New Jersey Outdoors

July/August 1985
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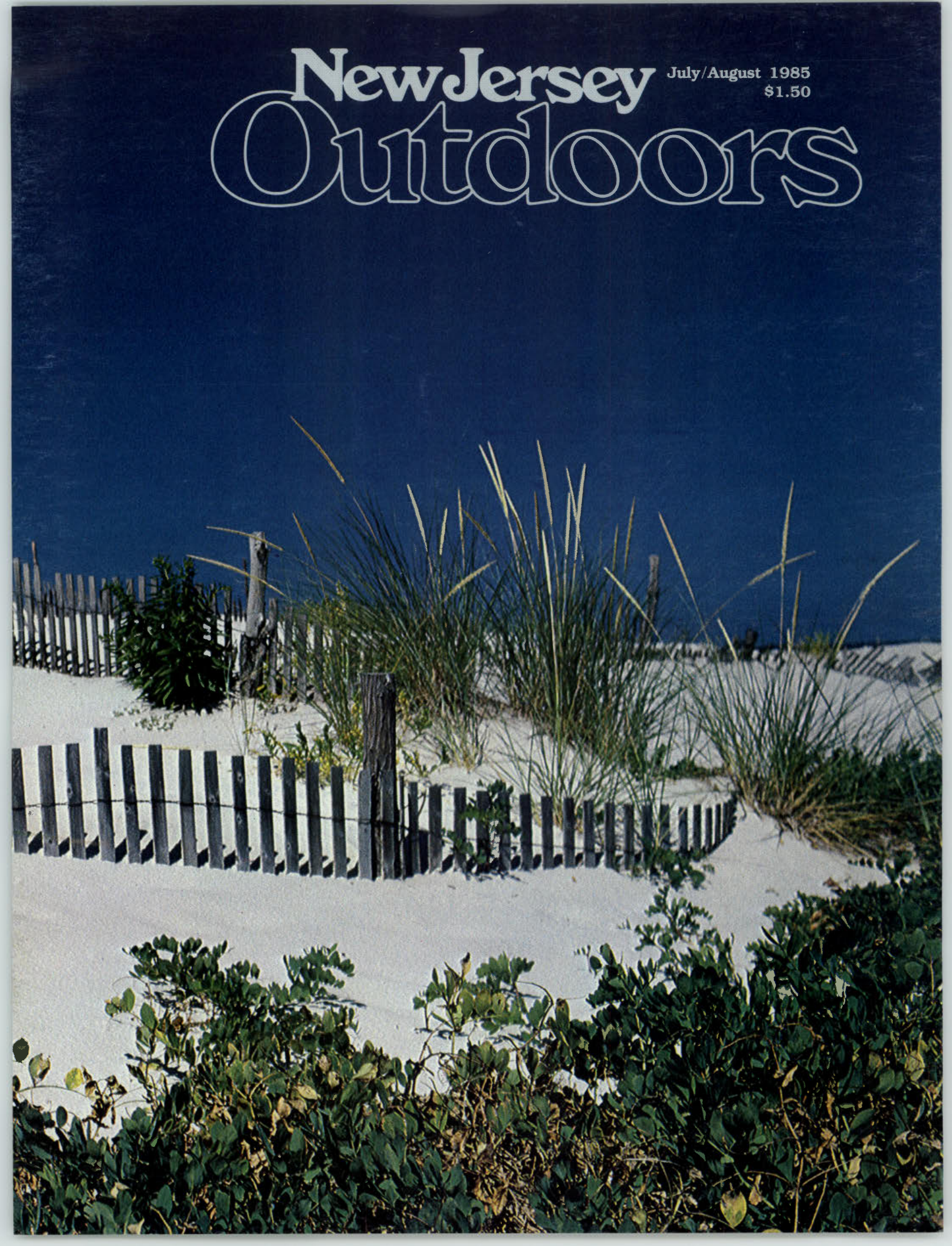

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New Jersey Outdoors

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

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

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

FROM THE EDITOR

Your Help is Needed—Let's Become Water Savers!

This State is in a drought situation. That is not news to you, I know. You have been reading about the lack of rainfall and the drought in your newspapers and hearing it on television and radio for many weeks. But I want to emphasize as strongly as I can that this is a potentially serious problem—one which needs everyone's cooperation and involvement now if we are to get through this period with as little suffering as possible.

Our dry trend began last August and we have had less than normal rainfall every month since then. In April, the Department of Environmental Protection reported that New Jersey had experienced the driest month in 55 years, and that followed the driest January, February and March ever recorded. As of June 1, the State was more than 13 inches below normal rainfall levels. The problems that stem from too little rain began in early Spring—wildfires erupted in our tinder-dry forests burning thousands of acres of woodlands, and requiring a woods closure until some rain relieved the situation, and water supplies began dropping in our reservoirs, rivers and streams.

Governor Kean has now declared a water emergency throughout the State and has asked everyone to voluntarily conserve water. In some areas the problem has grown rapidly more serious—93 municipaliies in the northern New Jersey are on water rationing and 112 municipalities in the Delaware River basin are on restricted water use.

For us who enjoy New Jersey's outdoors—especially those of us who are readers of this magazine, the thought of how a severe water shortage would limit our summer enjoyment is not one to savor. For some activities, there is little any of us can do except to "grin and bear it"—if the rivers, lakes and streams drop too low, there may be no fishing and little boating; some swimming areas may have to be closed as well as forest areas to help prevent wildfires.

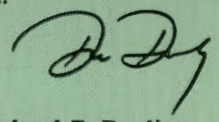
But there is a whole lot we can do!

We can conserve water and help prevent the situation from getting worse. Most of us are "water wasters" not "water savers." Let's first of all turn over a new leaf and change our individual labels!

Good common sense conservation practices at home or when using camping facilities in our parks include taking shorter showers, making sure faucets are turned off when you are not actually using the water, and flushing only for sanitary purposes. At home, you will want to repair any leaks and drips. Wash your car only at a car wash that recycles its water—a dirty car may be this summer's status symbol. You can still drink as much water as you like, but keep a large container of water in the refrigerator so that you don't waste water waiting for it to run cold. Practicing these relatively small inconveniences can do a lot about reducing the drain on the water supply.

The drought situation could be eased by good rainfall, but keep in mind that unless we have heavy and continued rainfall through the next several months, we cannot make up the 13-inch deficit we already have. So don't give up your conservation measures if we have a few showers.

Be a water watcher, please!



Richard T. Dewling
Coordinator, Drought
Emergency Task Force

IN THIS ISSUE

As is customary in this summer issue, our focus is on the coast—our most popular summer playground. We've included recreational articles about the seashore but we also feature articles about the fragility of our sand dunes and the value of our coastal ecosystems.

Addressing that focus, Contributing Editor Cathie Cush writes about *Sand Dunes: Nature's Savings Account.*

Pete McLain, Deputy Director, Division of Fish, Game & Wildlife, tells us about *Delaware Bay Shorebirds: A Natural History Phenomenon.*

Still at the seashore we have: *Corson's Inlet: A Postage Stamp State Park* by Joyce Pfeiffer, a new contributor from Philadelphia.

Wire-Lining for Deep Water Blues was submitted by Greg Venturo, an outdoor writer and party boat captain, from Roselle Park.

Those Other Fish was written by Wayne Heinze, from Kearny, his second effort for us.

Mola Mola by Herb Segars, underwater diver and photographer from South River, submitted this pictorial piece. He photographed the *Inlet Inhabitants* in our July/August 1984 issue.

Old Barney: Landmark of New Jersey's Coast: was written by James A. Edwards of Langhorne, Pa., a new contributor.

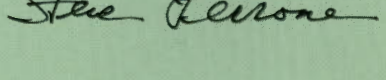
In the same area we have *Catboats: A Barnegat Bay Tradition* by first time contributor Steve Nagiewicz, from Bricktown.

And Robert Gnerre, a first time contributor from Barnegat, insists that *If God wanted me to be a clam, he would have given me a shell.* The illustrations are by Anthony Hillman.

We have more: *The Farm Pond* by a new writer, Barry C. Wessel, from Milford.

Chasing the sun in the skies of New Jer-

Continued on page 31



Corson's Inlet

a postage stamp state park

By Joyce Pfeiffer
Photos By Tom Keck

Within the last hundred years, Ocean City has been the scene of burgeoning population growth. The seven-mile barrier island was once used as pasture land for grazing cattle, and then as a secluded religious retreat.

Today, a few thousand people make the island their permanent home, and in the summer months hundreds of thousands of vacationers enjoy the boardwalk and beaches. Gone are the pasture lands and the sense of seclusion. Hardly an open lot remains. Development now takes place on the vertical: single family dwellings are razed to make room for duplexes, triplexes and condominiums.

Yet in the midst of this change lies a small, almost untouched, area of wilderness. From the southernmost mile of oceanfront beach, around the end of the island to the bay, and across an inlet to the town of Strathmere, Corson's Inlet State Park offers a glimpse of the island as it was before development began. Except for the ribbon of asphalt that is Ocean Drive and the gentle slope of a boat ramp, Corson's Inlet is wild.

Established as a state park in 1969 with Green Acres funds to provide ocean recreation and to preserve one of the few undeveloped barrier beaches in New Jersey, a "hands off" approach is taken to the park's 341 acres. The beach evolves naturally, building when the littoral drift (the movement of sand along the surf) deposits sand to replenish the beach, and disappearing with occasional storms. As new beach builds and dunes arise, animal and bird species that prefer a sandy environment colonize. Three endangered species—the piping plover, the black skimmer, and the least tern—regularly nest in the park's sandy areas. The colony of least terns is believed to be the largest in New Jersey. Ongoing studies, including one conducted by the Wetlands Institute in Stone Harbor, and DEP's Division of Fish, Game & Wildlife, monitor the bird colonies in the hope of saving them from extinction.

The inlet itself is also influenced by littoral drift. Officially closed to navigation by the U.S. Coast Guard, the waterway is shallow and changeable. Even the smallest craft must travel cautiously down

the inlet and out to sea. Shoals are completely exposed at low tide and barely covered by wavelets at high tide.

The park also encompasses more than 100 acres of marshland, or meadows as they're called locally. In summer the meadows are hot, mucky, and bug-infested—a combination many animals find irresistible. Muskrats and turtles swim in meadow ponds, and mice run through the grass in an attempt to escape the marsh hawks that prey on them. Fingerlings of several fish species gravitate to the protective shallows of the meadows until they're mature enough to survive in the open ocean. Almost every kind of shorebird can be found on the meadows at one time or another. Some stop only to feed, while others nest and raise their young. Ospreys, or fish hawks, another of New Jersey's endangered species, nested in the park in 1984.

In winter the vegetation of the park turns brown, and animal activity slows. Marsh hawks still cruise silently, but most other birds fly south. If the weather is severe, the ponds freeze over or become fringed with rime. Huge plates of ice may be stranded on the beach and the meadows after high tide.

People in the Park

People, as well as wildlife, seek out such natural places, and Corson's Inlet is no exception. The Division of Parks and Forestry estimates that an average of 6,200 visitors use the park each month from September through May, and 15,000 each month from June through August. Activity on the beaches and in the water is unceasing, and because access to the park can be gained from many different directions, the number of visitors cannot be controlled.

"When you think about all the coastal areas that used to look like this, Corson's Inlet is the size of a postage stamp," says Tom Keck, superintendent of Belleplain State Forest, who is also responsible for Corson's Inlet. One of his biggest concerns is that the ecology of the park remain undisturbed by so much activity. He says he receives many suggestions for improvements to the park. Some visitors want bath houses, picnic tables, a larger parking lot. "The trouble in such a small space is that *any* development has a significant impact on the whole park," says Keck. For now, the only planned improvement is to replace snow fencing around the park's perimeter, he says—"more to stabilize the dunes than to control the crowds." Keck points out that certain natural features of the park, like greenhead flies and poison ivy, tend to help with crowd control.

People who would like to see further development of the park's recreational facilities aren't the only ones who contact Keck's office. Others, worried about the fragile nature of the park, also offer advice. Many called to question a recent operation done there to replenish the sand in a section of Strathmere known as Whale Beach. About 500,000 cubic yards of sand were pumped from the bottom of the inlet and piped across the park on the Strathmere side. Keck says all parties involved, from his own Division of Parks and Forestry and the Bureau of Coastal Engineering, to the company that actually did the work cooperated to assure that park property remained undisturbed. The impact on the inlet is still unknown, but because of the strong and constant current, through the inlet, no change is anticipated. "It was not the purpose of the dredging operation to open the waterway. It's still non-navigable," Keck explains.

Keck believes there are two ways to maintain a balance between recreational use and environmental protection within the park. The first way is through education of the people who use the park.

The second way, he believes, is to get local residents involved. He's currently working on a plan for neighboring volunteers to team up with his staff to provide better protection for the park. If a recent incident is any indication, this plan has a good chance to succeed. As Keck drove away following a walking tour of the park, he was waved down by a woman who lives nearby. She spoke for several minutes about her fears for the park, and then said, "We need snow fences. If you can get it, I'll help your guys put it up. I'm an old lady, but I'll help, and so will my friends." Keck hopes this kind of participation will preserve his postage stamp wilderness.

Corsons Inlet State Park is located on Ocean Drive, Ocean City in Cape May County. For further information, call 609-861-2404.

Sand Dunes

Nature's Savings Account

By Cathie Cush
Photographs By Susan D. Halsey
Unless Otherwise Credited

A savings account. Who would be without one in this day, age and changing economic climate? No matter how good things may look on the horizon, there's much to be said for putting something away just in case—a buffer against the unpredictable. In the meantime, it's there to be drawn upon, a little at a time, whenever necessary. And to be replenished, gradually, whenever possible. It is, in a word, security.

Ever prudent, Mother Nature likes to save a little something for a rainy day, too. In this case, the something is sand, and the rainy day in question is a hurricane or a severe nor'easter like the one that struck the New Jersey coast on March 28-29, 1984, or the brutal March storm of 1962. Her repository? Sand dunes.

Healthy dunes are a lot like a healthy bank account. They offer protection in the event of a catastrophe by absorbing the energy of storm waves. They stand as the last defense between property and the fury of the sea. And in good times dunes hold sand that helps replace what is lost through erosion. The wind makes the deposits.

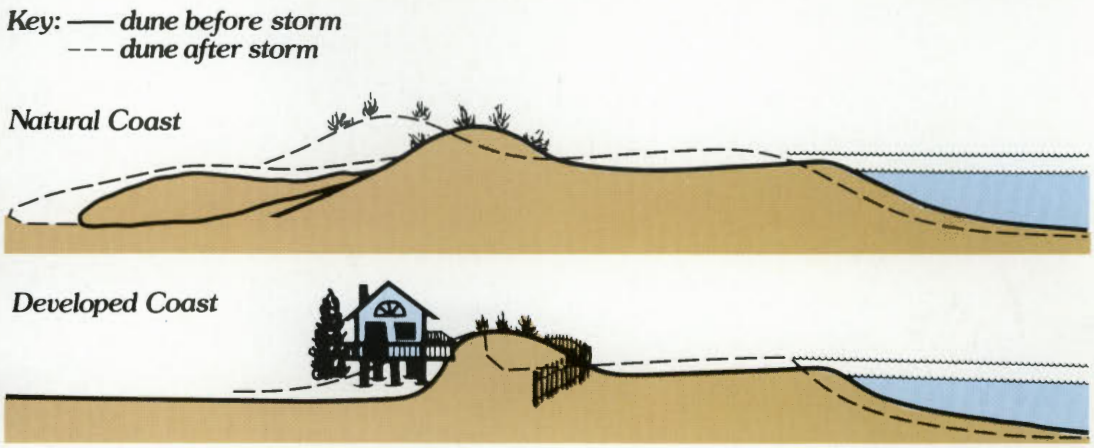
How Sand Dunes Form

Sand dunes are formed in much the same way as sand bars, their submarine counterpart. A medium (wind or water) carries fine particles of sand as it moves. When something slows that motion, some of the particles are dropped—heavier ones first, then lighter ones such as quartz. It takes much less of an obstruction to cause wind to drop the particles it carries than it does to make water do so. In the case of a budding sand dune, the wind could be slowed by something as seemingly insignificant as a pile of seaweed, a tuft of grass, some driftwood or snow fencing. As the sand begins to accumulate, it further slows the wind, and more particles are deposited. These form the hills and ridges we call dunes.

A number of factors will influence the growth of a dune, including size and shape of the beach, proximity and size of waves, wind patterns and vegetation. If the beach is wide, the dune can grow rapidly. On a narrow beach, however, waves washing up to the dune will carry away sand. Then the dune erodes as fast as—or faster than—it can grow. No wonder the largest dunes in the world are found in a desert, far from any wave action. Dunes in the Sahara, in east-central Algeria, are nearly three miles long and reach a height of 1,410 feet.

If the dune is forming around grass, the grass will continue to grow up through the dune, and an elaborate root system will help hold it in place. In New Jersey, the most common dune vegetation is American beach grass *(Ammophila breviligulata)*, a rapidly growing plant that is found as far south as

CORNELIUS HOGENBIRK



Wide heavily vegetated dunes in this section of Harvey Cedars provide cheap and effective protection from storms. Note homes in background that have encroached into the back of the dune thus weakening the overall effectiveness of the dune form.

North Carolina. It is essential that these fragile plants not be disturbed or trampled by wayward footsteps. In order to protect the dunes and the vegetation that keeps them in place, oceanfront communities along the east coast, including many in New Jersey, fine people who walk on the dunes or remove vegetation. And events such as Operation Greendike, held annually on Long Beach Island, encourage the systematic planting of dune grass to reinforce the dike that holds back the sea.

In fact, most sand dunes—and the barrier islands on which they are found—share a natural tendency to migrate slowly landward. When the surf breaks on the ocean side of an island, it takes some sand with it back to the sea, thus cutting away the ocean side. Meanwhile, winds off the ocean carry dry sand particles over the tops of low dunes and deposit them on the lee side. During a severe storm, waves will often drop large amounts of sand on the landward side of the dunes. In developed areas, this sand is usually bulldozed back into place. The most severe overwash is usually found at street ends where the dunes have been cut through or lowered to allow beach access. This can be lessened by constructing walkways over the dunes to the beach. Walkways such as these, which will be in place this summer at Island Beach State Park Beach Unit No. 1 and at Morey's Pier in North Wildwood, also provide barrier-free beach access for the handicapped.

Another way to lessen overwash is to maintain a wide dune system and a wide beach. When a severe storm strikes, the dune acts as a shock absorber, taking most of the blow dealt by wind-driven waves too strong to be softened by the nearshore slope of the beach. If the dune line is too narrow, the ocean can cut through easily. If there are no dunes, or if the dune system is not sufficiently healthy, the closest man-made structures to the beach will take the impact of the wave energy. If that structure is a seawall, the force of the pounding and retreating ocean cuts away at the sand at the bottom of the wall, causing severe erosion. If the closest structures are homes or other buildings, not only are they in jeopardy, but their occupants could be in danger as well.

The March 1984 Storm—A Case Study

The March storm of 1984 offered a look at just how vulnerable the New Jersey coast can be. The northeaster was not the worst storm to hit the coast—in fact, similar water levels could be expected to recur once every 10 years—but it did millions of dollars in damage and New Jersey was declared a disaster area. The beach profile is still recovering from that storm more than a year ago.

New Jersey was lucky. The full moon, which causes extra-high tides, had occurred the previous

Upper Left *Sections of Atlantic City's boardwalk in inlet section lifted off by waves during March 1984 storm. Due to the age of the structures and the inlet location, this area of the city is very vulnerable to storm damage.*

Lower Left *Waves breaking over the seawall in Sea Bright during swells from southeast. Note level of ocean relative to behind the wall. Waves reflecting off the wall eroded the beach and the ocean floor in front of the seawall allowing large waves to directly strike the wall.*

week. If the storm had hit during a full or new moon, water levels could have reached 10 feet above normal instead of the approximately 8.5 above mean low water measured in Atlantic City. The storm's intense low pressure caused a surge, or bulge of water, 4.5 feet above normal high tides. A drop and shift in the wind before high tide on the evening of the 29th also saved the coast from what could have been much greater destruction.

As it was, damage and cost of sand loss in some coastal communities was estimated as high as $6.5 million. High water inundated a great many homes and commercial facilities, and more than 2,000 people were evacuated to shelters. Of 36 coastal municipalities surveyed after the storm, only two escaped with minimal damage.

The extent of oceanfront storm damage depended on the absence or presence of beaches and dunes. Areas fortified with seawalls, bulkheads and revetments suffered more structural and wave damage. For example, Sea Bright and Monmouth Beach experienced flooding despite a seawall, and sustained $175,000 in damage to the structure. Other Monmouth County municipalities experienced beach erosion, boardwalk damage and loss of stone from the ends of groins.

In the northern half of Ocean County, the pattern of damage was somewhat different than in Monmouth County due to much wider beaches and the presence of dunes. However, towns that engage in the practice of flattening the beaches with bulldozers experienced much landward movement of sand that might have been avoided. Municipalities such as Seaside Heights and Seaside Park, which have little in the way of vegetated dunes, also experienced a great deal of sand overwash into the streets.

Although Mantaloking sustained heavy beach and dune loss, it suffered the least structural damage of any town along the coast. The extent of their dunes, mandated by ordinance and willingly maintained by homeowners, resulted in almost no sand overwashed into the streets. Heavily vegetated dunes also lessened the amount of erosion sustained by Island Beach State Park. Long Beach Island suffered beach and dune erosion. Much of the loss was due to scarping, or erosion of the seaward face, of the dunes.

To Repair the Damage

The Department of Environmental Protection has earmarked $75,000 to rebuild dunes in Brant Beach this year. Funded through the 1983 Shore Protection Bond Issue, the DEP's Shore Protection Program provides $40 million for the State share of up to 75 percent of such projects in cooperation with counties and/or municipalities and $10 million for

Sand piles from overwash on streets during the March '84 storm in Seaside Park await redeposition back on the beach. Armies of bulldozers, front end loader and dump trucks were mobilized all along the shore to clear streets.

←

View of a dune scarp (cliff) at Harvey Cedars—Long Beach Township in November 1981. Waves from northeast (right) remove base of dune causing that section of dune to collapse.

←

loans to counties and municipalities. The State plans to spend nearly up to $10 million on shore protection projects scheduled for 1985.

The largest portion of that money—$5.6 million—is to be spent on major beach fill in Atlantic City. Bradley Beach, Middletown Township, Monmouth Beach, and Elizabeth are among other municipalities that will benefit from the program. Avalon and Sea Isle City, which both sustained dune damage during the March '84 storm, are each slated to receive more than $300,000 for much-needed dune re-establishment and repair.

The State will spend almost $400,000 on dune repair at Cape May Point State Park. Severe erosion suffered during the '84 storm compounded the steady annual loss of beach in the area.

While extremely wide beaches protected the Wildwoods, Atlantic and Ocean cities lost portions of boardwalk. In Ocean City, approximately 100 cubic yards of sand eroded into each oceanfront street end. Overwash flattened Strathmere's entire dune system and completely buried the town's only north-south road.

To Prepare for the Future

After reviewing the damage left in its wake, it is important to remember that the March 1984 storm could have been much worse. The northeaster's severity and effects were lessened by its occurrence during average high tides and its swift departure. It did not become a new storm of record. New Jersey was—and has been—lucky.

A major hurricane or northeaster hasn't touched down since that storm, so the beaches have had time to grow and heal themselves. The dunes, however, have not yet healed, and much work remains to be done to repair and protect the shoreline. New sand fencing and beach grass plantings are needed and street ends must be better protected with dunes and wooden walkways. Beach users must learn to respect and help preserve sand dunes.

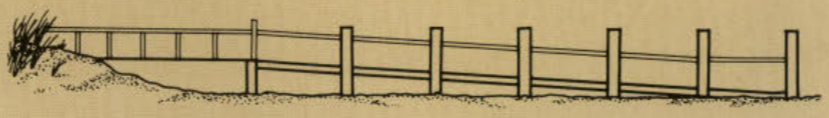
The condition of the shorefront is important to all New Jersey residents—not just because beaches provide enjoyable recreation opportunities, but because they make a major contribution to the state's economy. Tourism generates more jobs and revenue than any industry except petrochemicals. Sand dunes play a major role in securing our investment, because they provide sand for the beaches and storm protection for the homes and businesses behind them. Dunes are, in a sense, money in the bank. So isn't it wise to save a little something for a rainy day?

Barrier-free access to the beach

The Island Beach State Park bathing beach now provides barrier-free access for ocean swimming for handicapped visitors and senior citizens. A portable wooden boardwalk at Beach Unit No. 1, which workers will piece together and dismantle daily to take advantage of the tides' rise and fall begins at the existing barrier-free observation and sunbathing deck and stretches to the water's edge.

"Island Beach State Park is the first beach in New Jersey that is truly accessible to the handicapped," according to John R. Weingart, Director of the Department of Environmental Protection's Division of Coastal Resources. "The project was a joint effort of the DEP's Divisions of Parks and Forestry and Coastal Resources and we hope that it will encourage counties and municipalities to develop similar facilities elsewhere along the coast," he added.

In a complementary effort, North Wildwood is also featuring handicapped access for ocean swimming at the easterly end of Morey's Pier this summer.



Getting to the Shore

NJ Transit operates an extensive network of bus and rail services to and along the Jersey shore. For information call:

800-772-2222 (from 201 area code)
800-582-5946 (from 609 area code)
215-569-3752 (from Pennsylvania)
201-762-5700 (from New York)

The Island Beach Bus Shuttle between Garden State Parkway Exit 81 and Island Beach State Park operates on summer weekends and holidays from 9 a.m. until 6 p.m. The shuttle leaves the park and the parking lot every half hour and it costs $1.

"Your New Jersey Beach Guide" is available free by writing to:

NJ Dept. of Commerce and
Economic Development
Division of Travel and Tourism
CN 826
Trenton, NJ 08625

Wire lining for Deep Water Bluefish

By Greg Venturo
Photos By
Division Of Fish, Game & Wildlife

We all enjoy those hard fighters known as bluefish. On some days it seems you can't do anything wrong as they go on a feeding binge and destroy every bait and lure in sight. However, just as quickly they can become very finicky. I guess that's why they call this sport "fishing" and not "catching." On those "off" days, going deep for blues will—more often then not—pay off handsomely.

When I first started fishing, I tried to gather as much information on the sport as I could. But getting that information was not always easy. The seminars and New Jersey-based publications now on the newsstands were not available then. So I sailed out and just admired the great catches of blues that others were making. Finally I got somebody to show me about wire lining for blues.

As boat traffic builds up, blues will go deeper to seek shelter and to escape the whirring noise of the engines. Wire lining is just the ticket to get down there with them.

Wire line fishing is just what it sounds like—using a wire line's weight to get the lure down to the fish. Available at almost every tackle shop on the New Jersey coast, wire line comes in varying pound-tests and spooled lengths. But don't just go out and pick up a couple hundred yards and throw it on your rod. You need certain type tackle for this kind of fishing.

Tackle Needs

The rod and reel combinations are not that extravagant, so don't go into sticker shock. In fact, you probably have some of the necessary tackle in your garage or basement. Forget about spinning rods and reels. They just can't handle the wire line correctly. You must fish with conventional tackle.

The fishing rod should be in the 20- and 30-pound class. This might sound a bit on the heavy side, but you will be fishing deep with wire line and

that means added weight. The length should be around 6½ to 8 feet long and equipped with a hard line guide like Carballoy, the new Sic guides or roller guides. The wire line will quickly cut through cheap line guides. Spend a little extra, and the added investment will pay off in the long run.

You can get away with using a small conventional reel, but you will find that with the added drag of the wire line without a fish, it's just a little too tiring. My own preference is for a reel of the 3/0 to 4/0 size. The larger spool capacity and lower retrieve ratios let you bring in the rigs and fish much more easily. Any of the major manufacturers, such as Shimano, Daiwa and Penn, make reels that are suitable for this purpose. If you have a favorite manufacturer, no problem.

The wire line is not put directly on the reel. A backing of monofilament will give you added fish-fighting range and a cushion for the wire line. I set up my wire line reels this way: I use 4/0s with about 300 yards of 30- or 40-pound mono. Then I tie off a small section of swiveled bead chain. The bead chain moves more easily than a conventional two-way swivel. (I suppose I could find a small ballbearing swivel that would fit through the guides, but I have been using the bead chain without any failures for so many years that I'm just comfortable with it.) After I have spooled the line and checked that the swivel will pass through the guides, I connect the wire.

My preference for wire is Monel. There are two types of wire lines—stainless and Monel. Stainless is a harder-finished wire that is less likely to break. However, I have found that the harder finish also makes it harder to handle on the reel. When you're fishing with a green crew, the line tends to coil back on the spool—making for some of the most spectacular tangles you have ever seen in your life. Although Monel is a softer wire and is more prone to breakage, it does not have the memory that stainless has. If you're a little careful, you'll have fewer problems. I'm not saying you have to go with Monel. For every angler who likes Monel, there is one who likes stainless. You will probably troll two rods, so try both and make up your own mind.

I spool up with 40-pound Monel and use a 150-yard spool of wire. This, under certain instances, can get you down around 50 to 60 feet and is normally enough wire and depth to get you catching.

Spooling the Lines

Attach the wire to your swivel with a haywire twist. Place the tag end of the wire through the swivel and bring out about four inches. Now wrap both lines around each other by grabbing the loop that was made when you passed the wire through the swivel and twisting both at the same time. Do this for six or so complete turns. Then take the tag end and wrap it tightly around the main line. At this point you should have an inch of both lines intertwined and then six tight wraps around the main line that almost look like a small barrel. Trim the tag end. You're ready to spool the wire on your reel.

The trick to avoiding the coiling back of the wire is to spool it tightly. This will force the wire to lay flat. Do this whenever you retrieve your line and you will have no problems. When letting the line out, do it smoothly. Do not free-spool or you will have one big mess.

Now that you're set up, wrap on another swivel and add a mono leader about 10 to 15 feet long. I will normally put on an 80-pound leader. Yes, that is very heavy. But I can lift up about any bluefish in the ocean and swing him aboard without using a gaff. The mono also provides a little camouflage for the wire in case the fish are a little "line shy." So now you have your basic wire line outfit. You have probably guessed by now that you troll using wire line. You are going to want to get deep, so watch your speed.

Lures and Rigs

Many different lures can be trolled, but there is probably no single rig that can do it more effectively then the umbrella rig. The umbrella rig comes in several forms and has several names. The coat hanger rig has a single-wire arm that lets you troll two teasers and a center tube or spoon, and offers the least resistance in the water. At times it will outproduce multi-armed rigs. Keep one or two on the boat and experiment to see which is hot for the day.

The regular umbrella rig is a four-armed rig with a spread of about 14 inches across the arms. You will have that many more teasers and center droppers. The mini-rig is just a smaller version of the four-armed umbrella rig.

The gorilla rig is a six-armed rig with that many more teasers. This particular rig can be a little on the hazardous side when you have a blue jumping around on the deck and 10 or 12 hooks flying about. Any of these rigs can produce more fish then any of the others at a given time, so keep an assortment on the boat and rotate them until you find the secret for that day.

The tube teasers that hang off the rigs come in a wide assortment of colors. I have found that certain colors work best over different types of bottom. Darker colors (wine, red, green and purple) seem to work best over rocky bottoms. Brighter colors, such as white, yellow, orange and bright red, seem to work well over an open bottom. Some days it doesn't make a difference at all.

The umbrella rig's center dropper can be rigged with a wide variety of lures and tubes. The most common trailer is normally a large leaded-head tube that will be one to two feet back from the rest of the rig. On some days the center tube will catch all the fish. On others, the rig itself will produce. Again, color is important. I happen to like a dropper that's a different color from the rest of the rig. The center dropper doesn't have to be a tube-type lure. The spoon family, nylons and the like can be run off the center spreader.

Once you have set out to troll for bluefish, drop the rig over and observe it in the water to see if all the tubes are turning freely and the rig is moving nicely. You may have to change your speed to get the rigs to work right. I have found that anywhere from 2 to 4 knots will usually be the right speed.

A chart recorder is nice to have for deep water blue fishing. The graph will reveal the fish and the depth at which the fish are feeding. Once you have established the depth, let out enough line to get the rig down. If you require additional weight, add a few trolling weights to the rigs. A rough rule of thumb is that for every 50 feet of wire you let out, you will get down 10 feet. If you slow the boat down, the rig will settle down deeper.

The best way is to get out there and experiment. Take notice of what you are doing when you hook up. Keep records of what colors and rigs work best for you and soon you'll have wire lining down to a science.

Exercise caution when consuming large bluefish. The New Jersey Department of Environmental Protection has found elevated levels of PCBs and pesticides in bluefish weighing more than 6 pounds or measuring more than 24 inches in length. The New Jersey Departments of Environmental Protection and Health recommend consumers eat flesh from large bluefish no more than once a week and that pregnant women, women of childbearing age and small children eat no part of large bluefish at all.

Smaller bluefish appear to be free of high levels of toxic chemicals.

Further information is available in "Fishing Guidelines for New Jersey Waters," New Jersey Outdoors, May/June 1983, and from NJDEP Office of Science and Research, Trenton, N.J. 08625.

PAUL E. TAYLOR

The Farm Pond is a Special Place

By Barry C. Wessel

Farm ponds dot the landscape of New Jersey and contribute to its scenic beauty. The stereotypical pond is perceived as a peaceful place that harbors a limited assortment of wildlife—mallard ducks and Canada geese, a few species of fish and perhaps a turtle or two. Ponds are actually home to a more diverse range of creatures than first observations suggest, and they are great places to study natural science.

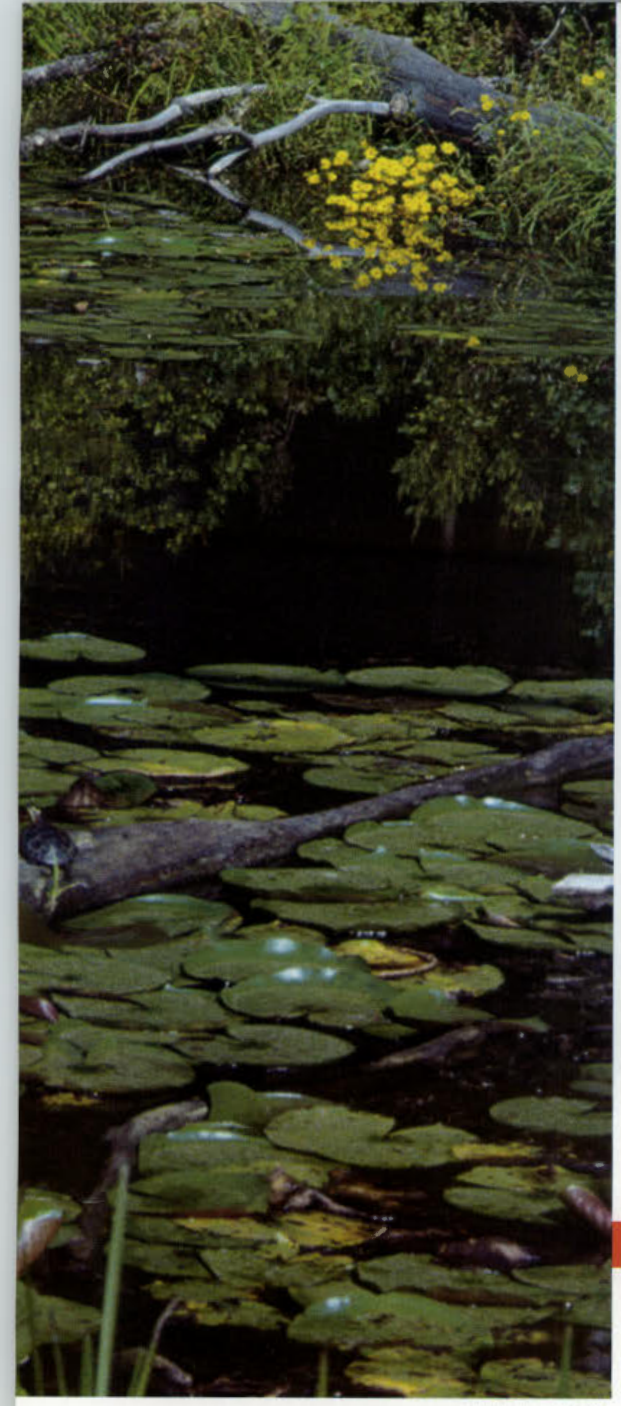
Since I acquired a property with a pond in Hunterdon County some years ago, I have had a very pleasurable learning experience.

Located on a five-acre wooded tract, the pond covers approximately one acre and is from two to six feet deep. Reedy aquatic plants and wild rosebushes decorate the water line, and a grass footpath on the embankment separates the pond from the surrounding forest. Vital feedwater is supplied through a concrete pipe that connects with a nearby creek.

Muskrats swim in the waters, and their houses protrude upward from the water to the grass near the surrounding footpath. These hidden burrows along the pond's edge do not always support the weight of a full-sized adult. On one occasion, I felt the ground collapse beneath my feet and had to scramble to safety using all the limited agility a non-athlete can muster. A furry head poked out of the resulting crater and disappeared again below the surface.

While this episode was extraordinary, I can normally watch the muskrats at play or engaged in mundane tasks—such as dragging choice grasses and tree twigs across the water.

But the world of nature is not all merriment. At



PAUL E. TAYLOR

MICHAEL BAYTOFF

PAUL E. TAYLOR

certain times of the year, the stalk-legged great blue and little green herons can be seen standing motionless in the water—until they plunge to scissor unwitting prey with their beaks. These soft-hued birds, in tandem with egrets and kingfishers, eat fish, frogs, and other animals living in and near the pond.

Ducks and geese that use the pond for rearing their young in the protective reeds surrender some of their numbers—especially the newborns—to foxes, raccoons and turtles. Broods of ducklings gradually decrease, one by one and I have chanced upon the remains of adult female birds apparently ravaged while defending their nests full of eggs. I've melted many minutes away watching birds swimming and feeding, nesting and preening, in this seemingly safe haven only to discover that the safety was illusory.

The pond is regenerative. From the footpath we watch courageous male bass and bluegills defend their shallow circular gravel spawning sites against the intrusions of much larger fish. A single bluegill female produces thousands of eggs each season and despite a high mortality rate, enough young survive to replenish annual losses. The water's clarity allows direct viewing of brief episodes in their struggle for life.

Visiting the pond is educational in other ways. While feeding the waterfowl, we discovered that bluegills and catfish have an appetite for bread. On sighting a human figure, they school near the surface to await a tasty meal. The surface churns in a feeding frenzy when bread is tossed on the waters. The fish seem to possess a biological clock and regularly congregate at the dinner hour.

Reptiles and amphibians share residency with the

BRECK P. KENT

fish. Snakes, frogs and turtles abound. Northern water snakes perch lightly on the thorny limbs of the wild rosebushes while basking in the sun. The turtles, principally snappers with a smattering of painteds, are usually submerged, but occasionally a periscoped head betrays its source. The snapper's massive carapace, or shell, has a jagged edge and an appearance that hints of its ancient ancestry. A vicious turtle which will lunge at humans on land, the snapper is quite docile while submerged. A mere glimpse at the powerful jaws and hooked beak of this creature has convinced me to never test the docility theory.

Frogs provide a gutteral chorus for nature's theatre. When approached, these benign leapers on the water's edge are as apt to freeze in place as to spring to the security of the water's depths, and careless human feet can leave behind some crushed frogs.

In spring turtles exit the water to lay eggs in the nearest sandy soil, and frogs mate, depositing gelatinous egg clusters in the shallows.

Land-based intruders migrate to and from the pond. Raccoons, foxes, woodchucks, rabbits, possums, chipmunks, squirrels, skunks and deer inhabit the nearby forest and visit the pond at night. An apple tree and a chestnut tree at the most remote corner of the pond are feeding stations for white-tail deer. The absence of fallen apples, the presence of empty chestnut hulls, and hoof prints and droppings of the animals are calling cards for these visitors from the forest.

Maple, fir, oak, walnut, hickory and elm near the pond shelter nests of bushy-tailed red and gray squirrels, doves, robins, wrens, woodpeckers, jays, cardinals, kingfishers and noisy catbirds. At the base of the trees spiny wineberries, blackberries and patches of grape vines use the neighboring trees as trellises.

Other creatures in the pond range from mosquitoes and dragonflies to bees, bats, moles and mice. A complete ecosystem composed of a host of living things, the pond is a fascinating place that will share some of its secrets with the interested observer. In the process, it may also yield some of its beauty and serenity as balm for the soul.

Delaware Bay Shorebirds

By Pete McLain
PHOTOS BY AUTHOR

For centuries a natural history phenomenon has existed on the shoreline of the Delaware Bay, almost undetected until a few years ago. During late April, May and early June well over one million shorebirds pause there as they migrate up to 4,000 miles from South and Central America to feed on the eggs of the horseshoe crabs which provide the food energy and body fat necessary for the birds to continue to fly another 3,000 miles to the Canadian Arctic nesting grounds. The Delaware Bay shores of New Jersey and Delaware have been recognized as having the largest concentration of shorebirds during the spring migration in the eastern United States, and the second largest in North America.

What makes the 50 miles of the lower Delaware Bay beach the bottleneck link for the million shorebirds, which may amount to over 80 percent of the shorebird population in eastern North America? It's the strategic geographic location of the Delaware Bay on the bird's ancestral migration route, and also the timing of the horseshoe crabs' egg laying process. As the birds progress northward from South and Central America they consume almost all their fat reserves and up to 50 percent of their body weight. During May and June on the Delaware Bay beaches hundreds of thousands of horseshoe crabs are emerging from the sea to deposit millions of pea-green colored eggs, about the size of large pin heads, in the sand at the high tide line. Eggs which are washed out by the tide are present in tremendous windrows or scattered along the tideline. These high-fat eggs provide the quick energy necessary for the birds to double their body weight in a couple of weeks and then to make

Horseshoe Crab Egg

Public utilization has increased tremendously as they become aware of the phenomenon which makes the Delaware Bayshore of New Jersey the largest concentration of shorebirds in Eastern United States, and the second largest in North America.

Red knots, which started their migration in early March at the tip of Argentina, fly nonstop 4,000 miles to the Delaware Bayshore, where they remain long enough to double their body weight while feeding on horseshoe crab eggs to continue their migration another 3,000 miles to the Arctic Circle.

another non-stop migration to the Canadian Arctic. Some birds may travel 18,000 to 20,000 miles a year.

During late April, May and early June the red knot, ruddy turnstone, semipalmated sandpiper and sanderling make up a high percentage of the 20 species of birds which utilize the Delaware Bay beaches. According to studies by ornithologists at the Manomet Bird Observatory in Massachusetts, red knots are typical of the migratory behavior of the six major shorebird species using the Delaware Bay beaches. Wintering along the Argentinian coast at the tip of South America, they leave in mid-March, move up the coast and stage for a short time in Peninsula Valdes before proceeding north to southern Brazil where they stop and feed heavily to put on body weight for their 4,000-mile migration to the Delaware Bay shore. When the birds arrive in New Jersey they have lost about 60 grams, or one third of their body weight. In about two weeks of intensive feeding on horseshore crab eggs, the red knots may double their weight as they accumulate the fat reserves necessary to carry them another 3,000 miles to the Arctic circle, where they nest in June, raise their young, and begin the southern migration in late August. Without the profusion of easily available horseshoe crab eggs found on the sandy beaches of the Delaware Bay shore, over 80 percent of the red knot population might not survive to reach their summer breeding grounds. The same can be stated for the ruddy turnstone, the semipalmated sandpiper and the sanderlings. Other shorebirds utilize the horseshoe crab eggs to a large degree, but are not as dependent on the eggs as their prime food.

International Ambassadors

Shorebirds know no international boundaries and are dependent on specific wintering, resting and feeding areas during their migration. These avian ambassadors of good will criss-cross both hemispheres twice a year, and their future existence depends to a large degree on man's maintaining the quality wintering and essential resting and feeding habitats on their migratory routes.

The shorebirds are not without their champions. The world-wide "Wader Study Group," is the leader in modern shorebird research with representatives from the Canadian Wildlife Service, the U.S. Fish and Wildlife Service, The World Wildlife Fund, the Center for the Study for Bird Migration and many other organizations and universities. The Pan American Shorebird Program, partially funded by the World Wildlife Fund and the Kleberg Foundation in Texas is supporting the mapping of the Western Hemisphere migratory pathways under the direction of Dr. Peter Myers, Assistant Curator of Ornithology at the Philadelphia Academy of Natural Sciences.

What beaches of the Delaware Bay are essential to the survival of the east coast shorebird populations? Based on recent aerial and ground surveys by Peter Dunne and the staff of the Cape May Bird Observatory of the New Jersey Audubon Society and Dr. Joanna Burger, Professor of Biology at Rutgers University, it has been determined that 50 miles of New Jersey shoreline and 55 miles of the state of Delaware bayshore are potential shorebird habitat, and that the lower 25 miles of the bayshore in each state is where a high percentage of over one million birds concentrate during the spring migration. Generally the scattered sandy beaches from Fortescue to Cape May in New Jersey and from Woodland Beach to Cape Henlopen in Delaware are the most heavily utilized spring shorebird concentration areas.

The future of the Western Hemisphere shorebird population is not certain. Aside from losing thousands of acres of critical migration habitat to the filling of marshes and tidelands, draining wetlands, housing developments on barrier beaches, bulkheading shorelines, and the vast destruction of feeding and resting areas, there is always the threat of a major oil or chemical spill occurring at the peak of the shorebird concentration. Such a spill in May or June in the Delaware Bay, one of the largest seaports in the world, would not only kill thousands of birds, and might also destroy the food supply (horseshoe crab eggs) for millions of birds.

Linda Leddy of the Manomet Bird Observatory reports that a single tanker pumping oil from its bilges in Argentina destroyed 60 percent of the red knot population in a major wintering area. Scientists report that 70 percent of the inter-tidal wetlands in California have been drastically altered for human needs, which has greatly reduced the shorebird use in that state.

Human related harassment of feeding and resting shorebirds is also a major problem during migration. During the critical period of May and June people seek out the same beaches where the shorebird must feed almost constantly to regain body fat to continue their northward migration. Dogs running at large, motor bikes, housing developments and related activities all may cause the birds to remain longer on their spring migration, and shorten the already short time on the breeding grounds.

Presently state wildlife agency biologists in both New Jersey and Delaware are well aware of the magnitude of the spring shorebird population on the Delaware Bay and also their states' responsibility to protect and manage this valuable wildlife resource. Plans are underway to acquire key beaches known to be critical horseshoe crab nesting areas and shorebird feeding habitat. A study is presently underway in New Jersey by the Department of Environmental Protection's Division of Fish, Game and Wildlife's Endangered and Nongame Species Program to evaluate the utilization of the various beaches along the lower 25 miles of the Delaware Bay shore to determine the arrival and departure dates of the various shorebird species, the numbers of birds using the beaches during the spring migration, and the effect of human activities on the feeding and resting shorebirds. This information will be used to develop a shorebird management plan and provide background information for land acquisition and protection of the Delaware Bay shoreline for over a million shorebirds. New Jersey and Delaware can be proud of hosting the largest concentration of shorebirds in the eastern United States and the second largest in North America, but with the distinction of possessing this natural phenomenon comes the awesome responsibility of protecting the irreplaceable wildlife resource.

Those Other Fish

By Wayne Heinze
Illustrations By Anthony Hillman

Fishing has long been one of America's most popular outdoor recreations, and interest in the sport keeps growing every year. In New Jersey, with its dense population and relatively small size, this increase in angler participation can mean longer lines at the launch ramp, and tangled lines on your favorite trout stream. But there is still room to enjoy our sport, especially for those who will hunt for out-of-the-way places and fish odd hours or days.

With this in mind, I feel a word should be said on behalf of some of the lesser species that abound in Jersey's waters, the so called rough fish, trash fish, or panfish. These scrappy alternatives are there for the taking in both fresh and salt water. Let's take a look at four such fish, two fresh and two salt. There just might be something here that you're missing.

One of the most universally cursed freshwater fish is the carp (*Cyprinus carpio*), which has been accused of everything from roiling water during its spawning to eating the eggs of gamefish. Although many of the claims against this fish are true, carp are here to stay. Carp are very hardy fish, and have adapted to waters too polluted for most gamefish. Fishing exists in certain areas of New Jersey only because of the carp's tenacity.

A long-lived fish which reaches good size, the average New Jersey carp is about five pounds, and fish in the 10-to-20 pound class are common. Light tackle is ideal in spite of carp's size and strength, because they usually wage a somewhat "dumb" fight, pulling straight away from the pressure you apply. That's why fishing for carp with six or even four-pound test line is practical, as long as you have a smooth drag and plenty of line on your reel.

Carp will take a variety of baits, including corn kernels, dough balls, bread, and worms. Chumming an area you plan to fish the day before will usually keep a few fish hanging around waiting for another handout. A slip sinker rig will keep your bait on the bottom yet allow the gentle biting carp to run off with it without feeling pressure. Carp will sometimes hit artificials, especially in the spring, and I once caught a pair of seven-pounders on spinners in Parvin Lake, but that is unusual. Usually found in areas of fairly heavy weed growth, especially in the spring, carp remain a shallow-water fish most of the year.

Two of my favorite lakes for carp are Paulinskill Lake near Newton, and Columbia Lake along Rt. 80. But the best carp fishing is probably in our state's rivers, including the Delaware, Hudson, Pompton, Raritan, Passaic, and the Delaware-Raritan Canal. Chances are good that the slow-moving, dirty-looking river flowing through your town has plenty of carp in it too, so you don't have to travel a long way to get in on the sport. Most anglers have caught a carp or two by accident, but they might be surprised at how much fun you can have trying to catch a few on purpose.

The rock bass (*Amblophites rupestris*) is a smallish member of the fairly common sunfish family. Although the rock bass fills a niche between its cousins the bluegill and the crappie, it does not reach the size of the crappie, nor is it as much of a scrapper as the bluegill. They are not as tasty as either one, but rock bass abound in many of our cooler lakes and streams, striking well from May through November. As the name suggests, rock bass frequent areas of rock, rubble, and boulders in still and flowing water. In fact, rockies often share their habitat with the smallmouth bass. Rock bass probably reach their largest size in lakes with enough fish in the ¾ to 1 pound class to keep things interesting for ultralight tackle buffs.

Rock bass will hit a variety of small spinners, spoons, and jigs, as well as small minnows and worms. You have probably caught some rockies while angling for smallmouths, and you could have caught a lot more from the same smallmouth cover by just scaling down your tackle a bit. On days when bronzebacks are hard to come by, spend a few hours

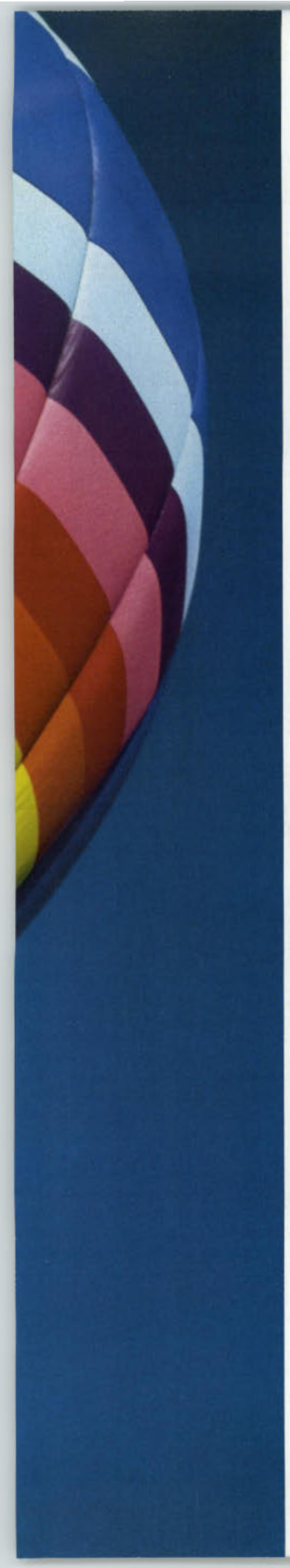
wrestling with rock bass on minature gear to keep a smile on your face. Many of our trout streams contain large numbers of rock bass, with the South Branch of the Raritan producing some particularly large ones.

The two other fish I want to talk about are saltwater dwellers, the sea robin (*Prionotus carolinus*) and the smooth dogfish shark (*Mustelus canis*). Both these fish are basically bottom dwellers of the inshore bays and the oceans, and occur in abundance during the summer. Dogfish are also quite common offshore in the fall, especially off the northern part of the Jersey coast. Both these fish are usually caught by anglers seeking some other quarry, and are just usually cursed and unceremoniously dumped back into the water. However both fish deserve more respect.

During the summer months when a storm roils the bays and put the fluke off their feed for a while, sea robins and dogfish remain active. They will chase down baitfish, and the same type of drifting or trolling tactics that you would use for fluke work well on these fish too. Killies, squid strips, or spearing work for both species, while sea robins will often hit a spoon or jig. Both are strong swimmers, and a large sea robin (in the two-pound class) can often fool you into thinking you have hooked a fluke, until it gets within sight. Although some would call sea robins ugly, they are also quite tasty. They can be cleaned and filleted quite easily, and can be deep-fried or baked. Long pieces sliced off the side of the sea robin with the skin attached make acceptable strip baits also. Primarily bottom fish, sea robins will also rise to take a bait or lure a few feet off the bottom. Present your offering along channel edges for best results, and in roily water the slower you move the bait the better. Inlets provide some of the larger specimens, and I have taken several large robins from the surf at the Holgate end of Long Beach Island.

Dogfish are abundant in our bays along with the sea robin and fluke, but these small, harmless sharks are more prone to inhale a stationary bait than the other two. Offshore anglers often run into dogfish when fishing for cod or whiting, and they can be a nuisance when you may have plunked down $25 or so for a spot on the rail. But they do provide welcome action in the bays during off weather, and at night. Dogfish occur from June to September in every Jersey bay from the Raritan Bay to the Delaware. On summer evenings they abandon the channels and swarm into the shallows in search of a meal. High tide usually produces the largest fish, and almost any dock, pier, beach, or sedge bank that you can set your rod on will probably produce some dogfish. Like most sharks, dogfish feed largely by scent, and strips of squid, mackerel, or herring all make fine baits. Dogfish commonly grow to three or four feet in length, but much of that length is in the tail, and they seldom top 10 pounds. So light tackle is the key for some enjoyable nighttime fishing, although some bays, Delaware in particular, commonly contain much larger sharks too. No wire leader is needed because dogfish lack standard shark teeth, and a 1/0 or 2/0 baitholder hook tied to the end of your line with a fish-finder rig would be ideal. Dogfish are highly edible, and in England they are commonly used in traditional fish and chips. If you plan on eating your dogfish it would be wise to bleed the fish immediately, and store your catch on ice to retard spoilage. While you're on vacation at the shore this summer, why not give the dogfish a try one night? Chances are your youngster or grandchild has never caught a shark, and besides, you just might enjoy a break from the boardwalk yourself.

So there you have four angling alternatives to consider for a change of pace when the gamesters aren't hitting. Any fish that is willing to do battle on rod and reel deserves a tip of our hat once in a while.



Chasing the Sun

in the Skies of New Jersey

By Carl Petruzzelli
PHOTOS BY AUTHOR

Have you ever wondered what it would be like floating free with the wind at you back, going wherever it took you? More and more people are experiencing the feeling every day, taking to the skies in hot air balloons—those brightly colored balloons you see so often these days.

Hot air ballooning has really taken off, so to speak, as a sport, attracting interest among people of all ages, perhaps due to the sense of romance or adventure they evoke in us. Many companies are using balloons to advertise their products. Couples have even been married in balloons.

Some people, bitten by the thrill of ballooning, have gone so far as to purchase their own balloons in order to enjoy this increasingly popular sport. And popular it is. Balloonists compete for state, national and world championships annually. If you enjoy watching one balloon, just imagine the sight of dozens taking off at the same time at a championship meet.

Pre-flight Preparation

My first experience as a passenger occurred rather suddenly. I had phoned the office of Rainbow Riders in Cherry Hill to see if they had any flights scheduled in the coming days that I could photograph for this story. A flight was scheduled that day and I could go along for the ride if I could be at the take off point in an hour.

When I arrived, the 20-minute pre-flight check was getting underway. First, the balloon envelope, most often made of nylon, was spread out on the ground with the wicker gondola attached with steel cables. A portable gasoline-driven fan, close to the mouth of the balloon, was inflating it. When the balloon was half full of air, the pilot ignited the propane burners that produce a flame reaching up into the balloon and attached the burners to the gondola to heat the air inside the balloon.

Air expands when heated, and the warmer air inside the balloon weighs less than the cooler air outside, thus producing lift. This is the principle behind hot air ballooning. Once the balloon was upright, the pilot made a pre-flight check before ascending.

Up, Up and Away

Lift-off was very smooth. There were no bumps or vibrations as with a plane. Climbing into the gondola I positioned myself in one corner, looked straight up and took several photographs of the flame shooting into the balloon. Then I looked down and saw, to my surprise, that we were approximately 100 feet off the ground and climbing rapidly. I had no indication that we had left the ground. We climbed 1,000 feet in short order.

The balloon traveled between five and ten miles per hour. Although it was apparent that we were moving, we really didn't feel much motion.

Once aloft the balloon almost becomes part of the air and goes where the wind blows. The pilot cannot steer it, although he can change the altitude of the balloon to take advantage of air currents blowing in various directions. The pilot uses the burners to ascend, or allows the air inside the balloon to cool to descend. Most flights take place in the early morning or later afternoon when the wind is usually not as strong.

My first ride was an unforgettable experience. Except for the sound of the propane burners, it was quiet, almost dreamy, with a peaceful feeling one rarely encounters on the ground. Ballooning also offers a different perspective on earth's surroundings. The ground below looks like an architect's model or a toy train platform, with trees like little green mushrooms and cars that resemble their matchbox counterparts.

People on the ground are very friendly toward balloons, often waving a friendly hand upward—a gesture that is returned by the airborne passengers. It's not uncommon to see cars pulling off to the side of the road to watch as the balloon passes overhead. Sometimes they follow the chase vehicle.

Back to Earth

The chase vehicle plays an important part in ballooning, since all flights are essentially one-way trips. It is a difficult job, because the pilot only estimates which direction the balloon will travel. Air currents can change in an instant, and the chase crew must turn up and down roads, to keep the balloon in sight until it lands.

If you yearn for an adventurous sport, you may want to try ballooning. In the United States, both the balloon and the pilot must be licensed by the Federal Aviation Administration (FAA). To obtain a private balloon license one must have 10 hours of in-flight instruction, including one ascension to 3,000 feet and a solo flight and pass a flight test and written examination administered by the FAA. A balloon and flight instructions can cost as much as $15,000.

The cost of a balloon ride is more down to earth, varying from company to company, but most range between $80 and $90 per person for an hour's ride. Many pilots offer rides all year long, weather permitting, and the craft can carry three passengers in addition to the pilot. To experience a trip of almost total freedom, take to the skies in a hot-air balloon.

For more information look under "Balloons-Manned" in the Yellow Pages.

Mola, Mola

By Herb Segars

Each year as spring moves into summer, the Gulfstream swings closer to New Jersey's coast and brings in several species of fish normally found in tropical waters. One odd-looking specimen, sometimes mistaken for a shark, and resembling a large underwater kite is the Mola Mola or Ocean Sunfish.

Generally found in temperate oceans, Mola Mola is not common anywhere in the world. They are most often seen on very calm days as they seem to bask lazily on the ocean's surface, seemingly unaware of nearby snorkelers. One specimen stayed with four of us for more than 45 minutes last summer.

Mola Mola's normal habitat ranges from the surface down to 1150 feet, with most time spent at mid water. They eat jellyfish, crustaceans, small fish, and, when close to shore seaweed and larger fish. With no observations of fertilized eggs or young larvae on record, very little is known about their spawning habits, although one female was found with 300 million eggs.

Despite the lack of scientific information about Mola Mola, we have been fascinated to watch it glide effortlessly through the water, usually with an entourage of scavenging pilot fish. With large puppy-dog eyes, it tolerates human observers to a point and then with a few swishes of the tail, dives into the murky depths, leaving us wanting more.

Although Mola Mola has no commercial value, the rush of adrenalin that comes when this gentle giant hoves into view has justified its existence on this planet to at least one human being. If you should see a large dorsal fin while boating, a closer look might bring you into the realm of that little known wonder, Mola Mola.

PHOTOS BY AUTHOR

Old Barney

Landmark of N.J.'s Coast

By James A. Edwards
PHOTOS BY AUTHOR

On a weekend drive to the New Jersey coast, you cross the light-line causeway bridge onto Long Beach Island. Someone in your car shouts, "Look, there's Old Barney!" Did he see a famous beach bum, a well-known local panhandler or maybe a family dog that was left behind on a previous visit? Nope. He saw Barnegat Lighthouse.

This magnificent, silent sentinel of Barnegat Inlet, affectionately known as "Old Barney," brings thousands of admirers each year. Some, often pulling reluctant companions, come to climb its 217 steps (a feat not to be attempted by the faint hearted) and to gaze at the surrounding area from the lamphouse walkway. A breath-taking view of Long Beach Island, Barnegat Inlet, Island Beach State Park across the inlet, fishing boats, ant-sized fishermen and other sights awaits the puffing climbers. Others marvel at Old Barney as part of their stay at the small, well-kept Barnegat Light State Park surrounding the lighthouse while they fish, swim, ex-

plore large, warm tidal pools and jetties or just walk in the soft sands.

But many come with the sole purpose of seeing, painting or photographing Old Barney's rugged, bicolored tapering form and symmetrical beauty outlined by a landscape of protective dunes, jetties and waves. Whatever brings them, they all leave remembering the lighthouse.

Many people, however, don't see this coastal wonder in its greatest splendor. To view Old Barney at its best you must see the light at night. Some cool evening when the air is clear and the sky is dark, take a trip to the state park. The red and white walls of the lighthouse will glow with reflected light from powerful floodlamps at its base. These lights go on at approximately 9:00 p.m. and shine until 11:00 p.m. The floodlit tower standing out against the black sky is a truly beautiful sight. It seems almost unreal as it juts up from behind the dark silhouettes of bayberry and beach plum bushes at its base.

Although it is difficult to imagine Barnegat Light without its lighthouse, island residents have struggled constantly through the years to maintain and preserve this treasure.

Lighting the Sea Since 1824

Its history goes back to 1824, when the first lighthouse was constructed near this site (The present one was actually the second to be built.) By 1855, only 31 years later, this fourth-order light, built of low-grade materials, had reached such a state of decay that without major reconstruction efforts it would have had to be removed from service. And in 1857 storms caused such extreme erosion around its base that it threatened to topple. The lens had to be removed and placed on wooden scaffolding near the lighthouse and any thoughts of temporarily refurbishing it were totally destroyed.

Even before this, however, it had been decided that the light was so important to shipping at this position on the coast that it should be replaced by a much stronger and larger first-order lighthouse. And so the Old Barney we know today was born. Completed in 1858, this coastal guardian was opened for duty on Jan. 1, 1859. She thrust protective, powerful beams of light out over the Atlantic to warn ships of dangerous shifting shoals and signal their position relative to the mouth of New York's huge commercial harbor.

Special Construction Features

At its apex Old Barney stands over 180 feet above sea level and has an ingenious internal structure. It rests on a massive stone foundation to prevent it from settling into soft sands.

The brick wall is actually a double structure. An outside conical wall four feet, six inches thick at its base tapers to only one foot, six inches at the top. This conical wall surrounds a second cylindrical wall that is nine inches thick from top to bottom. An air space separates the two walls. This construction is significant not only because it provides ventilation but because it allows the lighthouse to sway in high winds without causing structural damage. These twin walls give Old Barney a 27-foot diameter at the base that tapers to less than 15 feet above the walkway encircling the top.

Another fascinating construction feature is the central hollow pipe that you hardly notice as you are climbing the metal steps that spiral around it. This pipe, of course, acts as a support for the stairs. But most people are not aware that it also contains a pendulum mechanism, similar to the ones found in

SUSAN HALSEY

old clockworks, which once turned the multi-ton lens and lamp that perched in the glass lantern house at the top of the tower.

The lens, the most important part of any lighthouse, is a glass marvel that was cast and ground in the St. Garbian Glass Works near Paris. It has 24 flash panels made of more than 1,000 small prisms precisely mounted in an intricate brass frame. These prisms were individually positioned and focused to concentrate the light from a huge five-wicked oil lamp into powerful beams that could be seen more than 30 miles at sea. The lens and lamp assembly, which weighed in at more than five tons, were so delicately balanced on bronze rollers that the lighthouse keepers could rotate the entire light-dome by hand when the pendulum mechanism failed.

A Symbol Preserved

Old Barney poured forth its brilliant light until 1927. It was decommissioned then because erosion again threatened its existence and the lens had to be removed. The residents of Barnegat Light had developed such a fondness for the lighthouse that they could not tolerate its loss. They initiated a massive effort to stop the erosion and were later joined by the U.S. Army Corps of Engineers. The tower was saved. Ever since the people of Barnegat Light and the state park have kept a close watch on this monument to prevent further problems.

Area residents even formed the Barnegat Light Historical Society, which maintains a highly informative museum at Fifth Street and Central Avenue, just a short distance from the lighthouse. This museum is packed with artifacts, photographs of the lighthouse and surrounding buildings, and most fascinating of all, the massive lens which was once Old Barney's magnificent glowing eye.

The Historical Society also publishes a booklet entitled "Barnegat Lighthouse," written by Jerome Walnut, which can be purchased at the museum for a very small fee. This booklet is loaded with more interesting facts about Old Barney's history and structure.

Although the function of the lighthouse was replaced by a lightship anchored eight miles offshore and, later, other navigational aids, nothing could ever replace this beloved symbol of New Jersey's seafaring history.

Barnegat Lighthouse State Park is located on the northern tip of Long Beach Island in Ocean County. It can be reached from exit 63 of the Garden State Parkway via Route 72 and Long Beach Island Boulevard. For further information call 609-494-2016.

Catboats

a Barnegat Bay Tradition

STEVE NAGIEWICZ

The Silent Maid

BY STEVE NAGIEWICZ

Dotting the bay's horizon like so many tree trunks are tall masts, pushed along by huge billowing sails. For a moment, they appear to be an army of medieval knights, riding into battle behind banners of gleaming colors held aloft by mighty poles. On closer observation, the vision ends, and the viewer sees low wooden boats, dwarfed by their tall masts and large sails. These are the catboats of Barnegat

Characterized by a very broad-beamed hull, a catboat has a mast much taller than the boat is long, a very large single sail and a centerboard. The mast is located almost impossibly close to the bow, and it is this distinctive trait that marks the craft.

Catboats seem to have developed at the same time along the Cape Cod coast and in the small towns that dot the shores of Barnegat Bay during the early 19th century, although there is some evidence of their existence in the 18th century.

Although no one can fully explain just how these sailing craft were named, author Stan Grayson, in his book, *Catboats*, suggests the name came from an early catboat builder who advertised his boats had the "quickness of a cat." Others say the boats were named after the boat's small oval-shaped cabin portholes which resemble a cat's eyes.

Early catboats were strong and fast and their performance often surpassed other sailboats. Shallow draft boats, cats were designed to navigate bays, rivers and sounds where sleeker boats would run aground. Their wide beam—about one-half the boat's waterline length—provided excellent stability in almost any sea. While generally a boat for inland waters, used cats were used by New England sailors for fishing and racing.

Prominent among New Jersey Catboats designers and builders were: Howard and Samuel Perrines of Barnegat, John Keith and Ephraim Robinson of Toms River and Stanley Van Sant of Atlantic City. Their boats were among the fastest and most beautiful. Owners would often bet on whose was the best and fastest.

The simple design has survived all of yachting's changing fashions. They have remained a tradition in sailing that still attracts the individualistic sailor.

The First Party Boats

Jersey cats were relatively large, often measuring 30 feet or more in length. The *Olga*, moored in Atlantic City during the late 1890's, was reported to be more than 43 feet long.

Larger cats were often used to carry groups of people out on the bay for fun and fishing, and might well have been the first fishing party boats. Here again, the boats' low wide-beamed design made them ideal for carrying large numbers of people on a fast and stable sail.

A Racing Tradition

In the late 19th and early 20th centuries, catboat racing became a popular sailing pastime. One race continues today as the oldest purely American yachting trophy, the Toms River Cup Challenge Race. (The America's Cup Race originated in England.) First started in 1871, the Toms River race has been a showcase event for catboats. Today, most of the contestants still sail catboats, although other types of sailboats often enter. Some cats have had a reputation for being so fast that other sailors hesitated to enter the race, fearing they didn't have a sporting chance.

In the 1920's, a new class of catboat entered the racing scene—A-cats, 28-foot boats designed for fast sailing. One of the fastest was named the *Silent Maid* since she had no engine to spoil her smooth quiet sail. Launched in the winter of 1924, the *Silent Maid* immediately became a racing champion. As a matter of fact, she was so swift that she had to give other racing cats a 10 to 15 minute handicap.

Built with a 28-foot waterline length, 33-foot length overall and a 12½-foot beam or width, the *Silent Maid* draws just over two feet of water when under sail. Not many sailboats today can boast this same clearance with a comparable length and beam. Her natural wood hull supports a mast more than 47 feet tall and a sail area of 950 square feet.

Sixty years of sailing have made *Silent Maid* a part of New Jersey yachting tradition and have also left her in need of constant upkeep. Over the years, she has been almost completely rebuilt. As her present owner, Ms. Sally Schneider, tells it, "She had so many leaks and needed so much work to restore her original condition that I wasn't sure who owned who. It's been a constant love-hate relationship."

And as for the catboats, they still sail, with the same simple design and elegant grace that spans more than 100 years, reminding us all that these strange looking craft are an important part of the tradition and heritage along the Barnegat Bay.

HERB SEGARS

New Jersey's Trees:

Atlantic White Cedar

a valuable and historic resource

RICHARD A. KANTOR AND GEORGE H. PIERSON
PHOTOGRAPHS PROVIDED BY AUTHORS

One of few tree species named for an ocean, the Atlantic white cedar, also called southern white cedar *Chamaecyparis thyoides* is found along a coastal belt 50 to 130 miles wide, from southern Maine to northern Florida. White cedar stands commonly occur in swamps, alluvial flood plains, stream headwaters, tidal wetland borders, drainage ways and bogs, frequently underlain with organic peat deposits. In New Jersey, Atlantic white cedar forests are confined principally to the Pinelands region in Atlantic, Burlington, Cape May, Monmouth and Ocean Counties. There are also a few individual trees or stands in mixed upland bogs in northern New Jersey.

Atlantic white cedars characteristically form pure stands with many thousands of trees per acre, nearly all the same age. Since cedar seedlings require strong sunlight and are intolerant of shade, stands only develop after an area has been opened up by severe forest fire, clearcut timber harvesting or when a cranberry bog is abandoned.

Although sometimes confused with Eastern red cedar, *Juniperus virginiana*, white cedar has softer scale-like foliage, and distintive bluish-green or purplish to brown crumpled looking cones that contain five to fifteen minute, winged seeds.

Potentially long-lived, there have been reports of white cedars more than 1000 years old, although 200 years is the usual maximum. Mature trees generally reach 60 feet or more. New Jersey's largest known living specimen is 9 feet 5 inches in circumference and is found in a very wet woods in Manahawkin, Ocean County.

Where the Cedars Were

White cedar forests were once more widely distributed in New Jersey with major stands in the Pine Barrens, the Hackensack Meadowlands and at Sandy Hook. Although Charles Read sponsored an act to prevent the waste of this valuable timber species as early as 1759, the original cedar forests in Cape May County were gone by 1859 with few trees over 100 years old left. In the 17th and 18th centuries many cedar swamps were clear-cut, flooded and converted into cranberry bogs.

By 1974, there were less than 50,000 acres of white cedar in New Jersey and just a decade later, white cedar swamps occupy only 21,000 acres or 1.9 percent of the 1.1 million acre Pinelands National Reserve.

In colonial times the Hackensack Meadows also supported a vast stand of white cedar, used chiefly as hideouts for highwaymen of the old plank roads, then the major throughfares into New Jersey. Some of Captain William Kidd's pirate band reportedly escaped into the dense white cedar forest near Kearny. In 1797 authorities staged a massive raid to rid the area of pirates preying on vessels in Newark Bay and on the coaches and wagons on the roads. In a fantastic battle, a fire set by volunteers swept through the forest and drove the pirates from their lairs. The fire raged for three days, reaching as far north as Little Ferry. Today, partially submerged trunks and stumps are still visible at low tide in the Saw Mill Creek Wildlife Management Area of DeKorte Park in Kearny.

The Sandy Hook Peninsula was completely stripped of white cedar for shipbuilding during colonial times. Today only sunbleached stumps remain.

The Cedar Community

Atlantic white cedar supports important wildlife and helps stabilize our physical environment. Herbivorous animals—especially deer—feed on seedlings. In fact, deer damage to seedlings is so extensive in many areas that new stands cannot form after clearcuttings or wildfires.

In southern New Jersey's bogs and freshwater wetlands associated with white cedar, the water, called locally "cedar water," is characterisitically tea-colored, highly acidic, almost free of dissolved nutrients and relatively high in iron and aluminum. A number of interesting and beautiful plants, including several insectivorous species and the rare curly grass fern, several species of orchids, milkworts, sedge and cotton grasses are often found in these Pine Barrens white cedar bogs.

White cedar swamps and bogs are also home for several endangered and rare wildlife species including the Pine Barrens treefrog, the bog turtle and the four-toed salamander. Although the acidic water limits the diversity of fish in white cedar swamps, several species commonly found in the Pine Barrens are rare elsewhere, including the ironcolor shiner, the yellow bullhead, the pirate perch, the banded and blackbanded sunfish and the swamp darter.

Stands of white cedar create important "microclimates." The trees transpire water into the atmosphere, cooling hot summer air and protecting soil against freezing in winter. They can also serve as windbreaks by reducing the force of storm winds (although windthrow does occur and can proceed rapidly), slow down the flow of storm water runoff and serve as firebreaks.

Atlantic white cedar as always been commercially important. Swedish botanist Peter Kalm, reported seeing heavy cutting operations in dense stands of cedar along the Egg Harbor River as early as 1750. The only forest resources depicted on a 1778 map of colonial New Jersey are red and white cedars in Atlantic County. Every cedar forest in southern New Jersey has probably been clearcut at least twice and some as many as five times since the colonial period.

Atlantic white cedar wood is very light, soft, even grained, fine textured and wonderfully fragrant. Although comparatively weak, the heartwood is extremely durable and resistant to decay and insects. Dried, Atlantic white cedar is one of the lightest native species grown in the U.S.

White cedar wood was used for poles and posts, siding, shakes, shingles, lath, boards of boatbuilding, pails and tanks, logs for cabins, duck decoys, canoes and the old plank roads. In the 18th century most of the houses in Philadelphia and Wilmington were built with cedar shingles from southern New Jersey's swamps.

In 1911, over 669,000 board feet of cedar were cut in New Jersey to manufacture ships, boxes, crates and millwork. In addition more than 20 million shingles and an indeterminate quantity of plaster lath were produced. Today cedar continues to be an important timber resource in southeastern New Jersey with a reported harvest in 1982 of 5,000 cords.

Protecting the Cedars that Remain

A wide range of state sponsored programs are in place that help protect New Jersey's remaining Atlantic white cedars. The Bureau of Forest Management works to encourage growth of cedar on appropriate sites, conducts timber sales on state-owned lands to salvage white cedar from burnt stands, and reviews and comments on Pinelands Commission timber harvest permit applications. The State Park Service's restored sawmill at Batsto Historic Village in Wharton State Forest processes Atlantic white cedar for use at state parks and forests.

Since 1978, the Division of Coastal Resources has protected white cedar stands and mixed cedar/hardwood lowlands forests areas from disturbance as part of its permit review process. Applicants have agreed to eliminate specific building lots, realign roadways or storm water outlets, and establish buffer areas to preserve existing white cedar stands.

The New Jersey Pinelands Commission's regulations have also helped protect remaining stands of Atlantic white cedar. Of the development applications approved by the Commission, none have involved substantial encroachment on Atlantic white cedar stands and less than one percent have involved the freshwater wetlands usually associated with Atlantic white cedar.

What Needs to Be Done?

Although common in New Jersey, Atlantic white cedar has been eliminated from much of its previous range. Remaining white cedar stands must be carefully managed to conserve this valuable natural resource. Cedar swamps should be protected from filling and draining, from harmful nutrients and pollutants, from saltwater intrusion and from excessive surface and groundwater withdrawals.

Timber harvests should be managed to encourage white cedar growth. Clearcuts create favorable conditions for white cedar seedlings and prevent forest conversion to hardwoods. Temporary flooding and prescribed burns are also useful techniques to help cedar seedlings get started.

Although state and federal regulations help preserve most of New Jersey's white cedar stands from unrestricted destruction, some unprotected areas remain. Illegal wood cutting and timber thefts are a continuing problem in southern New Jersey. There is no comprehensve public or private statewide program to curtail the cedar's decline. A freshwater wetlands protection bill, currently under consideration by the New Jersey State Legislature, would help protect New Jersey's remaining Atlantic white cedars, as would promulgation of state and national listings for endangered and threatened plants.

Opposite page: 1920's picture of White Cedar harvest in Atlantic County.

Below: White Cedar stand along the Wading River

if God wanted me to be a Clam, *he would have given me a shell*

By Robert J. Gnerre
Illustrations By Anthony Hillman

Barnegat Bay and Little Egg Harbor just to the south have long been renowned for the abundance and quality of shellfish there. The procurers of these delights are also somewhat of a resource, providing a quaint local color as they ply their trade in their flat-bottomed, square-bowed, wooden garveys. Many innocent observers, myself included, have romantically pondered the simple joys of such lifestyle, picturing ourselves in their places peacefully reaping nature's bounty. But how many of us have looked (literally) beneath the surface? I was privileged to experience this profession first hand and to discover, to my dismay, that all nature isn't as benevolent as it appears to the native landlubber.

My clamming odyssey began, innocently enough, within the relaxed atmosphere of a gathering of friends inside a cozy home in late autumn, with the clamming season in a galaxy far, far away. "Sounds like fun—I'd like to try that," I said. But then, I might just as easily have said "Wrestling alligators—no problem," and now where would I be? From the comfort of my easy chair the ensuing mayhem seemed about as challenging as watching a jungle movie—thrills with no snakes, or as glorious as a war movie—with no bullets.

Some months later, upon arriving home after receiving a blow to my "chosen" career, my wife said, "I was talking to Flo and Ben wants to know if you're ready to go clamming." "What a coincidence," I thought, with only a vague, unheeded notion that Custer might have thought the same thing at finding a convenient nest of Indians.

"Why not?" I said. "Maybe the change will be good for me." A short while later I found myself putt-putting through deserted lagoons at 5:30 a.m., feeling cold and out of place. As we reached the bay, the waves pounding into our speeding boat jarred my bones, and the spray added to my chill. With menial labor now very close, this daring endeavor began to take on a different light altogether. Before we even reached our hunting grounds, I was determined to pursue a more practical occupation.

But labor doth have its rewards. I earned that day $5 cash!

The fiendish process we engaged in that day is called "raking," but any resemblance to strolling across a lawn with a human-sized rake is purely coincidental. The rake is a two-story high, three-inch diameter metal tube, with an air-conditioner-sized metal cage at its working end. This cage has teeth like a comb's at its bottom edge. These must be manipulated along the bay floor to dig the clams from their peaceful homes and deposit them in the cage. This takes both power and a deft touch, Ben explained, going through loops and various pulling motions with his arms upon the rake. When it's felt through a process akin to divination that the cage is full, the entire device must be hauled up to the surface, working against considerable unfavorable leverage, while rotating the handle so that the clams don't fall out of the cage. The difficulty of rotating this ungainly contraption is increased dramatically through the unfortunate combination of wet hands and a smooth metal finish.

Finally the cage is cantilevered off the side of the boat. It must be dunked several times to clear away the mud inside, only to reveal, more times than not, that it is filled with sponges, broken shells and beer bottles, and other creatures who are willing and able to nip an unsuspecting finger.

"Doesn't seem worth the effort," I say to Ben.

"It's not," he answers. The urge to kill rises within me.

"Can't make enough money at it," he continues. "Though some make out real good. What we're gonna do next is treading. You'll enjoy that."

Treading is walking on the bay bottom and feeling for clams with Tote-covered feet, then picking them up by hand. Oh great—walking among the creatures of the bay in *their* natural habitat, not mine. I think of the crabs, stingrays and other beasts that I wouldn't necessarily like to mingle with.

Watch Out For Spider Crabs

It will be a good experience, I tell myself, picturing Marlin Perkins in the wilds of the Amazon, and Jacques Cousteau capturing sharks. It will be a challenge.

When the dreaded day arrives, my mentor begins to describe the things that I kept hidden from my consciousness during the week. For example, guarding the clams is something called a spider crab. Toss that one around for a few seconds. Spider crab. There you have the worst of two worlds—a crab that looks like a spider.

"You walk through the mud, feeling with your feet," Ben says. "When you think you feel a crab, reach down for it. But if it's got points on it, don't pick it up—it's a spider crab.

"And don't step too hard. Could step on a conch. Got spikes on top. Can stick you pretty bad."

"Super."

He laughs. "I remember old Charlie last year. Had a shark between his legs. Was caught there. They can't see after you stir up the mud, you know. Anyway, the shark's flapping its tail against Charlie's legs, and he's hollerin."

"That's it. I'm not going," I say, but I know I will.

The thought of standing in cold water for a few hours on a chilly day with a 15 knot wind blowing on my wet body seems like a good story for "Masochist Weekly." Why didn't Ben mention it? It's

obvious—he's got the insulation of a killer whale, not to mention the disposition.

I Take the Plunge

He points to a spot between two "islands," two stretches where the seaweed has grown extra long, reaching above the surface to blow in the wind. Hardly an inspiring refuge and the only representation of dry land within miles. The stretch in between looks to me like the English Channel.

"We just stop out here in the middle of nowhere?" I ask. "How do we know it's not too deep?"

"We don't," he says, plopping into the alien zone.

"Well, this is it," I tell myself. I know that it's not going to get any easier. I've already got Totes on my feet and dungarees to cover my legs, and a long-sleeve shirt and rubber gloves. Everything is covered so I won't have to touch anything with my bare skin. I consider bringing my old football helmet next time.

I place the tire tube and basket combination in first clinging to it like a life preserver, I take the plunge. Immediately, I'm stiff from the cold, fearing to let another inch of my body touch the freezing liquid. I stand straight and take frenzied little steps on my tip-toes, not really wanting to discover anything in the muck.

"Let's get some clams" he says, fearlessly pulling up all sorts of creatures and inspecting them with detached curiosity before disposing of them. As he does so he explains them to me. Mister Wizard in pedal pushers. Just what I need. But clams begin accumulating in his basket.

Soon, despite my most fervent wishes, I feel something hard beneath my left foot. On darn it!

My First Clam

I finally penetrate the ice barrier and immerse my torso far enough to touch the unknown with my fingertips. I pull back, then approach it again. After several more timid forays noticing that it seems to be inert—I get the courage to grasp it, wondering if crabs like to play possum to lure their victims into a trap. Bravely I lift it, keeping it at arm's length, like a bomb. It's got a shell—so do crabs. But it's not. It's a clam ... shell.

"Look, I got a clam shell!" I call proudly. "Half as good as a clam, right?" He doesn't bother to answer, but his expression makes me wonder if I've suddenly turned into a giant jellyfish.

Next time, it's a little easier, and—a whole clam! My celebration is put into abject perspective, however, by the voice of Neptune.

"Congratulations."

But now I'm on a roll. This is going to be easy.

The next clam is brown, with spidery, churning legs.

"Yaah!"

Amid thrashing arms and splashing water, my miniature nemesis disappears quickly. My heart begins to beat again. My dreaded moment of horror came and went in a flash, and I survived—revolted, but basically intact. I realize that I must take the plunge again quickly if I am to do so at all. Proud of my astounding bravery and fueled by Ben's amusement, I forge ahead.

I begin to get fairly confident, almost smug, until he asks. "Come across any big ones yet?"

The look on his face tells me that he's not referring to clams. The specter of a giant crab with my number on it haunts me for the rest of the day. I continue doggedly, though even more cautiously than before, like a man walking through a minefield.

Next Time ...

Later, as we bounce our way home, I'm tired from the cold, the tension and the exertion, but my ordeal is over and I'm proud of my epic achievement. I have passed the acid test! I have faced the gorgon and lived! Move over, Marlin—here I come!

As I bask in the glow of my heroism, I even take in stride Ben's remark that "next time we'll try it a little different." Maybe I should be worried, but I'm not. I've proven to be a fearless (almost) and daring warrior. But beneath the aura of my self-praise, a nagging inner voice whispers that I should beware. A plea for rationality arises from the depths of my soul and forms itself into a prayer, desperate for recognition:

"Please don't ever let me meet an alligator wrestler."

Try fishing at Assunpink Lake

By Walter Murawski

Just south of Roosevelt and west of Clarksburg in Monmouth County, Assunpink Lake has an extensive gamefish population. A joint project of the U.S. Soil Conservation Service, U.S. Fish and Wildlife Service, N.J. Division of Fish, Game and Wildlife and the N.J. Green Acres program, the lake was completed in 1975 to provide flood protection, and fish and wildlife habitat for the Assunpink Creek watershed. The lake is located at the center of the 5400-acre Assunpink Wildlife Management Area, managed by the N.J. Department of Environmental Protection's Division of Fish, Game and Wildlife.

With an area of 225 acres, maximum depth of 14 feet and a mean depth of five feet, Assunpink's waters have a low basic productivity although sufficient dissolved oxygen is present at all depths to maintain a warmwater fish population. Although aquatic vegetation is widespread, it is not a problem.

Largemouth bass and chain pickerel are abundant year 'round, even under the ice. Channel catfish are stocked periodically and at least one specimen over nine pounds has been caught with hook and line. Sunshine bass (striped bass/white bass hybrids) were first stocked in 1984 and should reach catching size (18 inches) by 1986 and could weigh as much as 20 pounds. Black crappie, yellow perch and brown bullhead are the mainstay of the Assunpink's panfish harvest. Other fish found in the lake include banded killifish, golden shiner, creek chubsucker, American eel, redfin pickerel, yellow perch, pumpkinseed sunfish, and bluegill sunfish.

Parking and launching facilities are available on the lake's south shore, off Clarksburg-Robbinsville Road. Only electric motors are permitted. Most of the lake's shoreline is easily accessible for anglers.

Fishing Guide Available

The *New Jersey Party, Charter and Rental Boat Directory* is now available from the Division of Fish, Game and Wildlife of the Department of Environmental Protection.

This free, 16-page booklet lists 233 party and charter boats, the home ports, species fished for and the names and phone numbers of the captains.

In addition, the revised guide lists 66 boat rental places with information on the types of boats and facilities available along with addresses and telephone numbers. This material will help in planning day trips during vacation time at the Jersey shore.

The booklet is available by sending a self-addressed, stamped (40 cents) #10 envelope to: Boat Directory, Nacote Creek Research Station, Star Route, Absecon, NJ 08201.

In this issue

Continued from page 1

sey by Carl Petruzzelli, who wrote and photographed *New Jersey's Wild West Frontier* in the May/June issue, a very popular article.

From within the department, Richard A. Kantor of Coastal Resources, and George Pierson, Chief of Forestry Management, contributed the article *Atlantic White Cedar: A Valuable and Historic Resource.*

Two short pieces: The Wildlife in New Jersey feature is the *Great Blue Heron*, by Mimi Dunne. The inside back cover illustration was provided by Carol Decker.

Try Fishing at Assunpink Lake writes Walt Murawski, Asst. Chief of The Bureau of Freshwater Fisheries in DEP's Division of Fish, Game and Wildlife.

And we have a *Calendar of Events* on page 34.

Wawayanda State Park

By Kenneth W. Dahse

KENNETH W. DAHSE

DIVISION OF PARKS AND FORESTRY

In the rolling hills of north central New Jersey, Wawayanda State Park offers visitors a wide diversity of outdoor activities, from swimming, boating and fishing in a beautiful lake to hiking on tree-lined trails.

The air is pure and scented with the sweet fragrance of forest greenery. Even on a busy day, there is ample space to find complete solitude. Wawayanda's 10,500 acres give visitors a taste of the subtle beauty that encompassed all of New Jersey before it became the most densely populated state in the union. A visit to Wawayanda helps remind us how much beauty is still left in New Jersey, and how we should try to preserve as much of it as possible.

On the Water

The 255-acre Wawayanda Lake is 1½ miles long and 3/4 mile wide. Visitors may launch their own sailboats, rowboats, canoes and windsurfers (no motorboats allowed) or rent rowboats, canoes or paddleboats. Occasionally winds whip up enough waves to make a canoe tripe exciting and challenging and the lake is open enough to give sailors and windsurfers a nice trip even on calm days.

Taking the time to explore the lake is certainly worthwhile. Parts of the shoreline are boulder-strewn, while parts are filled with reeds. Ducks and geese float among the lily pads. Frogs croak in the wind. You might even get lucky and spot a hawk soaring high against the blue sky.

Bathers at Wawayanda's beach can enjoy the freedom and joy of a living lake—a refreshing change from the sterility of a concrete swimming pool. Beach sand extends into the swimming area, making it easy to take a running plunge into the water. Early in the day, before the lake is churned up, the water is crystal clear and you can see the bottom and watch fish swimming around you. A swim in the lake's silk-smooth water leaves you feeling clean, relaxed and refreshed. Lifeguards are on duty and changing rooms, restrooms and a food concession are open from Memorial Day to Labor Day.

A large grassy field between the parking area and the beach is perfect for touch football, Frisbee, or sunbathing for those who dislike the sand. Picnic areas on both sides of the beach offer grills and tables. Nestled among the trees they give visitors a nice view of the lake.

Wawayanda also offers several miles of bike and hiking trails. Part of the Appalachian Trail runs through the park. Try hiking the 6.6 mile section and get a small taste of the experience end-to-enders have while backpacking the trail's 2,000 mile length from Maine to Georgia.

A Special Place to Jog

The trails can also be enjoyed for jogging. One cool summer day I decided to warm up with a run in the woods on a trail that starts near the beach. I intended to go only a short distance, but I soon found the forest's peaceful solitude and pure scented air pushed me on. The joy of physical exercise in this natural setting was difficult to resist.

Far from the usual distractions of road running, I plunged deeper and deeper into the forest, heard chirping birds and felt the cooling caress of the drifting wind. My eyes scanned the trail for dips and rocks. At times it was like running an obstacle course, but mostly the trail was easy enough that I wasn't distracted. When I returned to the beach, I plunged into the cool soothing water and floated peacefully, bobbing up and down on the mild waves.

Located on the Warwick Turnpike in Vernon Township, Wawayanda State Park is open from one half hour before sunrise to one half hour after sunset. There is a $3 entrance fee on weekends and holidays, $1 on weekdays and free admission on Tuesdays. There is also a $3 reservation fee for the small group camping area. Backpack camping is not allowed on the trails.

For further information contact Wawayanda State Park, P.O. Box 198, Highland Lakes, NJ 07422, telephone 201-853-4462.

CALENDAR OF EVENTS

July 1985

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

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S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

JULY-AUGUST

Art Exhibits
Ringwood Manor West Wing and Barn Gallery
Ringwood State Park
Ringwood 201-962-7031

Barn Theater Performances
Ringwood Manor
Ringwood State Park
Ringwood 201-962-7031

Open Air Theater Series
Washington Crossing State Park
Titusville 609-737-0623

Theater in the Park
Amphitheater
Bridgeton 609-455-3230

SUMMER FESTIVAL '85
NEW JERSEY STATE COUNCIL ON THE ARTS
609-292-6130

JULY

14, 3 p.m. — OPERA OUTDOORS
Washington Crossing State Park
Titusville 609-737-0623

20, 10 a.m. — 6th ANNUAL CRAFTS FESTIVAL, featuring juried crafts show, folk music, mime and puppetry
Allaire State Park
Farmingdale 201-938-2371

21, 2 p.m. — MUSIC DANCE AND VIEW, featuring modern dance and popular music by New Jersey artists
High Point State Park
Sussex 201-875-4800

28, 1 p.m. — COUNTRY WESTERN AND BLUEGRASS MUSIC FESTIVAL, featuring special guest artist and New Jersey performers
Wharton State Forest
Hammonton 609-561-0024

28, 11 a.m. — COLONIAL CRAFT DAY, Wick Farm, Jockey Hollow
Artisans and craftspeople will demonstrate 18th century crafts and skills. Punch and Judy show, children's military drill
Morristown National Historical Park
Morristown 201-539-2085

AUGUST

4, 1 p.m. — FOLK MUSIC AND STORYTELLING
Swartswood State Park
Newton 201-383-5230

11, 4 p.m. — CARIBBEAN AND AFRO-AMERICAN BEAT
Absecon Lighthouse
Atlantic City 609-292-6130

17, 6 p.m. — BLUEGRASS MINICONCERT
Lake Nummy Pavilion
Belleplain State Park
Woodbine 609-861-2404

24, 6 p.m. — NEW JERSEY POPS WITH PETER HOWARD
Monmouth Battlefield State Park
Freehold 201-462-9616

25, 11 a.m. — COLONIAL COUNTRY FAIR, Wick Farm, Jockey Hollow
Colonial crafts, music and dancing, military regiments, games, Punch and Judy all help to recreate a 1780's fair.
Morristown National Historical Park
Morristown 201-539-2085

HIKES, BIKE RIDES AND OTHER SPECIAL EVENTS

JULY

26, 27 — 10TH ANNUAL CAPE MAY WATERFOWL & WOODCARVING SHOW
Convention Hall
Cape May 609-884-8411 ext. 20, 27

31, 1:30 p.m. — FLOAT TRIP, WADING RIVER
Meet at Evans Bridge, Route 563
Chatsworth 609-267-7052

31, 8 p.m. — MOONLIGHT HIKE (Sierra)
Lake Oswego
Chatsworth 609-267-7052

AUGUST

2, 3 & 4 — GREAT BLOOMSBURY BALLOON RACE
Garden State 76 Auto/Truck Plaza on Interstate 78. Free. 201-730-7676

10, 10 a.m. — HIPPOPOTAMUS HIKE (Sierra)
Meet at Atsion Ranger Station
Atsion 609-267-7052

10, 11, 10 a.m. — DECOY SHOW AND SALE
Allaire State Park
Farmingdale 201-938-2371

11, 10 a.m. — FRANKLINVILLE R.D. BIKE RIDE
Franklinville 609-547-1611

15, 16, 17, 10 a.m. to 6 p.m. — JERSEY CAPE SHELL SHOW
Wetlands Institute
Stone Harbor 609-368-1211

24, 5 p.m. — FINALS—NJ TOMATO CHAMPIONSHIP
Monmouth Mall, Eatontown
201-229-2395

SEPTEMBER

7, 8, 11 a.m. — ETHNIC FESTIVAL
Liberty State Park
Jersey City 201-435-0736

8, 8 a.m. — OPEN AIR MARKET
Monmouth Battlefield State Park
Freehold 201-462-9616

BIRDING FOR BEGINNERS—SUNDAY, SEPTEMBER 22

Sponsored by N.J. Audubon Society and N.J. Department of Environmental Protection

Name _____

Street _____

City _____ State _____ Zip _____

NJAS members $2, others $4, children under 16 and seniors free

Enclosed is $____ for ____ adult places. Please also reserve places for children/seniors.

Time preferred _____ 10 a.m.; _____ 2 p.m.

Place preferred _____

_____ Lorrimer Sanctuary, Franklin Lakes

_____ Scherman/Hoffman Wildlife Sanctuaries, Bernardsville

_____ Monmouth Battlefield State Park, Tennent

_____ Rancocas State Park, Mt. Holly

_____ Cape May Point State Park, Cape May

Please make checks payable to N.J. Audubon Society and return to Rancocas Nature Center, R.D. #1, Rancocas Rd., Mt. Holly, N.J. 08060

Dear Editor

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

More Legends and Lore

By reputation I am slow to boil, but let me tell you, my teeth are grinding. As a Sussex County native, I was shocked, utterly dumbfounded by William Zander's article, "Legend and Lore of the Flatbrook," (May/June '85) with its ugly characterization of the "local heathens" of Sussex County as unshaven, unkempt drunkards. If these cartoons had similarly depicted any other ethnic group, you know full well that the sky would now be falling upon you. The painful irony is that you have chosen to defame a community of true Jerseymen who have abided in these iron hills for many, many generations.

I hope that Mr. Zander will not find me humorless. An infectious hearty laughter is very much characteristic of the people of Old Sussex and many's the time we have enjoyed a good laugh at our own expense. Your depiction of the native inhabitants of Sussex County is unfit for a bathroom jokebook. It is certainly unworthy of NJO.

Kevin Wright
Newton

Editor's comment: Aside from this letter, we have received nothing but good comments about this article and its illustrations. Even my Sussex County friends enjoyed the piece.

William Zander replies: I want to assure Mr. Wright that I love Sussex County as much as he does—though such premises, as in marital quarrels are rarely convincing to the other party.

Never once in my article did I say that the people of Sussex County are "unshaven unkempt drunkards." I do use "heathens," but I would have thought readers would have understood that this was the way Flatbrook Valley Club members saw the locals, and anyone else who wasn't in their number. The real heathens may have been the club members themselves, who are shown arrogantly poaching in public waters from the sanctuary of their dam.

Except for the ancient stuff at the beginning, this piece was intended as a bit of oral history. The people I interviewed have lived in Sussex County for years, and some come from local families that go back for generations. I took no point of view toward my material but tried to be a good listener. I thought I was told some wonderful stories. I suppose Mr. Wright, if he were a commissar, would suppress all stories that don't show us Sussex Countians as paragons of virtue.

I wonder if Mr. Wright's quarrel isn't more with the cartoons than with my article. The cartoons are indeed caricatures. Here, the question of taste and humor could be argued, and I'd have to agree that there is something redolent of the "bathroom jokebook"—I was reminded of those cartoon postcards that depict an outhouse with a half-moon on the door.

See New Jersey First

I am, and have been for many years an avid reader and admirer of your fine magazine. I am also a hunter and fisherman, happily enjoying what's left of rural Hunterdon County. I'm writing in the hopes that you can tell me were Capoolong Creek is. It came to my attention last fall in a newspaper article.

Franklin Cosmen
Glen Gardner

The 61-acre Capoolong Creek Wildlife Management Area, purchased with Green Acres funds in 1974, runs along an abandoned railroad right of way from Pittstown to Kingtown to Sidney in Hunterdon County. There's parking off the Kingtown-Sidney Road, which runs east from Route 513 or at the railroad station in Pittstown. You can also reach the creek from Route 579 at Pittstown and from the Hogback-Landsdown Road Road in Landsdown. Capoolong Creek is stocked annually with brown and rainbow trout. The *Guide to Wildlife Management Areas* available from the N.J. Division of Fish, Game and Wildlife contains 61 Wildlife Management Areas and includes a two-color map of each area. The address is CN400, Trenton, N.J. 08625.

To Prevent Littering

My obsession is littering and the litterbug and how we can eliminate the first and educate the second. Perhaps a series of before and after pictures of areas which have been improved by Boy Scouts, Girl Scouts, women's clubs, etc. and a complementary article in NJO might help.

Regina Rumboldt
Montvale

Save Our Wetlands

Many northern New Jersey wetlands are vital aquifer recharge areas. Unfortunately, Ian Walker's letter (March/April '85 Letters to the Editor) does not seem to recognize that these wetlands play a key role in municipal ground water supply availability and water quality protection. So dear Editor, don't stand corrected!

I suggest you read "Wetlands and Municipal Ground Water Resource Protection," in *Drinking Water Quality Enhancement through Source Protection*, published by Ann Arbor Science. The wetlands described in this article are similar in hydrologic terrain to those in the upper Rockaway River watershed. The Ogden Bill (A-672) will help stop the continuing destruction of our wetlands, but we also need a better informed public to aid in this effort. Your magazine can play a big part.

Diane Nelson
Boonton Township

Cycling Lives

I was delighted to see the listing of bike tours and rides and the article by Eileen Van Kirk "The Great Memorial Day Bicycle Race" (May/June '85).

Eileen's source couldn't have been too well informed, especially when she writes "cycling died out after World War II." It was just the opposite. Cycling saw a surge in the late 1940's because boys like me who were racers before the war dreamed of getting back on their bikes when they were discharged from the service.

I was N.J. state senior and eastern states champion in 1942 before I went into the U.S. Navy. I raced in 1945 and 1946, was state champion in 1946 and 1947 and number one man on the 1948 Olympic track team in London, doing the best of any American until the 1984 Olympics.

Don't forget the classic "Tour of Somerville" run every year since 1940 and named after two former winners from Somerville and Paterson who were killed in the war. This race has drawn at least 30,000 people since its start. I rode it in 1941, age 16, and won it in 1956, age 32.

Cycling wasn't as popular after the war in this country as it is now, but please, it never died!! People are just finding out the joys and pleasures we enjoyed 40 & 50 years ago and still enjoy today.

John Heid
Rockaway

Thanks for the information.

Memories . . .

You did it! You brought me home again. I am referring to "In the Land of King Nummy: Belleplain State Forest," (May/June '85). From October 1937 through March 1939 I was a member of CCC Company 242, Camp S-80, which was garrisoned there. In a two-ton REO Speedwagon dump truck, I learned to drive and to spread gravel while building some of the roads at Belleplain. I also loaded many trucks in the gravel pits, with pick and shovel—no power shovels then. I planted many trees and fought a few wood fires, and was one of those who lifted many a shovel full of mud to dig Lake Nummy out by hand.

My only regret now is that when I visit Belleplain State Forest today, I have to pay to get in. Thank you for renewing memories of the happy days of Camp S-80.

Vincent L. Tuetkin
Mount Holly

The Great Blue Heron

By Mimi Dunne

When encountered in the wilds of New Jersey, the great blue heron is a delight to observe. Great blues can be seen year-round on lakes and streams in the Garden State, from the marshes and pinelands to High Point State Park. They're often observed in flight using slow, ponderous wing beats, trailing legs, and an occasional nasal "frawnk" to set the bird off. The heron can also be observed when foraging for fishes along lakes and streams. Its large, gracefully-plumed form is unmistakable.

Nine species of long-legged wading birds including herons, egrets and ibis use New Jersey breeding and feeding grounds. Long-legged waders occupy a particular niche in the ecosystems in which they occur. All are predators, and feed at the top of the food chain. Wading birds are well adapted to silently stalking their aquatic prey, and to catching and consuming prey with a long, sharp bill.

Great blue herons feed primarily upon fish. In a food habit study of a North Jersey rookery conducted by Endangered Species Program biologist Jim Sciascia, it was determined that rough fish make up the mainstay of the great blue's diet with suckers, carp and shiners being most important. Sunfish, bass, and trout are taken occasionally as are frogs and crustaceans. Great blue herons have also been observed hunting rodents in fields.

Four types of New Jersey herons, including the great blue, are active during the day. The great blue is the largest of all wading birds, and its size is perhaps its best distinguishing characteristic. It stands about four feet tall and has a wingspan the size of an eagle's. The little blue, tri-colored and green heron are one-half the size of the great blue. The coloration of the great blue is better described as gray. A whitish head and throat, black temple and plume, and mauve neck are also unique among the herons.

New Jersey is home to 313 colonies of great blue herons. Their breeding activity is restricted to rookeries, or colonies, which may contain from two to 300 pairs of herons. As a breeding species, the great blue heron is threatened in New Jersey. The habitats in which the rookeries are found were seen to be under increasing pressure from human encroachment at the time of listing. Rookeries are found in a variety of habitat types including wooded dredge spoil banks, wooded wetlands, and pine-oak forests well away from human disturbance. Rookeries may be active for several years or several generations and may be transient over time.

Adult herons arrive at the rookeries in March. Courtship lasts into April with egg-laying commencing in April continuing into June. Eggs are incubated by males and females for 28 days. Chicks hatch out in June and are relatively helpless. Parental care continues for about 50 days until the young fledge in July. Chicks are raised in the rookeries throughout the summer, but by mid-August, activity in the rookeries has ceased.

The largest of New Jersey's heron rookeries is located in Warren County near the town of Great Meadows. This colony contains 300 nests and has been active since the early 1900's. In 1983, the Department of Environmental Protection's Division of Fish, Game and Wildlife took advantage of an opportunity to protect the colony. The State purchased a 5-year conservation easement from the landowner, Art Weeks of Milford, N.J. The easement was designed to place a deed restriction on a portion of the property used by the herons prohibiting lumbering on the site, and was accomplished with the Tax "Check-Off" funds provided by the Endangered and Nongame Species Program. In exchange for the logging limitation, the landowner received valuable survey information. Creative protection of habitat seems to work well with species like the heron since outright purchase of land is prohibitively expensive.

The Endangered and Nongame Species Program has initiated a project to determine parameters of colony location as a means to further protect significant habitats. Biologists are studying a variety of physical and biological factors of existing colonies in order to ascertain common ingredients of great blue heron breeding habitat.

FRONT AND BACK COVERS

Dunes. Photograph by Walter S. Choroszewski

INSIDE BACK COVER

Great Blue Heron. Illustration by Carol Decker


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