the P.A. Van Cleef house, c. 1860, at 26 River Drive is in the Italianate style. The only stone house existing now in Titusville is that of Levi Knowles located on River Drive. With the exception of a few later additions, this structure is a good example of



Union Street, Lambertville



Griggstown Canal House

James C. Amon

the stone houses built in the Delaware Valley during the early 19th century.

Located north of Princeton on Route 533 is yet another community with historic ties to the D&R Canal. Griggstown, stretching along the Millstone River in central New Jersey first attracted settlers for its rich farmland, abundant forests and fish-filled streams. Even today it is a rural community of well kept farms and gracious houses.

When the canal was constructed, Lock Nine was located just south of the town. Both the locktender's house and the bridgetender's house, c. 1830 which are now state owned, may still be seen. The first is a wood frame building measuring 18 X 46 feet with two end chimneys and a scroll bracketed front porch supported by wooden columns. At the Griggstown Causeway, the bridgetender's house (now a private residence) was built entirely of fieldstone with a gabled chimney at either end. Directly across from this is the toll house, a little building about 6 X 8 feet that once housed a wireless telegraph station used to notify the tender of approaching ships.

The earliest house in the district is the Veghte house on Canal Road across from Butler Road juncture. It dates from the early 18th century and retains its original low ceilings and large kitchen fireplace. Of the same vintage is the Honeyman house (on Canal Road north of the Causeway), known as the "Spy House" for its owner. John Honeyman, a former British soldier, became a spy for the Revolutionary forces, and his information to General Washington regarding the Hessian encampment at Trenton was considered crucial to the success of the Christmas Day attack.

Much later, the increased population of the area, fostered by the bustling canal, prompted local residents to build the First Reformed Protestant Dutch Church in 1842 on Canal Road. Built in Greek Revival style, the church has a temple front with recessed entry porch, two doric columns and four pilasters. Its high belfry with dentiled cornices can be seen from miles around making it a local landmark. This classic church is considered the finest example of the Greek Revival style along the canal from Trenton to New Brunswick.

Continuing north on Route 533, the traveler will arrive at Blackwell's Mills, an area that retains its

agrarian flavor, and has remained virtually unaltered since the mid 19th century. The Blackwell house, facing Canal Road about a quarter mile from the intersection, is now the Canal Park Headquarters. It was built in the 1850's and reflects the Italianate influence popular in this country shortly before the Civil War.

In East Millstone (north of Blackwell's Mills) the Italianate style came to prominence between 1850 and 1875, and several good examples remain. The three story H.L. Olcott house, 2358 Amwell Road, c. 1860, is a good example of the Italian Villa style with a corniced front porch and elaborate entrance. Prominent for High Victorian Eclectic is the Nathaniel Wilson house at 13 Market Street built in 1888. Its Eastlake style porch and entrance combined with a profusion of spindlework, latticework, and carved panels, brackets and scrolls, help to create an exaggerated three dimensional quality that delights the eye.

East Millstone is an interesting example of what could happen in the 19th century when an important transportation link passed through a rural area stimulating business and economic growth. The original farms here were subdivided into lots, and the building boom began. Following the canal's decline, the town's character then changed from commercial to suburban residential.

Over 200 years of history are tied to the homes and buildings along the D&R Canal. They reflect another era, a quieter time when burly men slung blocks of melting ice on their shoulders and hauled it dripping to oak boxes with brass handles; a time when milk was delivered by horse and wagon to kitchens fragrant with the sweet aroma of bread baking in black iron stoves. Fruits and vegetables were harvested from nearby farms and backyard gardens. Flour was ground at the local gristmill. Coal—glittering blue-black anthracite—shipped by barge along the canal, warmed our winters, cooked our food, and fueled the fires of a budding manufacturing industry in this country. Farms along the canal became villages and towns, changing forever the face of the land they occupied. The architecture that survives here has become a record of those years; a book from which to read the history of the ordinary people who were our ancestors.



James C. Amon



Wilson house in East Millstone



D&R Canal State Park



Photographs by
James C. Amon

New Jersey Governor Peter Vroom and a party of dignitaries officially opened the Delaware and Raritan Canal on June 24th and 25th, 1834, travelling by barge for its entire length. They were met at every bridge and lock by crowds of cheering citizens, and when they finally got to New Brunswick they were greeted by a twenty-four gun salute, a brass band-led parade through the city, and a festive formal dinner.

It is hard for us to imagine now why such a fuss was made over the opening of a canal, but few people in America today are as isolated as Central New Jerseyans were in the early 1830's. There were few roads then and those that did exist were at best difficult and at worst simply impassable. Railroadings was in its infancy at this time, and the rivers were not easily navigated. The canal was seen as a broad, smooth connection with Philadelphia and New York City. It meant markets for farm products, or an opportunity to start a store or a small factory. It meant coal from Pennsylvania, fancy dresses or furniture from New York City, but most importantly it meant a connection with the rest of the world.

For thousands of laborers—mostly Irish immigrants—who spent three years digging the canal it had meant back-breaking work at very low pay. Even worse, many of those laborers died in 1832 when Asiatic cholera swept through the labor camps.

Once opened, however, the D & R served for a century as

one of America's busiest navigation canals. In its busiest year, 1871, it even surpassed any total that the much longer and more famous Erie Canal ever recorded.

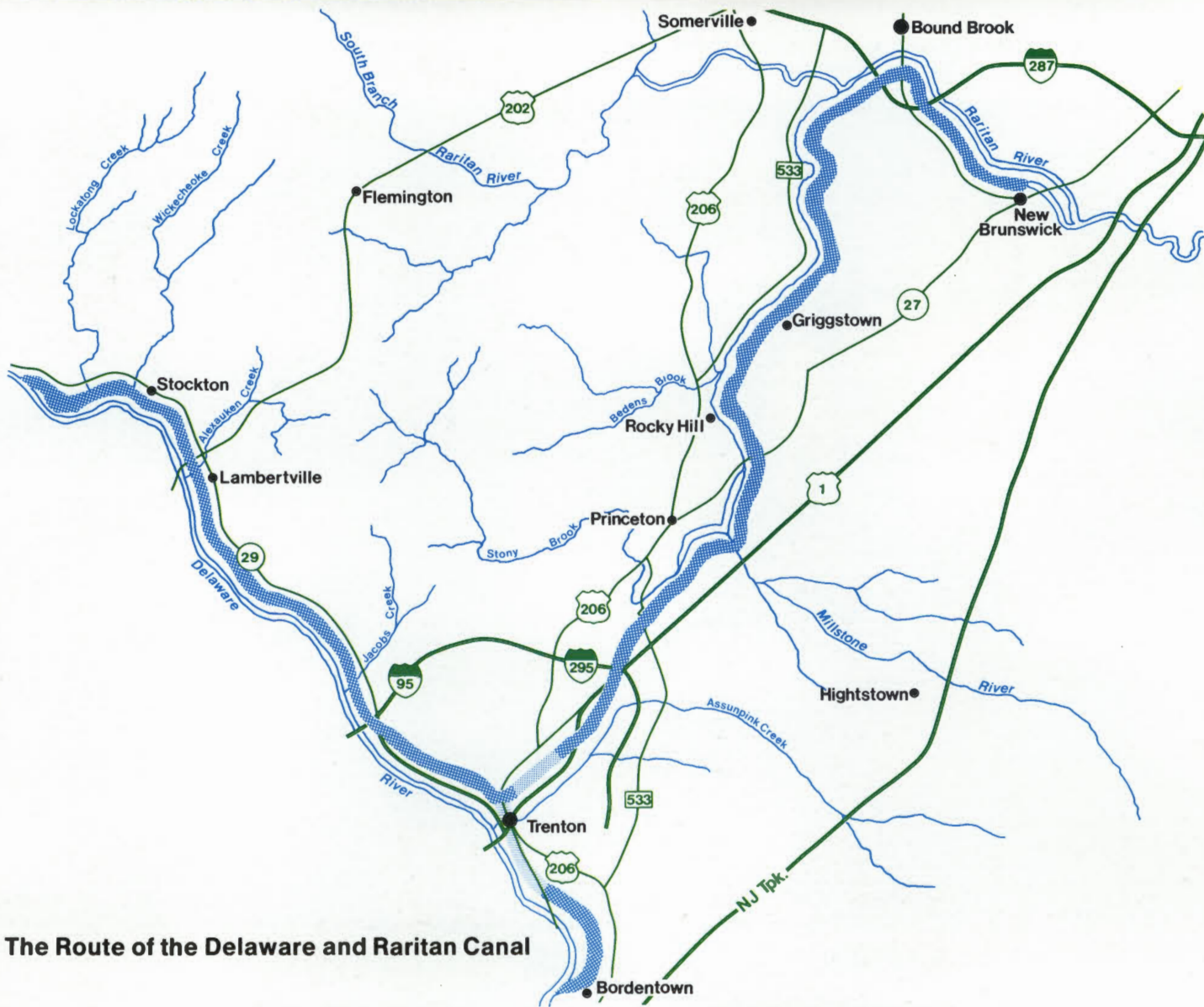
While the prosperity of Trenton and New Brunswick was obviously promoted by the canal, and a number of small commercial centers developed to take advantage of its presence, the D & R was mostly a route for Pennsylvania's coal to reach New York's furnaces. Coal accounted for about 80% of the total tonnage carried on the canal during most of its busiest years.

By the end of the nineteenth century enthusiasm for canals was dying all over Eastern America. They were too slow compared with the railroads and not enough cheaper to justify the expense of keeping them in good condition. The D & R never showed a profit after 1892, but it stayed open until the winter of 1932-33 when it was finally closed permanently.

Shortly after the canal was closed to navigation, the State of New Jersey took it over and, after restoring the feeder and the main canal from Trenton to New Brunswick, began to operate the canal as a source of raw water for farms, industry, and homes. While it was operated as a source of water, it was also informally used as a recreation site for hikers, canoeists, and nature lovers. Gradually, people began to realize what a valuable resource it is.

Continued on back page





The Route of the Delaware and Raritan Canal

Hiking & jogging

The towpath is used by hikers, joggers, dog walkers or any other kind of walker all the way from Whitehead Road in Lawrence Township to New Brunswick. South of Whitehead Road through Trenton the path is gone. From Trenton to Raven Rock along the feeder, however, an abandoned railroad right-of-way is available and is being gradually converted into a usable trail. Together, the towpath and railroad bed cover more than 50 miles.

Bicycling & horseback Riding

Bicyclists and horseback riders are welcome to share both the towpath and the abandoned railroad bed with pedestrians. The quality of the surface for bicyclists is variable, however, and is often too rough for pleasant riding. Two trails along the Millstone River near Griggstown are also available for pedestrians and horseback riding.

Picnicking

The whole sixty miles of the Canal Park can be used as a picnic site for people who want to simply spread out a blanket and eat a sandwich. For those who want picnic tables and fireplaces, however, public picnicking can be found at Bull's Island, Lambertville (south of Bridge Street between the Canal and the Delaware River), Washington Crossing, Trenton (Cadwalader Park), Princeton (Basin Park at Alexander Street), Griggstown and Blackwell's Mills.

Camping

Campgrounds are available at Bull's Island.

Boating

The entire Canal Park is available for canoeing or row boats (motorized boats are illegal and sailboats are impractical) except the mile and a quarter section that flows under U.S. Route One. Most bridges are high enough to let a canoe pass under but boaters must portage around the locks and the occasional low bridges. Canoes can be rented at Titusville, Kingston and Griggstown.

Fishing

Several thousand trout of catchable size are stocked in the feeder and in the Princeton section of the main canal every Spring. The year-around fish population includes largemouth bass, bluegill, pumpkinseed, catfish, perch, and pickerel. Fishermen are welcome to find the best spot along the sixty mile canal.



Recreational use of the D&R Canal Park





Continued from the first page

In 1973 it was included on the National Registry of Historic Places. In 1974 the State Legislature responded to citizen requests and passed a bill which established the sixty mile long canal and the narrow band of State-owned land along its banks as a state park. That park is being developed today while people canoe and fish, jog, bicycle, or hike along the towpath, and enjoy the ribbon of open space which ties Trenton to rural Hunterdon County, connects the floodplain of the Millstone River with the Piedmont hills, and gives twentieth century New Jerseyans a sense of their nineteenth century heritage.

The reason for building the D & R Canal was to provide a safe and short waterway between Philadelphia and New York City. The ocean route between those two cities was both dangerous and long. A channel was dug, therefore, from the head of navigation on the Delaware River (just north of Bordentown) to the head of navigation on the Raritan River (New Brunswick). This 44 mile long channel of the "main" canal follows river valleys in order to minimize the need for locks that a more direct route would have required. Only seven locks were required to step up from Bordentown to Trenton, and seven more mark the descent from Trenton to New Brunswick.

To supply water to the canal, a feeder channel was built from the main canal in Trenton northwest 22 miles along the Delaware River to where it draws its water supply from the Delaware at Raven Rock. Shortly after it was opened, the feeder channel also became a busy navigation canal.

Today the entire feeder canal remains open while the Trenton portion of the main canal has either been filled (the section toward

Bordentown) or covered with U.S. Highway One. Aside from another portion of the canal in New Brunswick which runs under U.S. Highway Eighteen, the rest of the main canal flows openly through the countryside.

The D & R Canal State Park is managed by the Division of Parks and Forestry, New Jersey Department of Environmental Protection. For further information about the facilities and activities available at this 106 acre park, contact,

Superintendent— D & R Canal State Park
R.D. #1, Box 4 • Canal Road
Belle Mead, N.J. 08502 • 201-873-3050

The D & R Canal Commission, created in 1974 to plan the development of the D & R Canal State Park, and to regulate land use in the Park's 400 square mile watershed, coordinates the activities of six state agencies, four counties and 21 municipalities as they affect the D & R Canal State Park. Eight members appointed by the Governor meet regularly to review development proposals and plans. The Commissioner of the Department of Environmental Protection serves as an ex-officio member. For further information, contact,

Executive Director— D & R Canal Commission
25 Calhoun Street • CN 402
Trenton, N.J. 08625 • 609-292-2101

A potpourri of interesting facts

New Jersey Outdoors

the bi-monthly magazine of the
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of New Jersey. This publication is dedicated
to the wise management and conservation
of our natural resources and to foster a
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803 lb. Atlantic Bluefin Tuna caught at the "Mudhole," by crew of Mr. Rooster, left to right: Rich Manera, Frank Valla, and Ed Flori (kneeling).

New Jersey has great saltwater fishing!

Parks '84

A selection of events scheduled across the state during May and June. Questions? Want more information? Call the phone number at the end of each listing.

- May 5 FISHING DERBY,
Lake Papaiani, Central Avenue Park
Edison 201-287-0900
- 12 MANASQUAN RIVER CANOE RACE
Howell Park Golf Course
Howell 201-842-4000
- 19 GREAT SWAMP WILDLIFE DAY
Morris County Outdoor Education
Center
Chatham 201-635-6629
- 19 REPTILES AND AMPHIBIANS OF
SOUTH JERSEY
Atlantic County Park
Mays Landing 609-625-1897
- 26, 27 TROUT DERBY
28 Swartswood State Park
Newton 201-383-5230

- June 2 GARDEN STATE TIN MAN TRIATHALON
Round Valley Recreation Area
Lebanon 201-725-8445
- 2 CANOE JAMBOREE
Turkey Swamp Park
Freehold 201-842-4000
- 10 17TH ANNUAL HISTORIC ARTS FESTI-
VAL
Batsto, Wharton State Forest
Hammonton 609-561-3262
- 10 JERSEY CITY ETHNIC FESTIVAL
Liberty State Park
Jersey City 201-435-0736
- D & R CANAL 150TH
ANNIVERSARY CELEBRATION
- 23 Many events along Canal's 66-mile,
length at Stockton, Lambertville, Wash-
ington Crossing State Park, Trenton,
Port Mercer, Princeton, Basin, Grig-
gstown, Blackwell's Mills and South
Bound Brook including wagon rides,
canoe trips, photography and art
exhibits, a skulling regatta, picnics, open
houses, and an underwater recovery
demonstration. D & R Canal Com-
mission 609-292-2101
- 23, 24 BATTLE OF MONMOUTH RE-ENACT-
MENT
Monmouth Battlefield State Park
Freehold 201-462-9616
- 30-July 1 HARBOR FESTIVAL
Liberty State Park
Jersey City 201-435-0736
- July 14-15 BASS DERBY
Swartswood State Park
Newton 201-383-5230



Ghosts of Iron Past

BY JOHN T. CUNNINGHAM

By night, roaring fires lit the sky for miles around. By day, black smoke eddied high above the surrounding forests. Giant hammers ran loud against iron, night and day.

Iron was king 150 years ago. Batsto, Atsion and Allaire were at the peak of their iron glory.

It is something of a minor miracle that the villages exist at all, they are not the kinds of collapsing foundations or crumbling walls that mark villages that thrived in southern New Jersey when bog iron was a way of life in the pine woodlands.

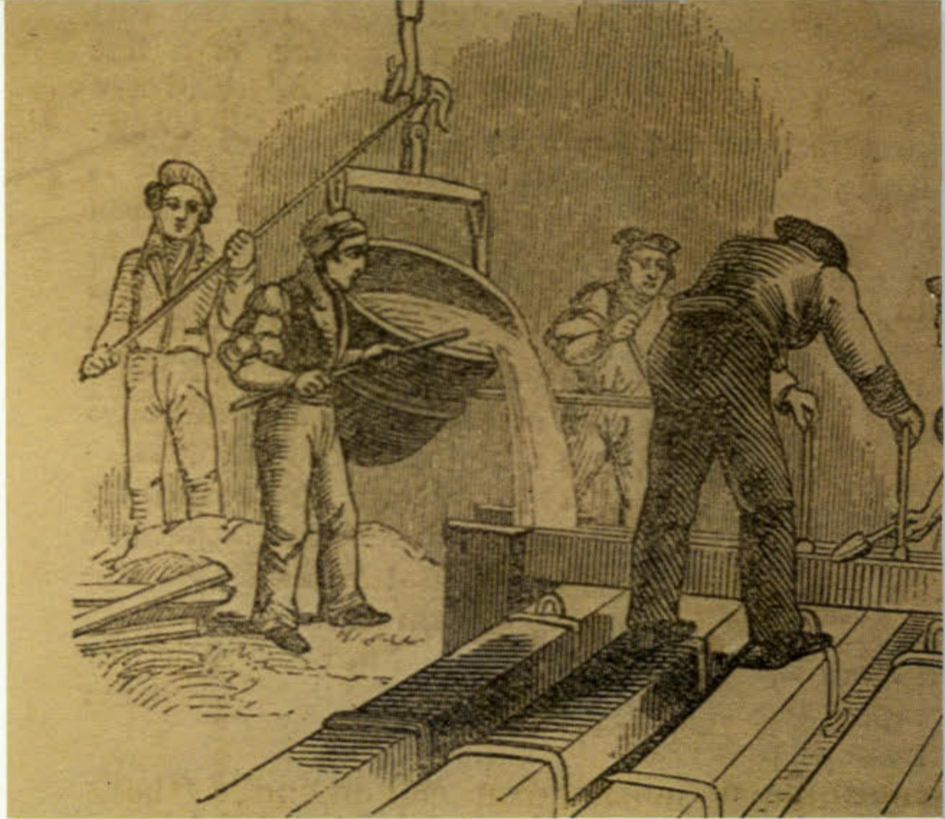
Surely it could have been expected that one of the awesome Pine Barrens fires would have leveled Batsto's wooden buildings. Vandals should have made Atsion a target after Route 206 was cut through to provide a link with "civilization." Allaire's valuable land survived development only because the founder's son lived long enough to keep the nearly-deserted streets out of the clutches of real estate developers.

All three villages began as visions, spawned in awareness that a vast region from Tinton Falls south and west held the three vital necessities of iron making: ore, fuel, and water.

Cedar-colored streams, meandering through the flat, sandy soil, gave the first insight to iron-minded men. The color hinted at iron, easy-to-mine ore in the mud.

Bog iron is one of the nature's simplest and yet most unusual phenomena. The slow-moving water that made the ore had to be dammed to provide the power needed to run forge bellows or to lift the massive hammers used at that time.

Nature, in her bounteous wisdom, ran those iron-laden streams through thick forests ready to be felled for the furnace stacks. It was so easy, so altogether.



Casting Pipes

Entrepreneurs were impressed with the potential. They estimated that ore could regenerate itself every 20 years. Coincidentally, they calculated that a lumbered forest would need 20 years to reach cutable growth again. Bog iron seemed like a dream; a perpetual industrial moneymaker.

The first bog ore exploitation in New Jersey began at Tinton Falls in 1675. It was short-lived, but the bite of the bog iron bug was enough to unleash dozens of iron men in southern New Jersey in the next 150 years.

No iron man surpassed Charles Read of Burlington, a distinguished lawyer, Supreme Court Justice, confidante of three Royal governors—and a terrible businessman.

Read began assembling Pine Barrens property in the 1750s. By 1768 he had four forges or furnaces in place—at Atsion, Batsto, Etna and Taunton. All depended on the slowly-moving iron-laden streams in the Mullica River watershed. Read and his associates hired men to dam the streams, build the forge stacks, mine the ore and turn out iron.

From the start, the iron workers were virtually serfs, paid in scrip that could be used only in company-owned stores.

Read failed, almost from the start, sold out his interests between 1768 and 1773. In the latter year he sailed for St. Croix in the Virgin Islands. From there he wrote:

"I hope no man shall lose by me tho' they may be longer than I choose out of ye money."

Later wrote Read in self-vindication: "It cannot be said by the most malicious that I wasted my substance in riot or on indulgence in any expensive vice..."

Small matter; the Read empire was gone. New owners regrouped, rekindled the fires in time for the Revolution. Both Atsion and Batsto produced mightily for the cause—Atsion with supplies for the navy and iron camp kettles, Batsto with such assorted military needs as cannon, shot, cannon balls



PHOTOS PROVIDED BY
THE BUREAU OF PARKS



Allaire State Park

and kettles.

The pineland iron installations were considered so important that in October, 1778, a British force set out to destroy the works. After burning Chestnut Neck, a vital shipping point, the invaders were turned back by a ferocious militia counter attack.

After the war, Batsto and Atsion both passed into control of the Richards, a powerful family that dominated Pine Barrens history for more than a half century.

Noted for quality pig iron, Batsto in the Richards' era turned out countless miles of water pipe for Philadelphia. It made an iron fence to enclose Independence Hall. Its quality firebacks were widely prized.

Atsion fared poorly. An 1823 traveler described it as a "formidable ruins." So it was, until Samuel Richards purchased the property, rebuilt the forge and village and brought renewed hope to the area.

Prosperity was not destined. By the end of the 1830s, bog iron was doomed. Railroads and canals reached into Pennsylvania to bring coal to forges and furnaces in northern New Jersey. Worse, iron ore was easily mined in the highlands. Additionally, overmining had made a mockery of the theory that bog iron beds regenerated in a 20-year period.

The Richards family switched to glass making at Batsto and for a time kept the village alive. Yet only an everly optimistic owner could fail to see that total collapse was inevitable. The wood gave out. Markets were too far away to be reached inexpensively. Industry in the pines languished.

Meanwhile, in Monmouth County, an industry and a village evolved southeast of Freehold.

First there had been Monmouth Furnace, perhaps as early as the 1780s. That had become the Howell Works, and so it was until 1822 when James P. Allaire of New York purchased the property.

Allaire had been a brass "founder" in New York. More important, he was an ingenious mechanic and a shrewd businessman. He bought the Howell

Works, built a self-contained village that he named for himself, and employed as many as 500 men in a wide diversity of crafts.

Allaire (both owner and town) prospered until the late 1840s, thanks mainly to James P. Allaire's energy and skill. There really is nothing unusual in villages that rise, prosper, then fail. The Pine Barrens has enough genuine ghost towns to tell that forlorn story.

The remarkable story is what happened to Allaire, Atsion and Batsto *after* failure.

Allaire is the easiest to describe.

James Allaire came to live permanently in the village in 1840, perhaps the better to appreciate "his" town, "his" workers, "his" school, and church.

He married twice, then in 1849 admitted in a letter that "all is lost." He died in 1858, leaving a will so tangled that it took 18 years to determine the legal heirs. The main heir, son Hal, was 29 years old when the village became his. He lived alone long after the furnace lost its fire, long after the shops and houses were vacated. He would not permit Allaire to die.

Fortunately for posterity, Hal loved the village enough to sell the Allaire holdings intact before his death in 1901. Then, in 1970, notable New York newspaperman Arthur Brisbane bought 5,000 acres of the property, including the village.

Brisbane respected the village, sought to preserve it, and advanced that aim by leasing the town to the Boys Scouts. His family donated Allaire Village and 1,200 acres to the state in 1941. The village saga entered a new period: official state preservation.

Meanwhile, in the Pine Barrens, Joseph Wharton of Philadelphia began in 1876 to buy as much acreage as possible. He envisioned a time when Philadelphia might run out of water. Equally, he recognized that millions of gallons of pure water lay in an underground Pine Barrens aquifer. His property, he thought, would some day slake Philadelphia's thirst.

Allaire Furnace Stack

Ore boat excavation at Batsto





Allaire Chapel



Atsion Mansion

Wharton eventually owned between 100,000 and 125,000 acres in the forest. He rebuilt and enlarged the mansion at Batsto, tided up the property, put people in the old wooden houses. He added the 116-foot-high tower, now so much a memorable climbing experience for mansion visitors.

Casually, too, merely by acquiring Atsion in a land deal, Wharton kept intact the remnants of a village—the old Richards mansion, the store, several outbuildings.

The State of New Jersey thwarted Wharton's water grab. He died in 1909 and conservationists urged the state to buy the property. State voters defeated a referendum to buy the tract in 1915. Strong opposition came from southern New Jersey interests that feared loss of ratables.

Governor Alfred E. Driscoll revived the proposal after World War II, pushed through an agreement to buy 96,000 acres at a cost of "just over \$3 million." The water was secure and at least a part of the Pine Barrens had been saved.

Atsion and Batsto were on the property. Neither was a factor in the state purchase, but those two villages were the greatest "throwins" ever acquired by New Jersey.

Allaire, Atsion and Batsto have come full cycle—from start, to probable death, to revival as historic villages.

Now they belong to all of us. Restoration has proceeded, often with agonizing slowness. There have been times when shingling a roof to keep out the rain was considered a fabulous undertaking for any given year. Fortunately the pace of work has

picked up. The three villages edge closer to what they ought to be.

And what should they be?

The late Kenneth P. Chorley of Hopewell, whose keen business and historic sense helped make Williamsburg, Virginia, an international attraction, once said that with vision and planning both Allaire and Batsto could rival—"even surpass"—the noted Virginia site as tourist attractions.

He could tick off the reasons—closeness to millions of people, the genuineness of the villages (as opposed to Williamsburg's reconstruction), the uniqueness of the personalities who built those New Jersey places.

Chorley could also tick off what needed to be done—immediate restoration, imaginative interpretation, sufficient accommodations for travelers such as those available at Williamsburg.

That was 25 years ago. Mr. Chorley did not live to see his predictions materialize. The possibilities still are evident. Not every visitor to New Jersey wants to drop quarters in slots or live in seaside splendor. The success of such places as Williamsburg, Sturbridge and other restored or reconstructed villages underscores that clearly enough.

Allaire, Atsion and Batsto await imagination, even as visitors respect how much has been achieved with so little funding.

Waiting is no new story for the villages. Somehow, they always seem to have been waiting. Ironically, their time may have arrived.



Pleasant Mills Church near Batsto

Sawmill at Batsto

New Jersey State Library

Fly Fishing for Trout

BY THOMAS DALE PAGLIAROLI

The dimplings on the surface became more frequent as the sun transformed itself into an orange line which ran the length of the mountaintop. The promise of dusk had often triggered such feeding activity, and as I flicked the size 14 Woolly Worm a half-dozen yards out onto the placid surface, a boil just a few feet away raced a shock down to my fingertips. Soaked with floatant, the Woolly sat erect and motionless until I nudged it enough to cause a quivering ring to play out around it. The artificial vanished in a swirl. I raised the rod with enough authority to sink the Mustad deep into the trout's jaw.

Then pandemonium struck.

The fish immediately broke the surface and cartwheeled three times in succession before taking off on a scorching run which nearly stripped the reel. With only a few feet of line remaining, the trout reversed itself and came up once more, this time falling over on the 6X tippet and then running along the sandy bottom.

The leader held out long enough for the relentless pressure of the graphite to do its job. The fish rolled feebly on the surface for a few seconds and gave it one more try on the bottom.

It didn't work. I slid the net under 18 inches of gorgeous rainbow trout, its vermilion band exquisitely highlighted by the purplish back and plethora of black speckles which adorned even the tail. I held up the "sugar" trout for a second, its bulky frame silhouetted by the final vestiges of sunlight melting away into the evening stars.

When I slid the fish back into its watery environ, a murmur of approval was heard from the one other fisherman casting a spinner along that same stretch of beach. Saw Mill Lake in High Point State Park had always been a fly fishing mecca for this angler, and this mid-April evening had proved no different.

Fly fishing for trout has always been associated

with tumbling brooks and swirling streams. While these undeniably remain the haunts of the purist, a growing legion of casual anglers are forsaking crowded streams in favor of the fantastic fishing offered by any number of trout-stocked lakes and impoundments. It is disheartening to see a waterway which is simply too congested to allow a roll cast, much less a double haul. What better place, then, to cast a fly than on waters which afford more than ample space for wading and casting as well as a healthy population of trout? A detailed glance at the Fishing Compendium will reveal a startling number of such places which are heavily stocked with trout and represent a tremendous opportunity for those fly fishermen who will make the effort to investigate them. It is a sign of the times.

Esthetics may or may not have to take a back seat when trouting in lakes. There are few places in the Garden State more beautiful than the rocky cliffs overlooking Saw Mill or the pine-studded shores of Prospertown Lake. Conversely, the not-so-peaceful atmosphere surrounding Union county's Echo Lake or Roosevelt Park Lake in Edison Township do not exactly lend themselves to the trouting experience. However, if one considers the number of trout stocked in each of the aforementioned urban lakes during the course of the spring, their fishing potential can be viewed in a different light. Both these lakes provide excellent fisheries in the early going, as do the other lakes that receive plantings of trout.

Only a slight moderation of tactics is necessary when fly fishing for trout in lakes. It is imperative that the angler know the location of sandbars, drop-offs, shelves and tributaries that enter the lake proper. By investing in a structure map from the local tackle shop, the angler can familiarize himself with these locations, thus eliminating guesswork.

Dropoffs and shelves are important in the early April season because these areas will attract baitfish. The warming waters of the shelves and shallows cause the forage to pull up tight; the trout will cruise the edges of the dropoffs and will make it a point to move on and off the shelves. Another selling point of these two locations is that they are a hotbed for aquatic insect activity. Since the water temperature will rise quickly in the shallows, this is where the awakening forms of larva will stir, extending yet another invitation to hungry trout.

Sandbars act as magnets to trout for much the same reasons. They usually signify shallow water which attracts and holds forage. The water off a sandbar will warm a bit more quickly than the surrounding depths, and as such will produce the most trout activity in the early season.

The mouths of streams or brooks deserve special attention because there incoming currents bring with them a variety of food. Minnows, crayfish, hellgrammites and a myriad of other nymphal forms are washed in by the strong flows of spring, and the trout will position themselves at the lip of the tributary and gorge themselves until sated. A freshet will also deliver water which may be slightly warmer than the lake itself, and this is especially attractive when the lake has just shed its icy shroud.

The choice of artificials will, of course, depend on where and when fishing. Lakes and ponds in the northern and central sectors of the state are stocked primarily with rainbows, while brookies are liberated in the more southern waters. The sprawling Round Valley and Spruce Run reservoirs also receive heavy doses of rainbows at the outset, while brown trout are stocked towards the tail end of the

Fly fishing for trout in lakes gets results! This seventeen-inch rainbow fell for a wet fly retrieved just under the surface.



J. K. WOOD

stocking schedule due to their holdover potential.

The species will dictate the choice. Both rainbows and brook trout are aggressive fish, much more so than the brown, and are prone to slash at patterns which are on the gaudy side. Wets are particularly effective on the bows and brookies, although nymphs will place a close second. Patterns such as the Queen of Waters, Yellow Sally, Professor, Scarlet Ibis and White Miller are wet flies that consistently take both rainbows and brook trout. The time-honored Wooly Worm, fished dry or wet, is most effective. Both fish will strike the standard nymph patterns as well as streamers, and a streamer known as the Wooly Bugger has proven to be absolutely devastating. This fly, a matuka dressed with maribou, possesses an action unmatched by any other fly, and it has been the downfall of many a trout.

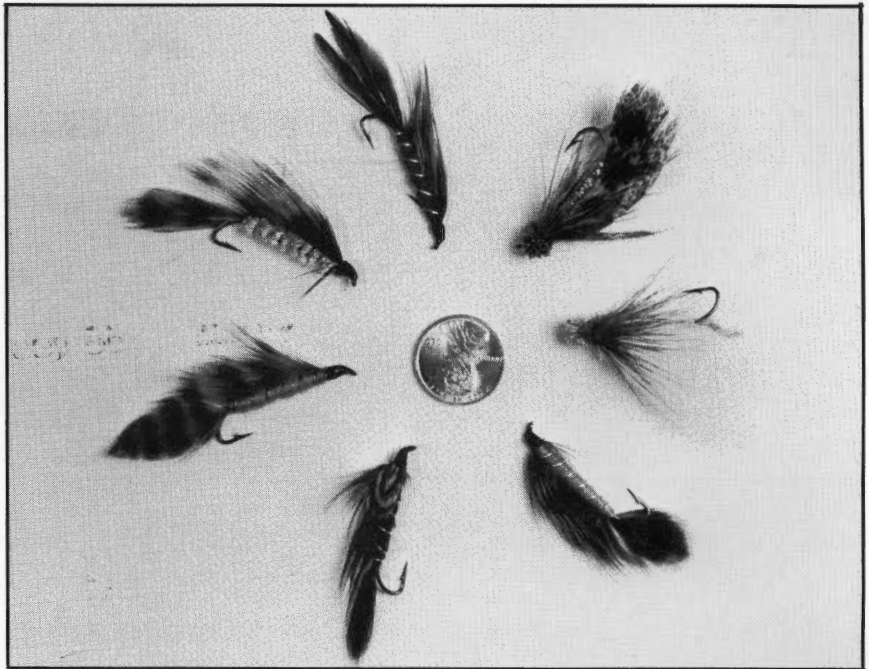
Brown trout are notorious for their natural wariness, even if just delivered from a hatchery truck. Browns will show a marked preference for the more somber patterns such as the March Brown, Gold Ribbed Hare's Ear, Dark Caddis and Hendrickson. Either nymph or wet will tickle their interest, and streamers are sure to goad them into striking. Matukas appear to have been tailor-made for browns, and these streamers will account for the largest trout taken on a fly in a lake situation.

The reason for the matuka's success is its design. The feather along the back will mimic the dorsal fin of a baitfish, the trailing feather successfully imitating the baitfish's tail. It sports a very realistic profile in a trout's window of vision, and is the medicine of the trophy trout.

Dry flies do have their place when fishing in lakes. A series of warm days will serve as a catalyst to insect activity, in turn bringing the trout to the top. It is not until May that serious dry fly fishing in lakes occurs, but it is not uncommon for trout to cruise just under the surface searching for any signs of edible life. Such was the situation described at the beginning of this article. There had been a three-day warming trend, and insect life was noticeable. I don't know what the rainbow thought that Wooly Worm was, but it hit it just the same.

A fleeting yet productive time for trout fishing in lakes is the inchworm "hatch" which takes place in late May into early June. Trout will cruise the shorelines looking for these delectables, and a green latex imitation tied on a Caddis hook will take a frightening number of trout.

There is no special tackle for trout fishing in lakes. Both glass and graphite rods will suffice, although graphite will be lighter and slightly more sensitive. This is important if fishing nymphs. Glass comes into its own if longer casts have to be made to reach cruising fish. Short casts are the rule, however, and the frigid water calls for a slow retrieve. The trout will be lethargic until optimum temperatures are reached. A trout will not chase down a prospective meal if low body temperature is keeping its metabolism relatively inactive. The fly will have to be put right in front of its face in order to get its attention. Since the fish will be moving almost constantly, it is almost assured that fly and trout will meet. In some waters, such as Round Valley, the trout can be seen moving in and out of an area, and it is a simple matter to cast to them. It must be pointed out that under such conditions the trout will shun any manner of spinner, plug or spoon simply because they have been assaulted with such hardware since being stocked.



J. K. WOOD

I once caught and released 14 trout during the course of an afternoon at the Round Valley boat ramp using a size 12 Black Gnat. At least a dozen other fisherman watched in frustration. Their salmon eggs, spinners and spoons were not touched, save for a straggler which wandered through. The trout had seen too many flashing blades and groceries to be interested in either. I picked out pods of trout as they moved by and dropped the fly within a respectable distance. They found it. Every time.

The retrieve can be accelerated as the waters begin to warm and the trout become more pugnacious. Streamers which are stripped rapidly along any of the trout holding places outlined earlier will get smacked in a hurry. I've found that once a wet fly sinks below the surface film, the same type of retrieve gets results. Nymphs coaxed in by the standard hand twist are sure trout getters.

A word about leaders. By all means gauge the tippet by the water and the fish. An angler casting streamers for browns on Big Swartswood would have problems if using a 6X or smaller. Such a move definitely courts disaster. On the other hand, the fellow who believes that he will entice 10-inch rainbows with a wet fly knotted to a 2X tippet is going to be sorely disappointed. Generally, a 5X tippet is standard. In clear water or when dealing with shy trout, a 6X or even 7X may be necessary. It is the rare occasion when 8X must be pressed into service, but do have a length of this tippet in the leader wallet. It doesn't weigh much, and can be the difference between takes and refusals.

Try to match the line to the situation. The standard floating line is fine for dries and nymphs fished just under the surface. The sinking tip is a good all-around choice for nymphs, wets and streamers. A weight forward will be a help in getting the fly out on windy days or when tossing a big streamer or bucktail.

Backing is not necessary unless fishing the larger waters where the chance of mixing it up with a trout measured in pounds, not inches, is a possibility.

Trout fishing in lakes can be a rewarding experience for the angler. It is a challenge which is distinctly different yet distinctly familiar to stream trout fishing, and certainly worth exploring.



Matuka streamers are very effective for lake-roaming brown trout, but will take rainbows and brook trout as well.

WHAT IS AN AEOLIUM?

the nature center at Island Beach State Park



The Aeolium Nature Center.

BY PATRICIA DE GUTIS
PHOTOS BY
ISLAND BEACH STATE PARK

From humble beginnings, the Aeolium (pronounced ee-o-lee-um) Nature Center at Island Beach State Park has become a familiar sight to many park visitors. The name is derived from the Greek mythological god of the wind, Aeolus. Since the winds play such a significant role in dune formation at Island Beach, the name Aeolium was thought to be fitting.

Not always the neat building that greets you today, it was once an old garage. Renovated at minimal cost, the old dirt floor, exposed studs, and overhead hanging light bulbs were converted into a small lecture room, museum, and office. The addition of storm windows, screens, and heat permit the use of the Aeolium in all seasons.

The Aeolium was opened to the public on May 21,

1966. Beginning in the fall of 1966, park visitors could arrange for guided tours originating at the Nature Center. Since then the Aeolium has been host to thousands of visitors, from all over the world and from almost every state.

One of the first of its kind in New Jersey's State Park System, the Aeolium has served as an interpretive center and museum. Information about the park, and educational material concerning the natural aspects of the area, can be obtained here. During the summer season a staff of naturalists is available to assist those who are interested in the history and the native flora and fauna of the park.

This small museum houses examples of animals, birds, and marine life common to the area.

Preserved specimens of snapping turtle, black racer snake, turtle eggs, oyster cracker, hermit crab, Portuguese-man-of-war (brought north by the Gulf Stream) and other "local inhabitants" can be seen, along with curiosities such as whale bones and a shark jaw. An interesting exhibit of shorebirds and a display featuring memorabilia from days past, have been receiving much attention. Articles new and old cast upon the beach, or uncovered by shifting sand, are always being added to the exhibits.

A shell collection on display enables one to identify any particular shell that may be found on the beach. Of special interest is a large mural depicting the successional plant communities of a barrier beach.

Although the Aeolium does not generally have live animals in residence, in the past some occasional guests have created quite a sensation. A live sea-horse was of particular interest, especially at feeding time. A pine snake caused quite a stir when it was found to have laid 12 eggs. Live horseshoe crabs or unfortunate gannets or loons rehabilitating for a few days have also been fascinating attractions for our visitors.

For those who come to enjoy the beach and ocean for swimming, beachcombing, or fishing, or for those who come to learn about nature, Island Beach offers something for everyone.

The guided tours, once numbering only five for the year, have grown in popularity until this year there were more than 300. They are offered to schools, colleges, and special-interest groups such as senior, garden and nature clubs. The tours are designed to develop an appreciation of nature and to provide an insight into the influences that the environment has on this area. Special attention is given to insure that the tours meet the interest or grade level of each group.

Group tours led by a naturalist can be arranged from March through November by calling (201) 793-0506. Public tours are available daily during the summer months at 11:00 a.m.; no advance reservations are necessary. The Aeolium is located opposite the park office in the Botanical Preserve approximately a mile and a half south of the entrance gate.

Many persons are surprised by the variety of plant life on Island Beach. A self-guided nature trail located just behind the Aeolium will acquaint the visitor with some of the natural maritime vegetation that grows here. The value of the dune grass for stabilizing the sand, why some plants grow where they do, and how others are pruned by the salt spray, are some of the topics discussed.

In spring the white blooms of the shadbush and beach plum can be seen followed by the pink flowers of the pasture rose and the showy flowers of the swamp rose-mallow in summer. The white berries on the bayberry, and goldenrod in the fall, with the monarch butterflies resting on the yellow blooms, change the scene until winter when the holly with its red berries creates another picture of Island Beach.

The natural features of this virtually undisturbed barrier beach have been a source of wonder and pleasure for all who have visited here. Island Beach is truly a place for all seasons.



The month of May along the trail gives visitors a delightful scene of flowering Beach Plums.



The Swamp Rose Mallow is one of the many marsh plants seen flowering by the bridge on the trail.



Heather which give the dunes a golden hue.



Joanna Burger putting out decoys to attract Least Terns to safe nesting sites. These sites were used in the past by Least Terns, but had been abandoned.



Least terns in New Jersey



Least Tern guarding chick and protecting it from the sun (Brigantine Beach).

A cool wind brushes my face, and wisps of fog drift silently by. The soft grey of the fog blends with the light tan sand, obscuring all but a thin line of dunes that disappear in whiteness. The silence is broken by the rhythmic roar of crashing waves. Out of the fog a wisp of white and grey floats toward me followed by another, and yet another. The light glances off their wings, and the black cap appears briefly only to disappear again. They circle overhead and land on a ridge at what seems to be the edge of the visible world. It is late May and Least Terns have returned to Brigantine Beach.

Least Terns were once common from Massachusetts to Florida, nesting in colonies along the endless stretches of barrier beaches fringing the mainland. They also nested along the Gulf Coast and along the Pacific coast wherever sandy beaches were sheltered from storm tides, winds, and predators. Even when settlers came from Western Europe the terns were relatively unaffected, for the hordes of mosquitoes along the coast kept all but hardy fisherman and clambers from the quiet, deserted beaches. During the latter half of the 19th century, Least Terns and many other birds were decimated by hunters for the insatiable Parisian millinery trade. Least Terns were particularly sought, for they could be mounted whole on ladies' hats. Had legal protection not been enacted early this century, the species could well have become extinct.

Under the new-found protection this and other coastal bird species made remarkable comebacks

during the 1920s and 1930s. The future looked bright indeed. But in the last 40 years drastic changes have occurred along our coasts. Around the turn of the century mosquito control started, and with it shore development began, escalating in the post-World War II era. As technology rapidly improved, people were able to stabilize dunes, change the course of inlets, and fill in salt marshes and bays. People moved in droves to build homes closer and closer to the surf, finally building amid the outermost dunes with only a ribbon of beach protecting them from the ocean. With homes and property to protect, substantial sums of money were spent on beach stabilization projects. People unable to live in the dunes built houses on salt marshes, in back barrier beaches, or on the adjacent mainland. Beaches became crowded with vacationers who spent days and weeks in areas once populated only by Least Terns, Black Skimmers and Piping Plover.

With time there were fewer and fewer deserted beaches suitable for nesting birds. Many beaches simply disappeared, while others were crowded with people, dogs, and off-road vehicles. For many years the nesting birds simply crowded along shorter and shorter stretches of beach, but now there are no deserted beaches. And so the birds must nest on the same beaches we use. Even that is possible, but only if we carefully delineate their nesting space and avoid it completely—no dogs, no cats, no children, no sun bathers, and no off-road vehicles.

BY JOANNA BURGER
PHOTOS BY AUTHOR



During this century there has been a drastic decline in the number of nesting Least Terns, and in the number of breeding colonies in New Jersey. Today only about 2000 pairs of Least Terns nest here, in fewer than ten colonies. It is important not only to preserve enough breeding pairs, but to have them nest in many separate colonies along our coasts. For if all our terns nest in only two or three colonies, they are more vulnerable. One or two high tides in those colonies could completely wipe out production for that year. And one or two predators could not only eliminate production, but could kill adults as well. Once a colony is deserted for whatever reason, it may take several years before terns settle there again and discover that it is safe from predators.

In 1978 the New Jersey Endangered and Non-Game Species Program of the Department of Environmental Protection put the Least Tern on the state Endangered Species List. It is also on the New York State list, and the West Coast subspecies is on the Federal Endangered Species list. Least Tern, as a species, is also being considered for the Federal Endangered Species list in the East. Not content merely to put them on the endangered species list, New Jersey's Endangered and Non-Game Species Program started a monitoring and protection program that has continued to the present. Each year colony sites are monitored for the number of breeding pairs, reproductive success, and causes of failure. Colonies are posted, and fenced where possible.

Posting and fencing keeps out people, pets, and off-road vehicles, all threats to the well-being of nests, eggs, chicks and adults.

In 1983, Program-sponsored ecologists began experimenting with decoys to draw terns back to previously successful colony sites that had been deserted for at least two years. In late May and early June, 1983, Natasha Kotliar, Laurie Goodrich and I, of Rutgers University, were involved in working with decoys at four New Jersey colony sites. Long hours of watching decoys paid off, as we observed adult Least Terns landing beside the decoys. Some even displayed to them before deciding that they were not suitable mates. At Mike's Island in Barnegat Bay, about 20 pairs of Least Terns successfully nested there beside decoys. Similar efforts at Brigantine beach resulted in initiation of nests that were subsequently washed out by heavy rains. A modest beginning, but old sites were recolonized and young fledged.

Least Terns return in late May and early June to assess the colony sites they used the previous year. If the habitat is still suitable and no predators patrol the beach, they begin to settle on territories, choose a nest site, and place a few bits of shell in the shallow nest scrapes. Sitting on a dune, barely hidden by gently-swaying dune grass, I watch as a female returns to land on her nest, followed by her mate bringing a fish. Gently he transfers the fish to her. She eats it, and minutes later he flies off only to return ten minutes later with another fish. The pro-

Jim Jones helping to post a Least Tern colony to try and keep out off-road vehicles. Whenever people see these signs they should not enter the area.

Continued on page 35



Integrating environmental education with the

BY PATRICIA CONTRERAS

Porcicy Park has no grand scenery, thundering waterfalls, or exotic or endangered wildlife. Perhaps in some parks this would be a disadvantage but at Porcicy Park it is actually an asset.

Unlike many parks and environmental centers where the main attraction is some unusual feature, Porcicy Park's strength is in its ecological *variety*. It includes forests, fields, marshland, ponds, and, well, one unusual feature—a bed of 65-million-year-old fossils from the Cretaceous period.

Porcicy Park is located in Middletown Township, Monmouth County and follows a two-mile stretch of land along Porcicy Brook. The central portion of the 250-acre preserve consists of open fields, on which are located the restored 18th-century Murray Farmhouse and the modern Nature Center.

The creation of Porcicy Park was a joint effort by the Porcicy Park Citizens Committee, a private, non-profit organization founded in 1969 to preserve the land along Porcicy Brook, and the Middletown Township Department of Parks and Recreation under the leadership of the director, John Campbell. Most of the land was acquired in 1973 with assistance from New Jersey Green Acres and federal HUD funds, and the nature center was constructed in 1978 with a combination of Middletown Township and Green Acres funds.

Today, the park is operated by the Porcicy Park Citizens Committee, which manages the land and buildings and conducts educational programs at the Nature Center and Murray Farmhouse. In the past two years, more than 60 different school systems and organizations from a wide area of New Jersey have attended programs in Porcicy Park.

The programs at the park cover two broad categories: environmental education and 18th-century farm life. In the environmental programs, the plants and animals which people study are not unusual or rare; instead, they are the same things that can be found in the schoolyard or neighborhood.

The goal at Porcicy Park is to teach techniques for

observation and make the ordinary extraordinary. Youngsters discover the excitement of seeing a goldfinch build a nest or a garden spider spinning its web. According to staff teacher Rosary Meyer, "We take science out of the classroom and put it into the backyard."

When the nature center was completed in 1978 the center began conducting environmental education programs for the Middletown schools. It was then that the concept of the full-day class visits was developed. Since then every fourth-, fifth-, and sixth-grade youngster in the system (representing about 100 visiting classes) comes to the nature center and takes part in a series of discussions and activities geared to their age level and also integrated into their particular science curriculum. Hence Middletown's fourth grades study habitats in the winter, the fifth grades study communities in the fall, and the sixth grades investigate natural cycles in the spring, culminating in an investigation of life in a pond.

For Middletown this program is an important part of the curriculum, so much so that the Middletown Schools, under the direction of Superintendent Dr. Bernhard Schneider, do not consider their trips to Porcicy Park as field trips. Instead they are an integral part of the science program for those grade levels.

The Middletown programs, developed and refined for five years, have become models of outdoor environmental education integrated into the school curriculum. Other school systems, observing the success with Middletown, are also opting for the full-day trips. With bus transportation costs rising, a long drive for a one-hour nature walk at a distant park is not always worth the expense, but a drive for a full-day visit becomes very worthwhile.

Almost every grade level in every school system has a unit on natural science in their curriculum. The Porcicy Park Nature Center staff work directly with teachers and department heads to develop in-



Porcicy Park Nature Center.



A Middletown Township School youngster examining one of the exhibits, an observation beehive at the Nature Center. ▶

◀ Middletown Township School youngsters learn about the interdependence of all natural things as they make a "web of life".

community

dividual programs that relate to their class studies.


Even the indoor environment at the nature center strives to be familiar. By design, the center looks like a large house. A carpeted meeting room with a large fireplace and Albert, the nature center's cat, greet visitors upon their arrival. Offices, a kitchen, and classrooms are also part of the facility.

The classroom houses many exhibits, the most popular of which is an observation beehive. Other exhibits feature the natural things that are found in the park including fossils, feathers, bones, nuts, pine cones, and so forth. Everything on exhibit can be handled and closely examined.

Outdoor sessions involve trips to the marsh and pond where youngsters dig through the mud to collect pond creatures and catch crickets in the fields. During winter trips youngsters discover the many plants and animals that remain active through the season as they find insects under logs, see birds fly overhead, and follow tracks in the snow.

The other type of program in Poricy Park involves the Murray Farmhouse, once the home of Joseph Murray, a patriot who was killed in 1780 by the Tories. In the farm programs, as in the environmental programs, the emphasis is on *participation*. All three fireplaces work, including the large open hearth which is equipped as a Colonial kitchen. Hundreds of people have prepared stews, corn biscuits, or other items in this kitchen. Other programs feature crafts, such as spinning, weaving, dyeing, and stenciling.

When visitors leave Poricy Park they take home not only the memory of a pleasant experience but also techniques for observing the things around them. What they learn at Poricy Park will be of use to them throughout their lives.

Poricy Park is located on Oak Hill Road in Middletown. The Murray Farmhouse is open for programs on Sunday afternoons from 1 to 3 pm. For more information, contact Poricy Park at 842-5966. 



NATURAL LANDS TRUST

presents

"Peregrine Falcon"

by

Stefan Martin

"The donation of land preserved in its natural beauty is a priceless and enduring gift made to present and future generations."

The Edition

To commemorate the 15th anniversary of the Natural Lands Trust and as part of the Year of the Parks celebration, a series of special edition Stefan Martin wood engravings are being released during 1984. The first of the series is now available, the second will be completed in June and the third in October. There will be 250 prints in each edition, 200 of these may be purchased and 50 will be retained by the Natural Lands Trust.

The first of the series is an engraving of a Peregrine Falcon in its native habitat. The engravings are printed on 12" x 16" sheets of okawara paper, a natural white handmade Japanese rice paper and the image size is 8½" x 12". Each is hand printed, signed, numbered and titled. Prints of this size normally sell for \$200 (depending on the level of detail), but are available through this special series for \$125.00 each.

The Artist

Stefan Martin has mastered the exacting art of end grain wood engraving, a print technique demanding extraordinary skill and patience. His wood engravings and incised paintings have been widely exhibited in one-man and group shows throughout this country, and have been shown in South America, Europe and China. He has received a number of grants and awards and is represented in numerous museum, institutional and private collections including the Museum of Modern Art, the Metropolitan, the Holmberg Museum, Smithsonian Institution, Chicago Art Institute and the Rockefeller Collection among many others. Martin is a former Vice President of the Society of American Graphic Artists and currently serves as Art Director of the Printmaking Council of New Jersey.



INCOMPLETE WORK

The Natural Lands Trust

The Natural Lands Trust, a non-profit public corporation within the Department of Environmental Protection, encourages through donation, the preservation of natural areas, endangered species habitat and land dedicated to passive recreational pursuits.

To Order

To order, send a check or money order in the amount of \$125.00 payable to the Natural Lands Trust, c/o The Office of Natural Lands Management, 109 West State Street, CN 404, Trenton, NJ 08625.

The proceeds from the sale of the prints will further the preservation efforts of the National Lands Trust.

Pedaling

continued from page 5

as he recollected youthful bicycle adventures similar to our own.

Before we could leave, the gentleman fished two business cards bearing his name and boarding home address from his billfold.

"When you get there (High Point), drop me a card, will you?" he asked. "Do me a favor and drop me a card, OK? Be sure now."

Assurances granted, we rolled onward and upward. By mid-afternoon the 220-foot granite High Point monument was within striking range. But we would have to earn it the hard way. Decketown Turnpike wanted to play with us first.

The sun was warm and the headwind we met in Cape May lingered like a fat lady riding our handlebars. The road slowly became a hill, then a mountain, then an obscenity, and finally, a legend, an unpleasant memory. Decketown Turnpike made Black River Road and Schooley's Mountain look like annoying bunkers on the back nine; by comparison, practice runs up Ringwood's steep Stonetown Road in Passaic County had been quick spins over a parking lot speed bump. The Decketown ascent took almost a half hour.

We cooled off along Saw Mill Road, a relatively flat route through the 12,857-acre High Point State Park.

"How much farther to the monument?" we asked two rangers. "We've just climbed Decketown Turnpike."

"Decketown?" a ranger replied. "That was the easy way. You should have come on Route 23. That goes straight up!"

The remark went over like a pet rat salesman during the plague.

High Point at Last

Reaching the monument was like climbing a two-mile spiral staircase. Route 23 beckoned first. Direction: South. Downhill, I assumed. So much for *that*

theory! This stretch packed a lot of hill into a little distance, an economy most fully appreciated when battling exhaustion, hunger and stinging sunburn.

A left turn deposited us in the park where the monument loomed, 1,803 feet above the Atlantic. As the name implies, High Point is the top of the Garden State.

A "scenic drive" supposedly led to our destination. But as we neared, treetops obscured the monument. Overanxious, we twice stopped to stagger through gnat-infested pricker bushes in futile search of the elusive structure. As always, there was one more hill.

This was pain.

Steve dismounted first, gasping alarmingly. "Don't die *now!*" I implored. "I'll never fit the bikes *and* you on the rack for the ride home."

I dismounted next. Together we pushed our bikes to the summit like Alex Guinness stumbling to the dynamite plunger in "Bridge On the River Kwai."

Enormous sighs of relief followed. "Monument closed," read the sign on the obelisk door. No more climbs to make!

A feeble handshake, a few photos of the splendid tri-state view, and the trip was over. Except for a couple of minor detours, we had faithfully followed State Bicycle Advocate Bill Feldman's trail from bottom to top. We might have covered it faster and we certainly could have traveled slower. But one more minute would have been too long at that point, as the lactic acid of intense fatigue slowly dissipated from complaining muscles.

Lightheaded, I gazed down upon New Jersey, which sprawled so green and deceptively flat below. With some difficulty I remembered the Montreal Inn in Cape May, hiding somewhere beneath the earth's curve five days—or was it five years?—away.

So many surprises had paved our path from there to here...like the stunning realization that New Jersey really is two-thirds forest and farmland, with enough cows and horses to fill Marlboro country, enough tractors and flatlands to satisfy a Kansan, and enough gentle wooded hills to appease a Connecticut yankee. There are beaches worth tanning upon and slopes worth skiing down.

And there are woodchucks and jackrabbits and hawks and deer and brightly colored birds and the greenest grass I've ever seen, on a Somerset County farm. We traveled 20 miles without seeing a gas station—impossible in the New Jersey I had known before—and even more astoundingly, we passed not one major shopping mall. Away from the corrupt politics and organized crime sometimes associated with the state, we found a rich, enthralling history of which residents can be proud. And we found kind, friendly people at almost every turn, teaching that hospitality is by no means restricted to the southern states.

As the stiffness gradually faded from my saddle-sore bottom, I grew wistful about the long haul and regretted returning to the "other" New Jersey. I regretted doubting National Geographic when it called New Jersey a "remarkably beautiful state... of such stunning diversity that it is almost America in miniature." And I regretted all those nasty things I'd said about our governor.

You're not crazy, Tom. New Jersey's a pretty damned nice place to visit. In fact, you might even want to live there. Please forgive my unkind remarks.

Now, if you'll please excuse me. I've got an appointment with a motorcycle dealer...

The bitter end, arrival at High Point



Letters To The Editor

New Jersey Outdoors welcomes letters from readers. Letters for publication should include the writer's name and address and should be mailed to: Editor, New Jersey Outdoors, CN 402, Trenton, N.J. 08625. Letters may be edited for reasons of length or clarity. Please keep the letters coming. We'd like to hear what you think about the magazine. We'll also try to answer questions and if we cannot, we'll ask our readers for help.

I have been getting New Jersey Outdoors since 1976. For some reason I did not get the January/February 1976 issue. Could you possibly tell me where I could obtain it? Perhaps another reader could help.

Carl Faulkner
No Address

Unfortunately, we have no more copies of that issue. If anyone else does, please let us know and we'll put you in touch with Mr. Faulkner, after we locate his address in our NJO file.

I read with interest "A Little 'Faith' is Followed by 'Stars' and 'Stripes'" (January/February). The name Patuxent appears about a dozen times, but the authors never mention its location. It took some searching in the library to discover it is in Maryland. Also, where is Wallace House, mentioned in "Our Friends in the Parks," same issue? Do you have a map or guide showing New Jersey's natural, cultural, recreational resources and parklands?

Mrs. Robert Mull
Florham Park

Sorry about the lack of specifics. We'll try to include better information in the future. You'll find the parks and historic sites described in "Our Friends in the Parks" at the following locations. Wallace House—Somerville; Batsto—Wharton State Forest in Hammonton; Washington Crossing—Titusville; Ringwood—Ringwood, north of Wanaque; the Hermitage—HoHoKus; Steuben House—Riveredge; Twin Lights—Highlands near Sandy Hook; Allaire—Farmingdale. Yes, we do have a guide to New Jersey's state forests, parks, natural areas, marinas, historic sites and wildlife management areas. To obtain a copy, write State Park Service, Department of Environmental Protection, CN 404, Trenton, N.J. 08625.

On January 22, 1984 at 10 a.m. we saw a sight we thought we'd never see in our home state of New Jersey. Travelling south on Route 206 from Branchville to Augusta we spotted a bald eagle. To see him soar over the tree tops, gliding through the clear blue sky was a sight we will never forget. We hope the work being done with eagles at Patuxent and other wildlife centers will continue. We can see that it is working, but we must also work together to clean up our environment so that once the eagles are released they will survive.

Glen and Evan Veprek
Secaucus

I have recently moved to New Jersey from Michigan, a state with many beautiful hiking and cross-country skiing trails. After reading several issues of your publication, I can see that New Jersey also has many excellent trails. Would you please point me in the direction of organizations that could provide comprehensive trail maps? I would also like information on canoeing the various rivers of New Jersey.

Randall F. Bell
Phillipsburg

A good place to start would be the Office of Natural Lands Management, Department of Environmental Protection, CN 402, Trenton, N.J. 08625. Also, read editorial on page 1.

Surprise! I have the missing Haddonfield dinosaur skull. ("New Jersey's Haddonfield Dinosaur: A Surprising History," January/February). My son found the skull intact with petrified lizard-like skin and teeth many years ago along Hopkins Pond. There is no doubt the area is rich in prehistoric items because 35 years ago I dug up a wild boar skull just five miles from Hopkins Pond in a spot now occupied by the Green Tree Shopping Center. A friend found enough dinosaur bones in the area to have his picture in the World Book Encyclopedia. Mother Nature's ground clay from the area provided hours of fun and had a texture as workable as today's store-bought clay.

Lois G. Hartmann
Franklinville

We're sure the Academy of Natural Sciences of Philadelphia, now putting together a major exhibition that includes the remounting of the Haddonfield dinosaur will be interested in your find. We've sent your letter to them.

As an eight year resident of sunny Florida and a 61 year resident of Perth Amboy and Runnemede in New Jersey, I look forward to every issue of *New Jersey Outdoors*. Every magazine brings back sweet memories of places my parents and I traveled through New Jersey. *New Jersey Outdoors*, I love it.

Herbert Bernau
Hobe Sound, Florida

P.S. The only thing I don't miss is the cold, sleet and snow.

First of all a note of thanks for your publication. It is doing something useful for your readers and helping dispel the notion that New Jersey is nothing but a smokestack state. Second, a question. I would like to visit Little Beach Island this summer but I don't have a boat. Do you know of any public boat transport between a place accessible by road and Little Beach Island?

Robert Saxon
Princeton

The best way is to take Route 9 to Tuckerton and then turn east on Seven

Bridges Road (a very rough, rutted dirt road) into the salt marshes. After crossing four or five bridges, you'll see three or four boat rental marinas. When you rent a boat, the marina owner can direct you to Little Beach Island. Depending on the time of year, the greenheads can be fierce.

I love swimming in the ocean. From my home to any of the shore beaches is quite a drive. I understand that there is a small patch of beach in Deal which is open to the public for a fee during the summer. Do you have any information on this?

Doris Gordon
Englewood

Yes, there is a public beach in Deal open to the public beginning in late June for a fee. To get there take the Garden State Parkway to Exit 105. Then take Route 36 east to the circle, then Route 35 south to Deal Road. Take the jughandle to turn left on Deal Road. At the end of Deal Road turn left on Monmouth Avenue, then right on Grant Avenue. After the railroad tracks, Grant Avenue becomes Phillips Avenue. Stay on Phillips Avenue right to the ocean and the Phillips Avenue Pavilion. For more information call 201-531-1454. You'll also find public beaches in the northern part of the state at Sandy Hook, Sea Bright, Monmouth Beach and Long Branch.

Enclosed is a picture of my favorite hunting and hiking spot. One day last fall while we were having our lunch break from bow hunting, I looked down the road that I always hunt off of and had to take this picture. To me, this view in the pines was so peaceful and beautiful. It's located in the Chatsworth Woods, one mile from Apple Pie Hill. (See *New Jersey Outdoors*, March/April 1983). Thank you from a hunter and lover of the Pines.

Bill Oster
Stratford

Sorry we couldn't print the picture because of space limitations but we've done the next best thing and printed your letter.

I've always found *Environmental News* valuable in keeping tabs on New Jersey's progress in protecting the environment I'd like to continue receiving it. Please add my name to your subscription list. Thanks very much!

John Baranowski
Englewood

For those who may have missed the previous announcements, *Environmental News* is now being published as a separate newsletter. If you'd like to receive it, send your name and address to:

Editor
Environmental News
CN 402
Trenton, NJ 08625



A Least Tern standing next to Least Tern Decoys—the first step to Colony use.

... Terns

Continued from page 29

cess repeats itself all over the colony. Females guard the nest sites, and males provision them with fish, contributing food so the female can soon lay two speckled eggs.

By early June, many terns have laid two eggs, a complete clutch. The parents fly before I reach the nest, and dive frantically at my head. They turn upward just before hitting, giving raucous calls. This is another method of protecting their eggs and young, and many adults soon join the mobbing parents. The nest and eggs blend completely with the sand, making them difficult for predators and people to find.

Along the mile of beach I wander at Brigantine, over 300 pairs of Least Terns nest, scattered in groups of 10-35. Their dispersion of nests over so broad an area no doubt reflects predation pressures. A fox has been seen in the vicinity stalking among the dunes. Sadly I find his tracks leading up to an empty nest. The terns often respond to such a predator by nesting farther and farther apart. When nests are widely spaced, it is more difficult for a predator to find them. Fox are a beautiful and necessary part of natural ecosystems, and must feed their young as well. However, when fox are near a Least Tern colony they should be live-trapped and removed to a less sensitive area. The sight of a lone fox kit playing among the dunes far from colonies of birds is lovely in its own right.

In a little over three weeks the eggs begin to hatch. But not before predators such as fox and humans have destroyed many clutches. Over the years predators have claimed 20 percent of the eggs, a high toll for a species already endangered. Only by constant vigilance can we remove the threat of predation from colonies.

Like the eggs the downy young blend in with the sand, but their soft calls bring their parent swiftly back after the threat has past. When chicks are very young, at least one parent remains to guard the chick, protecting it from the hot summer sun, and from cold night breezes. Hiding beneath a parental wing, the young slowly grow stronger.

In early July a particularly high tide hits the New Jersey shore, aided by violent Northeast winds and relentless, heavy rain. The strong pelting torrents give way to a steady rain, and the temperatures drop. Finally the sun seeps through and I anxiously check the terns along the shore. Only two days, and yet some colonies are completely wiped out; eggs and dead young are strewn amid the sand. A few adults still remain circling overhead, but in a few days they too will be gone. At other, higher colonies most nest and young are intact, having successfully weathered the storm. Least Terns evolved with coastal storms, and over the years they can survive the occasional year with low reproduction. At one colony I find 35

eggs piled together; at another someone has written "I Love You" in the sand with Least Tern eggs. No doubt the work of picnickers, thoughtless on their part, but devastating to the terns already battered by high tides and predators.

But at Brigantine, all is well. The Terns have escaped that particular high tide. By early July some young are old enough to be left alone, and both parents fly off to forage. As the chicks grow bigger, both parents must bring back food. From my dune grass lookout I watch as young chicks wait idly at the nest, picking up bits of shell or an insect. Each chick or pair of chicks keeps watch over their own nest, and waits. I too watch the empty sky. Finally two chicks leap into the air, jump wildly up and down amid flapping wings and loud calls. Only seconds before it lands do I see the adult approaching with a fish. It lands and feeds one chick. Minutes later its mate returns to feed the other chick. Parents and young stand quietly, preening and sleeping in the warm sun. A nudge by one chick and the parent flies off again in search of another fish.

In mid-July I watch as the first young make tentative flights, usually crash landing in their neighbor's territory. With only a sideways glance they run madly back to their own nest sites, only to try again minutes later. Within a week they are flying freely up and down the beach, still returning to their nest sites to be fed by their parents. The dune grass is still green, the sun still warm, yet with every day more young fly, and fewer wait impatiently for returning parents.

In late July I walk again along the same beach where only ten weeks earlier the first tern cries of the season had come to my ears. Now, all is quiet; the young terns have fledged, and left with their parents. They will remain in New Jersey for another month, learning to fish, and storing energy for their long and perilous migration. At the colony no sign remains of the bustling tern activity of a few weeks ago.

At many colonies Least Terns fare poorly due, in large measure, to human intrusion. Even this year some nests were lost to predation, others to flooding, and some to human disturbance. But we have made a start: colonies were protected; some terns were drawn back to safe nesting colonies that had been abandoned for several years; young fledged from colonies that would not otherwise have existed. Their stay in New Jersey marked a brief but crucial phase in their life cycle, for here they bred, established colonies, chose territories, laid and incubated their eggs, and cared for their young. Their departure leaves the beach silent—only the surf and the sunbathers remain. Yet even the swaying dune grass reminds me that next May the Least Terns will return.



The Virginia Opossum

BY DAN FERRIGNO

"An Opossum hath a head like a swine, a taile like a rat, and is of the Bignes of a Cat. Under her belly shee hath a bagge, wherein shee lodgeth, carrieth, and sucketh her young." No, this is not a description of the Jersey Devil. This description was used by Captain John Smith in the year 1612 to describe the Virginia opossum. Despite its name, it is found in 42 states, two Canadian provinces, and as far south as Costa Rica. In the United States its distribution is generally east of the Continental Divide and includes all of New Jersey.

In his description Captain Smith mentioned a characteristic common to all marsupials, the belly pouch, or marsupium. All female marsupials possess a fur-lined belly pouch which acts like a portable incubator and is used for nursing and rearing her young.

Aside from the presence of the pouch, male and female opossums look alike. They have grayish-white, bushy fur with long guard hairs which give the animal an unkempt appearance. The long, nearly naked, scaly tail can be used like a fifth hand. Although mice, rats, and some other mammals use their tails for support while climbing, the opossum is the only animal in North America capable of completely suspending itself by its tail. Contrary to popular belief, mother opossums do not lift their tails above their backs while their young, using their own tails, hang from hers.

The opossum's pointed snout, and wide gaping mouth with fifty teeth give it a somewhat comical look. According to southern folklore this grin was the result of a joke the "opossum" played on a deer. I dare not mention the joke for fear readers would take on the appearance of an opossum.

The name "opossum" is derived from "aposum," which is what the Algonquin Indians called the animal. The scientific name for opossum is *Didelphis virginiana*; *Didelphis* means "double-womb," apparently a reference to the pouch. Opossums are unique in North America in that they are the only representative of the Marsupialia family. In fact, opossums are more closely related to Australia's kangaroos than to any other New Jersey mammal.

At night opossums are often seen along highways, where they are attracted to feed on road-killed animals. All too often, however, they meet the same fate.

During the day opossums usually hide in brush piles, hollow trees, cavities in rock piles, deserted burrows, or under buildings. Opossums do not hibernate like groundhogs or chipmunks and are active throughout the year. However, when winter temperatures drop below 20°F they usually "hole up" in a warm cavity until forced out by hunger.

Opossums are solitary except during the breeding seasons. Females may breed twice each year. The first breeding usually occurs in late February or early March. Thirteen days after breeding the blind, naked, and helpless young are born. At birth the young opossums are smaller than a honeybee; sixteen of them would fit onto a teaspoon. They look like an unborn fetus except for their well developed forearms. It is with these forearms that the baby opossums must crawl across their mother's fur to reach the pouch. Those unable to reach the security of the female's pouch will eventually fall off and die. Once in the pouch the newborns lock onto one of 13 teats and remain attached for two months. Because this behavior went unobserved for many

years, people believe that baby opossums formed at the ends of the female's nipples, much like a bud on a plant.

After two months the babies will begin to venture from the pouch, often riding "piggy back" on the female. Although as many as 21 opossums may be in the litter at birth usually only seven offspring live. If the first litter is killed, the female will breed again.

Most of New Jersey's woodlots, which are interspersed with agriculture and close to abundant waters, provide excellent opossum habitat. Such habitat may support as many as 400 opossums per square mile.

Opossums are active at night. They forage about, eating just about everything they encounter, including fruits, vegetables, grains, insects and their larvae, worms, crayfish, frogs, birds and their eggs, snakes, small rodents, carrion and even other opossums.

Opossums have many natural enemies. All large flesh eaters, including dogs, coyotes, foxes, raccoons, hawks, and owls, will eat opossums. In many areas dogs and great horned owls are the chief predators.

Opossums have several defense mechanisms to help reduce their losses. When confronted, opossums usually retreat to trees or other cover, but because they are slow runners they often cannot outrun an aggressor. When cornered by a predator the opossum will often gape, hiss, and growl. If that doesn't work the opossum "plays possum." His body becomes limp, the tongue lolls, he drools excessively, and he also discharges greenish, foul-smelling substance from his anal glands. The combination of playing dead and smelling dead often causes the attacker to lose interest.

In spite of its popularity as a prey item and its apparent stupidity the Virginia opossum is actually intelligent and the species is very successful. The opossum has demonstrated greater ability to learn than dogs and is close to the pig in intelligence.

Their high reproductive rate, opportunistic feeding habits, and ability to adapt to human land-use changes have made opossums a national success story. They continue to expand their range northward. Often in cold areas like New Jersey they can be found with portions of their tails and ears literally frozen off. Frigid winter temperatures will probably halt the northward expansion of opossums.

There are many advantages to having the Virginia opossum share our state. They feed on destructive insects and rodents. They also clean up every dead animal they encounter—free of charge!

Opossums also provide recreational and economic benefits to hunters and trappers. They are harvested for food or fur in 41 of the 42 states in which they occur. Baked possum is a favorite dish, especially in the South.

Fur trappers in New Jersey annually harvest about 28,000 opossums. The value of an individual raw pelt ranges from one to three dollars. Opossum fur is used mostly as trimming on garments made from other furbearers. In recent years the U.S. opossum harvest has exceeded one million pelts valued at more than \$2.5 million annually.

Clearly, opossums represent different values to different people. The most important consideration is that people find value in this unique marsupial which is such a characteristic part of New Jersey's outdoors.

FRONT COVER

A pinelands stream in Lebanon State Forest—Photographed by David M. Campione

INSIDE BACK COVER

A family of opossums—Illustrated by Carol Decker.

BACK COVER

White tail deer fawn—Don't pick up apparently abandoned fawns found in the wild. They are not abandoned—the adult deer is searching for food and will return. Photographed by Les Rudnick.



Carol Becker 84

New Jersey State Library

