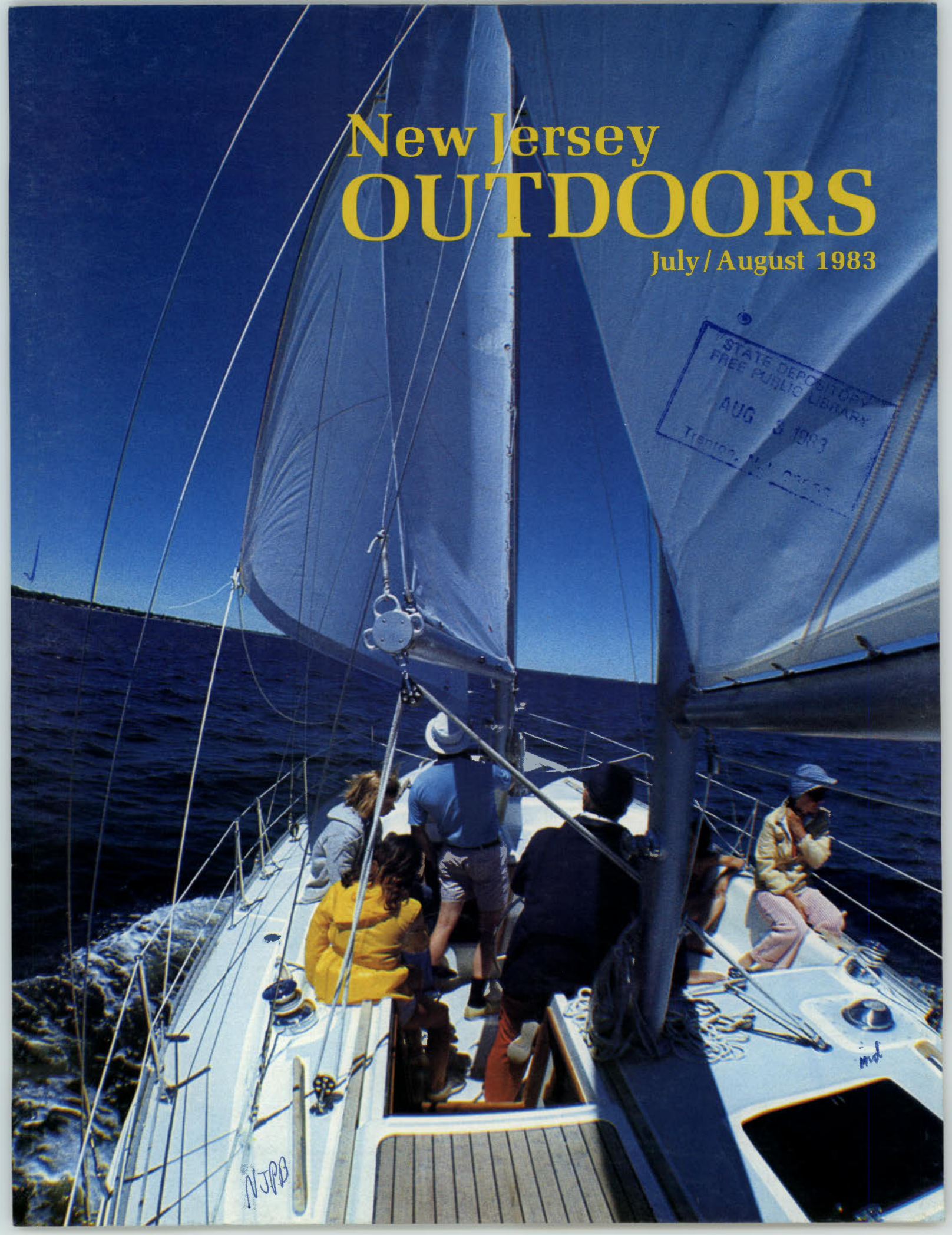

New Jersey OUTDOORS

July / August 1983

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

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

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

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July/August 1983
VOL. 10 NO. 4

New Jersey OUTDOORS

From The Editor

The Green Acres Connection

We are all lovers and users of the outdoors recreational resources of New Jersey. Therefore, we all have a Green Acres Connection. If we frequent and enjoy our state parks or some of our county parks, note that Green Acres bond monies were used to restore, build, or purchase open space for these areas. The same goes for restoration of historic sites throughout the state.

Green Acres funds were used to revitalize the central business districts in several New Jersey towns including Bayonne, Bridgeton and Paterson. And if you're a trout angler, you'll be happy to learn that Green Acres and Land and Water Conservation Fund monies were used to purchase and build the modern facility, *The Pequest Trout Hatchery and Natural Resource Education Center* in Warren County.

So you see, we are all in some way inextricably connected to Green Acres—but we like it. Two new publications "New Jersey Trails" and "River Recreation in New Jersey" are available from:

Green Acres Program
CN 404
Trenton, New Jersey 08625

In this issue

Summertime is the season to enjoy the *Best of all Worlds: Summer on Long Beach Island,* by Cathie Cush, her second article in NJO. Cathie is Managing Editor of the Long Beach Island weekly newspaper, the *Sandpaper.*

Deborah Boerner, a frequent contributor and an editorial assistant in 1981 and 1982, writes about another Jersey Shore town, *Ocean City: Fun and Sun, Family Style.* She also contributed another article, *The Jersey Tomato,* one of our most famous Garden State products.

A new author, Sheila Cowing, wrote about *An Expedition in the Great Swamp,* which describes a three year study of the quality of the water that flows through the Great Swamp. Ms. Cowing is the author of an award-winning childrens' book about wetlands ecology, *Our Wild Wetland,* published by Julian Messner/Simon & Schuster in 1980.

I mentioned *The Green Acres Connection* in my editorial; the person responsible for this material and the companion piece, *The Urban Water Frontier,* is Greg Johnson, of Green Acres.

Marine Biologist Bill Figley sent in the article titled, *More on Saltwater Fish,* the fifth or sixth piece in this series. Some day all of these articles will be available in one booklet.

It is the most popular state park in terms of the numbers of people that visit and use the facilities. Green Acres played a major role in the development of this park. The article is titled, *Liberty Park: The Real Work is Just Beginning.* The author, Anthony R. DePalma, is a full-time free lance writer who covers New Jersey for the *New York Times.* He was the Managing Editor of *New Jersey Reporter* magazine and a producer of *N.J. Nightly News* for New Jersey Public Television.

Frequent contributor Robert J. McDonnell writes about the *Wrong Finale for a Right Whale* that washed ashore at Island Beach State Park.

New to our publication is Anthony S. Policastro, an avid sailor and sailboat owner, who wrote, *Sailing in Raritan Bay.* The author is a free lance writer/photographer whose work has appeared in *The New York Times, Oceans,* and *Popular Photography.* He was Executive Editor of *Video Magazine* for three years.

A young lad who loved to visit the Pine Barrens and collect snakes is now an associate Professor of Marine Science at Stockton State College, located in the pinelands. He is Rudolf G. Arndt and he wrote the article titled, *A Young Naturalist in the Barrens.*

Professor Arndt has been published in *The Conservationist* and the *Delaware Conservationist.*

From an expert and dedicated fresh water angler, Thomas Dale Pagliaroli, we give you, *Small Water Bassin.* Mr. Pagliaroli is the Editor of *The Seasonal Sportsman* magazine.

Forester J.E. Perry is a *Certified Tree Expert,* so he is eminently qualified to write about it. So read it and learn.

Author Lynne T. Combs and her husband, Bill, celebrated their 40th birthdays last year, so they decided to try *Bicycling From Millington to Cape May and Back.* They did it and Lynne wrote about it. Nothing to it.

Lizards are not what you'd call a popular animal species. For one, they're hard to find. They don't have big brown eyes like deer. They're not cute like raccoons or chipmunks. Not cuddly like bears. But they are part of our food chain and Fish and Game biologist Cindy L. Kuenstner wrote this *Wildlife in New Jersey* article, and Carol Decker provided the illustration on the inside back cover.

We are now considering a *Letters to the Editor* page. It won't appear in every issue and we cannot print all letters we receive. We'll answer letters that require an answer. Some of the answers will be provided by our professionals in DEP—biologists, foresters, air and water pollution scientists, parks managers, etc.

Steve Perrone

Best of All Worlds: Summer on Long Beach Island

By Cathie Cush

"Vacation" is a tricky word. It can mean different things to different people. But if Billy wants to spend his time off racing speed boats and Jane wants to spend hers racing to see a Broadway musical, there's no need to cancel the whole trip for lack of a suitable destination. Don't press the panic button—head for the Jersey shore.

Long Beach Island is an 18-mile-long jewel in the chain of barrier islands along New Jersey's coast. Six miles at sea, the island is a perfect spot for those who believe Webster's definition of vacation as a "scheduled period when activity is suspended." You can almost hear the gentle breezes whispering "Don't forget the suntan lotion" as you lie soaking up rays on the clean, white beach. Beach Haven, at the island's south end, is famous for its large, Victorian homes. Their wide porches were built for the express purpose of providing the ideal perch from which to sit and watch the world go by.

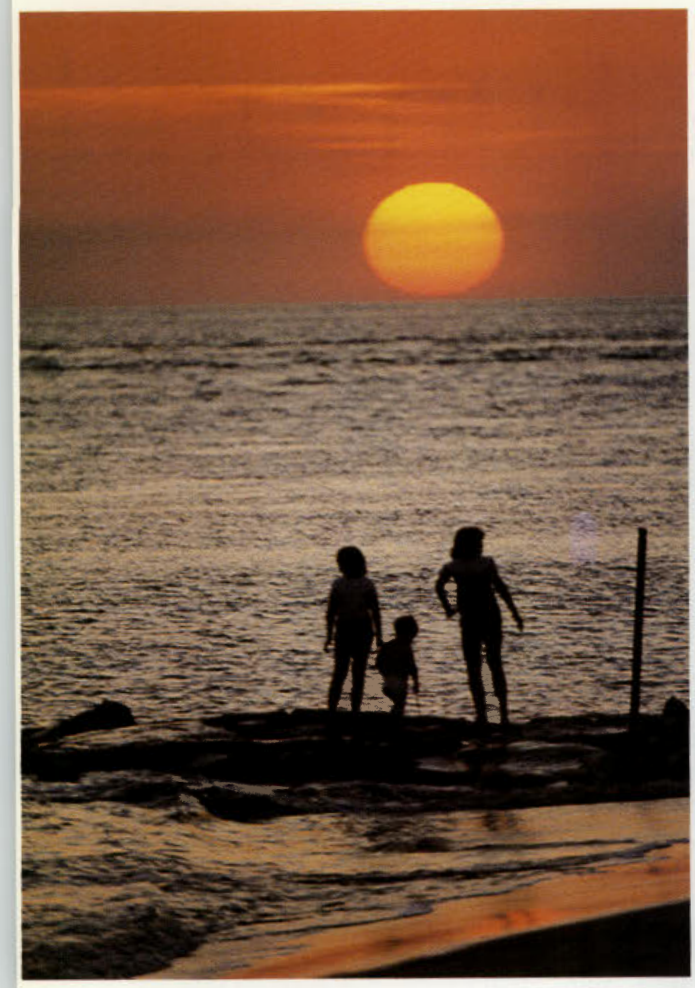
On the other hand, Webster also says a vacation is a "period spent in travel or recreation." If you're the active type who'd rather spend time off fighting a marlin than reading *The Old Man and the Sea,* there are charter boats aplenty ready to go, not to mention party boats which run half- and whole-day trips for blues, bass, cod and fluke. And Billy can rent a speed boat—or sailboat, windsurfer, jetski or paddle boat—at one of several water sports centers on the island.

Although the best things in life may be free, it costs money to maintain them, and so the municipalities on Long Beach Island (as elsewhere in New Jersey) charge a minimal fee for beach use. Beach badges are $6 a season ($5 in Long Beach Township) and $2 weekly. There is a discount on seasonal badges if they are purchased before the end of May.

Surfing is limited to hours when the beach is not guarded—before 10 a.m. and after 5 p.m.—except in Harvey Cedars. There, surfers may use the beach at Hudson Avenue any time of day. Watch for a surfing contest there in July, depending on wave conditions. Styrofoam rafts and other equipment are restricted on many beaches, and it's best to check with the lifeguard before taking them in the water.

If you like to watch lifeguards doing what they do best, the annual lifeguard races take place each year in mid-August, alternating between Ship Bottom and Surf City. Teams of guards from each borough compete for points in a series of swimming and rowing contests in the surf. Longstanding rivalries carry on from year to year, and the event's always exciting for both guards and spectators.

If you'd rather be the one doing the



PHOTOS BY
RAY FISK

racing, there's a mini triathlon held in Barnegat Light in early fall. The grueling event is a combination of swimming, bicycling and running based on Hawaii's Iron Man competition. There's also a Roller Run, sponsored by the Beach Haven Volunteer Fire Company in August, in which participants can either roller skate or run the five-mile course through town. The High Point Fire Company's annual Dog Day Race in Harvey Cedars last August drew 500 participants, and is expected to attract more this year. And of course, the 18-mile Commemorative Run sponsored by St. Francis Community Center each October, draws hundreds of entrants from all over the coast who run in memory of the athletes slain in the Munich Olympics.

Fishing can be as competitive as you like—or no contest at all (except between you and the fish). The Beach Haven Marlin and Tuna Club sponsors a marlin tournament each summer for those who have a little Hemingway or Zane Gray in their blood. The Long Beach Island Striped Bass Derby, held each year from late September until early November, offers weekly and overall prizes for the biggest striped bass, bluefish and weakfish catches. When the Derby's at its peak, almost everybody on the island grabs a pole and gives the surf at least one shot.

The island is a dynamite place to celebrate the Fourth of July. Speed garvies race across Barnegat Bay, and fireworks from Barnegat on the mainland can be seen from the north end of the island at night. Barnegat Light's celebration begins July 1 with a Sound and Light Presentation at the lighthouse, followed on the 3rd by a parade featuring bands from throughout the state. That evening, Pat Cannon's Foot and Fiddle Dance Company will perform at the firehouse.

Lest you take your vacation too seriously, Barnegat Light has scheduled a Gong Show at the firehouse on July 28.

If you want to soothe the savage beast that lurks beneath the savage tan you've been working on all day, there's music in the salt air all summer long. St. Francis Center in Brant Beach recently instituted a Performing Arts Series of classical music and ballet which runs through spring and early summer. The Ocean County String Band will perform at the Barnegat Light firehouse on August 18; jazz great Teddy Wilson will tickle the ivories at the Long Beach Foundation for the Arts and Sciences in Loveladies on July 16, and folksinger Oscar Brand will appear at the Foundation on August 6. Free outdoor concerts every Saturday evening in the Beach Haven

Continued on page 26

Ocean City: Fun and

By Deborah A. Boerner

Less than ten miles south of Atlantic City, Ocean City offers a striking contrast to neighboring resorts. The town prides itself in being a family resort.

Atlantic City has the casinos, Wildwood has night life, Cape May has its Victorian atmosphere, and Sea Isle is mainly residential. "Each community offers something a little different," Ocean City Public Relations Director Mark Soifer said.

For that reason, says Soifer, Ocean City does not compete with its northern neighbor. Being so different from Atlantic City yet located so close is a double advantage. When there's an overflow of people in Atlantic City, they often come to Ocean City for accommodations and find they like it here, Soifer said. Also, the contrast sometimes draws Atlantic City visitors to visit Ocean City as well.

Ocean City was founded 104 years ago by three Methodist ministers. They left Pleasantville in a sailboat to look for a place to hold camp meetings and establish a resort. They developed the island, previously known as "Peck's Beach," into a year 'round non-sectarian community and family vacation spot.

Included in all land titles was a clause prohibiting the manufacture and sale of alcohol and providing for Sunday observance. To this day, the clause remains, and Ocean City is known for the family atmosphere these restrictions create.

Despite its family atmosphere, Ocean City is anything but austere. Perhaps its most famous event is the *Night in Venice,* scheduled for July 23 this year. The festival takes place in and around the bay. "People decorate their boats and bayfront homes, everything is very colorful, and people have parties. It's a very big night in Ocean City," Soifer said. Last year, nearly 100 boats participated.

Other summertime events include concerts, sandsculpting contests, surf fishing tournament, parades, hermit crab races, a baseball card convention, art shows, and a suntanning tournament (see 1983 Highlight for details).

If you prefer sports, the Ocean City Recreation Department offers activities such as tennis, surf, beach exercise, chess club, gymnastics, volleyball, canoe trips, square and round dancing. Numerous baseball, soccer and softball fields, tennis, basketball, volleyball, and shuffleboard courts can be found on the island. Ocean City also has a fishing pier.

Of course, the sunny beaches and boardwalk are what attracts most visitors. The town's population of approximately 14,000 easily swells to 100,000 on peak summer weekends. However, many people like to visit Ocean City after the summer crowds are gone. Events are scheduled year 'round, and autumn is the perfect time to go bicycling on the boardwalk or take a walk along the beach. Whatever the time of year, Ocean City welcomes everyone to come and enjoy.

PHOTO BY DON MOISO

Sun, Family Style

PHOTO BY DON MOISO

1983 HIGHLIGHTS

JULY 4—Fireworks, Concert, and Kite Flying Contest, Recreation Field (6th Street off Boardwalk); Kite Contest, 6 p.m.—8 p.m.; Concert, 7 p.m.—9 p.m.; Fireworks, 9 p.m.

JULY 4—Ocean City Pops Orchestra, First Concert of the Season, Music Pier, 8 p.m.; Every Sunday through Wednesday until September 7

JULY 7—Bill Bruestle and the "Sunshine Boys" Banjo Band, First Performance of the Season, Music Pier, 8 p.m.; Every Thursday during July and August

JULY 9—Community Center Antique Show and Thrift Sale, Music Pier, 9 a.m.

JULY 13—Sand Sculpting Contest, 10th Street Beach, 9 a.m.

JULY 23—NIGHT IN VENICE

AUGUST 5-6—Boardwalk Art Show, 6th Street—10th Street on Boardwalk

AUGUST 11—Baby Parade, Boardwalk, 10:15 a.m.

AUGUST 17—Sand Sculpting Contest, Miss Crustacean Contest, Hermit Crab Race starting 9 a.m. on the 10th Street Beach

AUGUST 20—Shore Memorial Hospital Antique and Craft Show, Music Pier, 9 a.m.

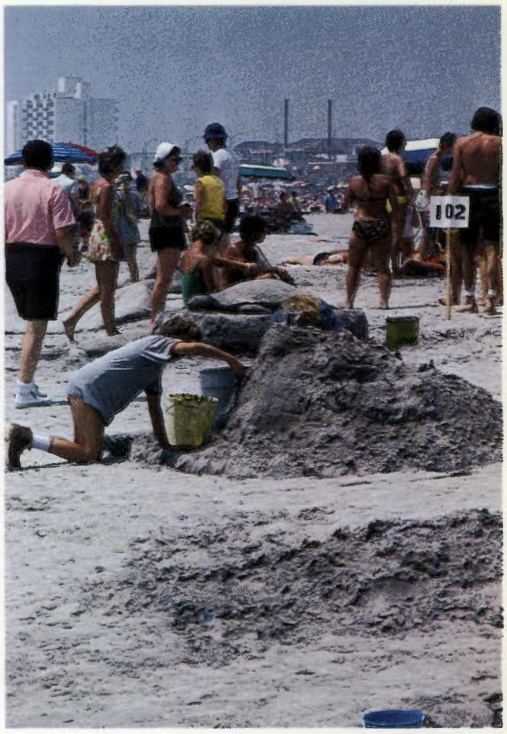
AUGUST 25—4th Annual Miscellaneous Sun Tanning Tournament, Music Pier, 1 p.m.

SEPTEMBER 4—Art Center Crafts Festival, Bizarre Bazaar, Music Pier, 10 a.m.—10 p.m.

SEPTEMBER 11—Ocean City Pops Orchestra Post-Season Concert, Music Pier, 8 p.m.

SEPTEMBER 13-14—Senior Citizen Crafts Festival, Music Pier, 10 a.m.—3 p.m.

SEPTEMBER 24—Decoy Show, Music Pier, 9 a.m.



AN EXPEDITION IN THE GREAT SWAMP

By Sheila Cowing

Black Brook, Great Swamp.

Electroshocking.

PHOTOS PROVIDED BY AUTHOR

Following the National Wildlife Refuge signs, marked with a stylized flying goose, we drove through marshy fields to the gray farmhouse that was once the headquarters of the Great Swamp Refuge. Here we would live for two weeks, helping to gather data for an important study of the water that flows through Great Swamp.

Far out, a wood duck nesting box rises above the marsh. Four thousand "woodies" hatch here each summer, twenty miles from New York City. Each spring and fall, over a million migrating water birds spend the night. Ringed by low hills, this ancient glacial basin features thick woods with 300-year-old oaks and beeches, as well as spring peepers and water lilies. Boardwalks lead to several blinds built on stilts, where a visitor can watch, unseen, Canada geese, muskrats, deer—swamp wildlife at home.

During the summer of 1982, two biologists, Dr. Anne Harris Katz, Assistant Professor of Biology at Fordham University, and Dr. Harvey M. Katz, Research Director at Bioservices, began a three-year study of the impact of border development on the water which flows through the swamp. EARTHWATCH, the organization which brought us here to help, sponsors scientific expeditions in the field all over the world, and for these two weeks we would be EARTHWATCH volunteers, while during the rest of the year, our occupations varied widely, from chemist to teacher, student to artist. Three teams, using five to seven volunteers, worked in the Great Swamp during the summer. We came from all over—Tennessee, California, one of us from England. Several had been EARTHWATCH volunteers on other summer expeditions, some looked at this trip as an aid in choosing a career, others as a way to be close to the natural world.

Laontaka Brook sewage ditch.

From the briefing pamphlets EARTHWATCH sent each of us, we understood that what happens in Great Swamp is vital to a million New Jersey residents. Water in the swamp may recharge the underground reservoir called Buried Valley Aquifer from which 500,000 people take their water. Inside the swamp, tributaries of the Passaic merge before flowing into the river, from which another 500,000 take their water. Two sewage treatment plants, from Chatham and Morris Townships, empty into streams which flow through. As the water oozes through the dense growth, it is filtered and purified.

Now the Fish and Wildlife Service, which manages the swamp, and the Federal Environmental Protection Agency fear that this natural filter may be in danger from several commercial and domestic developments being planned

near its edges. Polluted runoff from sewage systems and chemical effluents from plants or private lawns could destroy wild habitats and effective pollution filtering within a few decades.

Great Swamp has been threatened before. The Army Corps of Engineers twice considered drastic flood control measures. In the late 1950s, the swamp was saved from becoming a jetport by a determined group of local residents.

To gauge the impact of nearby development on the swamp, the biologists would first have to inventory the plants and animals living in the water. We would slog with them through the shallow water collecting samples, studying the plants and creatures for indications of health.

On the first day, the Katzes taught us how to use the testing equipment: meters for measuring water temperature, pH and dissolved oxygen and for analyzing the quality of the water. All tests were to be conducted with great care, a lesson in the use of the scienitic method in the field.

The next morning, in teams of two, we waded into the water wearing hip-high boots at a site in the swamp chosen for its position along the water's path to the river. Two of us measured 150 meters, about 500 linear feet, marking it with pieces of lath wedged in the mud. Then we measured the water's depth and width and how fast it flowed. We explored the bottom with a dredge to learn its type: silt, smooth, sandy or pebbly, and took a benthic, or bottom, sample for later study in the lab. Then we tested the quality of the water. In July, we performed 500 water quality tests, but in order to see a broad, seasonal picture, the Katzes will perform some 2000 tests throughout the year from twenty-five sites inside the swamp. We also measured the water's ability to conduct electricity, which we needed to know in order to use the electroshocking device to catch fish for study.

Electroshocking was the most exciting task. With a pole from a portable generator, we fed an electric current into the water at each site. The fish, stunned, would float to the surface where we could net them. At some sites, we caught as many as one fish a minute. Quickly we would identify, weigh and measure each. During the six weeks of the three summer expeditions, we caught 1,527 fish of twenty-six species, only eleven of which had been previously identified as Great Swamp denizens. A few we kept for a research collection or to analyze the contents of their stomachs and examine their scales, but 94% of the fish were returned unharmed to the water at the site from which they had been collected.

After a few days, we were able to guess ahead of time what kinds of fish we would catch at a site by how muddy the water was or how thickly water plants grew. If a great deal of sediment was suspended in the water, or if plants choked its course, or trees bent close shading the surface, we knew we would catch only a few fish. Gill-breathers need light and oxygen.

We had lunch at the site, a baloney or tuna fish sandwich, cold juice, fruit and GORP, that backpacker's favorite, Good Old Raisins and Peanuts. After lunch, we finished collecting samples of water plants, bottom invertebrates and mud from the water's edge. Then we carried all the gear back to the house on Pleasant Plains Road.

There we helped repair equipment, removing mud and leaves, replacing sampling bottles, occasionally mending the seines, nets used to bring in fish. We studied the bottom mud under the microscope, trying carefully to remove tiny snails, worms and wriggling larvae with tweezers for identification and preservation.

Most of the sampling sites could be reached by car or by a short hike along an overgrown road. The paths were lined with woods, or with cattails and reeds. In August, we hiked through banks of pink and white rose mallow blossoms, some as large as six inches across, a canyon of flowers so beautiful it looked like a painting, matted with the gray-green velvety leaves.

One site, however, was so deep in the wilderness that we had to use boats to haul in the sampling equipment. Here the sewage ditch from Chatham Township's treatment plant joins Black Brook before it enters the Passaic river. The first team of volunteers tested the difficulty of the trip; the second team completed the sampling task on a hot, humid day early in July.

The site was only a mile in, but it took us two hours to get there. Branches hung so close to the water we had to duck and pull them aside; spiders dropped and crawled all over the boats. The swamp here was dark and eerie. Greasy, oily sewage effluents curled around our paddles. The deep mud was clogged with plants, roots and fallen branches. Far away, celebratory fireworks exploded like distant cannon. We kept thinking of the jungle in Viet Nam. Four of us worked our way in with the two boats and the testing gear, while the others climbed and waded in to meet us from the other end.

What we were trying to learn was whether or not sewage pollutants are hurting the swamp. We took one water sample above where the sewage ditch joined and another below. Here the great numbers of nutrients brought in from the treatment plant are causing plants to grow too fast, depleting the oxygen in the stream. The stream is "eutrophying" —growing old much faster than usual. Few species of fish can live in this water. Here, too, we found worms and insect larvae common to polluted water.

The samples we collected will help the biologists decide whether or not Great Swamp's ability to filter out impurities is being impaired. The Katzes believe that the swamp's drainage system is healthy now, but is beginning to show signs of pollution. They urge that development along the swamp's edges be minimized, and that sewage treatment be upgraded.

During the winter, they compiled the data in a comprehensive report for the organizations helping to pay for the project, including EARTHWATCH in Massachusetts, the Geraldine R. Dodge Foundation in Morristown, the New Jersey Conservation Foundation and Fordham University. The research is planned over a three-year period so that data can be thoroughly studied and assessed. Planners will be able to study the reports to inform their decisions about development. More information may be obtained by writing: GREAT SWAMP RESEARCH for Ecological Studies, 49 Lyons Road, Basking Ridge, N.J. 07920

WHAT: **First International Wildlife Art Exposition**
WHERE: **Grand Ballroom, Harrah's Casino in Atlantic City**
WHEN: **August 27 and 28**
WHO: **Sponsored by Ducks Unlimited**

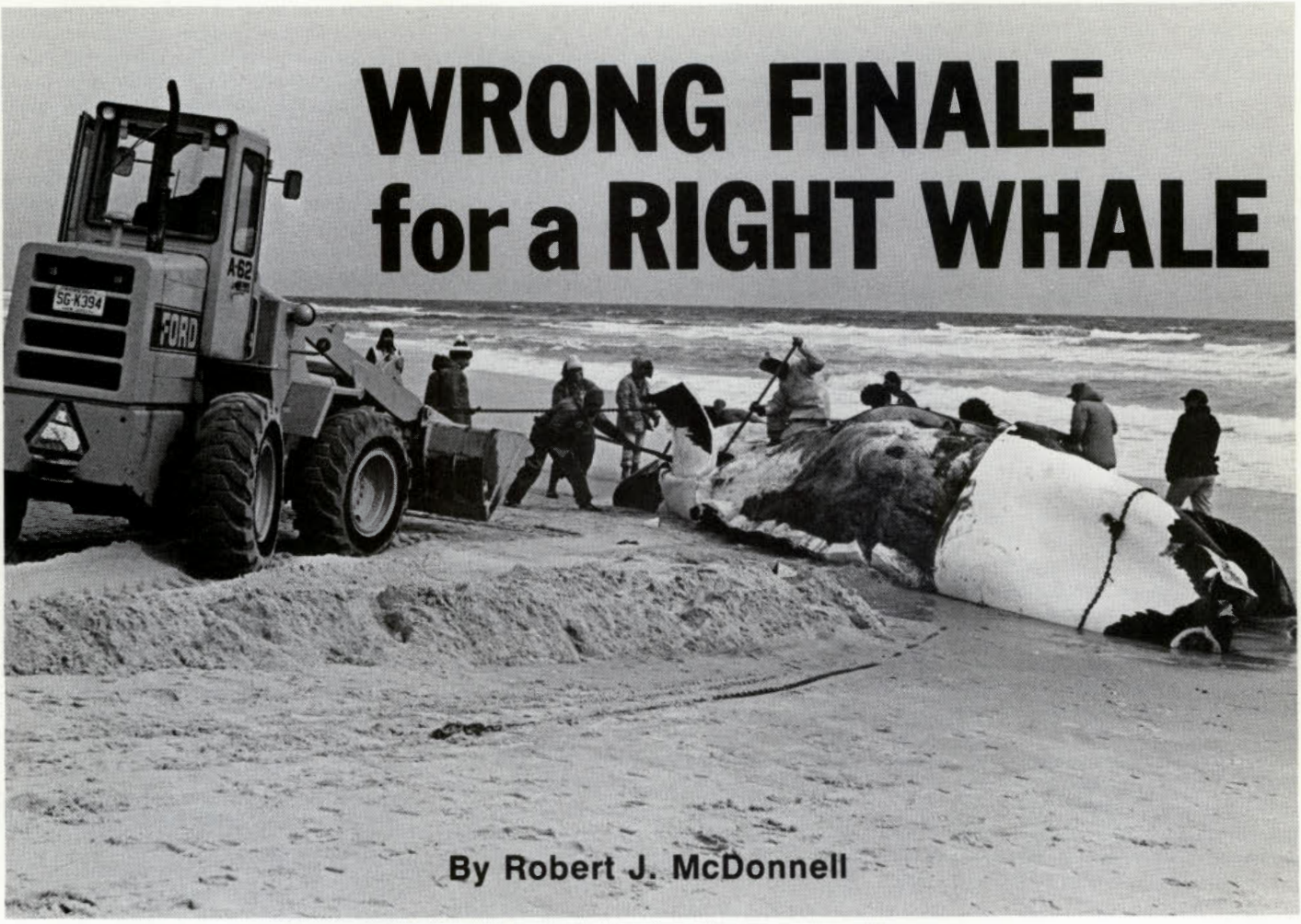
Internationally-known artists, such as Pa. Duck Stamp Winner Ned Smith, Dick Plasschaert, and N.J.D.U. artist of the year Ned Ewell will be displaying original artwork. Carvers such as William Veasey and T.J. Hooker, decoy makers, and other wildlife artists will be exhibiting and demonstrating their talents.

Artistic work of over one hundred artists and carvers will be exhibited and available for purchase.

On Saturday, August 27, a contest will be held to select the N.J. Ducks Unlimited Decoy of the year. The image of the winning decoy will be featured on art items for Ducks Unlimited fund-raising events throughout the year.

An art contest for the N.J. artist of the year for 1984 will also be held in conjunction with the exposition. Artists and carvers will be demonstrating their talents during the show. Many of these items will be included in auctions to be featured each day. General admission to the show is $3.00. Hours are on Saturday, 10 a.m. to 10 p.m. and Sunday, 10 a.m. to 4 p.m. Free parking is provided by Harrah's.

WRONG FINALE for a RIGHT WHALE



By Robert J. McDonnell

As I scrawl this lamentable tale, I'm reminded of the title of a recent best-selling book, "When Bad Things Happen To Good People"; because, in late February, the wrong thing happened to four- or five-year old Right Whale swimming off New Jersey's coast. The propeller of a large ship lanced a three-foot gash in the whale's stomach and severed part of its delta-shaped tail. The whale then bled to death. Ironically or—perhaps through some mysterious, mystical marvel—the mammal's 40-foot, 20-ton carcass came to rest on Jersey's most beautiful, serene stretch of sand, Island Beach State Park.

Displaying what scientists called "Epimeletic Behavior," (behavior where one mammal assists another in troubled waters), the Right's mate or mother "stood-by" about 150 yards off-shore where she anxiously awaited the reappearance of her companion. Alas, there would be no resurrection! Nature lost another of an estimated 200 Right Whales still navigating Her oceans . . . and, yet another Right became childless or a widow.

As humorous people sometimes do during tragic circumstances, comedian George Carlin—using his notorious body, mouth, and eye gyrations—would doubtlessly quip: "A Right Whale? Can there be a 'wrong' whale? What's the difference between a Right Whale and a Wrong Whale, I wonder?"

George would be told a Right Whale is "right" because it swims slowly, it floats when killed, and it yields large quantities of high-grade oil and whalebone. Thus, Right Whales WERE an easy kill for whalers. Conversely, "wrong" whales were species that gave whalers heartburn!

Let's take a closer look at Right Whales. Rights are part of the Balaenidae family of whales; i.e. they're Baleen Whales. These whales possess 130 to 400 baleens (thin, horny plates suspended from the palate) on each side of the jaw. A Right Whale's jaw contains about 250 baleen on each side and a baleen can be up to seven feet long. Since baleen whales are toothless, the rake-like, baleen apparatus filters out water, leaving behind plankton or krill, the whales' main food source.

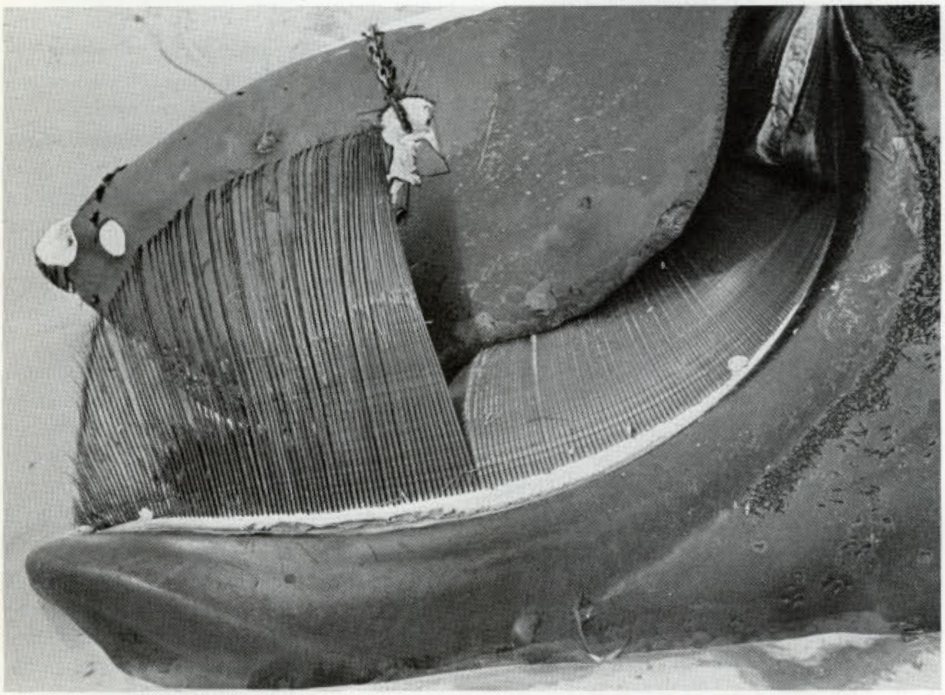
Right whales mate during July in Arctic regions and a single calf is born further south during January or February. A mature Right can attain a length of 60 feet, its head being 2/5 to 3/4 of its total length. The spout or "blow-hole" forms a double V shape that is directed forward. How thicks its blubber? About 20 inches, average, in a fully grown creature! Rights are marked by sharply contrasting white areas on their skin, areas caused by parasites. These whales also possess a rounded protrusion on their upper jaw. This nose-like part is called a "bonnet" and I guess one could dub the Right, the "Jimmy Durante of Whales."

Like other baleen whales, Rights inherit poor sense of smell; but keen eyesight, and superb hearing—their primary sense of perception.

We know that centures ago, whales were hunted for their oil or whalebones. In more recent times, whalebones were used in corsets. Today, however, whales provide oil used in production of soap, linoleum, and synthetic resins. Whalebones become components found in glues and gelatin, while vitamins and hormones are extracted from intestines. *BUT RIGHT WHALES ARE FULLY PRO-*

Using a front loader and sharp knives, a slice of whale skin is removed.
←

Members of the Marine Mammal Stranding Center dissect the Right Whale. The mammal's jaw is clearly visible; its eye is the white oblong shape located above the jaw's curve. I estimate the blubber thickness to be 6-8 inches.



A close view of the whale's jaw reveals rake-like baleen plates. Although I didn't count the plates, by using a ruler and multiplication, I estimate that 180 plates are shown.

Photographs, Copyright, Robert J. McDonnell, 1983.

TECTED BECAUSE THEY ARE ENDANGERED.

What was the fate of the unfortunate Right Whale that washed ashore at Island Beach? Reportedly, its eyes went to Yale University to assist in the research for glaucoma—a leading cause of human blindness. (Seems that a whale's eyes are similar to those of humans.) The Smithsonian Institution inherited its bones while internal organs and other parts were used to determine pollution levels. Remaining portions were buried in the sands of Island Beach.

As shown in pictures accompanying this article, the Right Whale was dissected on Island Beach by professionals of the Marine Mammal Stranding Center, Atlantic City. This team is led by the Center's Director, Robert Schoelkopf and by Assistant Director, Sheila Dean. Although the Center is primarily privately funded, New Jersey's Divison of Fish, Game and Wildlife provides some funds also.

Admittedly, pictures shown of the dissection aren't a pretty sight, but they show us the whale close up, give us some idea of blubber thickness; but, most of all, they show that our environmentally conscious society now takes advantage of any mishap to learn more about whales . . . and, even human medicine. Years ago, the unfortunate Right Whale would probably have been discarded with no inclination to study it. (The last Right Whale to wash ashore in New Jersey was in 1965, incidentially.) So, the "right" action was taken with this particular Right Whale.

If you would like to learn more about whales and help preserve them, contact:

Whale Protection Fund
624 Ninth Avenue, N.W.
Washington, D.C. 20001

NEW JERSEY TRAILS BROCHURE

A new foldout, color brochure filled with helpful information about foot, water, horse, bicycle, ski-tour, and motor (snowmobile, motorcycle) trails in New Jersey is now available from DEP. Included in the text is a section on planning a trip and a map showing the major trails in the state. To obtain a copy, write to Green Acres Program, CN 404, Trenton 08625.

The Pequest Trout Hatchery and Natural Resource Education Center

The Green Acres Connection

Compiled by Greg Johnson

You know that New Jersey is the most densely populated state in the nation. And you know that the preservation of open space and the development of recreational facilities are critical to the welfare of our state's environment and well-being of its citizenry. You may even know that there is a bond issue-supported Green Acres Program which since 1961 has directed its efforts towards endowing the state with an ample supply of open space and recreational facilities. But did you know that . . .

- Green Acres has assisted in restoring and preserving the far-sighted parks designed by Frederick Law Olmstead—the father of American landscape architecture. Newark's Branch Brook Park is an excellent example.
- Projects range from a 0.4 acre addition to a historic park on the Palisades in Fort Lee to 10,556 acres of rugged, rural beauty in Wawayanda State Park.
- Green Acres acquisitions help protect the integrity of the Delaware and Raritan Canal and provide recreation access to this historic waterway which, in its heyday, carried more tonnage than the Erie Canal.
- Paterson's Raceway Park is an integral part of that city's celebration of its industrial past. Green Acres is helping restore the fruits of Alexander Hamilton's vision.
- New Jersey offers a wide variety of trails use opportunities. The State Trails Council, assisted by Green Acres, has prepared the New Jersey Trails Plan. This document inventories existing trails, proposes new ones, and presents a framework for development of a coordinated system of trails throughout the State.
- A combination of Green Acres and Land and Water Conservation Fund monies were used to create the state's newest fish hatchery at Pequest. This modern facility employs the latest technology in a structure that complements the beautiful countryside.
- Green Acres' interest in a program doesn't cease after the initial grant. The City of Bayonne has been awarded four grants that have guaranteed the successful acquisition and development of Kill Van Kull waterfront park. This park brings a variety of recreational opportunities to one of the most densely populated areas of the state.
- Green Acres projects often retain the flavor and spirit of historic sites. The Morristown Green has served as a meeting area since the mid 1700's. The site was declared a "common forever" in 1816. Green Acres supplied half of the funds required for the area's restoration. The remainder was raised by a group of local businessmen, school children, and housewives.
- New Jersey's environmental education centers preserve historic as well as natural features. They encourage not only observation but participation in nature. Green Acres has been active in the development of these centers, some of which demonstrate the latest advances in solar technology and land management.
- The acquisition of Berkeley Island preserves an area characteristic of what once constituted the entire Barnegat Bay before lagoon development altered coastal ecologies elsewhere in Ocean County.
- The City of Bridgeton has transformed its Cohansey riverfront into an area graced with fountains, a pavillion with sitting area, and a fishing dock. It is hoped that the preservation of this valuable open space will help to revitalize the central business district.
- In a previous life Riverview Beach Park was an amusement park. Pennsville Township acquired the decaying park, retained such features as its waterways, and created an area which offers a variety of recreational opportunities.

If these sound impressive, you've good reason to be proud. As a bond issue-supported program, Green Acres' very existence depends on the environmental consciousness of New Jersey's voters. These highlights are but a few of the program's many accomplishments. More will appear in the next issue.

THE URBAN WATER FRONTIER

By Greg Johnson

CAMDEN

Before

After

KILL VAN KULL

Before

After

TRENTON

Before

After

Essentially a peninsula, New Jersey's coastline is home to numerous ports and harbors. Once gateways to a fledgling nation, these cities and towns have been subject to the ebb and flow of the economy; their fortunes rising and falling like the ocean and rivers from which they draw their strength. The nation's dependency on its harbor towns diminished as the auto and airplane became the major modes of transportation; the advent of the tractor trailer spelled doom for those cities which were once the hub of railroad activity; and America's thirst for more diverse forms of recreation couldn't be quenched by the staid old resorts of the Jersey shore. In the wake of industrial and tourist decline lay deserted railyards, rotting piers, and empty hotels.

The early seventies witnessed a quiet stirring in the coastal towns. The lure of the waterfront created a new frontier with a decidedly urban flavor. But the new interest could only be nurtured by an infusion of new funding. The Green Acres Program responded to the challenge by assigning a high priority to urban waterfront projects. By combining Green Acres with other grant money, 90 percent funding was often achieved. This urban waterfront renaissance is being played on a statewide stage. Atlantic City, Bayonne, Bridgeton, Burlington, Camden, Trenton, Perth Amboy, Newark, Jersey City, and Elizabeth are some of the cities eager to revitalize their waterfronts.

In 1834 the Gazetteer of the state of New Jersey noted that the residents of Philadelphia sought out Camden for "shade and recreation in the hot season." Nearly 150 years later Camden County, Camden City, Green Acres, and the National Park Service pooled their efforts to create Waterfront Park. The park commands a magnificent view of Philadelphia and serves as front yard for the city that was founded as a ferry landing and went on to worldwide fame for its industry and shipbuilding.

Continued on page 31

More On Saltwater

Some anglers have difficulty in distinguishing the various species of offshore tuna. The quickest key to identification is the length of the pectoral fin which is located on the fish's side just behind the gill. The albacore is easily identified by its extremely long pectoral fin, which extends beyond the far edge on the second dorsal fin.

The pectoral of the yellowfin is moderately long, extending into the second dorsal. The bigeye's pectoral is the shortest, usually extending only to the juncture of the first and second dorsal. In appearance, the bigeye is stockier than the yellowfin and large yellowfin often have long second dorsal and anal fins. The best way to separate the two species, however, is to examine the liver. The liver of the bigeye is striated, while that of the yellowfin is smooth.

Recreational and Commercial Importance

Until very recently, the three species of offshore tuna had very little commercial importance in New Jersey. Now, however, markets have been established and tuna are being landed by swordfish longliners. In addition, a significant portion of the tuna caught by sportfishermen is also sold to restaurants and seafood dealers.

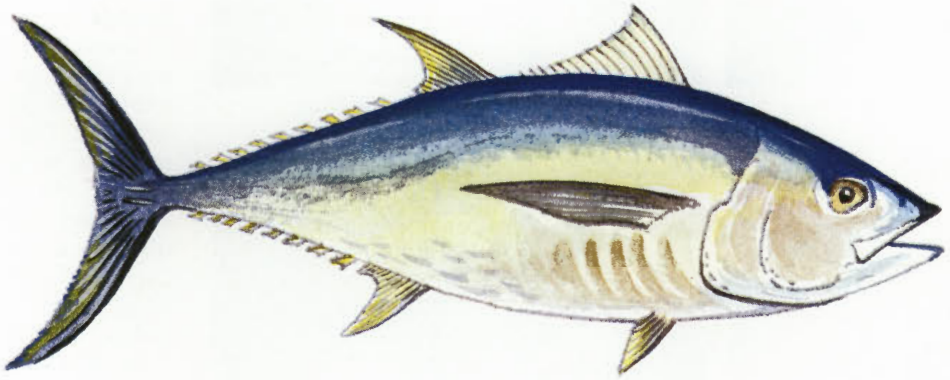
Sportfishing for yellowfin, bigeye and albacore tuna is a relatively recent development in New Jersey. The sport began in the late 1950s when a small group of anglers began fishing farther and farther offshore, eventually reaching the area known today as the "canyons." Offshore fishing grew slowly throughout the 1960s, but increased rapidly in the 1970s and is still growing today. Over 800 boats from New Jersey now participate in this fishery. During 1981, the recreational catch of tuna was as follows:

yellowfin	18,200
bigeye	1,362
albacore	14,636

Sportfishing Facts and Techniques

The principal method used for catching albacore, yellowfin and bigeye tuna is high speed trolling. Along New Jersey, the fishing grounds are located well offshore. Yellowfin can be caught closer to shore, sometimes enturing in as close as 30 miles offshore in depths of 20 fathoms. They become more abundant, however, beyond the 30 fathom depth contour. Albacore are usually taken in waters deeper than 50 fathoms and bigeye tend to concentrate along the edge of the continental shelf in 100

YELLOWFIN TUNA



BIOLOGY

Common names: Allison tuna

Scientific name: *Thunnus albacares*

Range and Habitat: The yellowfin tuna has a worldwide distribution in tropical and temperate ocean waters. On the East Coast, they extend from the Gulf of Mexico north to New York. They are pelagic wanderers that prefer deep, blue offshore waters. Along the New Jersey coast, they do follow warm water eddies which split off the Gulf Stream in as close to shore as the 20 fathom depth contour. Their temperature range is 50° to 80°F, with an optimum of 72°F.

Size: Yellowfin, like the other tunas, grow rapidly and may reach 140 lbs. in four years. In New Jersey, they average 40-80 lbs., but may exceed 300 lbs.

Foods: Squid and pelagic fishes.

Spawning: The spawning area of the yellowfin tuna is extensive, occuring for the most part in the tropical waters of the Atlantic, Pacific and Indian oceans. Spawning occurs throughout the year in tropical waters and in late spring and summer in subtropical waters.

A female yellowfin is believed to spawn at least twice a year and produces about 45,000 eggs per pound of body weight.

Fish

By Bill Figley

fathoms or more. Many fishermen troll a zig zag course along the shelf edge or drop off.

Tuna are large and powerful fighters; high quality, heavy duty tackle is a must. Conventional reels of 3/0 to 9/0 size, matching rods, 30 to 80 lb. test line and ball bearing swivels are required to withstand the strain of the tuna's runs. A variety of rubber-skirted high speed lures are now preferred over rigged natural baits. Although many colors do attract strikes, green lures are the most popular. The lures can be trolled at high speeds indefinitely and withstand multiple hits without being riped apart.

Depending on the boat, from 4 to 12 lines are trolled. A basic pattern for trolling 5 staggered lines is to place two flat lines in close (25 and 50 feet), two outrigger lines at moderate distances (75 and 100 feet) and a middle line well behind the boat (150 feet). The staggered pattern allows the boat to make relatively sharp turns without tangling the lines, and offers lures at a variety of distances from the boat. Some fish will hit close in, others prefer lures farther back. Additional large teasers can also be set in close off the outriggers. Lures should be set so that they ride at the crest of wake waves. This will ensure maximum action and allow them to pop from the water occasionally.

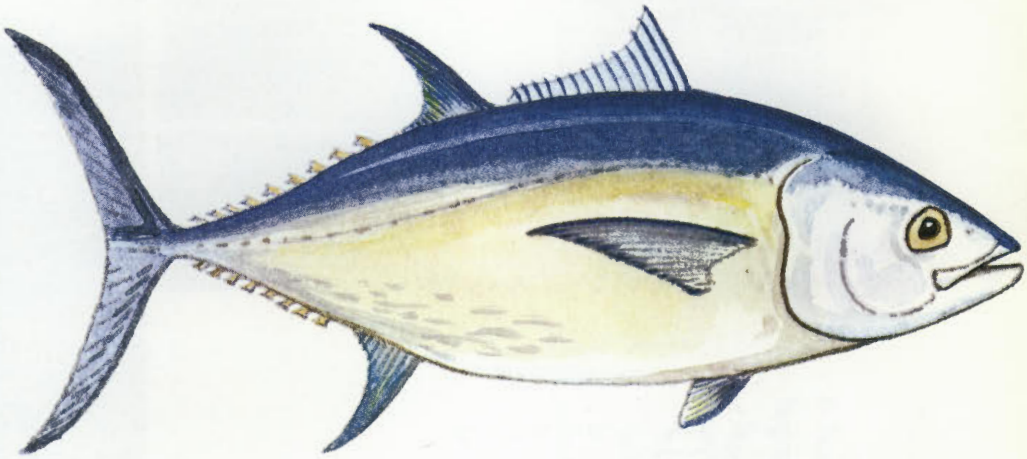
Although each type of lure is designed for a specified range of speed, the general rule in tuna trolling is to create as much white water behind the boat as possible. The recommended speed range is 8-18 knots.

ACKNOWLEDGEMENTS

Anthony Hillman (art), Migdalski and Fichter (1976) McClane (1978), IGFA (1979), Pete Barrett.

ILLUSTRATIONS BY ANTHONY HILLMAN

BIGEYE TUNA



BIOLOGY

Scientific name: *Thunnus obesus*

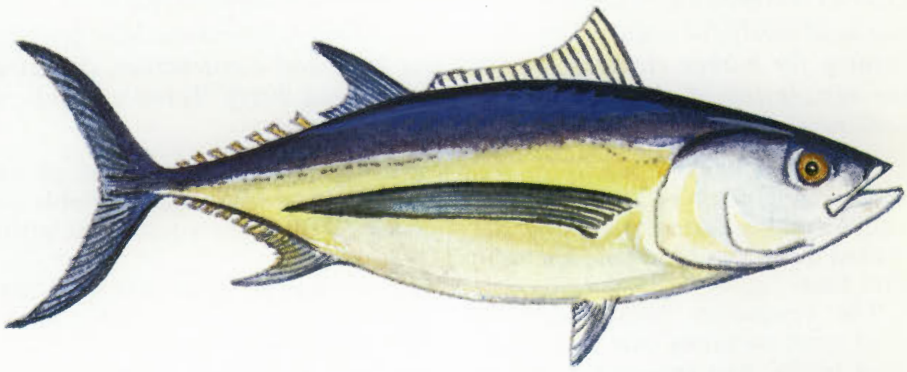
Range and Habitat: The bigeye is found in warm temperature oceans worldwide. The bigeye is pelagic, preferring deep ocean waters. Along New Jersey, they are usually found at the edge of the continental shelf in depths of at least 100 fathoms. Their temperature range is 50°-80°F.

Size: In New Jersey waters, bigeye average 100-200 lbs., with some exceeding 300 lbs.

Food: Squid, mullet, mackerel, and other pelagic fishes.

Spawning: The bigeye spawns during the summer; each female releases several million eggs.

ALBACORE TUNA



BIOLOGY

Common names: Longfin tuna, white meat tuna (should not be confused with the false albacore or little tunny).

Scientific name: *Thunnus alalunga*

Range and Habitat: The albacore is found worldwide in tropical and temperate waters. Along the East Coast, it occurs from the Gulf of Mexico to New England. Albacore are pelagic, inhabiting the deep (usually over 50 fathoms along New Jersey), blue waters of the open ocean. Their temperature range is 50°-80°F with an optimum of 65°F.

Size: Albacore are the smallest tunas in New Jersey waters, averaging 20 to 50 lbs., and a maximum of about 80 lbs.

Food: Squid and pelagic fishes.

Spawning: Albacore spawn in the summer. Each female produces between one million and three million eggs.

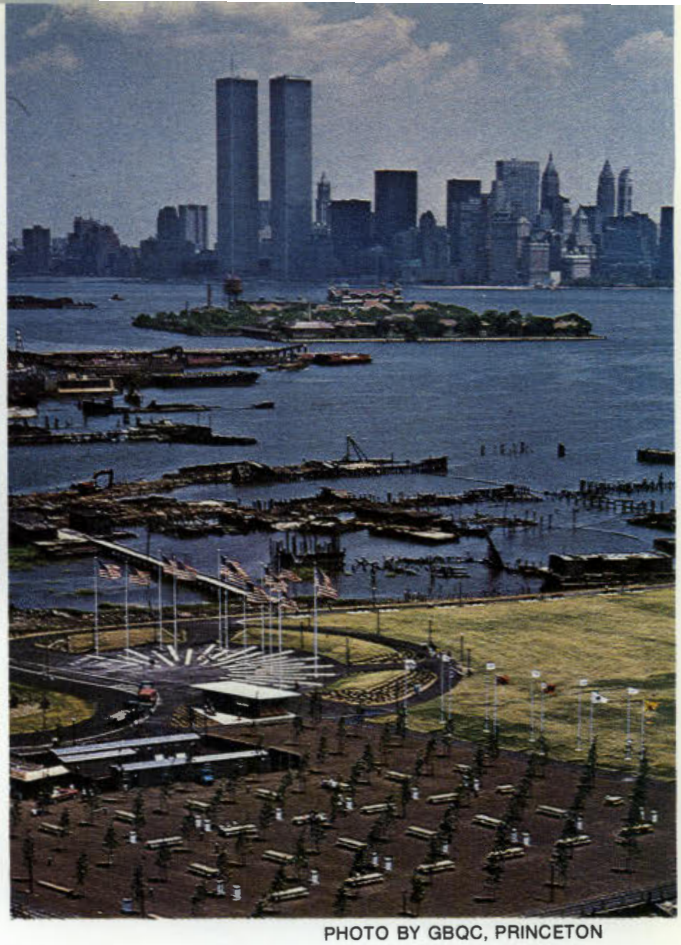


PHOTO BY GBQC, PRINCETON

Liberty State Park:

The Real Work Is Just Beginning

Liberty State Park represents the collective funding efforts of federal, state, and local agencies. The Green Acres Program has played a major role in the emergence of this successful park. Monies from the four Green Acres bond issues of 1961, 1971, 1974, and 1978 have been injected into nearly every facet of the area's development. While money from the first two bond issues was used solely for acquisition, the 1974 and 1978 referendums have provided funding for harbor clean-up, seawall and bulkhead construction, dredging, the restoration of the historic Central Rail and Ferry Terminal, and for construction of the environmental education center.

Anthony R. DePalma

It hugs the brawny riverfront, overshadowed by the New Jersey Turnpike and the drab industrial plants that hide it from those coming to the park for the first time.

The newcomers follow signs that send them trundling over rusting railroad tracks, past shacks and factories and tank cars before finally leading them through the flapping pennants of Wolf Drive, where the Statue of Liberty is framed in heart-stirring symmetry.

To those who can remember what this area looked like before the cleanup started in 1974, the vista is astonishing no matter how many times it is seen. Where there once was only the refuse of this most densely populated region, there now is verdant grass, proud flags, and, occasionally, a number of wild rabbits or pheasants comfortably foraging on their newly reclaimed territory.

The transformation has been spectacular. Still, whatever exists at Liberty State Park today is but a small inkling of what will one day be there—just 35 acres out of a total of 800 acres on the Jersey City waterfront that will one day make up the whole of the park.

After nearly two decades of planning and work, the basic configuration of the park is beginning to take shape, its outline just now starting to bleed through the cover of old railroad buildings, rubble and debris that had littered the land for so long. As massive old railroad facilities such as the Central of New Jersey roundhouses are razed, people who have lived in the area all their lives can see the river in a way they had never seen before. People can now walk along the waterfront, glimpsing for the first time the immense steel and concrete heel of Manhatten across the silvery water of Upper New York Bay.

No one knows for certain what Liberty State Park will look like when it is completed, or even how long that will take. A master plan does exist, one that lays out a park of natural green areas, historical buildings, a spectacular mile-and-a-half long promenade and other prominent features of what the *New York Times* has predicted "could be the most dramatic open space in the metropolitan region in the next century."

There also are other visions of what Liberty State Park will look like. Some have seen it as an unparalleled commercial attraction—a theme park—set down in the heart of the country's greatest market. Still others look to the

state to use some of this valuable land to meet the needs of the hard-pressed city dwellers living within a stone's throw of this green oasis.

There is no lack of ideas for what to do with this unique piece of land and history. What is missing is capital. When the park master plan was drawn up in 1977, the long term project was estimated to cost about $150 million. Today, that figure is $175 million and growing. At the same time, potential funding sources have been restricted. The state Department of Environmental Protection has had its budget frozen, all Green Acres bond money has been allocated, and the federal government has put a lid on new capital projects.

"We are being forced to look for new, creative ways to do things for which we simply don't have sufficient funding," said Helen Fenske, DEP's assistant commissioner for natural resources. "The Governor wants us to look at the kinds of development that can be allowed in the park to make it the major facility we want it to be."

Nearly all those involved in the project, from the Governor on down to the local citizen advocates, agree that the state does not have the money to develop Liberty State Park by itself, and must look to outside help.

The problem however is in balancing that private interest with the real needs of the region's people. Liberty State Park is New Jersey's first urban park, perhaps the only park of its size being developed in any American city. There are no blueprints for what an urban park ought to look like. The closest thing to it is New York's Central Park, designed and built more than a century ago.

To help in shaping the park's future, the state has hired a Philadelphia consulting firm to make recommendations on how private investment might be used to develop the remainder of Liberty State Park.

In retrospect, the role of private investment in development of Liberty State Park and the land on which it is being built goes back two hundred years to when the shallow tidal flats below historic Paulus Hook were a major departure point for the Philadelphia stagecoach and the ferry to New York. In the early 19th century, railroad tracks were laid down to connect Jersey City with points South and West.

'Liberty State Park" (Area 1) Waterfront Cleanup 1975

By 1872, the railroads had outgrown their land and needed room to expand. They filled in the muddy riverfront, creating hundreds of acres of land that they quickly converted into one of the country's greatest shipping ports. In 1889, the Central Railroad of New Jersey built a magnificent passenger rail terminal and ferry dock that for nearly a century served as a way station for untold Manhattan commuters and newly arrived immigrants from nearly Ellis Island.

The decline of the railroad was long, slow and painful to watch. By the early 1960s, the entire riverfront operation was covered with a patina of wearly neglect and rust. As industrial activity slowed, the scavengers took control, stripping the old buildings of anything valuable and using the land as a free private dump.

In 1964 the city of Jersey City donated to the state 144 acres of land it had picked up from the railroads in bankruptcy. The state did not know what it wanted to do with the land; it was not even sure what the land looked like. It sent Jerome J. McCabe, a retired Air Force test pilot who worked in the state's Bureau of Capital Planning and Improvements, to assess the land's value.

McCabe, now special assistant to the Director of the Division of Parks and Forestry, recalls his first impression of the area. "The Commissioner asked me what I thought and I told him that it was the worst place I'd ever been in," he said.

It was a bleak landscape that McCabe had surveyed in 1968. The only access to the site was a dirt road pitted with holes and covered with broken glass and strips of metal. He saw a boat salvaging operation where the unsalable remains of old ships were scattered anyplace there was room. He saw heaps of discarded refrigerators, couches and sinks rising 30 feet high. He saw junk so thick it raised the level of the ground two feet in some spots.

"It was a convenient place to get rid of everything," McCabe said. "I'm sure there were a couple of bodies in there too."

But despite all this, the land's value showed through, and McCabe reported then that the area was the "most beautiful *location* in the world."

Over the next six years, the state invested $21 million to acquire 700 acres of high land and another 100 acres of land that was underwater.

The first section of the park opened on Flag Day, 1976. Less than a month later, 30,000 people viewed the American Bicentennial Harbor Festival—Op-

eration Sail—from the park's overlook, a spectacular way to tell everyone in the region that the old dream was indeed a reality.

Since its opening, Liberty State Park has become the most popular state park in New Jersey. Most of the land within the park's boundaries has been cleared of tons of debris. The old passenger terminal has been totally restored—at a cost of $15 million—and the area surrounding it cleaned and cleared. The state has built a new $1.2 million Environmental Education Center, which opened this summer, and is rehabilitating the train sheds outside the CNJ terminal so they can be used in the future for bazaars, flea markets and other outdoor events.

At the southern rim of the park, the first area to be developed, the state had constructed an administration building, picnic area and, just recently, a new pier walk, boat launch and a large sundial.

But perhaps the most important work now underway is construction of the first segment of the $25 million seawall, a one-and-a-half mile long sand and stone buffer that will protect the park's shoreline from being battered by the harbor's powerful currents. The U.S. Army Corps of Engineers has built up an additional 1.5 acres of land at the tip of the southern embankment that will become one end of the crescent-shaped walk atop the seawall. Liberty Walk, as it will be called, is expected to be the most popular feature at Liberty State Park when it is finished, a harborside promenade that will give strollers spectacular views of Ellis Island, Liberty Island and the entire Upper New York Bay.

Despite all the work and money that has already gone into creating the park, the most important work is yet to be done. "What we've accomplished so far is to set up the park," McCabe said. "Our first goal was just to bring attention to the area and what we're trying to do here."

The park has demanded attention since it opened. The highlight was a bright September morning in 1980 when Ronald Reagan kicked off his bid to become president at Liberty State Park.

Now the park's supporters are trying to get the attention of those in Trenton so that the park can be fully developed. Russell Myers, director of the Division of Parks and Forestry, acknowledged that the park's development is a state priority.

"Most of the work done to date, other than the terminal restoration and what had been done along the southern embankment, has been cleanup," Myers said. "We're now just starting a true development phase. We don't have the money to do it ourselves, so we're trying to work with private enterprise in developments that will enhance the park, not detract from it."

Private development schemes will be handled carefully, especially after what happened when such a plan was introduced a few years ago. In 1980 , Warner Leroy, the man who designed Great Adventure Amusement Park in Jackson, was hired to create an international theme that could be used in a family-entertainment attraction at Liberty State Park. The plan was quickly and unceremoniously shot down by local advocates who feared that ferris wheels and roller coasters would be built on their waterfront.

Since then, there have been other controversial plans for the park, including a proposed doll museum in the passenger rail terminal and now the new Environmental Education Center, which could become either a transportation museum or an outdoors information center.

Although there is a consensus that the waterfront areas of the park should be kept green and available for passive recreation, there are a number of different views on what ought to be done in the larger uplands section of the park, closer to the turnpike.

It is in this area that suggestions for a hotel, conference center and camping area for recreational vehicles have been made. Another consideration brought up occasionally is that the park is too large and will be too costly to maintain, and so the uplands should be sold to private developers. The proceeds of the sale could then be used to fund development of the rest of the park.

Whatever is finally proposed for Liberty State Park is sure to attract attention not only in Hudson County but around the state. Assemblyman Robert Janiszewski of Jersey City, chairman of the Assembly Appropriations Committee, said that legislators from all over the state have expressed great interest in the future of Liberty State Park and are willing to continue helping with development of the park. Janiszewski said a $155 million Green Acres bond issue that will be on the November ballot could provide more money for the park.

Janiszewski, who can remember jumping off half-sunken boats in the area when he was a child, believes the state can work with private interests to develop the rest of the park. But he added that whatever is decided on, the park whould remain primarily a people's park, where those who live in the region can get away from the city for a while.

Local interest in the park's fate has always been strong and it remains that way. Two of the earliest park supporters—Morris Pesin and Audrey Zapp, both of Jersey City—are members of the Liberty State Park Advisory Committee and continue to oversee development of their cherished idea. Mrs. Zapp now wants the state to designate the beach at Caven Point, just south of the park, part of the New Jersey "Natural Areas System," because it is the only remnant of the tidal flats that once stretched from Fort Lee to Staten Island.

Mrs. Zapp is confident that Liberty State Park—which she calls a gift from the state to the people of New Jersey—will eventually take a form that will offer the most satisfaction and enjoyment to these people. But she says she will keep a watchful eye on the planning process until that happens.

"This is more than just a park," she said. "It's an attitude that says this riverfront is special and has to be treated in a special way." NJ

RESOURCE RECOVERY GRANTS AWARDED

Governor Kean recently signed legislation appropriating $471,550 from the Natural Resources Bond Fund for state matching grants to five county governments for the design, acquisition and construction of resource recovery facilities. The allocation of the money: Cape May County, $195,000; Hunterdon County, $10,795; Morris County, pass-through grants of $27,500 for Randolph Township and $33,333 for Roxbury Township; Salem County, pass-through grant for Pennsville Township; and Essex County, $190,922 on behalf of Newark Recycling, Inc.

Environmental News

THEY'LL REMEMBER EARTH DAY, 1983! The proud youngsters posing with Governor Kean are the first prize winners (and one little sister!) of DEP's fourth annual poster and essay contest for students throughout New Jersey. The theme of this year's contest was "What do parks mean to me?" Students from primary grades through High School were eligible for the poster contest, the essay contest was open only to Jr. High students. The poster contest winners, from left: Andrew Mitchell, High School Division; Patricia Techera (with sister), Intermediate; Martha Anastaciou, Jr. High; and Carol Lynn Tobermann, Primary. The essay winner, extreme right, is Lori Washington. U.S. Savings Bonds and plaques were awarded to the first place winners and plaques were given to the second and third prize winners during a ceremony marking the 13th observance of national Earth Day and the 13th anniversary of DEP. The April 22 ceremony was held in the Assembly Chamber at the State House in Trenton.

EPA APPROVES N.J. PLAN FOR TOXIC SITE CLEANUPS

Federal approval of DEP's four-year plan for hazardous waste site cleanup was announced by U.S. Environmental Protection Agency (EPA) Region II Administrator Jacqueline E. Schafer at a press conference in Trenton on April 11. Miss Schafer described the plan as a "well-conceived and commendable strategy for the cleanup of abandoned hazardous waste sites in New Jersey." The plan, which set priorities for cleanup activities through fiscal year 1987, was announced by Governor Kean and DEP Commissioner Hughey on February 10 (see these pages, NJO May/June). EPA approval of the plan brings cleanup money from the $1.6 billion federal Superfund program another step closer for the New Jersey sites entered on EPA's national priorities list issued December 20, 1982.

• The first stage of DEP's four-year plan to clean up toxic sites around the state—the clearing of 33 small drum dumps—was completed by April 1, as scheduled.

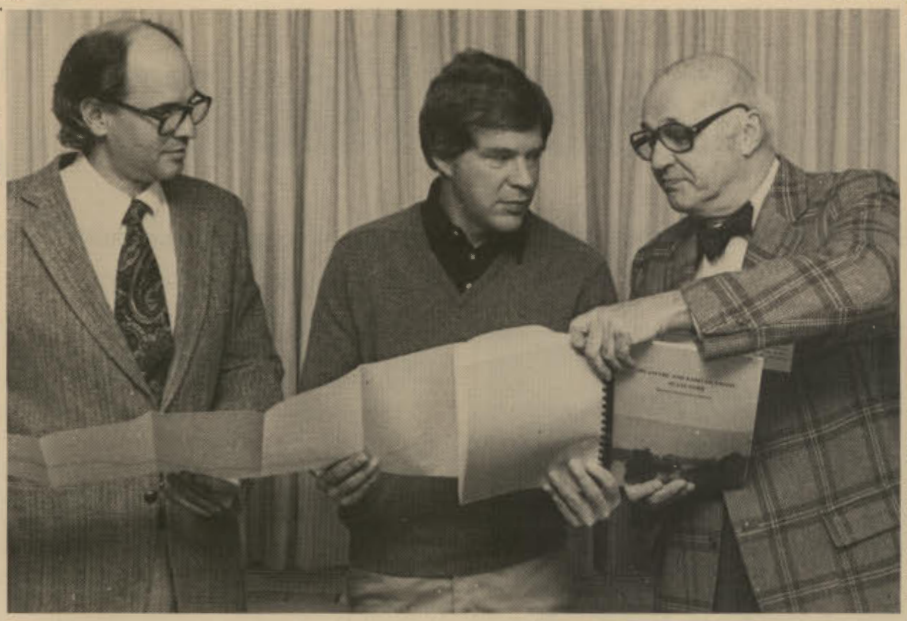
U.S. JOBS BILL TO FUND WORK FOR THE JOBLESS AND BEAUTY FOR PARKS

Governor Kean on May 12 announced that under the provisions of the recently enacted federal Jobs Bill New Jersey will receive a grant totaling $1,388,800 for the landscaping of state and county parks and recreation areas. The specific purpose of the funds in this particular grant is to involve and assist small businesses in providing jobs during a time of high unemployment and, at the same time, to accomplish benefits of lasting value through park beautification.

"We are going to ask these small businesses, as the law stipulates, to try to hire people who are currently unemployed to perform these jobs," Governor Kean stated. He went on to explain that all reasonable attempts must be made to hire the jobless who are not receiving unemployment compensation.

Of the $1,388,800 appropriated to the state, $400,000 will be used in six state parks/recreation areas (Allaire, Fort Mott, Monmouth Battlefield and Washington Crossing state parks; Spruce Run Recreation Area and the Pequest Fish Hatchery Picnic Area). The remaining $988,880 will be apportioned among the 21 counties, for their county-owned parks, based on the gross number of unemployed population they represent. The grants will be administered by the Green Acres Program of DEP. Letters of intent from sponsors of projects were due by June 1. Each project must be completed by October 1.

The Office of Small Business Assistance (OSBA) of the state department of Commerce and Economic Development will participate in the program by preparing announcements of bidding opportunities, developing lists of small business vendors, assisting public and private procurement offices in locating small business firms, and in coordination of information regarding the program. Also, the OSBA staff will provide linkages between small businesses seeking employees for these projects and the appropriate resources, such as the employment and unemployment services of the state department of Labor, local Private Industry Councils, and other public and nonprofit employment services.



Benjamin B. Kirkland (right), chairman of the Delaware and Raritan (D&R) Canal Commission, points out an area of interest on one of the foldout maps in the commission's new publication, *DELAWARE AND RARITAN CANAL STATE PARK Historic Structures Survey,* to DEP Commissioner Robert E. Hughey (center) as James C. Amon, executive director of the commission looks on.

The book, a product of three years of research by the commission, community groups and hired experts on historic preservation, was prepared by Amon and architects David Gibson and Steven Bauer. It contains detailed information on structures in the D&R Canal State Park, the history of the 60-mile-long, 148-year-old canal, descriptions of eight* historic communities through which it passes, and photographs of buildings along the canal which illustrate the changing styles of American architecture. Also, there are page and foldout maps which cover the historic districts and the entire canal. The canal has been entered on the National Register of Historic Places; the eight historic districts covered in the survey have been nominated for inclusion on the register.

Copies of the survey book are available at $8 each from the D&R Canal Commission, CN 402, Trenton 08625. Please make checks payable to "Treasurer, State of New Jersey." The canal commission is an agency within DEP.

STROBE LIGHT WARNS BOATERS OF HIGH WINDS

A powerful flashing light has been installed at Spruce Run Recreation Area near Clinton (Hunterdon County) to warn boaters when winds reach dangerous levels. The white strobe light will flash at one-second intervalls when winds reach 25 miles or more per hour, warning boaters that the reservoir is closed and to immediately return to landing areas or the shore. To provide maximum visibility, the strobe light has been placed on top of the new sanitary facility near the boat launching ramps. Signs erected at key locations at the recreation area provide detailed information on the new high wind warning system. (A similar strobe system was installed at Round Valley Recreation Area in 1979. Boaters termed the installation a success—the strobe lights are much easier to see than the colored lights used in the old system.)

U.N. HONORS PINELANDS

The United Nations Educational, Scientific and Cultural Organization (UNESCO) designated the Pinelands National Reserve as an international "biosphere reserve" at its annual meeting in Paris this past April. Dr. William Gregg of the National Park Service in Washington, D.C., who is the USA coordinator for UNESCO's "Man and the Biosphere" program, said, "This is one of the highest recognitions the Pinelands can have. The designation focuses international scientific attention on the Pinelands and will make more grant money available to scientists who wish to study and research the area." The designation does not establish any additional controls in the area. The state Pineland Commission and the National Parks Service endorsed the nomination. (UNESCO's Man and the Biosphere program was established in 1970 to identify natural areas which are representative of the world's major ecosystem types.)

FORKED RIVER GAME FARM NOW RUN BY CORRECTIONS

In a move which forestalled closure of the Forked River Game Farm in Lacey Township (Ocean County), the operation of the facility was transferred in March from DEP's Division of Fish, Game and Wildlife (FG&W) to the state department of Corrections Bureau of Farm Operations. The change was made through a memorandum of understanding signed by DEP Commissioner Robert E. Hughey and Corrections Commissioner William Fauver. The one-year agreement is renewable.

In announcing the agreement, Governor Kean praised Hughey and Fauver for their "best continuing use of this property from the multiple standpoint of rehabilitation, recreation and the economy of government."

Under terms of the agreement, FG&W will purchase a minimum of 20,000 pheasants and 15,000 quail for release in 1983. (The transfer will not affect the number of game birds released each year in New Jersey—55,000 pheasants and 18,000 quail—as the Rockport Game Farm in Warren County also produces those species under the administration of FG&W.) The area to be leased to Corrections by DEP totals 250 acres, with the remainder of the 530-acre property to be administered as a wildlife preserve by FG&W.

The Forked River Game Farm was established in 1912 to build a pheasant population in New Jersey. The aging facility required repairs and upgrading which can now be accomplished through the rehabilitation youth training program of the Ocean Residental Center, operated by Corrections on the property since 1963.

'DON'T EAT' WARNING RENEWED FOR FISH TAKEN FROM SOME RIVERS, LAKES

Signs have been posted at several rivers and lakes in Burlington, Camden and Gloucester counties warning fishermen not to eat fish taken from those waters. The warning covers the Cooper River, the north and south branches of Pennsauken Creek, Strawbridge Lake, Cooper River Lake and Stewart Lake. The warning, originally issued in 1978, has been renewed by DEP and the state department of Health because of levels of the pesticide chlordane still found in the edible portions of fish. The action was taken in cooperation with the Burlington, Camden and Gloucester County Health Departments.

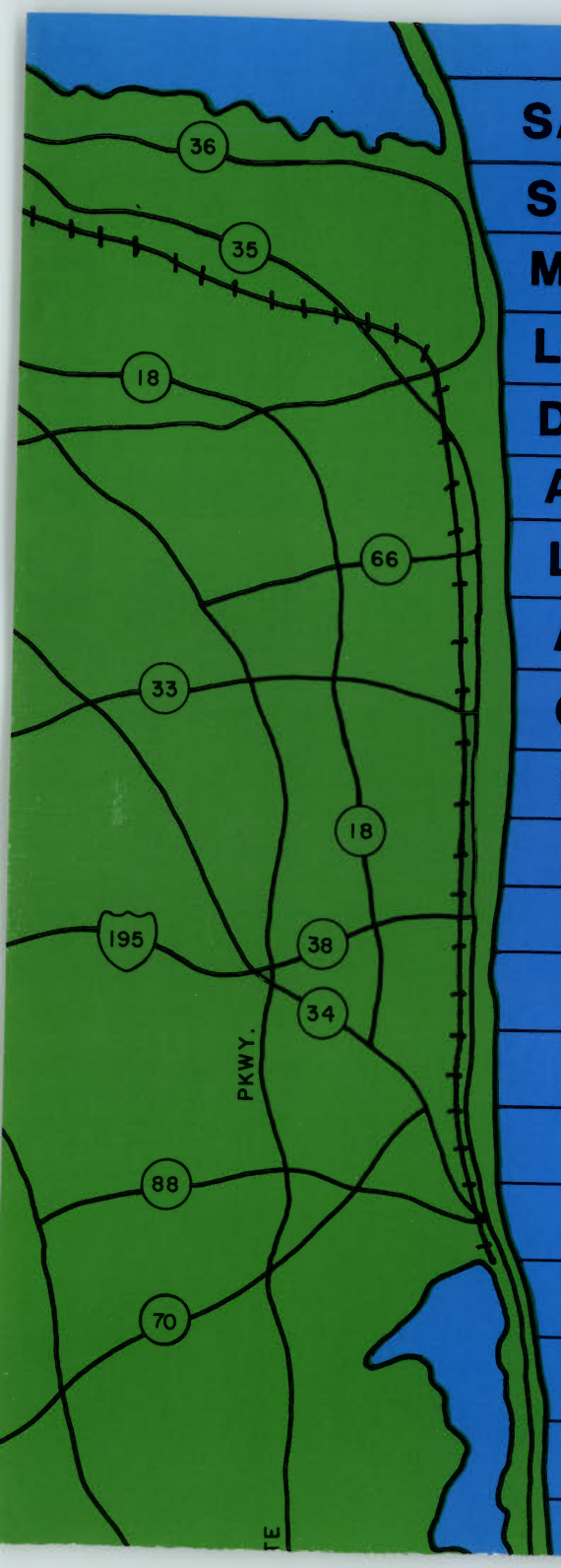
ORTLEY BEACH DOVER TWP.	82		●			●			
SEASIDE HEIGHTS	82	B	●	●	●	●	●b	●	●
SEASIDE PARK	82	B	●	●	●	●	●b		●
ISLAND BEACH STATE PARK b	82	B		●	●	●			
BARNEGAT LIGHT	63		●	●	●	●			●
BARNEGAT LIGHT STATE PARK	63			●	●	●			
LOVELADIES	63		●						●
HARVEY CEDARS	63		●						●
SURF CITY	63		●						●
SHIP BOTTOM	63	B	●	●	●	●		●	●
LONG BEACH	63	B	●						●
BEACH HAVEN	63	B	●	●	●	●		●	●
HOLGATE	63		●						●
BRIGANTINE	N 36 S 40	B	●			●		●	●
ATLANTIC CITY	N 36, 38 S 38, 40	B		●	●	●	●b	●	●
VENTNOR	36	B	●			●	●b		●
MARGATE	N 36	B	●						●

AT THE

BEACH	FEES				HOURS	ACTIVITIES							
	SEASONAL	WEEKLY	DAILY			SURFING	SCUBA DIVING	RAFTING	BEACH BUGGY PERMITS	BEACH FIRE PERMITS	PICNICKING	SURF FISHING	JETTY/PIER FISHING
			WEEKDAY	WEEKEND									
SANDY HOOK GATEWAY NATIONAL RECREATION AREA (201) 872-0115	None Parking Fee				Sunrise-Sunset Lifeguards From 9 AM-6 PM	•	•	•		•	•	•	•
SEA BRIGHT (201) 842-0099	$20.00 (Semi-Private Beach Clubs)		$2.50	$2.50	9 AM-6 PM	✓ •		•				✓ •	✓ •
MONMOUTH BEACH (201) 229-5926	$25.00 (Pool & Beach) $4 Daily Parking Fee	(Semi-Private Beach Clubs)			9 AM-6 PM		•				•	✓ •	✓ •
SEVEN PRESIDENTS COUNTY PARK NO. LONG BRANCH (201) 229-6349	Ages 11 and under Free $10.00 Ages 11-16 $15.00 Adults $3.00 Sr. Cit.		$.75 Ages 11-16 $1.50 Adults $1.50 Sr. Cit.	$1.25 Ages 11-16 $2.50 Adults $2.50 Sr. Cit. (Are Also Holiday Rates)	8 AM-Sunset Lifeguards From 10 AM-5 PM	•					•	•	•
LONG BRANCH (201) 222-7000	Not Yet Set				10 AM-5 PM	•	•					•	•
DEAL (201) 531-1454	$110.00 Family Additional $35 For First 2 Over 12 $55.00 Single		$3.00	$4.00	9:30 AM-5:30 PM	•	•	•				✓ •	•
ALLENHURST (201) 531-2757	Municipal Beach Beach Club— Non-Residents Seasonal Passes Only		$2.00	$3.00	10 AM-6 PM	✓ •	✓ •	•				✓ •	•
LOCH HARBOR (201) 531-4740	$50.00 Age 12 and over $15.00 Ages 5-11 and Sr. Cit.		$3.00 Adults $2.00 Ages 5-11 Sr. Cit.	$4.00 Adults Sr. Cit.	10 AM-6 PM			•				✓ •	
ASBURY PARK (201) 775-2100	$12.00 If Purchased In April $16.00 If Purchased In May $18.00 If Purchased After June 1		$1.50	$2.50	9 AM-5 PM			•				•	•
OCEAN GROVE (201) 775-0035	$40.00 Adults $30.00 Ages 5-11 Beach/Pool $15.00 Pool Only 10% Discount March-April 1		$2.00 Beach/Pool	$2.00	9 AM-10 PM Lifeguards From 9 AM-5 PM	•	•	•		•	•	•	•
BRADLEY BEACH (201) 774-0588	$20.00 Season $12.00 Monthly $7.50 Sr. Cit.		$2.00	$3.00	9 AM-5 PM	•				•	•	•	•
AVON-BY-THE-SEA (201) 774-0871	$23.00 Season $15.00 ½ Season		$4.00	$4.50/Daily	9 AM-11 PM Lifeguards From 9 AM-5 PM			•		•		✓ •	•
BELMAR (201) 681-1176	$18.00 $12.00 Monthly		$2.00	$3.00	9 AM-5 PM	✓ •	✓ •	•		•		✓ •	•
SPRING LAKE (201) 449-8920	$25.00 Age 12 and over		$4.00	$4.00	9 AM-5 PM			•				•	•
SEA GIRT (201) 449-9433	$30.00		$4.00	$5.00	9 AM-5 PM	•	▫	•		•		•	•
MANASQUAN (201) 223-0544	$16.00 Adults $13.00 ½ Season $5.00 Sr. Cit.		$2.50	$4.00	9 AM-6 PM	•		•				✓ •	✓ •
PT. PLEASANT BEACH	Comercially Operated Facilities Prices Vary							•				✓ •	•
BAYHEAD (201) 892-0633 MANTOLOKING (201) 899-3434 NORMANDY BEACH (BRICK TWP.) (201) 477-4441	Private Beach Associations— Residents or Property Owners Only					•	•	•				•	•
LAVALLETTE (201) 793-7477	April 1-April 30 $11.00 June 7-July 5 $16.00 Half Season $11.00 Before Aug. 1 $11.00 Aug. 1-Labor Day	$4.50		$4.00	10 AM-6 PM	•		•	▫			•	•
ORTLEY BEACH (DOVER TWP.) (201) 341-1000	April 1-June 19 $6.00 June 19-Labor Day $9.00				10 AM-6 PM			•				✓ •	
SEASIDE HEIGHTS (201) 793-9100	Jan. 1-March 31 $9.00 April 1-June 14 $11.00 June 15-July 31 $13.00 Aug.-Sept. $7.00	$3.00	$ .75	$1.75/Daily	9 AM-6 PM	•	•	•				•	•
SEASIDE PARK (201) 793-0234	May 7-July 2 $10.00 July 2-Aug. 2 $12.00	$5.00	$ .75	$1.25	9:00 AM-6 PM	•	•	•		•		•	
ISLAND BEACH STATE PARK (201) 793-0506	None Parking Fee				8 AM-8 PM	•	•	•	•	•	•	•	•

KEY

• ACTIVITY PERMITTED ▫ PERMITTED IN OFF-SEASON ONLY ✓ PERMITTED AFTER-HOURS ONLY



	PKWY EXIT	TRANSIT	FEE	FACILITIES	SHOWERS	ROOMS	WALK	MENTS	DATIONS
SANDY HOOK [b]	117			●	●	●			
SEA BRIGHT	N 109 S 117	B	●	●	●	●	●[b]		●
MONMOUTH BEACH	105	B	○	●	●	●	●		
LONG BRANCH	105	BT	●	●	●	●	●[b]	●	●
DEAL	N 100 A,B S 105	B	●	●	●	●	●		
ALLENHURST	N 100 A S 102	BT	●				●[b]		
LOCH ARBOUR	N 100 A,B S 102	BT	●	●	●	●	●		
ASBURY PARK	N 100 A S 100 B, 102	BT	●	●	●	●	●[b]	●	●
OCEAN GROVE	100	B	●	●	●	●	●[b]		●
BRADLEY BEACH	100	BT	●	●	●	●	●[b]	●	●
AVON-BY-THE-SEA	N 98 S 100 B	B	●		●		●[b]		●
BELMAR	97	BT	●	●	●	●	●[b]	●	●
SPRING LAKE	97	BT	●	●	●	●	●[b]	●	●
SEA GIRT	98	B	●	●	●	●	●[b]		●
MANASQUAN	98	BT	●	●	●	●	●[b]	●	●
PT. PLEASANT BEACH	N 90 S 98	BT	●	●	●	●	●[b]	●	●
BAY HEAD	N 90 S 98	T	⊗						●
MANTOLOKING	N 88 S 82, 90		⊗						
NORMANDY BEACH BRICK TWP	90		⊗						●
LAVALLETTE	82		●				●[b]		●

TO THE BEACH

BEACH	BUS—TRAIN—PLANE	OPERATOR
SEASIDE PARK	NYC—Seaside Park (Summer only)	NJ Transit (800) 772-2222*
ISLAND BEACH STATE PARK	Bus Shuttle Toms River (Garden St. Pkwy. Exit 81) Island Beach State Park (Summer only)	NJ Transit (800) 772-2222*
LONG BEACH ISLAND	Phila.—Ship Bottom—Beach Haven (Summer only)	NJ Transit (800) 772-2222*
BRIGANTINE	Atlantic City—Brigantine	Atlantic City Transp. Co. (609) 345-3201
ATLANTIC CITY	NYC—Lakewood—Atlantic City NYC—Atlantic City—Ocean City Wildwood—Cape May Phila.—Atlantic City Phila.—Atlantic City (Express) Cape May—Atlantic City Phila.—Atlantic City Brigantine—Atlantic City Mays Landing—Atlantic City Ocean City—Atlantic City Stockton St. College—Atlantic City Longport—Atlantic City Ventnor Plaza—Atlantic City Jitney Service—Along Atlantic, Ventnor, New Hampshire and Pacific Avenues	NJ Transit #117 (800) 772-2222* NJ Transit NJ Transit NJ Transit NJ Transit #101 NJ Transit US Air (800) 448-2970 Atlantic City Transp. Co. #2 (609) 345-3201 Atlantic City Transp. Co. #6 Atlantic City Transp. Co. #7 Atlantic City Transp. Co. #3 Atlantic City Transp. Co. #5 Atlantic City Transp. Co. #4 Atlantic City Jitney (609) 347-5300
VENTNOR	Atlantic City—Ventnor Atlantic City—Ventnor	Atlantic City Transp. Co. #4 (609) 345-3201 Atlantic City Transp. Co. #5
MARGATE	Atlantic City—Margate	Atlantic City Transp. Co. #5 (609) 345-3201
LONGPORT	Atlantic City—Longport	Atlantic City Transp. Co. #5 (609) 345-3201
OCEAN CITY	NYC—Atlantic City—Ocean City Phila.—Camden—Ocean City Phila.—Ocean City Atlantic City—Ocean City Jitney Service—From Longport Toll Bridge (G.S. Pkwy.) to 59th St. and Central Ave.	NJ Transit (800) 772-2222* NJ Transit #111 NJ Transit #102 Atlantic City Transp. Co. #5 (609) 345-3201 Ocean City Jitney (609) 399-6111
STRATHMERE	Atlantic City—Strathmere NYC—Strathmere	NJ Transit #102 (800) 772-2222* NJ Transit #119
SEA ISLE CITY	NYC—Sea Isle City Phila.—Sea Isle City Cape May—Sea Isle City	NJ Transit #119 (800) 772-2222* NJ Transit #115 NJ Transit #102
AVALON	NYC—Avalon Phila.—Avalon Cape May—Avalon	NJ Transit #119 (800) 772-2222* NJ Transit #115 NJ Transit #102
STONE HARBOR	NYC—Stone Harbor Phila.—Stone Harbor Atlantic City—Stone Harbor	NJ Transit #119 (800) 772-2222* NJ Transit #115 NJ Transit #102
THE WILDWOODS	NYC—Atlantic City—The Wildwoods Phila.—Millville—The Wildwoods Phila.—The Wildwoods Atlantic City—The Wildwoods Anglesea—The Wildwoods—Diamond Beach	NJ Transit #119 (800) 772-2222* NJ Transit #113 NJ Transit #115 NJ Transit #102 Five Mile Beach Busline (609) 522-7721
CAPE MAY	NYC—Atlantic City—Cape May Phila.—Wildwood—Cape May Phila.—Millville—Cape May Atlantic City—Cape May Wildwood—Cape May Cape May—Lewes, Del. Trolley Service: Beach Hours—beachfront to mall; every 2 hours through village green area After Hours—beachfront only	NJ Transit #119 (800) 772-2222* NJ Transit #115 NJ Transit #113 NJ Transit #102 NJ Transit #150 Cape May—Lewes Ferry (609) 886-2718; (609) 886-2710 Cape May Trolley Service (609) 884-8411

*When calling from So. Jersey, dial (800) 582-5946
*When calling from New York, dial (201) 762-5100
*When calling from Pennsylvania, dial (609) 966-4488

PUBLIC ACCESS TO THE NEW JERSEY SHORE 1983

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

INTRODUCTION

New Jersey has 126 miles of ocean beachfront beginning at Gateway National Recreation Area at Sandy Hook, where you can bathe within view of the Manhattan skyline, and ending at Cape May, a quiet resort with turn of the century Victorian charm. In between you can find a beach for any mood: crowded fun-filled beaches with amusement piers at Wildwood, Seaside Heights, Long Branch or Asbury Park, or isolation for those willing to explore Island Beach State Park. The thrill of Casino gambling and top name entertainment at Atlantic City, or the serenity of Ocean Grove. There are dozens of other shorefront towns, each offering a mood of their own.

This Beach Access Guide will tell you a little about each beach and then tell you about access—how to get there by car, bus or train, and the availablity of lockers and changing facilities. By using this guide, we hope you will be able to spend many summer days at the Jersey Shore, without any access problems.

A WORD ON RIGHT OF ACCESS

"Beaches" include both the dry sand area landward from the mean high water line to the vegetation line, as well as the **wet sand** area seaward of the mean high water line. The **wet sand** area is known as Public Trust land. It belongs to the State of New Jersey unless the State has conveyed a riparian grant for the tide-flowed lands. Even when sold by the State, these wet sand riparian lands remain impressed with Public Trust and must be open to the public for purposes of navigation, commerce and recreation, according to decisions of the courts of New Jersey. The Public Trust doctrine does not apply to the dry sand beaches which are owned by either local, state or federal government, or by private individuals or associations.

The practical implication of this doctrine is that even where a dry sand beach area is privately owned and the public excluded, that landowner cannot exclude the public from the area **below** the mean high water line. The dry beach can be fenced off, but that fence **must** stop at the water line, so that bathers can pass from each side to the surf. The public has the legal right of access to the wet sand beach.

In recent years the New Jersey Supreme Court has extended this doctrine to **municipally owned** beaches and beach facilities which now must be made available to the public and residents on an equal basis. Municipalities do have the right to make and enforce ordinances to regulate practices on a public beach. If you have a question about your right of access, please call the New Jersey Department of Environmental Protection, Division of Coastal Resources at (609) 984-0853.

YOUR RESPONSIBILITY TO THE BEACH

Maintaining New Jersey's beaches is not only the responsibility of government, but of beach visitors and users as well. Obeying regulations, helping to prevent litter and respecting natural landforms (such as dunes) are good practices to preserve the beauty and ecological balance of the coast. Please remember that other people also use the beach and enjoy the same right to a clean and safe visit.

A major aspect of beach upkeep is the preservation of sand dunes. These graceful landforms are vital to the health of many of New Jersey's beaches. Dunes provide a natural barrier to flooding during coastal storms and contain a storage of sediment which can be released during storms and can be used to build beaches.

The following are ways in which you can help to preserve the dunes:

1. Use only properly designated paths in going through the dunes to the beach.
2. Stay off the grassed areas of the dunes.
3. Do not disturb or remove barriers such as snow fences or brush which were erected to build up the dunes.
4. Do not dig into the dunes or camp on them.
5. Do not use vehicles of any sort to cross or go up and down the slopes of the dunes.

KEY

- B Bus
- T Train
- ● Facility Available
- ○ Restricted Availability
- ⊗ Available for Residents Only
- b Barrier Free Facility

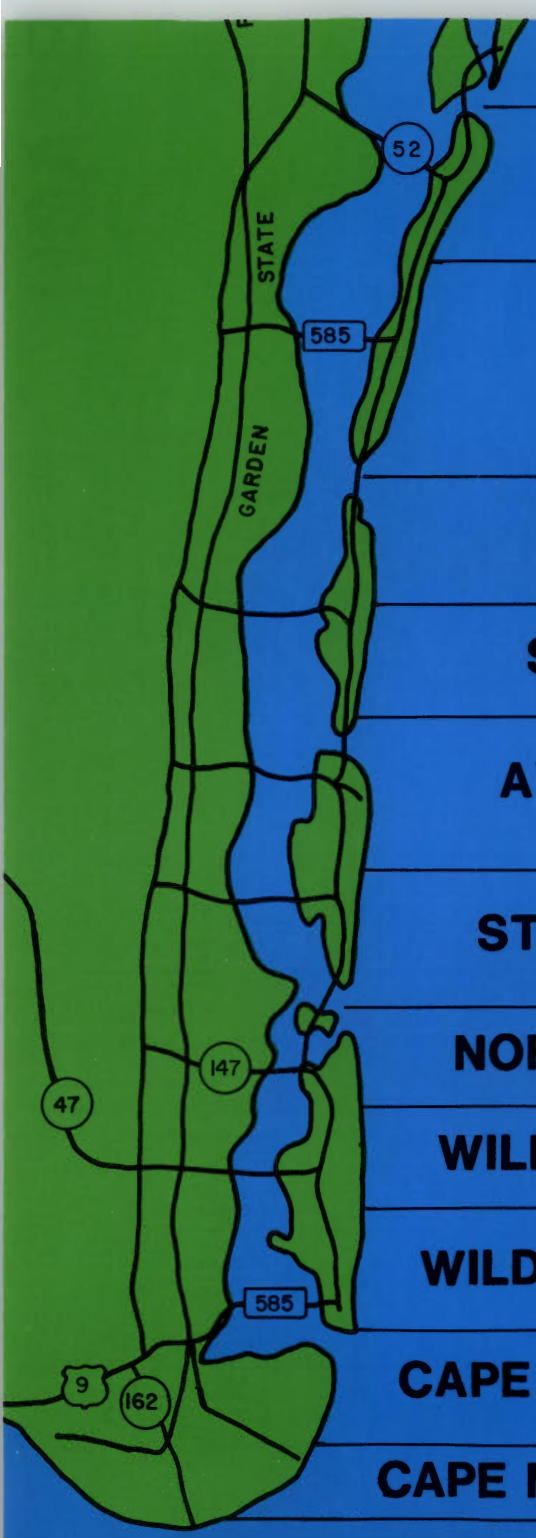
MAP NOT DRAWN TO SCALE

HOW TO GET

BEACH	BUS—TRAIN—PLANE	OPERATOR
SEA BRIGHT	Red Bank—Sea Bright NYC—Sea Bright Newark—Sea Bright	Boro Bus Co. #5 (201) 741-0567 NY—Keansburg—Long Branch Bus Co. (201) 291-1300
MONMOUTH BEACH	NYC—Monmouth Beach Newark—Monmouth Beach	NY—Keansburg—Long Branch Bus Co. (201) 291-1300
LONG BRANCH	NYC—Keansburg—Long Branch Newark—No. Long Branch NYC—Newark—Long Branch—Elberon Red Bank—Oceanport—Long Branch Red Bank—Long Branch Long Branch—Asbury Park No. Long Branch—Asbury Park NYC—Long Branch	NY—Keansburg Long Branch Bus Co. (201) 291-1300 NJ Transit Rail-North Jersey Coast Line (800) 772-2222* Boro Bus Co. #3 (201) 741-0567 Boro Bus Co. #1 Monmouth Buslines #7 (201) 774-7780 Monmouth Buslines #31 (800) 772-2222* Asbury Park—NY Transit Corp. (201) 774-2727
DEAL	Freehold—Asbury Park—Neptune City—Deal Long Branch—Deal—Asbury Park	Monmouth Buslines #4 (201) 774-7780 Monmouth Buslines #7 (800) 772-2222*
ALLENHURST **LOCH ARBOUR**	NYC—Newark—Allenhurst Long Branch—Deal—Asbury Park	NJ Transit Rail—North Jersey Coast Line (800) 772-2222* Monmouth Buslines #7 (201) 774-7780
ASBURY PARK	NYC—Asbury Park NYC—Newark—Asbury Park Phila.—Asbury Park Jersey City—Asbury Park Red Bank—Asbury Park Manasquan—Belmar—Asbury Park Long Branch—Asbury Park No. Long Branch—Oakhurst—Asbury Park Pt. Pleasant—Asbury Park Freehold—Asbury Park	Asbury Park—NY Transit Corp. (201) 774-2727 NJ Transit Rail—North Jersey Coast Line (800) 772-2222* NJ Transit #117 Domenico Bus Service (201) 339-6000 Boro Bus Co. #2 (201) 741-0567 Monmouth Buslines #2 (201) 774-7780; (800) 772-2222* Monmouth Buslines #7 Monmouth Buslines #31 Monmouth Buslines #20 Monmouth Buslines #4
BRADLEY BEACH	NYC—Bradley Beach NYC—Newark—Bradley Beach	Asbury Park—NY Transit Corp. (201) 774-2727 NJ Transit Rail—North Jersey Coast Line (800) 772-2222*
AVON	NYC—Avon	Asbury Park—NY Transit Corp. (201) 774-2727
BELMAR	NYC—Newark—Belmar Asbury Park—Belmar	NJ Transit Rail—North Jersey Coast Line (800) 772-2222* Monmouth Buslines #2 (201) 774-7780; (800) 772-2222*
SPRING LAKE	NYC—Newark—Spring Lake	NJ Transit Rail—North Jersey Coast Line (800) 772-2222*
SEA GIRT	NYC—Sea Girt Asbury Park—Sea Girt	Asbury Park—NY Transit Corp. (201) 774-2727 Monmouth Buslines #16 (201) 774-7780; (800) 772-2222*
MANASQUAN	NYC—Newark—Manasquan Asbury Park—Belmar—Manasquan	NJ Transit Rail—North Jersey Coast Line (800) 772-2222* Monmouth Buslines #2 (201) 774-7780; (800) 772-2222*
PT. PLEASANT	NYC—Newark—Pt. Pleasant NYC—Pt. Pleasant NYC—Asbury Park—Pt. Pleasant Seaside Heights—Pt. Pleasant (Summer only)	NJ Transit Rail—North Jersey Coast Line (800) 772-2222* Asbury Park—NY Transit Corp. (201) 774-2727 Monmouth Buslines #20 (201) 774-7780; (800) 772-2222* Boro Bus Co. (201) 741-0567
BAY HEAD	NYC—Newark—Bay Head	NJ Transit Rail—North Jersey Coast Line (800) 772-2222*
SEASIDE HEIGHTS	Phila.—Toms River—Seaside Heights (Summer only) Trenton-Seaside Heights (Summer only) Pt. Pleasant—Seaside Heights (Summer only)	NJ Transit (800) 772-2222* Mercer Metro (609) 296-9171 Boro Bus Co. (201) 741-0567

BEACH

BEACH	FEES				HOURS	ACTIVITIES							
			DAILY			SURFING	SCUBA DIVING	RAFTING	BEACH BUGGY PERMITS	BEACH FIRE PERMITS	PICNICKING	SURF FISHING	JETTY/PIER FISHING
	SEASONAL	WEEKLY	WEEKDAY	WEEKEND									
BARNEGAT LIGHT (201) 494-9196	May 1-June 15 $3.00 June 15-Labor Day $6.00	$2.00			10 AM-5 PM	•		•				✓ •	•
BARNEGAT LIGHT STATE PARK	None Parking Fee				9 AM-6 PM			•			•	•	•
LOVELADIES (201) 494-2153	May 30-June 15 $2.00 June 15-Labor Day $5.00	$2.00			9 AM-6 PM							✓ •	✓ •
HARVEY CEDARS (609) 494-2843	May 1-May 30 $4.00 May 30-Labor Day $6.00 Age 12 and under Free	$2.00 Persons Wearing Street Clothes Free			10 AM-5 PM	•		•	▫			•	•
SURF CITY (609) 494-3064	April-May 31 $4.00 May 31-Labor Day $6.00	$2.00 Ages 12 and under Free			10 AM-5 PM	•		•	▫			•	
SHIP BOTTOM (609) 494-2171	Prior to May 31 $4.00 May 31-Labor Day $6.00	$2.00 Ages 12 and under Free			10 AM-5 PM	•		•				•	•
LONG BEACH (609) 494-2153	May 30-June 15 $2.00 After June 15 $5.00	$2.00 Ages 12 and under Free			10 AM-5 PM								
BEACH HAVEN (609) 492-0111	May 1-May 31 $3.00 May 31-Labor Day $5.00	$2.00 Ages 12 and under Free			10 AM-5 PM	✓ •	•		•	•		•	•
BRIGANTINE (609) 266-7421	May 1-May 31 $4.00 May 31-Labor Day $6.00	$2.00			10 AM-6 PM	•		•	•			•	•
ATLANTIC CITY (609) 347-5330	None				9 AM-7:30 PM	•	✓ •						
VENTNOR (609) 823-4118	May 1-May 31 $3.50 May 31-Labor Day $7.00	$2.00			10 AM-6 PM	•		•		•	✓ •	✓ •	
MARGATE (609) 822-2605	May 1-May 31 $5.00 May 31-Labor Day $7.00	$2.50			10 AM-6 PM	•		•				✓ •	•
LONGPORT (609) 823-2731	April 1-May 31 $3.50 May 31-Labor Day $7.00	$2.50			10 AM-6 PM	•		•				•	•
OCEAN CITY (609) 399-6111	May 1-May 31 $3.50 May 31-Labor Day $5.50	$2.00			9:30 AM-5:30 PM	•	•	•	•			✓ •	•
CORSON'S INLET STATE PARK (609) 861-2404	None				Sunrise to Sunset					•			•
STRATHMERE (UPPER TWP.) (609) 628-2011	None				Sunrise to Sunset No Lifeguards			•				•	
SEA ISLE CITY (609) 263-4461	May 1-May 31 $5.00 May 31-Labor Day $7.00	$3.00			10 AM-5 PM	•	•	•	▫			•	•
AVALON (609) 967-8200	May 1-May 31 $4.00 May 31-Labor Day $6.00	$3.00			10 AM-5 PM	•		•	•		•	✓ •	•
STONE HARBOR (609) 368-5102	April 16-May 31 $5.00 May 31-Labor Day $7.00	$3.00			10 AM-5 PM	•		•	▫			•	
NORTH WILDWOOD (609) 522-1407	None				10 AM-5:30 PM							•	•
WILDWOOD (609) 522-1407	None				10 AM-5:30 PM							✓ •	
WILDWOOD CREST (609) 522-1407	None				10 AM-5:30 PM	•		✓ •	▫			•	•
CAPE MAY (609) 884-8411	April 9-May 31 $7.50 May 31-Labor Day $9.00	$4.00	$2.00	$2.00	10 AM-5:30 PM	•	•	•				•	•
CAPE MAY POINT (609) 884-8468	Before May 31 $5.00 June 1-Labor Day $6.00	$3.00			10 AM-5 PM		•	•			•	•	•
CAPE MAY POINT STATE PARK (609) 884-2159	None				Sunrise to Sunset No Lifeguards						•	•	



LONGPORT	N36 S29	B	●						●
OCEAN CITY	25 N30 S29	B	●	●	●	●	●[b]	●	●
CORSONS INLET STATE PARK	N25 S20								
STRATHMERE UPPER TWP.	17	B							●
SEA ISLE CITY	17	B	●			●	●[b]	●	●
AVALON	13	B	●			●	●[b]		●
STONE HARBOR	10	B	●			●			●
NORTH WILDWOOD	N4, 6 S4A,B	B		●	●	●	●[b]	●	●
WILDWOOD	N4 S4A,B	B		●	●	●	●[b]	●	●
WILDWOOD CREST	N4 S4A,B	B		●	●	●			
CAPE MAY	1	B	●	●	●	●	●[b]		●
CAPE MAY POINT STATE PARK	1			●	●	●			

DIVISION OF COASTAL RESOURCES

FOREST FIRE SERVICE EXHIBIT AT PATERSON MUSEUM

One of the first exhibits mounted in the new quarters of the Paterson Museum is a display of antique fire fighting equipment, badges and other mementoes, prepared by the southern and northern divisions of the State Forest Fire Service in cooperation with the museum and the Paterson Fire Company. (The Forest Fire Service is a unit within DEP's Division of Parks and Forestry.) The exhibit, part of the "Learn Not To Burn" display, also traces the development of fire prevention and the forest fire service in New Jersey from colonial times to the present through documents dating from 1683. Another section of the exhibit displays accounts of catastrophic forest fires that occured in the state. The exhibit will be in place through the summer until September 6. Scheduled programs include demonstrations of fire equipment and visits by Smokey Bear.

The museum is housed in the old Thomas Rogers Locomotive Works building which has been rehabilitated as part of the historic preservation project underway at the Great Falls of Paterson Historic District. (Federal historic preservation grants, administered by DEP's Office of Historic Preservation, are helping to fund the project.) The museum is located at the corner of Spruce and Market streets in Paterson (Passaic County).

PESTICIDE RULE REVISED

Major revisions were incorporated into the recently adopted pesticide use rule of the New Jersey Pesticide Control Code. The changes were in direct response to testimony from the more than 500 commentors at three public hearings held on the nine proposed subchapters by DEP. Under the changes, among others—Displayed warnings of pesticides in storage must be in both English and another language representative of the ethnic majority in the local area where the storage is located; No community or area-wide pesticide application for gypsy moth control may take place between 7:30 and 8:30 a.m. within two miles of a grades K through 8 school or within two-and-a-half miles of a grades 9 through 12 school; and pesticide products toxic to bees may not be applied on a community or area-wide application within one mile of a commercial blueberry field during the period April 15 through May 31. Further information on the subchapters adopted and in effect may be obtained from DEP, Bureau of Pesticide Control, 38 Scotch Road, Trenton 08628.

U.S. EPA DELEGATES ADMINISTRATION OF AIR QUALITY PROGRAM TO DEP

DEP this spring agreed to take over the administration of a federal air quality program—"Prevention of Significant Deterioration Permit Program"—from the U.S. Environmental Protection Agency (EPA). The program, in effect since 1980, is designed to avoid deterioration of good air quality beyond set limits by restriction of total aggregate emissions from major new and modified sources of air contaminants. The permits for New Jersey had been issued by EPA's Region II office in New York City following application review by DEP.

DEP Commissioner Hughey said, "With this delegation of authority, the entire permitting process for New Jersey's industrial and manufacturing sources of air pollution will be in state hands. This will streamline the permitting process because applicants will be dealing only with DEP, rather than with DEP and EPA." However, Commissioner Hughey cautioned EPA that though he foresees no serious problems in carrying out the program for the remainder of this fiscal year, he could not be so optimistic about the 1984 fiscal year in view of further projected cuts in funding.

Herbert Wortreich, assistant director of DEP's Division of Environmental Quality, stated that the majority of new facilities in the state requiring review under the program will be resource recovery facilities and industrial coal-fired boilers. Most other sources will not emit enough air contaminants to be affected.

SWIMMING POOL OPEN AT LIBERTY STATE PARK

The swimming pool at Liberty State Park, staffed by trained lifeguards, is now open on a daily basis and will remain on that schedule through Labor Day. *The user fees at the pool are in effect every day.* The charges: Adults (age 12 and over), $3 and Children (ages 5 through 11), $2. Children under 5 years of age are admitted free. Liberty State Park is located off Exit 14B of the New Jersey Turnpike. The pool is located off Pesin Drive, the main roadway leading to the developed portion of the park. There is no parking fee at Liberty.

REMINDER . . . To report a forest fire by phone, dial Operator and say, "I want to report a forest fire." You will be connected to the nearest fire warden.

PHOTO BY BARRY LEILICH

THE NATURAL AREAS SYSTEM. Currently, there are about 40 natural areas in the state system—most of these are sections of state parks/forests, some are parts of wildlife management areas. To be designated a state natural area a place must meet set-by-law criteria . . . "lands or waters which have retained most of their primeval character or are habitat for rare or vanishing species of plant or animal life or have similar features of interest which are worthy of preservation for the use of present and future residents of New Jersey."

The mother and son stone-stepping across a brook in Hacklebarney State Park (above) are enjoying one of the quiet pleasures of exploring a natural area while visiting a state park. A portion of the Lamington Natural Area lies within the northern section of the park (the remainder, within the Black River Wildlife Management Area) and provides the visitor with a breathtaking view of the Black River which flows deep within a hemlock and boulder lined ravine. Hiking trails with picnic tables adjacent to them can be found within the ravine as well as throughout the mature hardwood forest on the hillsides to the north and west of the river. The waters of the park provide an excellent opportunity for fishing. They are annually stocked with trout by FG&W. New Jersey fishing laws apply. It is recommended that visitors wear comfortable walking shoes as the topography of Hacklebarney is rather rugged. The park is located in Morris County, about three miles southwest of Chester with access from Routes 24, 206

Continued on page 16D

SKILLFUL ANGLER AWARD PROGRAM

The Division of Fish, Game and Wildlife in cooperation with the *New Jersey Fisherman Magazine* recently announced a new recognition program to honor the many anglers who fish New Jersey waters and display their skill by catching fish of near-record size. New Jersey has for many years awarded recognition to fishermen who break existing state records, but never before has the state honored those who landed fish of trophy size.

Now, there is the *New Jersey Skillful Angler Award* which will be given to anglers who catch any of a wide variety of both fresh and salt water species which exceed established minimum weights. (See tables.)

DEP Commissioner Hughey remarked that "the Skillful Angler Award helps to give recognition to the fact that New Jersey has some of the finest fishing in the northeast and should go along way to promote the state's fishing opportunities for both residents and nonresidents alike."

The Skillful Angler Program will be administered through the *New Jersey Fisherman Magazine* which will receive the applications and make the awards. The Division of Fish, Game and Wildlife is supplying the award applications and the certificates and pins which will be sent to the winners.

Here's how the program works:

Application forms have been distributed to most sporting goods stores and bait and tackle shops throughout the state.

Persons who catch a fish which exceeds the minimum weight should fill out an application form and submit it as soon as possible to the address shown on the form (N.J. Skillful Angler Award Program, c/o New Jersey Fisherman, 339 Herbertsville Road, Brick Town, NJ 08723).

Included with the fully completed form, the angler MUST also submit a clear photograph (either color or black and white) to assist in identification of the species.

Under this program there is no need for the angler to retain the fish, but all applications must be properly filled out to be eligible for an award.

Those applications which are approved will be processed within 30 days and the winners notified. Winners will receive a bronze pin suitable for wearing on either a hat or jacket. The pin will identify the person as a N.J. Skillful Angler. Only one pin will be awarded per person, per species during the year. For example, a person who catches a bluefish exceeding the minimum weight will receive an award, but only one award for a bluefish will be given to that person.

However, persons are urged to submit applications for large fish caught even if they have already received a pin since at the end of the year an award will be given for the largest fish caught in each of the category of species. The grand award will consist of a gold-plated pin with a suitable inscription. All winners will also receive a certificate attesting to their skill.

Following are the species and the minimum weights which are eligible for the Skillful Angler Award:

Freshwater	Minimum Weight
Largemouth bass	6 lbs
Smallmouth bass	4 lbs
Chain Pickerel	4 lbs
Northern pike	10 lbs
Muskellunge (incl. Tiger)	25 lbs
Walleye	5 lbs
Brown trout	8 lbs
Rainbow trout	5 lbs
Brook trout	2 lbs
Lake trout	8 lbs
American shad	7 lbs
Channel catfish	9 lbs
Carp	25 lbs

Saltwater	Minimum Weight
Albacore tuna	60 lbs
Black sea bass	5 lbs
Black drum	80 lbs
Bluefish	18 lbs
Fluke	10 lbs
Make shark	275 lbs
Striped bass	40 lbs
Tautog	8 lbs
Tuna (other)	300 lbs
Weakfish	13 lbs
White Marlin	75 lbs
Winter Flounder	2½ lbs
Bluefin tuna	800 lbs

They are "Stars" and "Stripes." These are the names selected from more than 10,000 entries received for the name the eaglets contest sponsored by the N.J. Division of Fish, Game and Wildlife. These eaglets were placed in the nest of the state's only remaining pair of nesting bald eagles in April. The birds were banded in mid-May and left the nest on their own in June. The winners of the contest follow: Jason Gonzales, Basking Ridge; Melody Lynn Katz, Millville; Eileen Arendt, Toms River; Vedrana Culc, Butler; Chrissy Hurley, Haddon Heights; Kimberly Maslo, Somerset; Krista Smolda, Delran; Jason Butkus, West Milford; Katy Howe, Wildwood; Thomas M. Bland, Cape May; Andy Berg, Bridgewater; Stephanie Schenck, Westmont; Ethan Fogg, Bridgeton; Teresa Gradel, Mt. Holly; Jessica Hyder, Atco; Karen White, Spotswood and Larry Wileman of Atco. All of the winners selected the names "Stars" and "Stripes," and each were presented awards by Assistant Commissioner For Natural Resources Helen Fenske of the Department of Environmental Protection.

Continued from page 16C

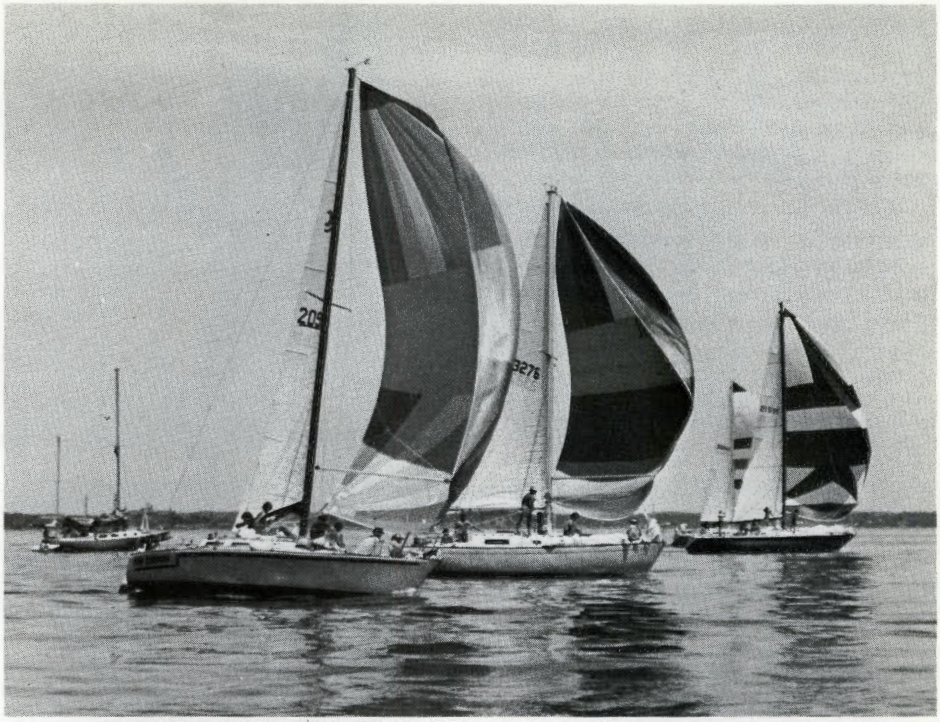
NATURAL AREAS

and 517.

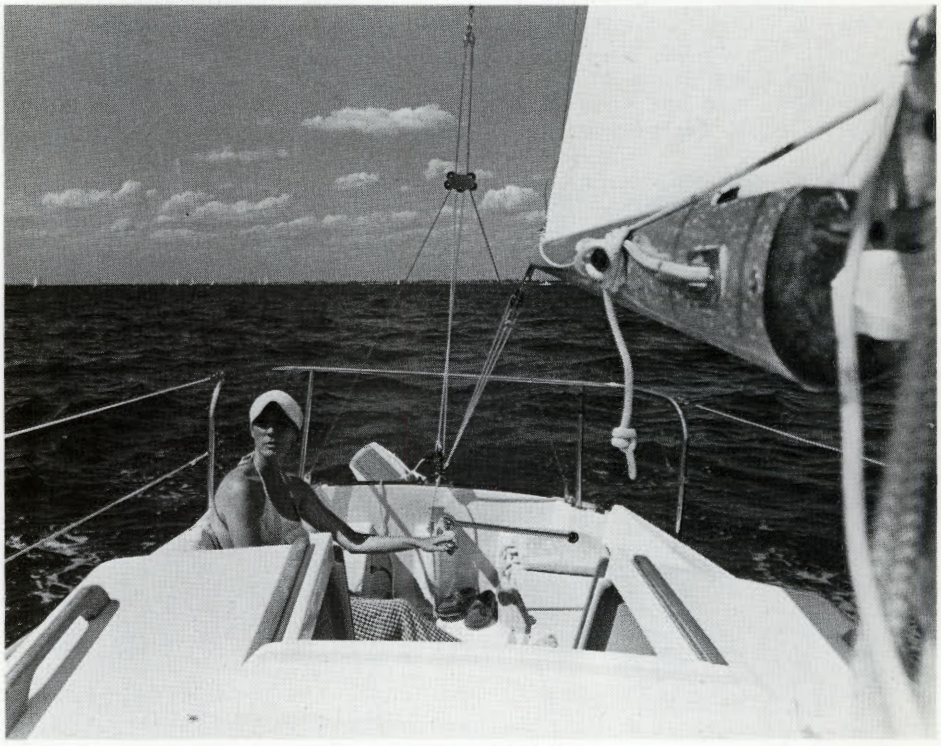
(Hacklebarney State Park was established in 1924 when Adolphe E. Borie donated 32 acres to the state in memory of his mother and granddaughter. The park now contains 524 acres—380 of which were acquired through the state Green Acres program. Additional acreage was obtained through donations and capital purchases.)

SAILING IN RARITAN BAY

By Anthony S. Policastro



Three sailboats attempt to fly spinnakers in extremely light winds during the 1982 Red Grant Regatta.



Sailing on Sandy Hook Bay which connects Raritan Bay.

PHOTOS BY AUTHOR

When someone says they own a boat or a yacht, the words quickly suggest that that person is wealthy and can afford to spend lazy summer afternoons drinking martinis or rum and cokes onboard while dressed in white pants and a blue blazer with gold buttons.

But that is far from the truth because 90 per cent of the boaters in the United States are middle or lower middle class, and this is especially true in New Jersey, according to Boat Owners Association of the United States, 16-year-old national boat owners organization with 100,000 members.

Boaters in New Jersey are simply people who enjoy being on the water, according to Charles Stevenson, Commodore of the Raritan Yacht Club in Perth Amboy.

"Instead of taking the family to an expensive vacation spot once or twice a year, they have purchased a boat," he explained.

One of the hotspots for boating in the Garden State is Raritan Bay, where on any summer weekend the horizon is littered with hundreds of boats of all sizes and types.

"The bay has all the right ingredients for sailing: deep water along most of it, moderate winds, and it is land-locked on three sides, which accounts for good winds and flat seas," Mr. Stevenson explained.

The sailors' havens on the bay are the Raritan Yacht Club, Keyport Yacht Club, Keyport; Richmond County Yacht Club, in Great Kills, Staten Island and the Atlantic Highlands Yacht Club, Atlantic Highlands.

The clubs have large boat-owning memberships and offer a potpourri of sailboat races and activities during the summer for its members, members of other clubs and for anyone with a sailboat desiring to race.

Races are designed for the avid sailor, the weekend sailor and the newcomer, and all boats which race on the bay must join the Performance Handicap Racing Fleet (PHRF), an East Coast sailboat racing organization headquartered in Avon, New Jersey. The annual $10 fee entitles the racer to a PHRF rating for his or her

particular sailboat. Since no two boats sail at the same speed, a handicap system had to be used to make racing competitive and fair. In general, the bigger the boat, the faster it can sail. Consequently, a 21-foot sailboat is no match for a 30-footer.

Before the predominance of the big boat fleets, racing sailors used boats between 14 and 21 feet in length. Some of the one-design fleets which dominated the bay were the Rhodes 19, Mariners, Celebrities, Jets, Albacores, Etchells, Flying Scotts and Daysailors. The fleets get smaller each year, while the PHRF grows in size each year.

Highlights of the short six to eight-month sailing season include two annual open invitational regattas sponsored by the Keyport Yacht Club during July 4th weekend, and the Red Grant Regatta at the Raritan Yacht Club the following weekend in July.

Each regatta includes two races, one on Saturday and one on Sunday, and the races are open to anyone with a valid PHRF certificate and a sailboat.

More than 100 sailboats from as far away as Sheepshead Bay in Brooklyn converge at the clubs for these races each year. The number of participants increases each year along with the competition. More and more sailors are purchasing boats designed strictly for racing with custom equipment, well-trained crews and one purpose: to win.

Sailing on Raritan Bay is pleasurable most of the time. Winds are moderate and seas are usually flat.

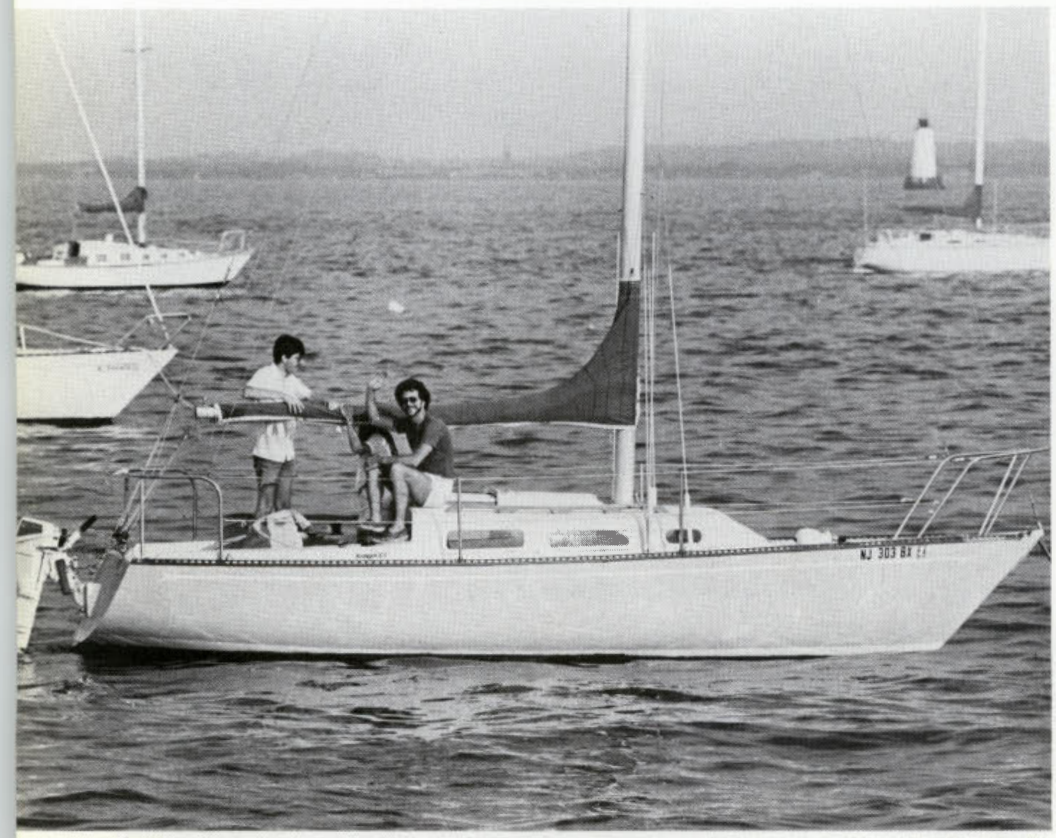
Sailing on a windy day takes a bit of skill as this skipper attempts to clear rock pile #52 without changing tack.

For the cruising sailor, there are several favorite, well-protected anchorages on the bay. One in particular is Horseshoe Cove at Sandy Hook. It is sheltered on three sides, large enough to accomodate 100 or so boats and the water is 11 feet low tide, enough to keep even the largest sailboats afloat.

Small powerboats can be seen with the bows sitting on the west beach because the water drops off very quickly just a few feet from the shoreline.

It is also used as a meeting place for boaters, who plan rendezvous and then raft up with as many as five boats. (Rafting up is when each boat is tied alongside of each other.)

Another anchorage is Great Kills on Staten Island. This is one of the best areas on the bay. It is an oval-shaped harbor surrounded by land with only a narrow channel providing boating access. Vessels inside are protected from winds in all directions, the water is about 11 to 15 feet at low tide and there is plenty of room for visiting boats. It is also the home of the Richmond County Yacht Club, and several marinas. NJ



Skipper at Raritan Yacht Club anchorage waves as he and his crew prepare to relax. Boats at RYC are anchored to moorings. A motorized launch brings owners to their boats.

DEP 1982 ANNUAL REPORT

The Annual Report of the New Jersey Department of Environmental Protection for calendar year 1982 has been published. To obtain a copy, write to Hilda Dutko, DEP, CN 402, Trenton 08625.

PHOTOS BY AUTHOR

A Young Naturalist in the Barrens

By Rudolf G. Arndt

Pine snake.

Even as a youngster in the early 1950's I knew of the pine barrens in southern New Jersey and the treasures they contained for the naturalist. When a leader in the New York Herpetological Society offered to take several of us younger members on a collecting trip to this area, I could hardly wait for the moment. We all hoped to see animals new to us, and best of all, to bring back live specimens of especially snakes which we could study at home. Further, the trip was to be by automobile, a particular treat for a city boy whose family did not own a car. I was even more excited than I would be today had I the chance to go to the jungles of the Amazon. Finally, early on a sunny day in May perfect for finding snakes and lizards and turtles and frogs, we left the crowds and asphalt of New York City and drove south on the New Jersey Turnpike.

About an hour later, I was literally hanging out of a car window looking for the pine trees that should have indicated we were in the barrens. But I still saw only broad-leaved trees. We continued on for yet another hour. When I thought I couldn't stand the wait any longer, I saw a few large pine trees. Moments later, along a curve of Route 206 almost at Atsion Lake, there was a stand of pines and the sand—just as I'd imagined the barrens. What excitement! We went a few more miles, then turned off the highway and headed east on one of the dirt roads I later was to learn ramify apparently aimlessly through the barrens. We drove past a blueberry field, through a stretch of pine woods, and through a thicket of catbriers and brush along the edge of an old cranberry bog until we reached our leader's destination. He had taken us to a cluster of abandoned buildings, the remains of a once large and thriving farm. I have returned to this place often, but never with the promise and excitement I felt on that first visit to the barrens.

We all poured out of the car, each one hoping to be the first to turn over the most promising pieces of board, sheet metal, and other trash that form prime shelter for many kinds of reptiles and amphibians. Man has conveniently "provided" this shelter for them at places like this old farm. We wanted most to find specimens of species typical of the warmer southeastern coastal states. In the barrens these species are at the northern extreme of their distribution. Most prized, because of their large size, coloration, and behavior, were the pine snakes, kingsnake, and corn snake. These do not occur as far north as New York, or even in northern New Jersey. However, we were young enough so that specimens of forms found also in New York would be novel and valued.

Within seconds, one friend screamed excitedly and I turned to see him tugging with both hands on the tail of a pine snake. The five-foot long snake almost succeeded in escaping by pulling itself into a pile of cinder blocks. Another friend quickly caught a four-foot long black racer snake, and another friend almost simultaneously found a twelve-inch long pinkish worm snake under a board.

Moments later, three of us were standing around a pile of old tin cans and jars

Northern fence lizard.

and scrutinizing it for a snake or a lizard. I noticed the black and yellow coils of a kingsnake between the feet of a friend on the other side of the pile. The snake was hiding but was not concealed under a jar imbedded in the sand. I instantly leaped across the pile and captured the snake. It was a beautiful, shiny adult about three feet long—a real prize.

I barely had time to put it into a pillowcase for safekeeping when I saw another kingsnake. It was crawling into a hole in the base of a catalpa tree. I ran for it but it eluded me. A companion

caught it minutes later as it emerged. I had grossly underestimated the time I thought it would hide in the hollow tree. I don't remember being greatly disappointed, since I'd caught one already and I *did* learn a bit about snake behavior. After a stay of less than a half hour, our leader called us together to visit another site. Everyone had caught something at this first stop, even if "only" a fence lizard or a toad.

Moments later we stopped at another abandoned farm, west of Route 206. The day was still sunny and warm and had not become hot—a perfect day for our activities. At this stop, more than at the first, we really noticed the flatness of the land, the sand, and the pines, so different from the hilly, rocky, broadleaf-tree areas so familiar to us.

Quickly, however, our attention was caught by some fence lizards on an old building foundation. After a few moments of exciting chase we succeeded in capturing two or three of these beautiful rough-scaled reptiles. We thoroughly admired them, and were particularly captivated by the vivid blue color on the throat and belly of the males.

I now remembered a stream we had crossed just before we parked, and decided to investigate it. Looking down from a small bridge, the clear, brown-stained, flowing water with its undulating "seaweeds" appeared perfect for turtles. I followed a bank downstream, intent on finding one of these shell-covered reptiles and on keeping my shoes dry. After proceeding only a few yards, an almost explosive hiss near my feet raised the hair on the back of my neck with fright. Looking in the direction of the sound, I saw a large snake. Its head was about a foot off the ground and its body mostly hidden in grass.

After conquering my fear and remaining where I was, I examined it warily to make sure it was not a rattlesnake. After several seconds that seemed like minutes, I concluded that it was not. Simultaneously, it turned to escape. I quickly grabbed it. Momentarily, I was back on the road and walking toward the car and the others with a four and half-foot long pine snake coiled around my hand and arm.

No day was ever a happier one nor a more unqualified success than that one, with a group of enthusiastic friends, a visit to an exotic area, and two prize snakes. I don't remember scenes of the trip home later that day, as the drive was eclipsed by our talking and the examination of our specimens.

I and one or more friends returned to the barrens often in our subsequent high school years, usually to these sites. The trip there was always exciting and for me involved a ride on a New York City bus, two subway rides, and a long ride by bus, destination Hammonton. Only twice did we go by car. Once with an older cousin in his 1949 Ford. It was too early in the year for our interests, in March, and we found only a couple of juvenile fence lizards. And once when a friend, Tom, managed to borrow his father's black Cadillac sedan. On this trip, we travelled through the pines like a Mafia don or an ambassador.

Usually, a skeptical bus driver dropped us off at our request in a long stretch of woods. It was in the middle of nowhere by his standards. For two or three days we explored the pines on foot. We had only the barest necessities, and at night sheltered in one of the dilapidated buildings or in the open. These searches in tick-infested woods in often uncomfortably hot weather with nothing cold to eat or drink and "sleeping" while covered with sand and ravenous mosquitos soon convinced some of us not to become field biologists.

Each visit was an often humorous adventure and revealed much that was new about wildlife.

On one trip, I roused from near sleep after hearing the nearby call of what I believed was a pine barrens treefrog. This would be another prize catch. I strode off into the dark clothed only in underpants and carrying a flashlight to confirm my belief. Promptly I encountered a pick-up truck approaching me. It happened so quickly, and while I was in a large clearing, that I had no chance to avoid it. The incredulous driver and woman passenger both asked what I was doing. After some quick thinking, I could still reply only "Looking for treefrogs". What would have been a better answer? Talk about embarrassment! As an anticlimax, I located the frog, awoke my friend, and spent until 2 a.m. with him collecting five more pine barrens treefrogs. This was my introduction to this species.

Another recollection also illustrates the sweepstakes nature of our searches, when a success often occurs just at the time one vows never to go into the field again. A friend, Tony, and I had spent three days in August heat without finding more than a couple of fence lizards. We were more sophisticated now, and these no longer satisified our interest as on our first trip. After three days of walking, turning trash, being bitten by insects, getting scratched by briars, not to mention being plain tired, sweaty, dirty, hungry, and thirsty, we were dejected. Further, we had to start our hitchhike or walk to Hammonton promptly to catch a bus for New York. Tony decided to take a break and sat down on a wide log in the shade and lit a cigarette.

Eastern King snake. PHOTOS BY AUTHOR

After a short rest, I decided that log had as much promise as anything as a place in which to find a specimen. I started prying into it with my potato rake, our invaluable field tool for turning and pulling things. The seasoned outer wood was tough but pried off after some work. The inside wood was rotten and easier to remove. Moments later, near the log's center, I saw a four-inch long bluish-black tail disappear deeper into the log. I was thrilled that I was on the trail of a five-lined skink. This is a lizard I had not seen often in the barrens, and it would be a worthwhile catch. I worked fast to

remove wood to catch up to the lizard, but also carefully so as not to damage the specimen. Finally, I caught the owner of the tail—a beautiful adult kingsnake. And there was a second one with it! (The tails of this lizard and snake look very similar.) What a success! On the last moments of our trip, after almost losing all hope, two prize specimens.

Of course, Tony was a bit frustrated by all this as he literally sat on the specimens, and as there was always friendly competition among us when in the field.

There was a good relationship between the number of specimens each of us found and the amount of work we expended to find them. However, luck helped to distribute the specimens among us, as follows. A friend, Stu, and I had searched for two days without finding anything notable. Then, while walking along a dirt road, we came to a fork. I took one road, Stu the other. The choice was purely by chance, as neither of us knew the area. I soon came upon a trash pile in an overgrown field. Turning over a square board near the middle of the pile, I discovered a large pine snake coiled symmetrically under the wood. Moments later Stu and I met. He envied the specimen and my good luck, and the black racer he had caught now paled into insignificance.

On another trip Tony and I had spent two days tramping through woods and brush in summer heat, without any results. Downcast, I was absent-mindedly and almost automatically walking down a dirt road near some abandoned cranberry bogs. My field of view covered only my feet and a yard ahead. Suddenly, I almost stepped on a nice kingsnake that chose that moment to leave cover and cross the road. The whole trip was now worthwhile! Of course, my friends had similar good luck on other occasions.

While collecting specimens was the most exciting part of our interest in biology, a well-developed ethic guided our behavior. A specimen belonged not to the person who collected it, but to the one who first saw it, as finding one was usually the more difficult part. Whenever assistance was required to catch something, anyone nearby was more or less obliged to help. We shared specimens to some extent. This often involved trading them. As the specimens were very special to us, they only changed hands among good friends. Rarely did this involve any money, and our activities never had any commercial or mercenary flavor. We disassociated ourselves from individuals who had no real personal interest in the specimens, or who mistreated them.

Pine Barrens tree frog.

Further, our methods of collecting were primitive. They did not involve the sophisticated techniques used by commercial collectors, and they did not deplete populations. We were more interested than anybody in having an area remain productive, for we always planned future trips. We tried not to unduly disturb the areas we searched, but tried to improve the habitat, as by distributing appropriate trash over broader areas to provide more suitable shelter. We were hurt by seeing large-scale disruption of land or by finding specimens that had been shot or beaten to death, or by being told of this. We were very hurt by finding specimens killed on highways by cars or trucks.

Of course, to learn how to catch specimens and then to successfully maintain them at home we had to read appropriate books and articles, as well as visit zoos and museums and talk with experienced naturalists. We learned where animals lived, what they ate, and how they behaved. We learned how to build and repair cages and terrariums, how to keep field notes, how to fill out specimen labels, and how to preserve specimens when they died. Many of us began to photograph animals. This led to a whole new area of knowledge.

As a result of the environmental movement of the 1960's and 70's, greater affluence, better and more roads, and television, many more people are aware of the barrens now then when I was young. To a question such as "Did you ever go to the pine barrens?" it is today probably rare to get the answer, as I did recently from a friend in her 30's and a lifelong resident of southern New Jersey, "Gee, I don't know. Do they have a band?"

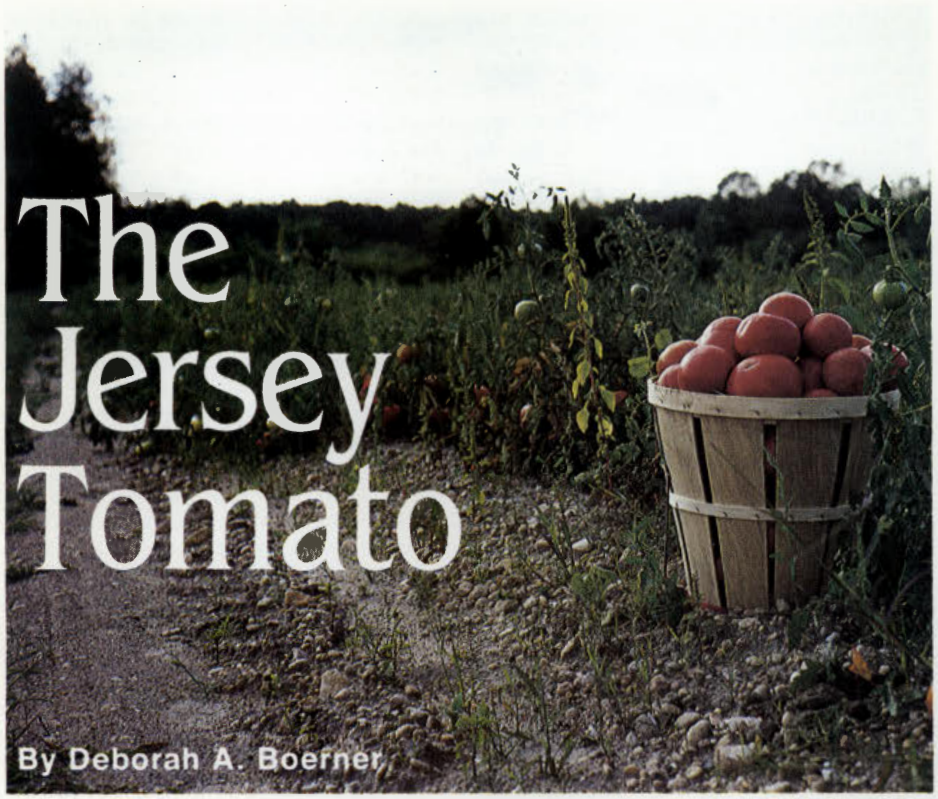
Many of the reptiles and amphibians which I searched for as a youngster are now protected by laws. It is now not legal to catch these animals the way we used to. Such laws are necessary to prevent over-collecting by hobbyists, and especially to stop the activities of commercial collectors who supply specimens for the pet trade.

Many of man's past land-use practices in the barrens are also now forbidden or severely restricted. And rightly so. However, it should not be assumed that all of man's activities here have had an adverse impact on wildlife. The farming and other land use of the past created dirt roads, wooden buildings, trash piles, forest clearings, dikes, and lakes. I don't know for sure whether this increased habitat diversity and shelter, in general, increased the numbers of most species of reptiles and amphibians in the barrens, or whether they only concentrated these animals and made them easier for us to find. I strongly suspect that they really did foster populations.

But certainly the old farm buildings in which we stayed in the 50's and that were heavily used by lizards and snakes are now almost but memories. These buildings have almost disappeared through fire, storm, and decay. When I go there today I see few signs of such animals.

Changing times result in changing land use, and changing land-use legislation is a consequence. But I am glad I am old enough to have memories of the barrens before today's crowds invaded them by car and canoe. I am lucky I was able to satisfy the interests of my youth and search around certain old buildings for specimens, and to wonder about the people who used to live there.

The Jersey Tomato



By Deborah A. Boerner

PHOTOS BY AUTHOR

Anyone who has ever tasted a "Jersey tomato" does not need to be told of its unique flavor and quality. For those who haven't, it's impossible to describe. New Jersey tomato lovers suffer all winter long, tolerating expensive yet bland-tasting tomatoes sold in the supermarket. But when summer comes, farmers and backyard gardeners throughout the state, grow a tomato that knocks the "imports" right off the market produce counters.

In fact, the tomatoes grown during New Jersey's three-month growing season are enough to make this state the fourth-ranked producer of fresh market tomatoes in the nation. The three states which exceed New Jersey—Florida, California, and South Carolina—are all states where the growing season is much longer. If production was tabulated by the month, New Jersey would undoubtably rank much higher in the production of tomatoes for the fresh market.

"The term 'Jersey tomato' is really a misnomer," says W. Bradford Johnson, Extension Specialist for Vegetable Crops at Rutgers University. There's no particular variety the term refers to, but it's a term used for any large-size tomato grown in New Jersey. Although it's not known what makes the tomatoes grown in this state so special, an important factor is the soil. Farmers who retire to Florida often send for seed but are disappointed when they find the product is just not the same, Johnson said.

The latest figures (1980—from New Jersey Agricultural Statistics 1981) indicate New Jersey farmers produce more than 500,000 cwt. (hundredweight) of fresh tomatoes each summer. Year after year, tomatoes rank first in value over all other vegetable crops grown in the state. In 1980, tomatoes accounted for 21 percent of the value of all major vegetables. Fresh market varieties were valued close to $9.7 million while the value of processing tomatoes was $4.6 million.

Even though production of tomatoes for processing is only half as valuable as fresh-variety production in the state, tomato processing is an important industry. It is especially important in the southern counties of Salem, Gloucester, and Cumberland, where 85 percent of the processing crop is grown. Unfortunately, five major processing plants have closed down in recent years, resulting in hard economic times for some South Jersey communities. However, six canneries are still operating in the state and New Jersey has been able to retain its rank among the top five states in the country producing processed tomatoes. Another indication tomato processing will not become a dying industry here is the fact that much of the tomato research being done in New Jersey today is geared towards the processing varieties.

The fact that tomato production is

Roy Malyar, center, accepts a $1000 check for his father, John Sr., who grew last year's heaviest tomato in the New Jersey Championship Tomato Weigh-In. Looking on, left to right, are former Secretary of Agriculture Phillip Alampi, Secretary of Agriculture Arthur Brown, Joseph Helmbold, director of the contest, and Senator Matthew Feldman.

any kind of business at all in New Jersey is somewhat ironic, considering how unpopular the vegetable was just a few generations ago. The South Jersey community of Salem boasts of a legend which explains how the tomato was finally accepted there. Colonel Robert Gibbon Johnson, who later became the town's first mayor, is said to have stood on the county courthouse steps in 1820 and eaten a tomato. A crowd which had gathered to watch him gasped in disbelief. Quite a feat it was, for tomatoes, or "love apples" as they were called then, were thought to be poisonous. When the crowd saw that Johnson suffered no ill effects, others tried eating them and so began the tomato's popularity.

It is not known why tomatoes were believed to be poisonous. Most likely, it had something to do with the nightshade plant family, which is a group of plants that includes some very toxic plants as well as the non-toxic tomato. Whatever the reason, these mistaken fears persisted even into this century and definitely stunted the tomato's improvement and its migration between continents.

Because all parts of the tomato plants are perishable, it's difficult to trace its origin through archeological records. The genus to which the tomato belongs is native to South Africa. It is believed a wild, tiny, red-fruited tomato of Peruvian origin was carried northward to Mexico by prehistoric Indians. There it was domesticated in Pre-Columbia times. Introduction of the Mexican cultivars to the Mediterranean region probably did not occur until the 16th century. Even after the tomato reached Europe, migration to northern Europe was slow. It was first grown there as a curiosity or for decoration, possibly because of its poisonous mystique.

There is no evidence the American Indian knew of the tomato. It was reintroduced to the New World via the colonists in the 1700s. Here, too, it was initially grown in flower gardens. In 1781, Thomas Jefferson was one of the first in the country to grow the tomato for its food value. It was brought to the Philadelphia area in 1798 but was not sold in the market until 1829.

The first real attempts to breed improved varieties since the tomato's domestication in Mexico, occurred after the Civil War. Until the tomato gained popularity as a food which could be eaten, breeding was done mainly by selecting plants within European stocks. More recently, primitive cultivars and the native wild species have proven useful for breeding resistance to wilt diseases and nematodes, two major problems with tomatoes today.

New Jersey has played a dominant role in improving its most valued vegetable crop, the tomato. In 1934, L.G. Schermerhorn, working at Rutgers University, developed a tomato which was popular well into the 1950s, longer than any variety since then. Dubbed the "Rutgers" tomato, it was excellent for both processing and fresh sales; it was particularly noted for producing a flavorful, red-colored tomato juice. Grown flat or on stakes, the Rutgers tomato was widely adapted in the southern states, too.

When a tomato more resistant to wilt diseases was needed, Ramapo, another variety developed at Rutgers, replaced the Rutgers variety on the fresh market. Many varieties for canning and the fresh market have been developed since that time, as the research at Rutgers, the Agricultural Experiment Station, and research plots throughout the state continues. As mentioned before, much of the research today is geared not towards finding a bigger tomato but towards developing a smaller, more crack-resistant tomato that will ripen fast and withstand more punishment from mechanical harvesters when picked for processing.

For fresh market and home gardeners, however, the biggest is still the best. For the past five years, the New Jersey Championship Tomato Weigh-In has been held with that theme in mind. Last year, a 3.905-pound Super Steak tomato earned its grower, John Malyar, Sr., a $1000 check. Drawing local winners from all over the state, the idea of the contest is to "further popularize the already popular Jersey tomato," according to Joseph Heimbold, originator of the contest. Heimbold's goal is to have a tomato grown in New Jersey which will triumph over the current 6.5-pound World Champion from Wisconsin. He believes it will happen and predicts the "champ" will not be grown by a farmer; only one of the past five winning tomatoes was farm-grown.

The tomato has certainly come a long way to become a summer tradition and to affect so many facets of life in New Jersey. If the legend of Colonel Johnson eating a tomato at the Salem County Courthouse is true, there are many people who would gladly thank him. New Jersey farmers would thank him for bringing the most valued crop they grow out of the flower garden. The processing plants and people they employ would have him to thank for making possible a million-dollar industry in catsup, tomato juice, and spaghetti sauce. Backyard gardeners would thank him for giving them something to brag about, whether they win a contest for their tomatoes or just show them off to friends and neighbors. But best of all, tomato lovers have a summertime treat they'd find it difficult to live without.

- ***The 1983 New Jersey Championship Tomato weigh-in will be held on August 27.***
- ***The Semi-Finals will be held at 88 locations at 9-11 a.m. (at least one location in each county).***
- ***The Finals will be at 5 p.m. at the Monmouth Mall at Eatontown (Exit 105, Garden State Parkway).***

1st prize	***$1000.***
2nd prize	***500.***
3rd prize	***250.***
4th prize	***150.***
5th prize	***100.***

Each finalist receives $25.00.

SMALL WATER BASSIN'

By Thomas Dale Pagliaroli

Bass fishing has become a serious business in New Jersey over the last decade. The more popular lakes and impoundments such as Cranberry, Hopatcong, Swartswood, Round Valley and Spruce Run annually play host to swarming hordes of customized bass boats which sport more electronic paraphernalia than the most sophisticated computer centers. These tournaments have met with mixed reaction from the different segments of the sporting fraternity, running the gamut from indifference to "a motorcycle gang on the water." While this article will not concern itself with the pros and cons of competition fishing, it will nonetheless put bassin' in a different perspective.

It has become all too apparent that angling for largemouths has been associated with big water; i.e. the overwhelming majority of articles and columns on the subject deal with the sprawling waters which offer not only optimum cover and inexhaustible sources of forage, but also plenty of "fishing space," if you will. However, the angler without access to a well-equipped bass boat or, for that matter, a large expanse of water, is at a loss. If one wants to fish for bass, there is little in the way of alternatives other than the smaller lakes and ponds, some of which are within city limits. These diminutive waters are full of surprises and in the long run can offer more enjoyable fishing than the more sizeable lakes and impoundments. Why? Simply because the bass are that much easier to find. Of course the fish will not be as large as those found in the bigger waters, although some eye-popping hawgs are beginning to be taken with startling regularity now that more fishermen are turning their attention to these under-utilized jewels. Previously ignored as being "fishless," the small waters are quite capable of producing bass in the 4 lb. range or better. The lack of fishing pressure has given the bass no choice but to develop pot bellies and bad attitudes. As such, they are fairly easy targets for the angler who takes the time to learn the water, its structure, and the bass' behavior.

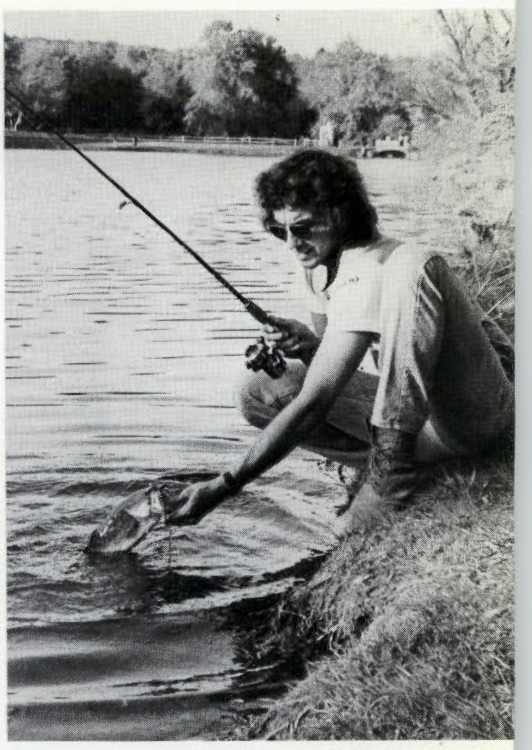
The size of the water varies, but can usually be described as being between a half and twenty-five acres, shallow and eutrophic.

Just as with the larger waters, structure is the critical factor when locating bass in small lakes and ponds. Weeds are the dominant structure, with stumps and fallen trees placing a distant second. Drop-offs and channels must also be considered structure in this type of habitat due to the fact that bass will gravitate towards either of these two areas at one time or another during the course of a day, season or year.

Lake #1 is a typical small water bass pond. Fed by springs and runoff, this lake can either be natural or man-made, has a mean depth of 4 feet and sloping contours which reach to a depth of 10 feet. There are weeds and lilly pads on the shallower end as well as scattered expanses of weeds along the shorelines. Bass will be found around the weeds at the lower end of the pond during the earlier daylight hours and again under the cover of darkness. They will roam the shoreline weeds to a certain extent, but the main area of activity will be centered around the drop-offs. Baitfish will frequent the areas in close proximity to the edge of the drop-off as will bass in residence will be close to the food source. As the forage moves up into the shallows in the early and late hours, the bass are sure to follow. During the off hours, the bass will still hang around the dropoff. These fish are opportunists and will quickly inhale an errant shiner, minnow or sunfish which ventures too close to the edge.

The scattered mats of weeds will also attract and hold bass. The fish will seek the shelter of the weeds on bright sunny days and are aware of the prospect of an easy meal in the form of a baitfish or frog. Those weeds bordering the shallows are a haven for forage species, even if the size of the weed patch is that of a bathroom rug!

A number of artificials will be effective in a lake of this sort, but top honors belong to the jig. When



Author lands a 2 lb. bass which fell for a striped plastic worm. The place is Best Lake in Watchung, a fine piece of bass water which is both small and underfished. (photo: J.K. Wood/The Seasonal Sportsman)

bounced up the side of a drop-off, this lure is sure to goad a bass into striking. Black or yellow maribou jigs get the nod, as do the shad and living rubber varieties. Chartreuse has proven to be a standout color for the latter types of jigs. Size will depend on depth and water condition, but it usually isn't necessary to use anything heavier than a ¼ ounce. On occasion it will pay handsome dividends to doll up a maribou or living rubber jig with a strip of Uncle Josh ripple rind. That little something extra just might do the trick should the bass go into a finicky act.

Surface lures will take bass in such a lake, but these should be fished at dusk into the evening. On overcast days, surface artificials can be used for the duration, providing the water is relatively calm, and should be worked as close to any weed cover as possible. Hula Poppers, Jitterbugs, Rapalas, Rebels and Hawg Frawgs are examples of topwater lures which will kick up a fuss and get a bucketmouth's attention.

Live bait does have its place in a lake of this character. A lively shiner sus-

pended just beyond the lip of a drop-off is doomed. Crays and salamanders worked in the shallows are known bass-blasters; however, these baits are best employed under nocturnal circumstances.

Lake #2 is a very common body of water formed by the damming of a brook or stream in which the channel cuts a swath through the lake. In most instances the channel itself runs fairly close to one of the shorelines and can be fished effectively for bass from one side only. Best Lake in Watchung is a perfect illustration of this type of water. The channel runs within 10 to 15 yards from the brushy southern shoreline opposite the manicured path and park benches of the northern bank. The heaviest pressure is on the north side, where the walking is easy and casting room abounds. Not many bass are caught on this side despite the endless presentations of baits and lures, and the comments made by fishermen would lead one to believe that there were few, if any, largemouths in the murky confines of the lake. Meanwhile, the southern shoreline houses a rspectable number of bass which prowl the length of the creek channel searching out baitfish.

This type of lake is generally more eutrophic than Lake #1 and will have a noticeably heavier weed growth not only along the shorelines but also out into the lake itself. This lake is more fertile, thus increasing its food-producing capabilities. The mean depth again is 4 feet with the channel at or around the 8 to 12 foot mark. Primary attention and effort should be given to the entire stretch of channel, for it is here that bass will congregate to feed and rest. The weeds should be fished only after the channel has been thoroughly scoured.

Plastic worms are the specialty of the house for creek channel bass. Rigged Texas style, a worm slithered across the creek channel up to the shoreline will yield positive results. The plus of the channel is that it harbors other structures such as stumps, dead trees and branches; all of which draw forage and in turn attract bass. A plastic worm can be fished in the thickest of creek channel structure without fear of hangups, therefore enabling the angler to concentrate on getting the worm into the meat of the cover without worrying about snags. Retrieving the worm into the bowels of the channel is tantamount to success, and the lure can be fished in an infinite number of ways, one of which will trigger a response from a bass.

Spinnerbaits and crankbaits (both shallow and deep runners) are particularly devastating when fishing the creek channels. Spinners take their share of bass also. Spinnerbaits, those ever-so-versatile instruments of safety pins, blades and rubber, can be gurgled along the top of the channel or whisked down along the bottom at varying speeds. Spinners retrieved just under the surface or slightly above the channel draw strikes. Cranks can be dug right down into the mud to create as much a disturbance as possible. Rebel's crayfish crankbait is an incredible lure to run a channel with. The life-like appearance and tantalizing gyrations solicit crunching assaults from lurking bass. Crayfish are perhaps the most favorite entree of bass, in big lakes and small.

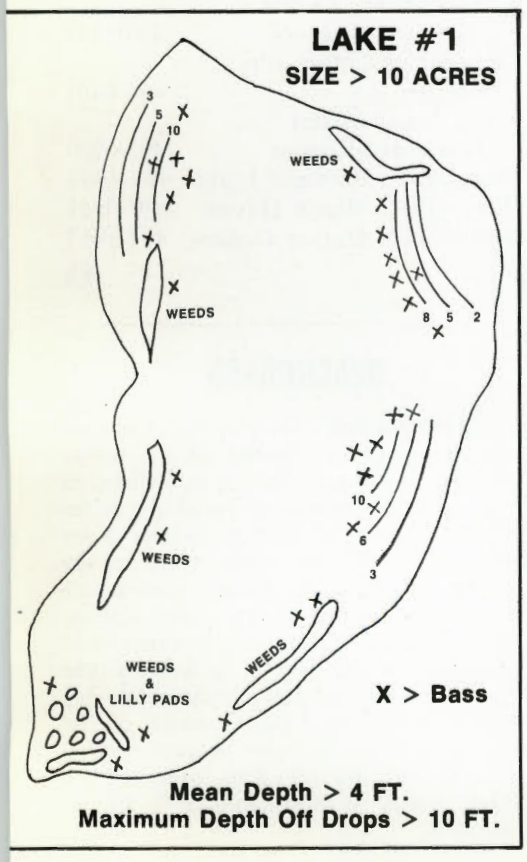
The aforementioned topwater lures and life baits work as well in this type of lake as they do in Lake #1.

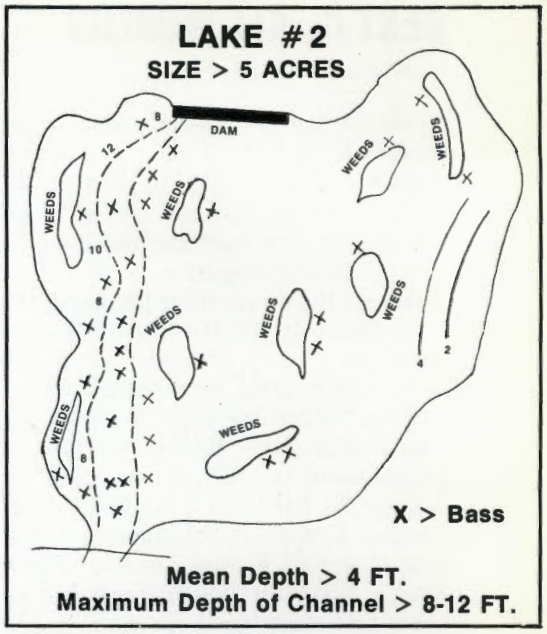
Small water bass are untapped resource for the inquisitive angler. There is no need for a boat, depth recorder, live well or 20-pound tackle box. These waters can be fished from the bank or by wading. The bass are within reach. All that is needed is a little time, ingenuity and "bassin' sense." The hawgs will do the rest.

Below is a list of waters which offer good to excellent bass fishing without the fuss of the bigger lakes and impoundments:

Mary Elmer Lake (Cumberland)
Amwell Lake (Mercer)
Rosedale Lake (Mercer)
Duhernal Lake (Middlesex)
Forge Pond (Ocean)
Best Lake (Somerset)
Fox Trail Lake (Sussex)
Surprise Lake (Union)

The joys of small pond bassin': a young angler, a nice bass and a big smile! (photo: Lee Rods/Lee Lures)





BEST OF ALL WORLDS

Continued from page 3

Bicentennial Park feature string bands, bluegrass, military bands and other sounds.

The park is also the site of three fundraising flea markets, one each in June, July and August.

Across the street from the Park, the Long Beach Island Historical Museum sponsors a series of exhibits and lectures which cater to a variety of interests. Wilderness survival instructor and author Tom Brown will give a presentation on July 8 and again on August 26. The Fourth Annual Woodcarvers' Exhibit is scheduled for August 12 and 13. Friday afternoon Porch Rocker Chats through July and August are a real treat for those who love to listen to old-timers talk about how the island used to be. The Museum is open from 2-4 and 7-9 p.m. throughout the summer.

For those more interested in Bauhaus than Victoriana, the Art Foundation's annual Seashore Open House Tour on August 3 is a chance to examine some of the island's more modern architectural gems.

If you've always believed Manhattan was the only island with a claim to culture, think again. The Surflight Summer Theatre in Beach Haven offers a different Broadway musical hit each week, and kiddie shows for the children. And "Our Gang," a children's troupe from Barnegat Light, performs at various island spots throughout the year.

If you want to do more with the beach than just lie on it, learn to paint it. There are art and craft classes at the Art Foundation and St. Francis Community Center. Each also offers other classes. Marine biology, yoga and gourmet cooking (so you'll know how to fix all those fish) can be learned at the Foundation during summer months; the Center offers swimming, aerobics, self defense, weightlifting and more all year long.

On the other hand, if you don't want to do anything but soak up the sun, feel free. Just don't forget to turn over.

For more information call:

Long Beach Island-Southern Ocean Chamber of Commerce	494-7211
Long Beach Island Foundation for the Arts and Sciences	494-1241
St. Francis Community Center	494-8861
Long Beach Island Historial Museum	492-0700
Borough of Barnegat Light	494-2343
Borough of Beach Haven	492-0111
Borough of Harvey Cedars	494-2843

NJ

BEACHGRASS

SAND SAVER. The clumps of American Beachgrass planted at the shore perform a valuable service by helping to perserve the beaches. The strong roots of the American Beachgrass hold down the sand and help keep sand dunes along the coast from being washed or blown away during wind or rain storms; and the broad leaves help prevent raindrops from pounding down on the dunes. But, beachgrass is delicate—it is easily killed by being walked on or smothered by blankets thrown over it. Vacationers are urged to "keep off the beachgrass" to allow it to flourish and do its work.

Certified Tree Expert

By John E. Perry, C.T.E. Forester

Dr. Louis M. Vasvary (left), of The Cooperative Extension Service, guides prospective CTE's through field examination.

Extensive planning, care, and expense go into the proper placement and use of trees in landscaping, park management, and municipal street beautification. As a homeowner, municipal shade tree manager, park superintendent, or estate manager, what would you do if your trees showed signs of disease? Would you call in a local "expert" you know—one who uses white paint for every treatment, or would you seek out a qualified tree expert who can substantiate his/her credentials? Diagnosing and treating tree ailments is a specialized field that requires much training and experience. As in any other profession, vocation, or field of knowledge, experts are available. To encourage the proper treatment, care and use of trees, and to protect the general public, the State of New Jersey passed the Tree Expert Act (Chapter 100, P.L. 1940) and was the first state to enact nonrestrictive legislation providing for certification of tree experts.

Under the terms of the Law, arborists may present themselves to the public as Certified Tree Experts after having passed a comprehensive examination conducted by the Bureau of Tree Experts, appointed by and subject to the jurisdiction of the Department of Environmental Protection.

The first examination was held in May, 1941, with 24 applicants being examined by the Bureau of Tree Experts. Fifteen people were successful in obtaining the title of Certified Tree Expert. Since that first examination, there have been 237 successful candidates.

The provisions of the Tree Expert Act establish eligibility for certification as follows:

> *Qualifications:* (a) a citizen of the United States or who has duly declared his or her intention of becoming such citizen, and who is a legal resident of the State of New Jersey, (b) who is over the age of twenty-one years, and (c) who is of good moral character, and (d) who has had four years of college education preferably forestry or agriculture, or equivalent, or who, in the opinion of the bureau has had sufficient professional experience in tree care so that in the judgment of the bureau the requirements of four years of college or equivalent education may be waived or (e) who shall have continuously for at least five years immediately preceding the date of his application been engaged in practice as a tree expert, (f) who shall have successfully passed examinations in the theory and practice of tree care, including such courses as botany, plant physiology, dendrology, entomology, plant pathology, and agronomy.

Those who pass the examination are furnished a Certificate and an Identification Card and are required to renew certification each year. Those who do not pass the exam the first time may reapply for examination in successive years.

The title of Certified Tree Expert is treasured by those who have obtained the designation because the exam is comprehensive and is a standard by which one is compared with others in the business of tree care. The professional ethics and conduct of those holding this designation are monitored by the Bureau of Tree Experts and the Bureau can suspend or revoke a certificate if, after holding a hearing, in its opinion the individual has been found to be guilty of negligence or wrongful conduct in the practice of professional tree care.

An entire day is devoted to the testing of each candidate and the examination consists of a written and field combination. The written portion is in essay, true-and-false, and multiple-choice types of questions; the field test is on identification, diagnosis, and recommended treatment. The exam requires expertise in tree diseases, tree insects, cabling and bracing, physiology, planting, pruning and general maintenance, and a knowledge of equipment use, tree requirements, tree characteristics, and good practice.

The Certified Tree Expert has the credentials—seek this person out. NJ

Bicycling From Millington to Cape May and back

By Lynne T. Combs

My husband, Bill, and I have lived in New Jersey all our lives. We were both raised in Chatham and now live in Millington. Being native New Jerseyians, however, does not ensure familiarity with the State, for we have never made the effort to explore New Jersey except for that part immediately near our home. Having experienced a bike trip through the Massachusetts Berkshires last summer we were anxious to undertake another biking adventure. We thought the goal of reaching Cape May reasonable with the added bonus of giving us a chance to explore New Jersey.

On Friday morning, August 7, 1982, we left Millington at 6:27 on our bicycles, packed with panniers, sleeping bags, a backpacking tent, and a bike tire repair kit. Our goal for the day's ride was Sea Girt where my aunt has a home. We had spent some time studying a road map and had chosen a surprisingly direct route on back roads. We crossed Rt. 22 into Bound Brook and then followed the bike path paralleling Rt. 527 through Franklin Township. This is a very heavily traveled road and we appreciated the bike path that separated us from the motorists. At New Brunswick, we enjoyed seeing the new restoration project. At Ryders Lane we headed south to Spotswood where we stopped at Gail and Frank's Coffee Shop for breakfast around 8:30 that morning.

Satisfied and refreshed we headed onto DeVoe and Englishtown Road through Englishtown, the home of the famous auction and flea market. Outside of Freehold on Rt. 522 we stopped to read the markers commemorating the Revolutionary Battle at Monmouth and Molly Pitcher's well. Freehold is a pretty town with friendly policemen and a fine hotel, the Americana, where a coke tasted particularly good.

Peddling through Adelphia we were taken by the beautiful color lavender in the church's stained glass window.

Bill Combs at one of five tolls.

Thus began our awareness of the many truly striking stained glass windows in the churches we passed. We passed through Farmingdale and lush acres of open spaces and sod farms. Had we not been fortunate enough to have a rest stop in Sea Girt we would have stayed in Allaire State Park through which we rode. We arrived in Sea Girt around two in the afternoon. We took a swim in the ocean, relaxed on the beach, and felt pleased with the first day's trip.

For us the adventure was to begin with the trip south from Sea Girt. We would travel south on the roads nearest the ocean, boadwalks included, and Bass River State Forest would be our destination, and campsite that night.

Before I recount that day let me tell you a little bit about ourselves and the preparation we have made for this trip. Bill and I both celebrated 40th birthdays this year. Our three children would all be away for the same week in August which made it possible for us to undertake this trip. We both run regularly. I more than Bill ride a bike as a form of both exercise and enjoyment. Actually the arrangement is this: I run with Bill and he bikes with me.

We left Sea Girt at 6:45 am after a light breakfast. We headed south on Rt. 35 over the Manasquan River. At Seaside Park we had a nice change of pace riding on the boardwalk. We rode all the way to Island Beach State Park in a cool, misty rain. After we passed through the gatehouse we were taken by the dense vegetation along the roadway. The three-mile ride to the first pavilion seemed long because we were now experiencing a south wind as the rain was lifting and the sun trying to make an appearance. We relaxed at the pavilion, enjoying its easy setting in the dunes. The beach was sparsely populated so we really felt we were seeing the Jersey coast as it might have been before the influx of the sunbather.

We left the Park and had to head back north to Seaside Heights and Rt. 37 heading west. This was our only available route back to the mainland and roads south. The bridge over the bay on Rt. 37 is hazardous for bike riders. The four lane road is very busy and has no shoulder. The elevated sidewalk next to the railing was our best option but the strong south wind and narrow path made that choice unnerving and one we were very glad to end. On future such bridges we would walk!

At Toms River we picked up Rt. 9 on which we would ride for the rest of the day. Although a heavily traveled road, the shoulder is wide and fine for bicycling. At Waretown, Bill had the first of four flat tires we would have. Being the rear tire it took a bit longer to fix, but encouragement from another cyclist helped. At Barnegat we stopped for a cheeseburger which tasted delicious. Soon afterwards we saw a sign, "Life is like an ice cream cone; you must learn to lick it."

The hot August sun, the constant south wind, and the long flat road were beginning to wear us down. We found

ourselves stopping frequently for drinks and ripe Jersey peaches. We were very happy to arrive at Bass River State Forest. We set up our tent and, best of all, took a swim in Lake Absegami. What a beautiful state forest is Bass River. Having marveled at state forests in other states, I never realized New Jersey had such nicely equipped and maintained spots.

We cooked ourselves a stew-like concoction on our backpack stove, played a few rounds of gin rummy and then fell asleep as the thunder rolled.

As is our custom we were up with the sun the next morning. The rain during the night had not been heavy but just enough to soak everything hanging outside. Thus we put towels, bathing suits and socks in the dryer which under the circumstances proved to be a much appreciated feature of the campground. By 6:30 we were on our way south. Going over the Mullica River, Rt. 9 and the Parkway merge into one road. On this very busy portion of the road Bill had another flat which really wasn't the best way to begin a day's ride. But he fixed it in record time, and we walked over the Mullica River bridge and aimed for Smithville. The village wasn't open, but the bakery was. We had wonderful sticky rolls and juice which proved to be a very adequate breakfast. At Absecon we left Rt. 9 and took Rt. 30 into Atlantic City. We had planned to ride into Brigantine Natural Wildlife Refuge but felt a pressing need to keep riding south. Our game plan for this day was Cape May or bust. Again we had a south wind and it was going to be a hot day so it seemed enough of a challenge to reach the tip of New Jersey.

At Atlantic City we took to the boardwalk which is grand and wide and very long, taking us all the way to Margate. We passed by Lucy the Elephant in Margate and then over the causeway into Ocean City. The causeway drawbridges were to number five before we arrived at Cape May, and cost us each a 10¢ toll per bridge. The novelty of the tolls never ceased and the toll collectors never failed to give us encouragement.

Now we started noticing other cyclists heading north. After exchanged shouts as they passed we learned the bikathon from Cape May to Margate was in progress with 900 cyclists participating. The smiles and waves from fellow travelers and frequent remarks that we were going the wrong way helped us as we again began to feel the heat, the wind and the weariness.

The entire trip on Ocean Boulevard was filled with constant activity. There were lots of cars and pedestrians; lots of stopping and starting; lots of sites to see, worn coins to pick up, potholes to avoid and stops to be made for drinks. We were constantly parched so we had to stop for liquid often. This gave us a chance to meet and talk with the bikathoners heading north.

At Avalon we stopped to visit with a cousin for a short while. Had she not lived right on Ocean Boulevard we might not have stopped for we were really feeling weary and were anxious to reach our destination. After a short visit in a cool porch we moved on.

Bill & Lynne Combs leaving Sea Girt on way to Cape May.

PHOTOS BY AUTHOR

We made one final stop in Stone Harbor at the bird sanctuary where the evening bird activity was just beginning. A pleasant birder pointed out different cranes and bittern to us.

At 5 pm we rode into Cape May, happy to make it but exhausted. At the Welcome Center we made plans to stay at the Duke of Windsor Guest House because they advertised a bike shelter. We were warmly greeted by the owner holding two glasses of lemonade. After a refreshing shower we were ready to explore Cape May—on foot!

Cape May was a very gratifying reward for us. We were happy to be able to walk everywhere. We enjoyed the night activity. We had a fine dinner at the Mad Batter where the waitress was most obliging in constantly refilling our water glasses.

We awoke early for a jog to the beach, a dip in the ocean and then a long walk in search of Cape May diamonds. We found many different colored stones and perhaps one diamond, at least we're content to think so.

Since our breakfast at the Duke of Windsor didn't begin until 9 am, our morning was very relaxed. We felt no need to hurry so our walk on the beach and through the backroads of the town was slow and easy. We visited the local bike shop where Bill made arrangements to have foam grips put on his handlebars and where we purchased two more spare inner tubes. We did some shopping in the mall, took pictures of the colorful Victorian architecture and saw the lighthouse at the tip of New Jersey.

By noon we were ready to pack our bikes and hit the road. By 12:30 we were on our way home! Our route north would be inland, through the Pine Barrens for we wanted to see another aspect of New Jersey. We took Rt. 9 to Rt. 47 which took us up to Belle Plain State Forest. This was only a 30 mile trip which was just enough after our respite in Cape May. Riding through Goshen and Dennisville we saw samples of beautiful cedar furniture for sale, bountiful fruit stands, and interesting antique shops. Again we were very impressed with the quality of the state forest. Belle Plain State Forest has beautiful trees lining the entrance. Lake Nummy is clean and picturesque. The concession stand is well stocked with pretzels and soda. The campsites are generous in size, very clean, and curtained with trees. We relaxed over tea and stew and a few hands of cards. By nightfall we were ready for bed.

We were on the road by 7 the next morning. We planned to make Lebanon State Forest our evening's destination. We took Rt. 47 into Tuckahoe and then onto Rt. 50. We figured May's Landing would make a nice stop

for breakfast and as the drizzle became a sprinkle we were most anxious to reach this community.

We found Johnnie's Restaurant in Mays Landing and had a wonderful breakfast of eggs, hash browns, toast and lots of hot tea. It was hard to leave the warmth and hospitality of Johnnie's, but press on we must. Luckily the rain had stopped as we headed for Egg Harbor City. Here we picked up Rt. 563. I was eager to reach Chatsworth because I had been reading John McPhee's book, *The Pine Barrens.* Since he named Chatsworth the capitol of the Pine Barrens we felt it only appropriate that we should aim for this spot. On the way we stopped at Lee's Blueberry Farm and packing plant. We passed by cranberry bogs and extensive blueberry farms. We were tired when we found the Chatsworth General Store and stopped for lunch.

We continued north on Rt. 563 until we came to Rt. 72. Heading east on this route we rode into what we figured was the entrance to Lebanon State Forest. We came upon a barricade across the road. Since it was early in the afternoon and we didn't know where to find the Lebanon State Forest camping area, we decided to head further north, perhaps finding something in Lakehurst or Lakewood.

The only county map we carried was for Ocean County. We were in Burlington County near the Ocean County border. By examining that map along with our trusty Exxon map we decided on a northbound road off Rt. 72 just west of Conrail's tracks. This proved to be a perfect backroad but a bit long for two anxious cyclists, who were not certain that it was the right road. We were relieved to reach Rt. 539. Using the County map we took backroads into Whiting where we stopped for a Creme Soda. We headed into Lakehurst on Rt. 70, a very busy road which makes cycle touring a more stressful mode of travel then the backroads we'd been enjoying all day. In Lakehurst we found Rt. 547 which would take us into Lakewood. By now I realized Bill wanted to make Sea Girt our goal for the day. It seemed easier to keep peddling than to object. From Lakewood it was a series of backroads we followed on the Ocean County map that brought us into this shore community. At 7 p.m. we reached my aunt's home. We had covered 90 miles for the day.

The trip back to Millington was the first day in reverse. We had breakfast in Freehold at Tony's Diner. When we reached New Brunswick we thought we would vary our route and take Rt. 18. We were ready to cross the Raritan River bridge to get to Rt. 18 when we saw two runners emerging from the tow path along the Raritan Canal. We asked them about the condition of the tow path for cycles and they assured us it was passable all the way to Bound Brook. We decided to take the gamble and ride the tow path. This proved to be one of the most exciting stretches of our trip. Here we were in one of the most congested areas of New Jersey traveling on a peaceful, remote and scenic historic pathway. We took our time and stopped frequently. We then came to Rt. 527 in Bound Brook where we had traversed five days earlier. We had only to cross Rt. 22, maneuver the Watchung Hills and coast into Millington to bring an end to this adventure. All went without mishap except for some muscles that were beginning to rebel at the demands. It was good to be home again!

IF FISH COULD TALK

A marine pollution educational module has been developed through a cooperative effort of the National Oceanic and Atmospheric Administration's Ocean Assessments Division, the New York State Sea Grant Cooperative Extension Program, the Cook College-Rutgers University Department of Education, and the New Jersey Marine Sciences Consortium. The modules focus on the sources and effects of marine pollution in the New York-New Jersey metropolitan area. The New York-New Jersey area was chosen because of the severe pollution problems that beset the area and because of public concern over issues such as ocean dumping.

Entitled *If Fish Could Talk,* the modules are structured in a way that makes the research findings of environmental scientists accessible and more easily understood. The modules include two 30-min. filmstrip/cassette programs, student readings, study guides, discussion questions, testing materials, an ecological game entitled "To Harvest a Bluefish," classroom activities, instructions for the teacher, and reference materials. Module components may be used singly or in combination, allowing the teacher to adapt the materials to his or her own needs. As few as two or as many as fourteen class periods may be devoted to module materials, depending on the depth of coverage desired by the teacher.

Although the module was developed for use with secondary school pupils, field trials suggest the materials are suitable for junior college or introductory collegiate audiences, as well as concerned citizen groups, environmental organizations, fishing clubs and the public at large.

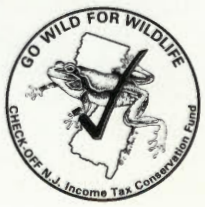
A primary school module, entitled *The Great Garbage Chase* is also available. For further information regarding these materials please contact Mr. John Tiedmann at the New Jersey Marine Sciences Consortium, Sandy Hook Field Station, Building 22, Fort Hancock, New Jersey 07732 (Phone—201-872-1300).

FREE PARKING TUESDAYS AT ALL STATE PARKS

Park users can save money and enjoy less crowded conditions by visiting state parks/forests on Tuesdays through Labor Day. Under DEP's popular Free Tuesdays program, no fees are charged for autos, motorcycles or mopeds, or walk-ins. The program, which was begun to encourage weekday use of state park facilities, has proved attractive to thousands of park visitors over the years.

PINELANDS ACQUISITIONS

The state's program to purchase tracts identified by planning studies as critical to the preservation of the Pinelands ecosystem has resulted in the acquisition of more than 26,000 acres between July 1979 and July 1983, through DEP's Pineland Acquisition Program.



URBAN WATER FRONTIER

Continued from page 11

In the late 1600's Mahlon Stacy found a town at "ye falls of ye de la Warr." Once the center of the great Lenni-Lenape nation, this area became the seat of government for the state of New Jersey. The fortunes of Trenton were founded on iron, ceramic, and rubber. From 1930-1955, the Trenton Marine Terminal was an outlet for "Trenton Makes, the World Takes." Competing ports and alternative modes of cargo transit siphoned business away from the terminal and in 1960 it became inactive. But there is new activity on the site. Cranes which once lifted tons of cargo now stands as silent, black sentinels. Beneath them, fishermen cast into the Delaware and children play on the jungle gyms. With the aid of a Green Acres grant, this rotting, rusting site has been transformed into 3.5 acres of public recreation. The site will serve as the centerpiece for the surrounding 21 acres of light industrial facilities which are expected to employ more than 200 people and generate approximately $100,000 per year in taxes to the city.

In the 1890's the life blood of Bayonne was drawn from the oil fields of the Southwest and the crude tapped from the Pennsylvania terrain. The combined capacity of Tidewater Oil and John D. Rockefeller's Standard Oil crowned Bayonne as the world's major oil center. With this title came all the trappings of industrial royalty; a network of rail lines, crowded housing, and piers jutting out into the Kill Van Kull.

As the world's dependence on Bayonne declined, the rails rusted, the piers rotted, but the crowded housing remained. In the early sixties it was decided to carve an urban park from an industrial forest.

Kill Van Kull Park is indicative of Green Acres continued interest in projects it has funded. Phase I involved the acquisition of 10 acres with a grant of $166,559 coming from the 1961 Green Acres Bond Issue. A subsequent grant of $105,000 resulted in the acquisition of 4.1 acres. In March 1979, the City of Bayonne was awarded a development grant of $1 million to create Kill Van Kull Park. Two years later the grant was increased to $1.3 million for the expansion of the fishing dock.

On May 14, 1983, Bridgeton dedicated "The Waterfront." The park is expected to bring new life to the Cohansey waterfront area. Arthur Kill Park will significantly alter Elizabeth's waterfront. Scheduled in two phases, the site of the old Staten Island Ferry will offer a variety of recreational opportunities.

Camden, Trenton, Bayonne, Bridgeton, and Elizabeth represent only a small fraction of Green Acres projects. The program continues to acquire open space in the Pinelands and sensitive areas such as a blue heron rookery in Lafayette. The bond issues of 1974 and 1978 answered a rising demand for urban recreational facilities. In eight years, over 300 municipalities have used Green Acres funds to add new recreation areas, revitalize aging park systems, and make those areas accessible to the handicapped. A new bond issue will continue this emphasis. . .

NEW JERSEY CHALLENGE

The "New Jersey Challenge" was announced by the National Shooting Sports Foundation as part of a nationwide program aimed at reaching 20,000 schools with the "Un-endangered Species" filmstrip by the end of 1983. The NSSF and other groups have already placed the "Un-endangered Species" in more than 15,000 schools nationwide. To reach the 20,000 goal, the NSSF is calling upon sportsmen in all 50 states to sponsor the placement of additional programs based on the number of schools in each state.

The "Un-endangered Species" traces the rescue of many species of wildlife from the brink of extinction to relative abundance today and emphasizes the role that sportsmen-supported wildlife management has played in the comeback. It has been extremely well-received by teachers, and one school has even worn out their first copy and asked for another.

The NSSF has made it very easy for a sportsman or a sportsman's organization to sponsor the placement of the "Un-endangered Species" in one or more schools. The program costs only $7.95, plus $1.50 postage and handling, and there are two simple ways to place the program in a school system. The best way is to have NSSF mail the programs directly to you so that you can present them to school officials personally. This is the best method because it allows you to meet school officials personally and to develop a relationship which you can build upon in future years. However, if you prefer, you may simply provide the NSSF with the address of one or more schools in your community, and the NSSF will send the programs directly to those schools.

The NSSF will send a Certificate of Recognition to every sportsman who participates in this program, and they will make a special mailing to newspapers in New Jersey when the 125 goal has been reached.

All sportsmen and sportsmen's clubs in New Jersey are urged to participate in the "New Jersey Challenge." Order copies of "Un-endangered Species" for schools in your community from "Un-endangered Species," P.O. Box 1075, Riverside, CT 06878.

FRONT COVER

Sailing off Sandy Hook—Photographed by Al Nunes Vais

(See article on page 17.)

INSIDE BACK COVER

Lizards—Illustrated by Carol Decker

BACK COVER

Fishing and sunbathing at Barnegat Lighthouse State Park—Photographed by Joan R. Huber

Wildlife in New Jersey

LIZARDS

By Cindy L. Kuenstner

Sunlit logs are a favorite basking place for "cold-blooded" reptiles, incuding New Jersey's three species of lizards. Unlike moist, smooth-skinned salamanders which are amphibians, lizards are covered with overlapping scales and have clawed toes. Although active primarily during the day, these terrestrial creates are often unnoticed, either fleeing and hiding when disturbed, or remaining completely motionless.

Our most conspicuous lizard is the northern fence lizard, measuring between 4 and 7 inches in length. These rough, spiny scaled animals are grayish brown with dark, wavy bars across their back. Males possess a dark blue or black area on the sides of the throat, and large blue patches, bordered in black, on each side of the whitish belly. Females are marked similarly to males, but the gray-brown color blends with orange along the tails. They lack the male's blue patches and have light undersides with small dark flecks.

Sandy locations from central Jersey southward are inhabited by fence lizards. They frequent dry, open woods with logs and brushpiles. Fence lizards tolerate living close to humans, and are often observed basking in the sun on logs or fences.

An effective escape mechanism used by surprised fence lizards begins with a quick ascent to the opposite side of the nearest tree, where they will sit motionless. When pursued, they dodge to the other side while climbing higher, similar to the antics of a gray squirrel. If necessary, they will continue this behavior until out of reach of the intruder.

Territoriality is common to all three of our lizards, but defense against rival males is most pronounced in the fence lizard. Courting males perform a head bobbing display while standing high on their front legs to show their throat patches. The challenger usually leaves the territory defended by the dominant male. Eight weeks after mating, female fence lizards deposit from 4 to 17 eggs below a log or in an underground burrow, then abandon them.

The pine barrens is home to New Jersey's smallest lizard, the ground skink, measuring only 3 to 5 inches total length. A smooth, brownish animal, this lizard has two dark lateral stripes extending through most of its tail. In contrast the belly is whitish.

Ground skinks have a translucent "window" in their lower eyelids, known as a nicitating membrane. This membrane affords protection as the skink moves under leaf debris on the forest floor. Humans have a remnant of this membrane located at the inside corner of each eye.

Ground skinks prefer moist areas, and do not hesitate to enter shallow water to escape. When scurrying along the ground, they make snake-like lateral movements.

The life history and habitats of these skinks are not well known due to their secretive behavior. Mating apparently takes place in May and nesting occurs in early summer. Humus and rotten stumps seem to be favorite nesting sites. Hatching occurs sometime in August or early September.

The five-lined skink is our largest native lizard reaching a length of up to 8 inches. Juveniles are shiny black with five light stripes extending along the body halfway onto the tail, the remainder of the tail being brilliant blue. This flash coloration is a survival mechanism, serving to attract a predator's attention to a nonvital portion of the animal. The tail can be severed from the body when it is seized by an attacker. The detached portion then violently writhes about for up to 30 seconds, catching the predator's attention momentarily, perhaps long enough for the lizard to escape under a log or down a stumphole. Regrowth of the tail occurs in all three of our lizards, although the new portion may be shorter and less colorful then the original tail. Adult male five-lined skinks become brownish as they mature, losing most of the blue color in the tail, while the tail of females remains blue but is less intense.

The five-lined skink is found throughout the state but is restricted to undisturbed areas of hardwood forests. They prefer moist locations, especially cut woodlots with rotting logs and piles of leaves.

Soon after emerging from their underground burrow, which protects them from winter weather, lizards begin their springtime courtship rituals. These secretive skinks have an interesting method of mate recognition. Active courting consists of a male skink rushing with his mouth open towards the neck of another member of this species. He will attempt to grasp the other lizard's neck with his jaws. But if a fight occurs, he now knows that he has embraced another male skink. He continues his pursuit of a mate until he approaches one that either flees or succumbs. This lizard is identified as a female and mating proceeds.

The female retains her eggs for a seven week gestation period before they are laid in a rotting log or just below the soil surface. The five-lined skink is our only lizard which broods her 2-18 eggs, actively defending them against small predators. Hatching occurs in late summer.

All of New Jersey's lizards are carnivorous (meat-eaters), feeding on a variety of small invertebrates such as spiders, termites, grubs, beetles, crickets, and snails. A benefit to gardners and farmers, lizards help control insects and other invertebrate pests. Lizards may serve as food for other animals, especially the scarlet, king, and milk snakes.

Although the fence lizard population is considered stable in New Jersey, the status of skinks is undetermined because they are so secretive. Habitat encroachment by man has a negative impact on lizards, especially skinks because of their preference for undisturbed locations away from humans. Pesticide spraying can also harm lizards because of their consumption of insects and other small animals.

With the help of Green Acres open areas acquisitions, lizard populations should endure in New Jersey. A visit to the proper habitat can yield several lizard sightings for patient observers and photographers of wildlife.

Supporting technical information provided by Robert T. Zappalorti, herpetologist.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