

\$2.50
May/June 1989

New Jersey Outdoors

NJ
NEW JERSEY DEPARTMENT OF TREASURY
PUBLIC LIBRARY
AUG 3 1989
TREASURY N.J. 09608

NJRB





New Jersey Outdoors

Features . . .

- 3 Canoeing the Ramapo
Kenneth W. Dahse
- 6 Mosquito Alert!
Purple Martins are doing it in the Pines
Carol C. Nash
- 8 Wildlife Lives Best Wild
Jan McDowell
- 12 JAWS of the Forest
Alan J. Stearne
- 15 DEP Lyme Study
Barbara Maccarillo
- 16 Alien Landing
Cynthia and Amor Klotzbach
- 17 OZONE in the Air We Breathe
Joann L. Held
- 19 Swartswood State Park Celebrates Seventy-Five Years
Martanne Ofenloch and Karla Risdon
- 25 Free Fishing Days
Laurie Pettigrew
- 26 "Betwixt and Between" on Entering the Great Rebellion
Richard D. L. Fulton
- 30 Golden Anniversary—A Partnership in Pride
Kevin Wright
- 32 Elusive Butterflies
Phil Moylan

Departments . . .

- 2 Editorial
- 36 Calendar of Events
- 37 Explorer
- 39 Editor's Desk
- 40 Wildlife in New Jersey
Striped Bass

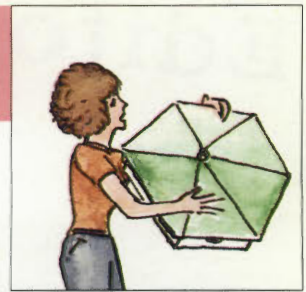
Covers . . .

- Front:** Clinging to vegetation where it spent the night, a Baltimore Checkerspot waits for the warmth of the morning sun. The loss of specific plant species and marsh/swamp habitat threatens its future. Photograph by Phil Moylan.
- Inside Front:** Turtlehead, sometimes called snakehead, is a Baltimore Checkerspot favorite and necessary to its survival. Photograph by Marilyn Takesh.
- Inside Back:** Striped Bass. Original acrylic painting by Carol Decker.
- Back:** The pink lady's slipper, a wild terrestrial orchid, is beginning its bloom across New Jersey. The pouch-shaped lip, a slipper's most distinctive feature, allows greater insect access for pollination. To preserve species and allow flowers to set seed, the removal of any wildflower or plant, except by scientific collection permit, is prohibited on state lands. Photograph by Dian Schroeder.

New Jersey Outdoors (USPS 380-520) is a bi-monthly publication of the N.J. Department of Environmental Protection. Second-class postage is paid at Trenton, N.J., and additional mailing offices. Subscriptions are \$8.50 for one year, \$15.00 for two years, and \$21.00 for three years payable by check or money order to: *New Jersey Outdoors*, NJDEP, Trenton, NJ 08625-0402. Single or back issues, if available, cost \$2.50. POSTMASTER: Send address changes to *New Jersey Outdoors* mailing office. Send old and new addresses and the zip code numbers. The Post Office will not forward copies unless forwarding postage is provided by the subscriber. Allow eight weeks for new subscriptions and change of address to take effect. *New Jersey Outdoors* welcomes photographs and articles but will not be responsible for loss or damage. Permission granted to reprint with credit to *New Jersey Outdoors*. Telephone: (609) 530-5772; Editor's Office (609) 292-2477; Subscription information 1-800-345-8112.

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.

6



16



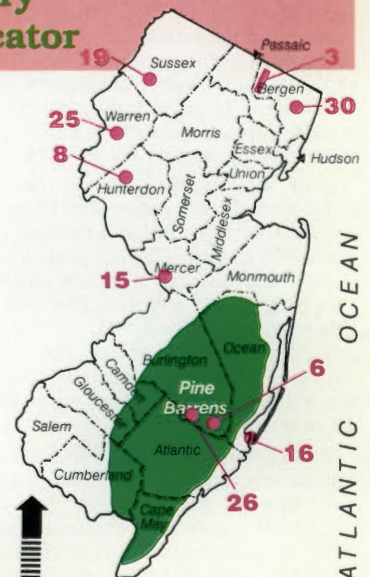
17



32



Story Locator



Editorial

For friends and schoolmates in the 60s, May marked the start of convertible season, riding to a county park or the Jersey shore, top down with 50 mph winds blowing through the hair, an image undoubtedly reinforced by television's California focus.

That shared American Dream of having your own set of wheels is now reality. With the number of cars increasing twice as fast as the population, today's version of the one-car family is a curb or driveway where three or four vehicles are parked. In 18 years the number of vehicles on New Jersey roads has increased 50 percent. Vehicle miles traveled (VMT) annually have jumped almost 20 percent in just one decade.

Life revolves around the internal combustion engine. Children no longer walk to school or take buses. They drive themselves or parents chauffeur them. To buy a quart of milk or newspaper, we take the car. Recently I asked a college student to drop off some film, a six-block round trip, and the response was, "Where's the car?"

"Ozone in the Air We Breathe" focuses on a problem that affects us legally, economically, socially and as a matter of public health. Seventy areas in the U.S. did not meet a 1987 federally mandated deadline for ozone standards set to protect the public's health. Like most urban states, New Jersey was one of those areas. Particularly serious for people with existing respiratory problems and the elderly, ozone exposure adversely impacts children, otherwise healthy people and the athletic. The chemical pollutant, commonly called smog, damages agricultural crops, forests and man-made materials. U.S. crop losses due to ozone range up to \$3 billion. Ozone damage to other materials is another \$2 billion, \$500 million in rubber goods alone.

Your vehicle's tailpipe is the single biggest contributor to ozone pollution. About 50 percent of all volatile organic substances (VOS) emitted in our state come from motor vehicles. The number of vehicles, VMTs and the volume of emissions have cut into air quality improvements New Jersey had made through restrictions on stationary sources.

Your air quality program has changed lanes and shifted gears. The Stage II Vapor Recovery system, already required at gas stations, will reduce VOS emissions by 35 tons a day. Regulations reducing gasoline volatility from May 1 to September 15 take effect this year and will keep 300 tons of VOS from escaping into your air daily. On hot summer days we will breathe better because the state has reduced hydrocarbon emissions 30 to 40 percent.

To improve air quality and relieve traffic congestion, the state has undertaken "Project: Clean Air and Mobility." The study will isolate New Jersey emission sources from those of upwind states (ozone's failure to recognize geopolitical boundaries makes it

a regional problem as well) and then emissions generated by stationary sources from those of mobile sources.

Congestion, according to the Federal Highway Administration, results in \$1.2 billion lost annually, while vehicles idling in traffic waste more than a billion gallons of fuel. Congestion's toll is also measured in more expensive goods, increased accidents, declining air quality as standing vehicles pollute more heavily, and an increased public health tab. Reportedly, 40 percent of New Jersey drivers have changed travel patterns to escape the 20-minute commute to a five-minute destination. Even on weekends family, social and recreational car trips exceed in number and mileage work commutes.

During "Project: Clean Air and Mobility" DEP, the Department of Transportation and representatives of business, labor and civic organizations will identify strategies to relieve the extreme congestion that already impacts one-third of our interstate system. Trade-offs and sacrifices involving marketplace behavior, increased costs and driving habits may be necessary to avert federally imposed limits on development (now focused on southern California) if health-related air quality standards are not met.

A major component of the CAM project's outreach effort will be to determine our willingness to reduce car and VMT numbers by car or van pooling, incentives for employers who provide employee shuttle vans to and from mass transit instead of providing free parking, park and ride facilities, automated non-stop collection, highway lanes restricted to trucks and/or high occupancy vehicles, higher registration fees for 2nd or 3rd vehicles, peak-hour toll penalties or parking lot pricing for single-occupant vehicles, or an odd/even restriction or ban of cars in business or congested districts.

Since autos take space from trucks and mass transit during peak hours, new mass transit options to give auto commuters better and more mobility will be considered. The CAM study will also evaluate alternate fuels such as ethanol or natural gas.

The CAM committee's work will increase our knowledge and understanding of the problem. Raising public awareness increases public support for the need to reduce air pollution and acceptance of remedies.

Measures to change habits that degrade air quality might seem financially or personally intrusive, but they are less costly or painful than potential health risks. They can be implemented successfully if labor, business, government and everyone who plays or lives here work together. Make certain your air is clean and healthful, so we can still get out there and "eNJOy!"



State of New Jersey
Thomas H. Kean
Governor

Department of Environmental Protection
Christopher J. Daggett
Commissioner

Arthur R. Kondrup
Assistant Commissioner,
External Affairs

Beverly H. Fedorko
Director, Office of
Communications and
Public Education

New Jersey Outdoors
George Klenk
Editor

Marlena Gloff-Straw
Editor (Explorer)

John M. Mocerri
Art Director

Paul J. Kraml
Graphic Designer

Joyce M. Albanenzi
Production Coordinator

Jackie Fisher
Margaret Scott
Circulation

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.

Let's protect our earth

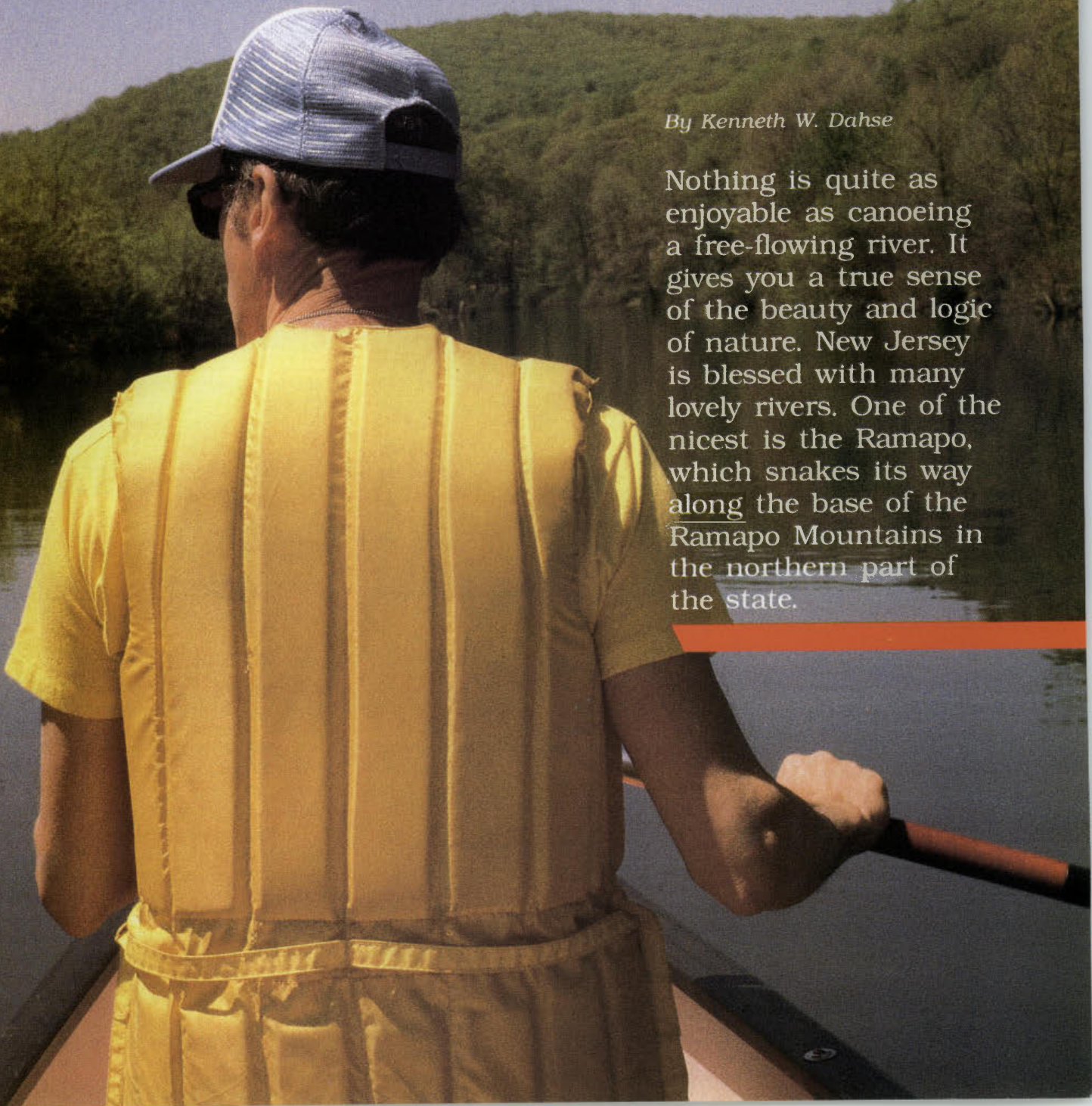


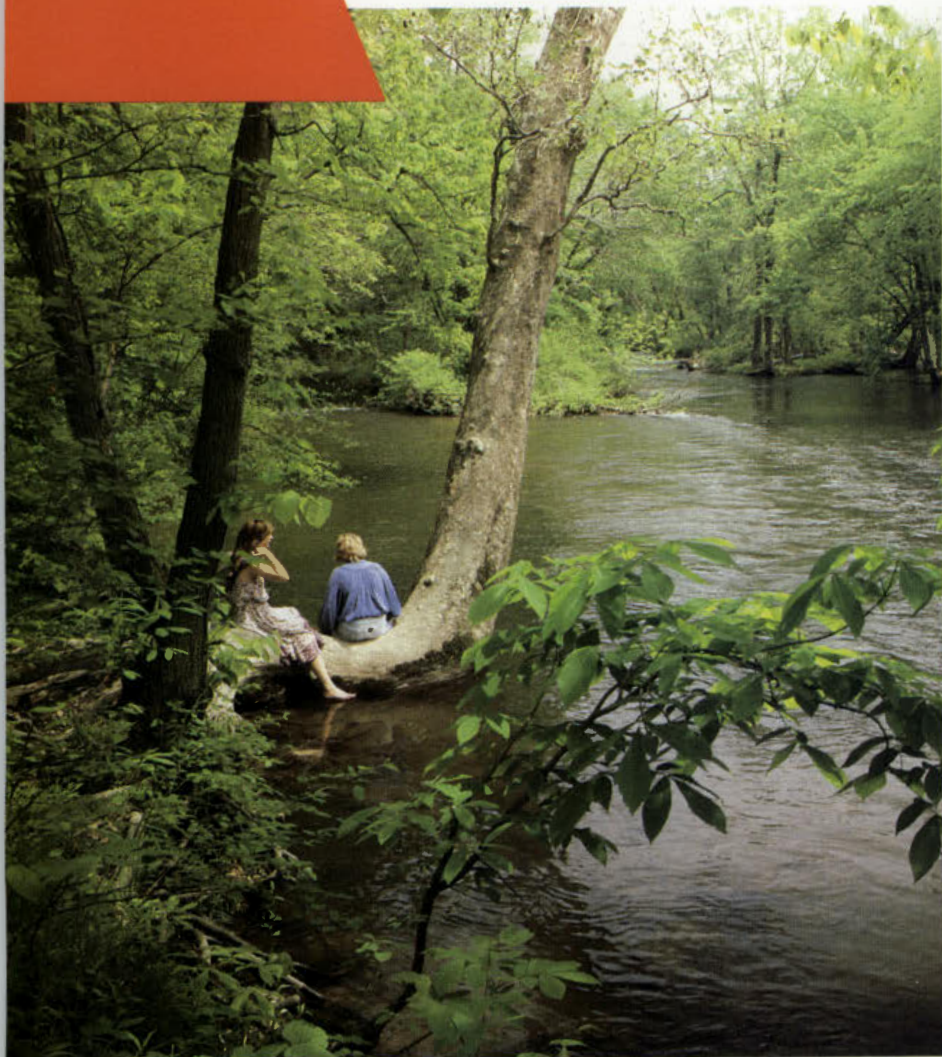
NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Canoeing the Ramapo

By Kenneth W. Dahse

Nothing is quite as enjoyable as canoeing a free-flowing river. It gives you a true sense of the beauty and logic of nature. New Jersey is blessed with many lovely rivers. One of the nicest is the Ramapo, which snakes its way along the base of the Ramapo Mountains in the northern part of the state.





(preceding page) In more placid waters, Art Rippas listens to the Ramapo's song.

(left) Ramapo reservation visitors enjoy the river's tranquility.

(top) Canoeists journey far from the maddening crowd.

Kayakers ride over the dams rather than portage.

For years, I have crossed it on my way to work and watched its drastic seasonal changes. In the spring, the river sometimes rages ferociously, swollen by melting snow and spring rain. During a dry summer it barely stirs, flowing placidly by tree-lined banks. In the winter, ice chunks float by and line the shore. Each spring, fishermen try their luck catching elusive trout from its silky waters.

It finally dawned on me, here was a river practically in my own back yard that I never explored. I called a friend, Art Rippas, and we decided to canoe from Mahwah, near the New York border, to Oakland at the end of Route 208. This is approximately nine miles of river, and it takes about five hours at a leisurely pace. We did a shuttle, leaving one car in Oakland and the other in Mahwah. You can put

in a few hundred feet east of Route 17, off Route 202. There is parking nearby. If you don't own a canoe, Cal's, which is the exit point on West Oakland Avenue, rents them (call 201/337-4772 for information).

Art and I started off on a beautiful day in May. Due to a dry spell, the river was a bit low. When the river is very low, there are some sections that require getting out and portaging (walking it). However, we didn't run into any difficulty. Several dams require very short portages. One of the nicest things about the Ramapo River is it offers canoeists of various skill levels an enjoyable trip. Experts enjoy the challenge when it is high, maneuvering in its rapids and fast moving, tricky currents; average or novice canoeists can when it's calmer.

Photographs by author

Upon entering the water, we were swept into the current and paddled downstream at a good pace. The banks are a lush green of trees and bushes. We passed several fishermen, one of whom had just caught a nice sized trout. Art asked, "How long did it take you?"

"I'm lucky today. I've only been trying for half an hour," he responded. He was only one of the many fishermen we saw on our trip. We continued paddling, gazing at greenery along the shore which at times was so overgrown it reminded us of canoeing through a jungle.

As time passed, the river gave us a false sense of security, and we let our guard down. It soon taught us a lesson. A few minutes later we came around a bend, one of many in the river, and were caught in a swift current heading for another tight curve. In front of us loomed a downed tree. Art and I adjusted our sitting positions at the same time, leaning in the same direction just as the canoe was forced sideways. It started to tip, and I almost fell out. Art responded instantly and shifted his weight to the other side, saving us from plunging into the water. The current forced us through the branches, and the river opened up into a small pond.

We ran the canoe onto a sand bar and sat for a few minutes enjoying the mountain scenery, as well as the ducks and geese peacefully swimming around us. Leaving the pond, the river picked up speed as it flowed near Ramapo State College and a new development of country homes. It is such a pretty area—trees, green fields and mountain views—we decided to stop for a snack. Nearby is a large horse boarding stable. The sweet aroma of horses, mixing with the scent of trees and flowers, filled the air.

We sat quietly, listening to the singing river as it danced over rocks and splashed against the shore. Art stood and pointed off to the horizon. "Hey, Ken. Look over there!" I followed his gaze and riding toward us, growing larger each second, was a horseman. He rode across the field to the river's edge and plunged his steed into the water, crossing over to us.

"How's it going?" asked the forever friendly Art.

"Pretty good. It's a great day to ride a horse or canoe a river," responded the stranger on horseback.

"Certainly is," I agreed.

"The river has dropped quite a bit in the last week or two," the horseman informed us.

"It's still deep enough for a nice trip," Art and I agreed. We talked a few minutes and then he rode off. We finished our snack but before leaving talked to two horsewomen also out for a ride. Continuing downstream, we


traveled toward Ramapo Valley County Reservation. This 1,400-acre reservation park provides both rugged hiking and pleasant strolling. It is contiguous with Ramapo State Forest and Ringwood State Park. Just before reaching it, the river again spans into a large pond offering nice views of surrounding countryside. Passing through the park, strollers, fishermen, and campers waved to us as we went by. One young camper asked, "Is that fun?" Simultaneously we answered, "Yes!"

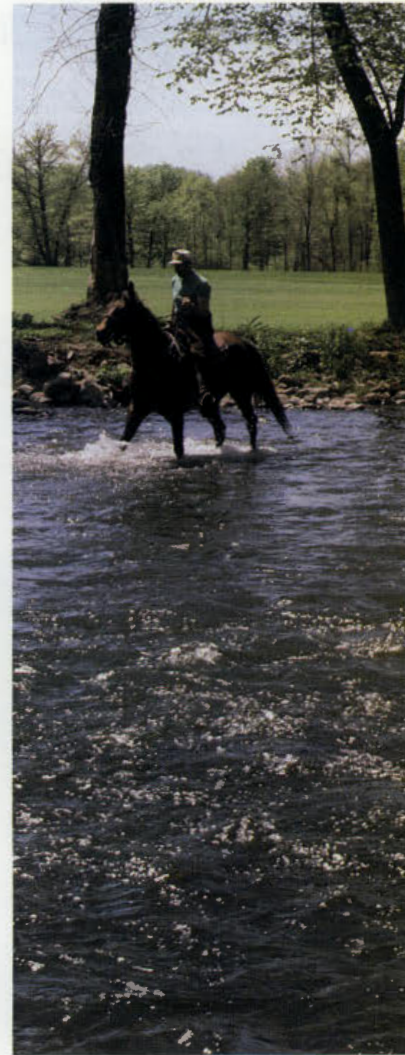
Leaving the park, we hit a long stretch of calm, deep water and some open land with views of the mountains. Art spotted a turtle sunning on a log. When we approached, the turtle dove into the river. Further on, I saw what I believed to be a pair of blue herons. Our conversation startled them and they took off, their massive wingspread blocking the deep-blue sky.

We paddled past another country home. The river again expanded into a small pond. There is a dam here, and we had to portage. Another traveler, making his way in a kayak, rode the river over the top of the dam and continued ahead of us. We met the kayaker at the next dam, a perfect place to take a break. The dam is attractive and so are the surroundings. You could easily spend half an hour or so relaxing on the sandy banks before moving onward.

We continued on to yet another dam where John, the kayaker, was sunning himself. We decided to do the same. While I rested, Art roamed. A short distance from the dam he discovered an immense wooden sculpture, at least 15 feet tall, of a bear standing on his hind legs clutching a salmon. We couldn't help but wonder what the owner had paid for it. The wooden bear seemed to fit perfectly into the surroundings, and we knew its live cousins roamed the very woods we were passing through. New Jersey has a black bear population exceeding 150, most of them living and wandering in the "Skylands" from Ringwood to Sussex.

The day was growing late and our bodies pleasantly tired, so we continued onward. Conversations lessened as we were lost in our own thoughts stimulated and nurtured by the peaceful flow of the Ramapo. I couldn't help but believe if more people had the opportunity to canoe a river, we'd be less likely to dam or pollute them so mindlessly.

We arrived at Cal's and loaded the canoe on the car. Art and I were fatigued but exhilarated after our pleasant river excursion. The Ramapo River is a beautiful part of New Jersey's outdoors. I hope it will always be there in all its natural glory for everyone to explore. I know in the future I will enjoy it again and again. 



A horseman crosses the river near Ramapo College.

A Bogota High School reading specialist, avid outdoorsman **Kenneth W. Dahse** has appeared previously in *NJO* and numerous national publications.

Mosquito Alert!

Purple Martins Are Doing It in the Pines



Anthony Helman

By Carol C. Nash

A 1960s insect-abatement program that rid an Illinois town of flies and mosquitoes, as well as other flying insects brought to town by the week-long Western Illinois Fair, publicized the effectiveness of purple martins in natural insect control. Since Griggsville, it has been reported in purple martin literature that each bird is capable of consuming 2,000 mosquitoes or other flying insects each day. If indeed true, imagine what a hotel full of purple martins could accomplish in the proper circumstances!

For several years my husband and I have been seasonal campers in an environment of "proper circumstances," namely the Bel Haven Lake Campground in the heart of the Pine Barrens.

When our friends Ike and Tom Cummings purchased a two-story purple martin house, I was delighted to help place it in an appropriate spot near the camp's 30-acre cedar lake. With the aid of a ladder perched atop my husband's pickup truck, we managed to place the house atop a 16-foot pole (purple martins like to be up high).

The year was 1979. We waited and we waited and we waited, and we waited some more. For

five years we waited amidst mosquitoes and other flying insects, and the only thing we attracted was a pair of English sparrows.

I gave up, saying "the heck with it!"

The next year the martins arrived, and they've been coming back ever since! In 1985 we put up another hotel, this time a three-story one for these outstandingly gregarious cavity-nesters. Within minutes of affixing this hotel to its 16-foot pole, we had purple martins inspecting the rooms. That year 58 nesting birds occupied 29 apartments, hopefully consuming some 100,000 flying insects each day.

Our experience has shown these hard-working birds effective as insect controllers. Consequently the next year the campers got together and bought a four-story martin hotel, which was put up in August shortly after the birds had left to winter in Brazil. Two other campers bought houses and two more opted to build their own, one of which was made from empty tobacco cans.

Last April the martins returned, first occupying the lower two tiers of the three-story model, then quickly filling up the rest of the units.

It was rewarding to watch the martins collect nesting material and mud from the lake

shore to build new nests and repair old ones. I had spent the winter crushing and refrigerating egg shells which I scattered along the beach. The birds used them as a sort of grit to help digest their food.


It appears that purple martins, once they have found a place to their liking, do not tolerate interlopers. Two pairs got into a major battle with a pair of starlings and a pair of sparrows attempting to nest in one of the houses. The fight lasted the better part of 30 minutes, with the birds attacking each other in the air and then falling into the bushes and onto the ground. The martins won and took over the house abandoned by the other birds.

By June the young had hatched, and activity was at its peak with mom and dad trying to keep the youngsters fed. We all enjoyed watching the adults swoop low over the lake to drink and "feed on the wing."

The martin babies fledged the middle of July. We were thrilled to watch the mother gently push her young to the edge of the hotel porch for their first flight. One by one they glided from their nest for the flight and returned to a nearby perch to rest. I felt great pride not only for the birds but for all of our campers who had so strongly supported the efforts to attract the martins to the lake.

We only had two weeks during which we could enjoy watching the adult birds teach their young how to survive in the wild. By the first week in August the lessons were complete, and the chicks had grown strong enough to begin their long migration. Days later, the birds began leaving in groups for South America.

I watched them leave with sadness but secure in the knowledge that come April they will be back to provide us with hours of pleasure, watching them nest and raise another generation of young. Like the American Indians who put up gourds for the martins, I know they will be back and consume even more Jersey mosquitoes.

It was a very long wait while the martins were discovering our hideaway in the pines, but it was well worth the time and effort. I have registered the Green Bank colony with the Purple Martin Conservation Association, a non-profit organization dedicated to helping the purple martin. 

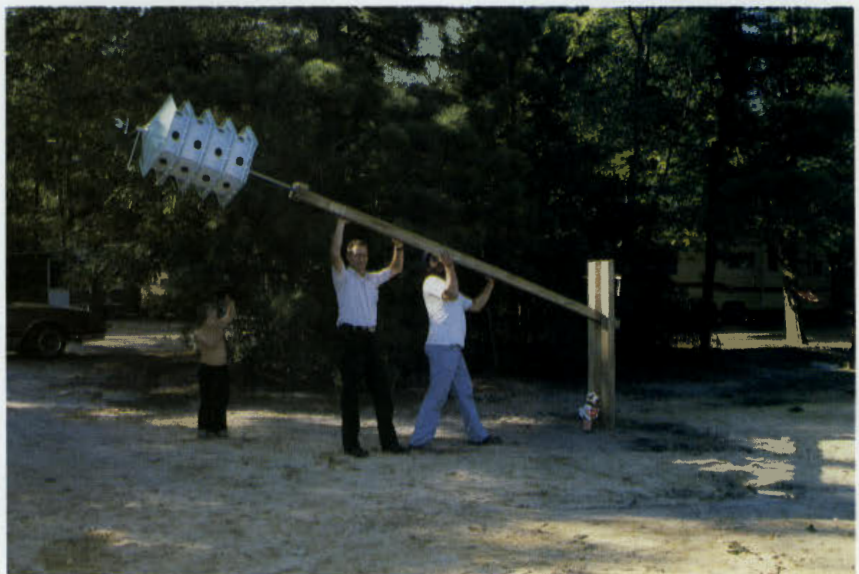
For more information on martins or to find out about registering a colony, write:
 The Purple Martin Conservation
 Association
 Edinboro University of Pennsylvania
 Edinboro, PA 16444
 814/732-2610



Carol C. Nash



James R. Hill, III



Carol C. Nash

A Division of Fish, Game and Wildlife employee, camera enthusiast **Carol C. Nash** shared other Pine Barrens experiences in the J/F 1988 15th Anniversary issue.

(top) Like other seasonal visitors, purple martins enjoy the hotel's porch and sun roof.

(center) A black rat snake descends the pole after dining on martin eggs and young birds.

(bottom) A peg construction allows campers easier raising and lowering for periodic housekeeping.



Wildlife

Lives Best Wild

It was a cold, rainy night around 9:30 pm, as I remember. It must have been about 20 years ago, for I was the new mother of a baby boy and a wife new to her husband's wildlife profession.

My husband, an employee of the DEP Division of Fish, Game and Wildlife, had been notified by a family in Sparta that they had found a very young deer fawn, alone and apparently abandoned, in a field near their home. Fearing for the animal's survival, they had taken it home and notified the "authorities" of their acquisition.

My husband's mission that night was to take custody of the fawn and release it back into the wild, a practice begun by the state after Division of Fish, Game and Wildlife "zoos" had begun to overflow, with no resources left to take in more displaced wildlife.

At the beginning of this new program, biologists returned to release sites within hours and again within days to check on the survival of the liberated wild animals. No deaths had resulted, reinforcing the biologists' assertions that the young animals had not been orphaned or abandoned at all. Instead they were being watched carefully from a distance by the mothers, who promptly took charge of the offspring when they were returned to the approximate pick-up site within two days' time, even with the scent of humans on them. It is a common misconception that animals will not care for young that have been handled by humans.

I had packed up our sleeping infant to accompany my husband because I had never seen a deer up close, and I especially wanted to get a look at this very young fawn.

I could see why so many people felt the need to take in and nurture young deer. The spotted creature with large, liquid brown eyes weighed only a few pounds and displayed coin-sized

hooves on legs so thin and delicate-looking that its handlers were almost afraid to touch it. The fine covering of fur seemed hardly sufficient to warm the tiny creature on an early spring night such as this, when humans bundled in winter coats shivered in the dark.

The Sussex County family had children of primary school age whose concern for this animal and, we were told, love for all living things were unmistakably apparent. They were allowed to accompany the rest of their family and this division biologist, even though the hour was late, as we all huddled against the rain in the broom sedge field where the deer had been found earlier in the day.

It was hard for us, not knowing what the night might bring, to leave the small, defenseless deer in the grass with no additional shelter. The fawn's almost inaudible hesitating bleat we heard as we arrived back at our cars gave us hope that a reconciliation might take place soon.

My husband returned to the field the next morning and the following afternoon. He informed the family all signs indicated another wild creature had been returned successfully to its rightful and most appropriate home.

Another new-to-the-country family and a slightly skeptical biologist's wife had learned a valuable wildlife lesson: leave young wildlife in the wild. Their family is probably close by waiting for your departure. It's also much easier not to take the animals at all than have to return them on a cold and rainy night.

Although division personnel are still trying to teach this lesson to a growing rural population, not everyone heeds the advice and the procedure must be reenacted every spring.

Yet sometimes wildlife is in need of a helping hand, and people want to help if they can. Many would not, however, know what to do if their child came home with the young of an

By Jan McDowell

Though cute and possibly orphaned, the young raccoon is and should be left in the wild.



Opossum babies accompany mom on forays and sometimes fatal road crossings.

opossum or raccoon killed by a car or if they came across an injured hawk or goose.

People have spent hours on the phone trying everything they could think of to find someone who takes care of animals, wading through governmental and/or police phone numbers trying to find the right authority to do something. Many have finally visited Agway for specialized wildlife formulas and feeds in an effort to save lives. But it doesn't take long for most to realize they don't have the time, facilities or expertise to handle the problem.

Although the path to help is not outlined very clearly in telephone directories or elsewhere for that matter, a good place to start is the Division of Fish, Game and Wildlife's Wildlife Control Unit. According to Supervising Biologist Steve Toth, biologists screen calls to this Clinton office during business hours and, making decisions about each call, function as a clearinghouse for people with wildlife problems. During non-business hours, information can be left on an answering machine for next-business-day attention.

When a call comes through, biologists try to determine if the animal is injured or sick and whether the young wildlife is really orphaned. By asking leading questions of people with limited knowledge about wildlife and its behavior, determinations can be made.

If there is no proof that the animal is orphaned, the caller will probably be told to take the animal back to where it was found and release it. Biologists explain that the animal's mother was probably off feeding or watching at a distance. People who think they are rescuing the baby are almost always taking a young animal away from its mother and doing more harm than good, Toth said. Once imprinted on humans, the animal may never be able to survive on its own again.

Callers who say they've seen an abandoned animal in the wild are usually told to leave it there and call back the next day if it is still there. If the dead mother was seen or there is other proof of abandonment, they will give the caller the name and phone number of a volunteer in the area who will take the animal. These people hold state permits to administer to wildlife. People who care for migratory wildlife also hold a valid federal permit.

In the case of sick animals, the unit must decide what course to take. Sometimes the animal must be tested in the pathology lab to determine the cause of ill health. If anything more than custodial or nursing care is needed, animals are sent to people with specific skills, like specialized bird-care facilities or people with veterinary knowledge.

Whether animals need nothing more than 'round-the-clock feedings and a safe place to mature or a spectrum of specialized medical care, it is always offered with the intention of raising a "healthy, behaviorally normal animal that can be released back into the wild. We don't want menageries of tame or disabled animals," stressed Brad Holloway, Senior Wildlife Biologist in charge of the permit system that makes it legal for these people to keep wildlife in their possession.

Most of the calls Toth takes involve birds with either congenital defects, like hanging wings, or injuries caused by hitting wires, flying into windows or encountering motor vehicles. A hodgepodge of other problems comes about on a regular basis: baby rabbits whose nests have been destroyed, birds that have fallen out of nests, deer injured by cars, and babies, like raccoons and opossums, whose mothers have been killed by cars.

Toth tells callers that baby rabbits and birds can be put back in repaired nests. Mike Valent,



Jan McDowell, featured frequently in NJO, is an avid bowhunter. A *New Jersey Herald* columnist, Jan's African bowhunting experiences recently appeared in *Bowhunter*.

division biologist in charge of permits for the Endangered and Nongame Species Program, suggests tying a damaged or downed bird nest back in its tree with string and putting the youngsters back. He says this is much better than having to feed baby birds every 10 to 15 minutes and running the risk of not giving them a balanced diet or having them imprint on humans.


In the spirit of this advice, my own family arranged a wild adoption at our house. An orphaned young robin was set out on a low limb after two days of intense worm feeding in our kitchen and the development of a lot of new feathers. We fed the baby, which kept screeching for food, until a couple of robins appeared in our yard. A bond seemed to be formed when the male began taking food to the baby at regular intervals. When the baby toppled off the branch, the adult robins fed it intermittently on the ground as they led it farther and farther away from the house. I think all were happier afterward.

Animals rehabilitated to healthy condition are returned to the wild, though a number die because they are in such bad condition when taken to a shelter. Valent says many people try to care for birds by themselves for a couple of days and unknowingly allow them to dehydrate or otherwise get sicker before seeking help. Hopelessly injured animals, he says, are humanely destroyed.

The names of wildlife cooperators are not released to the public because of the importance of the clearinghouse decisions of the Wildlife Control Unit and for the privacy of the cooperators, who needn't have to answer phone calls in the middle of the night in addition to taking care of wildlife. Larger facilities or long-time care givers known to the public, however, are contacted directly.

Holloway and Valent say the volunteer program is offered as a public service by the division to people confronted with a problem. Biologically, they say, saving one animal makes little difference since most wildlife populations usually have high juvenile mortality anyway. For instance, 80 percent of rabbits born each year die before they're old enough to breed. For rabbits this can be as young as three months of age.

It is when animals are classified as endangered or threatened that individuals become very important. Holloway and Valent agree that practices learned on animals whose species are not in trouble might be useful some day when an endangered species must be rehabilitated. Presently, very few animals tended by volunteers are threatened or endangered.

Wildlife cooperator programs are in a state of flux. Although new rehabilitators must be recommended by an established one in the game category and prospective migratory bird rehabilitators are screened, there are presently no formal standards. Meeting the standards of the National Wildlife Rehabilitators' Association or the International Wildlife Rehabilitation Council, which offer helpful courses for cooperators, may be required in the future along with an apprentice period. 

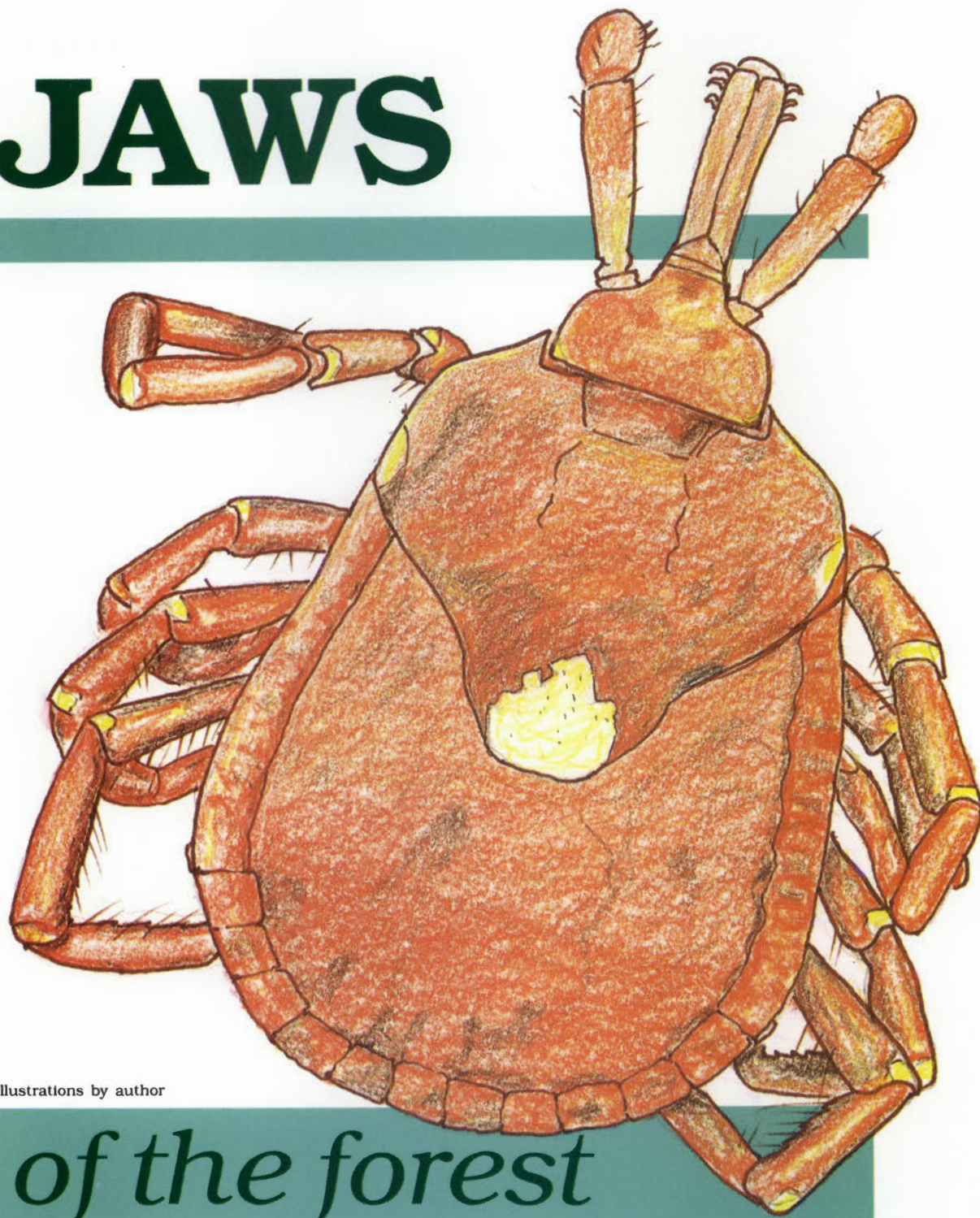
Contact the Wildlife Control Unit for more information or to request a copy of the brochure "Born to be Wild," which emphasizes leaving young wildlife in its natural habitat. Call 201/735-8793 or write:

DEP Wildlife Control Unit
Clinton Wildlife Management Area
RD 3, Box 409
Hampton, NJ 08827

A young rabbit's chances for survival are better in the wild than in the care of well-meaning individuals.

New Jersey State Library

JAWS



Illustrations by author

of the forest

By Alan J. Stearne

Since the discovery of Lyme disease in 1975, the tick has been visualized as the "Jaws" of the forest. Just when you thought it was safe to go back into the woods, lurking in the shrubs and grass is the eight-legged creature we love to loathe.

The current wave of mild tick trauma is the result of ignorance, diagnostic difficulties, and sensationalized reporting, all of which have deterred some nature lovers from enjoying our

parks and forests. It's time we put things in their proper perspective, study the situation, and explain what these creatures are and what makes them tick.

Ticks are not insects. Insects have three pairs of legs; ticks have four. Like spiders, mites, scorpions and daddy longlegs, they are arachnids. They may be soft-bodied or hard-bodied, the adults average five millimeters long, and they are attracted to one of the by-products of mammals' respiratory systems, carbon dioxide. If you want to see a tick get excited, breathe on it.

The hard-bodied Lone Star tick adult.

Ticks are considered parasites of wild animals; humans are incidental hosts. There is a different species of tick for almost every blood-bearing animal in the world, including bats, turtles, birds, and lizards. In New Jersey, hard-bodied ticks are the type that commonly bite humans.

The majority of these *Ixodes* require three hosts during their life span to complement their three stages of growth: larva, nymph and adult. Each instar (the tick's form between its successive external skeleton sheddings) requires a different host. The hard ticks take only one blood meal per instar.

The newly hatched larval stage usually picks on small mammals, like mice or voles. Its successors, the nymph and adult stages, attach themselves to larger mammals, humans included. The exception to this rule is the Lone Star tick, which bites humans during all three stages of growth.

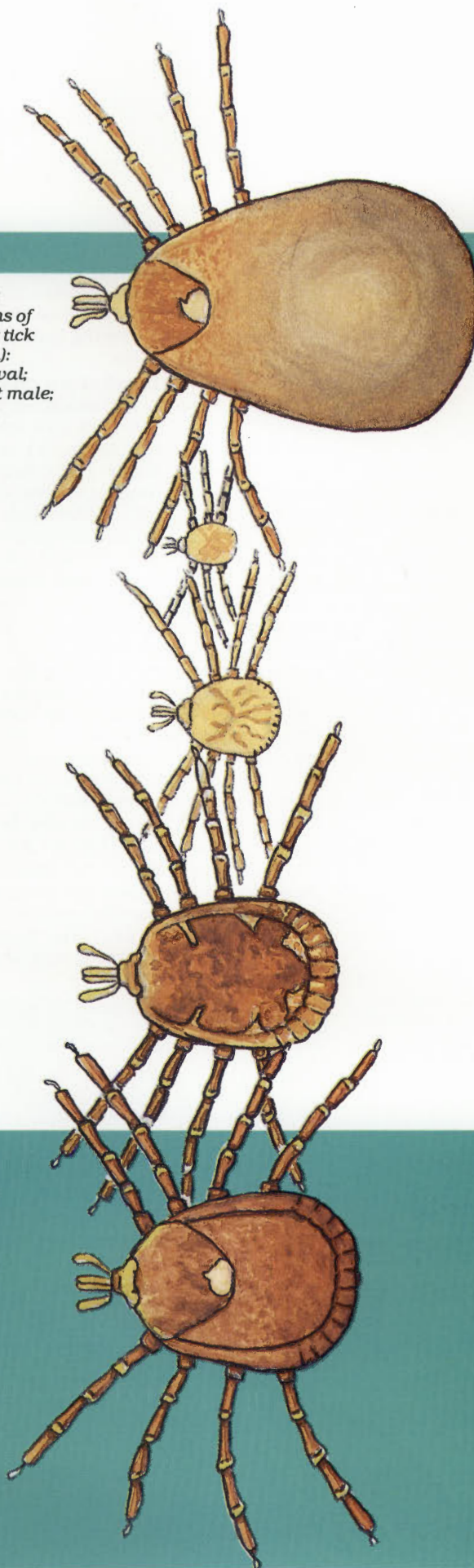
Like the Jersey mosquito, the tick gets its nourishment by ingesting a drop or two of our blood. This feeding activity, which involves mixing their saliva with our blood, may transmit any disease the tick is carrying. It's also possible to contract a tick-borne disease by ingesting their feces, accomplished by not washing your hands after you've handled wild animals or ticks and after petting your dog.

To extract your blood, the tick yells "thar she blows" and plunges its harpoon-like mouth (called a hypostome) into your skin. The hypostome contains recurved teeth or barbs. The miniharpoon often breaks and remains in your skin after the tick has been removed, and your body takes a few weeks to rid itself of it. Now you know why, after removing an imbedded tick, the area may itch for so long.

There are five forms to most hard-bodied ticks: adult male, adult female, larval stage, nymph stage and the engorged state (which means the tick has partaken of your blood and expanded like a tiny balloon). From the three endemic species of human-biting ticks, there are a possible 15 different appearance combinations which have deluded us into thinking that there are many more human-host ticks than actually exist.

The nymph stage, or tick teenager, is probably more troublesome (funny, I've heard this before somewhere). Not only does it efficiently spread disease but it is small enough to pass through the eye of a needle, and it's often overlooked. The larval stage tick is small enough to skip through the proverbial needle eye while holding hands with its sibling. Check yourself for ticks very carefully. Don't always look for a tick the size of a watermelon seed; look for

Five different stages or forms of the Lone Star tick (top to bottom): engorged; larval; nymph; adult male; adult female.



This "tick talk" is the first NJO contribution from Atlantic County resident **Alan J. Stearne.**

a pale poppy seed with legs. In June and July (July is the peak month for some tick populations), this naturalist removes about a dozen assorted ticks from his trouser legs during a typical nature walk, having learned to look for "teeny weeny" critters.

One of the few benefits of a drought is that it keeps the insect and arachnid populations down. Hatching tick eggs love humidity; few hatch in humidities under 45 percent. The more moisture stable environment of low woody deciduous vegetation usually supports greater tick populations than drier grass-herb areas. You might want to avoid pitching your tent close to heavy brush and swampy areas. Instead, pick a dry, sparsely vegetated area.


Ticks aren't restricted to the Americas but are worldwide inhabitants. For those with an international competitive spirit, you'll be happy to know we're closing the gap in the "tick disease race" because the Russians have had problems with ticks for years. They're found in Moscow and even in Siberia where one species has a long history of infecting the Russians with encephalitis, an inflammation of the brain. Even the affluent aren't immune because a tick which causes Buotonneuse fever is found on the French Riviera.

Locally, especially in the Jersey Pinelands, there appear to be only three species of ticks parasitic to humans: the common *Amblyomma americanum* or Lone Star tick, the *Dermacenter variabilis* or American dog tick,

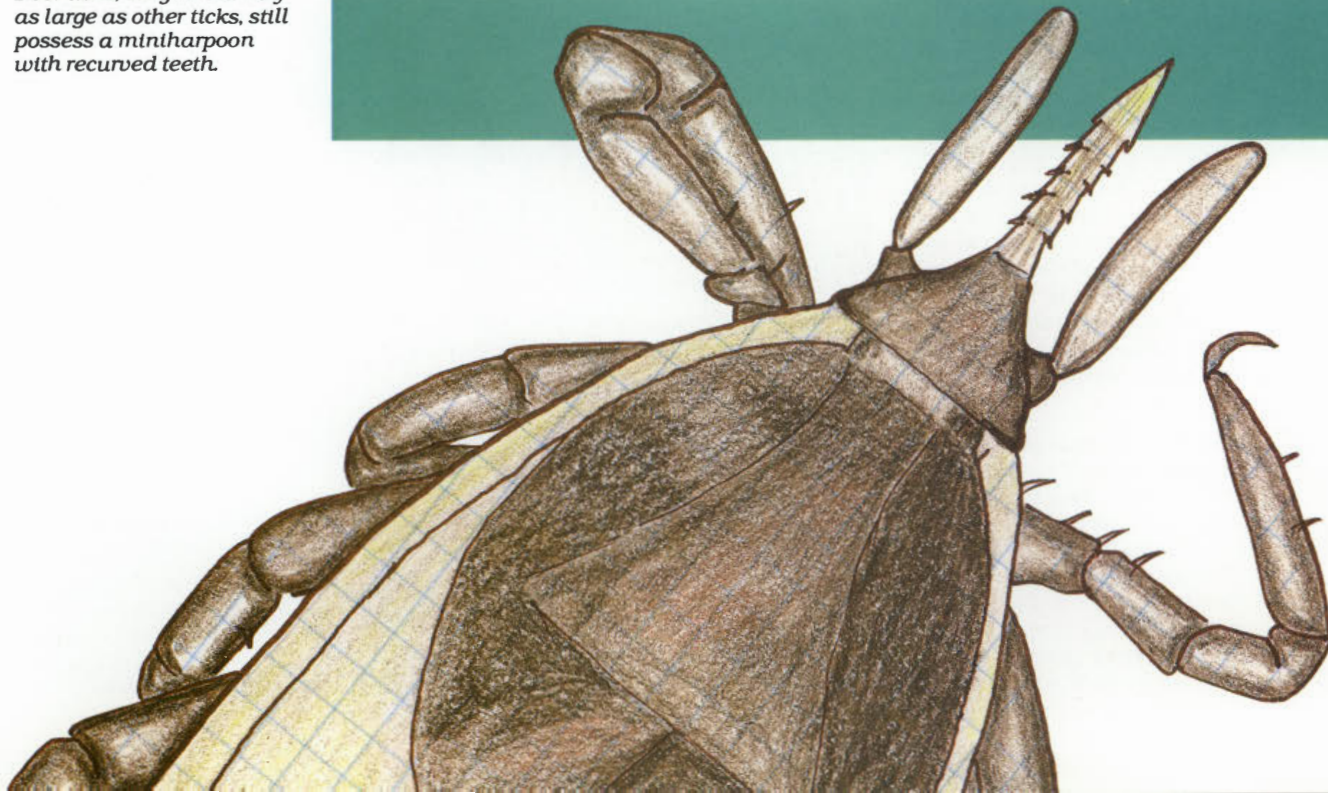
and the *Ixodes dammini* or deer tick. All three are known to transmit Lyme Disease. The Lone Star and American dog ticks also may harbor Rocky Mountain Spotted Fever.

On the subject of Lyme disease, we may be inadvertently neglecting an important family member who is more likely to contract it and less likely to receive timely diagnosis and treatment. Animal hospital technicians have reported a sizeable increase in the number of Lyme disease-infected canines suffering from stiff and sore joints caused by an arthritic condition. Unfortunately, the family dog is not able to tell us about his aching joints. Short of that, observe for signs of lameness, joint pain or decreased activity.

When you were a child, you learned how to cross the street or ride your bike safely by implementing the knowledge passed on to you by your parents. It's the same when you are in the woods. The best tick repellent is knowledge of the subject, followed by wearing light-colored clothing, tucking your pant legs into your tick-illuminating white socks, applying a good repellent, and frequent, thorough self-examinations.

As hiking and camping increase in popularity, exposure to wilderness creatures expands proportionately. To enjoy your parks and forests, make an effort to learn more about the critters that dwell there. Whenever you have questions regarding the wilderness, take "know" for an answer. 

Deer ticks, only about half as large as other ticks, still possess a mouthpart with recurved teeth.



DEP Lyme Study

By Barbara Maccarillo

Barbara Maccarillo, RN, debuts in this issue. She is Supervisor of Occupational Health Services, DEP Center for Occupational Medicine.

Although Lyme Disease is endemic in parts of New Jersey, the availability of medicines to treat it and the growing awareness of the disease by the medical profession and public are encouraging.

In the past, misdiagnosis was a concern. Physicians today know Lyme Disease can be present in varied ways and consider this in diagnosing and treating a patient's illness.

Persons contracting Lyme Disease often experience flu-like symptoms for a few days to a week after the infection takes hold. Symptoms of this nature, accompanied by a history of a tick bite or exposure to ticks, are reason enough for some physicians to prescribe antibiotics in anticipation of positive laboratory results for elevated antibody titers.

In greater than half the cases there is a diagnostic red "bull's eye" type rash, either at the bite site or elsewhere on the body. Should

the flu-like symptoms be so mild and the rash not appear, individuals may never consult a doctor during this early stage of the disease. The disease may lie dormant, quietly continuing to affect adversely the health of the infected person.

In the months to come, other symptoms may appear. Having forgotten the mild flu they may have had, most people see no connection between that and the arthritic-like joint pains developing. Lyme Disease can also lead to facial paralysis (Bell's Palsy) and cardiac complications. Lyme should be considered as a possibility in individuals who complain of joint pain or experience cardiac problems not normally associated with persons their age or those in generally good health.


The DEP Center for Occupational Medicine recently conducted an extensive study of over 700 employees to ascertain whether or not these individuals were at a higher risk of contracting Lyme Disease than was the general population. The study focused on natural resources employees but included others from units whose job duties frequently take them into areas where Lyme Disease is endemic.

Each employee completed a questionnaire designed to provide background information concerning hours worked outdoors, non-outdoor work hours, activities on and off the job, number and types of pets (particularly cats, dogs and horses), work and home locations, any prior history of Lyme Disease and recent medical history. The questionnaire was designed to detect if any correlation existed between the time and type of outdoor activities in which an individual participated and the incidence of Lyme Disease.

An educational component of handouts, a video and brief talk accompanied by a question and answer period was presented at each testing site. Education of the public and medical profession is an important key in helping prevent infection and cure the disease.

The data is being analyzed and not available at time of publication. The study has revealed slightly greater than five percent of those tested had titers for the antibodies, indicating exposure to the Lyme Disease spirochete.

Each participant with a positive antibody titer was seen at the center. A detailed history was taken and antibiotic therapy instituted. One month later blood samples were taken for repeat testing.

The study by the medical and support staff of the Center for Occupational Medicine was undertaken in cooperation with the University of Pennsylvania School of Medicine, Department of Epidemiology. 

During self-examination remember that the Lone Star nymph, most likely to attach to people from May through July, is small enough to fit through the eye of a needle.



Alan J. Stearne



First-time NJO welcomes to Camden County birders and professional photographers **Cynthia and Amor Klotzbach.**

ALIEN Landing



AC Photography

By Cynthia and Amor Klotzbach

New Jersey is again the focal point of alien visitation. No, this is not a sequel to the 1938 thriller so convincingly presented by Orson Welles in "War of the Worlds," though this alien is not human. It's not a martian invader but a friendly black swan from Australia. The alien landing site also has shifted, from Grovers Mill to the Edwin B. Forsythe National Wildlife Refuge, Brigantine Division.

Returning to a more earthly footing, let's talk about this visitor from "down under," *Cygnus atratus*. Because of its striking beauty, the black swan is a favorite "import" for zoos and private waterfowl collections. This particular bird most likely arrived at Brigantine the result of escaping from a zoo or private collection in the region. It's highly unlikely that this bird is a natural vagrant from Australia.

The swan was first observed by refuge personnel in March 1988. This is not the first sighting of this species in our area. Earlier appearances of these highly gregarious black swans include a pair at Heislerville during the 1970s that produced cygnets. A decade earlier, a single bird was observed at Wallworth Park in Haddonfield. You should capitalize on the chance to observe this beautiful bird at your earliest opportuni-

ty. If past behavior is any indication, the black swan's sporadic appearance may be punctuated by an equally unpredictable departure.

An Australian black swan is easily recognized anywhere in the world since it is the only species of swan that is essentially all black. The bird's overall dark appearance is brightened only by white flight feathers and its colorful red bill.

We keep referring to this bird as "it" because the sex has not been determined, according to the Brigantine refuge manager. There is some speculation that this particular swan may be immature. If this is true, the bird could become even darker in color as it grows older. The chance of eventually observing offspring from this "one of a kind" visitor is slim. Refuge personnel believe it highly unlikely that this bird will mate with one of the local swans.

Observation of this Australian black swan confirms a readily accepted fact: you never know what you're going to find when birding. When an unusual bird is found it can be exciting, whether it's an escapee, an accident (a bird far outside its normal or seasonal range), one that was dumped perhaps by an owner who lost interest, or one that paused briefly during regular migration flight.

Should you find an "alien" in an established nature area, report it to ap-


propriate personnel who can disseminate the information to other birders. New Jersey Audubon birding hot lines also are interested in unusual sightings. In north Jersey call 201/766-5787; in south Jersey, 609/884-2736.

Unlike the ominous connotation associated with the Orson Welles version, encountering an alien like the Australian black swan can be the pleasant highlight of your day.

Regulating Alien Rights

A permit is required in New Jersey to possess exotic animals such as the Black Swan. One condition of the permit requires that "animals must be kept in such a way that liberation is prevented."

Escaped exotics that proliferate can cause serious environmental problems by competing with native wildlife for food and breeding sites or by directly destroying sensitive habitat. Feral exotic wildlife can also spread disease, cause agricultural losses or damage human habitations and plantings. The escapee itself often suffers due to starvation or adverse weather conditions.

For information on exotic wildlife possession, permitted by the Endangered and Nongame Species Program in the DEP Division of Fish, Game and Wildlife, call 201/735-5450. 

OZONE

in the Air We Breathe



New Jersey Outdoors

By Joann L. Held

It's warm. You might even say hot. The mercury has climbed to 87°F, and the calendar reads any month from May to August. The sky is clear and bright with the sun blazing down on you. The still air brings no cooling breezes. Yesterday was hot and sunny too. Chances are good that there will be a lot of ozone in the air this afternoon.

This meteorologic scenario, common in New Jersey during typical late spring or summer days, is of great concern to public health officials. Ozone in the air we breathe can be harmful in large quantities. "But," you might be saying, "I thought we needed ozone. Isn't everyone worried about the lack of it, the ozone hole?"

The general confusion about ozone is understandable because there are really two ozone problems: the depletion of the upper stratospheric ozone layer and the excessive ozone found in "smog" at ground level. Depletion of the ozone layer in the stratosphere allows increased levels of ultraviolet light to reach the ground where it can cause skin cancer and hasten the formation of ground-level ozone. Increased ozone in the air we breathe can lead to serious respiratory and other health and environmental problems.

Ozone, a respiratory irritant, has its main effect on your lungs. When exposed to large quantities of ozone, you may experience difficulty catching your breath, have a tight feeling in your chest, feel like coughing and have irritation in your throat. Generally not very severe, these symptoms can be exaggerated in the elderly or anyone who already has an existing respiratory disorder. People involved in strenuous outdoor exercise, such as joggers or tennis players, are also more susceptible to these effects.

You can protect yourself from these potential health effects by being aware of days when ozone levels are high. The Department of Environmental Protection (DEP), in cooperation with the New Jersey Department of Health, issues press releases to radio stations and media outlets throughout the state to notify the public when ozone has reached or may reach unhealthful levels.

You can also find out about the day's predicted air quality by calling the DEP toll-free Air Quality Summary at 1-800-782-0160. When ozone levels are high, you may wish to follow the state's advisory to limit vigorous outdoor activities in the afternoon and early evening.

Ozone Control Strategies

Although a small amount of ozone occurs naturally at the earth's surface, higher levels of this pollutant are formed by the interaction of two man-made pollutants: volatile organic substances and nitrogen oxides. (See "Ozone—Questions and Answers" for a discussion of the relationship between these pollutants and ozone.)

Daily activities depend on and are surrounded by many sources (like the four pictured) of ozone-forming pollutants.

Celebrating her DEP 10th anniversary, **Joann L. Held** supervises the air quality section that addresses the technical issues related to acid rain, air toxics and ozone.

Because petroleum products such as gasoline are composed of volatile organic substances, petroleum processing and gasoline use have been of particular interest in the state's ozone control strategies.

Organic vapors are released into the atmosphere at every step in the petroleum marketing cycle. Beginning at the oil well, the cycle encompasses shipment to the refinery, the refining process itself, transport of refined products and refueling by the end user—the car or truck driver.

Emission controls have been developed for each step in this process, including tanker ships, storage tanks, refineries, and gasoline delivery trucks. The transfer of gasoline from gas station to motor vehicle is another source of emissions, filling both the tank and the air with vapors.

One control approach is to require a tight seal at the gasoline pump. Known as Stage Two Vapor Recovery, this system has already been adopted by the state. New nozzles with tightly fitting rubber boots have been installed at gas stations around the state. So far, about 2,300 New Jersey stations have been equipped with these systems. By the end of the year all large and middle-sized stations (based on volume of gasoline sold) will be using them. If these are working properly, you should not smell gasoline while your tank is being refilled.

After the gasoline is in your tank, it continues to evaporate and escape into the atmosphere. The volatility or tendency of the gasoline to evaporate can be limited by reformulating the fuel itself. This control strategy is particularly important in the summertime when ozone formation is at its high-



New Jersey Outdoors

OZONE
in the Air We Breathe
Continued on Page 23

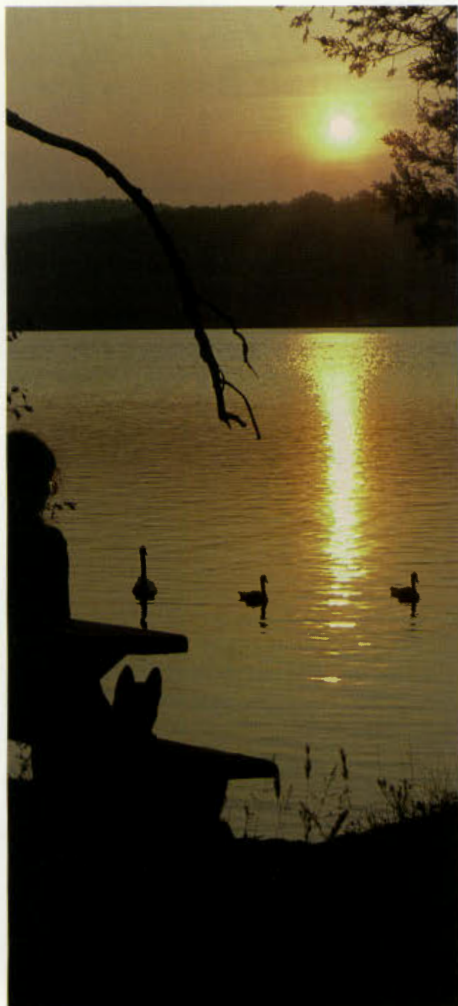
Swartswood State Park

Celebrates

SEVENTY-FIVE YEARS



Ken Oravsky



A Kittatnny sunset.



Sailboard in summer; iceboard in winter.

By Marianne Ofenloch and Karla Risdon

In New Jersey's 300,000-acre State Park System, the busiest season traditionally starts Memorial Day. Swartwood State Park is no exception, although the ground swell begins with April's good weather and trout season. Attendance and use of the park's 1,420 acres are as much as 16 times greater in "summer" than during other seasons.

Off-season visitors enjoy more relaxing and quiet visits, bright foliage in autumn, delicate ice artistry and winter's snowy mantle or spring's promise of young wildlife and fireworks of flowers.

The Leni-Lenape knew it as Payahalu. Today Swartwood Lake, named after the Swartwout family, is the focal point of Swartwood State Park. Its 519 acres reach depths of more than 50 feet. Little Swartwood Lake, second largest in the Sussex County park, covers 84 acres to a depth of 33 feet.

75 Years in the Making

The first park land was purchased in July 1914 when 14 acres of dry, water-

covered shoreline were acquired from George M. Emmans. "Emmans Grove Park" on Swartwood Pond is today the Emmans Grove Picnic Area. Swartwood Lake was purchased in 1915. Successive purchases included Snake Island, Little Swartwood Lake, two-thirds of Spring Lake, several small ponds and 828 acres acquired through the Department of Environmental Protection (DEP) Green Acres Program.

One of these many purchases included an old grist mill located on the southwestern tip of Swartwood Lake, where water spilling over the dam eventually flows into the Paulinskill River. This 1976 purchase included Keen's Mill, the Mill Pond and the dam. The present mill was built by the Keen family in the late 1830s on the site of several previous mills, including one built by Charles Rhodes just prior to the end of the Revolutionary War. Though the mill is closed to the public, this historic area is accessible all year.

Under the Sun, Moon and Stars

If you are not an avid historian and camping is your pleasure, then you, too, are in luck. Swartwood offers 70 shaded grass or fully wooded

campsites, suitable for six people or less. With a picnic table and campfire ring at each, a trailer dumping station, heated restrooms with hot showers, and laundry facilities (open April to October), your stay could hardly be called "roughing it." A campers-only boat launch, playground, and ballfield add to the recreational experience of the Swartwood camper.

Opposite the main park entrance are three group campsites near Duck Pond, which usually becomes a meadow during dry summer weather. Each has picnic tables, a fire ring and accommodates seven to 20 campers. Modern restroom facilities and water are located nearby.

Spend summer blanketed on a sandy beach or swimming in a sheltered cove of Swartwood Lake. This bathing area, open to campers and the public, is staffed by lifeguards from Memorial Day through Labor Day. Parking (including handicapped), restrooms with cold showers and changing rooms, and a concession stand are nearby. If you choose to pack a lunch, picnic tables (most with grills) and two shelters await you. Tables are also located in wooded areas near both playgrounds and along the lake shoreline. A limited number of picnic tables and grills are available near the boat launch at Little Swartwood Lake for those who prefer more peace and quiet.

Both Little and Swartwood Lakes traditionally have been favorite fishing areas for generations of anglers. Live bait is sold at the boat house, and you can fish from the shore or by boat. There are public boat launches at both and a launch for campers in the family campsite area. Personal Flotation Devices (PFDs) must be worn. Only electric motors are permitted. Canoe, paddleboat, rowboat and sailboat rentals are available late June to late September, from 6 am to 6 pm weekends and holidays and 10 am to 6 pm weekdays. PFDs are provided and must be worn.

The DEP Division of Fish, Game and Wildlife stocks both lakes with brown and rainbow trout and channel catfish. The Paradise Fishing Club stocks Swartwood Lake with brown trout and hybrid "tiger" trout. Lake fishing also includes species of bass, catfish, perch, pickerel, sunfish and smaller "baitfish." Fishing at Swartwood State Park is subject to Fish, Game and Wildlife laws and State Park Service regulations.

Hunting is offered seasonally, permitted in designated areas and in accordance with Fish, Game and Wildlife laws and State Park Service regulations. Eastern cottontail, ring-necked pheasant, wild turkey, ruffed grouse, waterfowl and white-tailed deer are among the wildlife with seasons.

Hiking trails and short footpaths permit the visitor to experience a quiet walk in the woods or a scenic view of the Kittatinny Mountains rising above Swartswood Lake's western horizon. Spring Lake Trail and the Equestrian/Cross-country Ski Trail comprise 2.5 miles of trail over old stone fence rows and through fields, pond communities, low-lying wetlands, mature deciduous forest stands, and hemlock groves. The Mill Trail, a 1.3-mile loop starting near Keen's Grist Mill, takes the hiker through fields and forests along a ridge above the lake's southeastern shoreline.



Mist settles over Little Swartswood Lake.



Safe boating begins with a PFD.

Residents and Visitors

You may encounter deer, red and grey squirrels, chipmunks, cottontails and opossums, as well as green, pickerel, and bullfrogs or painted turtles basking along the water's edge. The observant see raccoon, deer and bear tracks or evidence of beaver activity near the beaver lodge. Green and great blue heron silently stalk fish on the shoreline, while Canada geese, mallards, mute swans, wood ducks, and an occasional hooded merganser gracefully swim by. If you listen closely to the quiet songs between the crows' sharp cries, songbirds you might hear include warblers and sparrows, scarlet tanager, phoebe, wood pewee, wood thrush, mourning dove and owls. Red-tailed hawks, osprey and turkey vultures soar effortlessly across open water or fields.

Swartswood is an important migratory stopover in the spring and fall seasons. Many birds that do not reside

in the area may be seen as they travel seasonal migration routes. Bufflehead, ring-necked duck, scaup and the American coot, along with the lesser-seen common loon and the threatened pied-billed grebe, can be seen diving under the water in search of food. Watch for osprey circling above the water in search of fish, hear the high-pitched, shrill call of broad-winged hawks, in groups called kettles, as they ride the uplifting thermals, or study a kestrel sitting on telephone wires, scanning a bordering field for prey.

April to September Romances

Skunk cabbage, poking through the ground in early spring, produces enough heat to melt surrounding snow. However, it is the call of a tiny frog, the Spring Peeper, which heralds spring. Hundreds of frogs send their near-deafening chorus of song into the night from the wet fringes of Duck Pond and Little Swartswood Lake. The bloom of warmer weather flowers, such as violets, hepatica, dandelions, and periwinkle, follow soon. April showers bring mayapple, trout lily and rue anemone. Lady's slipper, false Solomon's seal, buttercups and Indian pipe precede summer's solstice.

In summer aquatic plants such as American lotus, fragrant water lily, and loosestrife blossom. The landscape is colored with clover, thistle, Queen Anne's lace, black-eyed Susan, bergamot, and a myriad of other wildflowers. Some of these, as well as goldenrod and smartweed, continue their flower show into autumn.

Water lilies dot the lakescape.



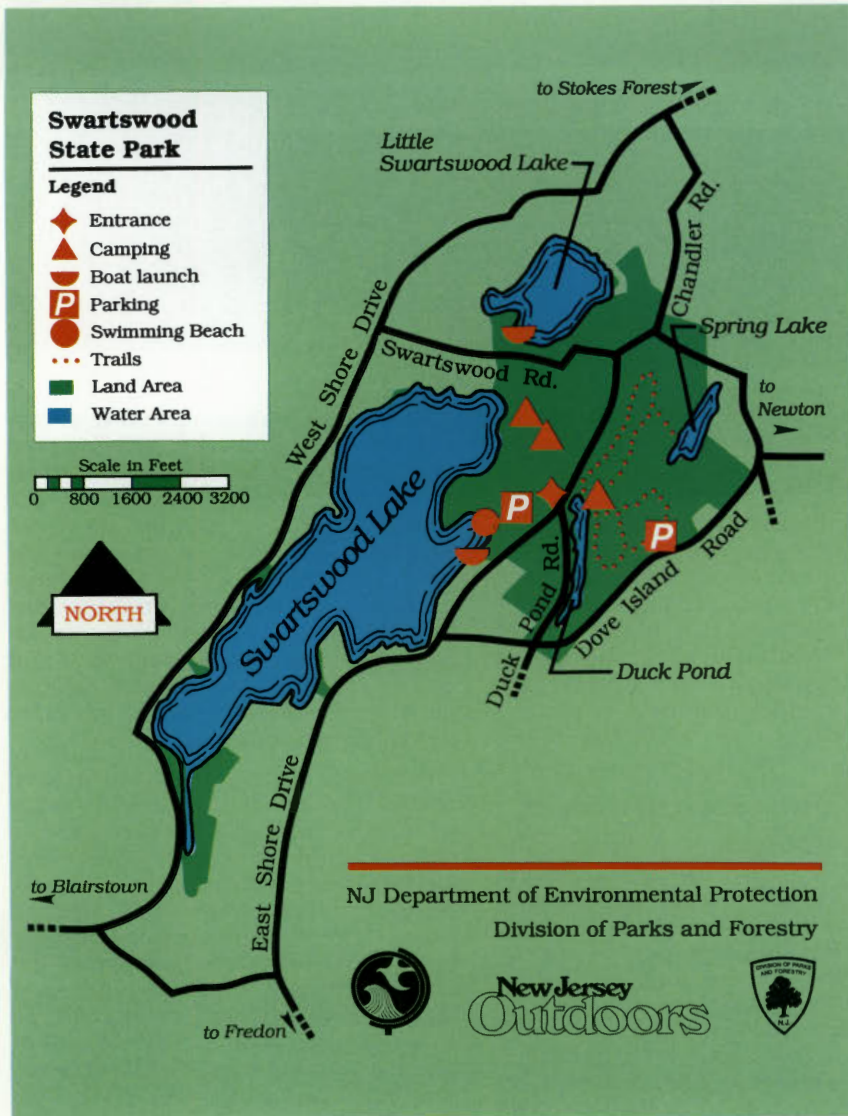
A variety of mushrooms make a summertime appearance, including the familiar white-speckled red toadstools of fairytales; *Amanita muscaria*, the hallucinogenic fly agaric; and the ominous *Amanita virosa*, otherwise known as the destroying angel. These fungi not only add color to the forest floor but also are highly toxic. It is best to observe mushrooms and wildflowers and refrain from picking them. Deadly or not, they would no longer be present for the enjoyment of others.

Forested lands in Swartswood harbor chestnut, red, white and swamp white oaks; red, silver, and sugar maples; sycamore; grey, yellow, and sweet birches; black walnut; willow; beech; white ash; cottonwood and bigtooth aspen; basswood; American and slippery elms; sassafras; bitternut and shagbark hickories; Norway and white spruces; red and white pines; and red cedar. An occasional tulip or yellow poplar tree can be seen while strolling through a hemlock grove.

Naturalist Programs

Guided walks through mature stands of hemlock and deciduous forest allow the park naturalist to explain the history of Swartswood and point out plant and animal communities. Free interpretive programs offered between Memorial and Labor Days on Wednesday and Saturday evenings are open to campers and park visitors. These programs incorporate nature and wildlife speakers whose illustrated presentations are as diverse as black powder riflery, mushrooms, wildflowers, birds of prey, endangered species, backpacking or history.


If you enjoy more active participation as well as listening, pack a lunch and join one of our weekly, naturalist-guided canoe trips. Each Thursday from late June to Labor Day, participants meet at the boathouse, travel from the northern coves to Swartswood Lake's southern tip, and observe the birds, plants and whatever flies, swims, grows or lives along the way. The beaver lodge and Keen's grist mill are favorite highlights.



Ken Oravsky

Winter—The Fun Never Ends

Swartswood in winter offers different recreational activities. Ice fishing, ice boating, ice skating, snowshoeing, cross-country skiing, sleigh riding, and winter camping (not really since the restrooms have both heat and hot water) in designated areas await your adventure. Wildlife, far from inactive, visually greet you. Cardinals, tufted titmice, chickadees, blue jays, pine siskins and the white-breasted nuthatch audibly are present. American coot, Canada geese and mute swans swim and feed in patches of open water. Lively squirrels, raccoon, white-tailed deer and an occasional shrew or mole, hunting and burrowing in the snow, pause to listen as your footsteps break through the crusted winter blanket. Berried plants, multiflora roses and viburnums add color to the usually drab landscape and provide food for wildlife when conditions are harsh.

Swartswood State Park. Something for everyone—aesthetic, recreational, educational, natural—no matter what the season. 

A Visitor's Guide to Swartswood State Park

Directions: The park is located approximately 65 miles west of New York City, 35 miles north of Morristown, and 70 miles north of Trenton in the southwest corner of Sussex County. Take Exit 25 off I-80, then north on Route 206. In Newton make a left at the 2nd traffic light, then a left at the next light onto Route 519. After one-half mile, make a left onto Route 622. About 4½ miles later turn left on Route 619. The park entrance is on the right.

Office hours: Open daily from 8:30 am to 4 pm in the off-season and in summer to 11:30 pm.

Camping regulations: The family camping area is open all year. Six people maximum per site, no hookups, no pets and no alcohol. Plan to lock your food away, or you may be visited by some of the local hungry raccoons or skunks.

To ensure a campsite in the summer, you can make reservations through the mail or in person for seven or 14 nights ONLY. Weekend reservations are not accepted in the summer, but two-thirds of the sites are available on a first-come, first-served basis.

Reservations can be made for both weekend or weekly stays from the day after Labor Day until June 14th. The fee is \$9 per night. Group campsites are available by reservation only. No minimum stay is required. The sites are open from April 1st through October 31st. The maximum number of people is 60 (20 for each of the three sites). In addition to the fee of 75¢ per person per night, there is a \$7 reservation fee for family or group sites.

Firewood: A limited amount of firewood is sometimes available. Since it is not plentiful, it is best if you bring your own or purchase it locally. The trees of

Swartswood (and all state parks) provide shade, beauty and wildlife habitat. They are not for campfires!

Admission fee: Admission, charged from Memorial Day weekend through Labor Day, is \$5 per car weekends and holidays, \$3 per car weekdays, and free on Tuesdays. The \$35 New Jersey State Park Pass allows cars free entry if the state facility is not already full. Bus groups must reserve a spot in advance with the office. Buses are not permitted on weekends, holidays or Tuesdays.

For boat rental information, call 201/383-4200. Swartswood State Park does not sell fishing or hunting licenses. For further information or a park brochure, contact:

Swartswood State Park
PO Box 123
Swartswood, NJ 07877-0123
201/383-5230

OZONE

in the Air We Breathe



New Jersey Outdoors

Better daily planning and improved mass transit would keep some of these VOS sources off highways, resulting in improved air quality.

est level. Regulations limiting gasoline volatility have been adopted and are scheduled to take effect in New Jersey this summer.

Ozone control must also include products used at home. The average home contains about 42 aerosol cans containing paints, air fresheners, pesticides and deodorants. Many of these products contain solvents, used as propellants to carry the active ingredient from the can to the spot where it is needed. These solvents are chosen because they evaporate quickly, quickly into the air that is.

Steps have already been taken to decrease the emission of volatile organic substances (VOS) and nitrogen oxides (NOx) from large New Jersey industrial sources. Pollution control devices have been installed at thousands of sources to comply with DEP rules and regulations. This has been fairly straightforward compared with the task of reducing the emission of VOS and NOx from cars, trucks, buses and other motor vehicles. Motor vehicles contribute 48 percent of the VOS and 58 percent of the NOx emitted into the air.

Motor Vehicles and You

Since 1974 New Jersey has had mandatory inspection of tail pipe emissions at Division of Motor Vehicle Services inspection stations. Each year about 4.6 million vehicles are tested for hydrocarbon (another name for VOS) and carbon monoxide emissions. Of these, about one million fail. During this same period, the federal government was setting more stringent emission standards which auto manufacturers must meet. Even with all of these programs, motor vehicle emissions are still responsible for 50 percent of the ozone problem in the state.

What more can be done? Since cleaner auto emissions alone are not enough, we must find ways to limit the number of miles driven. The number of vehicle miles traveled annually reached 57 billion in 1988, a 19 percent increase in the last decade. Comprehensive planning could reduce the distance driven to work and stores. Since 1970 the number of vehicles on the state's roads increased by more than 50 percent. Better public transportation would get some people out of the 4.6 million cars and into buses and trains for the daily commute. Car and van pools are effective in reducing the number of cars on the roads, but studies show that 60 percent of north Jersey residents who commute to work in the state drive alone. The number of vehicles is now too much for the highways and atmosphere to handle!

Environmental issues such as waste disposal, water pollution, hazardous waste site cleanups and radon have captured considerable media attention and public interest. Yet ozone air quality has been and continues to be one of our most serious and persistent environmental problems affecting public health.

The DEP will be proposing additional regulations and programs to control industrial source, automobile, and consumer product emissions. Public support, understanding, and cooperation will be necessary if we are to apply these strategies successfully and provide more healthful air.

We are all part of the problem, and we must participate in and contribute to its solution. Reduce the amount of your daily driving (especially from May to September) and keep your car's engine well tuned. You can also share with others your knowledge of the problems we face with the ozone we are breathing



48%

Vehicle Emissions



19%

Solvent Usage



25%

Industrial Processes



8%

Petroleum Production

VOS
Emission
Sources

on the surface of this troubled earth.

Solving the ozone problem is the subject of "Cleaning Up Ozone—Can We Afford Not To?" We urge you to borrow this DEP videotape, available beginning the first week of June, for group viewing. Working together strategies become solutions, and we may all breathe better.

To reserve the ozone videotape, request single copies of the brochure "Ozone in the Air We Breathe," or obtain more information on ozone, call 609/292-6722 or write:

DEP Bureau of Air Quality
Planning and Evaluation
401 East State Street
Trenton, NJ 08625-0027

Ozone - Questions and Answers

What is ozone? Ozone consists of three chemically bound oxygen atoms (O_3) instead of the two found in an oxygen molecule (O_2). Unlike the oxygen we need for respiration, ozone is very reactive and tends to breakdown many substances exposed to it.


What is the source of ozone? Unlike most pollutants, ozone is not emitted directly but forms as a result of the chemical reaction of precursor pollutants in the presence of strong sunlight. The two most important precursors are volatile organic substances (VOS) and nitrogen oxides (NOx).

Where are VOS found? Organic substances are chemicals containing carbon atoms. Volatile organic substances (VOS), organic substances that readily evaporate, are found in gasoline and other petroleum products. Many industrial and commercial processes are large sources of VOS. Consumer products such as paints, pesticides, air fresheners, and deodorants also contain VOS.

What are the NOx sources? Nitrogen and oxygen, the two most common gases in the atmosphere, can react to produce nitrogen oxides (NOx). However, this reaction occurs only

when the temperature is high. Internal combustion engines (such as car engines) produce temperatures hot enough to form NOx. Combustion of fossil fuels (such as coal and oil) and various industrial processes also produce nitrogen oxides.

When and where are ozone levels high? Weather and pollution emission patterns determine which parts of New Jersey will experience high ozone concentrations. Just as the smoke from last year's forest fires in North Carolina clouded New Jersey, ozone is an atmospheric pollutant that illustrates a transport phenomenon. Precursor pollutants emitted in one area are blown by prevailing winds elsewhere and chemically react there.

Although unhealthy levels occur statewide, the values recorded in northeastern New Jersey and areas downwind of metropolitan Philadelphia (the transport phenomenon) are generally the highest in the state. The DEP operates 14 ozone monitors throughout the state. In the summer of 1988, the worst year nationally for ozone this decade, ozone reached unhealthy levels at one or more of these monitors on 45 days, an increased health risk one out of every three days. 

NJ Department of Environmental Protection
Division of Environmental Quality

New Jersey
Outdoors



OZONE

in the Air We Breathe

Free Fishing Days

By Laurie Pettigrew

"I think I got one!" Amy cried, her fishing rod bent double. "Keep that rod tip up," yelled an instructor. "Don't give him any slack. That's it, keep reeling, slowly ... slowly."

"Wow, look at that trout!"

Amy's beautiful brown trout was caught during a fishing lesson at the Pequest Trout Hatchery and Natural Resource Education Center on "Free Fishing Day." Free Fishing Days, the result of 1986 state legislation, allow two days each year when anyone can fish in New Jersey waters without a fishing license.

New Jersey's two 1989 Free Fishing Days will be held June 10 and 11 during National Fishing Week, June 5-11.

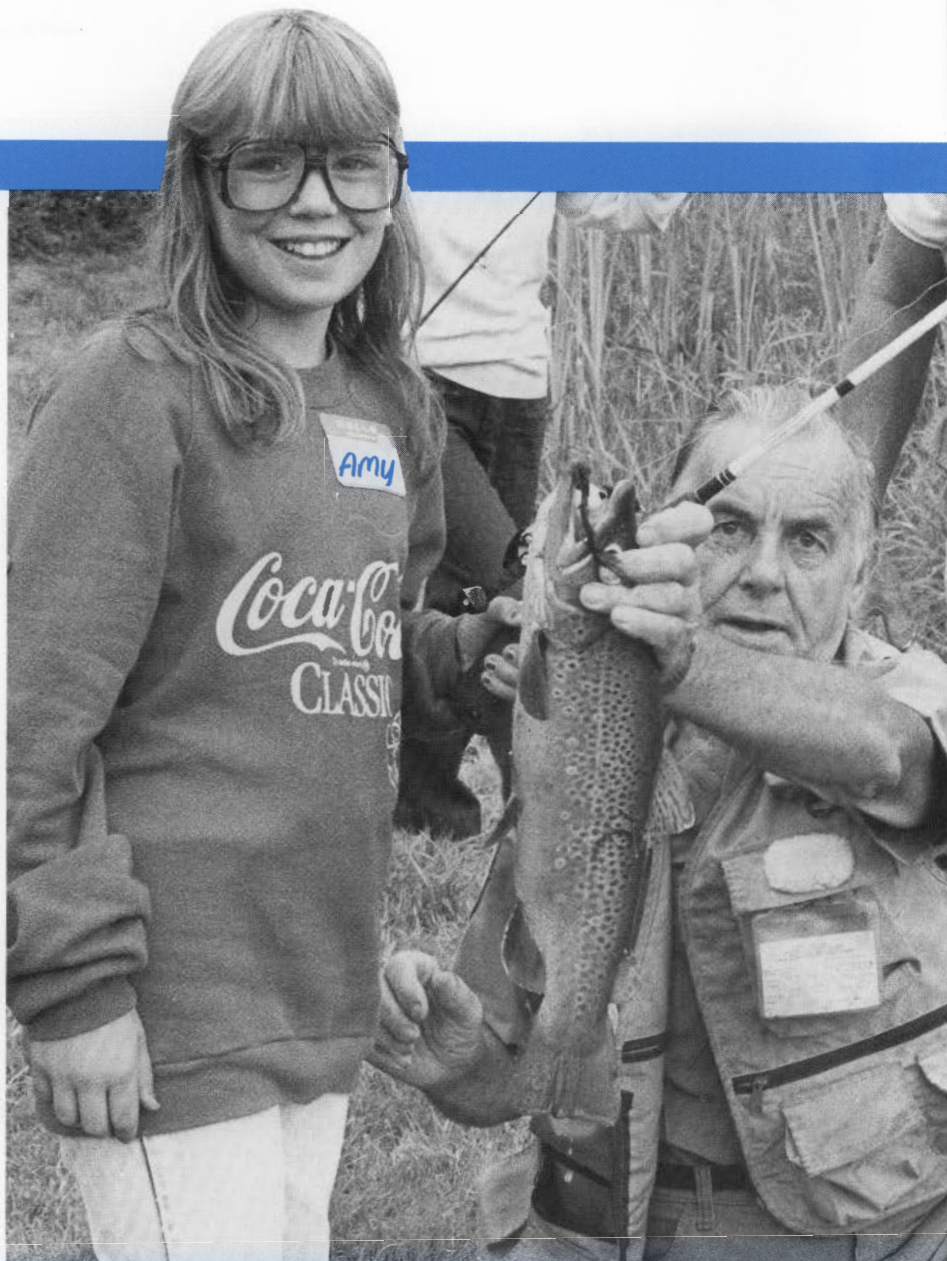
"Like a free trial offer," said David Chanda, Information and Education Chief for the DEP Division of Fish, Game and Wildlife, "this is the perfect opportunity to discover the pleasures associated with fishing."

The division administers Free Fishing Days. Although the license requirement is waived, all other rules and regulations regarding size and bag limits must be obeyed.

Fishing is America's second favorite outdoor sport, with more than 60 million Americans angling. An excellent family activity that is relaxing and entertaining, learning to fish properly fosters a responsible attitude toward natural resources, reinforces the importance of clean water and a stable environment, and instills a sense of appreciation for the outdoors. For children of all ages, fishing teaches patience, builds observational skills and provides an opportunity to get in touch with themselves.

Kids can make a simple rod with a stick, a thin piece of string, a hook and a bobber. A typical fishing outfit consists of a rod, reel, tackle box and a few lures, with many stores offering reasonably priced rod and reel combinations. Buying them in combination assures the angler of getting a "balanced" rod and reel that work well together.

To get the proper equipment visit your local tackle shop. The proprietor there is a source of information on what equipment is best, where to go fishing and what bait to use.



Fish, Game and Wildlife

With Free Fishing Days just around the corner, plan on taking advantage of the special events held around the state during National Fishing Week or on Free Fishing Days. Sportsmen's groups sponsor local fishing derbies, tournaments, seminars, demonstrations and lessons.

An Angler's Fest will be held at Pequest on June 10 from 10 am to 4 pm. There will be hatchery tours, fishing lectures and lessons, displays and fly-tying demonstrations. Registration for lessons is required. For information, call 201/637-4125 or write:

Free Fishing Days
Pequest Trout Hatchery and
Natural Resource Education Center
RR 1, Box 389
Oxford, NJ 07863



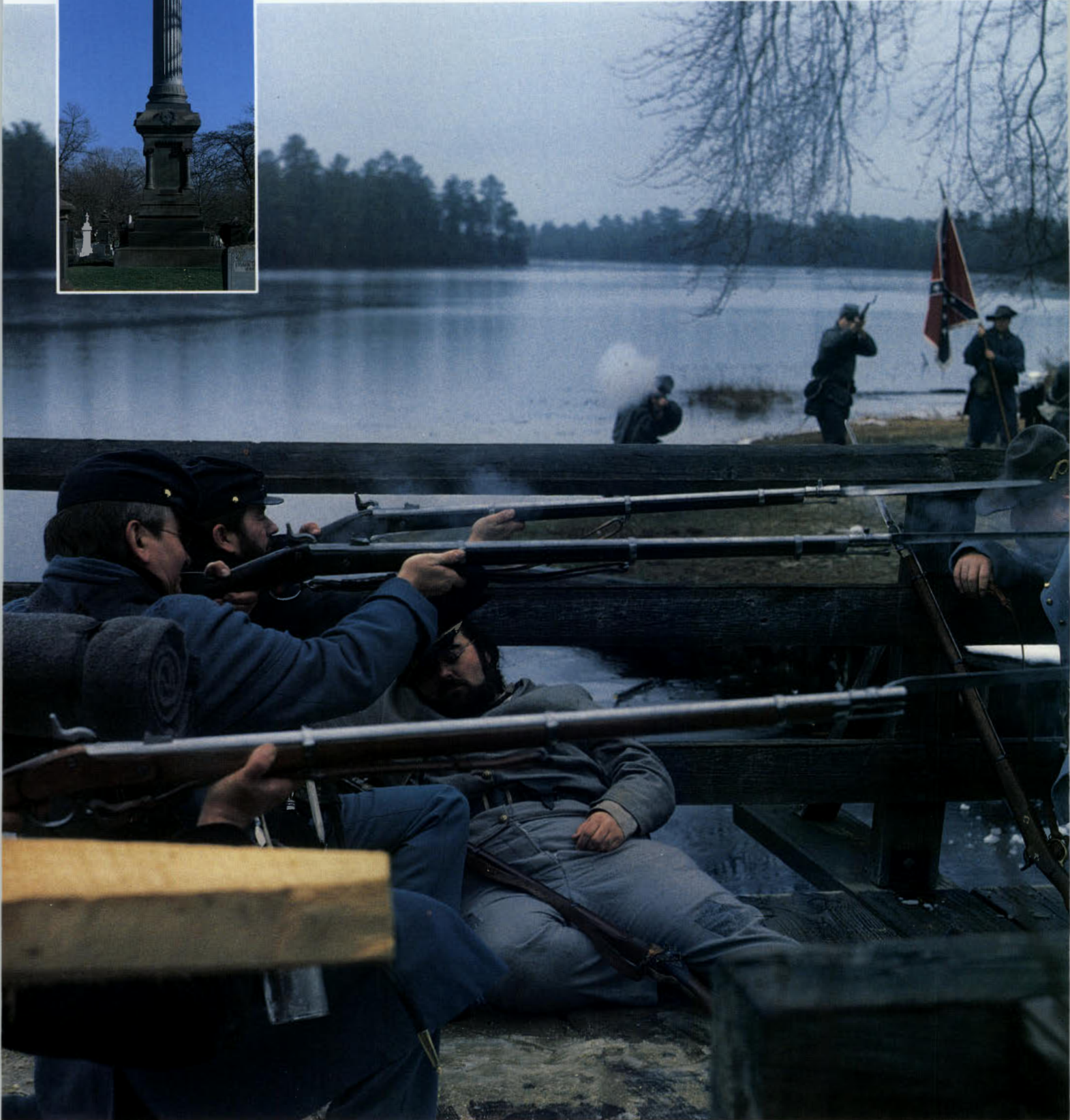
*Wildlife Conservation
Corps volunteer Joe
Richkus helps Amy
Howard with her catch.*

Senior biologist **Laurie
Pettigrew** is Education
Coordinator at Pequest
Trout Hatchery and Natural
Resource Education Center.

Riverside Cemetery (Trenton) monument to Gen. George B. McClellan, Commander of the Union Army of the Potomac.

Hundreds of reenactors, like these of the 12th NJ infantry and the 12th Georgia volunteers, will bring Civil War history to life at Batsto Village.

Photographs by author



“Betwixt and Between” on Entering the Great Rebellion

By Richard D.L. Fulton

The Great Rebellion or Southern War of Independence, also known as the War of Northern Aggression, began in April 1861 with the shelling of Fort Sumter by Confederate forces, although gunfire had already been exchanged between the opposing forces four months earlier at Fort Barrancas, Florida.

Militarily, the War came to a close in November 1865 with the surrender of the last armed Confederate raider, the *C.S.S. Shenandoah*. Confederate land forces had already “stacked arms” the preceding June.

Officially, however, the end came August 20, 1866, when an end to hostilities was declared by Union President Andrew Johnson, who had replaced slain President Abraham Lincoln. Thereafter, the five-year war was no longer referred to by its period names but by the names invented during the post-war years—Civil War and War Between the States.

Collectively, both sides buried more than half a million soldiers during the War. Tens of thousands more would die during the post-war years from wounds or from medical complications resulting from wounds. In addition, tens of thousands were maimed, blinded, or became legally insane due to brain damage received in combat or from the sights they had seen. The Great Rebellion resulted in more American casualties than all wars engaged in by Americans from the American Revolution to Vietnam added together.

So horrendous was the War that mythology was generated almost immediately to glorify and explain the aggression of the victors. One of the most persistent post-war myths was that it was fought for or against slavery, a rather odd contradiction since northern states continued to allow slave ownership after the cessation of hostilities. The South could have kept its slaves, according to the terms offered by the Lincoln Administration,

had the Confederate Army laid down its weapons any time before the end of the War. Indeed, even the Emancipation Proclamation only liberated those slaves engaged in, for all intent and purposes, (through their labors) supporting the Confederate war effort.

It is unlikely New Jersey would have entered the War on the Union side had slavery been the determining factor on which side a state fought. New Jersey had been a slave-holding state prior to, during, and after the gunfire had ceased between the opposing armies.

Historians claim that the Garden State only had about a dozen slaves still in bondage after the Confederate surrender. These numbers are somewhat obscured by the fact that New Jersey slave holders began listing their slaves as apprentices, beginning in 1846, for census purposes. It remains nearly impossible to sort out slave apprentices from free apprentices in an attempt to gain insight as to the state's true slave holdings.

One might presuppose that south Jersey would have had a higher slave population than north Jersey. Actually, the opposite was the case, and most slaves were held in bondage in the middle and upper tier of counties in the state. South Jersey had been largely settled by Quakers, opposed to owning slaves.

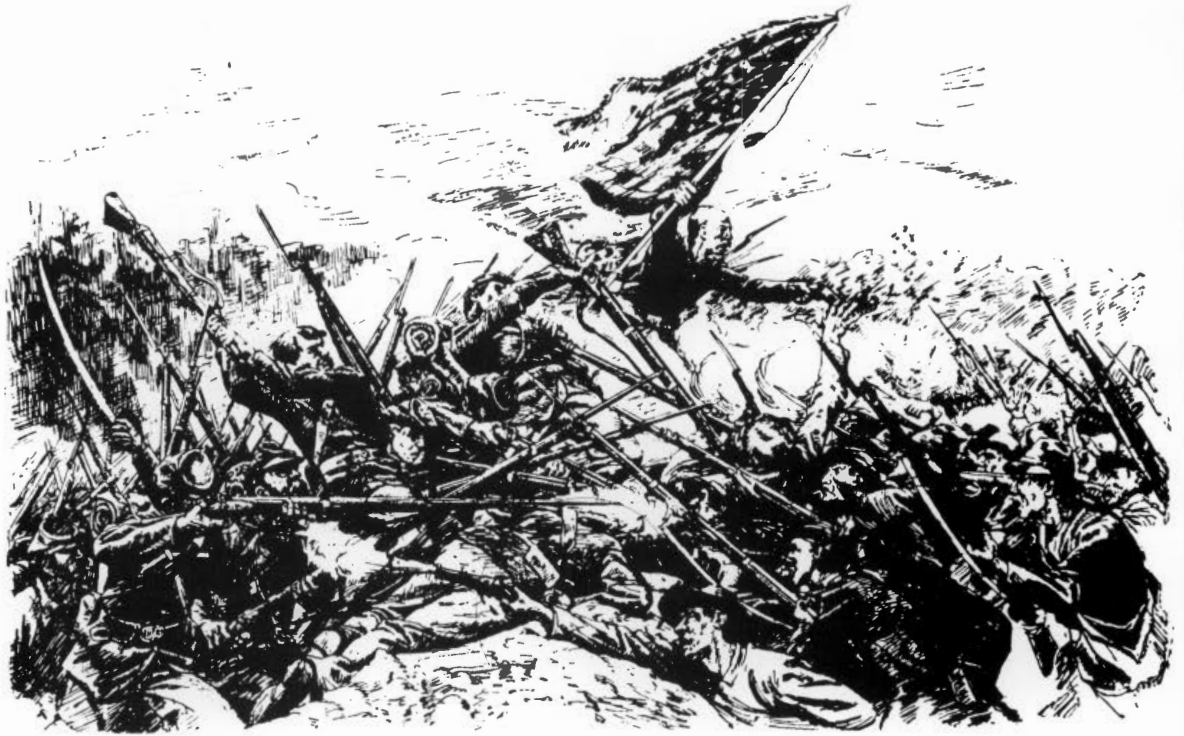
Ten years before the Great Rebellion, records show that 75 slaves resided in Monmouth County, 41 in Bergen, 31 each in Passaic and Somerset, 19 in Morris, six in Essex, three in Hudson, two in Warren and one each in Sussex and Atlantic. These numbers, of course, do not reflect slave identities obscured by listing them as apprentices. With this in mind, it seems unlikely New Jersey would have committed her troops to abolish that which she freely engaged in even after the cessation of armed hostilities.

With the commencement of secession of the Deep South, New Jersey was torn “betwixt and between” which side of the issue to support.



***"We are in favor of peaceful dissolution,
and opposed to all measures of coercion.
If the Union cannot be preserved without
shedding the blood of our brethren, it
cannot be preserved at all."***

Hunterdon Democrat, January 2, 1861



Five New Jersey regiments were instrumental in the Union's "Bloody Angle" victory.

The South courted her as a member of the Confederacy. An advertisement placed in the *Newark Evening Journal* by a Confederate agent promised that New Jersey would become the manufacturing center for the Confederate States and Perth Amboy (a major port at that time) "would be(come) the rival of Philadelphia and the equal of any port in the Southern States in commercial business." Perth Amboy apparently liked the concept. The *New York Tribune* wrote soon after that the "town of Perth Amboy is infested by a knot of Secessionists, who, not content with talking treason, have at length begun to outrage loyal citizens."

New Jersey was, in fact, leaning so precariously toward siding with the Confederacy that former Garden State Governor Rodman M. Price warned that "the National Men of New York will if they have to march go East (into New Jersey), rather than South, to hunt down the inciters of revolution."

A second option given serious consideration in New Jersey, other than casting her fate with the Deep South Confederacy (the Upper South had not yet seceded), was the establishment of a "Central Confederacy" comprised of mid to eastern Pennsylvania, a portion of New

York, and possibly Maryland and Delaware. That this was being entertained as a viable option was reflected in the March 14, 1861, issue of the *New Brunswick Times* editorial which stated "sooner or later, the Border states will either unite with the Cotton States, or with other States and form a third or Central Confederacy." The *Times'* editorial further stated, "So far as our State is concerned, we have no doubt she (New Jersey) would at once take position with the conservative men of the Border States."

The *Times'* editorial continued in a manner which truly represented the state's "betwixt and between" sentiments. "New Jersey has no feelings in common with the ultraists of the (Deep) South, who have been laboring for years to destroy the Union, and she has no sympathy with the ultraists of the North East, who are abolitionists at heart, and whose fanatical notions lead them to imagine that they are 'doing God (a) service,' in carrying out doctrines which they know will dissolve the Union."

There was also a strong faction of Republicans who felt the secession movement should be curtailed whatever the price. Ocean County was so disgusted with it all that there

Author of "The Victory at Trenton" and "Franklin Marble," DEP press aid **Rick Fulton** will don a gray hat to participate in the Bloody Angle reenactment.

was talk of seceding the county from New Jersey and the Union and establishing an independent country. The Toms River *Ocean Emblem* reflected this opinion in an editorial which stated "may be necessary to secede from the Union In short we have all the elements of independence. There is no reason why we should not become a great and happy people. Let us (Ocean County) secede." There can be little doubt why, early on, the ensuing conflict was labeled the "Great Rebellion."

The affiliation question aside, New Jerseyans struggled with the possibility of a hostile, combative situation. What would New Jersey do when triggers were pulled and gun powder obscured the legal arguments of Constitutional disputes of state versus federal powers?

The *New Jersey Herald* was among many newspapers in the state which felt armed confrontation was to be avoided even if it meant dissolving the Union. "The only alternative presented therefore is peace or war The Southern people . . . (are) merely intent upon a quiet separation of their personal interest from our own To make war upon our Southern neighbors, who have compelled to this act in consequence of Northern aggression . . . is at variance with every principle of humanity, and will find but few advocates."

What then was the cause of such a Southern-leaning state entering the War of Southern Independence on the side of "Northern aggression?" It was indeed the shelling of Fort Sumter. Until then it appeared, if superficially, that the Union could be "divided up" and differences settled by the establishment of possibly several independent nations.

The Lincoln Administration wanted the final "show down" and purposefully baited the Deep South into engaging in gunfire. The perpetrated event, the attempted reprovisioning of Fort Sumter and the predictable Southern resistance under the circumstances, achieved Lincoln's desire. The "American" flag had been fired upon. It jolted New Jerseyans, as it did most states undecided in their stand.

The shock wave resulting from the casualtyless assault on Fort Sumter (the single Union casualty occurred after the surrender during a salute) invoked a remarkable change on New Jersey residents who had hoped for a bloodless solution to the state of affairs.

New Jersey Supreme Court clerk Charles Perrin Smith observed, "Suddenly there flashed over the wires, 'The Flag is down, and the Fort in Flames!' Then burst forth the long-pent patriotic enthusiasm! The cities suddenly became resplendent with flags." Until that moment, New Jersey was willing to dissolve

the Union, but only peacefully. Now, however, a deeper emotion prevailed. The nation had become a house divided against itself, and so did New Jersey as the state sent its armed masses to fight against Southern brethren.

WILDERNESS—SPOTSYLVANIA 1864-1989

This year, thousands of reenactors will recreate historic battles of the Great Rebellion which occurred during the year preceding the end of the conflict.


In tribute to Union and Confederate soldiers buried in New Jersey soil, as well as to honor New Jersey soldiers who fought for the Union and the Confederacy, a three-day event will be held at Batsto Village, Hammonton. On August 11, 12 and 13, the 125th Anniversary of the Battles of the Wilderness and Spotsylvania Court House will be commemorated.

Beginning May 5, 1864, the Union Army of the Potomac and the Confederate Army of Northern Virginia clashed in the forests and on the rolling hills of Virginia from the Wilderness to the outskirts of Spotsylvania Court House. Over 50,000 casualties were left in their wake. More than 200 wounded soldiers were burned alive when the Wilderness caught fire from the battle.

The culmination of the 15-day struggle was climaxed by the storming of the "Bloody Angle" by five New Jersey volunteer infantry regiments along with four regiments from other states. The charge resulted in a major breach in the Confederate defenses outside of Spotsylvania Court House, forcing the Southern Army to fall back.

On August 12 the Battle of Wilderness Tavern will be recreated at Batsto featuring hundreds of Union and Confederate troops. The planned two and-a-half hour battle reenactment will be one of the longest single battles in reenacting history. On August 13, there will be an hour and-a-half reenactment of the clash at the "Bloody Angle." More than a hundred feet of breastworks will be constructed for this battle.

Also featured will be period crafts, demonstrations, military drills, Union and Confederate military camps, and medical and period ministry encampments.

The event is being sponsored by the 12th Georgia, Company G, in cooperation with the Department of Environmental Protection. The Friends of Batsto have developed a special one-day (August 12) cancellation for the Batsto Post Office to commemorate this historic reenactment. Further information will appear in the July/August Calender of Events. 



Mullica Hill Cemetery epitaph recorded his death in Virginia during the Peninsula Campaign.

Unknown but not forgotten Civil War veteran buried in Riverside Cemetery.





Golden Anniversary

By Kevin Wright

Baron von Steuben.

"Windjammers on the Hackensack," B. Spencer Newman's painting of the Steuben House operating as a trading post in 1835.



A faint tapping in the quiet of an evening is but Johannes Ackerman, cordwainer, fastening heel to sole. The chilly breeze passing the stoop is Jan Zabriskie stepping briskly to the mill, grabbing his coat and crying, "Yo! Ebb tide! Start the wheels grinding!"

Steuben House has many voices. Here the winter soldiers crossed from Fort Lee on "the bridge that saved a nation" enroute to Pennsylvania. Colorful colonial figures associated with the Steuben House include Lord Cornwallis, General Stirling, Light Horse Harry Lee, Mad Anthony Wayne, General Washington and Baron von Steuben, the Prussian Inspector General who received the estate in gratitude for his services in training and organizing the Continental troops.

I am not an impartial observer. As resident curator, I know every closet and corner, each tale and tiding of the grand old mansion upon the tidal bank of the Hackensack. The mansion house itself, fashioned from an estimated 230 tons of hand-hewn bedrock, has stood an inescapable sentinel at New Bridge for 276 years. Built low to the ground with dark reflective eyes of hand-blown glass shaded by a bell-shaped cedar bonnet, it remains a model of the distinctive sandstone architecture of the Dutch Colonial style so predominant in Bergen County. Inside, a remarkable collection of local furnishings recalls the county's founding families and pioneer homesteads.

At a corner of the porch stands a sturdy red oak, our State Tree, planted as a sapling in 1939 to commemorate the dedication of Baron Steuben's Jersey estate as a museum and as one of our nation's most endearing Revolutionary landmarks. On Saturday, May 21, 1989, ceremonies at the Ackerman-Zabriskie-Steuben House will celebrate the Golden Anniversary of a Partnership in Pride: the operation and care of this landmark by the Bergen County Historical Society, a volunteer association organized in 1902, and the DEP Division


A Partnership in Pride

of Parks and Forestry, steward of New Jersey's historic and natural resources.

When the Bergen County Historical Society and the Historic Sites Commission dedicated the Steuben House on September 23, 1939, German invaders were closing in on Warsaw. Big guns dueled on the Franco-German front. At the Ortinani Theatre in Hackensack "The Wizard of Oz" had its premiere. Two-pound bags of Eight O'Clock coffee sold for 29 cents. A four-bedroom house in Teaneck, with two baths and a garage, was selling for \$5,500.

Dedication of the Steuben House commenced a two-week celebration of the Hackensack Valley Tercentenary. Acquisition by the state had taken several years, as the family of William Randolph Hearst, who had purchased it for starting an ink factory, wanted "a Tammany Hall price for the place." In October 1928 the state took title, having paid Hearst \$14,000 for the house and one acre. Emergency repairs and restoration, interrupted by the Depression, were completed with state funds and the labor of a Works Progress Administration (WPA) crew in 1938.

Later that year the state invited the historical society to occupy the restored landmark as their museum headquarters. Since 1942 the curator's salary and all costs connected with the Steuben House have been borne by the state. Many of the historical artifacts on display are of local manufacture and use. Period furnishings, including valley cupboards, kas, chairs and settees, are displayed with local slip-decorated redware, antique dolls and toys, textiles, indian artifacts, folk art, and accessories of everyday life in early New Jersey. Handiwork made for the 1939 celebration is still found in the house a half-century later.

The Steuben House, 1209 Main Street in River Edge, is open Wednesday to Sunday till 5 pm. For information, call 201/467-1739 or address inquiries to: Bergen County Historical Society, Box 55, River Edge, NJ 07661, or call 201/343-9492. 

Rutgers graduate **Kevin Wright**, Steuben House curator for eight years, previously worked at Waterloo Village, Stanhope. This is his first *New Jersey Outdoors* appearance.

Bergen Dutch furnishings circa 1790-1835 include a 1799 Mourning Piece of President Washington.

The Golden Anniversary Celebration on May 21, which includes exhibits, living history demonstrations, crafters and food, runs from 11 am to 5 pm. Music of the 18th century will be presented by Linda Russell and Companie on instruments of the period, beginning at 1 pm. Outwater's Militia and the 4th NJ Volunteers, a Tory group, will perform. The 3 pm ceremony marking the anniversary features a "Feu de Joie" and planting of a second commemorative red oak.

Admission is \$2 (children under 12, \$1). The Steuben, Demarest, and Campbell-Christie Houses, open throughout the day, display the largest collection anywhere of Bergen Dutch artifacts of early American life.



Deborah Powell
May/June 1989

Elusive Butterflies





By Phil Moylan

A brilliant burst of orange flashes by, settling among the leaf litter from last fall's shedding. Ahead tiny sparkles of blue flutter about the damp ground as you walk the wooded trail. Dark, sombre-colored movement catches your eye as an object circles amid the tree canopy and then, floating, alights on the bark of a riparian silver maple only to sit lazily in the warming, mid-morning sun.

This may seem like a child's dream or a fanciful passage of artistic license. Yet no one need imagine this. A short, quiet walk with adventurous eyes in the early spring mature woods of New Jersey will initiate the innocent into the world of the butterfly.

It is a spring ritual for me—the rebirth of the butterfly world from winter's lethargy. In mid-April brilliant rays filter through local hardwood forests since the leaf clutter of summer has not yet appeared. The sun falls constantly on last fall's leaves, and the world beneath comes alive with color and aromas. When the odiferous spicebush's small yellow flowers bloom along woodland streams, it is time to see Comma, Spring Azure and Mourning Cloak butterflies.

These three pioneers are a feast to our eyes as they reappear with fresh color and renewed energies. Some have been sleeping or hibernating through the winter as partly grown

caterpillars or larvae, while others emerge as they hibernated—as adults. These creatures sleep tight until the ambient temperature and abundant, early spring light become adequate to warm their cold-blooded bodies.

As early as March and as late as November adults can be seen “winging it” across field and meadow, in swamps and bogs and even in the darkness of a summer forest. Truly, as a family, these beautiful creatures are ubiquitous and can be found in almost any type of habitat. While you may not see most of the many diverse and relatively abundant species within any one season, let alone the whole year itself, most can be located through preparation and research.

A guide can assist you in determining where and when to look for butterflies. It also helps clarify the distinctions of habits, seasonality, abundance, variation in color and size, duration (adults frequently will not last two to three weeks beyond emergence from the pupa or cocoon), the number of “broods” or groups of adult emergence and, most important to this observer, habitat.

With New Jersey's rapid loss of undeveloped land and its destruction of open fields, meadows and woods, the issue of habitat becomes even more important to the butterfly enthusiast. Finding *unmanned* public lands for hiking and observation of our prettiest group of insects has definitely become more difficult in the last decade. This is not to say that there still aren't areas which excite one with their abundance and diversity of but-

Photographs by author

Red Spotted Purple.

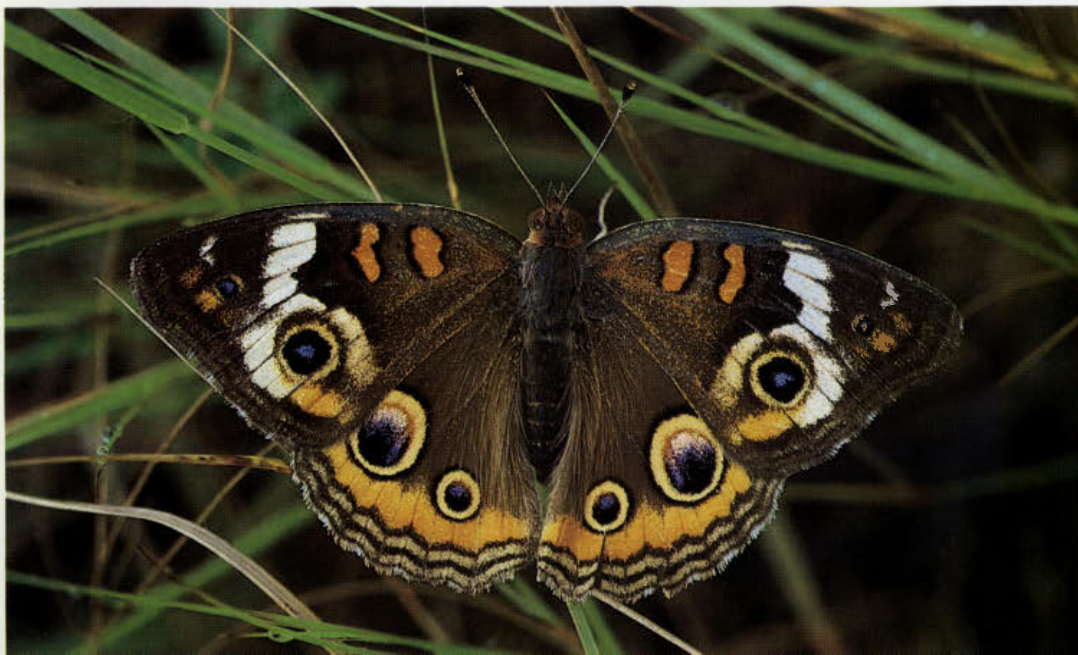
(facing page, top) Caterpillars of this American Copper feed on sorrel.

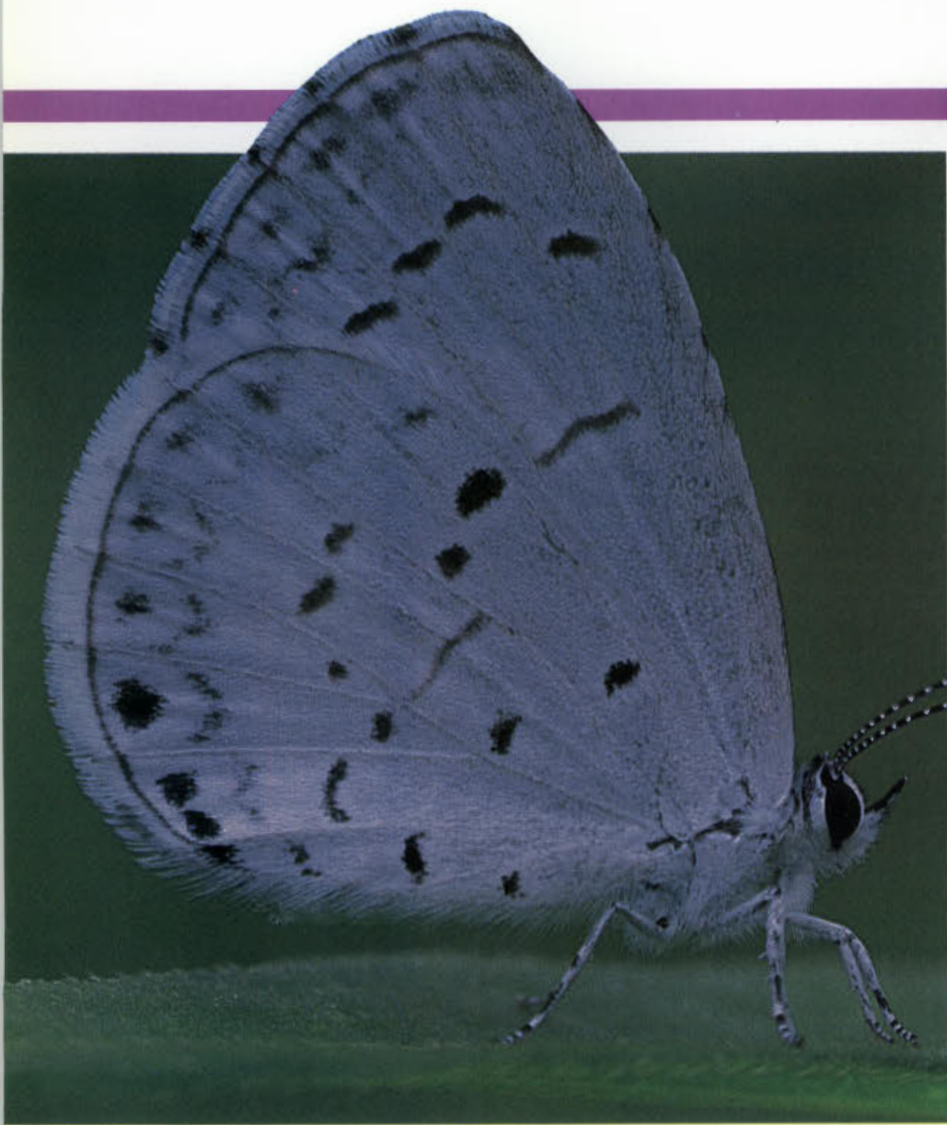
(fp, left) The Monarch caterpillar feeds exclusively on milkweed.

(fp, center) A barrel-shaped chrysalis or cocoon holds the Monarch pupa stage.

(fp, right) The nectar diet of this dew-covered Monarch adult includes goldenrod. The metamorphosis from egg to adult Monarch unfolds in about four weeks.

(below) Strikingly colored, the Buckeye is a swift flier if disturbed.

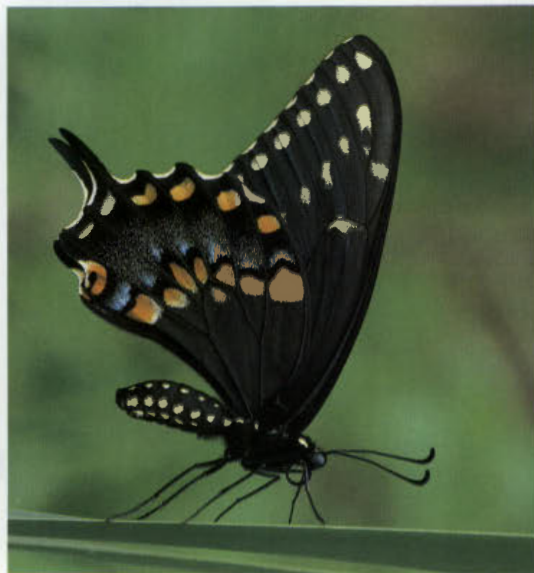




terflies. Still to be found are parklands, refuges, and even wilderness areas which give us the opportunity to explore. Yet some species are endangered in the state, particularly the Hessel's Hairstreak found only in Atlantic cedar swamps or bogs in the Pinelands. This species would be further threatened by development of our fragile Pinelands and, without adequate protection, would be lost from our state forever.

Although butterflies seem abundant, their single most important need is habitat and the plants and flowers associated with that habitat. Continued destruction of specific environments, particularly the freshwater and coastal marshes, the Atlantic White Cedar bogs and the Northern Spruce bogs, will eliminate certain dependent species and reduce the numbers of many others.

Many species have extraordinarily restrictive and precise needs when it comes to where they spend their time and on what they feed. The Baltimore Checkerspot, an insect so perfectly named since its colors are that of its namesake Baltimore Orioles (the team) and the Baltimore or Northern Oriole (the bird), resembles a chessboard. Infrequently seen although at times abundant, this gorgeous, medium-sized species has singular requirements of habitat and can only be found in freshwater marshes and swamps. More correctly, it survives only wherever Turtleheads or False Foxgloves grow, though there is no



guarantee that where you find the plants you will find the butterfly.

Why these plants? The Baltimore caterpillar prefers the succulent juices of these plants and few others. This vegetation is found solely in wet or damp areas near freshwater ponds and marshes. Another peculiarity is that the adults hatching from the cocoon or pupa the first week of June live no more than two to three weeks, if that. Following this extremely brief period, you no longer find Checkerspot adults flying. They have laid their eggs for next year and died. No wonder few naturalists and butterfly lovers ever see this species.

When it comes to distinctive life history, the Baltimore wins many awards since few species are so extreme or unique in all of these characteristics. Most of the more popularly known Monarchs, Swallowtails, Buckeyes, Painted Ladys and Red Admirals have very specific requirements in some areas but may be generalist in others. Many people know, for instance, that Monarch caterpillars feed exclusively on milkweed leaves but as adults have a varied flower nectar diet including thistles, goldenrods and asters. Compare its mimic, the almost as familiar Viceroy. As a larva it prefers willows for sustenance but, less limited in its tastes than the Monarch, also feeds on aspen, cherry and apple leaves.

The adult Viceroy rarely feeds on flowers and is essentially non-migratory, whereas the spectacular movement of Monarchs each fall to the mountains of Mexico and Central America is a celebrated North American event. Don't think that the Monarch, though "king" of the North American butterflies, is a lone participant in the annual fall festival of latitudinal movement! The Buckeye and several species of Sulphur butterflies, that join the king in great abundance from mid-September into early October, are not built for the rigors of such a monumental "south of the border" journey. The Monarch leaves these smaller comrades behind in the southern United States.

Butterflies come in many sizes and not all are as colorful as their larger counterparts. The group of generally tiny, moth-like species called skippers are so abundant at times they far exceed all other species combined in a particular area, except maybe the pearl Crescent-spot. Frequently passed over by the uninitiated as "only moths," they are, in fact, members of the same family and deserve as much consideration and attention.


One of my greatest butterflying pleasures occurs on early or late summer mornings, before the sun has risen. I grab waders or old bluejeans and boots and walk in a fallow,

uncut, grassy field and search among the vegetation with camera or magnifying glass for dew-covered insects. People take for granted that butterflies are found in open meadows on warm sunny days. I find it somewhat impersonal if I can't look a butterfly eye-to-eye.

It's remarkable that insects, cold-blooded as they are, perch all night on vegetation and only take flight when the sun's rays have raised their body temperature sufficiently. Before this happens, take the opportunity to explore the grasses and see how many species you can find. It's not easy!

Another humbling experience is to have a butterfly drink the salts from the perspiration on your hand and refuse to leave, even after careful nudging with your finger. This happened to me with another beauty, the Red Spotted Purple. After roaming one early morning in one of my favorite haunts, a local grassy field, I had started to my car but noticed from the corner of my eye a splash of color. Sitting in the early, windless morning amidst a thick, green hedgerow was a lovely example of this medium-sized insect. A female prepared to lay eggs on some cherry trees, the plant her caterpillars rely on for food. I noticed that it wasn't startled by my motion, as most species are, and slowly slipped a finger under its keenly sensitive feet, resting it on the palm of my other hand. For more than three minutes it sat contentedly lapping up my sweat and wouldn't budge.

Though not common, such experiences regularly occur with some species, while others are wary or even pugnacious. The Red Admiral traditionally alights on the gardener's shoulder. I have seen this many times, though don't expect it to happen on your first meeting. The Question Mark, Gray Comma and other species of "angelwings" become so involved with feeding on tree sap or rotting fruit that a person can get within inches of them. Perhaps nothing is more exciting than to be accepted as part of the landscape by a wild and free creature.

There are two distinct but subtle mental approaches to the adventure of butterfly watching. You may actively research and plot your course to a specific species or group, or you might wish to experience the more leisurely, serendipitous style and simply enjoy what you find. The latter, one I have a strong predilection toward, is more akin to a child's approach. With it comes a clarity of interaction with the "bigger picture" via this "smaller world" of motion and color, bringing better understanding and solutions to our stressful lives. 

Photographer and naturalist **Phil Moylan** is a first-time contributor. His bird photography has been featured in National Wildlife Foundation's "Ranger Rick," Audubon magazine and on Audubon calendars.

(facing page, top) The Spring Azure sometimes emerges when snow still covers the ground.

(fp, left) Sulphur butterflies often gather to drink at mud puddles.

(fp, center) Black Swallowtails frequent cultivated flowers and open meadows of clover.

(fp, right) The American Copper is a meadow and roadside dweller.

(below) False Foxglove supports a pair of mating Baltimore Checkerspots.



Calendar

May

- 13-14 9TH ANNUAL CARVING AND WILDLIFE ART SHOW, demo and sale. 10 am-6 pm. Somerset County Environmental Education Center, Lord Stirling Park, Basking Ridge. 201/766-2489.
- 14 WYANOKIE PLATEAU HIKE overlooking the Wanaque Reservoir, moderate to strenuous 6-miler. 11 am, Weiss Ecology Center, Wanaque Reservoir. New Jersey Nordic Ski Club. 201/335-9599.
- 14 APPLE PIE HILL HIKE. 15-mile Skit Branch and Batona Trail. *Bring trash bag to pick up litter.* Carranza Memorial, 7 mi. SE Tabernacle, 9 am. Outdoor Club of So. Jersey. 609/546-7644.
- 14 CANOE THE MULLICA 5 hrs. to Pleasant Mills. NOT for beginners. 9 am, Atsion Ranger Station, Rt. 206. OCSJ. 215/288-3331.
- 17 DIVING OFF THE NEW JERSEY COAST. Learn shipwreck/artificial reef diving hotspots on the Jersey sea floor. 7:30 pm. Pequest. 201/637-4125.
- 19-21 CAPE MAY SPRING WEEKEND. NJ Audubon Society and Cape May Bird Observatory. 609/884-2736.
- 20 GREAT SWAMP BIKE TOUR. 19 miles of fun, exercise and swamp ecology. 10 am-2:30 pm. Morris County Outdoor Education Center, Chatham. 201/635-6629.
- 20 NATURALIST HIKE Washington Crossing State Park 5-miler. 1 pm, Nature Center, Titusville. Prereg. req. 609/737-0609 (W to S).
- 20 CANOE THE OSWEGO. 9 am, Pine Barrens Canoe Rental, Rt. 206, 8 mi. S of Chatsworth. OCSJ. 609/985-6172.
- 20 BATSTO NATURE HIKE. Moderate Batona Trail 8-miler. 9 am, Batsto Village parking lot, Rt. 542, Ham-monton. OCSG. 609/859-8160.
- 21 NJ 10-MILER AND RITE OF SPRING 5K RUN, Cooper River Park. 8 am. Camden County Parks and Recreation. 609/695-PARK.
- 21 STEUBEN HOUSE GOLDEN ANNIVERSARY CELEBRATION (p. 30).
- 21 DOUBLE TROUBLE HIKE, moderate Cedar Creek Trail 10-miler. 10 am, Double Trouble State Park, Keswick-Pinewald Road, Bayville. OCSJ. 609/468-4849.
- 21 BIRD IN HAND demonstration of migratory bird banding. 8 am. Kateri Environmental Education Center, Wickatunk (Marlboro Twp.). S2. 201/946-9694.
- 21 POND/STREAM SPLISH-SPLASH! Explore freshwater pond/stream inhabitants. 10:30 am-noon. \$3. Kateri. 201/946-9694.
- 26-28 MARINE AND ESTUARINE WILDLIFE TEACHERS WORKSHOP, Seaville. Classroom, field and sessions "afloat." \$65 (RU credit, \$77). F, G and W. 609/441-3815.
- 27-29 EAST COAST STUNT KITE CHAMPIONSHIPS, on the beach in Wild-wood. Greater Delaware Valley Kite Society. 609/429-6260.
- 27 FEATHERED FRIENDS, 6-11 year olds explore the world of birds. Games, demos, observation. 1-3 pm, Washington Crossing State Park Nature Center. 50¢/child. 609/737-0609.
- 28 MYSTERY CENTURY. 100-mile flat-land pines tour. 8 am, Taunton Forge Shopping Ctr., Taunton and Tuckerton Roads, Medford. OCSJ. 609/546-0956.
- 28 PAULINSKILL VALLEY TRAIL HIKE, easy 5-miler. 10 am, Halsey parking lot. Rts. 519/526 junction, 4 mi. N of Newton. NJNSC. 201/356-3289.
- 10-11 SMALL BOAT FESTIVAL. 10 am-4 pm. Berkeley Island County Park, Brennan Concourse, Bayville. Ocean County Parks and Recreation. 201/370-7380.
- 11 FORKED RIVER MOUNTAIN HIKE. Moderate 9-miler. 10 am, Lacey Road at Penhook Road, 9 mi. SW of Whiting. OCSJ. 609/654-8159.
- 13 TOURNAMENT OF CHAMPIONS EQUESTRIAN EVENT for learning disabled and physically handi-capped. East Freehold Park, Kosloski Road, East Freehold. 8 am-4 pm. MCPS. 201/842-4000.
- 17 INDIANS AROUND THE CAMPFIRE. Big Foot and White Dove tell stories about the Lenne-Lenape, once in-habitants of the Pequest Valley. 8 pm. Pequest. 201/637-4125.
- 18 ORCHID HIKE to Martha's Pond on the Oswego. Wet and mucky 8-miler, bring footwear change. 10 am, Harrisville Pond, Rt. 679, 13 mi. S of Chatsworth. OCSJ. 609/386-9068.
- 21 THE BLACK BEAR IN NEW JERSEY. Update on wildlife management of New Jersey's largest mammal. 8 pm, Pequest. 201/637-4125.
- 24 HIKE AND SWIM SUNFISH POND. Hiking boots a must for 7-miler. NJNSC. 201/852-9325 for start and time.
- 24 INNERTUBING ON THE WADING, Harrisville-Beaver Branch. 2-hour float, 20 min. walk back. 10 am, Harrisville Dam, Rt. 679, 11 mi. S of Chatsworth, 7 mi. N of New Gretna. Sierra. 609/267-7052.
- 25 BAGGING THE BIG GAME BUGS. 1-3 pm bug safari for kids 6-12. Pequest. 201/637-4125.
- 25 5TH ANNUAL RIVER FESTIVAL, New Bridge Landing Park, River Edge. 11 am-5 pm. 100th anniversary of the New Bridge over the Hackensack River. Music, tours, crafts, restored antique boats. \$3 (\$1 under 12). Bergen County Historical Society. 201/343-9492.
- 28 TUBE FLOAT Cedar Creek's crystal clear waters. Noon, Double Trouble State Park. OCSJ. 609/547-0377.

June

- 3 CANOE JAMBOREE, Turkey Swamp Park, Georgia Rd., Freehold Twp. 10 am-5 pm. Clinics, demos, games, tryout models, antique canoe parade. MCPS. 201/842-4000.
- 3 MOUNTAIN LAUREL/TURKEY BEARD HIKE, Batona Trail 10-miler. 9 am, Lebanon Forest Ranger Station, Rt. 72, 1 mi. E of Rts. 70/72 junction. OCSJ. 609/859-8160.
- 3-4 MOUNTAIN LAUREL WEEKEND HIKE. MCOEC. 201/635-6629.
- 5-11 NATIONAL FISHING WEEK (p. 25).
- 7 PYRAMID MOUNTAIN HIKE. Naturalist-guided 3-miler. MCOEC. Prereg. req. 201/635-6629.
- 9-11 FRESHWATER ENVIRONMENT AND WILDLIFE TEACHERS WORKSHOP, Branchville. Pond, stream and wetlands field activities keyed to Aquatic WILD. \$65 (RU credit, \$77). F, G and W. 201/637-4125.
- 9-11 9th ANNUAL PINE BARRENS WEEKEND. Naturalist-guided field trips. One-day or weekend fee. NJ Audubon Society. 609/261-2495.
- 10 MEADOWLANDS BIRDWALK. 8:30 am, HMDC Environment Center, Lyndhurst. 201/460-8300.
- 10 ANGLERS FEST. Tours, displays, demonstrations and fishing lectures. 10 am-4 pm. Free lessons—reg. req. Pequest. 201/637-4125.
- 10-11 FREE FISHING DAYS.
- 6 CEDAR CREEK TUBING. 1½ to 2½ mi. clean water float. 10:30 am, Double Trouble State Park. Sierra. 609/267-7052.
- 15 MOONLIGHT HIKE. 7-mile high crossing in the pines. 7:45 pm, Carranza Memorial, Rt. 532, 7 mi. SE of Tabernacle. Flashlight, snack. Sierra. 609/267-7052.

July



“Get the Scoop” on Ozone

From the news desk of
WTVZ in Atlantic City:

“Scientists have reviewed data, gathered recently during the flight of the space shuttle Discovery, concerning the ozone layer. It appears that ozone in the stratosphere that surrounds Earth 12 to 30 miles above the planet’s surface continues to be decreasing.

Ozone screens out much of the sun’s high energy ultraviolet light, which is a major cause of skin cancer. If the ozone layer continues to decrease, the cases of skin cancer could rise sharply.”

From the news desk of
WGLJ in Newton:

“The county health department has reported an increase in breathing ailments during this week-long heat wave. Scientists from the DEP Bureau of Air Monitoring reportedly have identified the cause

for these health problems as ozone.

The amount of ozone in the air we breathe has increased dramatically in our area due to the heat, increased vacationer traffic, and westerly winds carrying industrial emissions (*gases or vapors*) from northeast Pennsylvania.

State officials recommend that people, in particular the elderly or those with respiratory conditions, not participate in heavy outdoor exercise at this time, especially in the afternoon and early evening.”

(Both WTVZ and WGLJ are fictitious television stations.)



What is your Ozone I.Q.?

Having read the news reports, answer the following questions:

If you answer correctly

- four or five questions you are airtight.*
- two or three questions your head must be in the clouds.*
- one question or none you are a potential airhead.*

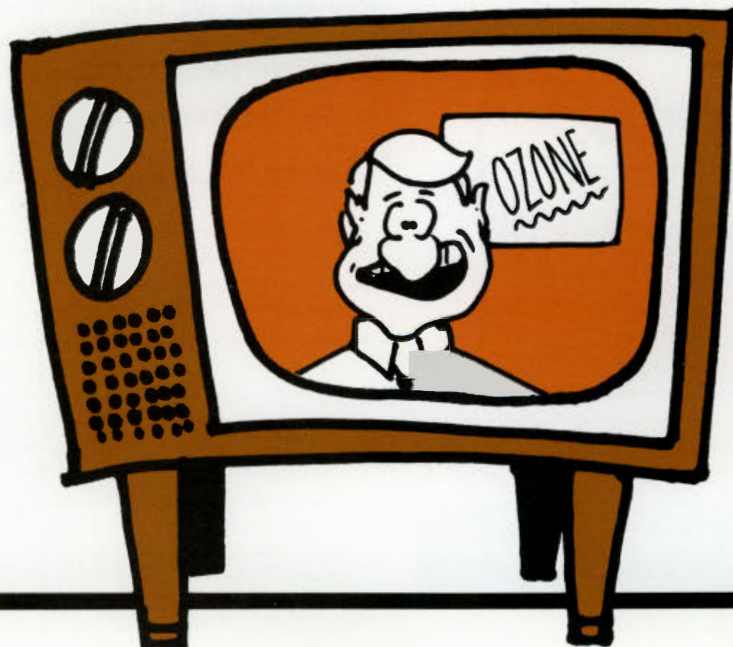
1. Ozone can be found

- a. in your closet and under your bed.
- b. high above the earth as well as on the earth’s surface.
- c. three hundred feet below the earth’s surface.

2. When people breathe large amounts of ozone they might

- a. feel sick in their stomach.
- b. fall asleep.
- c. feel like coughing.

(continued on next page)



What is your Ozone I.Q.?

(continued from previous page)

3. Ozone in the stratosphere protects the earth from
 - a. ultraviolet light.
 - b. asteroids.
 - c. extraterrestrials.
4. Ozone in the air we breathe is created mostly by
 - a. solid waste, emissions from wood burning stoves and rain.
 - b. industrial emissions, gasoline vapors and sunlight.
 - c. water paints, glue and snow.
5. If the ozone in the stratosphere continues to decrease, scientists say
 - a. the earth will return to the ice age.
 - b. people will want to travel more.
 - c. the cases of skin cancer will probably increase.

Ozone Recipes: An Explorer Challenge

Like the potions of the Wicked Witch of the West, ozone has many ingredients, all of which are invisible gases. However, there is one basic recipe to make the ground-level ozone that:

- causes choking and coughing
- reduces resistance to colds and other respiratory illnesses
- irritates eyes
- deteriorates rubber and paint
- damages fruit and seeds
- injures and kills crops and trees
- changes wildlife habitat and reduces food sources

Basic Recipe for Making Ozone:

Combining Nitrogen Oxides with Hydrocarbons in Sunlight on Hot days makes Ozone.

Nitrogen Oxides + Hydrocarbons + Sunlight + Heat = Ozone

What are the sources of nitrogen oxides?

NO and NO₂ come from high temperature combustion (burning) of oil, gasoline and coal. However, this process can occur naturally when lightning unites both nitrogen and oxygen.

What are the sources of hydrocarbons?

The shimmering vapors that come out of the nozzle of a gasoline pump are hydrocarbons. Hydrocarbons also come from oil refineries, gasoline storage tanks, dry cleaning plants, smokestacks, car exhaust, oil paints, pesticides, and spray air fresheners or deodorants.

Now you are ready to identify other ozone "recipes." Here are two examples:

1. Cutting the lawn with a gas powered mower on a hot sunny day.
2. A sunny hot day when cars are traveling on the NJ Turnpike near refineries.



I.Q. Answers:
1.b, 2.c, 3.a, 4.b, 5.c

From Our Readers

In response to "Suburbia—Too Many Deer or Too Many People" in your January/February '89 issue. It is interesting to note that all of the illustrations given by the authors are from places other than Princeton—this includes the "deer damage" photos. The photos were taken in Chester and Mendham, towns that allow hunting deer with firearms. In addition, the pumpkin farmer referred to in the article, who lost his pumpkins, is from Lawrence Township which allows deer gunning. The tragic accident where three young people were killed also took place in Monmouth County where deer hunting is not limited. If the situation is so much worse in Princeton, why did the authors choose to demonstrate the problem in areas that still allow gunning? The answer is obvious—the problem of too many deer is not unique to Princeton—it is a problem all New Jersey residents experience.

All citizens pay increased collision insurance premiums due to deer/car accidents and we all pay increased farm prices due to deer damage and the only ones who benefit are hunters.

Schneider and Kuser have pointed out the wrong culprit. Indeed the deer are a problem only because they are managed by the Division of Fish, Game and Wildlife whose sole purpose is to INCREASE the deer herd for recreational and self-serving interests since their funding base is directly tied to licenses sold.

Nancy Kern
Princeton

Photos of Princeton Township deer damage were supplied by the authors. The artwork used was selected by NJO staff for the variety of damage illustrated and how well it would be reproduced during printing. Dr. Kuser, a professional forester, told the editor, "The same type of damage on the same species does occur in Princeton, and I can show it to you." Though not in Princeton, the damaged nursery stock photo was on property that lies only a few hundred yards from a refuge area where hunting is not allowed. Foraging deer do not stop at municipal or refuge boundaries.

All areas of New Jersey do not have deer problems. Too many deer is increasingly problematic where population and development are explosive and hunter access is prohibited. In the 15 years after Princeton enacted its no-discharge-of-firearms ordinance, there was a five-fold increase in roadkills. These statistics take into account increased population and traffic; without, the increase was six-fold. A 500 percent increase in deer-car collisions has not occurred anywhere else in our state.

Closing lands to hunting allows herds to increase virtually unchecked, as deer have no innate self-regulating mechanism that suppresses breeding as populations grow. As long as the social carrying capacity (the number of deer people accept in an area) is exceeded, deer-related problems escalate.

This renewable resource is managed to maximize the recreational value but limit it to meet farmer needs, agricultural interests and other land uses of concern to people. Antlerless deer hunting permits are issued to DECREASE herd size. In Mercer County during the 1988/89 seasons, hunters took 1,361 antlerless deer, 991 antlered. Statewide more antlerless deer were taken than antlered, a measure that reduces deer numbers. The data do not support your statements.

All of us—not just hunters—derive enjoyment and benefit from the deer presence. As forests disappear and roads, buildings and "pretty" landscaping cover fields, measures to lessen property damage and collision insurance rates are necessary. Were these increasing herds Norway rats, skunks or snakes, eradication would be the clamor. In the absence of natural predators, overprotection of deer (a measure not afforded other wildlife or livestock) is not supported by logic or biological principles.

John Carr of Lakehurst, a long-time subscriber, shared with us a copy of a letter sent to his grandfather, Charles L. Rogers of Lakehurst, from the State of New Jersey Fish and Game Commissioners. The October 27, 1905, letter stated:

Yours of the 19th received. I beg to advise you that I had already listed you for some deer this fall, and if we are able to get them, I will send at least one half dozen to your neighborhood. I will be glad to hear from you any time on the subject, especially as to whether or not there have been any deer seen within fifteen or twenty miles of your place during the past year.

*Yours very truly,
Benjamin P. Morris
President and Treasurer*



FISHIN' & FRIENDS
It's Catching On
NATIONAL FISHING WEEK
JUNE 5-11, 1989

As a life-long resident of New Jersey, I want you to know I enjoy your magazine. You reveal areas of NJ many people are unaware of. As a hunter and fisherman, I also enjoy your articles that pertain to the wildlife in New Jersey. As a parent, I like to use *New Jersey Outdoors* to educate my children. However, I am considering not renewing my subscription when it expires because I constantly receive the magazine very late. I did not receive the March/April issue until April 7th! There are many events and exhibits I would like to attend but don't know about until they are over because your magazine is so late.

Please do something to insure that *New Jersey Outdoors* will go out on time so that my family, and lots of others, may enjoy it to its fullest.

Susan G. Greener
Bloomfield

Susan's letter is one of many received about your magazine being late. We are aware of the problem and working on regaining time lost over about eight issues. Several of you queried if it was late due to the postal system. That is not the case; NJO mailing in the state has been timely. It was suggested that the calendar be printed four months in advance. Few event notifications, unfortunately, arrive so far ahead of schedule. To list a September activity in the July/August issue requires the information arrive here before May 15.

While we push to get back on schedule, information received by that date will be listed. All of the part-time staff and I are committed to mail your NJO on the 25th of the month prior to its cover date.

Credits Due

Three photocredits in "Franklin Marble" (M/A 1989) were identified incorrectly. The Franklin-Ogdensburg Mineralogical Society provided NJO with the Alfred Standfast micromount photos. The Society is a member organization of the New Jersey Earth Science Association. We regret the misidentification and again extend our thanks to the Society for its assistance.

Updated Trail Maps

The 1989 (3rd) edition of North Jersey Trails are available at outdoor stores or from the publisher, the New York-New Jersey Trail Conference. The five-color Tyvek maps cover parks and trails in western Bergen, Passaic and eastern Sussex counties and Orange and Rockland counties to the north. The two-map set costs \$5.95 plus 70¢ p and h. Send check or money order (payable to "TRAILS") to: NY-NJ Trail Conference, GPO 2550, New York, NY 10016.

Striped Bass

By Larry Sarner

Why would anyone get out of bed before dawn on a cold fall day, drive to a lonely, deserted beach, stand casting and retrieving a line in damp, clammy wind, endure cold hands and feet, and often have little at day's end to show for these efforts? Along the Jersey coast the answer, more often than not, is striped bass.

The dream of catching a monster fish, as Albert McReynolds did off Atlantic City in 1982 with his world record 78-pound, 8-ounce striped bass (see "A World Record Striped Bass Caught in New Jersey," NJO M/J 1983), lurks in the mind of many New Jersey surf fishermen.

These prized game fish can be found in coastal waters from the St. Lawrence River to northern Florida's St. John's River, and even in northern waters of the Gulf of Mexico.

Thanks to contributions of bass and fry from New Jersey's Navesink River stocks in 1879 and 1882, the west coast also now has a thriving striped bass population, much to the delight of fishermen there. But that long journey west from Red Bank to California's San Joaquin River and arms of San Francisco Bay is another story (see "a factual fish tale," NJO M/A 1985).

Known also as striper, the striped bass is called rock fish in neighboring states to the south. It is a silvery fish recognized by seven or eight black stripes on its side, with the central stripe being the longest. Fish from inshore waters seem to have a more olive-colored back, while offshore fish are rather bluish.

The striped bass is anadromous: it is basically marine in habit but travels into fresh water to spawn. However, there are land-locked populations of striped bass, as in Virginia's Staunton River, which never reach the sea.

Stripers which do have access to the open ocean, such as the great Chesapeake stocks, usually remain in the bay area for the first several years of their life cycle. These stocks eventually move into the ocean and migrate up the coast in the spring and back down in the fall, a surf caster's delight twice a year.

The majority of New Jersey's coastal stocks overwinter off North Carolina's Outer Banks or the Delmarva Peninsula. In late spring/early summer and from September to December the surf, jetties and inshore waters (stripers usually do not wander too far out to sea) are dotted with thousands of anglers.

Stripers are predators of smaller fish. Favorite foods include anchovies and menhaden (moss bunker), although they are also known to eat alewives, flounder, killifish, shad, crabs, shrimp, clams and mussels. Their habit of gorging on one type of fish at a time makes them a challenge to the fisherman not able to mimic that fish with his lure.

The Chesapeake estuary seems to be the main spawning ground for stocks of interest to New Jersey fishermen and, perhaps, for the entire coast. The Hudson estuary is probably another major contributor and possibly even the Delaware.

The Navesink's population (mentioned earlier) vanished some years back. However, DEP Division of Fish, Game and Wildlife restocking efforts begun in this area in 1984 may prove successful in restoring striped bass to the Navesink. Evidence of reproductive success might be apparent sometime next year.


The recent history of man's interaction with this fish has been dramatic and complicated. Formerly an important commercial species in New Jersey,

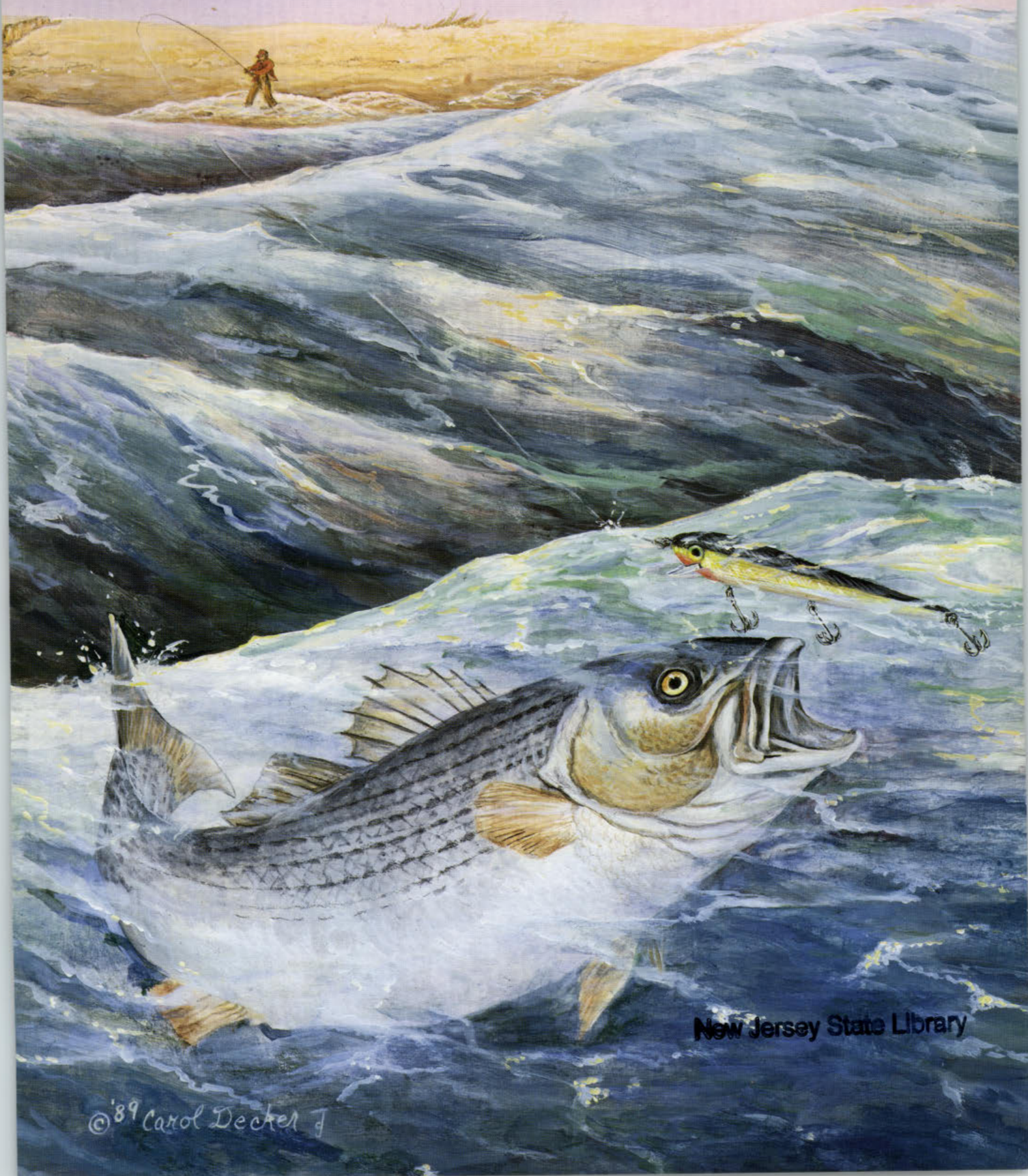
a decline in stocks led to its protection in 1948. Since then netting of striped bass has not been permitted in our waters.

To protect the breeding females, the minimum keepable size has been increased over recent years. Female striped bass reach maturity between their fifth and eighth years, at lengths ranging from 31 to 38 inches—quite sizable fish! Males of comparable ages are generally smaller.

Because of these restrictions based on female spawning ages and sizes, encouraging signs for the future are slowly appearing. The number of striped bass has increased tremendously, although the majority of females are still not mature. The outlook is guardedly optimistic.

Signs marketing the sale of "striped bass" and "rock fish" advertise farm-raised hybrids from western states. Due to contamination found from Florida to New England in Atlantic coast stocks, New Jersey prohibits the sale of striped bass. The hybrids are aquacultured crossings with the striper's close relative, the white bass, and are distinguishable by the broken pattern of the stripes. A modest stocking program of this hybrid is administered for New Jersey freshwater fishermen.

The next time you see a tired old four-wheel drive, equipped with an ice chest and pole holders that resemble the antennae of a giant alien insect, heading for the beach on a gray, drizzly morning, have pity on its driver. That surf fisherman is hooked and can't help it. It is doubtful that even if he or she were able to break McReynolds' striped bass world record the angler would stop pursuing the next elusive "bass of a lifetime" stalking quietly in the surf. 



New Jersey State Library

©'89 Carol Decker J

