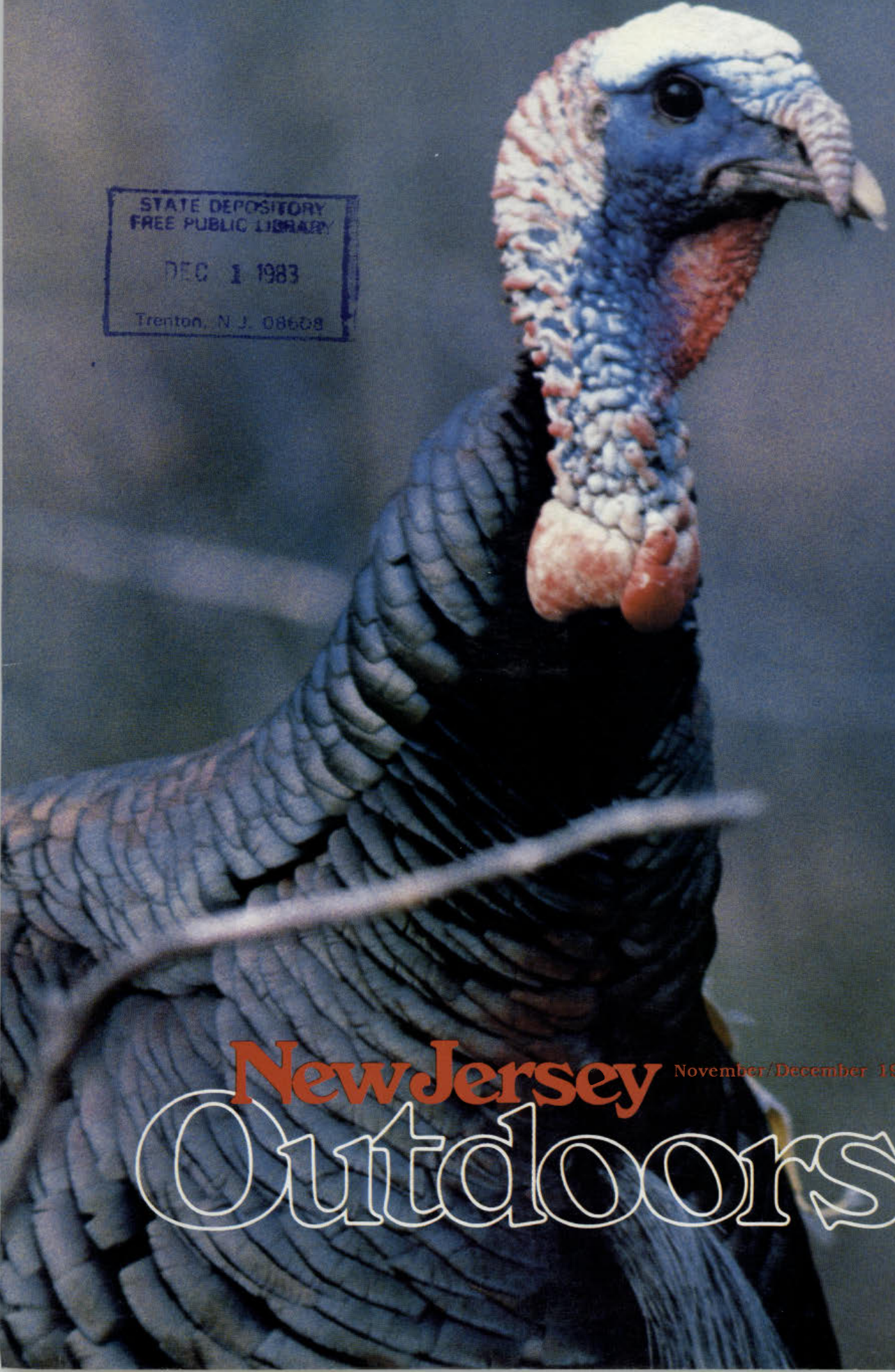


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New Jersey November/December 1983
Outdoors

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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

Happy Holidays!

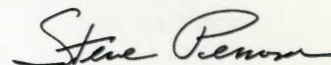
The lead article in this issue is titled, *A New Look at Old Christmases*, and you'll notice that our magazine also has a "new look." The logo has been changed, but not drastically. It looks a great deal like the old logo, except for the outline type. The Table of Contents and Editorial pages were redesigned to give a more "open" and "airy" look to the front of the magazine. And a new typeface introduced in the September/October issue is used throughout this latest issue.

But even with this new facelift, we're the same magazine from an editorial standpoint. Recently, I looked at several of the early 1974 issues and they looked dated when compared to the '80, '81 and '82 issues. So the magazine has been changing gradually over the years. We call it maturing. People age but magazines mature—we don't allow them to age because every couple of years we take the wrinkles out. Let us know what you think of our facelift.

Also, this issue of *New Jersey Outdoors* will be the last issue in which the *Environmental News* will appear. In the future the *Environmental News* will be printed separately and will be mailed free to subscribers requesting it. Send your request to:

Editor
Environmental News
CN 402
Trenton, New Jersey 08625

With the publication of this issue, the 60th published during my editorship, I again wish you all a happy holiday season. And a reminder—give *New Jersey Outdoors* as a gift, because it's a gift that will last for a year, or two, or three. Through the life of the subscription, you will be remembered with the arrival of each issue.



IN THIS ISSUE

"If we cannot return to the peaceful and unhurried Christmases of long ago, we can visit a number of New Jersey State Parks and Historic Sites." In the article titled, *A New Look at Old Christmases*, Parks Superintendent Dick Riker describes the celebrations of "Victorian Christmases" planned at Ringwood Manor, Steuben House, Old Dutch Parsonage, Wallace House, Rockingham and Allaire Village.

Kim M. Ruth is lighthouse aficionado and much more. In the past, whenever we featured a New Jersey Lighthouse on one of our covers, he wrote to congratulate us on our choice. And he promised to write an article about *Touring New Jersey's Lighthouses*. And he finally did.

Len Soucy is a naturalist, lecturer, photographer, and raptor researcher, with a particular interest in owls. He is the past president of the New Jersey Raptor Association and a member of numerous nature and environmental organizations. He is the author of the booklet titled, *New Jersey's Owls* and the article on page 6 titled, *Barn Owl: denizen of darkness*.

Although new to our publication, J. Kenneth Seiben is an avid salt-water fisherman and the author of *To Catch a Shark*.

Layout Shooting/The Other Method of Duck Hunting is the second effort by Outdoor writer Marty Boa for *New Jersey Outdoors*. A dedicated and active duck hunter, Marty can vouch for this method.

The Appalachian Trail begins in north-west Georgia and winds some 2100 miles through the Appalachians northeastward passing through New Jersey and on up to end in northern Maine. Ken Oravsky writes about hiking the 66.7 miles of *The Appalachian Trail in New Jersey*. Ken, a naturalist at Cheesequake State Park, has also been published in *Backpacker* magazine.

Author/photographer Robert J. McDonnell writes a nostalgic piece about rail-roading in New Jersey at the turn of the century and the renovation of *The C.R.R. N.J. Terminal*, which is a part of Liberty State Park.

If you are the owner of at least five acres of land and are interested in purchasing seedlings from the state nursery to reforest all or a portion of your acreage, read *New Jersey Nursery Produces Quality Seedlings* by Deborah Boerner.

Just Passing Through describes with words and color photographs the southward migrations of flocks of Snow Geese which stop to rest and feed on the impoundments of the Brigantine National Wildlife Refuge.

Hedgerow Ringnecks is about hunting pheasants in those narrow hedgerows you've been overlooking—but not by author Thomas Dale Pagliaroli. Tom is Editor of *The Seasonal Sportsman* magazine.

In the spring of 1974 an employee of the Hackensack Water Company discovered a large thigh bone at the Oradell Reservoir in

Norwood. Subsequently, about 60 percent of a Mastodon skeleton was unearthed at this site. *The Dwarskill Mastodon* by Eleanor Gilman describes this dig. Ms. Gilman has been published several times in NJO.

On Pages 28 & 29 we are featuring the wildlife paintings of Chris Forrest, Michael Budden, Wilhelm J. Goebel, Robert D. Fischer, Ann Michels and Donn Hettal.

Our *Wildlife in New Jersey* feature is introduced by the painting of the Pileated Woodpecker (inside back cover) by Carol Decker. The author of this article is Nongame Biologist Mimi Dunne.

The wild turkey on the front cover was photographed by Roy Decker of Branchville from a blind. Mr. Decker's photographs have appeared in NJO in the past.

The autumn scene on the rear cover was photographed by Paul Taylor, a naturalist at Parvin State Park. Mr. Taylor's work has appeared in our magazine many times.

In the September/October issue we neglected to give photo credits for the photographs on page 27. The photographer is Patrick Boffo.

Also, we wrote that Anne Morris, writer of the *Green Acres/Your Investment* article was employed by the N.J. Conservation Foundation. Not so. She is Director of the Resource Center for *The Association of New Jersey Environmental Commissions* (ANJEC).

A NEW LOOK AT OLD CHRISTMASSES



BY DICK RIKER

Christmas is a season for remembrance. It's the season that brings back the most pleasant memories of our own childhood and even the childhood memories of our parents when we tell stories of Christmases past to our children or grandchildren. If we cannot return to the peaceful and unhurried Christmases of long ago, we can visit a number of New Jersey State Parks and Historic Sites. In some simple homes and some ornate mansions of wealthy American Victorians, Christmas will be celebrated as it was in 18th and 19th century America.

Late each November volunteers of the West Milford Women's Club appear at Ringwood Manor burdened with handmade Christmas ornaments and decorations they have been preparing for many months. Greens cut by parks crews are piled on porches and greenhousesmen bring in large potted house plants and small trees as preparations for the annual "Victorian Christmas" at Ringwood Manor reach a climax.

Victorian Christmas originated in 1972 as a retirement remembrance to her friends from Mrs. Lillian Post, who was retiring as Caretaker/Interpreter of the Manor. She had long wanted to decorate and open the Manor for a Christmas celebration. Mrs. Post, two daughters and a daughter-in-law prepared the decorations that first year using family heirloom ornaments and antique toys around the Christmas tree. For three wonderous evenings visitors toured a candlelit Victorian mansion decorated as authentically as possible in the fashion of the 19th century.

Now, a decade later, more than 3000 guests are expected to tour the Manor in the five days of Victorian Christmas December 3, 4, 7, 10, and 11. The Manor will be open from 1:00 to 7:00 pm each of the five days. Admission fees of \$2.00 are charged adults with reduced fees for children, students, and senior citizens.

Arriving visitors are greeted at a front door framed with glowing Christmas trees and enter a wood-panelled Great Hall. Greens are swagged on the walls and over mantel and staircase. An authentic "kissing ball" made of boxwood and mistletoe and decorated with tiny red bows and sourgum tree "balls" hangs suspended over the passing visitors. Here each family is welcomed by a hostess in Victorian gown of velvet who tells a bit of the history of Ringwood Manor and the Hewitts who lived

there through the Victorian period and well into the 20th century.

Moving into the drawing room, we view large paintings and fine French furniture made during the 17th century. A proper Victorian Christmas tree fills the bow window aglow in the soft light, draped and ornamented with antique bells, angels, and a large variety of blown glass balls. Poinsettias glow on table tops. Greens ornament the mantel and antique toys surround the tree where a costumed hostess stands ready to tell all the children about a Victorian Christmas.

Visitors in small clusters then move into the Ryerson wing where velvet bell pulls and unusual mantel swags over the fireplaces add to flavor. An open family bible on the center table reminds us of the real meaning of Christmas. Over the fireplace a stern portrait of General George Washington, painted on glass, watches over all. In the corner, an early 19th century tall case clock ticks away the hours as it has for more than 150 years. In each antique-filled room a host or hostess explains the furnishings, art works and decorations.

For these few days the glassed-in west porch is converted to a "boutique" where handmade decorations and ornaments, eggshell jewelry, glass and pottery await the gift seeking visitor. In the library a portrait of Martin Ryerson, early owner of Ringwood, hangs over the lovely Dutch Delft fireplace. Another host or hostess tells a bit more of the history of Ringwood Manor. The sound of music draws us on into the music room. A huge centerpiece of poinsettia sits on the French pouff. Greens and gleaming candles frame the old pump organ where often a gentleman or lady plays hymns and carols.

In the cherry panelled dining room the table is set with the best china, glistening silver and gleaming cut crystal glassware. A huge centerpiece of fruit, nuts, holly, berries and greens adds charm to the warm wood of the table. Sideboards groan under heaps of fruit, cakes and cookies. Candles glow in candleabras to supplement the soft glow from old gas fixtures, now electrified. Here lies the true Victorian spirit of Christmas. Food, lots of the very best of foods, and friends joined with all the family at the dinner table. This was the very essence of the holiday season. In the minds of many of us this still holds true. Christmas is certainly a time for the family to



*French Drawing Room
Ringwood Manor
Victorian Christmas*

be together. On one side table are piled "Pomander balls," consisting of oranges covered with cloves then dusted with cinnamon and orris root before being put aside to dry naturally for several months. Lemons and sometimes apples were also used but oranges were most popular. The balls were used both as decorations at Christmas and as odorizers hung in closets or put in dresser drawers with stored clothing. They keep for years if properly dried.

The solarium might have been used to serve tea to the ladies in days gone by. Now it is filled with the large house plants, small fruit trees and rubber plants so dear to the Victorian woman. Visitors may purchase cookies or fudge to take with them as an edible gift or stocking stuffer. Leaving lovely old Ringwood Manor we can better understand the lifestyle of the Victorian period best described as an elegant clutter of furniture, ornamentation and greenery.

Ringwood Manor is located one mile south of the New York state line in northernmost Passaic County. It can be reached easily from Rt. 23 via Passaic County Route 511 at Riverdale or by taking Route 17 north through Bergen County into New York State and south at Sloatsburg on the Sterling Mine Road to Ringwood State Park.



Cornhusk dolls on Welsh dresser (1765) Pomander balls in local earthenware pie dish.

On the hearth of the Steuben House in River Edge a line of wooden shoes stuffed with straw and carrots for St. Nicholas reindeer await visitors entering the old riverside Dutch brownstone for the "Christmas Candlelight Tour" being held on the evenings of Thursday, December 15 and Friday, December 16, from 7:00 until 9:30 p.m. On December 23, 1783 the State of New Jersey gave the house to General Steuben for his service to the young nation and state during the Revolutionary War. This year, the 200th anniversary of the presentation, special exhibits will again honor General Steuben.

The house is decorated with natural old fashioned dried flowers, nuts, berries, greens, and fruits as the upper Hackensack Valley was settled primarily by Lutherans. Although absorbed by the Dutch Reformed Church by 1750, many Lutheran ceremonies and celebrations were still observed. No attempt is made to "recreate" Christmas of 1783. Emphasis in the decorations is in the use of "the language of flowers and herbs" as would have been appreciated at that time.

Members of the Bergen County Historical Society staff the house where visitors will view 150 years of children's toys and games, many homemade. Miniature doll furniture, sleds,

Continued on page 26

PHOTOS PROVIDED BY DEP



Touring New Jersey's lighthouses

Barnegat Lighthouse

mark dangers such as rocks and shoal waters as well as safe inlets and channels.

Lighthouses can also provide a vessel with information regarding its position. Many lighthouses have a distinctive light code called a "characteristic" which enables mariners to identify them. The "characteristic" is the sum of the qualities of the light shown, consisting of the light's color, type of flash, number of lights, and the time interval between flashes. By consulting his charts and a Light List, which is published annually by the Coast Guard, a captain can determine his approximate position.

During the day, when the lights are extinguished, lighthouses may still aid in determining a vessel's position. Many lighthouses can be seen from a long distance offshore and their color schemes identify them as distinctively during the day as their "characteristics" do at night. A good example is the difference between Barnegat Lighthouse and its more southerly sister, Absecon Lighthouse: Barnegat Lighthouse is painted white with a red top; Absecon is painted in three bands—white, red and white.

Many fascinating historical notes are discovered while studying New Jersey's lighthouses. The oldest operating lighthouse in the nation is located at Sandy Hook and was first lighted June 11, 1764. The Twin Lights of Navesink became a showcase for our nation's new navigational technology; most notably, they were the site of the first use of the Fresnel lens in the United States in 1841. At one time, the Twin Lights were the most powerful beacons in the country. Other events of importance in New Jersey's lighthouse history were the first use of a steam-powered fog signal at the Sandy Hook East Beacon in 1868, and the first use of radio fog signals at the Sea Girt Lighthouse in 1921.

Although many of our state's lighthouses have succumbed to the ravages of time, fire, and erosion, and many more have been razed and replaced by more efficient and economical towers, we are fortunate still to have access to a variety of lighthouses through which we can appreciate our state's maritime heritage.

A tour of New Jersey's lighthouses is best done one geographical area at a time. Spring and fall are the best seasons of the year to travel along the shore because traffic is lighter and summer crowds can be avoided. The lighthouses that are open to the public have limited hours during spring and fall, but this is

BY KIM M. RUTH
PHOTOS BY AUTHOR
SKETCH BY ANNA KONDOLF

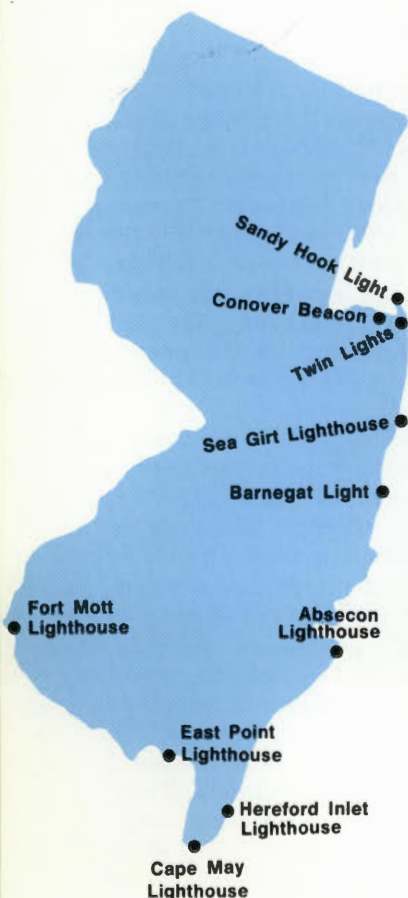
For most people, a lighthouse brings to mind the image of a tall tapering tower situated on a flat sandy beach with waves lapping at its base. Barnegat Lighthouse on Long Beach Island is just such a lighthouse, and is one of our state's most famous tourist attractions. However, such a portrait is not always accurate, as lighthouses are built in many shapes and styles and one does not have to leave New Jersey to see a wide variety.

Despite their romantic evocations, lighthouses were built for very practical purposes. New Jersey's position along the eastern seaboard of the United States and its proximity to the ports of Philadelphia and New York were important factors in the development of lighthouses along our state's coast. Many transatlantic ships made their first landfalls off New Jersey's shores.

During the days of sail, a vessel could not predict its time of arrival at port with any degree of certainty because it was subject to wind and tide conditions. When a ship approached land at night, it would cruise up and down the dangerous shallow coast until morning when it would take on a pilot and be guided safely into port.

Cruising off an unlit and unfamiliar shore was a hazardous proposition. On a cloudy moonless night it was suicidal, for one could not distinguish between sand and sea until it was too late and the vessel had run aground. Entrances to most of our inlets, as well as the ship channels leading into Philadelphia and New York, are shallow and filled with shifting sand bars. Even today most are kept open only by the constant dredging of the U.S. Army Corp of Engineers.

A coast guarded by a lighthouse provides a frame of reference by which a vessel can judge its distance from shore. Lighthouses also



Conover Beach



CORNELIUS HOGENBIERK

a small price to pay to avoid summer traffic jams.

In the Monmouth County area:

Begin at Gateway National Recreation Area, at Sandy Hook. The *Sandy Hook Lighthouse* is the oldest operating lighthouse in the country. It was built by a group of New York merchants who sponsored two lotteries to raise funds for its construction. For a time known as the "New York Light-house," it has been in operation since June 11, 1764. It is the only officially operating lighthouse in New Jersey to be open to the public on guided tours. Stop at the Spermaceti Cove Visitors' Center for exhibits, information, and schedules. Be sure also to see Historic Fort Hancock and the museum in the post jail.

Proceeding from Gateway Recreation Area, cross over the Highlands Bridge (Route 36). Immediately after the bridge turn right, and follow signs to Twin Lights.

The *Twin Lights of Navesink* sit 200 feet above sea level. Their castellated towers and walls are reminiscent of a medieval castle. The complex was built in 1862, replacing an earlier unconnected pair of towers that had stood since 1828. Part of the state parks system, the present facility houses a fine collection of U.S. Life Saving Service memorabilia and boats of the Jersey shore, as well as a replica of the original wireless telegraph equipment used at Twin Lights by Marconi in 1899. On a clear day the site provides a sweeping vista of Sandy Hook, the bay and ocean, and the New York skyline. With binoculars you can see the Sandy Hook Lighthouse and Ambrose Light-Tower as well as the Romer Shoal and West Bank Lighthouse in New York waters. New York's West Bank is the last manned light-station in the 3rd Coast Guard District. Picnic facilities are available at Twin Lights.

Return to Route 36 West for four and one-half miles to Leonardo Road. At Leonardo Road turn right. Conover Beacon is on the bay to the right.

Conover Beacon is the front light of a pair of lights, known as range lights, that marked the Chapel Hill Channel in Sandy Hook Bay. A captain aligning the beams of the front and rear range lights could be sure that he was in the center of the channel, thus having maximum draught for his vessel.

The Conover Beacon was originally built in 1856. It was a wooden tower constructed on the roof lines of a frame dwelling. This struc-

ture was razed in 1941 and replaced by the present red and white tower. While not a lighthouse in the same sense of the others on the tour, it has a charm of its own and is worth seeing.

The rear range light that worked in conjunction with the Conover Beacon is farther inland at Chapel Hill. It was also built in 1856, but was sold by the General Services Administration in 1959 and today is a private residence. The museum at Twin Lights has a photograph of the lighthouse as well as a lens and keeper's log from the Chapel Hill Lighthouse.

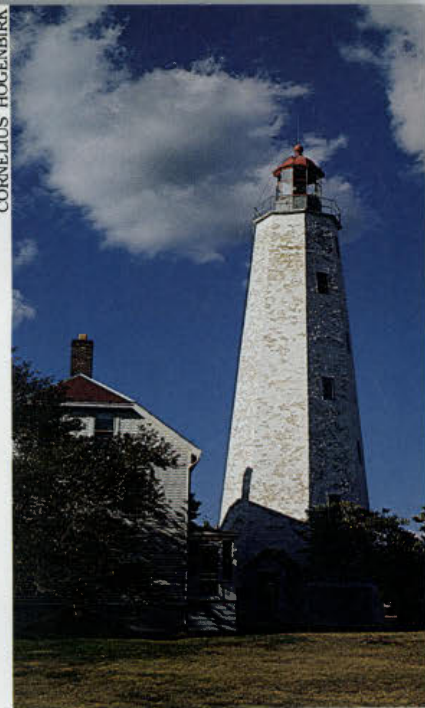
The last lighthouse on the tour in the Monmouth County area is to the south at Sea Girt. To reach the Sea Girt Lighthouse from the Conover Beacon, return to Route 36, and follow it East to Route 71 into Sea Girt. The lighthouse is on Beacon Boulevard and 1st Street.

The *Sea Girt Lighthouse* was built in 1896 and equipped with a second-order lens. In 1921 it became the first lighthouse to be equipped with a radio fog signal. It was decommissioned in 1955 and bought by the Borough of Sea Girt. Used for a time as a recreation center, the lighthouse is in the process of being restored.

In the Ocean County area:

The sole remaining lighthouse in Ocean County is "Ol' Barney." The *Barnegat Lighthouse* is one of New Jersey's best known tourist attractions, having almost the status of a symbol of our state. Built in 1858 and first lighted January 1, 1859, "Ol' Barney" was not the first lighthouse on the tip of Long Beach Island. A 40-foot beacon was built there in 1835 but toppled into the sea in 1857. The Barnegat Lighthouse was equipped with a flashing first-order lens. The lens was removed from the crown in 1927 after the lighthouse was decommissioned, and is currently on display at a nearby museum, operated by the town of Barnegat Light. The job of the lighthouse was taken over by a lightship in 1927. Today the lightship too has been replaced but is on display at Penns Landing, Philadelphia. The lighthouse is the centerpiece of Barnegat Lighthouse State Park, where fishing, swimming, and picnic facilities are also available. Splendid views of Long Beach Island and the surrounding area are rewards for the hardy souls who climb the lighthouse's 217 steps.

Continued on page 30



Sandy Hook Lighthouse



Twin Lights of Navesink



Sea Girt Lighthouse



Barn Owl: denizen of darkness

The night is dark and still. Clouds all but obscure the summer sky above. There is not a whisper of a breeze. Over an open meadow, barely visible in the dim evening light, the silhouette of a larger bird appears. The whitish apparition flies low, sometimes brushing the tips of the taller weeds and grasses. Its long, wide wings beat slowly, producing no audible sounds. The bird maneuvers through the darkness in total silence; its strange fluttering, reeling flight, resembling that of a giant moth. A barn owl is hunting.

Back and forth, to and fro, the owl slowly courses the meadow. A faint rustle in the grass below causes the bird to wheel abruptly and hover. Seemingly suspended in air, head swaying, the owl waits. Once again, the rustling sound below. The bird raises its wings high above its body, spilling the supporting air, and with legs outstretched and spread wide, swiftly drops.

The unsuspecting field mouse, scurrying through the grass, is caught in the viselike grip of the owl's feet. Needle-sharp talons pierce the rodent's body. Quickly, it is over, and the mouse lies lifeless in the owl's grasp. The owl rests on the ground for just a moment, then seizes the mouse with its beak and launches itself into the darkened sky.

Carrying the mouse in its beak, the owl flies from the meadow toward a large cylindrical shape a mile distant. The bird's flight is different now, swifter and more direct. As it approaches the cylinder, the form of the old wooden silo becomes apparent. The owl flies to the silo's roof and lands.

From within the silo loud rasping noises can be heard. The owl enters through a hole in the roof. Huddled together on a small shelf in the top of the silo are four grayish-white balls of fluff—young barn owls. At the sight of their parent, the mouse still dangling from its beak, the owlets become excited and scurry about the wooden shelf. Now their food-begging noises become much louder, resembling someone sipping soup through clenched teeth.

The parent owl flies to the shelf, drops the mouse, and departs. The owlets, about a month old, struggle among themselves for the mouse. Finally one gains possession, and with seemingly little difficulty, swallows the rodent whole with three gulping motions. Within minutes another adult owl arrives at the silo nest, a shrew dangling from its beak. This owl, smaller and whiter than the first, is the male of the pair. As he enters the silo the young repeat their excited behavior and vocalizations. The male obediently delivers the shrew to the nestlings and also quickly departs.

The activities of nocturnal owls (and other night creatures) although commonplace, are seldom witnessed by many diurnal humans. Yet each night, scenes like those described here take place as barn owls go about the business of making a living for themselves and

their young. We cannot claim this owl to be exclusively "our own" for it is distributed world-wide, but *Tyto alba* is surely a New Jersey owl. It lives and breeds in every county of the state. In 1973, prompted by a long-standing love affair with owls, I began an intensive study of *Tyto* in northern New Jersey. My close relationship with barn owls has reinforced my original belief that they are among the most interesting of all living creatures.

The scientific name *Tyto alba* means "white owl," and the underparts of the bird are generally very white, sometimes speckled with brown. The upperparts are golden or tawny in color, but when illuminated and seen from below, the whole bird appears white. Its most recognizable feature, the distinctive heart-shaped face, accounts for one of its popular names, "Monkey-faced" owl. It is found in North and South America, Europe, Asia, Africa, and Australia, and is not only the most widely distributed owl in the world, but one of the most widely distributed of all land birds.

One reason for the success of the barn owl has been its ability to adapt to humans. Historically a hole nester (mostly in tree cavities), this species now seem to prefer living in artificial structures, close to people. I've found them nesting in a wide variety of places: barns (hence, their common name), farm buildings, church bell towers, silos, warehouses, water tanks, haystacks, chimney flue pipes, under bridges, in wells, behind billboards, and once on a drive-in movie screen. They don't seem fussy about where they live and can easily be attracted to nest boxes supplied for them, from custom-built ones to bushel baskets (more details about nest boxes later).

The nesting season in New Jersey usually begins in April and can continue well into the fall. I have found eggs in every month from March through October. The owl builds no nest, but simply deposits the eggs on a bare surface or on the floor of the nest cavity. The eggs are generally laid at one- to three-day intervals and usually number from three to five. In years when food is abundant, larger clutches of eggs are produced. In 1978 I observed a nest containing ten eggs, all of which hatched and subsequently fledged.

All the time his mate is incubating, the male does the hunting and supplies her food, for she seldom leaves the nest. The 30 day incubation period is begun when the first egg is laid, resulting in young of varying ages and sizes in the same family. The young are born blind and are covered with sparse white down feathers. By the age of one week the eyes have opened and thicker, woolly, white down has grown. The young grow rapidly and require large amounts of food nightly. Now both parents must hunt to supply the demands of the young. The family of four owlets in our story, at one month of age, requires up to two dozen rodents *each night*. At age eight to nine weeks the young are full-grown and resemble the

adults. They can now fly well and are ready to fledge (leave the nest). Often they remain in the care of their parents for several weeks after fledging, before striking out on their own.

Although some remain resident throughout the year, most of New Jersey's barn owls are migratory. They depart, at least from the northern portions of the state, by November and return by March. Since 1973, I have marked nearly 700 nestlings with U.S. Fish and Wildlife Service bird bands, and many have turned up long distances from their birthplaces. An owl, banded in Somerset County in May, 1976, was found dead on the shore of the Gulf of Mexico in Alabama Port, Alabama, November 6, 1976. This owl, only six months old, had traveled for the first time in its life, alone, entirely at night, more than 1100 miles.

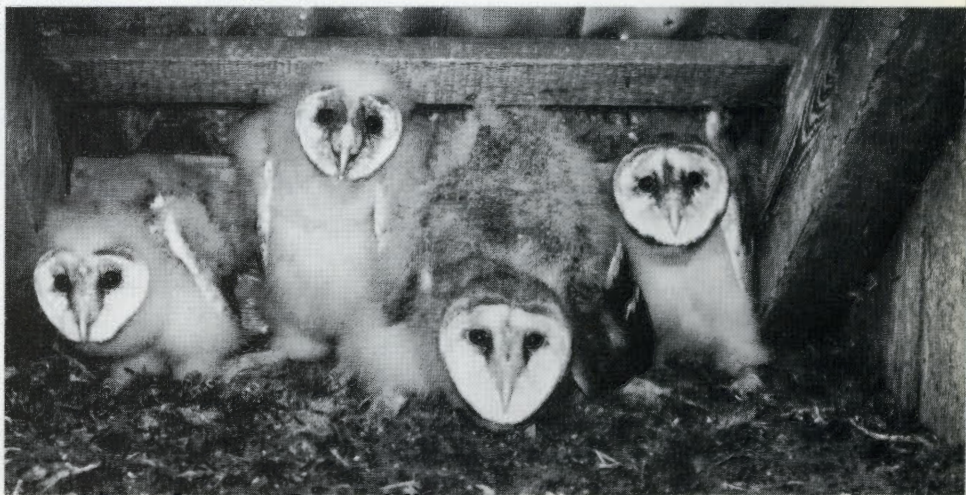
Over the course of millions of years of existence barn owls have evolved many special adaptations which allow them to function in a world of darkness. Their eyes are nearly perfect organs of vision. Their visual acuity and sensitivity to light permit them to see at light levels far below those required by humans. It is untrue that owls are blind in daylight; in fact, all owls see very well during the day.

As incredible as the barn owl's vision is, to me their most amazing faculty is their sense of hearing. The owl hunting the meadow at the beginning of this story located its prey entirely by sound, not by sight. The owl's ears are highly developed and specialized. The ear openings are located on the sides of the head, but are hidden by the feathers of the facial discs. They differ in size and shape and are positioned differently in the bird's skull, one higher than the other. (Figure 1) This asymmetry aids the owl in detecting the direction and distance from which a sound has come. The intended prey may be completely hidden from view, but any rustle or squeak is heard by the owl's sensitive ears.

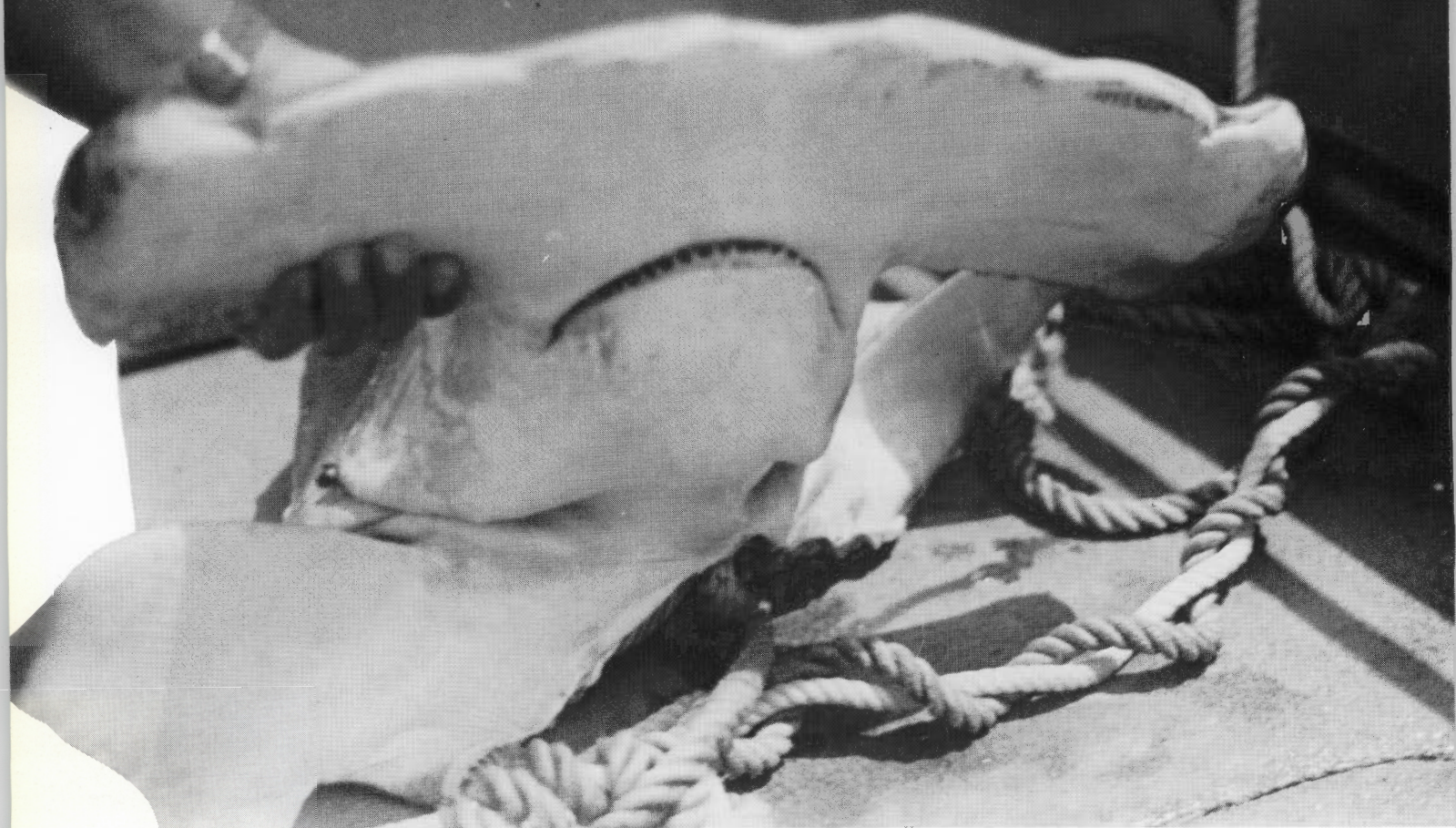
Long, wide wings and lightweight bodies allow barn owls to fly and glide in total silence. Their feathers are unusually soft and fluffy,

Continued on page 31

*Barn owlets
in a barn nest*



To catch a shark



BY J. KENNETH SIEBEN
PHOTO BY AUTHOR

Jim and I could read the doubt in each other's eyes as we clutched the cockpit rails of his 31-foot Uniflite and wondered what the heck we were doing 35 miles offshore besides pitching and rolling in the five-foot seas and watching the wave crests foam white. I know Jim doubted if he or I—or my 18-year-old daughter Ann, asleep on the flying bridge—could continue to ignore the seasickness that had been building in our guts during the second half of the three-hour run to the Resor wreck from Manasquan Inlet. And I know I doubted that such creatures as sharks really existed. After all, we had tried sharking a few weeks earlier in the Mud Hole, and perhaps we should have learned our lesson after 12 fruitless—or sharkless—hours spent ladling out chum slick. We had both read Pete Barrett's series of articles in *New Jersey Fisherman*, and Jim had participated in a local shark club workshop. The difference between us at this point was that he had actually caught a shark the previous year, while I hadn't even tried. Although he had been chumming for bluefish at the time,

when that hundred-pound-plus Dusky shark chomped his bait, he was turned on forever to serious sharking. Now he was determined to make me a believer.

Two stout rods set in rod-holders, one mounted with 9/0 reel and 70-pound-test line and the other with a 6/0 and 50-pound line, pointed toward two white styrofoam floats attached to the lines which drifted in our chum slick some 50 or 60 feet from the boat. The reels were in free spool with clicks set, and the lines were temporarily secured to the rail with spring clothespins to prevent them from being run out by wave action. The baits, fillets from a ten-pound bluefish we had trolled up on the run out with a high-speed "green machine," hung 10 and 20 feet below the surface, wired to 16/0 hooks and attached to the lines with ten feet of 100-pound-test stainless steel wire. We sat with eyes glued to the floats waiting for what Jim knew—and I doubted—was inevitable.

It may have taken 10 minutes, 15 at the most. First I saw that flat I was watching fall into two pieces, and then I

heard the line ratcheting out. In the microsecond it took my brain to realize that some great force had pulled the line right through the styrofoam, Jim yelled, "It's strike!" and Ann flew down from the bridge to grab the rod and engage the reel, and the fight began.

A frenzy of activity followed. Jim hauled back on the rod tip to set the hook. The shark made a run of more than a hundred yards. I strapped a belly gimbal to Ann so she could anchor the rod butt and conserve her strength. Jim shouted directions and readied his flying gaff and tail rope. I reeled in the other bait and cleared the cockpit for action, put the short-barreled shotgun and slug within reach, just in case we were hooked into something bigger than the boat (all of us having seen *Jaws*), then climbed to the flying bridge to try to record the scene on film.

Ann pumped and reeled, pumped and reeled, tiring as she tried to match her five-foot frame against the brute power at the other end. Jim helped her by raising the rod tip so she could gain back more line. Within 10 minutes I first glimpsed the shark from my perch on the bridge 11 feet above the water. This huge creature, whose length I underestimated to be five feet, shot through the water faster than any other fish I had ever seen. At first it looked bright green, but that color came from the foaming water displaced by its speeding charges. "It's a hammerhead!" yelled Jim. And then I could make out the features of this unique denizen of the ocean. From each side of its snout extends an appendage shaped like a ball-peen hammer, a one-inch brown and white eye where the peen would be a gaping nostril beneath each eye. The hammerhead must have known it was in a life-and-death struggle and drew upon its vast reserve of strength to dive once more, pulling yard after yard of line from the tightly-dragged-down reel, until we were back where we started from.

Jim took the rod from an exhausted Ann. We weren't thinking of rules for record catches, which specify that only one angler may touch the rod during battle. Instead, we wanted to boat that shark, even if it took all three of us to get it in. So Jim muscled him back to the boat after his second run, Ann took the camera, and I tried to gaff him. That's when I learned what incredibly tough skin a shark is endowed with. Unable to penetrate it with Jim's best razor-sharp gaff, I literally scratched the surface, throwing the shark into such a rage that he took off on another run.

This time I took the rod while Jim readied the gaff. What an experience! In a lifetime of fishing for stripers, blues, weaks, fluke, flounder, mackerel, whiting, and cod, I had never before felt such strength. It took 10 minutes of total effort to bring him back to the boat, and he still had enough fight to make a final dive. But he didn't go as far this time, and he no longer pulled as hard, and I knew we had him.

Ann took the rod again, and Jim stayed with the gaff while I kept the tail rope ready. As Ann raised the shark to the surface once more, Jim grabbed for the leader with gloved hands. I can't recall exactly who did what to whom during the next five minutes, but together we finally managed to gaff the shark, loop a rope around his tail, and cleat it down to the stern. We had won! Mr. Hammerhead hung head down in the water, dying.

Ann went back to sleep while Jim and I gutted the shark and removed the kidneys, an essential step to preserve the quality of the meat. We restored order to the cockpit, re-baited the two rigs, and set them out in the chum slick again. It was not yet 10 o'clock, but I felt a cold beer would be appropriate. Less than two swallows later, we heard the unmistakable whirring of the smaller reel and knew we had another hookup. Once again, Ann leaped from the bridge to grab the rod, but I had beaten her to it.

Now came the greatest thrill of the day. Before I could even set the hook, the other reel started to roar. We had two hookups at the same time! Jim quickly grabbed the second rod, set the hook, and allowed his shark to run off as much line as it could under a heavy drag. Since mine had begun a run toward the boat, I had to reel as fast as I could to keep up and avoid slack. We decided to concentrate on one at a time to avoid the likelihood of a mass foulup of lines, hooks, and thrashing sharks, so Jim placed his rod in a holder and hoped the drag would hold. After I reeled mine to the boat, we could see that it was smaller than the Hammerhead and a different species. It looked brownish-gray like a Dusky or a sand-bar shark, but we still hoped it was a Mako, since some of them tend toward that color before they mature. It permitted us only a fleeting glimpse, however, before taking a dive. Then Ann took the rod and I took the gaff while Jim played a little with his shark. Ann got the first back to the boat, but again I was unable to make an effective gaffing. Jim tried to lasso its tail. Between the two of us, we managed to get the shark to leap up and snap that 100-pound-test leader like a piece of baker's string. Shark Number 2 was free! Ann had some choice comments to make about our sharkmanship.

But we still had the other one to deal with. This time we encouraged it to run more, wearing it out before we tried to get it under control. The strategy paid off, and we had him secured to the boat within 20 minutes. This one was definitely a Dusky.

It took more than an hour to complete the butchering of the two sharks. The Hammerhead actually measured seven and a half feet. We didn't have a scale large enough to weigh it, but we estimated the weight to be around 175. (The soon-to-be-broken state record was 204.) The Dusky was four and a half feet long and weighed perhaps 75 pounds. Since the day was incredibly hot, we were afraid that the meat would spoil long before we could get back to port for an official weigh-in. So we cut the bodies into chunks that could fit into our ice chests and bait boxes and stay fresh.

While we were doing the carving, drifting a single bait in the chum slick, we heard the metallic whirring of the reel for the fourth time. Buoyed by the day's success, Jim yelled, "This one's the Mako!" as he jumped for the rod. But a few turns of the reel told him differently. It turned to be a 15-pound bluefish—a fine prize on any day but this one.

Back home that evening, I sliced an inch-and-a-half-thick steak from each shark and broiled them for ten minutes on each side. The Dusky was delicious, with a taste and texture resembling swordfish but distinct. As for the Hammerhead—well, the cat didn't even like it. I can't wait to go sharking again, but the next Hammerhead that I reel to the boat is going to get its freedom.



Layout shooting

The other method of duck hunting

BY MARTY BOA

Waterfowling means different things to different people. To some it means shooting ducks or geese from a blind on a point. Others prefer to do their gunning from sneakboxes carefully grassed in and concealed along a shoreline. Jump shooting is the choice of many hunters who enjoy walking the marshes, while still others prefer to gun a pond or pass shoot along a waterfowl trade route. All of these techniques have advantages and disadvantages depending on various conditions of wind, tide, temperature and time of year. The dedicated waterfowler usually finds himself trying many procedures and locations in his quest for the ideal set-up.

Layout shooting, also called open water gunning, is a unique and productive method of harvesting diving ducks on large bodies of water. Although the basic idea is not entirely new, the method described here is a recent arrival to the New Jersey waterfowling scene and may prove to be the direction to take when pursuing the more numerous species during the later part of the season.

Layout shooting has long been popular in the Great South Bay area of Long Island as well as in the Great Lakes area near Michigan. The technique involves shooting from a small boat which is towed to the desired location and anchored in place. The layout boat is nearly surrounded by a large rig of decoys, the bulk of which are located downwind of the boat. A tender boat, usually a large garvey or semi-V is used to tow the shooting boat and carry the decoys and other necessary gear. This craft also serves as a waiting station and auxiliary gunning platform for the members of the party who are waiting to take their turn in the layout boat. A separate set of decoys located near the tender to attract ducks provides the opportunity for shooting from both locations, which should be located about one half mile from each other.

The scaup (broadbill, bluebill) is usually the star of the show in open water gunning. Late in the season these ducks tend to raft up on the large rivers and bays. While trading from one area to another they decoy readily to large spreads and rigs of sixty to eighty blocks are an absolute minimum for this type of gunning. The object is to make your rig the largest that the birds will see, thus avoiding the likelihood of their being attracted to a large raft

of live ducks or another hunter's layout.

Paul Dobrosky of Shrewsbury is one of the pioneers of open water gunning in New Jersey. Paul, who is a veteran waterfowler and decoy carver, had gunned Great South Bay in the 1960s and noted the methods and equipment used there. At that time New Jersey had a law that prohibited shooting from a boat anchored more than 100 feet from the low water mark. Another law soon followed; this one made it illegal to carry a loaded firearm, for the purpose of hunting, within 450 feet of an occupied dwelling. The combined effect of these laws severely limited New Jersey's duck hunters, since it became unlawful to shoot from many of the favored points and gunning from a boat anchored in open water was also disallowed. Dobrosky, along with other concerned waterfowlers, led the campaign to have the law changed, thus permitting hunters to shoot from a boat anchored out in the water as long as it was in compliance with the 450-foot law. And so, layout shooting came to the rescue of a hardy group of sportsmen who wanted to preserve and expand their sport in the face of diminishing territory and restrictive laws.

Layout shooting enables the gunner to get right into the area where the ducks are living. Before planning a shoot the open water gunner must do his homework and scout the body of water being considered. Since the rafts of scaup frequently relocate while living on a large bay or river one can't simply pick a spot and hope the birds will cooperate. The layout must be placed in close proximity to a large raft of ducks, preferably the largest concentration on the water. As the birds travel between the various areas they should notice the layout and tender rigs and decoy to them. This can provide fantastic shooting as groups of ducks twist and dive while trying to land in the decoys.

Ideal conditions for open water gunning call for winds of no more than 10 mph. The cloud conditions can vary as can the time of day although an early start is recommended due to the large number of decoys that must be set out and collected. The layout shoot is usually an all-day affair and perfectly complements puddle duck hunting, which depends on falling temperature, low cloud cover and blustery winds.

Although any low profile gunning boat may serve as a layout boat, a specially designed craft will help stack the odds in the hunter's favor. Paul Dobrosky designed and built such a boat. Using Long Island designs as a basis, he tried one- and two-man prototypes. With the help of long-time boat builder and retired conservation officer Karl Kristiansen, a boat was built that towed easily, presented a low profile and was sturdy enough to withstand safely the rigors of this rugged aspect of waterfowling.

Made mostly of plywood and cedar with oak

PHOTOS BY AUTHOR

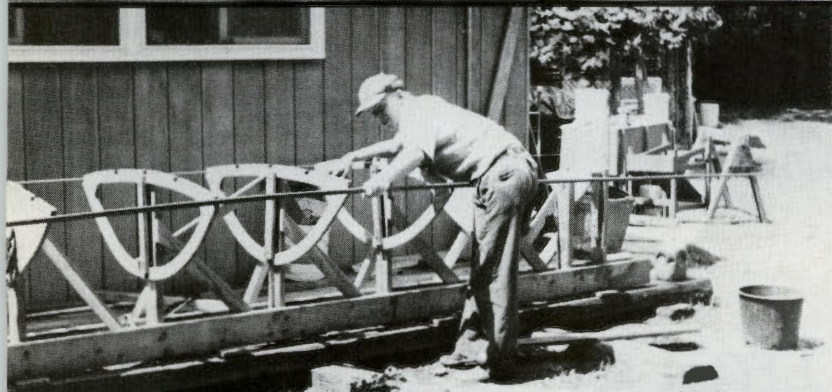
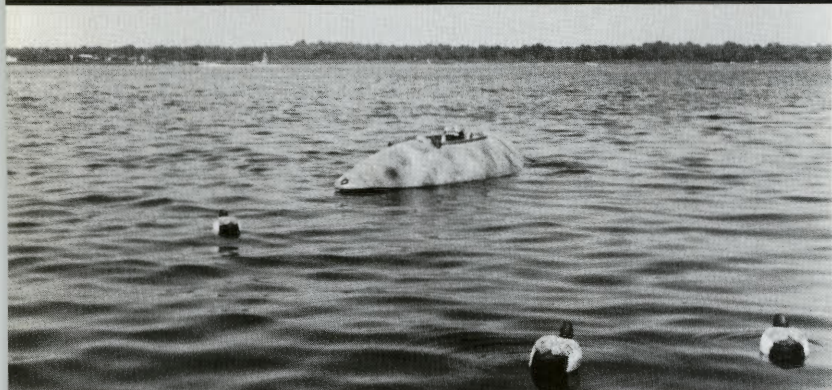
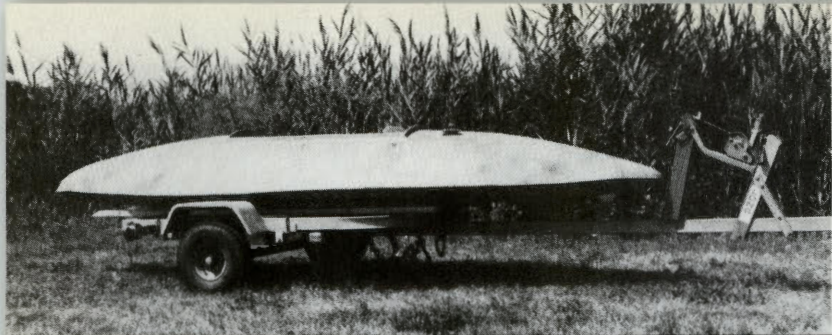
The layout boat mounted bow first on a trailer. During transportation a hatch cover is secured over the cockpit.

The combination of low profile and a blended gray and white color scheme make the layout boat nearly invisible against a background of open water. This view shows the deadly rig with a small sampling of decoys.

Martin Kristiansen of Little Silver, New Jersey, works on a layout boat of modified design. During the early stages of construction the boat is secured in an upside down position.

The door on a watertight compartment is fastened in place by waterfowler and boat builder Martin Kristiansen.

The author displays his share of a layout rig of broadbill decoys which represents less than one half the number needed for a full rig. The group of decoys to the left are made of plastic and are painted to match the hand made cork decoys grouped to the right.




for reinforcement, this ultimate layout boat resembles a partially surfaced submarine (minus the conning tower) at first glance. The cockpit has ample coaming (the framing around a ship's hatchway) to protect the occupant from spray and lapping waves. Water-tight compartments are located fore and aft and the boat is heavily fiberglassed. As the gunner "hunkers down" in the boat he is almost totally concealed by a tarpaulin-like cover. A padded backrest provides additional comfort. The layout boat measures 12 feet, 5 inches with a 4-foot beam. The crown of the forward deck section is considerably higher than that of the after deck section, therefore the boat is towed bow first and the shooting is done over the stern.

Both tender and layout craft should carry personal flotation devices, oars, signal flare kits and anchors. The layout boat also carries an orange flag to signal the tender when birds have been shot or when an emergency arises. The layout gunner's welfare rests with the tender crew, who should keep watch through binoculars. The layout gunner should carefully mark any birds that he downs and be ready to point them out to his companions in the tender, who must also do the retrieving, since the shooting boat is not motorized. A long-handled scoop net makes retrieving from the icy water a simple task.

My involvement in layout shooting started when I met Martin Kristiansen, who like his father Karl, is an accomplished hunter, boat builder and decoy carver. After meeting through the Sunrise Rod & Gun Club of Red Bank, we decided to pursue our interest in open water gunning together. We each made two dozen broadbill decoys based on patterns previously developed by Paul Dobrosky. We realized that fancy decoys were not necessary for scaup, however, we wanted to go first class and made a fine rig of cork stool with pine bottom boards and line adjustable keels. To these we added a natural looking paint job which I duplicated on a dozen plastic decoys used to fill out the rig.

After several successful shoots Martin has started working on his own layout boat which incorporates several new modifications.

In looking toward the future hunting seasons, the New Jersey waterfowler should consider the possibility that the hunting of traditionally attractive species may one day be curtailed for various reasons. Therefore it is to the advantage of each hunter to familiarize himself with the techniques that will allow him to concentrate on the more abundant species. Scaup fall into this category, with annual populations fluctuating between 25,000 and 200,000 birds in New Jersey. Open water gunning can be used for hunting a variety of waterfowl species, however, it seems to be most effective on the broadbills whose large numbers and tendency to decoy willingly make them a most desirable quarry. 



The Appalachian Trail in New Jersey

BY KEN ORAVSKY

PHOTOS BY AUTHOR

The Appalachian Trail begins where the mountains themselves begin. Springer Mountain in northwest Georgia (3782 feet above sea level) rises above the surrounding hills and is both the southernmost peak of the Appalachians and the southern terminus of the "AT". From here the trail follows the ridges of the Appalachians northeastward, traveling 2102.6 miles through Georgia, North Carolina, Tennessee, Virginia, West Virginia, Maryland, Pennsylvania, New Jersey, New York, Connecticut, Massachusetts, Vermont, New Hampshire and Maine, finally reaching its northern terminus on Baxter Peak of Mount Katahdin (5267 feet) in northern Maine.

Each year thousands of people hike along the AT: some use it to reach a scenic vista, some seek a few days' peace and quiet from the assaults of civilization, and still others simply look forward to a leisurely afternoon's walk in the woods.

The idea for this remarkable footpath originated right here in New Jersey. It was at Hudson Guild Farm, near Netcong, that Benton MacKaye first proposed such a trail in 1921. Sixteen years later, mostly with the help of volunteer labor, our first National Scenic

Trail was completed.

The trail enters New Jersey from Pennsylvania by crossing the Delaware River on the Interstate 80 bridge in Delaware Water Gap. It seems fitting that here the oldest National Scenic Trail crosses the Nation's oldest remaining road—Old Mine Road.

We have chosen "The Gap" to be the beginning of our trip. In the past we had backpacked the AT in New Jersey in sections, covering small stretches in one- or two-night trips (the many access points and campsites in N.J. are very convenient for weekend trips). This time, though, we are going for the entire New Jersey portion of the trail: 66.7 miles. Leaving our car at the horseshoe-shaped parking area just off Route 80, we begin our trek. White blazes, two inches by six inches, mark the trail as they have for more than 40 years. The trail turns away from the highway into a cool shaded area where the sounds of rushing water permeate the air. Tall hemlock trees tower overhead, blocking out much of the late morning sunlight. In the dense shade, rhododendrons have become the dominant shrub along the trail. Here the hiker may cool his feet in the sparkling cold waters of

Top: View of Delaware Water Gap from Mt. Tammany on the Appalachian Trail.

Dunnfield Creek. The trail follows along the creek, past pools and cascades, steadily heading uphill. Soon a spur trail branches downhill to the right and crosses the creek. This blue-blazed (most spur trails off the AT are blue blazed) trail leads, after one and a half miles along a steeply ascending route, to the summit of Mt. Tammany. From here the ambitious hiker can obtain a spectacular view of the Delaware Water Gap, one of the most beautiful views on the entire trail. After a lunch of raisins and peanuts we hike back down to the trail junction to continue our trek northward toward the camping area where we will spend the first night.

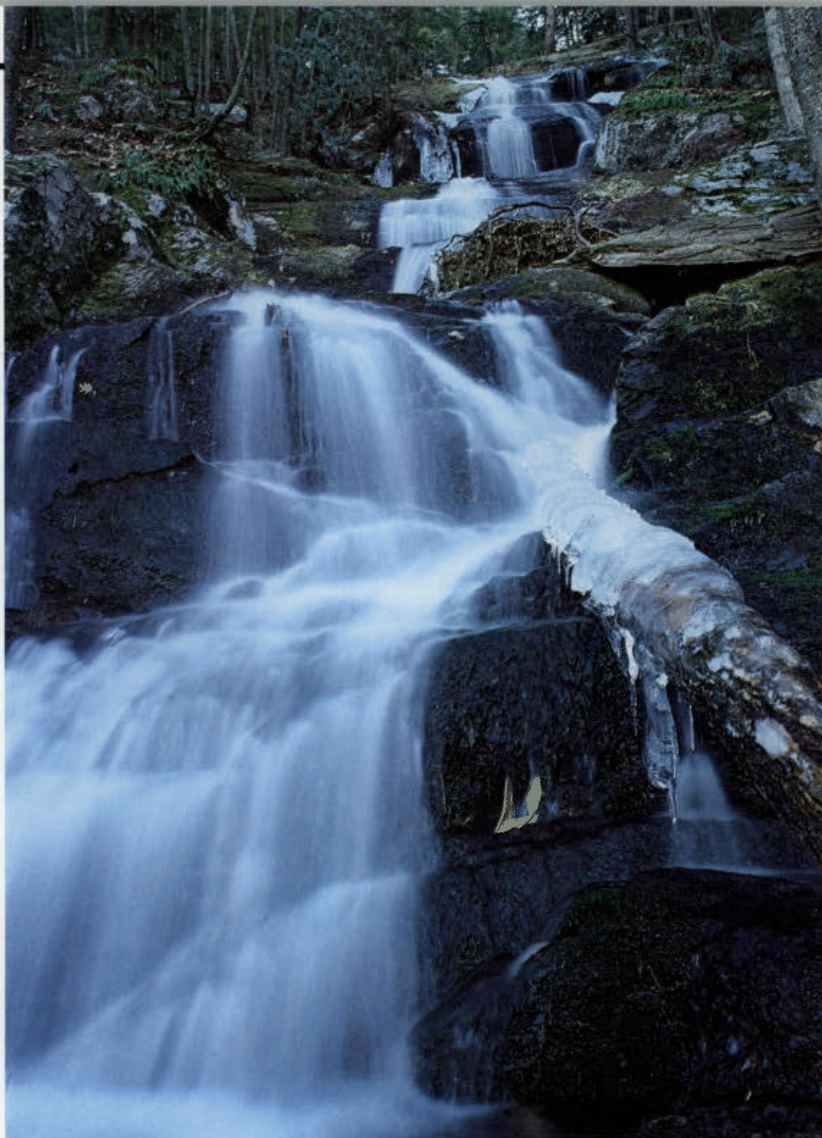
Since this stretch is the most heavily used on the entire AT, backpackers are required to camp only in designated sites. The site we choose is about one-quarter mile south of Sunfish Pond, close enough to catch the sunset at the pond with a leisurely stroll after dinner.

When we begin to follow the trail northward again in the morning, we again visit the pond. The mixed hardwood forest that surrounds it opens to reveal this gem of the mountains, shimmering in the clear morning light. Born during the receding of the last continental ice sheets, this glacial lake was once eyed as a holding reservoir for Upper Yard's Creek Power Plant. This plan was halted, however, and in 1973 Sunfish Pond was declared a National Natural Landmark, thus preserving it in a pristine state.

Continuing onward, we soon leave Worthington State Forest and pass onto Federal lands, part of the Delaware Water Gap National Recreation Area, administered by the National Park Service. Here the trail alternately follows rocky outcroppings and old dirt roads. Old fields are regenerating with birches and shrubs—good whitetail deer habitat. Mosses and lichens grow thick along the trail, and rock tripe, an edible fungus, clings to much of the otherwise bare rock.

After a few hours we stop for lunch at the trail junction for Buttermilk Falls, one of New Jersey's grandest waterfalls. The blue-blazed trail leads steeply downhill for three-quarters of a mile, eventually leading to the top of the falls. Even though this is a rather taxing side trip, it is well worth the effort. Here, as almost everywhere on the AT, you must pay the price to see the many beautiful waterfalls, for they are always at the bottom of a steep spur trail.

After another mile or so we make our camp for the second night. Here on the National Park Service lands, we can camp where we please, as long as we are more than 50 feet from the trail and not more than 100 feet from it. The tent is easy to pitch in the grassy field we have chosen, and our macaroni and cheese dinner is ready quickly. For cooking, we use a small backpacking stove that burns white



Buttermilk Falls



Summer camping 1 mile north of Sunrise mountain on the A.T.



The beauty of Dunfield Creek in winter

PHOTO BY CLAIRE TEACS

gasoline. In most places along the AT, fires are prohibited, and in many others the use of stoves is strongly recommended, even though fires are still allowed. With so many people using the trail, wood has begun to disappear near the trail, and fire-scarred rocks are becoming all too common. The fire hazard with a stove is minimal, so stoves are permitted even during times of high fire risk. Finally, rain and wind are so often encountered on the trail that campfires are not very dependable for cooking anyway.

The next day, as we approach the northern border of the Federal lands, the trail leaves the grassy plateau flanked by fields and returns to high barren ridges. Here, severe winter winds sweep along the exposed ridges, making it impossible for most tree species to survive. Only the Pitch Pine survives up here, itself often contorted and gnarled from the icy winter winds. While trees are often lacking, interest is not. Blueberry bushes and wild grasses carpet much of the open ridgetop. In the southern parts of the trail, these open areas are referred to as "balds." All along the trail they provide excellent scenic viewpoints throughout the year, but in the fall they are especially valued as vantage points to watch the hawk migration. Each fall thousands of individuals representing up to 16 species (including both Bald and Golden eagles) follow the ridges on their journey southward. On a clear day in September the hiker can marvel at the spectacle of thousands of Broad-winged Hawks soaring upward on thermals generated off the mountains.

Ahead we find that the old trail marks have been blacked out and a new stretch of trail laid out to replace the former path. This is one of the problems that has plagued the trail since its inception in 1937: relocations, or "relocs." A good deal of the entire AT still crosses over private property and occasionally landowners request that the trail be moved off their lands. Relocs have caused a great many difficulties along the trail, both by getting hikers lost (relocations happen much faster than the guidebooks can be rewritten) and by creating an uncertainty for the future of the trail in some areas.

New Jersey, however, recently solved this problem within its borders when it became the first state on the trail to have a permanent route for the AT entirely protected. New Jersey also enjoys the distinction of being the first state to accomplish this largely with state funds. Now the AT in New Jersey is safe from the uncertainty that continues elsewhere. Hikers here can have the satisfaction of knowing that the only changes along the trail now will be those of natural plant succession, not relocation.

In another few miles the trail descends 500 feet into Culver's Gap, where it crosses U.S.



Winter camping in Stokes State Forest

Route 206. There are a few houses here, but the buildings of greatest importance to the hikers are a small sports shop and a bakery. While the short-distance hiker may shun this meeting with civilization, the long-distance traveler often welcomes it. The sports shop offers a chance to purchase any extra gear that may be needed or to receive mail or a package from home. The bakery gives the hiker a chance for a tasty addition to his trail diet.

The longest of the long-distance hikers are those trying to walk the entire distance from Georgia to Maine. Aspiring "2000-milers" usually leave Springer Mountain in Georgia in late March to begin their journey northward. They reach New Jersey in late June or early July, and if you happen to be on the trail at that time you can meet some interesting people in the middle of a spectacular adventure. These 2000-milers hail from all over America and from many foreign countries and represent all ages and professions. All that they have in common is the desire to experience the Appalachians first hand. While many people have attempted the entire hike, fewer than 10% have succeeded (the Appalachian Trail Conference Archives Log lists 1,101 successful 2000-milers).

Thrilled with the fact that at this very moment hikers are pounding this trail on their way to Maine, we move on uphill toward a slightly less ambitious goal—our campsite for the night, three miles ahead.

We approach Culver Fire Tower, and with the fire lookout's permission, we climb it. The scenery from ground level here is spectacular, but the view from the tower surpasses it; the Appalachians stretch as far as the eye can see north and south, as the foothills unfurl in Pennsylvania to the west and New Jersey to the east. This ridge is like its own little world.

The next day we are crossing Sunrise Mountain and leaving Stokes State Forest for High Point State Park. We plan to hike through most of High Point today, all the way to the trail campsite at its northern border. In High Point, the trail alternates between open ridgetops and lower wet areas where the tapping of woodpeckers rings through old dead snags.

The trail veers east before it reaches High Point (at 1803 feet the highest point in New Jersey), but still provides an excellent view. A spur trail leads off toward High Point, but since the summit is accessible by roadway, we decide to forgo the novelty. The ridges we have been following are almost as high and are much less crowded. We approach our campsite a bit tired and fall asleep just after sunset.

Upon awakening we find that it had rained during the night. The morning coolness is invigorating and we plan a long stretch for today—about 15 miles through the Wawayanda State Park. From here on until the trail finally leaves New Jersey, the trail winds

through more moderate elevations and rather dense woodland. After about five miles the trail loops into New York State for a short stretch and then returns into New Jersey.

Finally, rather tired, we enter into Wawayanda. Here we can set up camp where we choose, as long as we are 50 feet from the trail and away from paved roads. Camping policy within a given area is often based on the amount of traffic that the trail receives, and since this portion of the trail is not as heavily used as the stretch to Sunfish Pond, hikers have more freedom in camping.

Tonight, our last scheduled night on the trail for a while, is a chance to reflect on the trip. In the morning we will hike the remaining eight miles toward Route 210, which will be the end of the trip. We realize that New Jersey has neither the longest stretch of the AT within its borders (Virginia has 503.1 miles) nor the highest elevations (Baxter Peak of Mountain Katahdin in Maine rises 5267 feet). We did though, just spend six great days on one continuous footpath in New Jersey, a corridor of solitude and beauty, and all that mattered was that we were in the mountains.

SEASONS ON THE AT

One of the greatest misconceptions about the trail is that the best time to hike the trail is in the summer. There *is* no best time! As a matter of fact, if you like to hike the trail often, try to hike stretches in different seasons and you'll be surprised how different the same stretch can be.

In New Jersey the AT is suitable for use in all seasons by almost everyone. While the inexperienced camper should forgo winter camping for a while, there's no reason why anyone can't enjoy the trail in winter just as in summer. Winter brings quiet and the beauty of snow. Because of the difference in elevation, the ridgetops will often get snow when it rains in the rest of the state. The trail remains easy to follow in winter and sets the scene for cross-country skiing, snowshoeing, or just plain walking through the snow.

Early spring days allow excellent views since the weather begins to moderate but the leaves have not yet returned to the many deciduous trees along the way. Spring is the time for the hundreds of wildflowers such as Pale Corydalis on the ridges and Columbine in the rocky forests. Trees just leafing out show their pale green color first, and in many places the hiker can see how spring "marches up the mountain."

Summer brings warmer days when the many cool streams feel good on tired feet.

Fall brings with it a spectacular display of color echoing off the hillsides and the southward hawk migration.

Whatever season you choose, the AT always has a different feeling to offer.

Letters To The Editor

New Jersey Outdoors welcomes letters from readers. Letters for publication should include the writer's name and address and should be mailed to: Editor, New Jersey Outdoors, CN 402, Trenton, N.J. 08625. Letters may be edited for reasons of length or clarity. In the July/August issue, we announced the start of a Letters to the Editor column. Here's a sampling we have received over the last few months. Please keep the letters coming. We'd like to hear what you think about the magazine—good, bad or indifferent. We'll also try to answer questions and if we cannot, we'll ask our readers for help.

It was great to see the statistics in the January/February issue about the magazine. I started with the small format a long time ago. Thanks for a great job!

Floyd Yoder
Pemberton

Over the past spring, I experimented with the manufacture of maple syrup and the end product is equal in quality and taste to any made in New England. I tapped and collected the sap from indigenous maple trees on less than an acre of ground, boiled sap to syrup on my ordinary wood stove. The necessary taps can be made from items found around the workshop or garage.

Thomas P. Farner
Barnegat

I am interested in searching for Indian artifacts (arrow heads, etc.) and wondered if your files indicate any good sites. I'd appreciate any thoughts you have.

Cy Quadland
Montclair

Try the Archeological Society of New Jersey, James Kellers, President, 14 Beakmon Road, Summit, NJ 07901, for information.

I have just finished reading my first copy of your magazine and I thought it was outstanding. I would like to offer one sug-

gestion. Would you consider printing a blurb about each author? I found myself wondering about the backgrounds of your authors and their motivations for writing.

Christopher Mullen
Highland Park

Thanks for the idea. As you've probably noticed, we are starting to include some background on our writers on the Editor's page.

Please let me know where I will be able to get a directory of the boat launching areas in our State. Thank you.

Mrs. T.R. Van Den Ouden
Clifton

DEP's Division of Parks and Forestry publishes a brochure that lists the names and locations of all the State-owned boat launching areas, as well as state forests, parks, natural areas, historic sites and wildlife management areas. To obtain a copy, write the State Park Service, CN 404, Trenton, New Jersey 08625.

My problem isn't catching fish. It's eating them. In South Jersey we have many fine small lakes for large mouth bass and blue gills and pickerel. We eat a lot of fresh fish. Fileting bass is easy, but what do you do with a boney fish like pickerel? Please send me recipes so I can enjoy pickerel without fear of choking on bones. Help! Send ideas. Thank you very much.

Douglas Reynolds
Atco

Any ideas? Let us know—we are stumped.

Thank you for publishing "Deer Roadkill Triples in Closed Township" (March/April, 1983). Many people do not realize that outlawing hunting in a deer-populated area has such a predictable and deadly outcome. Maybe when the ranks of the uninformed see that not just deer but people are in danger, they will learn why wildlife management is so important in a heavily populated state like ours.

Michael Toth
Outdoor Life, New York

GARDENING HINT: LEAVES MAKE FINE COMPOST BASE

Master gardeners as well as those of us who clear a plot in the yard, plant seeds and hope for the best, have learned over the years that a compost pile is one of a garden's "best friends." Fallen leaves make a very good compost base. Add grass clippings, vines, dead flowers, vegetable waste, kitchen scraps and weeds. These materials become rich organic matter after a winter in compost—the result is an excellent soil conditioner.

For first-timers, here's how to make a compost pile: Mark out an area 3 to 5 feet square, heap organic matter in layers about 6 to 12 inches thick (layering with commercial fertilizer if you wish), and one half layer of soil. To eliminate odor, keep the compost pile damp and maintain a top layer of soil. In the spring, work the compost material into the garden soil and into the soil around trees and shrubs.

RECYCLING YULE TREES

Your Christmas tree need not finish its "life" at curbside after the holiday season. Consider using it as a windbreak for exposed flower beds, "planted" as a bird feeding station, or its trimmed off branches for protective cover around bushes, plants and shrubs. Also, inquire at your municipal building—perhaps your community recycles Christmas trees into wood chips (these make excellent mulch for gardens and shrubs) or if you live at the shore, perhaps your town collects discarded trees for use as "sand dune builders."

FALL TROUT STOCKING

As NJO went to press, DEP's Division of Fish, Game and Wildlife began a one-time fall stocking of rainbow and brown trout as part of the changeover from the old Hackettstown fish hatchery to the new Pequest hatchery. More than 270,000 trout will be released between the first week in October and the third week in November. Participants in the fall trout season must have a valid New Jersey 1983 freshwater fishing license and a Trout Stamp.

NONGAME NEWS

FREE SUBSCRIPTIONS

Enjoy the quarterly newsletter of the Div. of Fish, Game and Wildlife's Endangered and Nongame Species Program.

Please add my name to the mailing list.

Send to:
Nongame News, CN 400,
Trenton, N.J. 08625

N.J. Record Tree List

We will publish a new revised Record Tree List in the March/April issue of NJO. We need your inputs on possible new record trees discovered

since the publication of the last list.

Write to: Santiago Porcella III
CN 401
Trenton, N.J. 08625



Environmental News



MORE N.J. SITES ELIGIBLE FOR CLEANUP AID UNDER SUPERFUND. Citing the state's "aggressive program to identify and classify" hazardous waste sites throughout the state, Jacqueline E. Schaefer (above, left), U.S. Environmental Protection Agency (EPA) Region II Administrator, on September 1 announced that 20 additional toxic waste sites in New Jersey are eligible for priority action under the Superfund cleanup program. These, added to the 65 sites on the National Priorities List (NPL)* announced in December 1982, bring the state's total to 85 such dumps targeted for federal assistance under the \$1.6 billion Superfund program. Miss Schaefer noted that New Jersey still ranks first among states in number of sites qualifying for Superfund aid and "is also high in Superfund dollars obligated for the task of long-term cleanup, with a total of \$17 million as of July 1983, as well as over \$4 million for short-term removal actions."

EPA Regional Administrator Schaefer, Governor Thomas Kean, U.S. Senator Bill Bradley (D-NJ) and DEP Commissioner Robert Hughey (above, from left) participated in a press conference following the announcement at the State House in Trenton. Governor Kean praised both EPA's response to the state's toxic waste dump problems and Senator Bradley's efforts on behalf of the state. Senator Bradley said he has introduced legislation (in the U.S. Senate) to extend the life of the Superfund law, which is due to expire in 1985. Governor Kean remarked that the extension of the Superfund program is "absolutely vital to New Jersey because of the long range costs of the cleanups and maintenance of the sites." DEP Commissioner Hughey estimated that the cost of cleaning up the state's hazardous waste sites could run between \$250 million and \$500 million and maintenance costs could double that figure.

*The December, 1982 NPL of 418 chemical waste dumps nationwide targeted for Superfund action was declared final on September 1, 1983. On the same day, EPA announced a proposed update of the NPL containing 133 such sites nationwide, of which 20 are in New Jersey. The newly proposed list will be subject to public comment before final addition to the NPL.

The 20 proposed sites in order of priority: **Vineland Chemical Co.**, Vineland (Cumberland County); **Florence Land Recontouring Inc., Landfill**, Florence (Burlington); **Shieldalloy Corp.**, Newfield (Gloucester); **Ventron/Velsicol**, Wood-Ridge (Bergen); **Nascolite Corp.**, Millville City (Cumberland); **Delilah Road**, Egg Harbor (Atlantic); **Chemical Leaman Tank Liners, Inc.**, Bridgeport (Gloucester); **W.R. Grace Co.**, Wayne (Passaic); **Ewan Property**, Shamong Twp. (Burlington); **Radiation Technology, Inc.**, Rockaway Twp. (Morris); **Tabernacle**

Continued on page 16D

GOVERNOR TO HOST REGIONAL CONFERENCE RE ACID RAIN AND HAZARDOUS WASTE

In his capacity as Chairman of the Coalition of Northeastern Governors (CONEG), Governor Kean has announced that New Jersey will host a major Northeast environmental conference in early December. The conference, scheduled for December 4-5 at the Meadowlands Hilton, will focus on regional strategies for addressing two problems of particular importance to the Northeast—acid rain and hazardous waste clean-up.

U.S. Environmental Protection Agency Administrator William D. Ruckelshaus has been invited to be the keynote speaker for the conference, which also will feature other nationally known speakers on acid rain and hazardous waste. For more information regarding the conference and registration fee, contact Cynthia Gordon at the state department of Environmental Protection (609) 292-5383.

SUPERFUND DOLLARS AT WORK IN NEW JERSEY

• **Lipari Landfill**, near Pitman (Gloucester County): The construction of a \$2.1 million wall and cap, made of stone and clay, designed to prevent further leaching of hazardous wastes, began on September 2. The wall will encircle 16 acres, including the original six-acre site. The federal Environmental Protection Agency (EPA), as the lead agency for the Lipari Landfill project, contracted for the work. Under the federal program, Superfund moneys cover 90 percent of the cost, state funds provide 10 percent.

• **\$430,000 grant:** EPA on August 18 made a \$430,000 grant to New Jersey to conduct preliminary field investigations and assessments at suspected hazardous waste sites. The funding was provided from \$10 million, allocated nationally through the Superfund Act, to carry out the requirements of Section 3012 of the Resource Conservation and Recovery Act of 1976, which called for the waste site inventory. The state,

Continued on page 16D



The look of delight on the face of the youngster receiving a gift from Santa Claus, the expressions of the other little ones, and the indulgent smile of Governor Kean (kneeling, left) spell "holiday joy" without using letters. The youngsters, from the state run Linden and Newark day care centers, were guests at the traditional tree lighting ceremony at the State House last December. (That's State Senator Walter Foran, R-Hunterdon, inside the Santa suit.) The beautiful 15-foot Colorado Blue Spruce, as usual donated to the state by the New Jersey Christmas Tree Growers' Association, was harvested at Fred Johnston's Christmas Tree Farm in Hillsborough Township (Somerset County). The tree was decorated by the New Jersey Council on the Arts with decorations hand made by New Jersey artists. (DEP's Bureau of Forestry has for many years, upon request, provided assistance to New Jersey's timber industry.)



'RIGHT-TO-KNOW' BILL SIGNED. Governor Kean and State Senator Daniel Dalton (D-Camden) shake hands following the August 29 ceremony in which the governor signed the "Community and Work Right To Know" bill (S-1670) into law. Senator Dalton sponsored the bill in the Senate. Terming it "a truly landmark piece of legislation," Governor Kean said the law "signals the state's concern for the health and welfare of its workers and inhabitants."

The "Right to Know" law (Chapter 315, P.L. 1983) provides the framework for establishing a comprehensive program for the disclosure of information about hazardous substances in the workplace and the community, and provides a procedure whereby residents of the state may gain access to this information.

Among other provisions, the new law requires industry to label with their chemical names substances it uses, hazardous and nonhazardous, within a set time frame—18 months for hazardous substances, three years for nonhazardous; to make detailed information on hazardous substances available to workers, police and firefighters, state departments of Health and Environmental Protection, and the health department in the county in which the employer's facility is located where the public would have access to it. The law delegates specific duties to the state departments of Health, Environmental Protection and Labor; creates a Right to Know Advisory Council in the state department of Health; sets penalties for noncompliance with the law; and to fund the program levies a fee of \$2 per employee against every company covered by the legislation.

NEW JERSEY TAXPAYERS CARE ABOUT WILDLIFE

With the major portion of income tax processing completed, the state Division of Taxation reported on August 31 that taxpayer contributions to the Endangered Species and Nongame Wildlife Conservation Fund totaled more than \$445,200—an increase of more than \$33,000 over the amount (\$412,000) received in 1982, the first year of the program. The number of taxpayers making donations through the tax check-off increased by more than 6,000—from 100,200 in 1982 to 106,400 this year; the average donation increased by eight cents, from \$4.11 last year to \$4.19 in 1983. (All contributions to the wildlife conservation fund are dedicated for use

only by the state's Nongame and Endangered Species Program within DEP's Division of Fish, Game and Wildlife. The money is used for the protection of 25 endangered species, such as the Bald Eagle and Pine Barren Treefrog and 400 other kinds of wildlife including songbirds, hawks and turtles.)

PUBLIC HEARINGS HELD ON MANAGEMENT PLAN FOR TOXIC SITE CLEANUPS

DEP CONDUCTED three statewide public hearings in October on the state's Management Plan for 1983-1986 for Hazardous Waste Site Cleanups. The purpose of the plan is to develop a systematic approach to remedial action at such sites, coordinate cleanup and enforcement actions and to identify future funding needs and sources. The draft plan, announced by Governor Kean on February 10, 1983 (See these pages, March/April NJO), was approved by the U.S. Environmental Protection Agency on April 11. The management plan was prepared by DEP's Division of Waste Management.

WORK BEGINS ON DEP BUILDING

Work began this summer to prepare the site at the corner of East Canal and East State Streets in Trenton for the construction of a DEP headquarters building. Plans call for the \$33 million, seven-story, 400,000-square foot building to be completed in 1986. The state Division of Building and Construction is overseeing the project.

**TO REPORT ABUSES
OF THE ENVIRONMENT
CALL ACTION LINE
609-292-7172**



Hunting and Hawk-watching

INTRODUCTION

By R.A. Cookingham, Director

New Jersey is not a large state. It consists of some 8,000 square miles into which more than seven million people live.

Given these numbers, one could easily assume there isn't much room left for wildlife, yet when it comes to a variety of wildlife, New Jersey ranks right up there with the best of the 50 states.

From the Kittatinny Ridge in Northwest New Jersey with its resident population of black bears, white-tailed deer, ruffed grouse, beaver, raccoons, wild turkeys and bobcats, south to the tip of Cape May peninsula which abounds in brant, snow geese, bobwhite quail, foxes, rails, the cottontail rabbit, and muskrats, wildlife is found in great numbers in New Jersey.

The wildlife is all around us, despite the fact that New Jersey is one of the three most populated states in the nation.

That New Jersey provides excellent hunting and trapping opportunities annually is proven by the fact that the state ranks fourth in the nation in the number of muskrats taken, and eighth in the country in the number of deer taken during the bow and arrow season.

More than three and a half million days of hunting and trapping recreation, which generates more than \$85 million to New Jersey's economy, are enjoyed each year by our sportsmen and sports-women.

Basically, the wildlife that we enjoy today is capable of producing tremendous benefits for the enjoyment of the entire population of the state.

There is in New Jersey a large renewable resource of wildlife species which have been able to adapt to the intrusion of man upon its habitat. We should have abundant wildlife populations in our state if we are able to maintain suitable habitats and protective regulations.

In addition to hunting, fall provides many opportunities to observe wildlife. Many species are more active in the fall preparing for the less bountiful times of winter. Also many species of birds migrate through our state seeking warmer



ILLUSTRATION BY RON ORLANDO

southern environments. Topping the list and becoming a more popular activity each year is the fall hawk watch.

Whatever your interests, hunting, looking or both, fall is the best time.



Winter bow hunting.

LATE FALL AND WINTER DEER HUNTING OPPORTUNITIES

By Bob McDowell, Principal Wildlife Biologist

The fact that New Jersey is an excellent deer hunting state is not the latest news for many people. However, expanded deer hunting opportunity provided by winter bow season and muzzleloader season is not as widely known. If you want to hunt deer in solitude with the possibility of having a tracking snow, these two seasons are for you. This year the muzzleloader season is nine-days long and in 1984 the season is expected to be at least the same length. The season will be held on December 12, 13, 16, 17, 19, 20, 21, 22, and 23. Hunting is allowed in specific deer zones by special permit. The details on zones and how to apply for a permit can be found in the Division of Fish, Game and Wildlife's *New Jersey Deer Guide*.

In addition to the special permit, hunters must have a rifle permit and a firearm hunting license to hunt in this season. Percussion and flintlock rifles may be used. These rifles must be .44 caliber or larger, have a single barrel, fire a single

ball or bullet and have "iron sights." The season is available to anyone 14 years old and up if they have taken the rifle Hunter Education Course and the firearm Hunter Education Course. One deer of either sex may be taken during this hunt.

This deer hunting season makes it possible to hunt in a manner we might envision our frontier ancestors hunted. Stalking slowly through snow-laden forests hoping to catch a white-tail unaware, or waiting by a well used deer trail not moving, hardly breathing for hours.

When the deer is finally seen there is only one shot, the aim must be true, the not so reliable black powder weapon must be ready to fire and the hunter must maintain his cool.

Last year over 13% of the 8,000 muzzleloader hunters were successful. This is an enjoyable but difficult way to deer hunt in the Garden State.

The ultimate challenge for Garden State deer hunters is the two-week win-

ter bow season. This season will be held January 7 though January 21. One deer is the bag limit and the same hunting rules apply in this season as in the fall six week hunt.

Only 12,000-13,000 of our state's 40,000 bowhunters take to the woods in "this frostbite hunt." If you really want to be alone in the forest with the deer this is the ultimate season. You share the forest only with a few late season grouse and some squirrel hunters, the occasional cross country skier and snowmobiler.

The archery equipment necessary for winter hunting is the same as fall; however, cold weather clothing and boots are necessary for the long wait in a tree stand.

Waiting in tree stands seems to be the most popular form of hunting; however, some bowhunters have success with small, well organized drives. These drives are aimed at moving reluctant deer from cozy, heavy-cover wintering areas. Some bowhunters have had excellent success stalking within 20 yards of the deer during snow storms. These hunters prefer all white clothing camouflage and driving snow conditions.

Deer are not found in their normal habitats during this coldest period of winter. In the central and northern portions of New Jersey cold weather will encourage deer to stay on evergreen covered, south facing hillsides. Habitat like this, near a picked corn field, will provide the finest winter hunting one can find. Trails laden with tracks and droppings will show the hunter where to locate a good downwind tree for a portable tree stand. In the southern portion of the state the edges of white cedar swamps provide excellent hunting sites.

In addition to location the weather is important. The deer move best when warm and cold fronts pass through. The absolutely finest hunting occurs when there is light wind and snowfall with a rise in temperature.

Last winter nearly 350 deer were taken during the winter archery season by our frostbitten bowmen. This is a 3-4% success rate. No one said it was easy.

Whether you decide to hunt muzzleloader season, winter bow season or both you will be able to find hunting spots in most areas of the state. Nearly half a million acres of uncrowded public land is available to the late season deer hunter. All wildlife management areas, state forests, and many state parks allow deer hunting. Many federally owned properties have deer hunting opportunities. In addition, many private landowners will allow deer hunting on their lands.

DUCK HUNTING IN NEW JERSEY

By Lee Widjeskog,
Senior Wildlife Biologist

New Jersey is one of the best waterfowl hunting states in the Atlantic Flyway. It leads other states in harvest of brant, and snow geese and is one of the leaders in scaup and bufflehead harvest.

Wait a minute! Is this guy talking about the same New Jersey that leads the nation in human population per square miles? Yes!!! In spite of this, New Jersey has managed to preserve most of its 250,000 acres of saltmarsh and many inland swamps, bogs, streams and lakes.

This habitat preservation, combined with being in the path of many migrating waterfowl has made New Jersey a favorite wintering spot for over 300,000 ducks and geese annually.

Even with the dense human population there are many places to hunt waterfowl in the state. Some of the best areas are open to the general public in the form of state wildlife management areas. Places such as Great Bay Boulevard Wildlife Management Area (WMA) near Tuckerton, the Absecon WMA near Atlantic City, L.G. MacNamara WMA near Tuckahoe, Dennis Creek WMA near Dennisville, Egg Island WMA near Fortescue and Mad Horse WMA outside

Canton are known for their excellent waterfowl hunting opportunities.

There are also two national wildlife refuges—Barnegat and Brigantine—operated by the U.S. Fish and Wildlife Service that allows public hunting of ducks and geese.

Knowing where to hunt will only help if you know *how* and *when*. The "when" is dictated by the migratory bird supplement, a copy of which is available from license dealers by mid-September of each year. Within the season, days of high wind, overcast skies and spitting rain are considered to be best. The wind keeps the birds moving as they look for shelter, at the same time it makes decoys look more realistic. Other times of adverse weather (snow, ice, storms) can also be good, but you must consider your own safety during these periods. Each year waterfowlers die from exposure or drowning because of poor judgement.

The *how* of duck hunting would take several hundred pages to do completely; but, briefly, waterfowl hunters fall into two categories: pass shooters and decoy hunters.

The pass shooter requires very little equipment other than drab clothing, a pair of waterproof boots, and a shotgun with high velocity or magnum load shells. Thus equipped, one simply stands in an area where ducks and/or geese are likely to fly overhead within 60 or less yards. Those that are the closest are shot at. Once the proper lead is determined by the hunter, the birds will begin to fall. Generally, only the most experienced pass shooters consistently get a limit of birds.

The other type of hunter uses decoys (imitation ducks and geese) which are placed on a pond or stream in such a manner as to lure near-flying birds to come closer or even land. This hunting method requires more equipment such as a boat, chest waders, a retriever, a blind to hide from the ducks' view and decoys. However, this method is gener-

Left: State biologist checks ducks.

Right: Young duck hunters.



ally more productive in terms of birds taken than is pass shooting.

With this information plus what you can glean from the information sources listed you should be able to sample some of the best, public waterfowl hunting on the east coast in no other place but New Jersey.

SEA DUCKS

By Paul Castelli, Assistant Wildlife Biologist

In an age of restricted bag limits and seasons, sea ducks offer an exciting recreational opportunity for New Jersey waterfowlers. Sea ducks include the old-squaw and three species of scoter—the white-winged, surf, and black. (Black scoter is not to be confused with black duck.) These ducks breed in the high arctic and winter in the ocean, two ecosystems which are still relatively unchanged by man. Because of this, their numbers have remained high while other species more closely associated with man have declined. The end results are long seasons (107 days) and high bag limits (seven) for sea ducks.

Migrating sea ducks appear along our coast in September. By the time our season opens during the first week in October, they are well established. The season runs through January, but most hunters prefer October when the temperatures are still warm and the seas are calm.

The boundary of the sea ducks area is defined as east of the high tide along the Atlantic Ocean shore from Sandy Hook Point south to Cape May Point and transversely across the mid-point of each inlet to the high tide line on each side of each inlet. In short you have to hunt sea ducks in the ocean, necessitating the use of a boat. Camouflage for the boat is not important, but safety is. Boats should be large enough to handle ocean swells and inlet currents. They should also be equipped with all coast guard required safety equipment.

Morning is generally the best time to hunt sea ducks, but there is no need to be out at the crack of dawn. Tide is not an important consideration. The best winds are light and from the north or west. Unlike most types of waterfowling, strong winds are detrimental to sea duck hunting because they kick up large swells making it difficult to run inlets and to anchor offshore. The waves also hide the decoys and make the boat an unsafe shooting platform. Usually the birds fly parallel to the shoreline so the best strategy is to find a flight-path in which to set up. Decoys are usually silhouettes or black jugs strung out several to a line. One or two dozen is sufficient. Many hunters use a 2' x 2' black flag which they run up to attract the ducks to the rig.

Most hunters agree that although sea



Duck hunters in blind.

ducks are easy to decoy, they are hard to kill. High brass or magnum shells are recommended. Number four is the preferred shot size. As with any hunting, letting the birds come well within range will result in more ducks bagged.

Most gunners rig their anchor lines with a buoy so they can immediately drop anchor and pick up their birds. A long handle net is the best "retriever" for this situation. Few sea duck hunters use dogs due to the rough swells and strong current.

One last point to remember while you are out enjoying this fall flight of sea ducks is that there are other species which you will encounter. Learn to identify loons, cormorants and other nongame seabirds and refrain from shooting at them. However, certain other migratory species, like bluefish, weakfish, and striped bass may be harvested. Bring a fishing rod on your next sea duck hunt and make it a double adventure!

THE UPLAND BONUS BIRD: THE AMERICAN WOODCOCK

By Larry Herrigty, Senior Wildlife Biologist

It is November. The hunter moves cautiously through the old field in a zig-zag pattern, stopping every few steps as the books and magazines instruct him. Dogless, he hopes to flush the pheasant or rabbit himself. From under his feet a whistling blur rises helicopter-like above the briars and cedars, darting left and then right as it levels off and flies out of sight. A quick conference with his hunting buddies, a tale of the little brown bird with the long bill and they decide it is a woodcock. Not having the required two dollar stamp, they hunt on, part of the 95,000 hunters who pursue the pheasant and rabbit in New Jersey.

Like most upland game hunters, even with good bird dogs, they never thought of hunting woodcock. "Sure," they'll tell



Successful woodcock hunter.

you, "a few die-hard hunters pursue woodcock that touch down at the northern or southern tip of our state during their fall migration. But average hunters rarely encounter them." Nothing can be further from the truth! Unless a sportsman pays the price for stocked pheasant or quail, he is more likely to encounter woodcock than any other huntable upland game bird. Add to that season beginning in October, when only 20,000 small game hunters are afield, of which less than 3,000 are pursuing woodcock, and it is near impossible to pass up this bird. The woodcock can be more than a bonus, it can be a bonanza of hunting opportunity.

The woodcock is migratory, it requires dense stands of saplings or shrubs for protection and its diet is mostly earthworms. Their migratory nature allows woodcock to quickly colonize isolated woodlots that offer suitable habitat. Woodcock reproduce in all but the urban counties of our state and local birds are available prior to their migration. Additionally, each fall waves of woodcock from the north pass through our state. They spend the day resting in bottomland woods or overgrown fields which were once pheasant habitat and now are more suitable for woodcock. Interspersed across our state are the valleys, farmland and river bottom woodlands, all containing rich soil and an abundance of earthworms.

The woodcock is not a rare individual but is in reality an untapped resource. The upland hunter can extend his season and increase his chances of bringing home a game bird dinner. Depending upon the weather which influences reproduction and timing of the fall migration, between 40,000 to 100,000 woodcocks are harvested by the 20,000 hunters who pursue them.

The upland game hunter already has all the equipment necessary for hunting woodcock. A shotgun of any type or gauge is fine although open chokes such as improved cylinder or modified are best. Shooting is close and fast so that a full choke should be avoided and only a keen eye should consider a singleshot. Skeet or trap loads are all that are necessary and a 12 gauge is only useful for the extra lead pellet it will throw. Many hunters prefer the lighter 20 gauge. Doubles, either the over-under or classic side by side with their shorter overall length, are easier to handle in dense cover. Of course the hunter with a dog will find more woodcock. Close-working pointing dogs are preferred; however, as with grouse, flushing-dogs under proper control are often used. Woodcock hold tight, especially early in the season, and therefore offer excellent dog training opportunities prior to the pheasant and quail season. Hunters without dogs can be quite successful as long as they hunt likely-looking coverts

thoroughly and slowly.

The state is divided into two woodcock hunting zones with different opening and closing dates. This allows hunters to take advantage of regional differences in abundance due to migration. Hunting hours are from sunrise to sunset and the daily bag limit is five woodcock. The northern zone is north of Route 70 from Pt. Pleasant to Camden. The season begins during the first week in October and continues to the end of November (Oct. 5 to Nov. 28, 1983). The southern zone is south of Route 70 and hunting begins during the third week of October and continues to late December, (Oct. 22-Dec. 3 and Dec. 12-Dec. 23, 1983). The season is closed during the firearm deer season (December 5 through December 10).

The highest densities of resident woodcock are found along the Delaware River valley of Sussex and Warren Counties. Alder thicket bottomlands and fields of grey dogwood and aspen saplings are like the coverts described for more northern states. Peak migrations through this region will occur from late October to early November. Best hunting opportunity will be found during this period when the woodcock are in. This is the time to listen to the late night weather for cold fronts in New England and to read the outdoor columns in the local paper. Public hunting grounds such as the Big Flatbrook-Roy and Walpack Wildlife Management Areas (WMA) and the Delaware Watergap National Recreation Area contain premium cover. Not to be overlooked are the bottomland wooded greenbelts that snake through the central farming regions of our state. Hunt these covers during the late October or early November when most hunters are still indoors or later when the pheasant and rabbit hunters fill the fields. The Assunpink, Black River and Manasquan WMA's contain such coverts and receive very little use.

Mention southern zone woodcock hunting and most hunters think Cape May County. As the cold weather and snow hit New England, migration of woodcock begins in earnest. The Delaware River valley and the Atlantic Ocean act as funnels concentrating many woodcock in South Jersey. Cape May County has received nationwide coverage and rightly so, for if northwesterly winds stall migration across the Delaware Bay, unbelievable concentrations occur. Better hunting opportunity is hard to find but it is usually short-lived. As is the case in all coverts during the migration, favorable winds occur and the woodcock move on. Peak migration normally occurs from late November to mid-December and often overlooked spots in Atlantic, Burlington, Cumberland and Salem Counties also offer excellent hunting. Public hunting areas such as Higbee Beach, Mad Horse Creek, Heislerville and Edward G.



Railbird.

Bevan WMA should not be overlooked. For an additional two dollars for the required state woodcock stamp, the upland game hunter can cash in on this bonus bird and receive an increase in his hunting opportunity while still avoiding the crowd.



RAIL BIRD HUNTING IN NEW JERSEY

By Lee Widjeskog

September 1st means different things to many people. To many it means the Labor Day holiday is very close; to those attending school it signifies the start of a new school year, and to a few New Jersey sportsmen it is the start of the annual rail bird season.

Three species of rail birds are hunted in New Jersey: the clapper rail, Virginia rail and the sora rail. Good hunters learn to identify other long-legged birds found on the marsh and are careful not to mistake a willet or yellow-legs for a rail bird.

The clapper rail, also known as the "mud hen" or "marsh hen" is a thin, grey, long-legged bird standing about 12-14 inches high. It is found on the salt water tidal marshes from Barnegat Bay to Salem Cove. This bird has been at times, very abundant. A naturalist visiting the New Jersey marshes remarked that local egg gatherers could collect 100 dozen clapper rail eggs in a day. Even in recent years there have been periods when such a collection would have been possible. However, the rail population is not stable and such high populations do not exist each year even though there is always a harvestable surplus.

Hunting the clapper rail is generally not for people who insist upon a clean and neat appearance. The dress of the day is old clothing, old tennis shoes, a hunter orange hat, a water skiing belt for buoyancy and a shotgun you won't mind getting rusty.

The best hunting is during the extremes of the tidal flow (low and high). During the low tide a hunter with a dog can walk along the numerous tidal creeks and ditches. The birds are found lurking in the tall marsh grasses or feeding on the exposed mud flats. As you approach they will hide in the grass. With the help of your dog the birds are soon flushed for a possible shot.

Generally light loads and small gauge guns are considered best for this bird. However, an open choke 12 gauge gun using #7½ or #8 size shot in field loads can be used acceptably.

Once the bird is airborne the hunter will have a tendency to shoot ahead of the birds. It is a deceptively slow flier. While it seems to flap about in the air at a furious pace, it travels forward slowly. It is not unusual for many of these birds to be missed.

Once the bird is downed, carefully mark the spot and quickly seek out the bird. This grey bird is quite easy to miss amid the grey mud and heavy grass. This is the time when your dog with its keen nose is very valuable. As the tide comes in this type of hunting becomes less productive.

The other time to hunt is during a high tide that puts 6 inches to one foot of water over the marsh surface. This condition is most likely to occur during the full moon or a northeast storm.

When the conditions are set, three or four hunters can form a line and move in unison across the marsh towards a point formed by the junction of two streams. As they approach the end of this point, any rail birds in front of them will start flying away. At times ten or more birds will get up at the end of the drive, providing some very fast and furious shooting. With a little luck, three or four birds will be bagged.

During this type of hunt, one must be prepared to swim across tidal creeks up to 30 yards wide in order to continue a drive or to avoid walking far out of your way. The water is four to eight feet deep and the mud on the banks of the creeks is one foot to two feet deep. By the end of the day you can count on being soaked from head to toe with mud and water. But you'll be able to say you hunted clapper rail.

Sora rail are small stubby birds with a chicken-like beak, grey body and a black mask about the eyes and bill extending down the throat. Virginia rails are often found with the soras, but look like brown minatures of clapper rails. These birds are found in the wildrice marshes of New Jersey. These marshes are on the Wading River, Maurice River, Oldmans Creek, Mantua Creek, Raccoon Creek and the Rancocas to name a few. While a number of these birds are raised within the state, the best hunting comes when the migrants arrive during the late September through October period.

These small birds are hunted only during a high tide and from the relative comfort of a boat pushed along by a partner or someone you have hired. This can be done from a canoe or an aluminum john boat, but the best selection would be a boat designed for pushing rail birds as used on the Maurice River.

The man in the front of the boat sits and waits for the birds to jump from the wildrice as the pusher moves the boat rapidly through the grass. A quick-handling, open choke gun with light loads is best since the birds get up and drop back very quickly. For those with more money than time, there are still guides along the Maurice River for hire. They will push you on the high tide in their boat. Be sure to bring plenty of shells, for when the migration is in full swing, the shooting is fast and the limit quite liberal.

Rail birds are not heavily harvested or hunted in New Jersey. It is estimated that less than 5,000 rail birds of all types are taken annually. The low harvest reflects the lack of hunting effort and not lack of birds. If you've got the time and wish to try a different type of hunting, then rail bird hunting may be for you.

Retrieving the Railbird



PHOTO BY DAVE CHANDA

HUNTING SNOW GEESE IN NEW JERSEY

By Fred Ferrigno, Principal Wildlife Biologist

Hunting snow geese in New Jersey is a challenging and sometimes frustrating experience for hunters. Usually hunts involve spectacular views of thousands of these beautiful birds, with few, if any, ending up in the hunter's bag. Snow geese have adapted to hunting pressure and are difficult to harvest. Today, if snow goose hunters are to be successful, they must know where, when and how to hunt this wary bird.

Hunting Location

During the past eight years, snow geese have spent the fall and part of the winter on six areas. Hunters should select one or more of these areas as hunting locations. The location and access points to these areas are shown in Table 1.

Hunting Time

The snow goose hunting season (October 15 to January 12) is set to coincide with the time snow geese are present in New Jersey. Snow geese arrive in mid-October and peak numbers are available to hunters in late October and all of November. When freeze-ups occur in late December most of the snow geese depart from the state. Usually a portion of the Brigantine flock of several thousand birds will winter in the vicinity of Absecon and Brigantine Inlets. Hunters should seek these birds in late December and early January.

Snow goose hunting is excellent in late November. The large number of duck hunters keep the geese moving, making it a good time for diversified rigs with duck decoys on a pond and snow goose spreads on the marsh. In the Brigantine and Reeds-Absecon areas, hunters often improve their hunting opportunity by setting up for snow geese, brant and ducks.

Hunting Methods

Location of snow goose decoy rigs is important. Large cordgrass eat-outs are excellent sites for snow goose rigs. Be careful not to set up a spread adjacent to standing shallow run-off ponds. Some guides think that the birds' own reflections spook them.

In selecting the proper time of day, don't overlook the evening flights. In late afternoon, snow geese get hungry and leave their resting areas to feed on the marshes. To catch the morning flight, hunters should set up before daylight in the flight line between night feeding birds and their resting areas. Birds disturbed on the marsh at daylight will fly to a refuge. At times, they will drop into or fly over large snow goose decoy spreads in their path.

Figure 1
THE TEXAS SNOW GEESE RIG

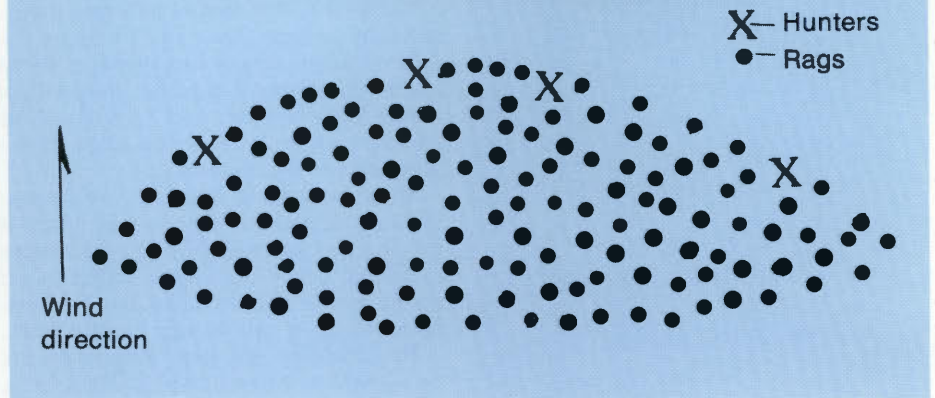


TABLE 1

Flock location	Ave. no. of geese	Access points (boat ramps)
Delaware Bay (South Zone)		
1. Back Creek	11,000	Bayside
2. Egg Island	7,000	Fortescue, Turkey Point, Dividing Creek
3. Heislerville	4,000	Matts Landing, Bivalve
4. Dennis Creek	9,000	Dennisville, Goshen, Reeds Beach
Atlantic marshes (Coastal Zone)		
5. Brigantine N.W.R.	40,000	Brigantine N.W.R., Leeds Point, Motts Creek & Brigantine City
6. Reeds-Absecon Bays	5,000	Absecon, Brigantine City

On all six areas, a boat and outboard are needed and waders are recommended.

Among the most important things contributing to a successful hunt is the proper snow goose spread and the hunter's behavior at the spread. The hunter must be well-concealed in camouflage clothing and remain motionless until he is ready to shoot. When birds are spiraling into rigs from high altitudes, they may look very close, however, hunters should wait until they are well within range!

When the snow goose season first opened in 1975, they decoyed readily into all kinds of white rigs (pyramids, silhouettes, plastic bags and different types of decoys). Today, they are more selective and will only decoy into well-located and good-looking spreads. Try beefing up your white rag or silhouette spreads with full-body and shell decoys. One of the popular spreads is known as the four-man Texas rag spread. It was introduced into New Jersey by Robert Creeden, a trustee of the New Jersey Waterfowlers Association.

In the four-man Texas rag spread, at least 350 white rags are placed in the pattern which is 50 yards wide. Rags are placed 4 to 6 feet apart. Two men, about 10 to 15 yards apart, sit near the front

center of the spread. The other two men are 20 to 25 yards farther out. The reason for this placement is that some geese will decoy to the center of the spread and others will slide along the edges of the spread (see figure 1).

Weather is an important factor. The Delaware Bay hunter knows that the time to be in his marsh blind is during strong westerly winds. Snow goose hunting is a new challenging sport to New Jersey waterfowl hunters. Weather, migration patterns, hunting sites and the various decoy schemes and rigs are important to success. However, the real fun is in the learning how to do it yourself.

Cape May Point
Hawkwatch.



HOOKED ON HAWK WATCHING

By Mimi Dunne, Assistant
Nongame Zoologist

Have you ever seen a bald eagle, golden eagle or peregrine falcon? Avid New Jersey hawk-watchers don't have to drive all the way to Hawk Mountain, Pennsylvania to pursue their interest. New Jersey hosts some of the best flights and has some of the best spots in the northeast to view the spectacle of "hawk" migration. For some people, hawk watching is the most absorbing kind of wildlife observation—indeed many a novice is "hooked" on it each year.

Raptors are a small but spectacular portion of the animals that migrate great distances each spring and fall. Spurred on by diminishing daylight, food and temperature, northern breeders head south to their ancestral wintering grounds. The avian population in New Jersey swells and changes with the arrival of migrants. Raptors, shorebirds, songbirds, wading birds, waterfowl and marsh birds enliven fall birding in New Jersey.

Raptors can be classed into several broad groups and the unidentified migrant can usually be distinguished by certain characteristics. The *buteos*, or buzzard hawks as they are sometimes called, are large, thickset hawks with broad wings and wide, round tails. Our most common *buteo* is the red-tailed hawk, often seen perched by roadsides or soaring high in wide circles. A characteristic flat profile in flight distinguishes the hawks from the vultures who fly with their wings held in a V. Other *buteos* that pass through New Jersey include the red-shouldered, roughlegged, broad-winged and occasionally the Swainson's hawk.

The falcons as a group are fast-flying raptors with long, pointed wings and a streamlined body. Three species of falcons move through New Jersey. The kestrel is the most common but the peregrine and merlin are also seen.

The accipiters can be identified by their short, rounded wings, long tail and unique pattern of flight. The sharp-

shinned hawk is the smallest of accipiters and is also the most abundant in migration. Less abundant is the Cooper's hawk, a secretive accipiter similar to the "sharpie" in appearance but differing in size and flight pattern. The goshawk is even less common but is seen occasionally at hawk watches.

Eagles are spotted in small numbers. These very large birds of prey are usually not seen in migration until mid to late fall.

The osprey and Northern harrier, or marsh hawk, are also seen on migration as well as nesting in New Jersey. The osprey or "fish hawk" is identified by "elbow patches" on its underwings and a crook in the wings in flight. The harrier has a white rump patch and flies with the wings held in a slight V.

Geography and weather conditions are two of several important factors determining the kinds and amounts of hawks present. The Appalachian and Watchung ridges and coastal beaches provide "leading lines" for raptors to follow south. *Buteos* and accipiters, especially, travel the updrafts created along the inland mountains. In addition to updrafts, some raptors, like the broadwing utilize "thermals" to soar great distances at little energy expense. Because of the dependence on air masses, fall hawk watching is usually best with a northwest wind and a rising barometer associated with frontal passage.

You can expect to see different hawks through the fall months. September belongs to the broad-wing when thousands assemble in "kettles" rising with thermals and riding updrafts through the state. Into October, the "sharpies" dominate the scene with an increasing variety of raptors beginning to move through—goshawks, Cooper's hawk, golden eagles, peregrine falcons, merlin, marsh hawks and kestrels. November brings in large birds of prey—the red-tail in greatest numbers along with rough legged and red-shouldered hawks

PHOTO BY JOAN LENGYAL



Carol Nash with banded Red-Tailed Hawk.



AUTUMN OUTDOORS ACTIVITIES

and eagles.

The time of the day affects the movements of some birds of prey. In general, accipiters move in early morning, buteos late morning, and falcons early afternoon.

Habitat plays some role in determining the kind of raptors seen. The falcons tend to stay along the coast feeding on a ready supply of migrating birds. Harriers are best observed in open areas while accipiters are woodland species.

Given the above conditions, you are likely to see hawks anywhere in the state wherever you have a vantage point. However, if you want to see variety and numbers of raptors, you can increase your chances by going to some well-known and not-so-well-known spots.

In northeastern New Jersey, Montclair Quarry offers one of the better-known vantage points. Located in the city of Montclair, the look-out sits atop the southern end of the third Watchung ridge. Since 1957, the Montclair Bird Club has sponsored a hawk watch at this New Jersey Audubon sanctuary. Peak migrations of broadwings, sharpies, osprey and kestrel occur at this point in September and October. Good buteo flights are seen in November.

Other vantage points in the Watchungs are somewhat less well-known but as accessible as Montclair to urban residents. North of Montclair on the same ridge, a look-out can be had at Passaic County Park Commission's Rifle Camp Park in West Paterson. Also maintained by the Passaic County Park Commission, Garrett Mountain in Paterson offers a look-out easily accessible from Interstate 80. Many of the hawks observed at Montclair pass over these points as well.

Hawks can be observed at the highest point in the Watchungs-High Mountain in Franklin Lakes. Buteos and accipiters are abundant over this point from September through November.

Additional spots in the Watchungs include Chimney Rock in the Somerville area, Skyline Ridge in Passaic and the Watchung Reservation in South Orange.

Bearfort Mountain offers a look-out for accipiters and buteos. This rock outcrop at the base of the Bearfort Mountain fire tower is located in West Milford Township, Passaic County.

In northwestern New Jersey, vantage points all along the Kittatinny Ridge are bound to be productive. One of the best known spots in the state for watching hawks is in Stokes State Forest. Sunrise Mountain provides a wide view, good for hawks well into the fall. The look-out is easily accessible from Sunrise Mountain Road off Route 206 north of Newton.

Southwest along the Kittatinny Ridge in Warren County, Raccoon Ridge offers an excellent look-out for hawks. The steep climb to the ridgetop is accessed from the Jersey Central Power and Light Company property near Yards Creek off Route 94 in Blirstown Township.

In South Jersey, Cape May Point boasts unparalleled hawk watching opportunities. Migrating raptors bottleneck in the peninsula and stage at the point, unwilling to cross the wide expanse of the Delaware Bay when northwest winds prevail. In addition to the buteos and accipiters commonly seen to the north, falcons, harriers and osprey are seen in large numbers. The Cape May Bird Observatory, a New Jersey Audubon facility, also regularly spots goshawks, Swainson's hawks, bald and golden eagles.

Other places to look for raptors in South Jersey are found along the coast. North of the Point on the Delaware Bay in Cumberland County, East Point Lighthouse can be reached from East Point Road out of Heislerville. Higbee Beach Wildlife Management Area is also productive for hawks in the fall. Purchased for endangered species and other wildlife, this property north of Cape May is also on the Delaware Bay. In central New Jersey, Island Beach State Park is a fall hotspot for falcons.

Raptors can be observed in unlikely places in our urban areas. In and around the garbage dumps of North Arlington and Kearny, large rodent populations attract migrating red-tails, kestrels and harriers. The Jersey City and Bayonne waterfronts attract an occasional rough-legged and red-shouldered hawk in addition to the more common raptors. The Meadowlands and Caven Cove area of Liberty State Park should also be checked for the more unusual raptors.

The New Jersey Palisades offer another vantage point for urban hawk watching. Stateline Look-Out off the Palisades Interstate Parkway is the highest spot in the Palisades and a good place to view accipiters, buteos, kestrels, osprey and the occasional golden eagle.

You don't need much equipment to enjoy this sport. Binoculars, a field guide and time are the only necessities. So get out and take a look at some of the best the fall has to offer.

For more information:

New Jersey Raptors Association
Bob Law, President (201) 948-3806
New Jersey Audubon
(201) 891-1211
Audubon Bird Hotline
South (609) 884-2626
North (201) 766-2661
Cape May Bird Observatory
(609) 884-2736

Sources of information

Official State Highway Map

Division of Travel and Tourism
CN 384
Trenton, NJ 08625

Guide to Wildlife Management Areas

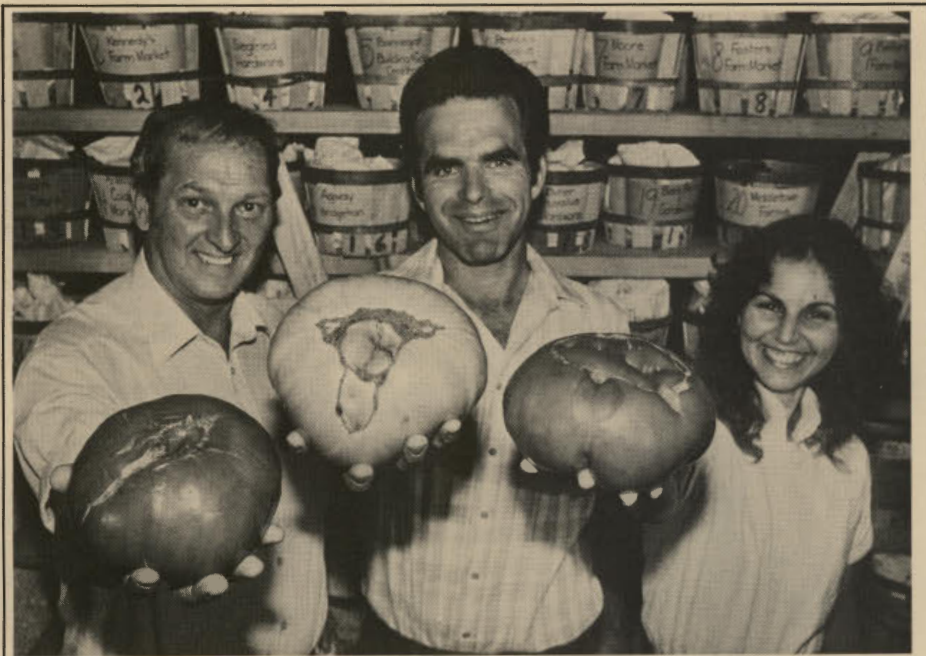
Division of Fish, Game and Wildlife
CN 400
Trenton, NJ 08625
Fee: \$5.50 (post-paid)
Brigantine National Wildlife Refuge
P.O. Box 72
Oceanville, NJ 08231

N.J. Summary of Hunting and Trapping Laws and the Waterfowl Supplement

Division of Fish, Game and Wildlife
CN 400
Trenton, NJ 08625

N.J. Deer Guide

Division of Fish, Game and Wildlife
CN 400
Trenton, NJ 08625



THE WINNER . . . A 3.53-POUND TOMATO. George Bucsko (center) of Clifton, a "backyard gardener," won the grand prize of \$1,000 at the annual "New Jersey Tomato Weigh-In," on August 27 at Monmouth Mall in Eatontown. Bucsko's tomato, which measures 22 inches around, was heavier than those of 84 other regional winners. Second prize of \$500 was awarded to Shifra Petrisko (right) of Holmdel for a 3.47-pound tomato and Third prize of \$250 to Casimir Sieminski (left) of Sayreville for a 3.39-pounder. Joseph Heimbold, who originated the event in 1977, said the state record weight was set in 1980 by a 4.034-pound tomato. (See NJO July/August story, "The Jersey Tomato," for information about the annual contest which attracts thousands of entrants.)

UPI PHOTO

NEW OFFICE TO HANDLE NATURAL LAND PROGRAMS

The Office of Natural Lands Management, recently established within DEP's Division of Parks and Forestry, is charged with administering and implementing laws concerning the Natural Areas System, the Wild and Scenic River System and the State Trails System. Also its responsibility is maintaining the necessary data inventory related to these laws. The office is located at 109 W. State Street in Trenton. The mailing address is CN 404, Trenton 08625; the phone number, 609-984-1339.

Thomas F. Hampton, who has been with DEP for 11 years, was named Administrator of the Office of Natural Lands Management. Before assuming his new post, Hampton served as chief of the Bureau of Coastal Enforcement and Field Services of the Division of Coastal Resources.

'QUIET SEASON' BONUS FOR STATE PARK USERS

Parking fees have been discontinued at 20 state parks/forests and reduced to \$1 daily at Island Beach State Park until the busy season begins again Memorial Day weekend 1984. The summer "free parking on Tuesdays" program holds true at Island Beach year-round. Free parking in the off-season is in effect at the following areas: Allaire, Atsion, Barnegat Lighthouse, Bass River, Batsto, Belleplain, Cheesequake, Hacklebarney, High Point, Hopatcong, Lebanon, Parvin, Ringwood-Skylands and Shepherd Lake in Ringwood, Round Valley, Spruce Run, Stokes, Swartswood, Washington Crossing and Wawayanda. All are administered by DEP's Division of Parks and Forestry.

DEP COASTAL PLANNER TAPPED FOR NOAA PROJECT

David N. Kinsey, who has been actively involved in the planning for the management and protection of New Jersey's coastal resources since coming to the department in 1975, is on leave for six months with the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service, based in Washington, D.C. He is serving as a Coastal Resource Specialist assisting the U.S. Agency for International Development in designing a multiyear coastal resources management project for developing countries. Kinsey, DEP's Director of Planning, had earlier served as director, Division of Coastal Resources and chief, Office of Coastal Zone Management.

NEW ENVIRONMENTAL LAWS SIGNED

In addition to the "Right to Know" law (see story, pg. 16B) Governor Kean signed several bills relating to various environmental matters over the summer. Brief descriptions of these are given below.

AJR-24 (Joint Resolution II, Public Laws of 1983) directs the Division of Parks and Forestry to formulate and submit to the legislature a master plan for more efficient utilization and management of the state's timberlands. Signed on June 29.

A-1244 (Chapter 230, P.L. '83) authorizes DEP to license operators of water supply and wastewater treatment plants and systems. "Water Supply and Wastewater Operators Licensing Act" signed, June 29.

S-1632 (Chapter 267, P.L. '83) exempts the owner or operator of a sanitary landfill from imposition of taxes for acceptance for disposal of solid waste generated by federal agencies. Signed, July 14.

A-1161 (Ch. 298, P.L. '83) makes resource recovery (recycling) facilities eligible for funding under the Industrial Pollution Control Act. The law permits counties to create authorities to finance and build such facilities. Under the new law, those authorities would be able to

extend credit to make loans against project costs for resource recovery facilities, provided they are approved as part of the statewide solid waste management plan. Signed, August 8.

A-1231 (Ch. 330, P.L. '83) prohibits businesses from abandoning industrial plant sites contaminated by toxic wastes and leaving them for the state to clean up. This "**Environmental Cleanup Responsibility Act**" requires any firm which generates, manufactures, refines, transports, treats, stores, handles or disposes of hazardous substances or wastes on-site, above or below ground, and is planning to close, transfer or sell its property, to insure that any contamination has first been removed. Companies whose sites are contaminated by toxic wastes will have to submit clean-up plans to DEP for approval prior to their sale or closure and post surety bonds for the amount of money it would cost to decontaminate their properties to guarantee that they undertook the work necessary to clean up their sites. Firms that do not have toxic waste problems will have to submit written declarations to DEP, which must approve them before the property can be sold or closed. Signed, September 2.

Continued on page 16D

ENVIRONMENTAL LAWS

A-3256 (Ch. 331, P.L. '83), "The Northeast Interstate Low-Level Radioactive Waste Management Compact Act," provides for the management and disposal of low level radioactive waste, enacting and entering New Jersey into the Northeast Low-Level Radioactive Waste Management Compact. (New Jersey became the fourth state to enter the compact, the others are Connecticut, Delaware and Maryland. The remaining states eligible for membership are Maine, Massachusetts, New Hampshire, New York, Pennsylvania, Rhode Island and Vermont.) The compact provides a legal framework for a cooperative regional approach to meeting state responsibilities under the federal Low Level Radioactive Waste Policy Act of 1980. After January 1, 1986, regional facilities may legally refuse to accept wastes from states which have not entered the compact. When formally established, the compact must be ratified by Congress. Signed, September 1. Governor Kean said, "Our failure to enter this compact could only result in enormous costs being placed on the shoulders of New Jersey's taxpayers in the future. Our membership in the compact ensures that New Jersey will have a hand in determining how and where these wastes will be treated, and will allow us to share the costs associated with disposal with other states."

Continued from page 16A

SUPERFUND

through DEP, plans to do 200 preliminary assessments and 50 site inspections with the grant funds. Information to be obtained includes amounts, nature and toxicity of the hazardous waste at each site; types of treatment and disposal used; geological, hydrogeological and topographical data, as well as current conditions. The state will evaluate and rank the sites in need of cleanup. The ranking will then be submitted to EPA for consideration for additional Superfund grants.

Continued from page 16A

CLEAN-UP

Drum Dump, Tabernacle (Burlington); **Cooper Road**, Voorhees Twp. (Camden); **De Rewal Chemical Co.**, Kingwood Twp. (Hunterdon); **Diamond Alkali Co.**, Newark (Essex); **Woodland Twp. Rt. 532 Dump**, Woodland Twp. (Burlington); **Hopkins Farm**, Plumsted Twp. (Ocean); **Wilson Farm**, Plumsted (Ocean); **Upper Deerfield Twp. Landfill**, Upper Deerfield Twp. (Cumberland); **Woodland Twp. Rt. 72 Dump**, Woodland Twp. (Burlington); and **Landfill & Development Co.**, Mt. Holly (Burlington).



Filming for *New Jersey Outdoors*, the first of the new outdoor series, "A Coast Walk" with Dery Bennett, Executive Director of the American Littoral Society, and Pete McLain, host. This show is funded by EXXON Corporation and photographed by New Jersey Public Television in cooperation with the State Federation of Sportsmen's Clubs.

A CHALLENGE FOR N.J. GIRL SCOUTS

The United Nations has proclaimed the eighties as the International Water Decade and the Girls Scouts of the USA have taken up the challenge as members of the World Association of Girl Guides and Girl Scouts. To stimulate interest in the problem of water, GSUSA developed guidelines for projects that promote the wise use of water resources. Girl Scouts across the country are engaged in study and service projects related to water: habitats, safety, conservation, water purity, water in the arts and in history, water and food, water emergencies, aquatics and boating. Some girls are developing programs on recreation and hydrotherapy for people with disabilities. Others are exploring water-related careers.

Most girls become Girl Scouts for fun and friendship. As they grow in an informal educational program they derive personal satisfaction from acquiring new skills and testing their talents. They are encouraged to use their skills and talents to benefit their communities. Girl Scouting has a way of motivating girls to community service through companionable activities and projects. This motivation becomes a habit that carries over into adulthood and builds responsible citizenship.

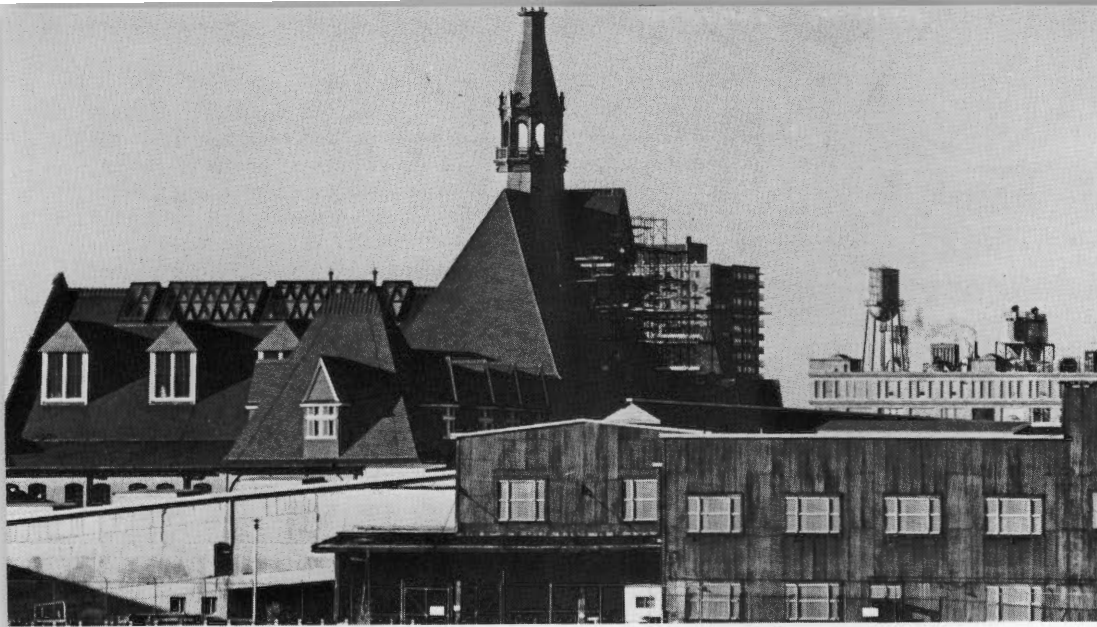
New Jersey Girl Scouts have been involved in water conservation concerns since 1979 when they received a Sea

Grant to support training for adult volunteers and educational activities for girls. At the marine education site at Sandy Hook, Girl Scout volunteers and staff members from ten counties met with DEP officials and representatives of national and state organizations that foster water resource conservation.

As an outgrowth of these sessions, many local projects were initiated. Enthusiasm continues with the national and international emphasis on the eighties as the "Water Decade."

Lenni-Lenape Council which serves Passaic and Sussex Counties held a Jamboree at Willowbrook Mall in Wayne, with a "Gift of Water" theme. During the last water crisis, Essex County Girl Scouts distributed water conservation checklists to 100,000 families.

It is difficult for children in our society to visualize the deprivation that water shortage and contamination has created in other countries. The Girl Scout program presents a panorama of the uses and benefits of water in the child's own community and neighboring areas. It explores the recreational, economic, cultural and historical significance of water. Through a variety of experiences geared to each age level, children are able to see how the lack of resources affects the development of countries. They begin to see the dangers of assuming that it can't happen here.



From the right, this view of the partially restored terminal shows a vestige of the French Chateaux style. Buildings in the lower front are now demolished. Note ... the Howard Clock is not yet in place.

THE C.R.R.N.J. TERMINAL

BY ROBERT J. McDONNELL

DEFINITION: Normally, "railroad terminal" or "terminal" refers to a complex consisting of at least two sections; namely, a "train shed," where trains are stored next to concrete platforms, and a "head house," an antechamber where passengers wait. The Terminal described herein included a third element called a "jerry house," because it is a waterfront terminal.

A quick glimpse at a Hagstrom's map detailing Hudson County's waterfront shows well-planned, contiguous layouts of rail lines, freight yards, and terminals from which locomotives and diesels, first pumped, then electrified a heart that pushed the lifeblood of progress into our industrialized nation. Although for years these arteries efficiently carried passengers and freight to destinations both near and far, the railroads' heyday ended with the arrival of cars, trucks, and airplanes. One by one arteries hardened, then eventually closed, thus inflicting a myocardial infarction on the railroad business. Yes ... a society hell-bent on

reaching destinations "yesterday," now looks at rail transportation through disgusted eyes.

But even our most scornful eyes harbor respect (perhaps secretly) for railroads, because our human nature engages in a love/hate relationship with them, an affair punctuated by nostalgia. For example, I don't relish waiting for delayed trains at a station; yet I fondly recall catching soot and cinder in mouth, nose, and eyes while I stood atop a bridge overlooking the Erie-Lackawanna tracks, as a "steamer" rumbled along arrow-straight rails.

Now, some 30 years later, I find myself describing and photographing a railroad terminal located in Jersey City—the historic 1889 Central Railroad Of New Jersey Terminal, part of Liberty State Park. Although nostalgic, this venture also stands laced with irony for me, because 50 years ago my grandfather, a passenger in a taxicab, was killed by a Central Railroad freight train passing near Caven Point—a scant mile or so from this same terminal!

With nostalgia and irony pushing me forward, I entered the Terminal, now being restored to its 1913 look, and my initial glance sparked disbelief, an incredulity thrusting me into a "time-warp."

I was looking at an EMPTY railroad terminal (head house), the kind pictured in model railroad magazines of times past. Here stood a massive, empty hall with beautifully refinished doors leading to a waiting room on one side; while, on the other side, signs proudly proclaimed track numbers 1-20 (train shed) to invisible guests.

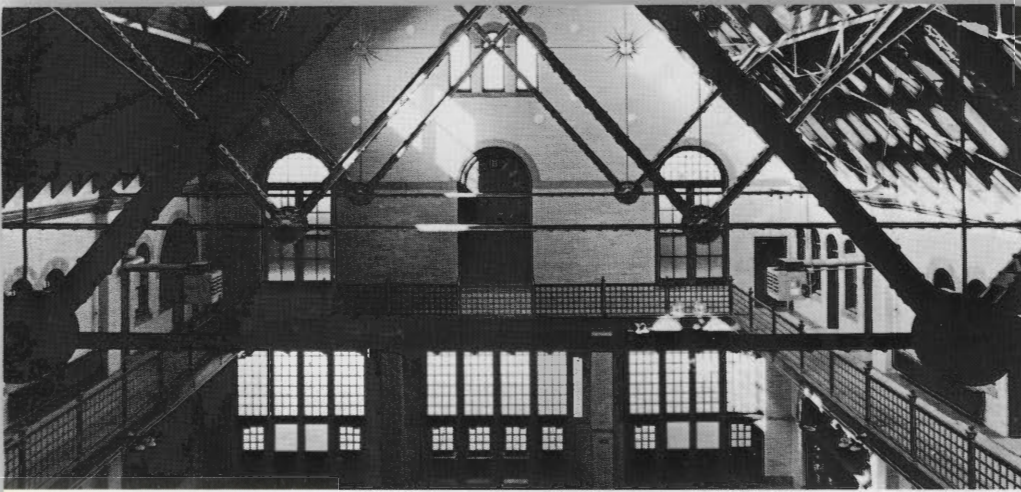
Looking through iron gates that once separated passengers from trains, I saw only overgrown trees and weeds concealing concrete platforms standing beside tracks now removed.

I pictured myself caught within an impatient crowd waiting in line to purchase tickets for ferries or trains, while a horde of humanity rushed in the opposite direction to "Track 13" as a conductor hollered, "All board!"

Today's Train Shed provided for twenty trains. Here a lineup of track numbers are shown.

Looking into the Bush-type Train Shed, one sees "bushes" and weeds taking over the shed. Notice the open areas for ventilation above each "track" and an "umbrella" above each platform.





From a third level balcony in the "Waiting Room," one sees the symmetrical V-shaped trusses, complete with star-like decorations. Skylights are also clearly dominant as are doors and windows.

Leaning against a wall in a southern corner, a well-dressed man puffed a long Havana cigar as he leisurely perused the daily newspaper. In yet another section of the Terminal, anxiety-filled and confused immigrants, fresh from a ferry departing Ellis Island, huddled in distinct ethnic groups: Italian, Russian, Irish, and German—each group appointing a spokesperson to obtain information on transportation to their new homes in America.

Constables sporting pressed blue uniforms and thick Irish brogues twirled varnished nightsticks as they meandered about the Terminal while greeting commuters with a cheerful, "Good day to you."

Two children "dressed to the nines" stood impatiently holding their mother's hands while whining the timeless question: "Mama, when will we be at Grandma's?"

In the waiting room, a disheveled soul begged for alms, using the well-known line: "Brother can you spare a dime!" And, oblivious to noise produced by machine and man, a soldier and his tearful bride embraced as they stood on a balcony overlooking the antechamber.

Finally, before my "time-warp" ended, I swear I saw Humphrey Bogart and James Cagney waltzing around in search of each other! Indeed, the ambiance permeating this terminal blended the suspense and romance of *Casablanca* with the cheerfulness and gaiety of *Yankee Doodle Dandy!*

THE C.R.R.N.J. AT SOUTH COVE, JERSEY CITY

In 1860, the Central Railroad Company of New Jersey received permission to build a terminal complex along the waterfront in Jersey City. However, railroad officials soon discovered that other railroads already possessed "prime" locations, so C.R.R.N.J. had no choice but to settle for the less-than-ideal South Cove—a series of mud flats near an area called Communipaw. Today, Communipaw Avenue (a.k.a. Rt. 1 or the Lincoln Highway) terminates about one mile from the railroad terminal; but Johnston Avenue, renamed Audrey Zapp Drive inside Liberty State Park, leads directly to the terminal.

Garbage from New York City served as

landfill (sounds familiar) and the railroad reactivated the forgotten Communipaw Ferry running between Jersey City and Manhattan.

Once mud flats were adequately filled, construction of buildings started and their design kept pace with rapidly changing engineering technology and construction methods. For example, construction of long spans necessary for large train sheds was made easier by using both cast and wrought iron; later, trusses or beams made entirely of iron came to be and iron was utilized in what were called gable and balloon types of shed.

Near century's turn, reinforced concrete and steel buildings began springing up in certain parts of the country, so the Jersey Central Line capitalized on the strength and size of these types of building. The 1913-14 train shed (to be described) was so built, as were a pier and roundhouse.

THE C.R.R.N.J. PASSENGER TERMINAL, 1889

In 1889, C.R.R.N.J. constructed a new, maritime passenger terminal at South Cove. The complex was divided into three parts: the Ferry House, a one-story wooden building containing four ferry slips on the Hudson; the Head House (in the middle) that acted as a migration route and "holding area" for passengers awaiting transportation; and a Train Shed on the west side, from which trains departed.

Probably the terminal's most distinctive feature was its Head House, designed by Peabody and Sterns, a Boston-based firm that, five years earlier had designed the largest station up to that time. The Head House followed French Chateaux style overall, although Neo-Romanesque was used for detailed work. From its outside, the Head House looked T-shaped, with the tail of the T (and the building's highest part) facing the Hudson River. The tail consisted of the central pavilion that was crowned by a narrow, steeple-like cupola, and that supported a glass-encased Howard clock which faced the river.

Each end pavilion sported three dormers sitting atop a steeply pitched roof, while adjoining lower links contained three dormers

each along the harbor side.

The Head House was enormous, a 215 X 125 foot rectangle (26,875 square feet)—the equivalent living area of about 20 modest houses of today. The central waiting room, 64 X 96 feet (6144 square feet), contained a Ticket Office and, off to the sides, other rooms housed Telegraph Office, Lavatories, Kitchen, News Stand, and more. The room was illuminated by a series of skylights located along the building's ridge line, thus natural light pouring through skylights accented the beautiful cream-colored, English glazed brick and bluestone flooring adorning the waiting room.

The 1889 terminal is also noted for its Train Shed, whose total width reached 215 feet via six shed roofs of 36 feet, 4 inches each; its length spanned 552 feet, 6 inches, thanks to 17 trusses spaced 36 feet, 6 inches on center. The shed, of gable design, stood as the largest gable shed ever erected; it was also the last of its type.

This shed, with load-bearing walls containing windows, provided "a clerestory continuously running above shed roofs, a continuous monitor at the ridge, and an end wall entirely glazed." Thus, the shed, which housed 12 trains, permitted ample illumination, a major breakthrough in shed design.

The 1889 Train Shed was replaced in 1913-14 by a shed following a design discovered by an engineer, Lincoln Bush, and the existing shed, which housed 20 trains, is of the Bush design. Incidentally, the Bush design was superior to older designs because it provided a continuous vent over each track and a continuous umbrella over each platform.

THE FUTURE

My personal opinion regarding the beauty and splendor of this complex is well-stated in the beginning paragraphs of this article. I hope my photographs convince you too, that this historic building is a beauty worth preservation and visitation.

What lies in store for the Terminal Complex in future years? Completion of the Terminal Complex restoration is scheduled for 1985, although some of the complex is partially restored now. (The terminal is not yet open to the public.)

Many social functions are thought to be suitable for the complex—it could house art shows, formal dances, and the like. It could also be opened for historic tours. Imagine attending a New Year's Eve party at this waterfront complex? How about a convention for railroad buffs? Incidentally, I'm told a train will eventually leave "Track 1" for an excursion to Caven Point and back. This feature should be a favorite of adults and youngsters alike, while ticket fees will help offset restoration cost.

ACKNOWLEDGMENTS

I'd like to thank Jerome J. McCabe, Special Assistant to the Director, Division of Parks and Forestry, for allowing me to photograph the Terminal Complex. He also forwarded a comprehensive history of the complex, so the writing of this article was easier than it should have been.



Seedling Sale

New State Nursery Produces Quality Seedlings

BY DEBORAH A. BOERNER

Winter is almost here and the chill wind reminds you how much more energy efficient your house would be with a windbreak at the northwest corner of your property. A grove of evergreen trees in the backyard might be nice, too. It would attract wildlife and birds within viewing distance. And how about that sloping field out back that is overgrown with every weed species imaginable? A few trees planted there would keep the soil from eroding, might conserve water, and would certainly be more aesthetically appealing.

These are just a few reasons why a seedling sale by the New Jersey Bureau of Forestry should interest you. Now is the time to order seedlings for the upcoming spring, when the Bureau plans to provide (450,000) seedlings to interested landowners and municipalities at a cost of *only* seven cents per seedling. Two-year-old white pine, Norway spruce, Japanese black pine, pitch pine, and loblolly pine seedlings are available. Various hardwood seedlings including red oak, pin oak, black locust, autumn olive, tulip poplar, black walnut, and hybrid poplar will also be sold. Orders must be received by February 1. Seedlings may be distributed for pickup to certain county locations throughout the state, or they can be picked up at the state nursery in Jackson this spring.

To qualify for a seedling purchase, landowners must own at least five acres of ground and be willing to plant a minimum of 500 seedlings for reforestation purposes. At the recommended spacing of 6' x 6', approximately 1,200 trees can be planted on an acre. A minimum order of 250 trees per species is required. What is meant by reforestation is that the trees will not be sold as nursery stock. The trees may be grown for the production of timber products, however, and half the trees may be thinned and sold as Christmas trees.

The reforestation clause is a policy the state nursery has held since its inception. The Bureau does not wish to compete with private nurseries in the production of Christmas trees or ornaments. Its primary interest is in seeing that trees raised in the state



Bureau Forester, the late Otto Kunkel, examines a cone for seed at a seed orchard in Washington Crossing.

nursery provide an incentive to landowners throughout the state to plant trees for reforestation purposes.

For years, the Bureau of Forestry has sold seedlings from its nursery each spring. This year, however, marks the first year the seedlings to be sold will be seedlings raised at the state's new nursery. In 1982, the state nursery operation was moved from Washington Crossing to Jackson. The first seed was sowed in Jackson soil in November of that year. The move was a significant one and resulted in better seedling production. Jack Baggaley, Nursery Superintendent since 1972, describes the differences between the former nursery and the new one as "like night and day." The soil at the Jackson site in Ocean County is 83 percent sand, very close to the optimum soil composition of 85 percent sand/15 percent silt and clay. Not only does the light, sandy soil at Jackson allow better drainage for good root development, but it also permits soil tillage and tree lifting early in the spring. Early harvest and distribution are important to getting the trees planted before bud break.

The 280-acre Jackson site is more spacious than the former nursery grounds. Thirteen acres of nursery seedbeds are more than twice the area

previously devoted to seedling production at Washington Crossing. Although seed orchards are still maintained at Washington Crossing, new seed orchards have been established at Jackson. More than 10 acres of superior seed orchards for white pine, shortleaf pine, loblolly pine, pitch pine, loblolly X pitch pine hybrids, and hybrid poplar are presently started in Jackson. Quail pens from when the area was a quail propagation farm operated by the Division of Fish, Game, & Wildlife are used to store machinery and equipment. Other buildings on the site have been equipped with refrigeration to store seedlings and prevent them from breaking bud between harvest and distribution. An irrigation pond and extensive pipe system provide water to the seedlings and thirsty pine barrens soil. Additional forest management activities at Jackson have included a 26-acre prescribed burn, a 12-acre firewood sale, and a 35-acre gypsy moth control program.

The goal of the new forest nursery is to provide one million genetically superior seedlings to public and private lands throughout the state in 1985 and the years that follow. The function of the seed orchards is to produce genetically improved seed and seedlings.

Another function of the nursery is to provide an information and education facility for forest management activities. In its first year, the nursery held programs for six college groups but would like to reach all age groups in the future. Several buildings on the site have been renovated and are available for meetings; they might be particularly useful to Christmas tree growers and groups with related interests. Guided tours of the nursery are by appointment, but anyone is welcome to come and see the nursery on their own. Picnic tables shaded by large oak trees are on the grounds for the public to enjoy.

If interested in a seedling purchase, fill out order blank below and send to New Jersey Forestry Services, Labor & Industry Building, Room 713, CN 404, Trenton, N.J. 08625. The public is welcome to visit the new nursery located in Jackson, four miles south of Exit 17-Rt. 195 on Route 527/528.

I AM THE OWNER OF AT LEAST 5 ACRES OF LAND IN NEW JERSEY AND AM INTERESTED IN REFORESTING _____ ACRES.

NAME _____ () _____ PHONE NUMBER _____

STREET _____ TOWN _____ STATE _____ ZIP CODE _____

—At 6' X 6' spacing plan for approximately 1,000 trees/acre.

—Minimum order 500 trees.

- Please send order blank and instructions for seedling purchase to me.
- I am planning to plant 5 acres or more and would like to discuss my plans with you by phone.

Just passing through



BY JOHN HURSHMAN
PHOTOS BY AUTHOR

It is unmistakably autumn, again. The trees throughout the state have put on stunning multicolored displays of red, orange, and yellow. The air has a clean crispness to it. In the evening, we feel the first touches of frost, a warning of much stronger things to come from the North in the impending months of winter.

To me, though, one of the most impressive signs of autumn is the beginning of the southward migration of many birds to their wintering grounds. Canada Geese flying overhead honking in the night, Red-winged Blackbirds forming into large flocks that look like clouds of dark smoke as they fly from field to field—these are just two of the many happenings of the fall migration.

The most spectacular aspect of the fall migration in New Jersey, however, is probably the flight of the Snow Geese. The southward migration route of some of these long-distance travelers will take them from the Arctic tundra and over New Jersey to their wintering grounds further south. As many as 40,000 to 60,000 of these handsome white geese will

pause in their long migration to rest and feed in the fresh and salt water marches of Brigantine National Wildlife Refuge in Oceanville, New Jersey. As the Snow Geese arrive, the air comes alive with fascinating sights and sounds. All day long, large feeding flocks of perhaps 4000 to 5000 geese fly in and out of the Refuge, raising a clamor of honking and calling as they fly overhead in their V and U-shaped formations. When a large flock takes off nearby, you are inundated with a sound like distant thunder as thousands of wings beat the air to carry the flock skyward.

What are these birds that give us such a spectacular show, and where do they come from? The Snow Goose, sometimes called "The Emperor of the North," has the scientific name *Chen caerulescens*. It is a medium sized goose, 25-31 inches in length with a wingspread of 53-60 inches. It is all white with black wingtips (primaries), and while both sexes look alike, the male is somewhat larger. The Snow Geese that migrate through New Jersey breed in Arctic North America and winter along the Chesapeake Bay—Currituck



Sound area of Maryland, Virginia, and North Carolina. Their annual round-trip migration flight covers 6000 to 10,000 miles.

The Snow Geese begin to arrive at Brigantine in late October or early November. They usually stay until sometime in January, continuing their migration south when the first hard freeze grips the Refuge marshes. They do not return in significant numbers in the spring, when only 100 to 150 Snow Geese pass through the Refuge, because a different migration route is used north to the breeding grounds.

Brigantine National Wildlife Refuge is well suited as a host for the Snow Geese and other waterfowl. The Refuge, administered by the U.S. Fish and Wildlife Service, covers more than 20,190 acres most of which is saltmarsh, where the Snow Geese feed on marsh grasses and aquatic plants. This habitat is further enhanced by 1600 acres of fresh water and brackish water impoundments in which the Snow Geese drink and bathe. The Snow Geese did not stop at Brigantine until these impoundments were completed some 15 years

ago.

Visitors to Brigantine can best observe the Snow Geese by driving the eight-mile auto tour route along the impoundment dikes. From this tour route, you can easily observe the Snow Geese resting and preening in the impoundments, and you can experience the thrill of hearing and seeing the large feeding flocks as they fly overhead to and from the saltmarshes.

Brigantine National Wildlife Refuge is open to visitors from dawn to dusk, seven days a week. The Refuge offers a wide variety of other bird life to observe; more than 270 species have been identified on Brigantine at various times of the year. However, the variety and total number of birds are greatest during the spring and fall migrations. A nature trail and foot trails are also available. Why not drive out to Oceanville and experience the migration of the Snow Geese and other Brigantine attractions, as more than 125,000 people a year do? Brigantine is located just east of Route 9 in Oceanville, approximately 11 miles north of Atlantic City.



Hedgerow ringnecks

BY THOMAS DALE PAGLIAROLI

PHOTOS BY
LEONARD LEE RUE III

Mark Butler and I sat in the front seats of his Volkswagen Rabbit, sipping hot coffee while discussing our tactics for getting a bird or two into the air. Pheasant season was rapidly drawing to a close, and the birds came hard after the relentless pressure put on them before deer season. As we talked, four hunters pushed their way through the cornfield in front of the car. We were at a popular central New Jersey wildlife management area which played host to sportsmen six days a week.

"Think they'll put up a pheasant?" Mark asked.

"Probably not," I replied. "They are wasting their time in that field. The birds sure as hell aren't going to sit there and wait to get flushed."

The hunters were about two-thirds of the way through the corn when a hen darted out onto a weedy path bordering the field. She was followed by two cocks and a second hen. The birds milled nervously as the hunters came closer, finally darting into a hedgerow which separated still another cornfield. The cocks were nowhere to be seen.

Both Mark and I kept our eyes fastened to the hedgerow while conversing in muted tones.

"See that?" he whispered.

"Yeah. Did you see where those birds went?"

"As far as I can tell, they are still in that hedgerow," replied Mark, "and I know I didn't see them come out."

The hunters finally made it through the field and stood on the same weedy path which the four pheasants had occupied only moments before. A quick conversation regarding the lack of birds was barely audible in the biting air of that December morning, and a quick agreement was made to hit the adjacent field. The four then bulldozed through the hedgerow and continued on their way, plowing down the dried and frozen stalks, and were soon swallowed by the skeletal configurations of the dead plants.

When the noise finally died down, a pheasant's head popped out from an abandoned chuck hole hidden in the nightmare of piled stones. The second bird eventually showed itself from underneath a halo of thorns and



dead leaves. Both pheasants then scooted up the path for almost a hundred yards before hanging a quick right and disappearing into a multiflora rose thicket which formed a vague U-configuration at the very top of the hedgerow. There was no way to tell if they moved on through the tangle or were holding tight. Either way, that is where we were heading!

Needless to say, the jungle of vines and thorns was formidable, and it snared and stabbed anything within reach. I elected to play "bird dog" and dived into the mess. There was no use trying to pick my way through such a thicket. I didn't even see the first bird go up. The simultaneous thud of Mark's Winchester 101 and the eruption of wings at the edge of the tangle instinctively caused me to shoulder the Ithaca 37 just as a garish cock beat its way over my head. Shots taken at 12 o'clock aren't a personal favorite, but I folded the bird with a deadly swarm of #6 pellets.

It was no use working the fields, so we scrubbed a number of hedgerows before we came upon one which just looked too birdy to leave alone. We repeated the routine and two hens and a cock thundered up and out over a field, affording us the luxury of choosing our shots.

I tumbled a hen while Mark dropped the big male almost thirty-five yards out. The tail on the cock was almost a yard long and sported a vicious looking set of spurs. In all likelihood it was a native bird which had run out of tricks.

"Not bad for an hour's work," I called to Mark as we made our way down to the car. "Plenty of time for you to get some work done."

Mark is a medical student who has to sandwich hunts in between classes, exams and hospital duty.

We met a few hunters in the parking lot who had been combing the fields since sunup and had but one hen to show for their efforts. The general consensus among another group of uplanders at a local eatery was that the pheasants were pretty much thinned out on the public lands and that the Bureau of Wildlife Management had ceased its stockings for the season. Comments were made about



holdover and wild birds, but these were shrugged off as "not worth the trouble."


Many pheasant enthusiasts became disillusioned with hunting for this gamebird after deer season had passed. Stockings have been drastically curtailed, and the Bureau is preparing bobwhite quail releases to sate the hunger of bird hunters who trek the fields until the February closing. Those pheasants which have managed to hold over, as well as any native birds in residence, have become educated in the ways of autumn survival and will not hold tight in the corn and weedfields as they did during the opening weeks in November. After thousands of bootsteps have trampled through their upland home, the birds become skittish and retiring, preferring to utilize leg power to motor into thick cover rather than taking to wing in the classic fashion.

Hedgerows are a natural for pheasants because they offer much in the way of hiding places. Chuck holes, vine tangles, broken stumps and logs are but a few of the places a bird will hide when hunters are beating the brush and polishing the fields. Why hedgerows are ignored or given only token consideration is puzzling, but I suspect it has something to do with the fact that despite being lengthy, many view them as being too narrow to attract anything more than songbirds. The reason pheasants will sit tight in a hedgerow is in great part due to the sportman's lack of attention and/or willingness to work down the middle of the cover and stomp around. A few half-hearted kicks will not roust a skulking pheasant out of hiding and into the open. Jumping up and down on the heavier cover and investigating each and every nook and cranny is the only method of hunting a hedgerow successfully. It is easy to distinguish the hedgerow buster and the field gentleman by the scratches and cuts on the former's face, hands, neck and ears. It is not easy hunting and will prove somewhat time consuming if done properly. Checking out the entire hedgerow with painstaking care is vital because a ringneck will hide in a patch of cover which would make a meadow mouse claustrophobic.

Hunters without dogs will not be at a disadvantage if they concentrate on hedgerows instead of fields. Since the majority of 'rows are narrow, the bird really has nowhere to go and will nearly flatten itself out in an attempt to remain concealed. If the bird does decide to run, it will most likely be seen by the one hunter who remains just to the outside of the hedgerow while his partner is working the middle. In the case of the lone uplander, enough of a commotion will be made by the departing ringneck to get his attention. Then it will come down to stalking the bird until it has nowhere to go but up. A three man setup is perfect for working the 'rows because all sides will be covered, and the extra man will allow for more thorough coverage of the wider hedgerows.

This is not to say that hedgerow pheasants are not for the dog fancier. A flushing breed such as a springer will worry the birds out into the open. One of the finest flushers I had the privilege to hunt with belonged to Jake Philhower of Hunterdon County fame. Mooshi smelled like a decayed mouse nest, had sagging teats and was blind in one eye. Her nose was absolutely incredible though, and Jake pointed this out to me by carving a notch in a black walnut hull, letting the dog sniff it and then throwing it in among the thousands of hulls littering the bushes. Mooshi brought back the cut hull every time! When it came down to getting birds out of even the tightest of hedgerows or the thickest of cover, she was the champ. Her great nose and squat body allowed her to do things dog men wish for, and many a pheasant was put in the bag thanks to that smelly little cocker.

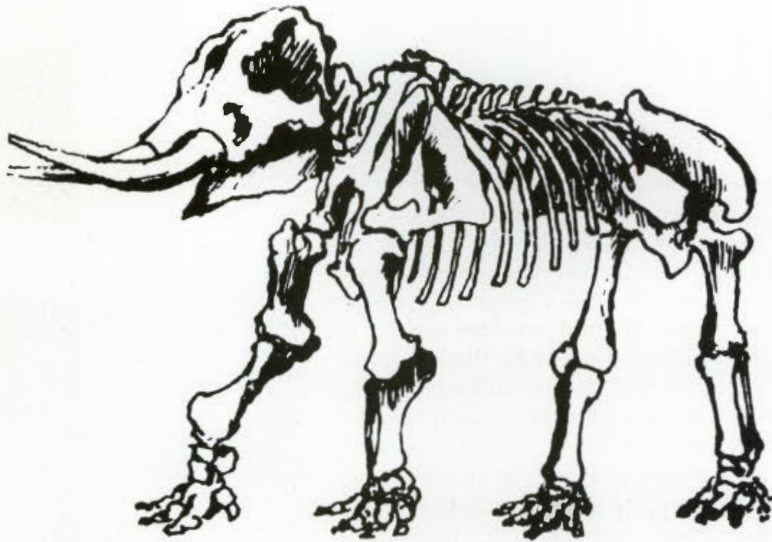
Beagles with a penchant for bird stink will also work wonders on hedgerow pheasants. These hounds will get right in there with the birds and get them out in a hurry. It may be necessary to run with the beagle in order to get a shot at the bird due to the fact that when a beagle is pressing the quarry, there is no letting up.

The pheasants are still around after the deer season. Hedgerow ringnecks are smart, fast and will take to the cover before the air. Forget the fields. The hedgerows are the place. 



Springer spaniel retrieving ring-neck pheasant.

BY ELEANOR GILMAN
PHOTOGRAPHS BY ADOLPH STRUSE



The Dwarskill mastodon



Although it's been several years since the excitement began, school children still ask to see the "big bones" at the Bergen Community Museum in Paramus. Indeed, the museum's big attraction—the Dwarskill Mastodon—continues to enthrall children and adults alike.

About 60 other mastodon skeletons (most are merely bones or fragments) have been unearthed in the state of New Jersey and the Dwarskill (from *kill*, the Dutch word for creek or stream) is probably the most complete, according to Joan Kuyper, director of the museum. She adds that the camaraderie among the scientists, schoolchildren, and other volunteers who participated in the dig still surfaces whenever they recapture the excitement of that time.

The fortuitous discovery took place in the spring of 1974 when an employee of the Hackensack Water Company arrived at the Oradell Reservoir in Norwood to upgrade a small brooklet entering the main body of the reservoir. While operating a drag line in the cleanup procedure, he discovered something on the embankment that he first thought was an old tree stump. Upon examining the four-foot-long object, he realized that it was a thigh bone.

He stopped the operation, and authorities at the Hackensack Water Company contacted officials at the American Museum of Natural History in New York, who sent three young paleontologists to the site.

It was determined that the bone came from a mastodon, a massive beast that roamed the earth in herds during the Pleistocene ice age from five to ten thousand years ago. Mastodons were characterized by elongated noses and by tusks. The grown male grew to ten feet at the shoulder and weighed four tons. Although he was not as tall as his distant cousin, the elephant, he was more heavily built.

Frozen specimens discovered in Alaska show that the mastodon was covered by a heavy coat of course reddish-brown hair. The huge teeth were strongly ridged by transverse cross crests. Unlike another distant cousin, the mammoth, who was a grazer, the mastodon was a browser, eating twigs and little branches which were gulped, not pulverized; pieces an inch long have been found accumulated in the stomach area of mastodon fossils.

With the aid of the Bergen Community Museum, an excavation team composed of children, housewives, and other volunteers who heard about the discovery, was organized. Eschewing the usual method of probing in mapped-out squares, the excavators, led by the three paleontologists, took a chance and began digging in the area where the thigh bone was found. They were lucky; piece by piece, parts of the skeleton emerged from the muck. "It was hard work," recalls an amateur

archeologist who was part of the team. "We had to dig through thousands of years of decomposed vegetable matter. It stuck to the blade of the shovel and kept us literally glued to the ground." He remembers coming out of his boot which tenaciously stuck to the earth.

As bones of the backbone, legs, and rib cage of the mastodon were found, slowly a picture developed and was recorded on a master plan. In all, 60 percent of the skeleton was recovered. The head was never found; it is theorized that it may have floated away to another area. A quarter of a tusk was discovered in a crushed state and put together through the painstaking efforts of one worker.

Carbon dating revealed that the Dwargskill Mastodon lived about 8000 years ago, and because the calcification process was incomplete, experts believe that it was a young adult specimen. Jessica Harrison, one of the three paleontologists involved, said they were unable to get a good radiocarbon date on this specimen.

There are two theories on the cause of its death. One is that it was unable to extricate itself from a mud hole it which it became stuck. Another speculation is that during the winter, the huge beast broke through a layer of ice and could not escape. (There was no evidence of predators in the area to account for an attack.)

With the completion of the dig, the long, arduous process of reconstructing the skeleton began. After being transported to the Bergen Community Museum, the bones had to be cleaned, treated with preservative, and dried; shoulder blades and pelvis imbedded in plaster casts and jacketed; and the vertebral column glued and attached to an arched rod. "Every Saturday, we soaked bones," recalls a volunteer.

The painstaking task of building the skeleton piece by piece lasted for more than a year. A plastic replica of a mastodon head was provided, as were its front feet.

Work still remains to be done. For example, the legs, now lying on the floor of the exhibit, need to be attached. Perhaps when the exhibit is completed, visitors will gaze at the awesome, beautifully preserved skeleton, then look above it to the mural of a mastodon in its natural surroundings, and begin to wonder at and truly appreciate this rare find.

The museum also boasts the skeletal remains of the Hackensack Mastodon, unearthed by paleontologists in 1962-63, as well as fossils, mineral and rock specimens, northern New Jersey Indian artifacts, mounted specimens of birds that inhabit Bergen County, a nature room and discovery room for children, and an art collection.

Museum hours are Tuesday to Saturday from 10 to 5 and Sunday from 1 to 5. The museum is located on East Ridgewood and Fairview Avenues in Paramus near Bergen Pines Hospital.



Cleaning the bones



Dig site



The Discovery





Old Christmases

Continued from page 3

and a child's sleigh to be drawn by a dog or goat are on display along with many other toys. Early publications on display will include an 1881 printing of "The Night Before Christmas" with illustrations by Thomas Nast.

The Steuben House is located on Main Street, one quarter mile north of Rt. 4 in River Edge. It is easily reached by taking Hackensack Avenue north from Rt. 4. Just past the second traffic light turn right onto Main Street and go straight to the end of the road at the river. Guests visiting the house during regular hours from December 8 until the end of the month will be able to enjoy the decorations.



The brick walls of the Old Dutch Parsonage housed the first Dutch Reformed Theological Seminary in America. This later became Queens College and eventually Rutgers University. Here during the Revolutionary War, Dominie Jacob Hardenberg ministered to his flock. On December 17 and 18, Friends of the Wallace House will sponsor "A Taste of Christmas" from 3:00 to 6:00 p.m. at both the Parsonage and the nearby Wallace House on Washington Place in Somerville. Volunteers will portray servants, military aides, family members and even Dominie Hardenberg himself. The floral decorations have been prepared by local community service organizations.

Visitors entering the Parsonage are offered the opportunity to sample hot mulled cider and "snicker doodles," an 18th century cookie, in the dining room. In the drawing room John Stokes plays the Harpsichord. Tour guides take visitors upstairs to meet the Dominie and his stepdaughter Eva Frelinghuysen. The house is decorated very simply and sparsely as was done during the 18th century.

A military escort accompanies the visitor to the kitchen door of the nearby Wallace House where Washington lived and worked from the fall of 1778 to the summer of 1779. Servants are preparing the Christmas feast in the kitchen; family members are gathered in the candle lit drawing room and dining room decorated with greens, fruits and nuts.

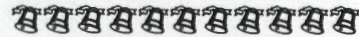
Visitors can reach the two historic sites by following Rt. 206 into Somerville, turning east on Somerset then right on Middaugh Street to Washington Place.

Washington's last military headquarters (1783) was here at Rockingham, an eighteenth century manor house located on present day Rt. 518 about a mile east of Rocky Hill and about six miles north of Princeton. Decorated with loving care by the Stoney Brook Gar-

den Club and staffed with volunteers of the Rockingham Association to assist the costumed resident interpreter, the lovely old house will be open to the public from 2-6 pm on December 11th.

The herb wreath around the brass door knocker welcomes us to Rockingham. Chamber music resounds through the house as visitors view a display of Victorian period toys throughout the first floor. In the dining room, polished fruit, greens, boxwood and pineapple are combined in a welcoming arrangement. The pineapple was a symbol of hospitality in colonial times and a rare treat for 18th century Americans. In the drawing room, arrangements of dried flowers delight the eye. On the old mantle, Queen Annes Lace sparkles like snow among the dark greenery.

Visitors will also tour the second floor bedrooms, see the colonial laundry building where the children card wool, and have refreshments in the kitchen house.



Christmas newspapers in the early 1800's told of the imminent arrival of Saint Nicholas by ship from Holland. Many New Jersey families of that period were of Dutch descent and they celebrated his arrival rather than our more modern Santa Claus who now arrives at the local shopping mall by helicopter. At Allaire State Park the Ladies Auxillary of the Allaire Village Association join with the Village Board of Trustees and Advisory Council to present "St. Nicholas Day" on December 3rd, from 10:00 am to 4:00 pm. Christmas will be celebrated as it might have been in Allaire Village just after their iron furnace was blown out in 1846. St. Nicholas Day at Allaire blends "a little fact, a little fancy and a little fiction" as the ancient village awakens for just one day.

Costumed volunteers will open the entire village and live in it for just that one day as its original occupants might have lived it. The General Store will feature Christmas gifts and the Ladies Auxiliary will have Christmas ornaments and memorabilia for sale. The old Postmaster will use a special cancellation stamp on your Christmas Card envelopes if you bring them to him. The General Store remains open from Dec. 3 to Dec. 18 every day except Monday. On the second floor you will be welcomed to "The World of Edward Hicks," noted primitive painter of the American past. Toy animals of "The Peaceable Kingdom" will be displayed for the youngsters delight.

Live animals inhabit the village barn and blacksmiths forge iron in their shop. Decoy makers carve in the old tinsmith shop. The smell of cookies and gingerbread draw you to the village bakery. Above the bakery the school room waits for its students. Two famous Americans of the 19th century, Samuel B. Morse and Alfred Vail are visiting in the foreman's cottage. Both were artists who then became inventors.



At the row house a family prepares for the holidays. The craft of quilting is demonstrated there. In the farm house the Dutch farmer sits by the fireside as the women prepare a feast for the family. "Scheerenschnitzen" or dutch paper cutting, spinning, and weaving are demonstrated. Lithograph and Christmas card tinting are shown for it was about this time that Christmas cards first became popular. Herb drying is also demonstrated.

In the old village church carolers sing the glad tidings and the village Christmas tree stands stately there, for in 1846 it was often found in the churches if not yet in all the homes.

Saint Nicholas strolls the ancient village street visiting with young and old alike for the village street is open to all who come. As no more than 1000 people can visit the buildings on this one day, building entrance must be limited to ticket holders. Tickets go quickly but some may be available by mail if you write to:

Top left: Drawing Room at Old Dutch Parsonage; right, Dining Room at Wallace House.

Above: Dining Room at Rockingham.



Costumed volunteers at Allaire

St. Nicholas, Allaire Village, Allaire, NJ 07727 and include \$4.00 for each ticket and a self addressed, stamped envelope. Allaire Village is located at Allaire State Park in Wall Township, Monmouth County.

Now a nostalgic look at Christmas past is over. In the historic old houses the tinsel and ornaments are stored away for another year. Greens and dried flowers find other homes. Poinsettias are returned to their donors. Volunteers who portrayed historical figures or acted as hostesses now hurry home to prepare a Christmas for their own families. All these events have been made possible by the efforts of volunteer workers, civic organizations, service clubs and community business men and women. They have given freely of their time to work with park personnel and historic site interpreters to bring you moments of Christmas past. We are grateful to them for the gift of a memorable Christmas present.



Chris Forrest—Red-Tailed Hawk



New Jersey's Wildlife Artists



Robert D. Fischer—Ringneck Pheasant



Ann Michels—
American Egret

Wilhelm J. Goebel—Red-Winged Blackbird



Michael Budden—Bluebirds



Donn Hettal—Thoroughbred



New Jersey State Library



Barnegat Lightship



East Point Lighthouse

Continued from page 5

In Atlantic and Cape May counties:

Beginning at Route 30 (White Horse Pike), drive east into Atlantic City. Turn onto Pacific Avenue and follow to Vermont or Rhode Island Avenue. The *Absecon Lighthouse* was built in 1857 and used until 1933 when it was decommissioned by the Coast Guard and replaced by an electric beacon on the Steel Pier. Some buildings, including the keeper's house and a U.S. Life Saving Service station, were destroyed in 1946 before public outcry halted demolition and saved the lighthouse. The Absecon Lighthouse is a sister structure to Barnegat Lighthouse. Both lighthouses were designed by Gordon Meade, who later gained everlasting fame as the Union Commander at the Battle of Gettysburg.

Returning to Route 30, proceed west to the Garden State Parkway. Take the Parkway south and follow to Exit 8, Route 147. Follow Route 147 into North Wildwood. The *Hereford Inlet Lighthouse* is next to the Coast Guard station on the south side of Hereford Inlet.

This quaint Victorian structure was built in 1874 and was used until 1963 when the Coast Guard sold the property to the DEP. In 1977 the lighthouse was registered in the State and National Registers of Historic Places. It is currently being leased to the City of North Wildwood and is being restored for use as an information center and maritime museum. The city hopes to have it open to the public soon.

Returning to the Parkway, proceed south to its end at Cape May City. Turn onto Lafayette Street and follow to Sunset Boulevard. Turn left onto Lighthouse Avenue and follow to the entrance of Cape May Point State Park.

The present *Cape May Lighthouse* is the third to have been built on the Point. The first lighthouse was built in 1823, the second in 1847, and the present in 1859. The first two were razed when they became threatened by the sea. Ruins from the base of the 1847 tower can still be seen on the beach front of the lighthouse. The Cape May Lighthouse was called the "flash light" and was once equipped with a first-order Fresnel lens. When the lighthouse was electrified this lens was removed and was placed on display at the Cape May

County Historical and Genealogical Museum at Cape May Court House. Presently the lighthouse is equipped with a 36-inch hyper-radial lens. The lighthouse is still in operation.

In Cumberland and Salem counties:

From the Parkway's end at Cape May, proceed north to Exit 4. Turn off the Parkway onto Route 47 West. Follow Route 47 to Dennisville. After Dennisville Route 47 becomes Delsea Drive. Follow this to Delmont. After Delmont turn left towards Heislerville. Turn left onto East Point Road and follow to the bay. East Point Lighthouse is on the right side on the beach.

The very picturesque *East Point Lighthouse* was built in the early nineteenth century. It was used until 1944 when the Coast Guard abandoned it. Severely damaged by fire on July 15, 1971, the lighthouse has been the victim of much vandalism because of its isolated location. However, it is now in the process of being restored by the Maurice River Historical Society.

Return to Route 47 by going through Heislerville via the Dorchester-Heislerville Road. Follow Route 47 to Millville where it becomes Port Elizabeth Road. In Millville take Bridgeton-Millville Road which becomes Route 49 West. Follow Route 49 to Pennsville. Turn left on either Lighthouse Road or follow signs to Fort Mott State Park. The Fort Mott Lighthouse is a short distance before the Fort at the "Y" in the road.

The *Fort Mott Range Light* (also known as the Finn Point Rear Range Light) is a 100-foot tower built in 1876. With a Greek Revival doorway, it is a rare surviving example of a wrought-iron lighthouse. If you continue down Fort Mott Road you will arrive at the historic fort which is a wonderful site for exploration. Picnic facilities are available.

This tour of New Jersey's lighthouses provides but a sampling of the approximately 30 lighthouses, 6 lightships, and 7 offshore lighthouses that have guided mariners in our state's waters. Most of these structures are no longer in existence, but we are still fortunate to have a fair representation of what may be among New Jersey's most significant historic structures.



Hereford Inlet Lighthouse

Barn Owls

Continued from page 7

and the leading edges of their wing feathers are serrated to dampen sound. Silent flight is necessary for the owl to hear sounds while it is hunting, and also for it to approach its prey without being detected.

In owls and other birds of prey there is a reverse sexual dimorphism (difference in size and/or plumage between the sexes) with the female being larger, heavier and stronger. Because of their long wings and loose feathers, owls appear heavier than they actually are. A female barn owl with a wingspan of 3½ feet seldom weighs more than 1¼ pounds.

Owls are very vocal birds. Probably the best known owl sound is "hooting," but barn owls do not hoot at all. Instead, they make a variety of sounds (some very weird), including a shriek which sounds like brakes screeching, beak clicking, hissing, and the "soup-slurping" of the young. Because visual contact between individual owls is restricted by darkness, vocalizations are a very important part of their nocturnal lives.

These mousetraps with wings are efficient hunters, striking quickly and surely, seldom missing their intended prey. They have large feet equipped with strong, piercing talons, and a sharp, hooked beak for biting and tearing. Their gape is large, and whenever possible the prey is swallowed whole. If too large, the prey is pulled apart and the pieces swallowed.

The barn owl is not only a meat eater, but actually a whole-animal eater. Yet not everything it eats is digested. In the muscular stomach (gizzard), undigested portions of whatever the owl has eaten are compressed into "pellets," then worked upward from the stomach, through the esophagus, and ejected from the mouth. The pellets, or castings, are thumb-sized, black, with a varnished look and resemble short sausages. One or two pellets are produced daily, depending on how much the owl has eaten. They contain the bones, teeth, and fur of the prey animals. Analysis of pellets collected from a roost or nest site can provide a fairly accurate record of the bird's diet. Scientific examination of barn owl pellets from northern New Jersey has shown that meadow voles (also called field mice), shrews, and rats make up about 95% of this bird's total diet. I have supplied pellets to school biology and ecology classes statewide, and once over their surprise at how pellets are produced, the students really enjoy owl-pellet studies.

Properly constructed and erected nest boxes will readily be accepted by barn owls. Providing such boxes not only increases the available breeding sites for resident owls, but may attract owls into areas where they do not now live. Here are two designs that I have used, but these are by no means the only ones that will work.

Figure 1.



A barn owl's two ear openings are different in size, shape, and position in the skull in order to increase the owl's ability to locate precisely the source of sounds.

Figure 2.

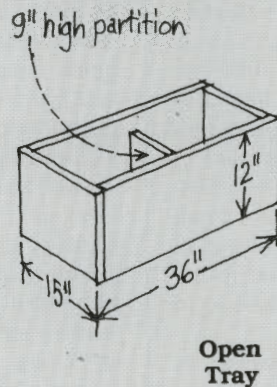
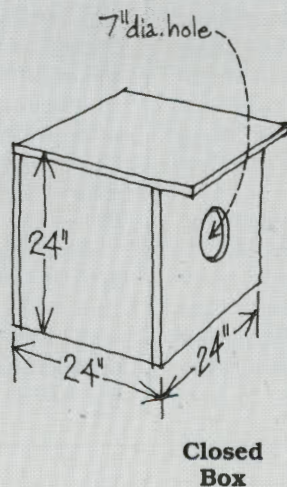


Figure 3.



The open tray (Figure 2) is the least expensive and easiest to construct. This type of box should be used only where a roof or covering of some kind already exists, as inside a barn, silo, or other building. Place the box high in the structure where it will be safe from house cats, raccoons, or too much human disturbance. It can be nailed fast, hung with wire or rope, or fastened with brackets.

The closed-box type (Figure 3) can be attached to the outside of an existing structure, hung inside a topless silo, erected on a pole, or placed in a tree. When erecting boxes on poles or placing them in trees, remember to choose open areas such as fields or meadows, for barn owls are birds of open country and will not use boxes placed in woods. For protection from wind and rain, face the entrance hole south.

In many parts of the United States barn owl populations have decreased alarmingly in recent times. The declines, in most cases, have resulted from the fact that this owl lives its entire life in close proximity to people. Some of the causes are:

1. Lack of suitable nest sites. Old barns, silos, and water tanks are becoming scarce, and with the recent popularity of wood burning, old dead trees are also becoming scarce.
2. Changes in agricultural practices have caused declines in availability of prey animals.
3. Poisoning. In attempting to control rodents, many people (sometimes entire communities) use large amounts of rodenticides. Eating a rat that has been poisoned results in secondary poisoning to the owl, and can be lethal.
4. Automobiles. Great numbers of barn owls are killed or injured while crossing or hunting near busy highways at night.
5. Shooting. Although not as serious a problem as it once was, it still does happen. All owls in our state are protected by federal and state law. It is illegal to shoot, kill, or capture an owl, or to possess an owl, dead or alive, without proper permits from both the U.S. Fish and Wildlife Service and the State of New Jersey.

My research over the past ten years (and recently, that of other researchers) has shown New Jersey to be most fortunate in not experiencing the serious barn owl declines occurring in other states. I believe that we have one of the healthiest breeding populations in the entire United States. Let's all work to keep it that way. Barn owls are a fascinating, beneficial, and important part of New Jersey's avifauna. We will be better off for allowing *Tyto* to share a place in the world with us.

If you have a problem with barn owls or you wish further information about them, you may write the author at: 1390 White Bridge Road, Millington, N.J. 07946 or call: 201-647-2353; or contact the New Jersey State Division of Fish, Game and Wildlife at 609-292-9400.



Pileated Woodpecker

BY MIMI DUNNE

The famous cartoonist Walter Lantz must have had the pileated woodpecker in mind when he created the cartoon character of Woody the Woodpecker. The slate-black resident of forested uplands and swamplands is our most striking woodpecker in size and coloration. Though it doesn't "laugh" and frolic about the forest chasing other animals as the cartoon suggests, the real pileated woodpecker is always a thrill to spot and should be appreciated for its important role in the woodland ecosystem.

The pileated is a crow-sized woodpecker with a prominent scarlet crest. Both males and females have the crest, but the red extends onto the forehead of the male only. The forehead of the female, in contrast, is black. A red "mustache" is present on the male only. In both sexes, white wing linings flash prominently in flight.

Like other New Jersey woodpeckers, the pileated is primarily an insect-eater. It has a remarkable ability to find ants, its main staple. In pursuit of food, dead and dying trees are sounded to determine the presence of insects in the heart of the tree, and bark is peeled to reveal insects underneath. The tongue of the woodpecker is marvelously adapted to reach into small crevices and snare insects. The muscles and bones of the woodpecker's lower jaw are greatly modified to extend a bristly tongue several inches beyond the end of the bill.

Evidence of the pileated woodpecker, or "log-cock," is more often seen than the bird itself. In search of ants, the woodpecker rips apart dead trees and chisels oval or oblong 3-4" holes into standing dead and dying trees. Large woodchips littered around the tree attest to recent woodpecker activity.

The hole-boring activity of the woodpecker would seem, on the surface, to be the bane of tree growers. While they occasionally tap into trees that appear "live," the trees contain insects or the birds wouldn't waste their time. Insect activity, along with fungal rot in the cambial layer, signals a dying tree. In some cases the woodpecker may hasten the process of death and decay vital to forest succession, but the birds don't destroy lumber.

Deciduous and mixed deciduous and evergreen forests are preferred by the pileated woodpecker. Due to extensive deforestation at the turn of the century, these habitats were at a minimum and the species was eliminated. With the regrowth of forests, populations of the species have rebounded to the point of being considered "stable" in New Jersey. The species is best

known from North Jersey where it is found in extensively forested areas and smaller woodlots.

The adaptable nature of the species allows it to be a survivor in New Jersey. Once thought of as a bird of vast wild places exclusively, it shows signs of tolerance of human activity and habitation. Unlike the nearly extinct ivory-billed woodpecker which is similar in appearance, the pileated has adjusted to second growth forests and life near people. The bird is regularly seen in the Palisades Interstate Park of Bergen County and occasionally visits feeding stations near New York City.

A variety of animals are associated with the pileated woodpecker. Dam-building activity of beavers flood wooded areas creating snags utilized by the birds for nesting and feeding. Abandoned pileated holes are used by flying squirrels, screech owls, wood ducks and other cavity nesters who don't excavate their own nesting holes. Often found feeding with the pileated are downy and hairy woodpeckers; they glean insects missed by the larger woodpeckers.

Preferred nesting trees of the pileated woodpecker are located in heavily forested canopy usually near a swamp, lake or river. Typically, the birds excavate nesting cavities on the southern face of the tree. They will use a variety of trees for nesting including oaks, maples and birches if the trees are of a large enough diameter. In many cases, nesting cavities are excavated in the same stub year after year, and it is not uncommon to find a tree with many holes in it. Holes excavated for feeding are not usually used for nesting.

Though the birds are relatively inconspicuous and wary throughout most of the year, they often become quite noticeable during the spring in the breeding season. It is at this time that their calls can be heard most frequently. The notes are louder and more irregular than the insistent notes of the similar-sounding flicker. In addition, the pileated's voice tends to rise and fall in pitch more often. (You can sometimes get the bird to respond by clapping cupped palms, imitating the cry or pounding a dead tree trunk.) Courtship displays continue until May. Three to four eggs are laid and the young are tended by both parents. The young usually fly off in mid-June.

This denizen of mature forests is a true indicator species. Where this bird is found, other cavity nesters that make up a forest community are also found. The continued existence of expanses of mature forests and appreciation of the value of this handsome bird will be the key to its future in New Jersey.

FRONT COVER

Eastern Wild Turkey Tom—Photographed by Roy Decker. This bird is a cousin of the traditional Thanksgiving bird. Twenty three wild toms and hens from Vermont and New York were released in New Jersey in 1977. Estimate of present flock in our state is 3500 birds.

INSIDE BACK COVER

Pileated Woodpecker—Illustration by Carol Decker.

BACK COVER

"The leaves of brown came tumbling down, remember ..." Photographed by Paul Taylor.



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