

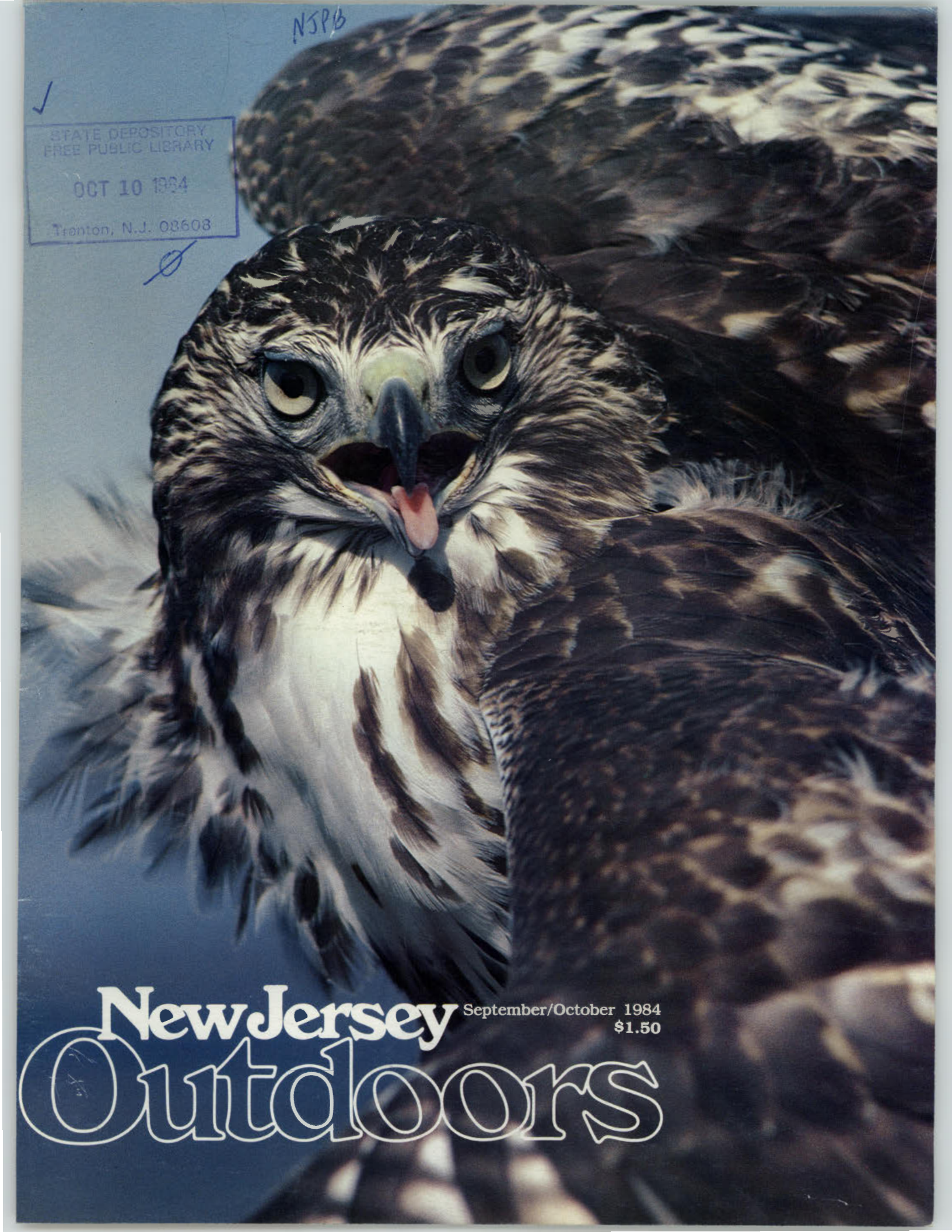
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**New Jersey** September/October 1984  
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**Outdoors**



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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.

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# FROM THE EDITOR

## Record Trees

As promised in an earlier issue this year, we have included an updated register of *New Jersey's Record Trees* in this issue. This is the list you take along on hikes or motor rides along the New Jersey countryside so you may compare the record trees listed with any other large trees encountered in your travels. Remember if you discover a record tree, your name is included in the list as the "Reporter." And as long as the tree you discovered is the largest of its kind, your name will remain on the list.

This summer several friends, who knew we

were publishing the updated tree list, called me to report trees they thought might qualify. On two consecutive Sundays I packed my large tape measure and drove to the locations specified by my friends. I found the trees, made some fine conversation with the owners of the land where the trees grew, measured the trees, and even had a cold glass of ice tea at one location.

They were massive trees—one was a Tulip poplar and the other a Sycamore—but they were not record breakers. So you won't see my name in the N.J. record tree list.

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## IN THIS ISSUE

The article, *Decoys of the Delaware* by H. Harrison Huster, author and decoy collector, discusses the famous decoy carvers of the early 1900's who created "a marvelous form of folk art known as the Delaware River decoy."

Railbird hunting kicks off the hunting season and author Carroll Toft, in the article *Hunting the Railbird*, tells us how to work bird dogs when hunting this gamebird. This article also includes a recipe for the successful railbird hunter.

The Ricoh East Coast Triathlon will be held on Long Beach Island on September 29. Author Cathie Cush writes about last year's triathlon in the article titled, *Triathlons: Thrice as Nice*. Free lance writer/editor Cathie Cush is the former Editor of the Long Beach Island *Sandpaper*.

This event was photographed by Ray Fisk, who recently published a seasonal portfolio of the Jersey shore titled, *Down the Shore*, a collection of 14 photographs with a 13-month 1985 calendar, which begins in December 1984. The calendar is available at shops throughout southern Ocean County. It is also available by mail from Down the Shore, Box 353, Harvey Cedars, NJ 08008. Phone: (609) 494-3346.

Photographer/writer Joan Huber writes about *Patriots' Path*, a linear park which passes through seven communities in Morris County.

*Ringwood: A Bicyclists Delight* by Kenneth W. Dahse, a new contributor, sounds

and looks like a great place to go cycling spring, summer or fall.

I never knew that the Newark area was once a prime cider-making area. That's what Deborah A. Boerner tells us in the article titled, *Cider-Making in New Jersey*. Debbie, a former part-time editorial assistant on *New Jersey Outdoors* is now Assistant Editor of *American Forester* magazine in Washington, D.C.

The *Record Trees* article described in the editorial above was put together by Santiago Porcella III, a retired Chief of Forestry Management in the N.J. Division of Parks & Forests.

Dr. Roger Locandro of Cook College, Rutgers University, teaches a course titled, "Interesting and Edible Plants," from which came forth the article titled, *Edible Roots and Tubers*. The seven authors are all students at Cook College.

Trout angler Al Peinecke writes about *Autumn Trout*. No elbow to elbow fishing and beautiful fall colors to boot.

Paul E. Taylor, a frequent contributor, writes about our most southernmost park, *Cape May Point State Park*. This park is widely known for the spring and fall migration of birds, especially the fall raptor migration.

The most photographed mill in New Jersey is also the center of the *Clinton Historical Museum Village*. This educational facility is visited by 30,000 visitors (April 1 through October 31) who are entertained by

a full and varied roster of special events. Diane Sliney, the author, is editor of the *Preservation Perspective* newsletter.

*The Nation's Largest Environmental Center is in New Jersey* was written by new author Chip Deffaa. It discusses the environmental education programs available at the School of Conservation in Stokes State Forest.

*A Hands-On Approach to Environmental Education*, was written by frequent contributor Bert Nixdorf. It discusses environmental education programs developed by the Conservation and Environmental Studies Center at Whitesbog. Bert Nixdorf is the author of *Hikes and Bike Rides for the Delaware Valley and Southern New Jersey*, and *The Blue Book of South Jersey Bike Rides*. For information, write 9 Randolph Drive, Mt. Holly, NJ 08060.

A third outdoors educational article is titled, *Sharing the Outdoors*, by Scott McGonigle. The article discusses the outdoor educational programs offered throughout the state and nation on National Hunting and Fishing Day.

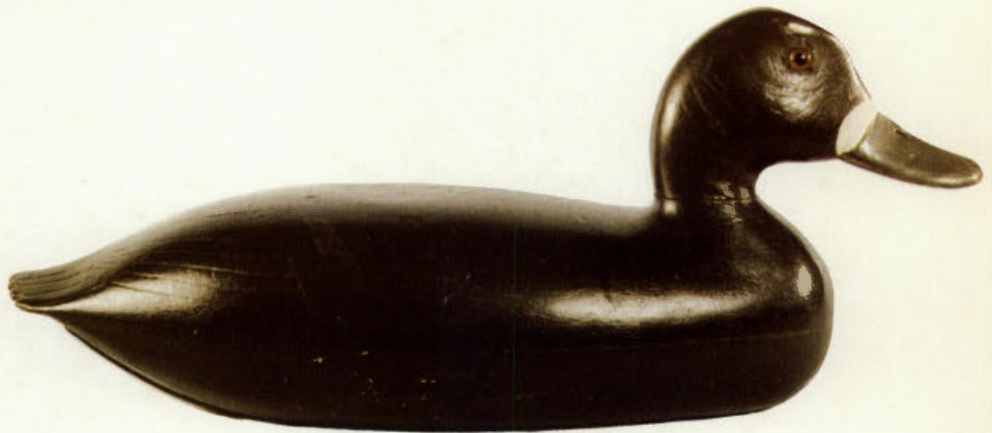
The fall trout stocking program is discussed by fisheries biologist Robert Soldwedel. And the Wildlife in New Jersey article titled, *Toads* was written by non-game biologist, Mimi Dunne.

*Steve Penne*

# Decoys of the Delaware



*Hen canvasback—Dan English*

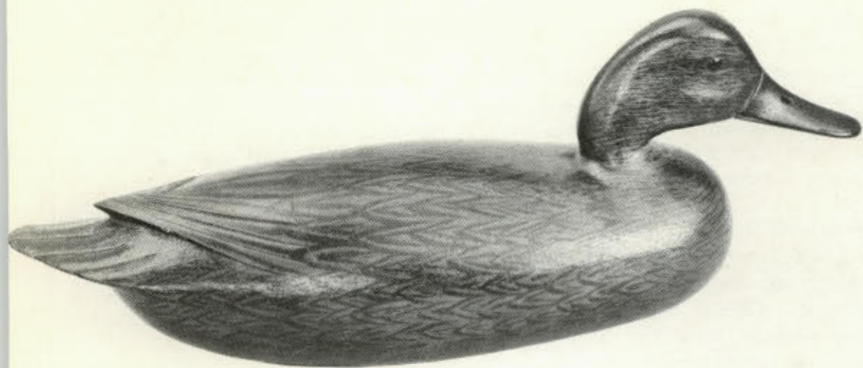


*Hen broadbill—John Dawson*

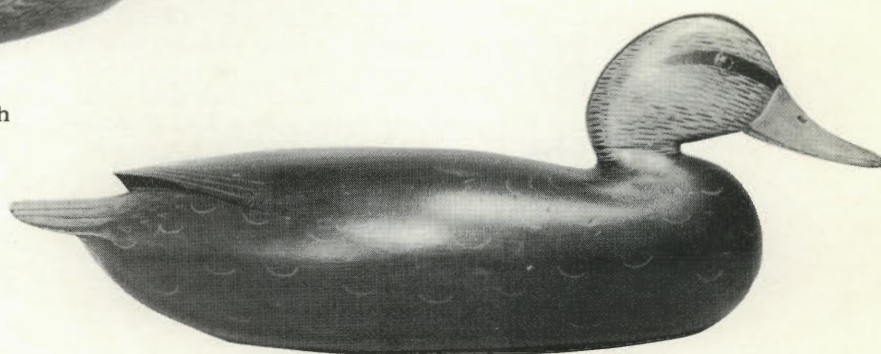
Illustrated are beautiful decoys by John Dawson, a hen Broadbill and a Blackduck are shown. A hen Canvasback by Dan English, the son of John English is illustrated. The decoys painted by John Dawson were made by John English. Dawson was a painter of note and hunted Duck Island near Trenton. Dawson also made a few decoys that were painted by him, but unlike the Eng-

lish style in appearance. Very few now exist.

John English, the greatest carver on the New Jersey side, is represented with a hen Pintail which many have tried to copy but few have succeeded. These were painted by John. Even his son, Dan, came close, but the beautiful heads of John's decoys have never been duplicated successfully.



*Hen pintail*—John English



*Black duck*—John Dawson

BY H. HARRISON HUSTER  
PHOTOS BY AUTHOR

A magical stretch of the Delaware River between Trenton and Philadelphia is steeped in Americana—the Americana of independence, revolution and a marvelous form of folk art known as the Delaware River decoy.

The traditional decoy of this region—hollow, roundbottomed until later when the river was dredged—was from Trenton to Delanco on the New Jersey side and from Tullytown to Kinkora on the Pennsylvania side. A variation of this style, of quite a different construction, was the so-called Blair style, named after John Blair, a superb carver from Philadelphia. In 1900 Blair purchased a farm called the “Henderson Point Farm” on the Elk River in Maryland.

Blair influenced both sides of the river below Philadelphia, where the waterway then becomes Delaware Bay. The decoys of this area were hollow and sometimes solid with both round and flat bottoms. What they did have in common was that their weights were forward and they had no raised primaries such as those decoys above Philadelphia did. They were smooth and beautifully painted; many were in a swimming position, their heads thrust forward. The several Blair styles appear to have been painted by a talented artist who apparently worked on many of the decoys of this region by different makers, as well. Possibly this painter belonged to one or more hunting clubs, so he would have had contact with numerous carvers. Some believe that he was a trolley car painter.

This article is intended to deal primarily with carvers of the New Jersey side, but the Pennsylvania side had its share of fine carvers. Many were greatly influenced by the New Jersey carvers, especially by John English.

Most decoys came from Bordentown, Trenton, Fieldsboro, Roebling, Florence, Kinkoro, Burlington

and Delanco. Trenton had William Kemble and John Dawson. The Bordentown area was largely influenced by Charles Black—an influence shown in the decoys of Joseph West, John McLoughlin and Antonio Bianco. These decoys are bulkier, with minimal carving.

Two non-conformists were Sam Archer, whose 1912-period decoys were mostly solid with flat bottoms, and Charles Allen, who made superbly painted and carved decoys in a style strictly his own in the '30s. The two hollow body pieces were mortised and tenoned together so they would never come apart or leak. Charles Allen was the only carver known to date who used this joining method.

John English, of Florence, exerted the greatest influence on the immediate region, as did his son Dan, who made and sold many decoys. Another son, Jack, made decoys but to a lesser degree.

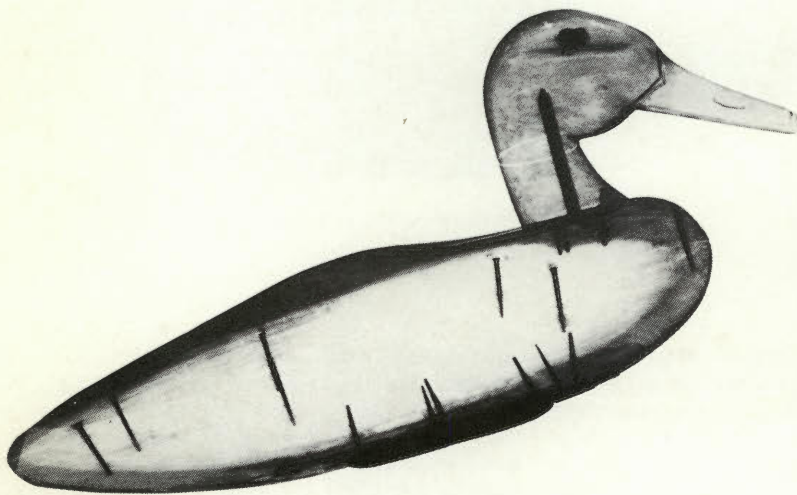
All decoys from the Trenton to the Delanco area were noted for their contented appearance. Low heads resting on their breasts, weights in the rear of their bottoms to compensate for the river's swift currents. Later dredging of the river by the Army Corps of Engineers destroyed much of the flats, food and breeding grounds of the ducks.

Delaware River decoy making was confined mostly to ducks. Very few geese were made in this region. The black duck was the principal duck that was made, since most other species would decoy to black ducks. This was followed by broadbills, with some redheads, teal and pintails. Mergansers and wood duck decoys are quite rare.

Jess Heisler of Burlington was a rather prolific decoy maker who also sold his work. His carving style was considered by many to be superior to that of many of his contemporaries and he was often copied. His decoys were less streamlined and more chunky than those of the English's.

An X-ray of an unusual black duck by an unknown carver, believed to be from the region near Salem, shows that the hollow decoy is unique in that it is extremely light, almost paper thin. Its detachable head that was attached by a screw that was bent on the bottom to fit into a small brass keyhole on the bottom of the decoy. It is attached by inserting the head reversed into the keyhole and turning it forward so that it locks in place. An X-ray shows the construction and use of hand-forged nails to hold the decoy together. This decoy is believed to be from the 1870-1880 period.

The hunting areas of the Delaware River before dredging by the Engineers included Trenton (Biles Creek and Duck Island, Bordentown, Hennessey Cove, Mikes Creek, Crosswicks Creek, The Brickyards and "Middle of the Woods"), Florence (Back Channel, Newbold Island and Scotts Creek), Burlington (Shedaker Flats and Burlington Island) and Philadelphia (Biddles Island and Frankford Creek).



*X-ray of a black duck decoy from the 1870-1880 period.*

Decoys had to be lifelike on the Delaware River because the hunting on this river was unlike any other region in the country. On Chesapeake Bay great quantities of decoys, mainly canvasbacks, were used because the ducks there were shot when alighting into the decoys. Sink boxes, blinds, etc. were widely used.

On the Delaware River a sneakboat was used with rush attached to the sides. The hunter would lie down and drift or scull his sneakboat down to where the ducks would be resting among the decoys, then shoot them as they became disturbed and rose in the air to try and fly away. Decoys had to be lifelike and well carved to fool the ducks into staying among them to await the hunter's pleasure.

Stories have been told of mating rituals between live ducks and their wooden counterparts. Also, aggressive male birds have been seen pecking at the decoys.

The author of this article as well as others have enjoyed many hours of pleasure collecting decoys of the Delaware River, which are among the best of American folk art and are truly "floating sculpture."

For more information on identification and history, read "Floating Sculpture, The Decoys of the Delaware River," by H. Harrison Huster and Doug Knight with foreword by Bob White, a well-known collector and carver. This book is heavily illustrated in both color and black and white and has an extensive text. It is published by Hillcrest Publications, P.O. Box 246, Spanish Fork, UT 84660.

## ATTENTION ROCKHOOUNDS!

Rockhounds of all ages with an interest in New Jersey will find the New Jersey Rock Set an easy way to begin or expand their collections. The Rock Set contains samples of nine rocks and six sediments collected by the New Jersey Geological Survey from throughout the state. Included are specimens of limonite, the bog iron ore mined in Colonial Burlington County, marble, quarried today in Sussex County, greensand, dug in Gloucester County for use as a soil conditioner and water softner, and diabase, the rock of the New Jersey Palisades. Also included are a geologic map and 19-page booklet which defines the major rock types, describes the samples and discusses the collection and display of rocks.

*New Jersey Rock Sets (\$3.50 each postage paid) are available from:*

Department of Environmental Protection  
Bureau of Collections, Licensing, Mgt. Services  
Map and Publication Sales Office  
CN-402  
Trenton, NJ 08625

Prepayment is required. Make check payable to "Treasurer, State of New Jersey".

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- Artists
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- D.U. Films
- Decoy Judging

SHOW HOURS: 10:00 a.m.-4:00 p.m.

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Donation \$2.00—Adults

Children under 12 years of age—Free

Chairman: Ed Rodgers (609) 678-5994



## Hunting the Railbird

BY CARROLL TOFT



The seasonal transition from rod and reel to shotgun is a greatly anticipated one and can never come too soon for me or any other enthusiastic and devoted hunter. Generally, the most popular early season gamebirds, and often thought to be the most delectable, are ducks. But duck does not actually open the hunting season—there is a short preceding period which allows practice for the up and coming season and also provides quite good eating. For many coastal gunners this important buffer passes by unnoticed or neglected—namely, the Clapper Rail season.

The slate-gray railbird slips among the saltmarsh grasses like a snake and can hold under water as long as a wounded duck. It flies with legs dangling and therefore appears deceptively slow—allowing too little lead is a frequent mistake of the novice railbird hunter. As with any gamebird, becoming an accurate shot is a matter of learning the movements and actions of the species.

Since a field-trial pointer is taught to work following a specific, learned format, the performance of

the railbird (which rarely holds on point) won't conform to his learning and he'll be confused; some hunters, therefore, opt to use retrievers. But a less-conditioned pointer (as are my own two Brittanies), working solely for—and at the spontaneity of—its owner, may even work well under the incongruent commands of railbirding. During flood tide when the birds are concentrated in the tufts of exposed marsh grass, a group of hunters can easily flush and retrieve without any aid from dogs at all. So accompaniment for the hunter is really left up to personal choice.

In New Jersey the season traditionally opens on September 1st, while both the weather and the water are still warm. It is important to get out early in the season before a Canadian high moves in with its northwest winds and late fall temperatures. If you wait until after such a cold snap, you'll have lost many of the birds to the southerly migration.

One of the oldest and best techniques used for a successful hunt is small-boat poling in and out of the creeks when the water is at its highest. It is

illegal in New Jersey to shoot from a motor or sail-powered craft, but shooting from the foredeck of a small boat being pushed along by a cane pole, has for many years, been the most accepted way to hunt railbirds. In this case, a good dog may be quite helpful if let off to work the sides of the creek—though I think mine prefer the boat ride!

Finding perfect poling conditions requires very early and careful planning, including strong reliance on the tide tables and weather reports. The ideal time to look for would be a spring tide, especially when there is an east wind blowing to bring the tide up another foot or two. Spring tides come twice a month, at full moon and new moon. When following the tide table, however, you must remember that marsh tides run one hour or more later than ocean tides and I've occasionally thanked nature for this late comer's cushion.

But for most of us, the perfect moon and the perfect tide—I'll not even mention wind direction—aren't always well at hand. Spring high tides with enough water for close and easy boating last only for a short time, and unfortunately, can come up at night and during the workday. Consequently, most hunting is done during the less-than-ideal lower tides. When hunting in such wide-open areas of exposed marsh grass, a favorite pair of comfortable sporting shoes (preferably sneakers under five dollars) and an eager bird-dog will prove virtual necessities since the birds scatter throughout the salt hay and are extremely difficult to get up. The success of such a hunt doesn't have to be measured by the number of birds in your game pouch (and to some, thankfully so). Certainly not to be overlooked are the physical and mental bonuses of such a fine preseasonal warmup—serving largely as excellent preparation for more competitive upland hunting.

Since railbirds feed in an estuarine environment their diet consists largely of fiddler crabs—thus explaining their rich, aromatic flavor as well as the nickname "mud-hen."

The legs of the bird are much milder in taste than the breast and therefore are usually preferred. But all in all, the rail is good eating and, though shy of much meat, makes up for it by supplying a generous bounty of vitamins and minerals. In venturing to prepare my own birds in a new and tasty way, I have come upon a recipe that is very simple and quite good.

#### **Spicy Baked Railbird**

Sauce: 2 tbsp. minced onion  
1 cup catsup  
1 tsp. salt  
1 tsp. celery seed  
2 tbsp. brown sugar  
3 cloves minced garlic  
1 tbsp. lemon juice  
2 tsp. dry mustard  
1 tsp. white pepper  
1 cup water

Railbirds: 6, skinned and quartered

Mix ingredients to make sauce and let stand one hour. Cover birds with sauce and bake on a cookie sheet for 10 minutes at 450°F. Continue to turn and base the pieces until done (about 40 minutes total). Any sauce left over may be stored in the refrigerator for a week or so.

Clapper Rail offers good hunting and good eating—don't pass up the chance or the season.



On September 30, 1984 Spokes and American Youth Hostels will hold the second annual MONTCLAIR BIKE TOUR. This is not a race or a bike-a-thon, but a leisurely tour through 20 plus miles of the Township. It is an event and a fun day for people of all ages.

For information:

2nd annual Spokes/AYH  
MONTCLAIR BIKE TOUR: SASE  
Spokes 60 Yantacaw Brook Road  
Upper Montclair, N.J. 07043  
or call AYH (212) 431-7100

## **Wings 'n Water Festival**

More than 45 events are scheduled to take place at the New Jersey Wings 'n Water Festival on September 15 and 16, at the Wetlands Institute in Stone Harbor.

This amazing show of nature will celebrate the land and water attractions of Cape May and Cumberland counties along the Atlantic Seashore and the Delaware Bay. Admission is free.

A world class decorative bird carving competition, show and sale is the centerpiece, with decoys, duck stamps and wildlife art shows included. New Jersey's first duck stamp, issued this year, will be a star. Guided beach, bird and botany walks, music of the sea, whaler's cabin tours, sunset boat cruises and seafood dinners are some of the other activities.

The two-day festival is a benefit for the Wetlands Institute and museum, a non-profit organization dedicated to public education and research. The institute is located on 6,000 acres of salt marsh one mile west of Stone Harbor in Cape May County. It offers a Wetlandia museum, Marshview lecture hall, observation tower, laboratories and a salt marsh trail.

The festival is partially supported through a grant to promote the garden state theme "New Jersey and You—perfect together."

For further information, write to Wetlands Institute, Stone Harbor Blvd., Stone Harbor NJ 08247, or phone (609) 368-1211. A free folder is available.

## **"Fungus Fest"**

Morels, oyster mushrooms, chantarelles and other wild mushrooms, once known to only a few experts, are appearing in markets and on restaurant menus with increasing frequency. What are they? Are there other edible wild mushrooms? What is that big yellow fungus on my tree? The answer to these and many other questions can be found at the New Jersey Mycological Association's annual "Fungus Fest" at the Somerset County Environmental Education Center on Lord Stirling Road in Basking Ridge. The fair will be held on Sunday, October 7, from 11:00 a.m. to 5:00 p.m.

Through lectures, slide shows and displays, members of the association will explain what mushrooms are, how they fit into the ecosystem and how to tell the edible kinds from their dangerous and sometimes deadly look-alikes. This year will feature "Introduction to the Mushroom World" a hands-on minicourse given at intervals during the day.

For additional information call either the center at 766-2489 or New Jersey Mycological Association at (212) 989-8999.



Swimmers enter Barnegat Bay and begin first leg of race.

## TRIATHLONS: THRICE AS NICE

The alarm clock rang, but it was guilt that got me on my feet. I couldn't lie in bed while a few miles away to the north 457 athletes gathered like lemmings at the chilly edge of Barnegat Bay, about to test their bodies' limits in the East Coast Triathlon Championship. I showered quickly and headed toward Barnegat Light.

Hundreds of bright red-orange bathing caps on hundreds of athletic heads milled about under the gray October sky as I pulled into the parking lot at the 17th Street dock.

Fog delayed the start of the race almost an hour; the gun finally went off at 9:30 a.m., and the lemmings moved *en masse* into the 65-degree water. They would swim a mile, up to Barnegat Lighthouse State Park, where they would shower quickly, then pick up sneakers, headgear, and a bicycle for a 25-mile spin through some of Long Beach Island's northernmost communities, finishing the ordeal with what a fellow observer called a "10-mile knucklebuster" run.

And I was balking at walking the few blocks from the parking lot to the lighthouse?

A mere 2:26:46 after the first bodies hit Barnegat Bay, 19-year-old Ken Glah of West Chester, Pennsylvania, broke through the finish line at the state park. During the next few hours, every triathlete who had entered the water that morning, with the

exception of a very few, would run, stumble, or throw themselves across the finish line. And every one would be a winner.

The East Coast Triathlon Championship, the second such event to be held on Long Beach Island in two years, is part of a burgeoning sports phenomenon, one that is certainly making its presence known in the Garden State.

A triathlon is any contest made up of three events. Although the swim/bicycle/run combination is the most popular, there are endless variations: swim/canoe/run, cross country ski/kayak/run, or even cliff climb/run/kayak. Pick your poison. More than 300 triathlons were held across the United States in 1983.

Triathlons got a major media boost in 1980 when ABC's "Wide World of Sports" covered the two-year-old Hawaiian Ironman competition—a grueling combination of three of Hawaii's most strenuous endurance races: the 2.4-mile Waikiki Rough Water Swim, the 112-mile Around-Oahu Bike Race and the 26.2-mile Honolulu Marathon. In 1978, the first year the race was run, only 15 people entered; by 1982, more than 850 triathletes traveled to the islands to join in the fun.

Less demanding (relatively speaking) than the Iron contests are the so-called "Tinsmans," like the triathlon in Barnegat Light, which feature moderate distances in each event. Last year Tinmans were held throughout New Jersey: The Hewitt Nautilus Triathlon, held at Wayawanda State Park in October,

BY CATHIE CUSH  
PHOTOS BY RAY FISK

**The Ricoh East Coast Triathlon will be held on Long Beach Island on September 29.**



*Swimmers emerge—to be logged in and begin 2nd leg of race.*



*Bicyclists completing the 2nd leg.*

consisted of a .5-mile swim, a 16-mile bike ride, and a 5-mile run; a Jersey Shore Spring Triathlon was held at Island Beach State Park (.5 mile swim, 10-mile bike and 5-mile run), and Bridewater hosted the Somerset County Tinman (.25 mile swim, 15-mile bike and 5-mile run). Prior to his triumph in Barnegat Light, Ken Glah won a Tinman in Cape May.

(He also won one of several biathlons—two-event contests—held in Ocean County throughout the summer as preparation for the big event in Barnegat Light.)

The East Coast Triathlon Championship, under the direction of architect Gym Wilson of Ship Bottom, was sponsored by Ricoh of America, Inc. The Fairfield based company, which markets cameras and office equipment, is also the sponsor of the Ricoh Ironman United States Championship in Los Angeles. "Ricoh's positive association with the sport of triathlons coming out of the Ricoh Ironman further enhanced the credibility of our race," Wilson comments.

And the general consensus among the competitors seemed to be that the East Coast Triathlon was one well-organized race. (Or was that three well-organized races?)

"It's a hell of a lot easier to compete in this race than to organize it," observes Lloyd Peters, who has done both. "A race like this, you have responsibility for someone's life. If you don't organize this properly,

people can die." Triathletes and automotive traffic must be kept apart, for one. The swim part of the contest requires a great deal of caution on the organizer's part. One entrant in Barnegat Light became hypothermic from the cold swim, and could not continue the race. Wetsuits are only allowed if the water temperature dips below 62 degrees. At the Cape May triathlon, Glah recalls, the swim had to be held last, and race officials feared what might happen if the tired athletes became exhausted while in the water. "They warned everybody not to go into the water unless they were feeling good—a lot of people didn't," says the curly red-headed economics major.

Surprisingly, however, there are usually very few injuries at triathlons—less so than at most foot races—although one contestant did finish the race with a broken clavicle that he suffered after a bike spill. As Glah observes, "There are no hackers here."

In fact, triathloning seems to be more a way of life than a mere event, or even three mere events. Training is a major time commitment.

"Between a normal job and maintaining a household it gets to be tough," admits 31-year-old Frank Bernabei of New Rochelle, New York, who says he trains two hours a day. "You wonder if it's worth it. After a day like today you know it is."

"You've got to keep this in perspective," reminds Greg Fields, a 34-year-old attorney from Delaware. "The top 10 percent (of triathletes) by and large are



Overall winner Ken Glah, 19, of West Chester, Pa., beating 457 other entrants from 14 states. (Ken was also the winner of the Liberty State Park Triathlon this summer.)

not very well bound by a lot of other constraints on their time. (Champion triathlete) Bill Rodgers once said, 'No one who works a 40-hour week is ever going to beat me.' Some of their work-out schedules are unbelievable."

Glah agrees. He would like to compete in the Ironman this year. But "the only way I can improve is to get a sponsor. To get competitive in the Ironman I'd have to do 42 hours a week training."

But the awesome endurance and thankless hours of training required don't mean that triathlons aren't for everyone. They may even overtake running in the popularity department.

Rather than making it three times harder to compete, so that only the elite at the top of each sport enter, Lloyd Peters believes triathlons give more people an opportunity to do well at something.

"I was a runner for 16 years and I was a mediocre runner. But I'm decent as a three-sport athlete. I don't have the specificity to do well in one event. You'll see a lot of that," says the 31-year-old Lancaster, Pennsylvania, contractor.

"Every one is different. You have things you learn in every triathlon," he explains. "That's one of the attractions of the sport." He speaks of skill levels, technique, and putting it all together. "That's why I think triathlons are booming... It's like an atomic bomb. We're at the base of that mushroom cloud. There's a potential of probably close to 100 million people.

You know you can finish," smiles Peters over a post-race Budweiser at Rick's American Cafe. "It's a matter of how fast." He came in fifth over all. After 18 triathlons, his goal is "to be the first finisher with a real job."

Upstairs at Rick's, Ken Glah is basking in the thrill of victory and the agony of the feet. "I feel good now," he confides, but says he feels "really good" after the race. Mainly a runner, he says he trains two hours in the morning and two in the evening during the summer.

He mostly trains by chasing girls, a friend at the table quips. Call him "The Molester from West Chester."

Triathletes are supportive of each other, he notes. "The back group is cheering for the front, and the front group is cheering for the back."

More athletes wander upstairs, waiting to hear Dr. Robert Arnot (a.k.a. Good Morning America's "Dr. Sport") speak.

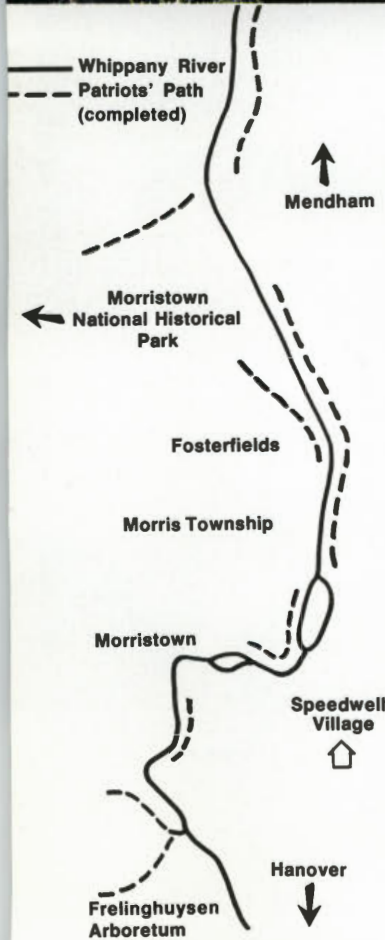
"Runners race and leave," Glah offers, explaining why so many competitors from 14 different states are still in Barnegat Light hours after the race has ended. "I think there's a lot of camaraderie with triathlons. You meet so many people, you want to stay around."

Beer in one hand, pretzels in the other, Glah laughs. "This is a training meal!"

And a triathlon is an event worth getting out of bed for—even on a chilly morning.



Oldest participant, William Farley, 66, of Brielle.



A linear park? A park is often thought of as a large, rambling piece of land, irregular and wide, while linear means long and narrow, like a path. The two concepts clash. The New Jersey Conservation Foundation, however, has combined the two notions to create Patriots' Path, a linear park which spans seven communities in Morris County.

Patriots' Path runs through backyards and forests, along old railroad beds, past lakes and across fields, and alongside the Whippany River. When complete, it will comprise a 27-mile stretch from India Brook Park in Mendham Borough to Lurker Park in East Hanover Township. The path will pass through Mendham Township, Morris Township, Morristown, Harding Township and Hanover Township.

Patriots' Path encompasses lands under the domain of municipal governments, the Morris County park system and the National Park Service. Each government division administers, funds and maintains the section of path in its domain.

The dream began in 1966. Hugh Stearns, who first showed interest in linear parks, Russell Myers, then secretary-director of the Morris County Park Commission, and Helen Fenske, former member of the Great Swamp Committee, coordinated meetings between the environmental commissions and recreation departments of these seven communities. Many political negotiations ensued. The groups responsible for making the park a reality are as di-

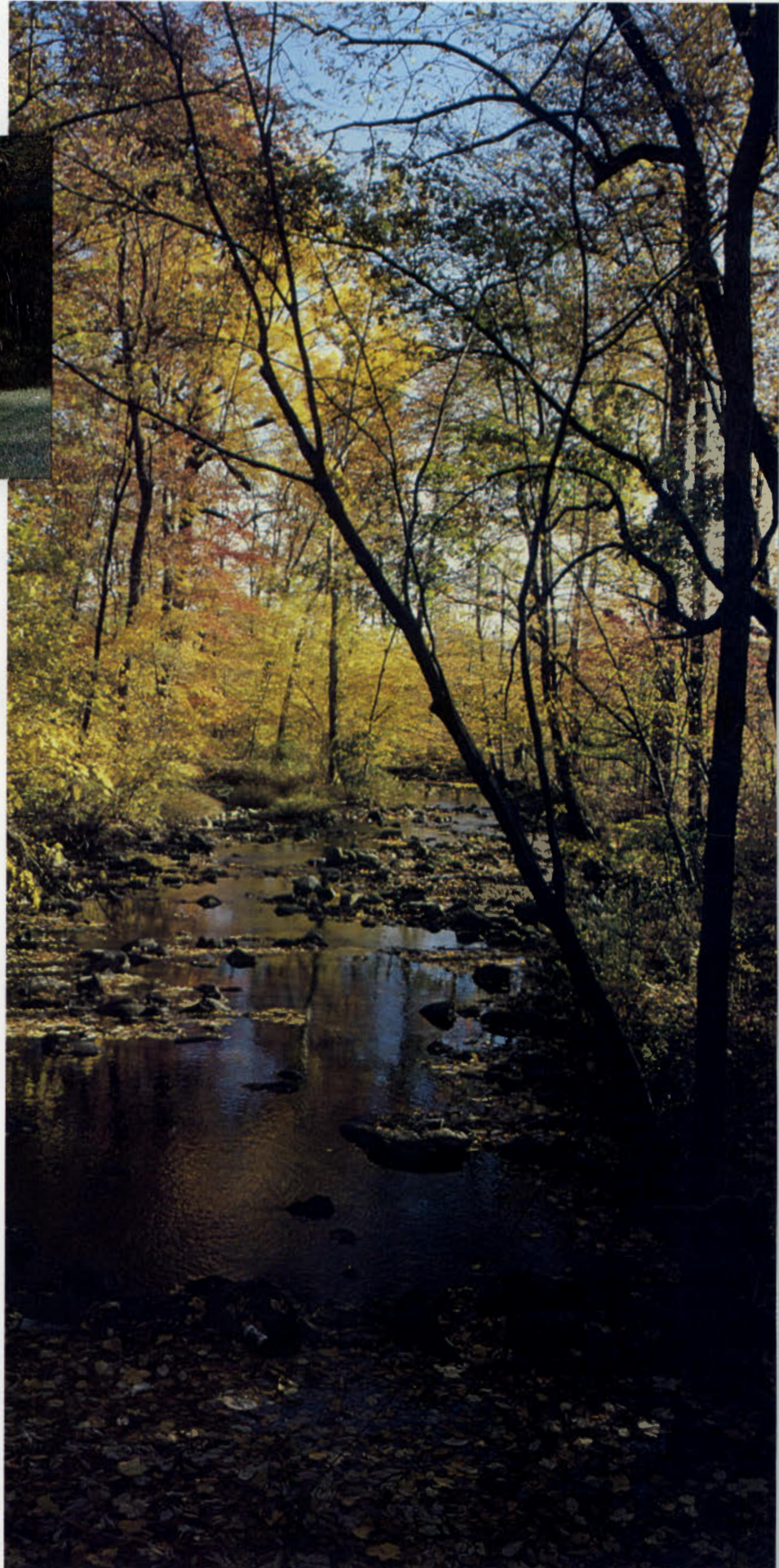
verse as the environments through which the path wanders: Rotary Clubs, Junior Leagues, Boy Scouts, Girl Scouts, garden clubs, environmental groups and government bodies.

Today, a third of the path is complete and open to the public. In 1980, portions were designated by the federal government as a National Recreation Trail.

Patriots' Path is primarily a hiking trail, but each section has rules for other uses as well. In Jockey Hollow, part of the Morristown National Historic Park, horseback riders share the path with hikers. Riders can gallop by cabins that simulate life during the bitter Revolutionary War winter of 1779-1780. Here, the historic structures bring home the meaning of the name "Patriots' Path."

The aroma of wood smoke wafts past riders in the fall when the forest is a kaleidoscope of color. Scarlet maple leaves, copper beech, golden poplar beckon the adventurer on deeper and deeper into the woods. There is so much room to roam that visitors have been known to get lost, briefly, in these open woods. To aid the wanderers, there are maps at intersections, and occasional tree trunks bear the Patriots' Path logo which shows the way.

Bicycling is encouraged in Morris Township, where a level, paved section of the path winds along the beautiful Whippany River through tall hardwoods and low shrubs. A cyclist could ride to downtown Morristown from five miles out in the country



# Patriots' Path

BY JOAN HUBER  
PHOTOS BY AUTHOR

and leave the car at home!

It is the tremendous variety of sights on Patriots' Path that is most impressive. A stretch in Hanover Township passes an historic paper mill and its railroad tracks. In Mendham Borough, the trail passes behind well-kept suburban houses where only a screen of trees protects the homeowners' privacy. Elsewhere in Mendham, one can walk where India Brook flows over sparkling stones and outcroppings of blue rock. In Morris Township, the path follows the old Rock-a-Bye Baby railroad bed along a low, flat valley where deer abound. At Speedwell Lake the path passes an historic dam and the remains of an iron factory. An authentic, hand-crafted arched bridge stands where the Whippany flows under Speedwell Avenue.

Several side trails branch into Patriots' Path. One eight-mile branch leads through the Cross Estate, located in the wilderness area of Morristown National Historic Park. This trail begins near the Sherman-Hoffman Wildlife Sanctuary in Bernards Township and passes by the New Jersey Brigade huts, some formal gardens, a huge dawn redwood and a cathedral of 100-foot spruce. It twists down a forested hill to a bridge across the Passaic River.

When Patriots' Path is complete, it will connect with Essex County's Lenape Trail, which starts in Newark and ends in Millburn. It will be possible to walk all the way from downtown Newark to Chester and remain on the same park the whole time!



*Author's daughter bicycling uphill.*



*Shepherd Lake*

## Ringwood: a bicyclist's delight

BY KENNETH W. DAHSE  
PHOTOS BY AUTHOR

Whether you are a weekend leisure rider or a racing cyclist, Ringwood is a great place for a bicycle tour. Ringwood is nestled in the Ramapo Mountains of northern New Jersey. It is a 27-square mile semirural community of rolling hills, quaint neighborhoods, lakes, and beautiful state parkland. Ringwood is the home of Ringwood Manor, Skyland Manor, and Ringwood State Forest. The air is pure and scented with the sweet fragrance of trees and flowers. Anywhere you glance, you will see mountains and greenery. It is not uncommon to spot a woodchuck or raccoon by the side of the road. On a few, very rare occasions, even bears have been known to come down from the mountains to sample honey from local beekeepers' hives.

It is easy to plan a tour of 5 to 30 miles or more. Most of Ringwood's roads weave through tree-lined streets and have very light traffic. You can stay within the boundaries of Skyland Manor and never even venture into a residential street, if you so choose. The best way to plan a bicycle tour of Ringwood, is to buy a Passaic County Road Map. The map will enable you to plan your route and mileage very easily. Of course, this won't tell you where the hills are. Don't worry, they are everywhere. But don't be discouraged, most of them aren't that difficult at all, especially if you have a 10-speed. Even if you are only interested in a short tour, plan on making a day of it. There is enough to see and enjoy to make a day seem very short.

One of the best bike tours of Ringwood, is approximately 17 miles long and can easily be extended by adding side excursions or by doing it twice. This tour will take you past three lakes, two public beaches, through Skylands Manor, around the picturesque Wanaque Reservoir and to the Weis

Ecology Center. If you take it during the summer months, there are two public beaches where you can stop for a refreshing swim.

You can start your tour by parking your car at the Fieldstone Shopping Plaza on Skyline Drive. Park on the side with the Grand Union. From there, ride up Fieldstone Drive. You will get nice views of Ringwood State Forest in front of you as well as some of the surrounding hills and valleys behind you. When you are forced to make a sharp right, don't. Instead, make a sharp left on fire road. Go around the gate and take fire road to Erskine Lake. Make a right onto Lakeview Avenue. This is a pretty ride with some nice views of the lake on your left. Stay on Lakeview until you pass Upper Erskine Lake on your right. You will be riding between two lakes. The road will start to curve. If you stay on Lakeview it will take you completely around the lake and right back to this spot. It will add another mile and a half to the trip and is a worthwhile diversion. You can stop at Erskine Beach and enjoy the scenery. However, this is a private lake, you can't swim there. If you don't want to do the circular, make a right onto Upper Lakeview and then bear left onto the steep hill of Valley Road.

Continue on Valley Road to Bear Mountain Road. Make a left turn and then a right onto Cupsaw Ave. When you reach Cupsaw Plaza which has only a few stores you can take another diversion around Cupsaw Lake by continuing straight onto Cupsaw Drive. This will bring you back to this same point. If you do not take the Cupsaw Lake circular, make a right onto Skylands Road. This will take you into the park.

Ringwood State Forest is a bicyclist's dream. This pristine area is practically devoid of cars, especially, if you are there off season or off hours. You will tour through woods, fields, and flower gardens. You can



*View from Stonetown Rd.*

stop at the huge Skylands Manor. From the Manor, you can get a panoramic view of the surrounding mountains and the Wanaque Reservoir below.

From this point, continue through the park to Shepherd Lake. Shepherd Lake is a perfect place to take a rest stop. You have travelled about six to eight miles. There is a public beach here as well as canoe and boat rentals. When you are ready to leave Shepherd, head back the same way you came until you reach Morris Road. This is just before Skylands Manor. Make a right and enjoy a fast ride downhill. But be careful, this road is bumpy. When you reach Sloatsburg Road you can take another short side excursion and visit Ringwood Manor, by making a right onto Sloatsburg Road. Ringwood Manor is an interesting old mansion dating back to the time of the iron barons. It is steeped in history and tours through the mansion are very enjoyable.

If you decide to bypass the mansion, then make a left onto Sloatsburg Road and stay on it for a short distance until you make a right and start up Margaret King Avenue. Continue on Margaret King Avenue until you reach Greenwood Lake Turnpike, then take left. This road is extremely busy but you will only be on it for a few minutes until you reach Stonetown Road. It's a sharp right turn. Stonetown Road takes you up a very steep hill, that only the most hardy can make without stopping. But once you reach the pinnacle, you are rewarded with a sweeping view of Stonetown Valley and the surrounding Ramapo Mountains. Don't be surprised if you see a horseback rider galloping alongside the road. Some of the residents own horses and there are stables in the area.

Once you have reached the top of Stonetown Road, you can cruise downhill for the next several miles. Stonetown Road ends at West Brook Road, make a right turn. Continue on West Brook until

you reach the Weis Ecology Center sign. If it's in the summer, ride up to the center and cool off with another swim. If you want to bypass it, just continue on West Brook until you reach Magee Road, then turn right. This is a beautiful road weaving its way through a forest with a few houses interspersed. You can add a few tough miles to your trip by heading up Burnt Meadow Road until the pavement ends. Then, if you are interested in speed, you can race downhill all the way back to Magee. Magee will bring you to Stonetown Road again. Make a right and go back to Westbrook, but now you will turn left and ride along the Wanaque Reservoir.

The ride along the reservoir is very pretty, and there are several places to stop for some nice views. The best is when you go over the bridge. From this point, you can see most of the reservoir with water on both sides of you and the mountains rising majestically from the shoreline.

When you reach Ringwood Ave., you can take two possible routes back to your car. The fastest and easiest way is to turn left and continue to Skyline Drive and back to the plaza. However, there is considerable traffic on this route. The alternative is more strenuous but safer. Make a right onto Ringwood Avenue and then a left on Skyline Lakes Drive. Continue until you reach Smokey Ridge Road. Take this road to Hill Top, Hill Top to Buena Vista to Alta Vista, which brings you right back to Fieldstone Shopping Plaza.

Without any side diversions or stopping to swim, this entire route shouldn't take you anymore than three to four hours to complete. You can race through it in less than two hours. But to really enjoy the spectacular scenery and opportunities offered by bicycling in Ringwood, take the entire day.

Whether you plan a trip in the spring, summer, or fall; Ringwood is a bicyclist's dream.



# Cider making in New Jersey

BY DEBORAH A. BOERNER  
PHOTOS BY AUTHOR

This time of year in Newark, the air is beginning to feel cool and the sweet aroma of apples lingers on the cool, crisp air. Some of the apples have already been harvested and are being pressed for cider at the cider mill on the other side of the hill.

Most people find it hard to imagine Newark as being a rural area, much less the prime apple-growing and cider-making country described above. The fact is, up until the mid-1800s, the Newark area had many large apple orchards for making cider, and "Newark cider" was widely celebrated as the best there was. Historical accounts show that as early as 1682, Governor Carteret wrote, "At Newark is made great quantities of cider, exceeding any that we have from New England, Rhode Island, or Long Island."

New Jersey has been noted for the quality and quantity of cider produced here ever since the 1600s. Though industry and urbanization have replaced the Newark apple orchards, there are still 50 licensed sweet-cider operations throughout the state. Also, the only remaining applejack distillery in America is located in central New Jersey.

Prior to Prohibition, most of the cider produced in the United States was fermented. In the 17th and 18th centuries, "hard cider" was a common household drink. Everyone drank it. Historical records indicate that John Adams was typical of many in his day who drank cider with breakfast. When milk was scarce, children were given diluted, sweetened cider. Clergymen drank fermented cider, because drinking was accepted as an integral part of religious ceremonies and social events. Cider was also thought to have restorative properties and was safer to drink than water, which was often contaminated around settlements in early America.

It's easy to see how cider became *the* drink in 17th- and 18th-century America. The colonists' hopes of making beer or wine in the new land were quickly abandoned, since grains and grapes grew poorly here at first. Although apple trees were not

native to America, some crab trees were. Crabapple varieties were obtained by grafting the common European apple on the wild native stock of crab trees. The results were apples which today would be considered too tough and astringent for eating out-of-hand. They were perfect for those days, however, when nearly all the apple crop went to making cider. This was done not only because cider was so popular a drink, but also because it was difficult to keep the apple crop from spoiling. Markets for fresh apples were few and roads were poor in colonial times. It was easier to transport and sell barrels of cider than a wagonload of decaying apples.

People had their own ideas about which ciders tasted best and what were the best drinks to be made from cider. Applejack, also known as "Jersey lightning" or "cider oil," was made by allowing hard cider to freeze and then siphoning off the alcoholic content (which separates from the water content and does not freeze). When repeated, the process, called fractional crystallization, results in a very potent drink. New Jersey cidemakers were especially skilled at making applejack and were famous throughout the colonies for their "Jersey lightning."

Another New Jersey favorite, especially in Somerset County, was the "Stewed Quaker." This drink has been described as cider with some cider oil in it and a hot roasted apple floating on top. A "stonefence" was hard cider to which apple brandy, brown sugar, and spices were added and steamed before serving. "Cider royal" was freshly fermented cider to which applejack was added; another account describes it as regular cider boiled down to one-fourth its original volume. The list of cider drinks and how they were prepared goes on, and surely others have been forgotten.

Throughout the 1800s, though cider was still the most popular drink in America, something was happening which would change all that. Temperance societies were forming and by 1919 had become

*Apples are harvested by hand on this New Jersey farm.*

*Each "cheese" on the rack and cloth press is prepared by draping a cloth over the frame, filling it with apple pomace, removing the frame, and placing a slatted rack on top.*



New Jersey State Library

strong enough to get the Prohibition Amendment ratified. The effect on cidermaking in the United States, even before Prohibition, was astounding. Farm cider production dropped from 55,280,000 gallons in 1899 to 13,366,000 gallons in 1919.

During Prohibition, however, New Jersey applejack was more popular than ever. Compared to most other bootleg liquor produced at the time, applejack was considered the safest and most unadulterated. Also, New Jersey cider bootleggers had a nearby market in New York City, whose residents generally never joined the temperance bandwagon.

About 400 of the 4768 alcohol-related arrests made in New Jersey during the Prohibition years involved the illicit manufacture, sale, possession, or transportation of applejack. About one in every 25 of the 2000 stills raided were making applejack at the time. However, most cider producers heeded the law and closed down during Prohibition. When the amendment was repealed 14 years later, many did not reopen their cider mills. This is evident in the fact that 150 years ago, there were 388 cider distilleries in New Jersey; today there is only one.

The sole distillery in New Jersey, Laird & Company of Scobeyville, Monmouth County, is also the only remaining applejack distillery in America, according to its Vice President, John Laird. Several million bushels of apples are used each year in the family-run business, which bought out other Jersey cider distilleries in the '30s, '40s, and '50s.

A Beverage Control Act was passed in the state in 1933 to regulate the licensing of manufacturers, wholesalers, and retailers; taxes on the sale of alcoholic beverages were also imposed at that time.

Though our consumption of applejack has declined, the sweet cider produced at more than 50 New Jersey cider mills is still a favorite commodity. Roadside stands feature it at this time of year along with their fall array of sweet potatoes, peppers, squash, apples, and pumpkins. Whereas apples were grown solely for cider production in colonial times, today cider is a byproduct of the apple industry. Although state law requires all apples used in cider to be sound and worm-free, cider apples are generally second-grade, culls, or surplus apples.

A blend of three or more apple varieties is thought

to produce the best-tasting cider. The definitive work on apple-growing and cidermaking for some time after it was written in 1817 by William Coxe of Burlington, N.J., was *A View of the Cultivation of Fruit Trees and the Management of Orchards and Cider*. In it, Coxe says, "The finest liquor I have ever seen was made from the crab with Harrison of Newark and the Winesap of West Jersey." Most of the varieties used in cidermaking in the early years are no longer grown; however, modern crabapple varieties are often used to add astringent qualities to the cider blend.

The first step in cider production is to wash and inspect the fruit. Then the apples are ground up, using either a grater or a hammermill. An old-fashioned hammermill consisted of a large wooden or stone wheel driven around in a circular trough by horses hooked to a sweep. The apples were placed in the trough to be crushed. Before devising this method, the colonists used a springboard and a heavy maul to crush the apples in a hollowed log, or they simply pounded the apples with wooden mortars. The modern hammermill is much more compact than the wooden or stone trough and has stainless-steel bars that crush the fruit when revolving at high speed. Another method is to place the fruit in a hopper in which blades, operated either manually or automatically, grind the apples.

After the apples are sufficiently ground, the apple pulp, or pomace, is placed in the cider press. Called a rack and cloth press, it consists of alternating slatted racks and the cloths filled with the ground apple pulp. The first rack is put on the pressing platform and a two- to three-foot square frame is placed on it. A cloth is draped over the frame so the corners extend over the sides of the frame. Then, the frame is filled with pomace. The cloth is folded over the pulp and the frame removed. This forms the first of the "cheeses," as each layer is called. When all the cheeses have been prepared, a rack is placed on top and pressure is slowly applied to the system from above. Some presses are mechanical and use a heavy screw to exert pressure; others use a hydraulic ram to press the cheeses. The amount of pressure depends on the size of the press, but usually ranges from 75 to 150 pounds per square inch. Pressing generally takes about half an hour and yields 160 to 170 gallons of cider per ton of apples.

In the earlier days of cider production, straw placed in alternate directions was used instead of cloths to form the cheeses; either serves to contain the pomace while filtering the cider. An even more primitive method used when cider was first made in the colonies was to press the pomace in baskets.

Cider is usually bottled in glass jugs or plastic containers. In the 1700s, when the New Jersey glassmaking industry was just getting started, it was definitely aided by the cider mills' demand for bottles. Bottles were sometimes worth more than the cider in them, and the sale of bottled cider was often cheaper if the bottle was returned.

Apple cider can be kept 10 to 14 days if refrigerated but will start to ferment within a few days if left at room temperature. Many cidermakers today choose to use chemical preservatives; potassium sorbate is preferred over benzoate of soda, which sometimes leaves an aftertaste.

Today, the production of cider in New Jersey is regulated by the State Department of Health. Licensing of cidermakers has been a part of state law since 1907. A license currently costs \$25 per year and the Department inspects each operation annually.

*The cider is filtered through a double cheesecloth and bottled in gallon jugs. This New Jersey cider mill dates back to before Prohibition.*





White Oak (21'8") Photo by Bill Vibbert

Sweetgum (17'6.8") Photo by J.T. Rozmus

## ***New Jersey's Record Trees***

BY SANTIAGO PORCELLA, III

Since early colonial days, trees have been planted along village streets, in yards, parks and cemeteries where shade was important to the early settlers. Trees were protected in these areas and were spared the axe. The Spaniards introduced the peach as the first orchard tree in the New World in the 16th Century and some Indians cultivated many acres of peaches in this area. By 1663, early American settlers were primarily interested in food, so fruit trees were imported. Pears, apples, cherries, quince and plums were brought to the colonies for planting.

This register of big trees in New Jersey (list #7) includes only those species indigenous to New Jersey, or those that have become naturalized. Foresters of the N.J. Department of Environmental Protection, Hackensack Water Co, and Cook College foresters aided in measuring many of the trees, which were mostly all nominated by interested citizens. Most measurements were taken at a point 4½ feet above the ground.

Many of the largest trees in the state date to the time when New Jersey was populated mostly by the Lenni-Lenape Indians, and a scattering of Dutch settlers along some of the bays. Hickories, Eastern Larch, Paper Birch and Basswood were Indian

favorites—hickory nuts for food, larch and paper birch for building canoes. Some tree species live to be hundreds of years old, others may only last an average of 50 years. The White Oak is a long-lived species, and reaches the greatest circumference. There are many white oak trees in New Jersey greater than 19 feet in circumference, and they are probably over 300 years old. Gray birch is one of the short-lived trees even though a very fast grower.

Trees get old and fall victim to insects, disease, storms and eventually succumb. If you learn of trees on this list that have died or are destroyed, please let us know. This will enable us to keep the list up to date. If you find trees greater in circumference than those listed, please send in the information so it can be included in the next revision. Only one tree remains from the first list issued in 1954. That's the Tulip poplar here in Trenton. It measured 18'8" in 1954, now 19'6" in 1984. Not much growth in 30 years! Red Oak (*Quercus rubra*) was designated as the official New Jersey state tree on February 13, 1950.

For other Forestry Information Contact:  
George H. Pierson, Chief  
N.J. Bureau of Forest Management  
CN 404  
Trenton, NJ 08625  
Summer 1984



*Shortleaf Pine (7'3.8")  
Photo by J.T. Rozmus*



*Sand Hickory (11'1")  
Photo by George Pierson  
(This is a national record tree.)*



*American Holly (7'7")  
Photo by Bill Vibbert*



*White Mulberry (17'5")  
Photo by Charles Kier, Jr.*

# New Jersey's Record Trees

Species	Circumference	County	Location	Owner or Reporter
<b>Ailanthus</b> Ailanthus altissima	15'2"	Cape May	From intersection of Bucks Ave., 500 feet east on Goshen Cape May Court House Rd., Goshen	Owned by Sam Clark
<b>Apple</b> Malus pumila	8'8"	Sussex	North of Stokes State Forest, along the abandoned road to Buttermilk Falls	Reported by F. Lloyd Staats, III
<b>Ash, Black</b> Fraxinus nigra	3'5"	Morris	Hacklebarney State Park 1/4 mile up stream from Reinhart's Brook	Reported by John E. Kuser Dept. Forestry/ Hort., Rutgers University, New Brunswick
<b>Ash, Green</b> Fraxinus pennsylvanica	14'0"	Mercer	Along west side of Quakerbridge Rd. 0.1 mi. North of Canal Bridge	Reported by F. Lloyd Staats, III River Rd., Belle Meade, NJ 08502
<b>Ash, White</b> Fraxinus americana	20'5"	Camden	Near Administration Bldg., Bancroft School Grounds, Hopkins Ave., Haddonfield	Reported by Michael F. McLenigan 274 E. Kings Hwy., Haddonfield, NJ 08033
<b>Aspen, quaking</b> Populus tremuloides	3'0"	Sussex	Behind shed at Lake Wapalanne, NJ School of Conservation	Reported by John E. Kuser
<b>Aspen, bigtooth</b> Populus grandidentata	3'7"	Sussex	Behind shed at Lake Wapalanne, NJ School of Conservation	Reported by John E. Kuser
<b>Atlantic coast cedar (See southern white cedar).</b>				
<b>Baldcypress</b> Taxodium distichum	21'9"	Salem	On property of Edgar J. Myers, Poplar Street, Hancock Bridge	Reported by Charles W. Holsworth Bureau of Forest Management
<b>Basswood, American</b> Tilia americana	20'1"	Monmouth	On property of J.G. Marzulla, 308 Tuttle Ave., Spring Lake	Reported by G. Lester Alpaugh Bureau of Forest Management
<b>Beech, American</b> Fagus grandifolia	16'6"	Monmouth	On property of Dr. A.B. Judd, 943 Broad Street, Rt. 35, Shrewsbury	Reported by Margaret Crooks 303 Bell Place, Sea Girt
<b>Birch, black</b> Betula lenta	71'1/2"	Passaic	Garret Mtn. Reservation, Rt. 1-80 to Squirrelwood Rd. ext. South 0.5 mi. to Getty sta. follow path opp. sta. 80 yds to tree left hand side	Reported by Peter Both 5 Providence Ave., W. Paterson, NJ 07424
<b>Birch, gray</b> Betula populifolia	2'7"	Middlesex	Cook College Display Garden	Reported by John E. Kuser
<b>Birch, paper</b> Betula papyrifera	5'7"	Mercer	In yard of Philip Reed, 575 Snowden Lane, Princeton	Reported by F. Lloyd Staats, III
<b>Birch, river</b> Betula nigra	10'2"	Somerset	On the West Bank of the Millstone River 0.6 mi. North of Griggstown causeway	Reported by F. Lloyd Staats, III
<b>Birch, yellow</b> Betula alleghaniensis	7'6"	Warren	On property of G.W. Scout Camp, Yard Creek, back of Ranger House	Reported by Peter Both
<b>Blackgum (see sourgum)</b>				
<b>Boxelder</b> Acer negundo	13'8"	Sussex	Stokes State Forest, on DeGrote Rd. approx. 2 mi. North of Gran Rd. intersection	Reported by Robert Dove N.J. Forest Fire Service
<b>Buckeye, Ohio</b> Aesculus glabra	11'3"	Union	Liberty Hall, sw corner in front of building, Union	Reported by Santiago Porcella, III 11 E. Delaware Ave., Pennington, NJ 08534
<b>Buckeye, yellow</b> Aesculus octandra	7'10"	Mercer	112 Alexander St., Princeton	Reported by John E. Kuser
<b>Butternut (see white walnut)</b>				
<b>Catalpa, northern or hardy</b> Catalpa speciosa	10'5"	Burlington	In rear of Walter Dubrow property (Hereshome), Riverton Road, Morrestown	Reported by Eileen Hand 7 Chatham Road, Vincentown
<b>Catalpa, southern</b> Catalpa bignonioides	15'8"	Somerset	On property of Henry Rushman (Meadowbrook Farm) 1/2 mile south of Bernardsville Quarry on U.S. Rt. 202, left side of road opposite mile post 37	Reported by Ronald J. Sheay Bureau of Forest Management
<b>Cedar, red (Not a true cedar. See Redcedar, eastern)</b>				
<b>Cedar, white (Not a true cedar. See southern white cedar)</b>				
<b>Cherry, wild black</b> Prunus serotina	16'11"	Salem	On property of Lawrence Antonik, Harvey Court, east of Deepwater Generating Station and north of Churchtown Rd., Pennsville	Reported by Bob Gardner, Salem County Agent, Salem, and Lewis S. Howell, Bureau of Forest Management
<b>Cherry, sweet</b> Prunus avium	11'3/4"	Somerset	Front yard of William Fallon, 28 Montgomery Ave., Rocky Hill, NJ	Reported by F. Lloyd Staats, III
<b>Chestnut, American</b> Castanea dentata	6'6 1/2"	Ocean	On property of Mrs. Carol Matera, 1000 Trenton Ave., cor. Rue Ave., Pt. Pleasant	Reported by Mike D'Errico Bureau of Forest Management
<b>Coffeetree Kentucky</b> Gymnocladus dioicus	12'8"	Bergen	118 Engle St., Tenafly	Reported by John Dobson
<b>Corktree, Amur</b> Phellodendron amurense	5'3"	Mercer	Marquand Park, Princeton	Reported by Santiago Porcella, III
<b>Dogwood, Alternate Leaved</b> Cornus alternifolia	1'2"	Union	West trail of Woodland walk closeby daylily bed on Reeves-Reed Arboretum	Reported by Reeves-Reed Arboretum, 165 Hobart Avenue, Summit, NJ 07901
<b>Dogwood, Flowering</b> Cornus florida	5'5"	Middlesex	572 Cranbury Road, East Brunswick	Reported by Raymond A. Clark
<b>Elm, American</b> Ulmus americana	14'0"	Mercer	Princeton, NJ, Princeton University in rear of Stanhope Hall	Reported by Santiago Porcella, III
<b>Elm, Slippery</b> Ulmus rubra	10'4"	Middlesex	Near Pond, Cook College, New Brunswick	Reported by Robert Bosenberg Cook College
<b>Ginkgo</b> Ginkgo biloba	16'7"	Bergen	Front Courtyard Heritage office, 555 Kinderkamack Rd., Oradell	Reported by Burton Dezendorf 401 Hasbrouck Blvd., Oradell
<b>Golden Larch</b> Pseudolarix amabilis	5'3"	Mercer	In front yard of main building, Hun School, Edgerstoune Rd., Princeton	Reported by John Kuser

Species	Circumference	County	Location	Owner or Reporter
<b>Goldenraintree or China-tree</b> <i>Koeleruteria paniculata</i>	6'7"	Passaic	Skyland Manor House by tennis court, Ringwood	Reported by Santiago Porcella, III
<b>Hackberry</b> <i>Celtis occidentalis</i>	12'7"	Mercer	On River Rd., North of Titusville	Reported by Santiago Porcella, III
<b>Hemlock, eastern</b> <i>Tsuga canadensis</i>	13'4"	Mercer	Marquand Park, Princeton	Reported by Santiago Porcella, III
<b>Hickory, bitternut</b> <i>Carya cordiformis</i>	9'7"	Somerset	On North bank of Beden's Brook, 0.4 mi. downstream from U.S. Route 206	Reported by F. Lloyd Staats, III
<b>Hickory, mockernut</b> <i>Carya tomentosa</i>	9'2"	Burlington	Masonic Home, Oxmead Rd. at edge of field near fence SE of bldg.	Reported by Louis E. Hand
<b>Hickory, pignut</b> <i>Carya glabra</i>	12'7"	Cumberland	From intersection of Stage Coach Rd., and Rt. 47, travel Southeast on Stage Coach Rd., 1,500 feet to gravel road intersection, left 200 feet to sand road, 400 feet on sand road to tree, Maurice River Township	Reported by Mrs. Carolyn P. Bacon, Mauricetown
<b>Hickory, Red</b> <i>Carya ovalis</i>	10'4"	Cumberland	West Landis Ave., opp. Two Guys store	Adele Filippi 561 East Wheat Rd., Vineland, NJ 08360
<b>Hickory, Sand</b> <i>Carya pallida</i>	11'1"	Cumberland	1490 N. West Ave., Vineland	Reported by Stephen R. Field
<b>Hickory, shagbark</b> <i>Carya ovata</i>	12'1"	Morris	On property of Albert Riggs, cor. of Russia Rd. and Weldon Rd., Milton	Reported by Ronald J. Sheay
<b>Holly, American</b> <i>Ilex opaca</i>	7'7"	Monmouth	23 Sheraton Lane, Rumson, NJ 07760	Reported by C. Brice De Ganahl
<b>Honeylocust</b> <i>Gleditsia triacanthos</i>	13'4½"	Burlington	Rancocas Rd., Pentacostal Assembly Church, Burlington	Reported by Louis E. Hand
<b>Hophornbeam, eastern</b> <i>Ostrya virginiana</i>	3'11"	Morris	Morris County Park Comm., Rock Hill Reservation, 100 ft. south of iron ore pile near Veldon Rd., Water Treat Facility	Reported by Thadd Craig Lenape Trail, Oak Ridge, NJ 07438
<b>Hornbeam, American</b> <i>Carpinus caroliniana</i>	4'9½"	Mercer	Academy St. in front of Grade School, Pennington	Reported by Santiago Porcella, III
<b>Horse-chestnut</b> <i>Aesculus hippocastanum</i>	14'6"	Bergen	Property of Maurice Coffey, 39 O'Connor's Lane, Old Tappan	Reported by Bruce Kulpan Hackensack Water Company
<b>Larch, European</b> <i>Larix decidua</i>	9'2"	Monmouth	In front of Old Tennant Church Yard, Tennent	Reported by Santiago Porcella, III
<b>Locust, Black</b> <i>Robinia pseudoacacia</i>	15'2"	Atlantic	Property of Richard Monihan, east side of Bargaintown Rd., 500 feet north of intersection with Central Ave., Bargaintown	Reported by Laura LaForge Cape May Court House, NJ
<b>Magnolia, sweetbay</b> <i>Magnolia virginiana</i>	4'10"	Ocean	Manahawkin Swamp, ½ way between road to AT&T site and the southern white cedars swamp	Reported by Louis E. Hand
<b>Maple, Japanese</b> <i>Acer palmatum</i>	5'8"	Essex	N.W. of Edison Home, Glenmont Liewellyn Park, W. Orange	Reported by Morris Highlands Audubon Society
<b>Maple, Norway</b> <i>Acer platanoides</i>	14'8"	Morris	On property of John Heilman, Green Pond Rd., 2 miles south of Newfoundland, Rt. 513, Jefferson Township	Reported by Ronald J. Sheay
<b>Maple, red or swamp</b> <i>Acer rubrum</i>	17'4"	Passaic	In front of "Ye old mountain rest Tavern" 1 mi. on Wolley Rd., off Gould Rd., West Milford	Reported by Philip Hockenberry NJ Forest Fire Service
<b>Maple, silver</b> <i>Acer saccharinum</i>	19'9½"	Ocean	Behind Mackle Assoc., 126 Hooper Ave., Toms River	Reported by A. Morton Cooper
<b>Maple, striped</b> <i>Acer pensylvanicum</i>	2'4"	Sussex	Stokes State Forest, Sunrise Mt. Road, 0.3 mi. below parking lot	Reported by John E. Kuser
<b>Maple, sugar</b> <i>Acer saccharum</i>	17'11"	Sussex	900' behind 99 Sawmill Rd., Sparta	Reported by Mr. & Mrs. John Griffen, Laidlaw Estate, Sparta
<b>Mimosa (See Silktree)</b>				
<b>Mulberry, red</b> <i>Morus rubra</i>	17'4"	Camden	Old Egg Harbor Rd., Cedar Brook	Owned by Albert Brown, Jr.
<b>Mulberry, white</b> <i>Morus alba</i>	17'5"	Atlantic	N/E cor. Neil Rd. & Gatto Rd., Nesco	C.F. Kier, Jr., 109 Oak Avenue, Elm Towne, NJ 08037
<b>Oak, bartram</b> <i>Quercus x heterophylla</i>	11'8"	Middlesex	East of hog pens, Cook College, New Brunswick	Reported by John W. Anderson Cook College
<b>Oak, black</b> <i>Quercus velutina</i>	18'5"	Warren	100 yards from Musconetcong River in hedgerow between two open fields, Lane entrance on Rt. 57 opposite Hazen Road, Mansfield Twp.	Reported by Dennis Bredie Hackettstown
<b>Oak, blackjack</b> <i>Quercus marilandica</i>	8'9"	Burlington	In front of Apt. 5C, Shady Oaks Apt., north on Rt. 530 (Hampton St.) ½ mile west of Hanover St. traffic light, Pemberton	Owned by Lewis-Chester Agency, Morris Ave., Union
<b>Oak, bushes</b> <i>Quercus x bushii</i>	10'4"	Burlington	Behind Shady Oaks Apt. & Thompson's Lawn & Garden Supply, Rt. 530 (S. Pemberton Rd.) ½ mile west of Hanover St., Pemberton	Reported by Louis E. Hand
<b>Oak, chestnut</b> <i>Quercus prinus</i>	15'4"	Cumberland	On prop. of Philo Chapman, east on Garden Rd. 2 miles from Rt. 47, Vineland	Reported by Louis E. Hand
<b>Oak, English</b> <i>Quercus robur</i>	9'1" @ 3'	Morris	Morris St. by Moore's Hardware Store and R.R. Station, Morristown	Reported by Morris Highlands Audubon Society
<b>Oak, laurel</b> <i>Quercus laurifolia</i>	5'2"	Camden	Corner of Haddon and Hawthorne Ave., Haddonfield	Reported by C. Frazer Hadley, MD 21 Haddon Avenue, Westmont, NJ
<b>Oak, Mossycup</b> <i>Quercus macrocarpa</i>	14'0"	Burlington	245 E. Main Street, Moorestown, NJ 08057	Reported by George W. Peck Moorestown, NJ

Species	Circumference	County	Location	Owner or Reporter
<b>Oak, overcup</b> <i>Quercus lyrata</i>	12'4"	Hunterdon	Main St., opposite monument of Bryan Realty, Flemington	Reported by Otto W. Kunkel Bureau of Forest Management
<b>Oak, pin</b> <i>Quercus palustris</i>	19'10"	Burlington	On Kuser property, 2,000 feet east of intersection Rt. 545 on White Pine Rd.	Reported by Karl Braun White Pine Rd., Columbus, NJ
<b>Oak, post</b> <i>Quercus stellata</i>	11'8"	Cape May	On property of Mrs. D. Donald Caroll, east side of Rt. 9, opp. Friend's Meeting House, 221 Shore Rd., Seaville	Reported by George H. Pierson Bureau of Forest Management
<b>Oak red</b> <i>Quercus rubra</i>	18'3"	Bergen	In rear of 737 Wyckoff Ave., home of R. Miller Wyckoff	Reported by Deedee Williamson 18 John Dow Ave., Waldwick, NJ 07403
<b>Oak, scarlet</b> <i>Quercus coccinea</i>	17'4"	Burlington	On property of Capt. Henry, 139 E. Main St., Moorestown	Reported by Santiago Porcella, III
<b>Oak, southern red or Spanish</b> <i>Quercus falcata</i>	16'2"	Camden	Cherry Hill Baptist Church, Cherry Hill	Reported by Paul W. Keiser 57 Cunningham Lane, Cherry Hill
<b>Oak, swamp white</b> <i>Quercus bicolor</i>	20'6"	Burlington	On Rosebud Farms property, 1 1/4 miles NNE of Springfield Meeting House Rd., Jobstown	Reported by Louis E. Hand
<b>Oak, water</b> <i>Quercus nigra</i>	5'11 7/8"	Cumberland	Property of Amos Pepper, miles from Rt. 553-S.E. cor. of open field, Dividing Creek, NJ	Reported by Daniel O'Connor 66 E. Main St., Port Norris, NJ 08349
<b>Oak, white</b> <i>Quercus alba</i>	21'8"	Monmouth	Between Hornertown & Cream Ridge on Highway 37 (also known as 539) near fruit tree test plots. Tree is east of stream at NE of property on south side on south side of Rt. 539, Cream Ridge, Upper Freehold Township	Reported by David C. Shaw Supt. Shade Tree Commission, Holmdel Arboretum
<b>Oak, willow</b> <i>Quercus phellos</i>	21'8"	Burlington	On property of Cozy Morley Beginnings at Medford Circle, travel 1/2 mi. west on Rt. 70, make right turn on Hartford Rd., travel 1/4 mile to tree in field on east side of road, Medford	Reported by Richard L. Washer Burlington County Agent, Mount Holly, and William E. Johnson, Church Rd., Medford
<b>Osage-orange</b> <i>Maclura pomifera</i>	13'7 1/2"	Burlington	Scully-Bozarth Post, VFW Grounds, 138 W. Pearl St., Burlington	Reported by John T. McNeil Paulsboro, NJ
<b>Pagoda, Japanese (See Scholartree)</b>				
<b>Paulownia</b> <i>Paulownia tomentosa</i>	13'2"	Mercer	Marquand Park, Princeton, at parking lot	Reported by Santiago Porcella, III
<b>Pear, Bartlett</b> <i>Pyrus</i>	7'5"	Union	Informal garden, Liberty Hall, Elizabeth	Reported by Santiago Porcella, III
<b>Peark, Seckel</b> <i>Pyrus</i>	8'8"	Union	Informal garden, in rear of Liberty Hall, Elizabeth	Reported by Santiago Porcella, III
<b>Persimmon, common</b> <i>Diospyros virginiana</i>	7'10"	Hunterdon	Behind dwelling on Lloyd Haas Farm on Flemington-Sergeantsville Rd., just beyond Sunset Village, about 100 feet into pasture, Flemington	Reported by William C. McIntyre
<b>Pine, Austrian</b> <i>Pinus nigra</i>	9'4"	Middlesex	Property of Annete & Elizabeth Funk, 166 Washington Ave., Milltown	Reported by Donald Knezick P.O. Box 4, New Lisbon, NJ
<b>Pine, eastern white</b> <i>Pinus strobus</i>	12'6"	Mercer	On property of Dewitt Boyce, next to 229 Mercer St., Princeton	Reported by John Kuser
<b>Pine, loblolly</b> <i>Pinus taeda</i>	6'1"	Cape May	On the property of Joseph Buzby, in woods about 200 yards north of 647 Town Bank Road and 0.6 miles west of Shun Pike Road, Cold Spring	Reported by Louis E. Hand
<b>Pine, pitch</b> <i>Pinus rigida</i>	10'7"	Ocean	On dirt road 1,000 feet from end of Oxycoccus Rd., Manahawkin	Reported by A. Morton Cooper Ocean County Environmental Agency, 54 Washington Street, Toms River, NJ
<b>Pine, Pond</b> <i>Pinus serotina</i>	4'1"	Cape May	On property of Joseph Buzby, in woods about 200 yards north of 647 Town Bank Road and 0.6 miles west of Shun Pike Road, Cold Spring	Reported by Louis E. Hand
<b>Pine, Red</b> <i>Pinus resinosa</i>	6'1"	Sussex	Stokes St. Forest, 200 yds. west of Forest Headquarters on Struble Road	Reported by John Kuser
<b>Pine, scotch</b> <i>Pinus sylvestris</i>	7'9"	Bergen	Property of New Jersey Bell Telephone, Broadway & Harrington St., Hillsdale	Reported by Albert J. Huber Hackensack Water Co., Oradell, NJ
<b>Pine, shortleaf</b> <i>Pinus echinata</i>	7'3"	Burlington	On property of Walter G. Spaeth, 150 ft. east of Horse Paddock, Friendship Road, Tabernacle	Reported by Louis E. Hand
<b>Pine, table mountain</b> <i>Pinus pungens</i>	4'10"	Hunterdon	On property of Joseph Landro, Rt. 523, 1 mile N.E. of Sergeantsville	Reported by Vincent Abraitys Hunterdon S.C.D.
<b>Pine, Virginia</b> <i>Pinus virginiana</i>	7'2"	Burlington	N.E. side of Budtown Rd. near Bush Turkey Farm	Reported by Donald Knezick
<b>Plane, London</b> <i>Platanus acerifolia</i>	12'0"	Mercer	In front of Blair Hall, Princeton University, Princeton, NJ	Reported by Santiago Porcella, III
<b>Poplar, Carolina</b> <i>populus canadensis</i> var. <i>Eugenei</i>	15'7"	Hudson	160 Bowers St., Jersey City, NJ	Reported by Leonard Claudat 241 Baltusrol Ave., Springfield, NJ
<b>Poplar, or Easter Cottonwood</b> <i>Populus deltoides</i>	20'0"	Warren	On property of Friedman Farm, Rt. 612 Allamuchy Rd., Johnsonburg	Reported by Peter Both
<b>Poplar, white</b> <i>Populus alba</i>	14'2"	Morris	On property of Archie Stiles, 596 Meyersville Rd., Gillette, 200 East on Meyersville center on left	Reported by Ronald J. Sheay
<b>Recedar, eastern</b> <i>Juniperus virginiana</i>	9'8"	Gloucester	On County Road 555, 0.1 mi. South of U.S. 40, Newfield	Reported by Charles W. Holsworth
<b>Redwood, dawn</b> <i>Metasequoia glyptostroboides</i>	11'3"	Mercer	Prospect Hall, Princeton University, Princeton	Reported by John Kuser and J.I. Merritt
<b>Sassafras</b> <i>Sassafras albidum</i>	16'4"	Burlington	On the Mt. Laurel Quaker Meeting House grounds, Mt. Laurel	Reported by Walter Cinkowski Soil Conservation Service, Mt. Holly
<b>Scholartree, or Japanese Pagoda</b> <i>Sophora japonica</i>	12'10"	Camden	In front yard at 221 Avondale Ave., Haddonfield (cor. of Kings Highway)	Reported by Stephen H. Dorsey 133 Third Avenue, Haddon Heights, NJ

Species	Circumference	County	Location	Owner or Reporter
<b>Serviceberry or shadbush</b> Amelanchier arborea	79"	Monmouth	On property of Balmer, 96 Middletown Rd., Holmdel	Reported by Edwin R. Keahey c/o Bartlett Tree Expert Co., 443 S. Washington Avenue, Piscataway
<b>Silktree, Chinese or Mimosa</b> Albizia julibrissin	8'6" @ 2'	Mercer	On property of Kenneth Kline, 323 Second Ave., Hightstown, adjacent to Walter E. Black Elementary School	Reported by Santiago Porcella, III
<b>Sourgum, or Blackgum</b> Nyssa sylvatica	14'4"	Burlington	On the Ezra Estate (Stokelan) Eayrestown Rd., 1 mile north of Rt. 70, Medford	Reported by Louis E. Hand
<b>Sourwood</b> Oxydendrum arboreum	5'0"	Gloucester	At Griscorn House, Southwood Mickleton, NJ	Carol Bresler 264 W. Wolfert Sta. Rd., Mickleton, NJ 08056
<b>Spruce, black</b> Picea mariana	3'10"	Warren	Swamp, southwest of Sunfish Point, Worthington State Forest, approximately 750 sw of Sunfish Pond monument	Reported by Robert L. Zellej 167 Lincoln Avenue, Yardley, Pennsylvania
<b>Spruce, Norway</b> Picea abies	13'10"	Mercer	Marquand Park, Princeton	Reported by Santiago Porcella, III
<b>Sweetgum</b> Liquidambar styraciflua	17'7"	Burlington	Close to the entrance of Fort Dix on Rd. ¼ mile north of High School, Pemberton	Reported by Dennis Perham Fort Dix Forester
<b>Sycamore</b> Platanus occidentalis	23'3½"	Warren	Behind the Sven Johnson & Son Automatic Screw Machine Bldg., Belvidere	Reported by Sven Johnson Hardwich Rt., Belvidere
<b>Tulip poplar</b> Liriodendron tulipifera	19'6"	Mercer	Community Guidance Center, 520 W. State St., Trenton	Reported by Santiago Procella, III
<b>Walnut, black</b> Juglans nigra	16'8"	Bergen	Lower Cross Road and Sheridan Avenues, Saddle River	Reported by Deedee Williamson
<b>Walnut, white or bitternut</b> Juglans cinerea	12'5"	Morris	Front of Pathmark Shopping Center, Kinnelon Rd., Kinnelon	Reported by Lucey A. Meyer Kinnelon Environmental Commission
<b>White cedar, southern, or Atlantic Coast</b> Chamaecyparis thyoides	9'2"	Ocean	Very wet woods, ½ hour walk by foot, Manahawkin	Reported by Louis E. Hand
<b>Willow, black</b> Salix nigra	19'3"	Hunterdon	Property of Bruce Herrigel, 300 sq. intersection of Studer Road, Sunrise Circle, Clinton Township	Reported by Otto W. Kunkel
<b>Willow, white</b> Salix alba	16'	Mercer	On property of Vladimir A. Metelsky, 143 North Harrison St., Princeton	Reported by John Kuser
<b>Yellowwood</b> Cladrastis lutea	10'5"	Mercer	On prop. of Brymer Nursery, Highway 29, 0.7 miles south on Pleasant Valley Rd., Titusville	Reported by John Kuser

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# Fall Trout Stocking Too: Better Yet (the 1984 trout season, looking back and ahead)

BY ROBERT SOLDWEDEL

Although the closing statement of my prognostigation for the 1984 trout season (the Best Yet!) unfortunately proved to be prophetic (i.e.—“if the weather on April 7 is anything like it was on the opening days of 1982 and 1983, all bets are off.”), the 1984 spring trout fishery was as predicted—probably the “best yet.” Opening day, however, was another adventure with streamflows almost equal to the floods we had on opening day in 1983. For those hardy souls that dared venture forth into the wild waters of the Rockaway, Ramapo, or any other major river, it would've been easy to imagine that all of the pre-season stocked trout were either somewhere out in the Atlantic or swimming in someone's flooded basement. The lakes weren't very productive on opening day either as water temperatures were well below that at which the trout become active. All in all, although there were a few noteworthy catches, opening day weekend was a wash-out.

Fortunately, the rains did not persist and by the second weekend of the season one could get to the river banks and even take a few cautious steps out into the rivers. The weather for the next few weekends was by no means perfect and utilization was relatively light by New Jersey standards, but the trout were there and they were eager to bite. The pre-season stockings and those of the first few weeks thereafter consisted entirely of brook trout and rainbow trout. While one might logically have assumed that these trout had been swept away by the raging rivers this proved not to be the case. They were scattered, more than usual, and this really worked to the advantage of the serious fishermen. There were trout everywhere, not just at the bridges or in the bigger pools. In all, over 625,000 trout were stocked in the Spring of 1984.

The brook trout lived up to their reputation of being exceptionally willing to strike, at any manner of bait, fly or spinner that came within sight. From my experience, (and I was out there every weekend) and observations it appeared that overall angler success was very high, with brookies making up a high percentage of the catch. The rainbows and the browns did not appear to share the brook trout's total disregard for self-preservation and many of these fish are still to be caught. The general condition of the stocked trout was much improved over past years, in size, body weight and health.

Most of the pre-season “moans and groans” we heard were related to the fact that we would not have any large “sugar” trout mixed in our stocking loads. Despite this, probably more, and bigger, and better

looking and stronger trout were caught in our major streams than ever before. Credit the 1983 Hackettstown Clean-out/Fall stocking program for that. Many of those two to five pound browns, and even rainbows stocked last fall survived through the winter and were taken in April and May of 1984. These were some of the best looking trout many of these waters had ever seen and they really made the day for a lot of fishermen who caught the biggest trout of their lives in the Spring of '84.

To this point it may sound like I'm wrapping-up the 1984 trout season, but that is not the case at all. The record rains of May, and the resulting high streamflows, should sustain the trout fishery through the summer. And now the really good news; there will be a fall trout stocking program in 1984. Following the well received fall stockings made in 1983, the Division and the Fish and Game Council received a lot of favorable comments and requests that this become a permanent fixture of our Trout Program. With the Pequest Trout Hatchery living up to, and even surpassing, expectations in terms of the number of fish it can produce and the rapid growth of these trout, it now appears that a limited fall stocking program is within our capabilities. Therefore, the Council and the Division have decided to go with a fall trout stocking in '84 on a trial basis.

Let me warn you at the outset that this fall stocking will be nothing near the magnitude of that which took place in 1983 when almost half a million trout were released. Last year the Hackettstown hatchery discontinued trout production and every trout that was on hand there was shipped out. This included trout we had been holding for release in the Spring of 1984, in the event we ran into trouble at Pequest, as well as Hackettstown's breeding stock, for which there was no further need. Because of the possibility of disease introduction we didn't want to transfer any Hackettstown trout to Pequest.

What will be stocked this fall will be 43,000 of the larger trout spawned last year at Pequest. These will all be rainbow trout, which spawn earlier and grow faster. We would prefer to use brown trout but there would be no way, at the present time, that we could produce a large enough trout for release. This could change as we develop our own breeding stock of brown trout and speed up their spawning cycle through the use of the “lighthouse” (the “lighthouse” is a completely sealed building which keeps out all natural light and in which diurnal variations are controlled by artificial light).

By decreasing the diurnal cycle early spawning of trout can be induced at Pequest. What would seem to be a logical move to have larger trout available for the fall releases, i.e. holdover trout from the spring stocking loads, really is no choice at all as the holding over of trout would be extremely expensive and more importantly, would seriously disrupt the set-ups for the current year's trout production. While the rainbows we will be stocking this fall will be nowhere near as large as the two to five pounders which went out of Hackettstown last fall, we are anticipating that they will range from 9 to 10 inches and should supply a lot of sport.

The Pequest Trout Hatchery is designed to produce 600,000 trout; therefore, those stocked in the fall will be subtracted from the numbers stocked in the Spring of '85. The 43,000 to-be-stocked figure represents the number of trout above our “baseline” of 557,000 which we would normally distribute between all of the state's trout stocked waters. In the past this “surplus” primarily was used to bolster stockings in the major trout streams and this is also where the fall stockings will be made, so we are not cutting any fish from the normal allotments for the other lakes, ponds and streams. Those streams slated for fall stocking are the Big Flatbrook, Black River, Manasquan River, Maurice River both the North and South branches of the Metedeconk River, Musconetcong River, Paulinskill River, Pequest River, Pohatcong Creek, Ramapo River, both the North and South branches of the Raritan River, Rockaway River, Tom's River, Wallkill River and Wanaque River.

The stockings are planned for early October; however, they will be weather related. If we have an abnormally warm fall it probably will be necessary to hold off stocking, especially in the more southerly waters.

We are not anticipating that the fall stocking program will result in any significant increase in licensed anglers or revenue to the Division. No such increases were noted in '83 and those stockings were more than 10 times greater than our plans for '84. Of course, the fall stocking may prevent defections from the ranks of current license holders.

In the final analysis, the fall trout stocking program really satisfies one of the basic objectives of the Division, and that is to manage the State's fish and wildlife resources to provide for the optimum sustained benefits to the state's sportsmen and outdoor enthusiasts. The success of the Pequest Trout hatchery has enabled us to go a little further towards meeting that objective.

# Edible roots and tubers



BY MICHAEL HAYDUK  
JACKI DICKERT  
TOM CLEMETSON  
CARL ALDERSON  
RUTH SAFLARSKA  
ELLISE TEEPE  
OSCAR MORERE

We could barely contain our excitement when we happened across that measly little skunk cabbage bud. With only sticks and our fingers, the seven of us took turns prying the thick, smelly root out of the mud, the first specimen to be placed into our collection bag.

It was autumn, and we had thought our search for something green and alive was hopeless at that time of year. But that day, we began to discover the abundance of plant life that exists even in the cold season, and we were especially amazed at all there was under the ground. Hence the beginning of our search for the edible wild roots and tubers in New Jersey.

There were seven of us, all Rutgers University students, taking out of curiosity the Cook College course entitled "Interesting and Edible Plants," taught by one of the deans of the college, Dr. Roger Locandro. At the first lecture, which included a slide show picturing many such plants, we were really amazed at how many there were. At the next class, a field trip to one of Cook's horticulture farms and the surrounding area, Dr. Locandro helped us find some of these plants to sample. But when he split the class of 35 into five groups and expected each to actually, collect, research, and prepare some specific wild foods, we lacked his confidence. He was an expert; we were just novices. That explains our excitement during our group's own field trip in the New Brunswick area, when we found not only the roots of skunk cabbage (*Symplocarpus foetidus*), but also those of arrow arum (*Peltandra virginica*), both of which we dried for future use.

Our success inspired us to take another field trip,

this time to the woods and fields of Morris County. Armed with cameras, confidence and, this time, a small trowel, we were successful in gathering several species of edible roots.

We came across a small, accessible cluster of cattail in a wet area. Quite a bit has been written about the food uses of the common cattail (*Typha latifolia*), but only the roots are succulent and edible from fall to early spring. The plant has a tall, erect stem with a large, velvety sausagelike seedhead and swordlike leaves.

With only a little difficulty, after we realized that the roots grew horizontally in the mud, we pulled out enough to fill a bag. The inside of the moist root was composed of loose stringy fibers. A pleasant-tasting flour can be made from the starch in these fibers. One method of removing this edible portion is to peel the freshly gathered roots and then wash and crush the fibers in a container of cold water until they are separated and clean. The water should be allowed to settle after the fibers have been strained out. After the water is poured off, the starch that has settled on the bottom can be used as a nutritious, tasty flour. It can be refined further by adding new cold water to the starch-filled container, mixing it up, settling it, and again pouring off the water. The flour can be used in its wet state, or dried and stored for future use.

Stepping off the trail and into the woods, we encountered a well known "pest" to many hikers, catbrier or greenbrier (*Smilax rotundifolia*). Dr. Locandro had raved over the delicacy of its spring growth in one of our classes, so we decided to research the edibility of the roots. We found that they can be used



to make a beverage, a jelly, and even a spicy bread. Digging the rhizomes was tricky business because of the plant's tough thorns. These thorns and the leathery, oval leaves which line the vinelike stems make greenbrier easily recognizable. Its roots can be used the year round.

Another "pest" of fields and woods encountered on our walk was burdock (*Articum minus*), which has those thistle-like burrs which stick to everything from shoelaces to hair. Burdock is a biennial plant, which in its first year of growth produces a rosette of large green leaves that are one to one and a half feet long. In its second year, the rosette grows into a tall, heavily stemmed plant with purple flowers which form the seed-dispensing burrs. The roots of the first year of growth can be eaten raw or cooked. The young stems of the first year can also be eaten when boiled twice to remove the strong taste.

Another common field and roadside plant was chickory (*Cichorium intybus*). The plant has blue flowers, a deep taproot, and dandelion-like leaves. Roasted chicory roots are used as a coffee substitute or as a coffee extender.

Not all the roots we found were edible—for example, the common reed (*Phragmites communis*). One book stated that the roots were eaten by Indians, so with much difficulty we dug up a couple of deep roots which supposedly could be roasted or boiled like potatoes. The roots seemed about as hard and dry as the wood of a tree. We figured that an awful lot of boiling would be needed to make *Phragmites* root edible, so we scrapped that idea.

One of us remembered where a cluster of day lilies

(*Hemerocallis lwa*) had been, so we dug in that spot and found numerous small tubers. The day lily has an unspotted orange flower which faces upward, unlike the nodding flowers of most true lilies. Although this plant, which can be found along roadsides, in waste areas, and in gardens, has long swordlike leaves, the stem itself is leafless again unlike that of true lilies. Its one-half to one-inch bulbs can be boiled, fried, or otherwise used in any way like potatoes.

The Jerusalem artichoke (*Hellanthus tuberosus*) was one of our favorite finds. This member of the sunflower family produces sweet, fleshy rootstocks that are easy to dig and prepare. The plant grows to a height of six to eleven feet, has hairy stems, and its two to three-inch flowers have ten to twenty rays. Blooming from September to late October, Jerusalem Artichoke grows by roadsides, near rivers, and in disturbed environments. The tubers are best when gathered from late fall to early spring when they are storing food for the plant; they can be eaten raw, in salads, pickled, boiled, mashed, fried, or cooked into pies.

The first-year roots of the wild carrot (*Daucus carota*) were also quite palatable. This biennial, also called Queen Anne's lace, first grows a rosette of long parsely-like leaves, typical of all members of its family. The second year growth develops large, flat flowers consisting of a lacy pattern of white florets with a single purple floret in the center. This flower dries into a brown cuplike shape resembling a bird's nest. The dried seeds of the wild carrot can be used as a spice which resembles anise. The roots of the

*continued on page 38*

*Tom and Carl identifying a specimen.*



## Autumn trout

BY AL PEINECKE  
PHOTOS BY AUTHOR

The tall sycamore silently stands sentinel as the brook curls past its gnarled roots. A few bright-hued autumn leaves drift by, delineating the main stem of the current. The scene states just one thing—trout.

It is the last day of September I venture forth to have a "bout with the trout." The parking area is empty and there are no fishermen about. At streamside, a glance discloses no footprints in the sand and gravel. None. Yet this is public water in New Jersey—not some faraway wilderness area.

The sun has started to burn off the light frost, while overhead a few white cumulus clouds patch the blue sky. The water is low and clear and no significant aquatic insect life is evident. I try a size 14 Adams dry fly, an all-purpose pattern which has become a habit.

A short trek takes me to the lower end of the pool. Slowly I progress upstream and get one half-hearted swirl. Carefully approaching the sycamore, the fly is cast toward the roots and jauntily rides the current. Underwater a metallic flash arouses expectation but further casts are of no avail.

Rather than persist I slowly back off and check the fly box. A grasshopper pattern jogs recall of the naturals along the path to the stream. The choice is a fly with a yellow body, palmered with brown hackle, and sporting a mottled brown, down-style wing. The fraud resembles a grasshopper.

A few short casts brings the feel of the bulkier fly. It rides down past the roots—one, two, three times—nothing. A short pause while false casts dry the fly. A cast to the riffle above and the fake hopper alights nicely. As it nears the "hot spot" I give it an almost imperceptible twitch. That brought him boiling out.

After being thwarted in repeated attempts to reach the haven of the undercut bank, a glistening 12-inch brown trout comes to net. One for the creel. Examination of the digestive tract discloses several beetles and some unidentifiable aquatic insect life.

I gather some red, yellow and russet leaves swirling in a nearby eddy and couch the plump trout in the bottom of the weather-beaten willow creel.

Meanwhile the hopper fly has dried in the sun and breeze and seems to be doing an aerobic dance toward the stream. I move up through some shallow riffles, probing pocket water and raise a dace. The original hopper is benched and is replaced by a twin.

A grassy undercut bank brings a swirl, and three casts later a small rainbow splatters in the broken water. In some slack current I grasp the leader, slip my hand down to the fly and the fish does the rest, gaining his freedom. Perhaps he will grow a little.

The morning has been a study in solitude—still no fisherman—incredible. Early-season crowds have vanished and last April seems far-distant time.

Upstream the water glides among some knobby roots, canopied by a mossy bank. The fly dances down from the run above, does a pirouette in a mini-whirlpool, and disappears. At the strike a brassy flash shoots for the roots and the fly becomes airborne. Perhaps some other day.

Low water does demand fine leaders, but stealth and presentation are paramount points. For most of its length, the stream stays cool enough for trout throughout the summer months. Similar waters hold promise for autumn trout fishing. With the advent of fall, trout, especially browns and brookies, will be on the move, and some previously unproductive spots will hold fine fish. The annual procession of anglers, who cast a line to this spot, would make quite a parade.

While lunching at streamside I take in the quiet beauty of the scene, meanwhile keeping a watch on a likely spot just upstream; again, an undercut bank with a gravel riffle immediately above. These locations were to prove productive on this autumn day. A slight dimple in the darker water lured me from the comfort of the log seat.

Several attempts with the "hopper" bring but a few swirls. Time to rest the fish and tie on a fluffy skater. The fly, having been dressed and dried, is delivered to the riffle. It comes dancing down on hackle tips and there is a flash below. The next cast is a little closer to the bank and the trout takes it with a slashing strike. The seven-foot bamboo wand turns him from his haven and he shoots down into a shallow flat. Three jumps later we have our fly back, sans trout.

I beat through the brush and break out where a sandy bend shoots the water beneath a big oak. The hopper fly is back at work and is cast to the head of the run. A brookie in full fall finery takes the fake and puts up a stubborn tussle before surrounding. About 8 inches, he is gently released and darts back to his hideaway.

Toward the west, the sun now is at treetop level and I head for another sycamore with a deep undercut bank. The current here is more confined and the little hopper bounces saucily down the glide. A solid rise and the little rod struggles to keep the trout from the roots. It is close, but I win, and garner a handsome, 14-inch brown, sides flecked with bright orange spots sprinkled among those of a more somber hue.

I add the colorful fish to the creel and thus fulfill the request of the "nice lady" at home for two for the table.

The sun has descended now and slowly I make my way along what passes for a path. The day has been just about perfect. Still no fishermen. Unbelievable! Autumn trout fishing is in a class by itself.

*Top: At times a skater or spider dry fly will arouse a reluctant trout. This brown was seduced by a fluffy spider.*

*Opposite right: Riffles with adjacent deeper water offer good possibilities for the fall trout fisherman.*

*Below opposite: The lure of the log jam, holding forth promise of a big trout, is irresistible.*



# Cape May Point

TEXT AND PHOTOGRAPHS  
BY PAUL E. TAYLOR

At the very tip of the Cape May peninsula, where the waters of the Atlantic Ocean and the Delaware Bay meet, lies Cape May Point State Park. Not only is this former coastal defense base New Jersey's southernmost park, it also has the distinction of being in one of the best birding areas in the East. The towering lighthouse, abandoned fortifications, and visitor center are prominent features.

Cape May Point State Park is situated three miles west of America's oldest seashore resort, the City of Cape May, known for its outstanding examples of Victorian architecture. Close to the park itself is Lily Lake, well known for its variety of waterfowl, wading birds, and shorebirds. Farther west and to the north of the town of Cape May Point is Sunset Beach, where visitors may see the sunken remains of the old cement ship, the *Atlantic*, view the frequent crossings of the Cape May-Lewes Ferry, and look for what are known as Cape May diamonds.

In addition to its ocean beach, the park's natural terrain includes freshwater marshes and woodland. Interesting trails, some with sections of boardwalk, wind their way through a portion of the park. Self-guided nature tours may be enjoyed anytime the park is open. Poison Ivy is abundant and serves as a natural reminder for visitors to remain on the trails. Except for access trails, the dunes are off limits.

Cape May has long been recognized as an excellent spot for observing the fall and spring migration of birds to and from the south. The fall migration is particularly spectacular because the migrants are funneled down the peninsula between bay and ocean. Here they rest, feed, and wait for favorable wind and weather conditions before crossing the mouth of Delaware Bay.

For many years the South Jersey Audubon Society and the New Jersey Audubon Society, with which the former group merged, have conducted spring and fall field trips to Cape May Point, including the present park area. With the establishment of the park, observation towers and a platform overlooking the marsh have been constructed; these permit visitors to view the variety of birds and other creatures found there. From them I have seen muskrats, green herons, least bitterns, snowy egrets, mute swans, peregrine falcons, and even purple gallinules.

Each year since 1976 a hawk watch has been conducted at Cape May Point. Over the past eight years the count has averaged 60,000 individuals a year, representing at least 16 species of raptors.

The first of three lighthouses at the Point, built in 1823, was located about one-third of a mile south of the one now standing. Because of erosion by the ocean this lighthouse was removed in 1847 and replaced by one a 100 yards to the north. This second lighthouse remained in use until 1859, when the present 170-foot tower was erected. In 1920 its original oil-fueled lamps were replaced by electricity. The oil house and lighthouse keeper's residence are located nearby.

*Cape May Point Lighthouse. Part of visitor center on left.*

*On boardwalk trail—hiking is confined to trails. Poison Ivy is abundant.*



# State Park

From about 1917 until 1962-63, when it was turned over to the State of New Jersey for recreational purposes, part of the site was a coastal defense base. The large magazine and equipment terminal still standing at the ocean's edge was protected from the front by four 155 mm guns. Anti-aircraft guns were mounted at both ends. The site was also used as a radio-relay station for the U.S. Navy's Atlantic fleet.

During the time the military base was at the Point, the building presently in use as a visitor center served as a workshop and storage area. Today its walls and display cases tell the story of the park and its environment. The exhibits include nautical subjects and information about the park's vegetation, its abundant bird life, and the marine life of the area.

For much of the year park naturalists conduct guided walks, environmental studies, and other activities. Two picnic pavilions are available, and although swimming is not permitted the beach and oceanfront may be enjoyed in other ways.

Over the years this writer has spent many enjoyable hours roaming the 300 acres of Cape May Point State Park and its environs. As thousands of others have discovered, the very nature of this spot bids you return again and again.

*Mother and child on beach at Cape May Point—old concrete magazine and equipment terminal in background.*



## Parks '84 Happenings in New Jersey's State, County and Local Parks!

### SEPTEMBER

Weekends HAWK BANDING DEMONSTRATION

Cape May Point State Park  
609-884-2159

- 1, 2, 3 ALL SPECIES FISHING DERBY  
Swartswood State Park, Newton  
201-383-5230
- 6 BATSTO HONORS PARKS '84 & PIONEER DAY  
Batsto, Wharton State Forest  
609-561-0024
- 8, 9 N.J. STATE ETHNIC FESTIVAL  
Liberty State Park, Jersey City  
201-435-0736
- 15, 16 N.J. WINGS AND WATER FESTIVAL  
Wetlands Institute, Stone Harbor  
609-368-1211
- 15 SALEM COUNTY SPORTSMEN'S CLUB DECOY SHOW  
On Route 40, one mile east of Deepwater  
609-678-5994
- 15, 16 ANTIQUE ENGINE SHOW  
Washington Crossing State Park, Titusville  
609-737-0623
- 16 BIRDING FOR BEGINNERS  
Campgaw Mountain Reservation, Mahwah  
Scherman/Hoffman Wildlife Sanctuary,  
Bernardsville  
Monmouth Battlefield State Park, Tenny  
Rancocas State Park, Mount Holly  
Cape May Point State Park, Cape May  
609-261-2495 or 201-891-1211
- 16 SEPTEMBERFEST  
Veterans Park, Hamilton Township  
609-890-3831
- 22 3rd ANNUAL DECOY AND WILDLIFE SHOW  
Music Pier, Moorlyn Terrace & Boardwalk Ocean  
City, P.O. Box 570, Ocean City, N.J. 08226
- 22, 23 SOUTH JERSEY SPORTSMEN'S JAMBOREE  
(NATIONAL HUNTING AND FISHING DAY)  
Cumberland Pond, Millville  
609-451-4802
- 29 FROGTOWN FROLICS PET SHOW AND FAIR  
Thompson Park, Lincroft  
201-842-4000

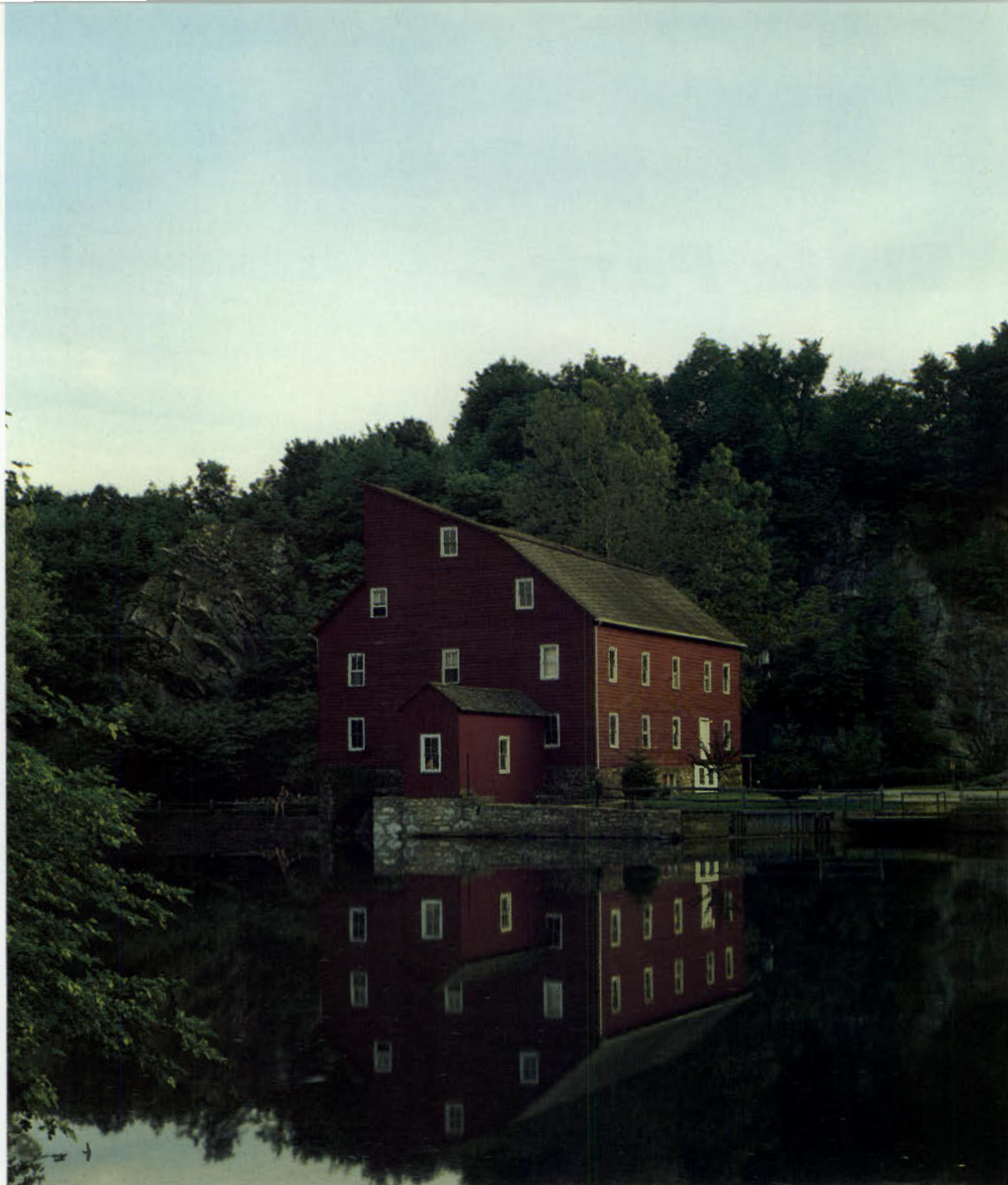
### OCTOBER

Weekends HAWK BANDING DEMONSTRATION

Cape May Point State Park, Cape May  
609-884-2159

- 5, 6 COLONIAL FAIR  
Washington Crossing State Park, Titusville  
609-737-0623
- 7 GOVERNOR'S RACE FOR OPEN SPACE  
Monmouth Battlefield State Park, Freehold  
609-292-3541
- 13, 14 STELLA SHOWS ANTIQUE FAIR  
Liberty State Park, Jersey City  
201-435-0736
- 14 OKTOBERFEST  
Central Avenue Park, Edison  
201-287-0900
- 14 CRANBERRY HARVEST FESTIVAL  
Whitesbog Village, Browns Mills  
609-893-4646

# Clinton Historical Museum Village



DAVID CAMPIONE

BY DIANE SLINEY

A photographer's delight, the Clinton Historical Museum Village is wedged between vertical limestone cliffs and the horizontal waters of two rivers, a slice of rural New Jerseyana at the base of a picturesque 18th century mill. Cradled in the ample lap of Hunterdon's hills, this unique educational facility opens its doors to 30,000 visitors seasonally (April 1 through October 31) who tour buildings, picnic on the grounds, observe wildlife, browse in the antique/gift shop, and attend a full and varied roster of special events.

The village is a collection of indigenous and transplanted structures with interior displays that depict various aspects of area history. The focal point is the much-photographed Red Mill, built in 1763 by miller David McKinney who there ground flaxseed for linseed oil. The building was enlarged and altered several times over the next century and a half to suit assorted milling operations in this the heart of a rich agricultural district. Between 1903 and 1920 E. & C. Tomson ground talc and graphite

at the mill before milling operations ceased and the building was eventually abandoned.

Determined to rescue this historic and imposing edifice with its scenic vistas, five area men purchased the property in 1960, replaced the water wheel, restored the lower floors, and with an incipient collection of farm implements opened the facility as a museum in 1963. Sounding more like a jazz band than a group of preservationists, the "Red Mill Five" consisted of James Marsh, Monroe Demott, Cyrus Fox, Robert Lechner, and Ralph Howard.

The mill building, which was placed on the National Register in 1974, today houses four floors of exhibits, an extensive collection of artifacts and items indigenous to the area thematically arranged to provide glimpses of 18th, 19th and 20th century New Jersey life.

In the cool interior of the building's rubble stone foundation against a backdrop of aged beams are the agricultural implements, of every description

and for every purpose—testimony to the infinite variations on manual labor. Based on the premise that “idle hands are the devil’s mischief,” the fertile minds of pre-automation days invented items that pull, sort, clean, lift, lead, pedal, thresh, and assist in the production of milk, footwear, and barrels.

Second floor “showrooms” include an 18th century kitchen featuring samplers, candles, and dried herbs, the Colonial woman’s handiwork, and a child’s Victorian bedroom with pint-sized furnishings and toys. This floor is further divided into displays documenting the evolution of many of our creature comforts—devices that light, heat, launder, stitch, iron, build and communicate.

The third floor is mainly a series of domestic vignettes focusing on interior and costume design. Household appointments range from the needlepoint, velvet and lace of a Victorian parlor to the rudimentary kitchen tub of Saturday night fame (since one tub of hot water serves all, cleanest kid first, please!). This floor concludes with “That’s Entertainment,” an exhibit of leisure-time options in music and the movies. A trek to the fourth floor earns the visitor a model view of the mill’s workings, from gears to grindstone.

The other museum buildings are clustered on land reclaimed from the quarry itself, which operated from 1850 into the 1920’s. These Clinton cliffs of “well-nigh inexhaustible limestone” chipped away by time and usage are currently endowed with patches of moss and espaliered greenery. In addition to providing historic interest, these cliffs serve as a quasi-amphitheatre for the summer season’s Concerts in the Park series, popular Saturday night events featuring prominent musicians and entertainers in varied programs.

In front of the cliffs stands the old stone crusher, its rusting innards protruding from the multi-tiered frame building. The quarried stone was crushed, then burned and pulverized in lime kilns, producing an agricultural lime for area markets. Examples of these coal-burning kilns remain in the retaining wall adjoining the crusher.

Newly-appointed Museum Director, Catherine Callan West, emphasizes, “It is important to capitalize on the unique nature of this site and to interpret it in museum displays and programs.” Determined not to let the museum facility rest on its “photogenic laurels” Director West has secured a grant from the New Jersey Historical Commission to compile a local history documenting the site and its surroundings. She hopes to supplement this project with a series of public lectures on rural New Jersey industries including lime and redware production and furniture making.

Proceeding through the village the visitor next enters the red doors of the blacksmith shop to see the smithy, his apprentice, horse and carriage, and assorted iron wares. Next door is the original tenant house which currently serves as Post Office, Barber Shop, and General Store. The postal display, formerly the interior of the Lebanon post office, features the brass-trimmed general delivery window and boxes, as well as vintage stamp equipment and a Jesse James “Wanted” poster. Adjacent to this display is the Barber Shop with razors and shaving mugs and, for the convenience of the customer in the chair, a period newspaper and spittoon.

Entering the General Store one passes the pot belly stove surrounded by chairs and a checkerboard (game in progress), a scene typical of rural New Jersey where country stores doubled as



PHOTOS PROVIDED BY CLINTON HISTORICAL MUSEUM VILLAGE

*Schoolhouse in 1891 (built in 1860).*

*Schoolhouse in transit in 1974.*

community centers in which neighbors amiably whiled away the hours in comfort.

Getting down to business on the shelves and countertops there are seed packets and canning jars, linens, laces, buttons, needles, threads and homespun underwear. Customers could select from tins of crackers and cocoa, barrels of pickles, crocks of butter and jugs of fresh milk. The storekeeper weighed out coffee beans and cheeses, fruits and vegetables, live chickens and chewing tobacco. Customers who found the shop’s inventory wanting could leaf through the pages of a handy Sears & Roebuck catalogue.

On to the Little Red Schoolhouse, built in 1860 as the Bunker Hill School in Alexandria Township, and moved, restored, and added to the village in 1974. Inside are figures in period clothing working with primers and slates. A dunce cap segregates one dull student who sits unhappily atop a stool with his erroneous math calculation in hand. Authentic school photos add to the ambience and a working

*continued on page 38*

*Youths coming upon a mid-forest beaver pond during a blizzard. Snow highlights both the dam and the mound-shaped lodge in the distance behind it.*



## The Nation's largest environmental center is in

BY CHIP DEFFAA  
PHOTOS BY AUTHOR

New Jersey may be the most densely populated, highly industrialized state in the nation, but it is also home to the largest environmental education center in the nation—indeed in the Western Hemisphere: the New Jersey School of Conservation in Stokes State Forest. Each year, some ten to twelve thousand students and teachers spend from two to five days at Stokes, taking part in programs in woodland and water ecology, geology, and character development that have been imitated at other outdoor education centers across the nation.

For many youths, the School of Conservation provides their first opportunities to encounter beavers, snakes, and deer living in the wild. Instruction is supervised by faculty members and graduate students of Montclair State College. The longtime director is John Kirk, an internationally known professor of environmental studies who has served as a consultant to branches of various foreign governments.

To Kirk, Stokes State Forest provides an ideal learning environment. "The primary purpose of the School is to teach people the importance of natural, wooded areas in our lives. The world has lost half of its forests in just the last 25 years. Fully a half million species of plants and animals are in danger of becoming extinct within the next 20 years, and 40% of the ingredients in our medicines come from species on that list."

To Kirk, the importance of the School will continue to grow as New Jersey becomes increasingly developed, and urban and suburban youths become further removed from natural areas. "The population density in parts of New Jersey is already actually greater than in Hong Kong," Kirk points out. And if Kirk has his way, some of his staff members suggested, he'll see to it that every one of those residents is a conservationist.

Fifty years ago, the Stokes site housed one of the nation's larger Civilian Conservation Corps camps. Starting in 1933, CCC workers—youths from urban New Jersey and New York—dammed a stream to

create a lake at their base camp, built barracks, a mess hall, lavatories, and so on. They planted seedlings, and developed the trail network used by students at the School of Conservation today.

When the CCC came to an end in the 1940s, the buildings were forgotten, the site largely forgotten. But Professor D. Alton Partridge of Montclair State College knew of the site. A dedicated environmentalist, Partridge saw the former CCC camp as an ideal place in which to train aspiring teachers in the importance of conservation. At Stokes, he hoped to transmit his values to future teachers, so that they in turn could transmit the values to countless pupils.

With colleague Lloyd Sharp, Partridge established the School of Conservation in 1949 as a field campus of Montclair State College. The former CCC barracks and mess hall were now filled with groups of college youths.

David Cassels of Hawthorne, New Jersey, was among the first of the Montclair students to go up to Stokes. Most of his 1950 classmates, he recalled, looked upon the time spent at Stokes "as pretty much of a vacation—we were out of school. Partridge had this visionary idea of setting up an environmental education center." No one questioned Partridge's dedication, but some wondered how much environmentalism the college students were absorbed while at Stokes.

In the 1960s, after the death of Partridge, the primary emphasis was shifted from educating aspiring teachers to educating elementary and secondary school students and their teachers.

The School always operated on a rather lean budget. By the late 1970s, however, the School was headed toward a financial crisis. The fees paid by school districts sending children to Stokes did not cover the cost of running the programs. And Montclair State College could no longer cover the shortfall. News of the School's plight was not widely publicized, and in 1980-81, it seemed for a while as though the School might quietly go under.



*Water ecology is an important part of the curriculum at the New Jersey School of Conservation in Stokes State Forest.*

## New Jersey

But as word of mouth spread, the School benefitted from an unexpected but highly effective lobbying group: students and teachers who had gone through the School's programs in years past. Trenton was flooded with letters—some 20,000 in all—many of them from children and young adults telling how much they had valued their days at Stokes. Legislation was passed giving the state permanent financial responsibility for ensuring the School's survival.

Today—some 30-odd years since his first student-days at Stokes—David Cassels is one of many teachers across the state who takes his classes to Stokes for the School of Conservation programs. They search for seeds of dogwood trees which are mailed to Japan, to be exchanged for seeds of Japanese cherry trees. They hike through the forest, in good weather or bad.

Eleven-year-old Matt Dooley, one of Cassel's students from Ho-Ho-Kus, New Jersey, said he had "never seen anything like the beaver dams and lodges" encountered on a morning hike at Stokes. "It was neat following a stream only two feet wide, and seeing how beavers made dams until it was almost 100 feet wide."

Members of Kirk's staff show the students stuffed beavers, tree stumps gnawed by beavers, and beaver droppings. And they pass on lore about the beavers. At one beaver pond, created more than a quarter of a century ago, they tell how workmen tried to break up the dam when the state wanted to put through a paved road. They worked all day, the story goes, but did not finish. They left their picks and shovels at the site. When they returned the next morning, not only had the beavers repaired the dam, they had used the wooden handles of the picks and shovels as part of the dam. Or so the story goes.

To Kirk, outdoor education also includes exercises in character development. The games and physical challenges introduced to school children at Stokes have been copied at environmental education centers across the country.

One of the most popular challenges is a 23-foot-tall wooden wall, looming incongruously in the midst of the forest. Under the prodding of Stokes instructors, youths inch their way up the sheer wall, moving on wood-block handholds and footholds only a few inches thick. If they make it to the top, their instructors are apt to ask them to try a pull-up on a bar above—or to descent and try making the climb again, *blindfolded*. (The youths are harnessed to safety ropes.)

Often the young people cry, begging not to be forced to climb any higher. But the staff prods them to continue, until they—often—exceed their expectations.

"The exercise is about trying one's hardest, and about discovering what you can do on your own, provided you don't give up easily," explained instructor Jim Merritt, who developed many of the games and challenges at Stokes. "Many of these youths have led easy lives. They haven't been pushed. At Stokes, we don't let them give up that easily."

Jonathan Pape of Ho-Ho-Kus, who climbed the 23 feet blindfolded, put it simply: "They made us do something we didn't want to do. Something we couldn't do. But we did it."

In similar fashion, youths are urged to try tasting lichen and other exotic edibles on survival exercises. They are asked to transport buckets of "nitroglycerine" (water, actually) across woodland obstacle courses, and to get their groups across netting strung up between trees.

Kirk often visits other environmental education centers (there are 2600 in the Western Hemisphere), exchanging ideas. The world's largest environmental education center, in Japan, is the official "sister school" to the School at Stokes.

Would the children who go to Stokes recommend the experience to others? Some noted they cried at times during their stay. Long hikes were not always easy—particularly if the woods were covered with snow. But one youth spoke for all when he answered: "You better bet your life!"

*On a nippy winter day, the challenge of climbing a 23-foot-tall wooden wall appeals to this 11-year-old girl.*



At Historic Whitesbog:

# The Conservation and Environmental Studies Center

BY BERT NIXDORF

"What's the color of a blueberry?" seriously asks the little first grader with naive curiosity. Do blueberries grow on trees? Why do they call cranberries cranberries? Do they grow on bushes? How do they pick all those berries? By hand? What does a snake really feel like? What's an artifact? Can we catch a frog? For answers to these questions, as simple as the first one from a primary child to the more sophisticated put forth by older students, high school or college level; or to make a detailed, in-depth research analysis and environmental impact statement for a governmental agency, CESC has dedicated its energies for more than 18 years.

Since 1966 the Conservation and Environmental Studies Center (CESC) has answered such questions—and more sophisticated ones as well. It has been instrumental in environmental education for all age levels, primary grades through college. The nonprofit corporation is also devoted to improving environmental quality through conducting research and offering services to planning boards and environmental commissions.

CESC is situated near the junction of Routes 530

and 70, on the border of Burlington and Ocean counties, four and a half miles east of Browns Mills, and 13 miles west of Lakehurst, at the old company town of Whitesbog. Why Whitesbog? Let's go back to the beginning.

More than 125 years ago, in 1857, James A. Fenwick bought 108 acres of land at New Lisbon, near Pemberton, and pioneered the culture of cranberries in the boggy soils fed by many small streams. In 1866 Joseph J. White, who married Fenwick's daughter, Mary, began a cranberry farm with 30 acres he inherited from Fenwick. It was "J.J.," as he was known, who ingeniously developed ways of tremendously increasing the production of high-quality berries. It was he who discovered the value of flooding the bogs for insect control and for protection from frost. It was he who was responsible for the building of Whitesbog, a model company town which contradicted all the bad things about company towns during the Industrial Revolution. It was he who eventually became "Cranberry King."

Elizabeth C. White, oldest daughter of Joseph and Mary, later became known as "Blueberry Queen." Any why not, having had such an illustrious father? The Whites, without exception, were blessed with exceptional "business heads" and with determined, persevering natures. Thanks to their curiosity, research, experimentation, and inventiveness New Jersey's cranberry and blueberry industries led the nation in production.

In 1957 Whitesbog was purchased by the state, and to this day it is leased for agricultural production to Thomas Darlington, current president of J.J. White, Inc.

It's only natural that Whitesbog, with such an ambitious and progressive history, should become the base of operations for an equally ambitious program of environmental education. Since 1966 CESC has conducted an intensive and extensive program of environmental awareness. It was the dream of Dr. V. Eugene Vivian, then chairman of the Science Department at Glassboro State College, to develop an education program linking the college with a number of school districts; these now total more than 60. Initially CESC got off the ground with grants from the U.S. Office of Education Title III of the Elementary & Secondary Education Act. It now survives on contractual fees for its many services to schools and colleges, communities, and agencies.

Some of the services include Pine Barrens research, environmental impact statements and natural resource inventories, as well as conferences, workshops, and the sale of publications on a wide variety of environmental topics. Other services include technical assistance in the development of school district-owned sites for environmental programs, assembly programs, in-service days for teachers, demonstrations, curriculum materials, and more. There are also resident programs of up to five days for any grade level. Classes stay overnight at the center of the United Methodist Camp and Conference, in nearby Mt. Misery, and have daily hands-on experience with the environment.

Compiling notes on findings at Buckingham, a class from Lacey Township.





*What do we have here?*

Courses with directions, activities, and teachers' guides for all grade levels are many. The newest is titled "Here Today, Here Tomorrow," a state-validated waste/energy recycling curriculum. Other courses include Signs and Spring, Signs of Autumn, What's In a Pond? Environmental Measurements, The Company Town, Exploring Forgotten Town Sites, The Cranberry Harvest, Forest Fires (Effects & Control), Exploring Old Cemeteries, Animal Ecology, Edible Plants, and many aspects of Aquatic Life.

#### HOW IT WORKS

Classes arrive about 10 a.m. and depart about 2 p.m. Upon arrival, classes are divided into groups of eight to ten students; each group has the same opportunities to explore and discover with CESC instructors who oversee the various group activities and lead the students to discovery and learning.

A typical day course class called "What's in a Pond?" begins with a slide introduction and summary of the topics. Normally, this will include much of what is to be later found hands-on, outdoors. Each group then heads for its designated study location, armed with pencils, outlines, art boards, buckets, trays, and long-handled nets. Everyone wants a net! They all know that with a net that there's something to DO! Scoop for frogs, dragonflies, fish, tadpoles, diving beetles—Who knows what? Enthusiasm is at high pitch. And what better way is there to learn than by hands-on? When a small creature is seen or captured, all

thoughts of school vanish. This is fun-play. It's also learning. The biggest disappointment is when these live creatures must be returned to the place where they've been caught, a firm rule at the center. Following group explorations, note-taking and discoveries, summaries of the day's findings are discussed in the total group or in the small group, whichever is most appropriate.

Classes get a highly concentrated day of outdoor experience which keeps them on the move. There's no "play-time." The kids love it. They're so enthusiastic. They pick up everything under the sun and ask: Is this one? What's this? Why? Will it hurt you? Can you eat it? Is this a blueberry? The first-grader who asks "What color's a blueberry?" finds out—and learns a lot more, too.

Your class, too, can have the same kind of play-learning, hand-on environmental education trip to CESC. Dr. Vivian and other CESC personnel will conduct the program. The workshop will be held rain or shine; and it will range from ecological studies to direct exploration related to school computer software. Participants should dress for outdoor activity and bring their own lunch and beverage. For further information and reservations, call CESC at (609) 893-9151.

**On Saturday, October 27th, CESC, Inc. will present the Pine Barrens Halloween Party, featuring a moonlight search for the Jersey Devil in the cranberry bogs. A professional storyteller from the Pines will offer a special evening program of Ghostly Tales Around The Campfire. There will be a fee for parking and admission to the program.**



Teenager being instructed in archery.



Trapper Tom Brown discussing

# SHARING THE OUTDOORS

BY SCOTT MCGONIGLE  
PHOTOS BY  
E. WARREN GARRETSON

Most people love a party, unless of course, they're not invited. Toward the end of September, as the languid heat of summer yields to the crisp of October, sportsmen throughout America celebrate National Hunting and Fishing Day. One of the biggest parties is held in New Jersey. Hosted by the Cumberland County Federation of Sportsmen's Clubs, the Annual South Jersey Sportsmen's Jamboree attracts more than 10,000 spectators during the two-day event. It is covered by all the major Delaware Valley newspapers and network television.

Best of all, everyone's invited and there is no admission charge. The Cumberland County Federation has demonstrations and exhibits covering a wide range of outdoor sports. In addition to the traditional hunting and fishing demonstrations, kayaking, canoeing, trapping and dog training compete for the spectator's attention.

One factor that contributes to making this jamboree one of the largest in the country is public participation. The audience is not limited to watching and listening to different experts. After most of the demonstrations, the public is invited to try their hand at shooting and casting, too.

For the youngsters, there's supervised air gun shooting. Qualified instructors demonstrate safe gun handling and shooting, after which each boy or girl is given five shots at a close target. This contributes to building confidence and teaching safe methods before unsafe ones are learned.

But public participation alone is not enough to

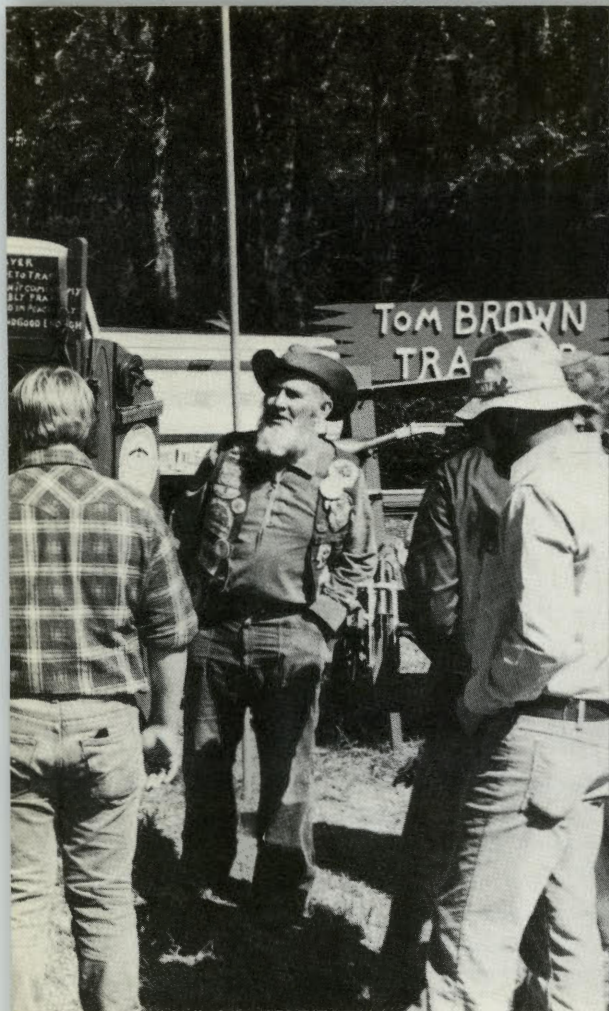
ensure the jamboree's success. Work and dedication from the county sportsmen and a unique location are the other elements that balance the equation. A confluence of three sportsmen's clubs, all within a quarter-mile of each other, provides the hub of activities.

Meadowood, on the western shore of Cumberland Pond, is the site of water-oriented sports. Farther up Union Road, Menantico, with its tree-shaded front area and a cleared field in the back, is the nucleus for many exhibits. Good Sports, just across the road, is where the youngsters can find the BB-gun range.

Exhibits by commercial vendors and state and conservation organizations are found at Menantico. In addition to a booth from the New Jersey Division of Fish, Game and Wildlife, information is also available from the local chapter of The National Wild Turkey Federation, National Wildlife Federation, Operation Game Thief, the division's endangered-species program and others.

The jamboree is a good place to do some Christmas shopping for outdoorsmen. It is possible to buy a \$25,000 motorhome or a \$2.50 turkey call. Boats were available from 20-plus-footers to Barnegat Bay snéakboxes. A number of woodcarvers have their work on display and for sale.

Menantico is the sight of the archery demonstration, also with public participation. Bird dog and hound demonstrations are held in the back field. Bird dogs of both pointing and flushing breeds are shown. In the afternoon the air is broken by the



different traps on display.



Flycasting demonstration on Cumberland Pond at the Meadowood Club.

tuba-voiced strains of coon hounds baying "tree" at a protected raccoon.

The range at Good Sports is where spectators may try supervised trapshooting and muzzleloaders. For many shooting a black powder rifle will be a first. They will get their introduction to one of New Jersey's newest and fastest growing outdoor sports.

Among those who tried trapshooting at Good Sports at the last jamboree was honorary chairman Dave Trout, placekicker for the Philadelphia Stars. After a couple warmup shots, it became evident why he is one of the top placekickers in the United States Football League. Between trapshooting and casting, Dave mingled freely with the crowd, answering their questions on hunting, fishing and football.

Water-bordered Meadowood provides the backdrop for flycasting demonstrations, a seminar on bass fishing techniques, and retriever demonstrations, as well as those on canoeing and kayaking. This is also where one of the most popular exhibits is found: trapping.

Fish and Game Councilman Jim Furlong was on hand with members of the Southern New Jersey Furtakers to answer questions on trapping and display pelts. Tom Brown's exhibit of antique and modern traps became one of the popular focal points. The display is a history lesson in the economics of an emerging nation. Traps ranged from a large antique bear trap to a small leghold muskrat trap. Included is the newer killer-type trap that will replace the leghold for muskrat trapping.

Little is overlooked. No one has to go hungry; food concessions are at all three clubs. Equally important is the conveniently located porta-potties. And for those who grow a bit leg weary, a shuttle bus runs every 10 minutes between the clubs and parking area.

Each year the jamboree grows in size and popularity. It's no wonder; with the exception of mountain climbing (the federation was unable to move a mountain), there's an outdoor activity for most interests. Even the sedate are considered. Bluegrass music competes with the wind whistling through the pines at Meadowood. It's a bring-your-own lawn chair or sit-on-the-ground concert.

This year the party will be held at the same location: On Union Road (Rt. 552) about five miles east of Millville off Route 49. The dates to remember are Sept. 22 and 23.

Appropriately, the theme for this year's National Hunting and Fishing Day is "Share the Outdoor Tradition." The idea is to get hunters and fishermen to share their outdoor experience with non-sportsmen. Giving non-sportsmen an opportunity to learn about the outdoors and conservation should help ensure a healthy future for the sports—and wildlife.

Few sportsmen's organizations have the potential to fulfill the theme as does the Cumberland County Federation. They have the best location that is easy to get to. They have a cadre of hard workers. Admission is free. But best, everyone's invited.



Sept. 22, 1984

**NATIONAL  
HUNTING  
& FISHING  
DAY**

## EDIBLE

continued from page 35

first-year plant taste very similar to cultivated carrots.

**CAUTION:** Wild carrot should not be collected unless one is sure of its identity, for it closely resembles the deadly poisonous hemlock plant. In contrast to wild carrot, hemlock has purple-spotted hollow stems and an unpleasant odor.

Take this as a general precaution when gathering any wild plants—always be certain of the plant's identity before eating it. Many perfectly edible plants look very similar to poisonous ones. Refer carefully to good field guides and, if possible, consult with an experienced wild food forager before experimenting with an unfamiliar plant.

Although most field guides note which plants are actually poisonous, they say little about the palatability of nonpoisonous species. In our study of edible wild roots, we came across several which were extremely unpleasant. Arrow arum, Indian turnip (*Arisaema stewardsonii*), and also our cherished skunk cabbage roots all contained calcium oxalate which caused an intense stinging in the mouth. We read that flours can be made from these roots, but even boiling, roasting, powdering, and drying for several weeks could not dispel this unpleasantness. Perhaps this was due to the insufficient drying time.

Well, although we were sometimes disappointed, we were by no means discouraged. As novices, we had been very successful at locating palatable roots and tubers and preparing flavorful dishes with them. Some of our recipes included:

### Jerusalem Artichoke Chiffon Pie

(From *Stalking the Wild Asparagus* by Euell Gibbons)

- ¾ cup brown sugar
- 1 envelope unflavored gelatin
- 1 teaspoon pumpkin pie spice
- 3 eggs, separated
- 1½ cups cooked and mashed Jerusalem Artichokes
- ¼ cup white sugar

In a pot, combine brown sugar, gelatine, and spice. Slightly beat egg yolks, add milk. Stir this into the brown sugar mixture and cook until it reaches a boil. Remove from heat and stir in the mashed Jerusalem Artichokes. Chill for about an hour. Beat the egg whites with the sugar until stiff peaks form. Fold this into the slightly stiffened artichoke mixture, and spoon it all into a nine-inch graham cracker crust. Chill until firm.

### Greenbrier jelly

Chop the roots of greenbrier as finely as possible and boil them in water for about an hour. Strain out the roots and add sugar to the water, and boil until the syrup jells. (Use an amount of sugar that is about half the volume of the water). This jelly becomes firmer upon cooling.

(We used this jelly on pancakes made from flour which was half cattail starch.)

### Cattail Pancakes

Substitute half the regular flour with the same amount of cattail flour in your favorite pancake recipe.

### Wild Carrot Cake

Substitute wild carrots for the carrots in your favorite carrot cake recipe.

## CLINTON

continued from page 31

school bell beckons today's young visitors to pull the rope.

To the rear of the schoolhouse and beyond are wagon sheds used locally to accommodate wagons during church services and donated by the Clinton Presbyterian and Methodist churches.

At the far end of the village is the Log Cabin, constructed as a Bicentennial project. Today its moss-covered roof sprouts seasonal wildflowers and its interior reflects the primitive conditions of the American frontier. Behind the cabin volunteers keep the herb garden weed free and cultivate the southernwood (to keep the moths away), lemon balm (for sachets and flavoring drinks), comfrey, lamb's ears and chives, ladies' mantle, lavender, tansy and Bible leaf.

Beyond are 17 acres of natural woodland leased from the state. Reflecting the preservation bias of the museum village and its director, "developing" this land will probably mean returning the acreage to the orchard and farm that once stood there.

Walking back to the entrance along the waterfront visitors pass under the gnarled boughs of giant sycamores and look down at this year's crop of ducklings usually accompanied by querulous parents deftly fending off the attentions of young children. In fact the drakes would be well-advised to direct their hostility against the large turtles in residence which have considerably reduced the duckling population this year. This wildlife sanctuary also is the migratory home of Canada geese, mallards, widgeons, coots and occasionally swans and the waters are stocked with fish for area anglers.

Guided tours of the Clinton Historical Museum Village are offered by lecturers who lead groups of

10-15 visitors on leisurely strolls of the grounds. Museum hours are weekends 12 pm to 6 pm and weekdays from 1 pm to 5 pm, and the antique-laden gift shop and office are open year around. A stone's throw from the charming village of Clinton with its specialty shops and eateries, the museum offers visitors a full day of recreation and the following parting advice: "Every man should Learn from the past, Live for the Present . . . and Build for the Future."

Clinton Historical Museum Village  
P.O. Box 5005, 56 Main Street  
Clinton, NJ 08809-5005  
201-735-4101

### Calendar

**Sat. and Sun., Sept. 8 and 9**—Encampment of Revolutionary War Unit. 2nd NJ Regiment, Maxwell's Brigade, 12 pm to 6 pm.

**Sun., Sept. 23**—Lecture by Norman Bobel on Postcards: A Collector's View, 2 pm. Adults \$2, Sr. Citizens \$1.50, Museum Members \$1.

**Sat. and Sun., Oct. 6 and 7**—Harvest Jubilee, 10 am to 5 pm.

**Sat., Oct. 27**—Teddy Bear Day, 12 pm to 6 pm.

**Wed., Oct. 31**—Clinton Historical Museum Village closes for the season.

**Museum Admission**—Adults \$2, Sr. Citizens \$1.50, Children \$1, Museum Members, Free.

**Museum Membership**—Individual \$10, Family \$25, Patron \$50, Endowment \$100, Individual Life \$1000.

## Dear Editor

As a long time paying N.J. hunter/sportsman and subscriber to *New Jersey Outdoors*, I cannot help but wonder why the January/February '84 issue did not have at least one hunting article, as that is still the prime time of the hunting season. Consider publishing stories on deer, fox, rabbit, coon hunting, their respective clubs, sportmen's federation purposes, methods of hunting, hunting dogs, conservation officers' experiences, etc. I would like to see this magazine more in line with *Pennsylvania Game News*. Thank you very much.

Peter A. Pagano

***New Jersey Outdoors* is a different kind of magazine than *Pennsylvania Game News*. Where that magazine is put together for people who hunt and trap, *New Jersey Outdoors* aims to appeal to all the different kinds of people who enjoy the outdoors—the canoers, hikers, birdwatchers, golfers, campers, fishermen, swimmers, history buffs, gardeners etc., etc. as well as the hunters. The list is endless. Still we appreciate your suggestions and will try to make use of some of them.**

At the library today, I picked up *New Jersey Outdoors* which I never knew existed. I read the article on New Jersey's turtles (March/April '84) turning a five minute run to the library into a much longer time. Now I know that snapping, box and painted turtles are not the only ones in New Jersey. It's now two hours after discovering your existence and I am writing out a check for a year's subscription.

Richard Hughes  
Sewell

### Many thanks for the compliment.

I saw a Bog Turtle last summer in August at Cheesequake State Park. The poor creature was being mishandled by some children that treated it like a toy, throwing it up in the air. When I came along, that action stopped. I picked the turtle up, checked it for damage and took it to the side of the road near a pond. After 40 minutes it felt safe enough to move slowly away into the woods.

Evan S. Lipson  
Edison

Many sportfishermen these days return a portion of their catch unharmed and significant efforts are being expended in teaching them how to avoid damage to the fish while doing so. For instance, fishermen are encouraged to place the fish gently into the water, rather than flinging it across the stream. I am certain we have all seen non-keepers killed because of rough handling.

I must comment that your feature "The Best Yet" (March/April '84) might have been

more thoughtfully illustrated. You depict very rough handling of the fish without explanation. This may be standard stocking procedure in New Jersey but it should not be presented to the public in *New Jersey Outdoors*.

Your magazine has come a long way since 1966 and the result is a fine journal. I particularly enjoyed the article about turtles in the March/April '84 issue.

Robert G. Ford  
Staffordville, Connecticut

The excellent article on New Jersey's turtles (March/April '84) contained a photo of the map turtle (*Graptemys geographica*). Please note that the photo illustrates the Mississippi map turtle. (G. Kohn) not New Jersey's map turtle which inhabits the Delaware River. Perhaps there was a mixup of slides.

Raymond J. Stein  
Curator and Chairman  
Bureau of Science  
New Jersey State Museum

**Thanks for the information. Turtle watchers take note.**

I am enjoying my second year's subscription to your very informative and picturesque magazine. You've given me several ideas for day trips, including my favorite, Twin Lights Historic Site, which I had not been aware of before "Our Friends in the Parks" (January/February '84).

New Jersey is now aggressively pursuing the tourist dollar, but we are sadly deficient, in my opinion, in our state park system. Not that we don't have beautiful parks. It is just that we are not using them to full advantage.

I am a big fan of West Virginia, whose state park system is extensive and well-utilized. They have several parks with cabins and lodges and a few full resorts, including a ski lodge and an 18 hole golf course. These are owned and operated by the state and the profits help reduce taxes.

How about a 60-room lodge on the Wharton Tract somewhere? This is the sort of thing the state should be considering. Keep up the good work.

Louis Hertz  
Ventnor

**While New Jersey's park system has no full-scale resorts, there are cabins at Bass River State Forest, High Point State Park, Lebanon State Forest, Parvin State Park, Stokes State Forest and Wharton State Forest. There are also family and group campsites at 19 state parks. And Spring Meadow at Allaire State Park in Farmingdale has an excellent 18 hole golf course. For further information, contact State Park Service, N.J. Department of Environmental Protection, CN 404, Trenton, N.J. 08625**

I think *New Jersey Outdoors* is the best thing to happen to the Garden State since the seashore. Great stuff! The only drawback I see is the lack of location in your articles. For example, Poricy Park, Middletown Township, Monmouth County. I live less than five miles away and it took me 45 minutes to find the place. Perhaps a small map could be included with these articles.

An avid reader and friend,  
George J. Royle  
Keansburg

**Sorry you had trouble finding Poricy Park. Your idea is interesting. Anyone else think maps would be helpful?**

In Helen Fenske's guest editorial announcing the Parks '84 program (March/April '84) she mentioned two major forces that helped establish the parks system we now enjoy. Only one small paragraph was devoted to the CCC—a major force in the establishment of our parks. The people who served in the CCC between 1933 and 1940 are so proud of their contribution to parks' development that we have established the National Association of CCC Alumni. Our main purpose is to do whatever possible to reinstitute the CCC as an ongoing program for the youth of the state and nation.

Robert O'Connell  
Vice-President  
Chapter 8, NACCCA  
West Orange

**Our next issue, November/December 1984, will include an article on the CCC contributions to our New Jersey state parks.**

I recently finished reading "Pedaling New Jersey" by Kevin Coughlin (May/June '84). I would very much like to know the detailed route Kevin took from Cape May to High Point and would also like a copy of the route provided by Bill Feldman of the Department of Transportation.

William List  
Madison

**We've forwarded your request to Kevin Coughlin and to Bill Feldman and will do the same for anyone else interested in taking this bike trip.**

I have some additional information about New Jersey's shipyards "Shipbuilding in N.J.". Both the *Juneau* and the *Dorchester* were built at the Kearny shipyards. The *Juneau* went down with the five Sullivan brothers which resulted in separate assignments for members of the same family. On board the *Dorchester* were four chaplains who gave up their life preservers to enlisted men before the *Dorchester* sank. This was later commemorated with a postage stamp.

Jessie Lang  
Kearny

# New Jersey Toads

By MIMI DUNNE

Scratch the surface of any toad and you'll find both a gifted musician and a hardworking fly-trap. Still, few people will scratch much less touch or appreciate the toad nor do they understand its role in the ecosystem. Even fewer know that we have three kinds of toads in New Jersey inhabiting several kinds of habitats and occurring throughout the State.

Toads are classed as amphibians along with frogs, salamanders and caecilians (limbless, blind, wormlike animals which don't occur in the U.S.). Most amphibians have larval, or juvenile, stage (known as a tadpole) that lives in water, and all amphibians have naked skin. The aquatic tadpoles usually breathe with gills, and the adults through lungs. Frogs and toads are predators as adults. There are many characteristics that are common to both frogs and toads and there is quite a bit of variety within each of those groups. That makes it difficult to generalize about the differences between toads and frogs.

In New Jersey, the American toad and the Fowler's toad are what people generally think of when they think 'toad.' These are the warty creatures that have granular undersides, horizontal pupils, prominent parotoid glands behind the ear or tympanum, crests on the head, unwebbed toes, and discolored throats. The differences between the two are subtle. Upon cross examination, the dark spots on the back of the American toad show only one or two warts. In contrast, the spots on the back of the Fowler's toad contain several warts. Generally, the underside of the Fowler's toad is unspotted whereas the American's tends to be spotted. Because these species occur in similar habitats, there is often interbreeding and the telltale characteristics are often disguised.

The best distinguishing feature between the two toads is voice. The American toad's mating call is a long, ringing, whistle-like trill. The Fowler's mating call is a short, loud, low-pitched "wa-a-a-h." Fowler's toads generally sing from a pond, lake or stream edge. They breed later in the spring than American toads and often are the only amphibians singing in mid-summer after the typical chorus of spring peepers, chorus frogs and American toads has waned.

Few people ever come across the third of New Jersey's toads. The spadefoot toad is a subterranean, nocturnal animal that occurs in the coastal plain of South Jersey. In contrast to the warty American and Fowler's toads, the spadefoot is a smooth-bodied toad with a horny, spade-like projection on the inner border of each hind foot. This 'spade' is an effective tool for digging in sandy soil. The spadefoot toad is also characterized by a vertical pupil, white chest and belly, and a yellow lyre-shaped pattern on the back. The skin of the spadefoot contains glands which produce a musky, peppery secretion. Spadefoot toads emerge in large numbers following heavy rainfalls.

Throughout their life cycles, toads feed on different levels of the food web. Tadpoles, or larval toads, are vegetarian and consume

mostly algae, diatoms and decaying aquatic plants. Adult toads, in contrast, are insectivorous and consume flies, mosquitoes, beetles, caterpillars, snails, small crustaceans and earthworms.

The predators upon larval and adult toads differ also. Fishes, snapping turtles, and water snakes likely take tadpoles. A variety of four-legged and winged predators consume adult toads if they don't find the glandular secretions distasteful. Hognose snakes make a living on toads. A large toad is able to discourage predators by inflating its upper body and making it difficult for an animal to swallow it. A full-grown, adult toad avoids being eaten by relying mostly on protective coloration (drab ground color with dark, camouflaging markings) coupled with the ability to surprise a predator by hopping away.

The life cycle of a toad is closely keyed to changes in the environment since the "cold-blooded" animal is unable to regulate its own body temperature. When days begin to warm in late March and April, adult toads venture from their winter burrows. Breeding takes place through mid-summer in temporary ponds, irrigation ditches and other backwaters. American and Fowler's toads deposit two long, spiral strings containing from 4000-8000 eggs. Spadefoots lay fewer eggs per band and appear to breed throughout the summer. Eggs hatch into tadpoles which spend most of the summer in the water, transforming into adults from June through August. Adult toads may live several years—the metabolism of cold-blooded animals may allow an animal to live longer than a warm-blooded animal of comparable size.

The habitat preferences of American and Fowler's toads are quite varied. These toads can be found everywhere; in dry, sandy uplands, rocky, mountainous regions, wetland regions and backyards. As backyard residents, toads are hard to beat. They consume quantities of insects around the home—mostly at night—and hide during the day. They harbor no disease nor will they cause warts to grow if they're touched. Toads destroy no vegetation, in fact, they may aerate soils to a small extent when burrowing.

A homeowner need do little to encourage toads around the yard. By limiting excessive use of insecticides, a stable community of prey species will exist around the home for the toad to prey upon. Allowing a certain amount of untidiness in the form of cover will provide plenty of places for the amphibian to hide under during the day. Since there seems to be abundant habitat in the state for American and Fowler's toads, their future looks rather secure.

The story is slightly different for the spadefoot toad. The Division of Fish, Game and Wildlife officially lists that amphibian as declining. Coastal plain habitats of this lesser-known species are changing at a rapid rate and development pressure is difficult to quantify. Habitat protection is a key objective of the tax check-off supported Endangered Species Program; efforts to minimize habitat destruction will accord protection to this species as well.

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#### **FRONT COVER**

Red-tailed hawk. Photograph by Joan Lengyel. (See article on page 28 for discussion of fall migration.)

#### **INSIDE BACK COVER**

Toads (American, Top; Fowler's, Center; and Spadefoot, Bottom). Illustration by Carol Decker.

#### **BACK COVER**

Laurie Terry amidst the fall foliage. Photograph by David A. Bast.



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