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New Jersey's Biggest Trees — Pullout Booklet

from the editor

A Directory of Environmental Action Groups

From time to time we receive letters from our readers asking for an address, a name, an organization—an agency they can contact for information or help with a local or regional environmental problem. And we have directed many of the letter writers to the applicable DEP divisions such as Marine Services, Fish, Game, and Shellfisheries, Water Resources, Environmental Quality, and Solid Waste Administration when the inquiries were specific. In some cases, we suggested the regional Environmental Commissions when the problems presented were of a local nature. But we've always felt that our information was incomplete and lacking in some way—not organized, classified or

documented. And this is the reason for this editorial.

We are planning an article for a future issue which will classify and organize environmental action information agency listings and enable the reader to locate a pertinent source more easily. We would like our readers to send us any known environmental action sources, whether they be local, national, governmental or volunteer groups, which will be added to our material so that a comprehensive directory-type article can be prepared and be available to readers requiring information or assistance. Send your lists to the Editor, New Jersey Outdoors, and let's see what we can come up with.

in this issue...

"I can't believe this is New Jersey!" One such unbelievable place in New Jersey is "Van Campens Glen" as described by Carleton V. Brairton and photographed by David A. Bast.

Author Henry R. Hegeman calls "The Barnegat Bay Sneakbox" one of the most versatile boats in the world. In fact, he is seriously considering being buried in his sneakbox—but not in the near or immediate future.

The illustration by author/illustrator Carol Decker introduces "The Screechless Owl"—the little screech owl that really doesn't screech. Ms. Decker's illustration of a red-bellied woodpecker appeared in the May/June 1977 issue of *New Jersey Outdoors*.

In the article "'V' is for Vulture," author Joan Galli discards and disproves some myths and superstitions regarding the vulture's relationship to man. Possibly because they are unattractive, or partly because of the meaning people attach to the word "vulture," or possibly because of the function of vultures in the natural order—as scavengers; they have acquired a villainous reputation. Unfortunately, because of the connotations people attach to words like "vulture," "scavenger," "weasel," "hyena," "snake," "hawk," and many others, we have created many "bad guys" in the animal world. Of course, we have many "good guys" animals too, and newspaper feature writers usually get some good human interest columns using "good guys" animal stories.

Author Richard Radis in his article "Bird Watching From A Party Boat" says, "Bird watching on the ocean is an avian last frontier." To those readers seeking new frontiers, to those able to withstand the rigors of oceanic

bird watching, this article was written for you.

In the article "Nature's Way," biologist Bob Byrne writes about the natural order of things. What he is really talking about is the life, death and decay cycle in nature and how this cycle benefits the many species in one particular ecosystem. Of course, this cycle operates in every ecosystem on earth.

Biologist Lee Widjeskog in his article "Steel Shot 1977—The Shot of the Future" writes that the required use of steel shot or some non-toxic shot for waterfowl hunting is here to stay. Tests conducted by the U.S. Fish and Wildlife Service and tests carried out by several firearm companies showed that steel shot is an effective load for killing waterfowl when used at a distance of not more than forty yards. If used, steel shot will eventually get rid of lead poisoning in waterfowl.

New Jersey historian Frances Shute writes about the "Jewels Of The Pine Barrens"—cranberries. Mrs. Shute gives us the history of cranberries—how they came about, where they are harvested today, and what cranberries mean to the economy of New Jersey.

September . . . October . . . November are hawk-watching months in New Jersey. Authors Wade Wander and Sharon Ann Brady write about one hawk-watching hot spot, Montclair, N.J. Several years ago, almost 10,000 broad-winged hawks were seen there in a single day!

Marine biologist William Figley continues his discussion of the marine fishery resource off the New Jersey shore in the article, "New Jersey's Sportfishery" (see "New Jersey's Saltwater Sportfishery" in the July/August

1977 *New Jersey Outdoors*), and why the increasing sportfishing pressures may necessitate a comprehensive program to collect sportfishing catch statistics so DEP's Division of Fish, Game, and Shellfisheries can determine the management demands of this resource.

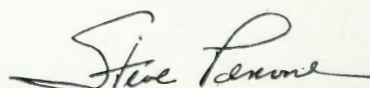
Authors Richard Lore and Linda Lore remind us that our ancestors were hunter-gathers for a long time and they are doing what comes naturally in "Gathering in New Jersey."

How's your "Duck Survey IQ" asks waterfowler Art Weiler, Jr. The author tests our readers to call attention to the U.S. Fish and Wildlife waterfowl survey conducted during last year's waterfowl season.

Be on the lookout for wing-tagged juvenile laughing gulls and report all sightings to Dr. Joanna Burger at Rutgers University or the Bird Banding Laboratory in Maryland. Addresses are given on page 32.

A third Wildlife Workshop for Teachers will be held at the Conservation and Education Studies Center at Whitesbog on September 23, 24, and 25. Registration information and other details are explained on page 24.

Biologist Roy Elicker writes about "Trapping in New Jersey" and discusses plans for a Trapper Education Program. We promised to include a pullout booklet of "New Jersey's Biggest Trees" in this issue. Turn to the center section and pull out Santiago Porcella's article.





Van Campens Glen

BY CARLETON V. BRAIRTON

To the traveler who just passes through New Jersey on his way to seemingly more picturesque regions of the United States, our state may appear to be a scenic wasteland. Unfortunately, the stench of noxious fumes, and the impacted existence of life as seen along parts of the New Jersey Turnpike are the only impressions many people have of the Garden State. However, once removed from the congestion of the industrial sprawl, visitor and resident alike can discover natural beauty in this state that would make anyone exclaim, "I can't believe this is New Jersey!" One such place is Van Campens Glen.

Located in Warren County in the Kittatinny Mountains, Van Campens Glen is easily accessible from Route 80 west. By taking the last exit in New Jersey—just before the Delaware Bridge—turning right on the Old Mine Road, and proceeding north for about 13 miles, one is assured of a relaxing, scenic ride.

The picnic area of Van Campens Glen, which is maintained by the National Park Service, is clearly marked on the right side of the Old Mine Road. Here the visitor may simply enjoy a lunch in the cleared woodland, and a wade in the shallow, icy stream. But for the more adventurous, a trip upstream



"Bouncing Beth"



Canadian Milkweed



Blueberry Buds



PHOTOS BY DAVE BAST

is worth the trouble.

The best way to reach the private and spectacular falls of the Glen is to continue north from the picnic area on the Old Mine Road for about a mile, and park in the cleared area on the left. By following the water downstream for about a quarter of a mile, the visitor can reach the falls. The easiest trail to follow is to the right of the stream; here, the land is relatively flat, and closely follows the swiftly running water.

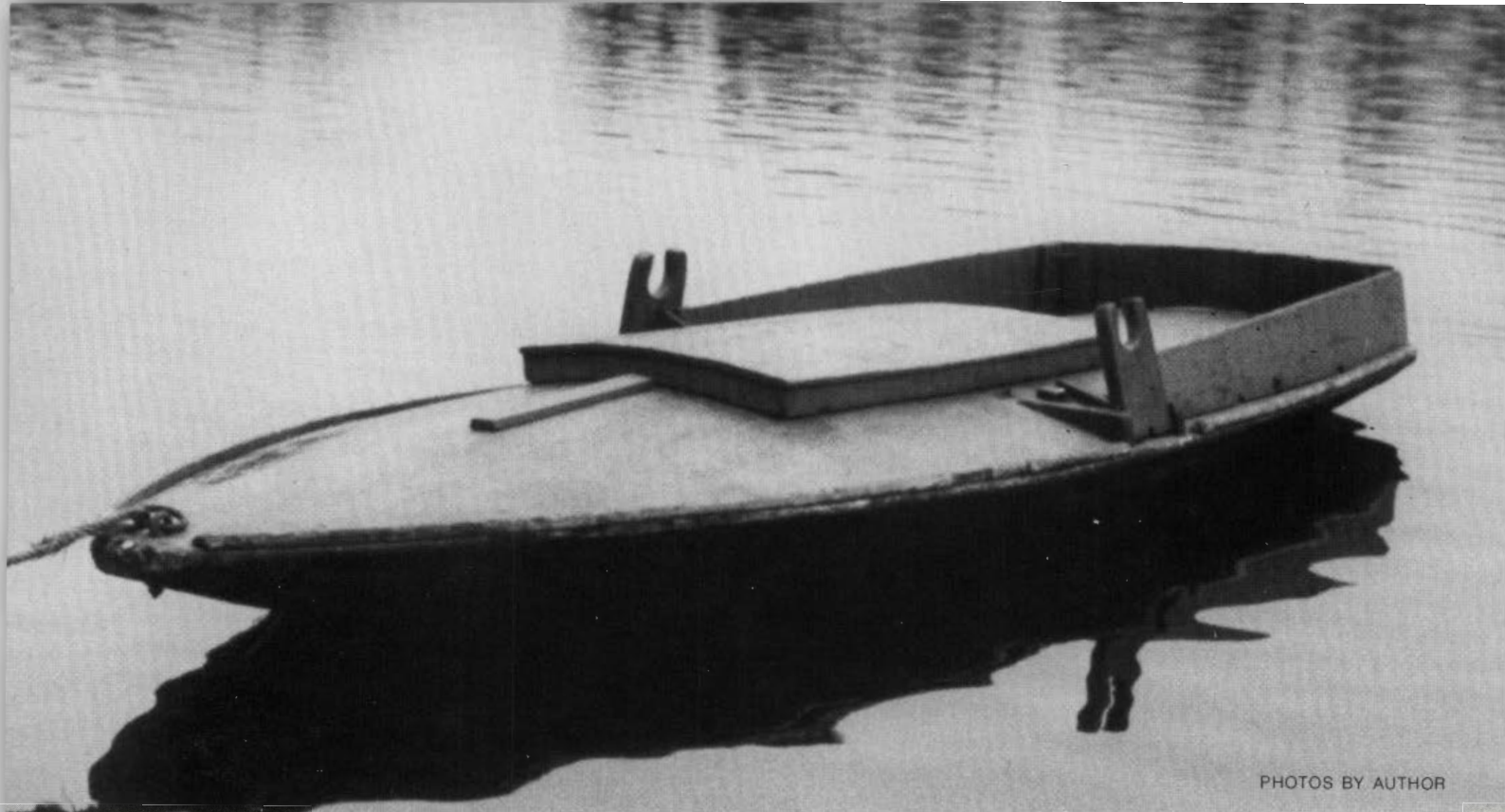
Approaching the falls, the stream drops, the flat land rises into steep hills, and the sound of rushing water intensifies. For the best view of the main falls, and the first and second cataracts, the stream should be crossed. The most accessible crossing point is easily identified by an unusual rock formation which supports a smooth, flat ledge resembling a walkway. Reaching the ledge, which is located on the left side of the stream, can vary in difficulty depending on the season. Although Dave Bast has photographed here in winter, he does not recommend crossing at that time of the year. In summer and fall, when the water level is lower, there is little danger. I visited the Glen after heavy autumn rains, and crossing was the old story of mind over matter. There are, however, rocks and jammed logs which offer secure footing over the white waters which

tumble swiftly through the rocks.

Once on the other side of the stream, you can reach the giant sun-warmed rocks which jut out over the main falls. Here, a visitor might feel that he is in some remote mountain region—not New Jersey. The sight of white water eternally cutting through the narrow rocky chasm is magnificent. Masses of deep green rhododendron, continually misted by the spray, hang securely over the gorge. After its tumultuous course through the rocks, the water empties into a large quiet pool at the base of the main falls. And to the perceptive eye, there is even a great stone face perpetually watching over this splendor. Beyond the pool, the stream divides into two parts and resumes its gentle flow downstream. There are a couple of smaller falls just above the picnic area, but none as spectacular as these.

Part of the charm of Van Campens Glen is that it is never crowded. Most people who venture there do so because there are few manmade interruptions in the landscape—only the ubiquitous beer bottle, thoughtlessly tossed aside by those few who do not respect the Glen's beauty. But those who appreciate the Glen bring their cameras or paint brushes—or just themselves—to capture forever a little bit of the other, beautiful, New Jersey. □





PHOTOS BY AUTHOR

An original Barnegat Bay Sneakbox on display at the Historic Towne of Smithville, Smithville, N.J. This one carries most, but not all, of the features found on sneakboxes. Missing are the spray curtain and provisions for a mast.

The Barnegat Bay Sneak Box

BY HENRY R. HEGEMAN

While the world has changed considerably over the last 140 years, let's hope the sight of a duck hunter getting ready for a day's gunning in his Barnegat Bay Sneakbox remains with us forever.

There's a bit of history floating around down along the Jersey shore—history everyone living in this state should be aware of and proud of. No, I'm not talking about Barnegat Lighthouse or buried treasure, or even the important role our coastline played during the Revolutionary and Civil wars. Actually, the history in question here takes the form of a 12 foot duckboat called the "Barnegat Bay Sneakbox."

History? A duckboat you sometimes find rotting in the Jersey salt marshes? Well, looking at a badly decomposed specimen obviously won't tell you much. But when you start exploring its past, you begin to get an insight into our forefathers' ingenuity, resourcefulness, craftsmanship, and practicality that never showed up

in the history books.

For instance, let's take practicality. What other craft of comparable size can be used as a duckboat in the fall, an iceboat in winter, and then serve as a sailboat and a means of fishing the coastal waterways in summer? In view of the many "specialty" boats we see around today, our ancestors gave us in the Barnegat Bay Sneakbox a definition of the word "practical" that has somehow been lost through the decades.

Craftsmanship? I think the large number of original sneakboxes in use today should bear this out. Without the aid of any of our modern power tools, our forefathers put together a craft that has been able to withstand the ravages of time; often without proper care and treat-

ment.

Those of us who have gunned from a sneakbox, fished from a sneakbox, or just plain admired the pleasing lines of a sneakbox owe a black duck dinner with a fine bottle of wine to Captain Hazleton Seaman of West Creek, N.J., who is credited with building the first Barnegat Bay Sneakbox in 1836. I don't know whether the good captain built his first sneakbox with all the features found on them today or if they were added over the years by the many baymen who built them; but I do know that when I get to Heaven he's going to be one of the first souls I look up just to shake his hand and personally congratulate him on the splendid job he did.

Now, suppose you were going to take a 2,000-mile boat trip. I'm sure you would invest in a craft that was both seaworthy and highly dependable, with all the latest navigational equipment. Would you consider a Barnegat Sneakbox? Well, Nathaniel Bishop did; and he took his trip 101 years ago without the aid of any of our modern electronic wizardry. His sneakbox, built by Captain George Bogart of Manahawkin, N.J., carried him safely from Pittsburgh, Pa., down the Ohio River to the Mississippi River, and then down the mighty Mississippi to the Gulf of Mexico. Not yet satisfied with this little voyage, Mr. Bishop continued to sail along the Gulf coast to the mouth of the Suwannee River. Whatever possessed this man to make such a journey during the four coldest months of the year (December to March) I'll never know—unless I can find a copy of his resulting book *Four Months in a Sneakbox*.

That a vessel of this size could make such a voyage on such treacherous waters is remarkable in itself, but when you consider that Bishop's means of transportation also doubled as sleeping quarters—well, I hope you're beginning to see why my praise for these boats is so high.

Nathaniel Bishop wasn't the only one who put his faith in a sneakbox for long voyages. A man named Slade Dale of Bay Head, N.J., sailed to Florida in one as a boy. Can you imagine an adventurous lad of today trying to convince his parents into letting him take such a trip?

If you've never seen a Barnegat Bay Sneakbox, hop in your car some Sunday afternoon and take a ride down Rt. 9 through Ocean, Burlington, and Atlantic counties. Check out the backyards of the homes you pass for a boat about 12 foot long, 4 foot wide amidships, and painted dead-grass green to be sure.

Let's assume you find an original version carrying all the appurtenances that can be found on a Barnegat Sneakbox. After securing permission from its owner to look it over, walk out back and view it first from the side, then from the back, and finally from the front. If you find that the boat has no sides or straight lines, you can be sure you're looking at an original design. For you see, all lines of true sneakboxes are parts of a curve. A stern view shows the curve of the deck and hull from port to starboard. A side view shows the curves from bow to stern. It is these compound curves that attribute to the craft's seaworthiness. (Unfortunately, it is these same compound curves that make building these boats so difficult.)

You'll notice that the entire craft appears to be decked over, with a 2 foot by 4 foot area rising at the center about 3 inches above the main deck. This raised portion is actually the hatch cover, which protects the inside from rain, snow, falling leaves, and other debris that seems to find its way into the bottom of an unprotected boat. When rigged with a hasp and lock assembly, a sneakbox can be used as a storage locker during the hunting season to store decoys, oars, outboard motor, and so forth. This saves the owner the job of lugging everything back and forth from the shed every time he wants to go hunting.

Just ahead of the hatch cover, along the boat's centerline, look for a slot of perhaps 1-inch wide by 18-inches long. If you look down into it, you'll find you can look right through the boat to the ground below. This is the centerboard well, which serves two purposes. First, when the craft is being sailed, the keel (or centerboard) is placed through the slot and aids in keeping the boat from sideslipping. Second, the centerboard well accepts the jab board, which is nothing more than a piece of wood $\frac{3}{4}$ -inch thick by 7 foot long in the general shape of a knife blade. In use, it is placed through the well into the muddy bottom and does a neat job of holding the sneakbox in place while setting out or picking up decoys.

Moving forward once again, look for a hunk of canvas lying on the deck. You'll notice that, starting at one oarlock, it is attached to the deck in a curve which crosses the bow and arcs back to the other oarlock. The top edge will have a seam sewn in it, through which a piece of rope also runs from oarlock to oarlock. Now, pick up the canvas at the center and pull up and back towards the cockpit. Look inside the cockpit for a piece of broom handle about 18 inches long and place one end in the hole provided for it at the forward end of the cockpit and the other end (with the nailhead sticking out of it) through the grommet sewn into the canvas. Pull the ends of the rope taut and attach to the oarlocks, and you've just erected your first spray curtain. This ingenious little device serves a threefold purpose and no self-respecting sneakbox would be caught on the water without one.

The main purpose of the spray curtain is to protect the occupant from the wind and flying spray (hence its name). Another use for the curtain is to protect the gunner (and craft) from waves breaking over the bow. Any rough water that manages to fight its way to the top of the deck is quickly deflected back into the drink by the curtain. Finally, once the decoys are set out and that magic hour has arrived, the spray curtain acts as an added aid in concealing the hunter from incoming birds. How's that for being practical?

Just ahead of the spray curtain, before you come to the end of the bow, you should see a cap, or a hole with some sort of plug in it. This is where the mast is placed when a sneakbox is going to be sailed. The mast is placed through the hole and rests in a block of wood that has been attached to the inside of the hull. Once again, mast and sails can be stored inside the sneakbox when not in use.

The oarlocks, I believe, illustrate one of the better

Continued on page 28

The Screechless Owl

BY CAROL DECKER



Although he doesn't screech, this misnamed creature of the night is an interesting little owl, measuring only seven to ten inches high and appearing to be mostly penetrating eyes.

I've seen the screech owl on many occasions, sometimes by chance and sometimes not. Once, to my surprise, one found its way down the chimney to sit peering from the cold remains of a previous night's fire.

Usually though, he's observed roosting among orchards and woodlots in a favorite cavity of a tired and twisted old apple tree or in a dense forest of pines during the day. Here he can rest concealed after a full night of hunting for his food.

Screech owls come in two color phases—reddish brown and greyish brown. Just what determines a given bird's color is still uncertain. Even the young in the same nest can be either red or grey phase.

One afternoon, I discovered a grey phase screech owl roosting in a hemlock tree in Stokes Forest. Instead of taking flight, he extended himself upward until he "grew" to almost twice his size. Appearing very tall and skinny, he looked more and more like part of the tree he sat on. His eyes narrowed to slits, making the bright yellow iris less visible and thus adding to his camouflage. Since he was leaning against the trunk of a tree that was as grey and mottled as he, he appeared to be just another stub of a branch. It is interesting to ponder whether the little grey owl "knew" to roost against a greyish tree trunk to begin with.

During the night the screech owl is up and about feeding a family or just feeding himself. He consumes quantities of mice, moths, minnows, frogs, and reptiles as well as various other insects and small mammals. When winters are extreme, an occasional bird is taken.

Rather than a screech, his voice is a spine-chilling quavering wail that I can often hear in the predawn hours from the spruces near our house.

The abundance of screech owls in our area is determined by the availability of old tree cavities or nesting boxes used for raising a family and the amount of open parcels of ground to secure his food.

The screech owl occupies a very important niche in our environment doing his part to successfully keep rodents and insects in balance. At the same time, he provides us with a thrill if we chance to see or hear him during a moment in his life. □

ILLUSTRATION BY AUTHOR

"V" is for Vulture

BY JOAN GALLI *Nongame Biologist*

In the animal alphabet, the letter "v" stands for vultures, vipers, and vampire bats. All these creatures have long been despised by man and considered hateful, ugly, and dangerous. Of the three, the vultures are perhaps the least studied and most misunderstood. Let's take a closer look at New Jersey's vultures—fascinating birds with some truly unusual habits and undeserving of their reputation as villains.

Two species of vultures are found in New Jersey. The black vulture is a common resident of the southern states, but only occasionally will one wander as far north as New Jersey. The turkey vulture, however, commonly inhabits the centrally located Pine Barrens; the rural farm country of the northwestern counties; the open areas of Mercer, Middlesex, and Monmouth counties; and much of the southern half of the state. The turkey vulture is a large, black bird, distinguished in flight by light-colored trailing wing edges and a habit of lazily soaring in great circles across the sky. Characteristically, turkey vultures soar with wings held above the horizontal in a shallow "v". They are aptly named, for the bare, red skin on the vulture's head and neck resembles that of a turkey gobbler. (The black vulture, in comparison, is smaller than the turkey vulture, flaps a lot more in flight, holds its wings horizontal, shows a distinct white patch on the underside of each wing,



FRED K. TRUSLOW FOR THE CORNELL LABORATORY OF ORNITHOLOGY

and has a black head.) In the rural and southern portions of the country, vultures are often unaffectionately and inaccurately called "buzzards." Properly, "buzzard" refers to broadwinged hawks of the genus *Buteo*, typified by our red-tailed and red shouldered hawks.

Over the centuries, misinformation and myths have been perpetuated regarding the vulture's relationship to man. Even today, seemingly well-educated people still believe that a vulture will take every opportunity to swoop out of the sky and carry away a dog, cat, or even a small child. This is impossible, however, for the vulture is designed as a scavenger, capable of feeding only on soft, decaying food. Unlike the taloned feet of other raptorial birds, a vulture's feet are very weak and poorly adapted for clutching or carrying any object. Nor do vultures appear to use their beaks to transport food. The young birds are fed on food regurgitated by their parents.

Vultures locate their food primarily by sight. Indeed, if we examine the vultures' feeding habits objectively, we must conclude that we owe the

vulture a round of applause for keeping our countryside free of decaying carcasses and thereby eliminating potential sources of pollution and disease. Some researchers believe that the vultures' digestive juices are so strong that the birds remain unaffected by any disease organisms or poisons they may ingest. The vulture is, therefore, not guilty of the charge that it transmits disease. Actually, vultures purify and recycle the nutrients in their food.

In his recent book, "The Animals Nobody Loves," Ronald Rood includes an entire chapter on vultures. His intent is not to malign them, but to erase the image of vultures as long-necked villains ready to pounce on any unsuspecting victim. Such caricature is an unfair portrait of these docile creatures. Rood more accurately depicts the birds as graceful flyers, "vital and essential" to the cyclical economy of nature.

Through the efforts of people like Ronald Rood, man's assessment of a vulture's value is being tempered by facts instead of fancy and superstition. New Jersey's vultures are fortunate in having two vulture enthusiasts in their home state. For three years Ed Henckel has been studying the vultures of northern New Jersey. Although he's gotten a lot of kidding from his friends, who consider the vulture only an ugly relative of the hawks and owls, Ed remains enthusiastic about vultures and can tell you many fascinating facts about them. Did you know, for instance,

Continued on page 27

Ed Henckel
holding vulture.



PROVIDED BY AUTHOR

bird watching from a party boat

BY RICHARD RADIS

PHOTOS BY ALAN BRADY

In recent years, films and television programs about wildlife have found a large audience, while zoos and parks which exhibit animals in "natural" settings are increasingly popular. People are looking for something which has been lost. The pioneers had little esteem for the wilderness and its inhabitants; then, wilderness was an impediment to be overcome; chopped, burned, and plowed until it yielded a dividend. Now that the wilderness is gone from most of North America, many people spend a large part of their leisure time trying to recapture it, though the closest most of us will ever come to a virgin forest, a wolf, or an eagle is through photography.

New Jerseyans in particular, living in the nation's most densely populated state, must compete for space in the already crowded outdoors if they wish to get back to nature. In summer, the stretch of the Appalachian Trail through northern New Jersey often seems like one long line of hikers from Pennsylvania to the New York border. The search for the wild and unusual can take the more fortunate on expensive trips to Africa or Central America, yet few people realize that a short voyage on the ocean could yield strange and exotic birds which are adapted for life in what often seems the most hostile environment of all. A few miles off the New Jersey coast, one can see birds which have traveled thousands of miles from the South Atlantic and the Antarctic.

Bird watching on the ocean is an avian last frontier. While the movements and seasonal distributions of land birds are now relatively well-known, oceanic birds still pose numerous questions. Almost everyone is aware of geese, robins and sparrows, but the common oceanic species are unfamiliar to most people, including many knowledgeable birders. Oceanic, or pelagic, birds spend almost their entire lives on the ocean, coming ashore only a few months a year to breed. Pelagic birds which can be seen in the New Jersey area include the shearwaters, petrels, Gannets, "alcids," Kittiwakes and phalaropes. Although they can occasionally be seen from shore, and even inland after severe storms, the best place to observe these is out of sight of land, and the state's fishing boats provide excellent opportunities to watch them.

One's first sight of a shearwater is a memorable experience. Once seen, the shearwater's name is self-descriptive—the grace with which this bird scales through the wave troughs is one of nature's wordless gifts. Three species of shearwaters occur regularly in our area, and another two are possible. Cory's



Shearwater, the largest, is a brownish, mainly unmarked summer and fall visitor. The Greater Shearwater, which summers in the North Atlantic and breeds in huge numbers on certain islands in the South Atlantic, is usually the most common shear-

water in our waters from late spring through summer. It is a sharply marked bird with a distinct black cap, slate gray back, white rump band, and clear white underparts. The third regular shearwater of our area is the Sooty, which occurs in largest numbers during late spring. It is the only all-dark shearwater normally found in our area, and may also be picked out by its light underwing lining. Two other shearwaters occur here very rarely. These are the Manx, common in the eastern Atlantic near Great Britain, and the Audubon's, the common shearwater of the southern Gulf Stream. The Audubon's, in addition to being more brownish-backed than the Manx, has a buzzy quick-flapping flight which is quite unlike the more gliding motion of the latter. A relative of the shearwaters, the Northern Fulmar, was until recently a great rarity in the waters off New Jersey. Though still scarce, it has been seen frequently on recent fall and spring trips to Hudson Canyon. The gray and white Northern Fulmar bears a superficial resemblance to the Herring Gull, but the Fulmar's large head and stiff shearwater-like flight readily distinguish it from the gull.

"Mother Carey's Chickens"—old seafarers' names for birds are more associative than modern ones. The "chickens" referred to are the tiny, swallow-like storm petrels. This quaint name is a corruption of *Mater Cara*, the Holy Mother or Virgin Mary, whose protection was thought to shield these delicate little birds from the fury of the ocean. In New Jersey, the Wilson's Storm Petrel is the common species; though another, the Leach's, occurs in much smaller numbers. Late spring, summer, and early fall are the seasons for storm petrels.

Any large seabird which is seen to circle overhead and then to dive headfirst into the water, often from a great height, is most certainly a Gannet. This is the ocean bird most familiar to bird watchers. In spring and late fall, the Gannet can often be seen from the outer beaches, and even at a great distance can be identified by its manner of fishing. The adult Gannet is white with solid black wing tips, but young birds are all brown, gaining more white plumage with age.

Occasionally the observer will see small shorebirds floating on the ocean, usually far offshore. These are the phalaropes, relatives of the sandpipers seen on beaches and mudflats, with the adaptation of webbed toes which enable them to spend most of the year at sea. The Northern Phalarope and the less common Red Phalarope can both be seen in our area, though more often at a distance than near the boat.

Jaegers are the "hawks" of pelagic birds—in German the word *jaeger* means hunter. Swift, acrobatic, incredibly graceful, jaegers are often seen wherever there are large gatherings of feeding sea birds, which they sometimes rob of food. They can usually be observed in small numbers in spring and fall, while a few stragglers are sometimes seen in summer and winter. Jaegers, particularly young birds, are the most difficult of sea birds to identify by species; one jaeger and two bird watchers frequently produces a disagreement. Three species of jaegers

can be found in New Jersey waters, though only two, the Parasitic and the slightly larger Pomarine, are regular. The beautiful Long-tailed Jaeger is unfortunately a rarity here, though not on its Arctic breeding grounds. The Skua, a close relative, is a dark, bulky, much more powerful bird seen occasionally during the colder months.

Although several species of gulls can be seen offshore, only one, the Kittiwake, is truly a pelagic bird. A breeder on North Atlantic coasts, the Kittiwake spends most of the year at sea and is rarely seen from land. It comes to our waters in early November and remains through March. Any trip offshore during these months will usually produce Kittiwakes, occasionally in large numbers.

The word *penguin* was first applied to certain birds in the North Atlantic. The Great Auk, the original penguin, has been extinct since the early 1800's. It was a large flightless bird which stood upright, resembling the southern birds which now bear the name penguin. The Great Auk's smaller relatives in the family Alcidae (hence "alcids")—the Puffin, Common and Thick-billed Nurre, Razorbill, Guillemot, and Dovekie—have all been seen in the Atlantic off New Jersey, though only the Dovekie and Razorbill are seen with any regularity. Late fall and winter are the seasons for these curious birds, real prizes whenever they are seen.

One of the most curious, and often the saddest, sights in the pelagic bird watcher's experience is the small landbirds which land exhausted upon boat decks, sometimes as far as a hundred miles offshore. Flickers, wrens, vireos, warblers and sparrows, some uncommon even on land, can occasionally be seen in large numbers in fall if the winds are blowing from shore. Many of them never see land again. The numbers of birds which die in this lonely manner must be phenomenal; such is the way which nature weeds out those least fit to survive.

As with land birds, pelagic birds have their seasons. Late spring is best for migrating shearwaters, jaegers, and phalaropes; late summer and fall see their return trip. May and November are the best months to see Gannets in large numbers. Summer is the season for the Wilson's Storm Petrel and visiting shearwaters from the South Atlantic. Late fall and winter are the best seasons for Kittiwakes, alcids, and perhaps the Fulmar and Skua. But any season can produce a surprise, since the ocean has few barriers, and severe storms sometimes bring exotic species to our waters.

Just as land birds seem to concentrate at favored locations, so it is with ocean birds. Hudson Canyon, approximately 90 miles west of Barnegat Light, has been a consistently productive area to visit. The Fulmar, four species of shearwaters, both petrels, Long-tailed Jaegers, Skuas, and the Puffin have been seen in the vicinity of Hudson Canyon in recent years. The long trip to and from the Canyon, often lasting more than 24 hours, is well worth the time and expense. For those wishing a shorter trip, interesting birding can be had closer to land. Gannets, as well

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Nature's Way

BY

BOB BYRNE

Several months ago during the last weeks of winter, I was out hiking with a friend when we happened upon the remains of an adult female deer. The carcass, however was in such poor condition that the cause of death could not be determined so I passed it off with a half-hearted sigh of remorse.

My companion, on the other hand, was obviously (and vocally) upset with the whole situation. She made some lengthy remarks what a waste it was that this deer was "just" rotting away in the woods. I let her ramble on because she was upset.

After awhile I suggested that we sit down near the carcass to see just how much of a "waste" it was. Being somewhat fidgety and disturbed by the sight of the deer car-

cass, she immediately started playing with a dead stick. I nodded toward the stick and asked "Is *that* a waste?"

"Well, no," she answered. "This is natural."

"Oh, and *that's* not," I replied, pointing toward the deer.

"This stick will rot and fertilize the ground," she quickly pointed out.

"Won't that do the same thing?" I answered again, pointing to the deer.

"Well, yes, but it's different," she hesitantly replied.

"You mean, the deer had soft fur and brown eyes while the stick didn't," I sarcastically prodded.

"That's part of it," she reluctantly admitted.

We sat quietly for awhile. A serious flaw in her interpretation of the "natural" world had been exposed. My point had been made and there was nothing to be gained by belaboring it further.

While we were sitting, a small flock of black-capped chickadees suddenly appeared. They immediately started squabbling among themselves over the choicest pieces of the deer. I had never observed chickadees eating carrion before so I watched intently. The squabbling of the birds interrupted my companion's train of deep thought.

She smiled as she saw the birds and philosophically said, "I guess it's not such a waste after all. Things have to die so that others can live. It's part of the whole natural thing."

The birds by this time had set up a definite pecking order for feeding on the deer. Only one bird at a time was tolerated on the carcass. Every few minutes the feeding order was interrupted by blue jays, titmice, juncos, or nuthatches.

This "wasted" deer turned out to be a real birders bonanza.

We were about ready to amble on when a movement near the deer carcass caught my eye. The shiny black eyes of a whitefooted deer mouse suddenly appeared. How long the mouse was there I do not know but it was obvious that he had just finished an ample meal. He sat within the exposed bones of the rib cage and meticulously cleaned

every hair on his diminutive frame. He disappeared as suddenly as he arrived.

By this time it was getting late and we had to be on our way. Before doing so, however, we decided to make a quick circle around the remains to see what else might be using this food source.

The melting snow clearly showed a network of trails leading to and from the carcass. It was obvious that many different critters had discovered this "grocery store" and were using it quite frequently. From the signs in the area I determined that foxes, raccoons, opossum, skunks, dogs, shrews, and vultures were also benefitting from this one animal's demise. Many of these animals might not have survived the rigors of winter without this available food supply.

Very little was said as we walked back toward the car. I was filled with the mixed emotions one often gets after spending a day afield. I was gladdened by the fact that I was able to participate and observe this sadly overlooked facet of the natural world but I was also disappointed because only two of us were there. An excellent opportunity to appreciate the "real" world had been missed by the thousands who need it most.

More recently, I was in the area again with a group of grade school youngsters. As we hiked to the spot where the deer carcass was I explained what had transpired there a few months earlier, making them all more eager to view the situation themselves.

When we arrived at the site *nothing* was evident. Only after a considerable effort did small pieces of rib bone turn up. Even these pieces were so extensively chewed upon by chipmunks and other small rodents that they were hardly recognizable.

In place of the deer carcass was a lush green patch of young jewel weed. The kids were not overly enthusiastic about this development until I told them that jewel weed is a favorite deer food in late summer.

We all left the area knowing that the life and death cycle was complete and would continue for at least another year. □

steel shot 1977— the shot of the future

BY LEE WIDJESKOG,
Senior Wildlife Biologist.

In 1959 F. C. Bellrose completed a survey of over 36,000 duck gizzards and concluded that 2 to 3 percent of the fall waterfowl population were lost due to lead poisoning from ingested shot. Based on this study, the U.S. Fish and Wildlife Service estimates that about 2,000,000 ducks are dying annually from this toxic shot. With this study in mind the Service proposed a non-toxic shot be developed for use in hunting waterfowl.

A number of different types of shot were developed and tested. The only shot that was non-toxic, relatively effective, and not prohibitively expensive was the "soft" steel shot in use today. The Fish and Wildlife Service conducted tests with this shot to see how well it killed ducks and what if anything it did to shotgun barrels. A similar but not identical test was carried out by some of the arms and ammunition companies shortly after.

Both tests showed steel shot to be an effective load for killing waterfowl when used at a distance of not more than 40 yards. These tests also showed some expansion of the shotgun barrel choke but the expansion was not excessive if the gun was of modern construction, and only one barrel. But there the similarity ended. The point of contention was how many additional birds would be crip-

pled by the steel shot as compared to the lead shot.

The Service felt the difference was negligible and proceeded to implement the first stage conversion of all waterfowl hunting to steel shot in 1976.

NEW JERSEY

In New Jersey, our area for this introduction was the Atlantic County marshes east of the Garden State Parkway.

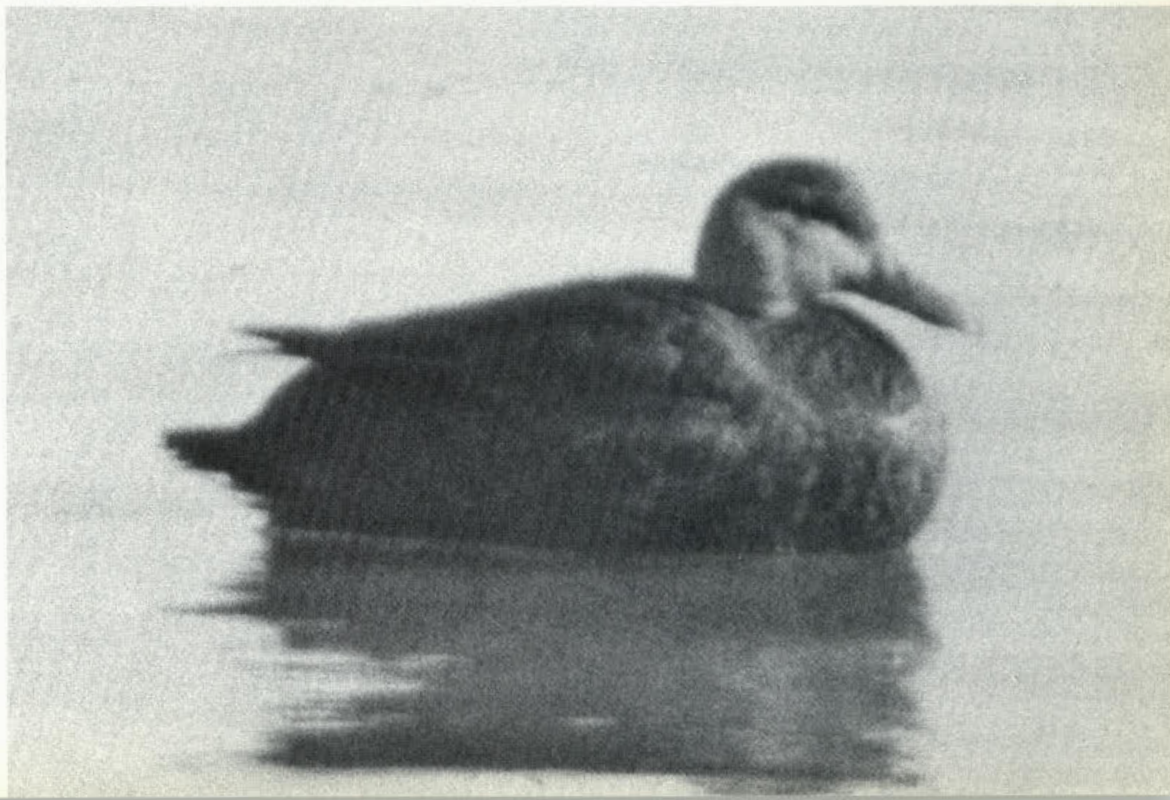
As a wildlife biologist for the New Jersey Division of Fish Game & Shellfisheries, I conducted hunter bag checks on this area in 1975 and 1976. The information collected from the hunters, combined with gizzard samples and the work done by our conservation officers gave me the following:

1. **Most hunters do not like steel shot.**
2. **As high as 25% of the hunters on the area regularly checked did not abide by the new regulations.**
3. **Eleven percent of the black ducks gizzards checked contained to at least one ingested lead pellet.**
4. **Hunting pressure was lower by 27.5% over last year on this area probably in response to having to use steel shot.**

I attempted to compare a survey done on the same area in 1975 with the 1976 season. However the weather and the illegal use of lead

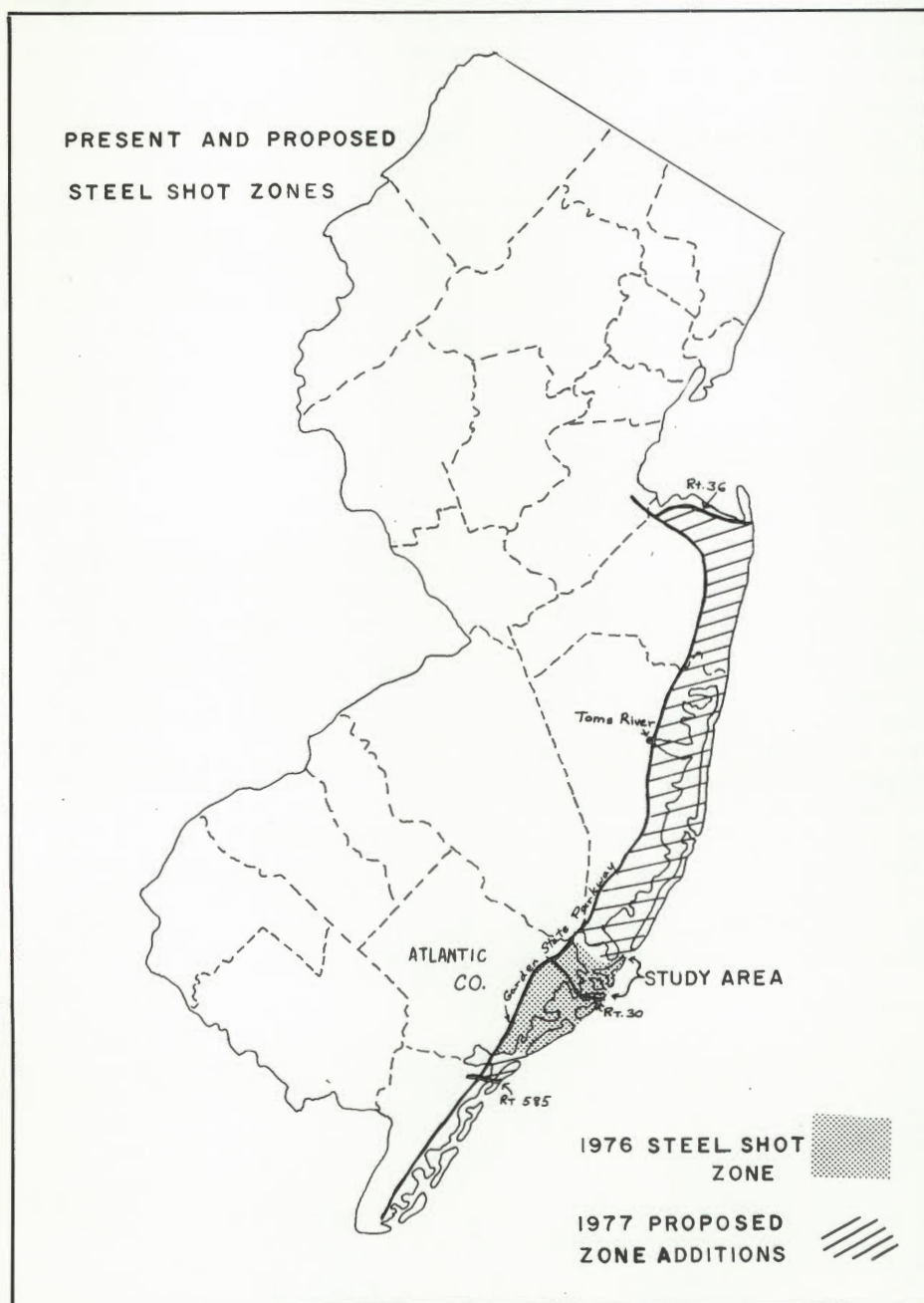
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PHOTO BY AUTHOR



**11% of the black ducks
examined on the study
area had ingested lead
in their gizzards.**

steel shot 1977



make a valid comparison impossible. Due to the cold winter in 1976, waterfowl were more susceptible to the hunters efforts. Thus the harvest for this past year was well above that of 1975. At the same time the percentage of crippled and not retrieved birds was down. This seems to be due to the better shots afforded by the colder weather of the 1976 season. A direct comparison of the two years data is shown in Table 1.

PROPOSALS FOR 1977

As this is being written the Federal waterfowl regulations are calling for an increased steel shot zone in New Jersey. The proposal will include all the marshes and waterways east of the Garden State Parkway from Rt. 585 in Cape May County north to Rt. 36 below Keyport in Monmouth County.

The Division will place added emphasis on the Atlantic County segment to properly evaluate the program. We will attempt to get 100% hunter compliance with the steel shot regulations on the study area so the effects of steel shot can be properly gauged. Additional gizzards and liver examinations for lead will be done as well as closer hunter checks by biologists and conservation officers.

FUTURE

The required use of steel shot or some non-toxic shot for waterfowl hunting is here to stay. Hunters can expect to see more of the state converted to steel shot zones over the coming years unless research discovers drastic problems with the program. This should save millions of waterfowl each year throughout the country and help to perpetuate the sport of duck hunting for future generations. □

Table 1. Comparison of the 1975 lead shot waterfowl season with the 1976 steel shot season on the Absecon-Reeds Bay Area.

	Ducks		Canada Geese		Snow Geese		Total Waterfowl	
	1975	1976	1975	1976	1975	1976	1975	1976
Hunters checked	480	339	503	363	303	192	503	363
Birds checked	175	285	14	14	93	87	282	386
Unretrieved birds	28	25	4	3	6	7	38	35
Percent unretrieved	13.8	8.1	22.2	17.7	6.1	7.5	11.9	8.3
Estimated Birds Harvested	1292	2326	120	167	571	570	1983	3063



The Keyport pier was one of the few in the area to last through the brutal winter needing no repairs.

Keyport Fishing Pier

BY JANET BAMFORD

The leisure time and recreational interests of New Jersey's residents are growing at an unprecedented rate. Citizens are often frustrated to find facilities overcrowded, unavailable, or privately owned and closed to the general public. The Green Acres Program of the Department of Environmental Protection is working to satisfy each community's recreational needs by giving local governments the opportunity to develop facilities and buy open space land. Green Acres is currently involved in 35 local programs, and has already helped to build a few hundred recreational areas. Money is available for developing outdoor games and sports facilities, boating, camping and swimming sites, playgrounds, nature study areas and fishing spots. A working example of a Green Acres supported program is the new Keyport Municipal Fishing Pier in Monmouth County.

Approved in late 1975, the Department of Environmental Protection contributed \$33,000 to the project. The Borough of Keyport contributed a like amount to meet the total cost (\$66,000) of building the pier.

The 72 foot structure, located in Keyport Harbor on Raritan Bay, includes a floating dock to allow for boat mooring, a ramp to provide access for the handicapped, night lighting and a shelter. The site is off American Legion Drive, within walking distance of the downtown Key-

port area.

Although officially christened as the Keyport Fishing Pier, a visitor to the facility finds a whole range of activities going on, along with fishing. Local workers, cooled by the ocean winds, enjoy their lunch on the pier and children and parents visit throughout the day. The evening brings people taking a stroll after dining in one of the area's restaurants or enjoying a free concert given in the lot across the street.

The bay that the pier looks over is undergoing vast improvements. In February, 1977, the now abandoned Keyport Sewerage Treatment Plant was connected to the Bayshore Regional Sewerage Authority (BRSA) located in Union Beach on the Raritan Bay. The linking of the Keyport plant halted the discharge of almost one million gallons per day of inadequately treated waste from being expelled into the bay only a few hundred yards from the pier. The burgeoning BRSA facility has expanded to a capacity of eight million gallons daily and has added sewer lines and pumping stations to service Keyport, Matawan and Keansburg.

Scheduled to be tied into the BRSA system by the end of the summer will be the municipal treatment system of Keansburg with a two million gallon per day discharge into the bay and an 800,000 gallon per day discharge from the Matawan Borough sewerage system.

Ironically, the sewerage treatment may lead to drawbacks. One old salt explained, "The blues used to come in closer to the pier to feed on the wastes. Big ones! Now we only get the little blues and bunkers. The big

PHOTOS BY AUTHOR



Sometimes all one needs is a quiet place to enjoy the breeze.



The pier provides a prime spot for watching boats in the Raritan Bay.

ones stay way out there."

Despite the temporary lull in fishing, the clean-up effort continues to make the Keyport pier and the whole Raritan Bay an even better place to live and pursue one's interests. □

Jewels of the Pine Barrens





Cranberry Harvest, Rutgers Experimental Bog

PHOTOS BY AUTHOR

BY FRANCES SHUTE

Cranberries are one of America's few truly native fruits. They were used by the Indians long before white men arrived in the New World. Indians crushed the berries and added them to meat as a natural preservative; they used them in poultices to draw poison from arrow wounds; the women not only served the cooked and mashed berries for food, but made dye from the red juice. It is interesting to note that research is being conducted today on making red food dye from cranberries as a replacement for chemical additives in Red Dye #2 recently banned by the Pure Food and Drug Administration.

There are three species of true cranberries, the large, or American, cranberry (*Vaccinium macrocarpon*); the small cranberry (*V. oxycoccus*); and the mountain cranberry, or lingonberry (*V. vitis-idaea*). All three are native to North America. Small cranberries and lingonberries also grow in northern Europe and northern Asia with the lingonberry being the commercial cranberry in Europe. Most cultivated varieties (differing in size,

color, and time of ripening) were selected from wild plants of the large cranberry. A dwarf variety of mountain cranberry (*V. vitis-idaea*, variety minus) grows in dry, rocky areas and headlands of Canada and our northern states and is sometimes called "rock cranberry," "cowberry," or "foxberry." This berry is harvested wild in Nova Scotia and marketed as "lingonberry." Cranberries belong to the heath (*Ericaceae*) family of plants, which includes rhododendron, azalea, trailing arbutus, and blueberries.

New Jersey's cranberries originally grew wild in the acid bogs of the Pine Barrens and they still can be found growing wild along the banks of the Wading River and other Pine Barrens streams, as well as in some other low, damp places in the Pines. The early settlers gathered them from the many natural cranberry beds in the region, sometimes picking them before completely ripe. The berries were then spread out in light shade until red. This practice became so widespread that in 1789 the New Jersey Legislature passed a law

imposing a fine of ten shillings for picking cranberries before October 10 to give the fruit a chance to ripen naturally.

Cranberries were first grown commercially in the early 1830's, first at Dennis on Cape Cod, and, almost simultaneously, in Burlington County. Credit for being the first cultivator of cranberries in New Jersey probably belongs to Benjamin Thomas, who had a small bog as early as 1835 on the edge of Burr's Mill Pond, east of Red Lion in what is now Southampton Township. Other very early growers were John Webb of Cassville in Ocean County and William Braddock, whose bogs were near Medford.

Cultivation as we know it today came from a simple observation made nearly 150 years ago when a Cape Cod native noticed that the berries grew larger and juicier where sand from the dunes blew over the vines. Early cultivated plants were grown on peat covered with three to five inches of sand and the bogs were resanded every three to four years. Today many

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A great deal of time and effort went into this successful trapping effort.



Young girl setting a trap. Trapping is a skill that takes practice as well as knowledge.



Young Neil Boss, being instructed in the proper skinning of a raccoon by Art Monto, President of N.J. Trappers Association.

Trapping in N.J.

BY ROY ELICKER

Photos by Harry Grosch

Early in North American history, trapping was an important skill for survival. Indians trapped for food and clothing, as did early white settlers. Trapping was a substantial basis for trading between the mother country and the colonies. The two greatest European powers of the time, France and England, fought a war over the control of the North American fur trade. Famous trapper-explorers such as Daniel Boone, Kit Carson and "Buffalo Bill" Cody have become legends of the American west. Films such as "Jeremiah Johnson" starring Robert Redford have done much to enhance the "mountain man" images of these early frontiersmen.

Throughout New Jersey's history, the furbearer resource has been important for many people. Though we have no "mountain man" claim to fame, the steady income derived from the annual fur harvest helped local residents face economic hardship and provided a source of recreation and income.

The old mountain man trapping days are over. Modern wildlife management and research have replaced the past abuses of the wildlife resource. The role of trapping has been scrutinized carefully. The conclusion: trapping in this modern age of civilization continues to play an important role in wildlife management. Under environmentally sound and regulated seasons, trapping provides recreation and income for New Jersey residents. Trapping is also an important tool in reducing wildlife populations for disease control and wildlife damage. As in hunting, a naturally produced annual surplus of furbearing animals can be utilized without damage to wildlife popu-

lation. New Jersey's furbearer resource provided over four million dollars in income for trappers in 1976 and generated over 24 million dollars of commerce in this state. Much of this four million dollars went into rural areas, where the employment opportunities are limited.

Trapping has always been important to rural inhabitants, a tradition and skill handed down from father to son. (Research conducted by the New Jersey Division of Fish, Game, and Shellfisheries showed trappers to be generally young and from a rural area.) However, because of the urbanization of much of Jersey, the youngster interested in wildlife and trapping has, in many cases, lost contact with the trapping tradition. Although youngsters become interested in trapping, the parental guidance and teaching which were available in rural societies are not now practiced. The results (in many cases) have been well-meaning, but unskilled young trappers. This unskilled trapper may be more likely to catch a non-target species, or not be familiar with trapping laws. The New Jersey Division of Fish, Game, and Shellfisheries recognizes that this young unskilled trapper may be the basis for complaints about trappers. A solution to this problem is trapper education.

Research was begun on instituting a trapper education program aimed at the young unskilled trapper. All 50 states and the Canadian provinces were surveyed for ideas and materials. Agencies and companies such as the Canadian Association for Humane Trapping and Woodstream Corp. were included. After a year of gathering materials, a nine-hour two-session course has been developed. Taught by Division personnel, with help from local trapping groups, the course will emphasize wildlife management, furbearer biology, equipment, trapper

ethics and proper pelt handling. Three courses will be given this year throughout the state on a voluntary basis in September and October. A bill is currently in the New Jersey Legislature to make this course mandatory (similar to hunter education) before a trapper buys his first license. If this bill becomes law, trappers and trapping would gain in a positive way.

In conjunction with this positive approach to trappers and trapping, the DEP's Division of Fish, Game, and Shellfisheries has also instituted a Trap Research program. An important tool in trapping, the steel-jaw leghold trap, has come under attack by citizen groups claiming that this trap is cruel and inhumane. These citizens feel that banning this trap totally in New Jersey would be a positive step. However, there is no alternative to the leghold trap in some situations. Furbearers such as raccoon and fox are extremely hard to trap in non-leghold traps. We must understand that these traps are only tools. People abuse tools everyday, and the leghold trap is no exception. Ensuring that the trapper understands the correct use of the leghold trap is a more positive approach to curbing trapping abuses.

In summary, trapping is an important recreational activity, and part time business for many trappers. It contributed approximately 24 million dollars to the New Jersey economy last year, with no damage to furbearer populations in the state. Trapping as a rural tradition has suffered in New Jersey's rapid development from a "Garden state" to an industrial community. Through innovative trapper education and trap research programs DEP's Division of Fish, Game and Shellfisheries hopes to underline the vital role trapping plays in sound wildlife management today. □



Environmental News



TAKING THE OATH OF OFFICE. Rocco D. Ricci is sworn in as Commissioner of the state Department of Environmental Protection by Superior Court Judge A. Jerome Moore. Mrs. Joan Ricci holds the family Bible for her husband. The ceremony took place in the Governor's chambers, State House, Trenton on July 20. Governor Byrne termed Ricci a thorough professional — highly qualified and with the good judgment necessary to carry out the important work of the department. The new commissioner, in a short statement, said his greatest challenge will be to produce an effective and realistic program to halt the introduction of toxic and cancer-causing substances into the air we breathe and the water we drink." He also said he would use every legal means available to the department and to him, as commissioner, to enforce the laws dealing with the dumping of hazardous and chemical wastes. Ricci, who was named acting commissioner in May following former commissioner David J. Bardin's acceptance of a high level post in Washington, D.C., has been with DEP since 1974.

Removing a health hazard:

SPRAY-ON ASBESTOS COATINGS BANNED

Rules adopted by DEP in mid June ban the spraying of asbestos coatings on buildings or other structures in New Jersey. These regulations will provide DEP with the initial mechanism for dealing with the many-faceted problem of asbestos exposure. By controlling the use of asbestos and reducing the public's exposure, the rules will begin to lessen the health risks associated with asbestos.

Note: DEP is presently involved in two as-

bestos studies being carried out by the Mount Sinai School of Medicine, Environmental Sciences Laboratory. The studies will determine asbestos exposure levels in New Jersey schools as well as in residential sections. The studies will provide useful technical information which may lead to regulations requiring corrective action for existing sprayed-on asbestos ceilings. □

RE: ocean pollution

JERSEY SHORE WATER WATCH

The department carried out an intensified monitoring of the New Jersey shore and adjacent waters over the summer to get an early warning of fish kills or trash washups of the type that marred the beaches in the summer of 1976. A close watch was kept on conditions and weekly reports issued to keep the public current on any problems or threats that might develop. And DEP stood ready to respond to emergencies on an around-the-clock basis.

The emergency response plans were in addition to DEP's regular monitoring of bathing water quality which is conducted along the shore each year in cooperation with the county health organizations.

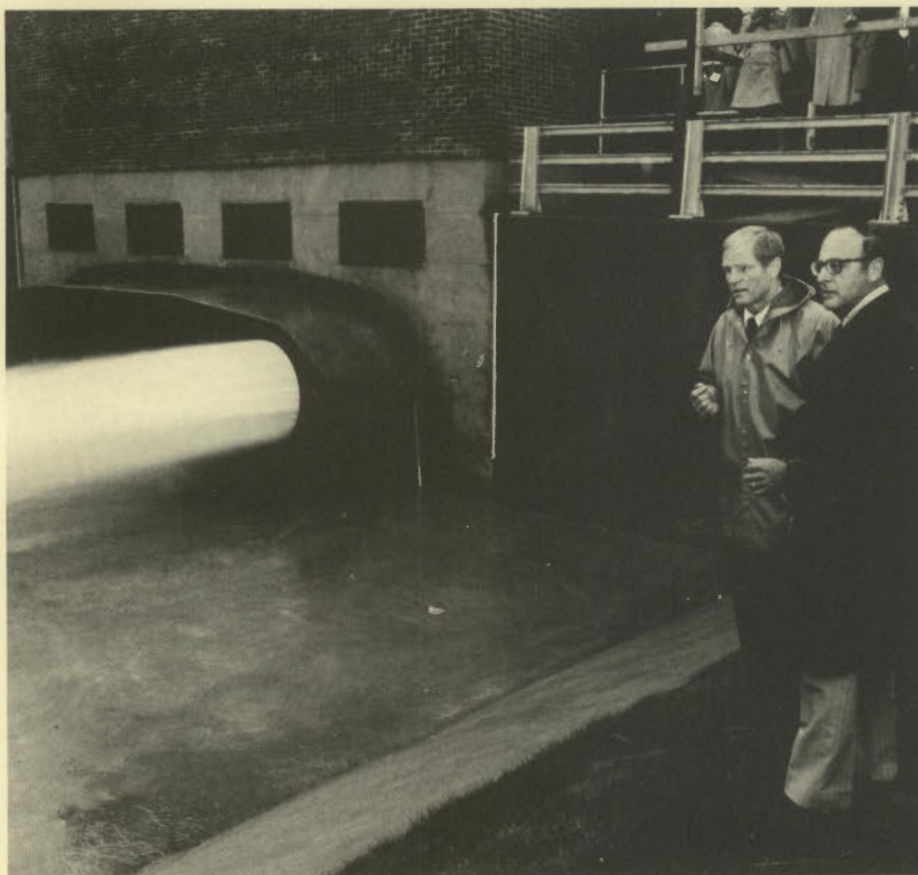
State and federal agencies joined forces in a cooperative effort to deal with the problems of ocean pollution. The joint effort was centered at the U.S. Environmental Protection Agency's (EPA) water quality laboratory in Edison.

Dr. Glenn Paulson, DEP's assistant commissioner for science, coordinated the state's response activities, a role he performed last summer. Paulson noted that DEP coordinated both its regular and emergency monitoring activities with EPA and other federal agencies. In particular, he pointed to the combined program of offshore biological inspection cruises carried out cooperatively with the National Marine Fisheries Service at Sandy Hook.

The public participated in the early warning program by calling DEP's *Environmental Action Line* (609) 292-7172 to report potential problems. The service is manned 24 hours a day, including holidays. This single number alerted the appropriate DEP specialists on water quality, fisheries and marine safety who were dispatched to the problem scene and worked directly with local health agencies, police and municipal officials. □

STRONG WATER POLLUTION LAW IN EFFECT

As of July 25 it will now be a crime to pollute the waters in New Jersey. Chapter 74, P.L. 1977 provides criminal sanctions of up to a year in jail and incorporates an entirely new schedule of fines against polluters, ranging up to \$25,000 a day. (See July/August Environmental Pages for background story. □



ROUND VALLEY PIPELINE OPENS

THIRST QUENCHER. With the completion (three months ahead of schedule) of the Round Valley Reservoir Release Pipeline the vast water supply of the reservoir is now available to millions of users in central and northeastern New Jersey. The pipeline will yield up to 80 million gallons per day (mgd), depending on demand, thus giving a major form of insurance against a prolonged drought of the kind suffered by the state in the 1960's. On June 9 Governor Brendan Byrne opened a valve at Whitehouse Station in Hunterdon County to activate the pipeline. In the photo above, the governor (second from right) and DEP Commissioner Rocco D. Ricci watch the first rush of water spew forth

from the \$9.3 million gravity-fed pipeline. (The nine-foot diameter pipeline extends approximately 3.7 miles from the north dam of the reservoir in Clinton Township to a discharge structure at the South Branch of Rockaway Creek in the vicinity of Whitehouse Station in Readington Township. From there the discharge will flow into the Raritan River where it will be available for pickup by water purveyors.) DEP's Division of Water Resources administered and supervised the project; the Cruz Construction Company of Union built the pipeline (begun in October 1975); and the funds for the project were appropriated in July 1975 by the legislature from the 1969 Water Conservation Bond Fund. □

Photographers — Get Ready

AUTUMN IN NEW JERSEY

In October, the annual spectacle of fall foliage unfolds in New Jersey drawing thousands of tourists to see and photograph the brilliance of leaves turning yellow, gold, red, orange and purple.

Far to the north in the High Point-Stokes Forest area, as the days grow shorter and nights grow colder, the trees change quickly, with gold, scarlet and orange leaves usually approaching maximum intensity early in the month.

Farther south the color change—the yellow of the ash trees, the reddish purple of the sumac, the bright red of the swamp maple—

usually peaks in mid October.

Whether the traveler drives through the areas or walks through one of the many hiking and nature trails in our state parks or the Appalachian Trail, the splendor of nature's autumn show of flaming foliage can not fail to please.

A word of caution to foliage followers—because location and weather conditions play an important role in nature's leaf-turning timetable, DEP's state park and forest rangers recommend that a phone call be placed to a nature area in the vicinity of choice before taking to the road with family and camera.

Continued on page 16D

'CRITICAL AREA' DESIGNATION ASSIGNED TO PINE BARRENS

The department plans to designate a 760-square-mile portion of the Pine Barrens region as a "critical area" requiring DEP review of all septic tank and other sewage disposal systems to protect the area's high quality groundwaters and surface waters. Also required would be the review of any building permit for a structure which will use sewage facilities.

The "critical area" designation would be the means of implementing DEP's proposed nondegradation water quality standards for that same portion of the Pine Barrens in Ocean, Burlington, Camden and Atlantic counties. The area includes the waters of the Mullica River and Cedar Creek and parts of Rancocas Creek and Toms River watersheds.

Proposed sewage facilities will be evaluated against these standards. DEP Commissioner Ricci said, "We consider this critical area designation and the water quality standards for the Pine Barrens as integral parts of a total resource management program."

The sandy soil conditions and rapid percolation rates in the Pine Barrens require careful selection of sewage disposal facilities to prevent pollution of these high quality waters.

Public hearings were held on July 28 in West Windsor and on August 30 in Chatsworth.

Note: The state in 1972 designated as a "critical area" certain low-lying sections of Atlantic, Cape May, Monmouth and Ocean counties and parts of Burlington County adjoining the Mullica River and its tributaries. This designation remains in effect to control septic tank installations. □

CAFRA ACTION

The recent approval of a Coastal Area Facility Review Act (CAFRA) permit to construct 242 single-family houses in Lower Township (Cape May County) is a good example of applicant agency cooperation. When the first application was submitted by North Cape May Development Corporation to build the project, it was denied. The company then worked with DEP staff to design an acceptable modified project.

The development, known as Tranquility Park, will be built on a 144-acre tract between Route 9 and the Cape May Canal. The revised, more environmentally sensitive site plan reduced the size of the proposed project from 341 to 242 homes, and a greater area has been preserved as wildlife habitat. The applicant has filed a conservation easement to maintain 24.3 acres as active farmland or open space.

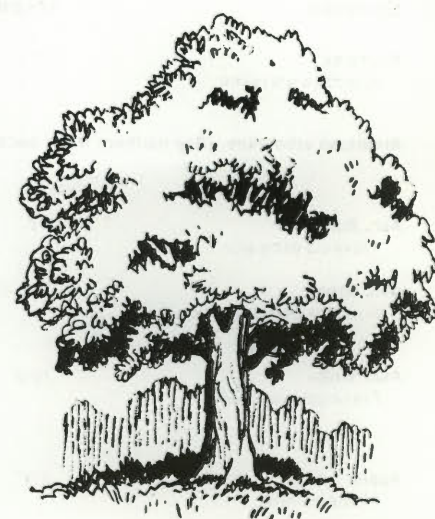
New location

HISTORIC SITES OFFICE

DEP's Historic Sites Section has been reorganized as the Office of Historic Preservation, and its offices moved to 109 West State Street (closeby the State House), Trenton. The phone number is the same: (609) 292-2023. The functions of the office are being carried out by its State and National Register Unit, New Jersey Historic Properties Unit and its Historic Sites Unit. □



Southern White Cedar (*Chamaecyparis thyoides*). This tree formerly grew in the great swamp of Green Bank State Forest, New Gretna, and fell in the hurricane of November, 1950. The photo was taken by H. Koster prior to 1920. The man is the late John Simpkins of Green Bank, holding a six-foot, two-man saw. The DBH of this tree was five feet. Photo courtesy of Charles Bell, Lower Bank, New Jersey.



List of New Jersey's Biggest Trees

BY SANTIAGO PORCELLA, III

How large are the big trees in New Jersey? Where are they located? The answers to these questions came from many interested citizens and from members of the New Jersey Chapter, Allegheny Section, Society of American Foresters. Especially helpful were the foresters of the Department of Environmental Protection, who aided in measuring many of the trees. Most measurements were made at a point 4 ½ feet above the ground.

Big trees grow older and eventually die. Sometimes storm damage, insects, or diseases may hasten death. If, in the future, you find that one of the trees on this list is dead or has been destroyed, please inform the N.J. Bureau of Forestry. It will help keep the list up to date. Also, information about trees greater in circumference than those listed will be welcomed.

Trees are important to the people of New Jersey. Many landowners grow trees as a crop just as they grow corn and potatoes. Such trees are scientifically managed to produce high-quality lumber, veneer logs,

piling for shipyards, and fenceposts. Trees of lower quality are harvested for paper, fireplace wood, and other products.

Thirty-eight percent of the State is classified as commercial forest land. About 35,000 cords of pulpwood, 1,448,000 board feet of veneer logs, 13,766,000 board feet of sawlogs, and 1,264,000 cubic feet of other products are produced annually. Altogether, our homegrown wood products plus those brought into the State for remanufacture provide employment for about 4,500 persons.

Trees serve many purposes, ranging from wood products and erosion control to cover for birds and wildlife. Trees make our homes and environment more livable and beautiful. They are a renewable natural resource.

For other
forestry
information
contact:

Gordon T. Bamford, State Forester
N.J. Bureau of Forestry
P.O. Box 2808,
Trenton, New Jersey 08625

New Jersey State Library

Species	Circumference	County	Location	Owner or reporter
Allanhus <i>Allanhus altissima</i>	15'2"	Cape May	From intersection of Bucks Ave., 500 feet east on Goshen-Cape May Court House Rd., Goshen	Owned by Sam Clark
American arborvitae. (See northern white cedar.)				
Ash, European <i>Fraxinus excelsior</i>	7'2"	Middlesex	Front of Lipman Hall, Cook College, New Brunswick	Reported by Robert Bosenberg, Cook College
Ash, Green <i>Fraxinus pennsylvanica</i>	10'2½"	Camden	400 E. Kings Hwy. past Roberts Ave., Haddonfield	Reported by Michael F. McLenigan, 274 E. Kings Hwy., Haddonfield, NJ 08033
Ash, White <i>Fraxinus americana</i>	20'0"	Camden	Near Administration Bldg., Bancroft School Grounds, Hopkins Ave., Haddonfield	Reported by Michael F. McLenigan
Apple <i>Malus pumila</i>	8'5"	Cumberland	Along west side of Roadstown Rd., Shiloh	Reported by Stephen R. Field, Vineland
Atlantic coast cedar. (See southern white cedar.)				
Baldcypress <i>Taxodium distichum</i>	20'7"	Salem	On property of Edgar J. Mayers, Poplar Street, Hancock Bridge	Reported by Charles W. Holsworth, Bureau of Forestry
Basswood, American <i>Tilia americana</i>	16'5"	Monmouth	On property of J. G. Marzulla, 308 Tuttle Ave., Spring Lake	Reported by G. Lester Alpaugh, Bureau of Forestry
Beech, American <i>Fagus grandifolia</i>	15'10"	Monmouth	On property of Dr. A. B. Judd, 942 Broad Street, Rt. 35, Shrewsbury	Reported by Margaret Crooks, 303 Bell Place, Sea Girt
Beech, cutleaf European <i>Fagus sylvatica v. laciniata</i>	12'2" at 4'	Morris	Vestpocket Park, corner James & South St., Morristown	Reported by Santiago Porcella, III, Bureau of Forestry
Beech, purple <i>Fagus sylvatica v. atropunicea</i>	17'3"	Monmouth	Conover farm, Rt. 539, 1 mi. sw Hightstown	Reported by Santiago Porcella, III
Beech, weeping <i>Fagus sylvatica v. pendula</i>	11'2"	Monmouth	On property of Dr. A. B. Judd, 942 Broad Street, Rt. 35, Shrewsbury	Reported by Margaret Crooks
Birch, black <i>Betula lenta</i>	10'11"	Hunterdon	Mrs. Harrison's, RD 1, Bloomsbury	Reported by William G. McIntyre, Hunterdon County Agent, Flemington
Birch, European <i>Betula pendula</i>	8'0"	Middlesex	Woodbury Hall, Cook College, New Brunswick	Reported by Steven Brodtkin, Cook College
Birch, gray <i>Betula populifolia</i>	6'5"	Morris	On property of James Cline, 237 Fairmount Road, Long Valley	Reported by Paul P. Berezny
Birch, paper <i>Betula papyrifera</i>	4'3"	Mercer	Washington Crossing State Park along Continental Lane, South of Forest Tree Nursery	Reported by Santiago Porcella, III
Birch, river <i>Betula nigra</i>	9'1"	Mercer	On the property of Mrs. William Nicklin, 61 Sanhican Drive, Trenton	Reported by Santiago Porcella, III
Blackgum. (See sourgum.)				
Boxelder <i>Acer negundo</i>	11'3½"	Camden	In parking lot of Merchantville Public School, Center St., ½ block east of Maple Ave., Merchantville	Reported by Louis E. Hand, 7 Chatham Road, Vincentown
Boxwood <i>Boxus sempervirens</i>	3'4"	Camden	In rear, 264 E. Kings Hwy., Haddonfield	Reported by Michael F. McLenigan
Buckeye, Ohio <i>Aesculus glabra</i>	11'3"	Union	Liberty Hall, s.w. corner in front of building, Union	Reported by Santiago Porcella, III
Buckeye, yellow <i>Aesculus octandra</i>	6'4"	Union	Liberty Hall, s.w. corner in front of building, Union	Reported by Santiago Porcella, III
Butternut. (See white walnut.)				
Catalpa, northern or hardy <i>Catalpa speciosa</i>	10'2"	Burlington	In rear of Walter Dubrow property (Hereshome), Riverton Road, Moorestown	Reported by Eileen Hand, 7 Chatham Road, Vincentown

Species	Circumference	County	Location	Owner or reporter
Catalpa, southern <i>Catalpa bignonioides</i>	15'6"	Somerset	On property of Henry Rushman (Meadowbrook Farm), ½ mile south of Bernardsville Quarry on U.S. Rt. 202, left side of road opposite milepost 37	Reported by Ronald J. Sheay, Bureau of Forestry
Cedar, Atlas <i>Cedrus atlantica</i>	9'11"	Mercer	Prospect Hall, Princeton University, Princeton	Reported by John Kuser, 140 Galbreath Drive, Princeton
Cedar, Atlas Blue upright <i>Cedrus atlantica v. fastigiata</i>	7'2"	Mercer	In rear of main building, Hun School, Edgerstoune Road, Princeton	Reported by Santiago Porcella, III
Cedar, deodar <i>Cedrus deodra</i>	5'2"	Mercer	On William Street, across from house number 56, Princeton University, Princeton	Reported by John Kuser
Cedar of Lebanon <i>Cedrus libani</i>	9'4"	Mercer	Marquand Park, Princeton	Reported by Santiago Porcella, III
Cedar, red. (Not a true cedar. See Redcedar, eastern.)				
Cedar, white. (Not a true cedar. See northern or southern white cedar.)				
Cherry, weeping Higan <i>Prunus subhirtella pendula</i>	8'0"	Somerset	Colonial Park, East Millstone	Reported by R. W. Vandergoot, Somerset County Park Commission
Cherry, wild black <i>Prunus serotina</i>	16'11"	Salem	On property of Lawrence Antonik, Harvey Court, east of Deepwater Generating Station and north of Churchtown Road, Pennsville	Reported by Bob Gardner, Salem County Agent, Salem, and Lewis S. Howell, Bureau of Forestry
Chestnut, American <i>Castanea dentata</i>	3'4"	Salem	On property of R. Rieck, Remsterville Road, 1 mile from Friesburg	Reported by Charles Holsworth
Chestnut, Chinese <i>Castanea mollissima</i>	9'2"	Burlington	Opposite side of street numbered 154 Elizabeth St., Pemberton	Reported by Louis E. Hand
China fir <i>Cunninghamia lanceolata</i>	3'5"	Mercer	Marquand Park, Princeton	Reported by Santiago Porcella, III
China-tree. (See Goldenrain tree.)				
Coffeetree Kentucky <i>Gymnocladus dioica</i>	15'10"	Morris	Frelinghuysen Arboretum, Morristown	Reported by Morris Highlands Audubon Society, P.O. Box 935, Denville, NJ 07834
Corktree, Amur <i>Phellodendron amurense</i>	5'0"	Mercer	Marquand Park, Princeton	Reported by John Kuser
Cryptomeria <i>Cryptomeria japonica</i>	7'1"	Mercer	On property of Dewitt Boyce, Mercer St., Princeton	Reported by John Kuser
Cypress, Sawara <i>Chamaecyparis pisifera</i>	9'4½"	Camden	Bancroft School Grounds, Hopkins Ave., Haddonfield	Reported by Michael F. McLenigan
Dogwood, Flowering <i>Cornus florida</i>	6'6"	Morris	Cross Estate, Jockey Hollow Rd., Morristown	Reported by Morris Highlands Audubon Society
Douglasfir <i>Pseudotsuga menziesii</i>	8'6"	Mercer	Superintendent's house, Rt. 546, Washington Crossing Park	Owned by State of New Jersey, Dept. of Parks & Forestry
Elm, American <i>Ulmus americana</i>	17'3"	Mercer	On property of WJB Stokes, 3801 Lawrence Road, Princeton	Reported by Santiago Porcella, III
Elm, Chinese <i>Ulmus parviflora</i>	4'5"	Middlesex	Near Pond, Cook College, New Brunswick	Reported by Steven Brodtkin
Elm, English <i>Ulmus procera</i>	20'0"	Mercer	On property of Dr. David Mayer, 940 Kingston Rd. (NJ Rt. 27), 3 miles north of Princeton	Reported by Santiago Porcella, III
Elm, Slippery <i>Ulmus rubra</i>	8'6"	Middlesex	Near Pond, Cook College, New Brunswick	Reported by Robert Bosenberg, Cook College
False cypress, sawara moss <i>Chamaecyparis pisifera v. squarrosa</i>	7'2"	Mercer	Guernsey Hall, 63 Lovers Lane, Princeton	Reported by John Kuser
False cypress, sawara plume <i>Chamaecyparis pisifera v. plumosa</i>	8'	Mercer	In rear of 63 Lover's Lane, close to Guernsey Hall, Princeton	Reported by John Kuser
Fir, balsam <i>Abies balsamea</i>	10'8"	Morris	Sarah Frances Nursing Home, Powerville Rd., Boonton Twp.	Reported by Mrs. Paul Tilly, RD 3, Powerville Rd., Boonton

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Fir, Cascades <i>Abies amabilis</i>	6'6"	Mercer	Marquand Park, Princeton	Reported by Santiago Porcella, III
Fir, Cilician <i>Abies cilicica</i>	8'	Mercer	Marquand Park, Princeton	Reported by Santiago Porcella, III
Fir, Greek <i>Abies cephalonica</i>	9'5"	Burlington	5 miles south of Bordentown on Georgetown Rd., south of house owned by Mrs. W. G. Kuser	Reported by John Kuser
Fir, Japanese <i>Abies brachyphylla</i>	7'6"	Burlington	On property of Mrs. W. G. Kuser, Georgetown Rd., Bordentown	Reported by John Kuser
Fir, nikko <i>Abies homolepis</i>	10'7"	Mercer	On property of Robert Geddes, 229 Mercer St., Princeton	Reported by John Kuser
Fir, noble <i>Abies procera</i>	8'8"	Mercer	63 Lovers Lane, near Guernsey Hall, Princeton	Reported by John Kuser
Fir, Nordmann <i>Abies nordmanniana</i>	6'4"	Mercer	Marquand Park, Princeton	Reported by John Kuser
Fringetree <i>Chionanthus virginicus</i>	1'3½"	Cumberland	South side of Landis Ave., across from Public Library, Vineland	Reported by Stephen R. Field, 5 Evelyn Avenue, Vineland, NJ 08360
Ginkgo <i>Ginkgo biloba</i>	15'10½"	Bergen	50 feet from west side of Kinderkamack Rd., 6 miles north of Oradell Ave., Oradell	Reported by Burton Dezendorf, 401 Hasbrouck Blvd., Oradell
Golden Larch <i>Pseudolarix amabilis</i>	5'3"	Mercer	In front yard of main building, Hun School, Edgerstoune Rd., Princeton	Reported by John Kuser
Goldenraintree or China-tree <i>Koelreuteria paniculata</i>	6'3"	Passaic	Skylands Manor, House by tennis court, Ringwood	Reported by Santiago Porcella, III
Hackberry <i>Celtis occidentalis</i>	12'7"	Burlington	In school yard, between two schools at edge of parking lot, Rt. 543, Beverly	Reported by Louis E. Hand
Hackberry, downy-leaved <i>Celtis occidentalis</i> v. <i>crassifolia</i>	4'9"	Somerset	Burnt Mills Rd., 2.4 miles west of Pluckemin on east bank of river, south of road	Reported by James C. Lime, 925 Brown Rd., Somerville
Hemlock, eastern <i>Tsuga canadensis</i>	13'4"	Morris	Alamatong well field, Chester-Randolph Twp.	Reported by Ms. Diane Nelson, Hillcrest Rd., Boonton
Hercules-club <i>Aralia spinosa</i>	2'	Morris	In front of garage, past Lake View Lodge, Schiff Boy Scout Reservation, Mendham	Reported by Santiago Porcella, III
Hickory, mockernut <i>Carya tomentosa</i>	8'5"	Cape May	South Dennis Methodist Church, South Dennis	Reported by Mark Robinson, South Dennis
Hickory, pignut <i>Carya glabra</i>	12'6¾"	Cumberland	From intersection of Stage Coach Rd. & Rt. 47, travel southwest on Stage Coach Rd. 1,500 feet to gravel road, 200 feet to sand road, 400 feet on sand road to tree, Maurice River Twp.	Reported by Ms. Carolyn P. Bacon, Mauricetown
Hickory, Sand <i>Carya pallida</i>	10'10"	Cumberland	1490 N. West Avenue, Vineland	Reported by Stephen R. Field
Hickory, shagbark <i>Carya ovata</i>	11'4"	Morris	On property of Albert Riggs, corner of Russia Rd. & Ford Mine Rd., Milton	Reported by Ronald J. Sheay
Holly, American <i>Ilex opaca</i>	7'0"	Cape May	Garden State Parkway between N & S lanes 23 miles N of Cape May City, or 3 miles S of Ocean City exit.	Reported by Santiago Porcella, III
Honeylocust <i>Gleditsia triacanthos</i>	12'6"	Atlantic	Rt. 9, east side, south of Smithville Inn, Smithville	Reported by John T. McNeil
Hophornbeam, eastern <i>Ostrya virginiana</i>	4'2"	Mercer	Alongside Stony Brook-Millstone Watersheds Ass'n., Wargo Rd., Pennington	Reported by John Kuser
Hornbeam, American <i>Carpinus, caroliniana</i>	4'6"	Morris	Kahdena Road, Morris Township	Reported by John Linson, Timberlands Tree Experts, Morristown, NJ
Horse-chestnut <i>Aesculus hippocastanum</i>	13'8"	Union	Liberty Hall, Rt. 82, Union	Reported by Santiago Porcella, III
Incense-cedar <i>Calocedrus decurrens</i>	8'7"	Mercer	In rear of Eugene Gillespie property, 51 Lovers Lane, Princeton	Reported by John Kuser
Katsuratree <i>Cercidiphyllum japonicum</i>	5'3"	Mercer	On property of C. B. Straut, 101 Galbreath Dr., Princeton	Reported by John Kuser

Species	Circumference	County	Location	Owner or reporter
Larch, European <i>Larix decidua</i>	9'0"	Monmouth	In front of Old Tennent Church Yard, Tennent	Reported by Santiago Porcella, III
Linden, European <i>Tilia europaea</i>	6'4"	Mercer	On entrance road to Columbus Boy-choir School, Galbreath Dr., Princeton	Reported by John Kuser
Linden, weeping <i>Tilia petiolaris</i>	8'6"	Union	75 N. Martine Ave., Fanwood	Fanwood Environmental Comm.
Linden, white <i>Tilia heterophylla</i>	13'7"	Union	75 N. Martine Ave., Fanwood	Fanwood Environmental Comm.
Locust, Black <i>Robinia pseudoacacia</i>	12'3"	Essex	N.W. of Edison Home, Glenmont Llewellyn Park, W. Orange	Reported by Morris Highlands Audubon Society
Magnolia, bigleaf <i>Magnolia macrophylla</i>	3'1"	Mercer	63 Lovers Lane, Guernsey Hall, Princeton	Reported by John Kuser
Magnolia, cucumbertree <i>Magnolia acuminata</i>	15'9"	Mercer	In rear of Eugene Gillespie property, 51 Lovers Lane, Princeton	Reported by John Kuser
Magnolia, saucer <i>Magnolia soulangeana</i>	4'5"	Mercer	Prospect Hall, Princeton University	Reported by John Kuser
Magnolia, southern <i>Magnolia grandiflora</i>	5'2"	Burlington	On property of Ms. Frances Adams, 902 US #130, Burlington	Reported by John Kuser
Magnolia, star <i>Magnolia stellata</i>	7'5"	Mercer	On property of Kenneth Atchley, 2281 Pennington Rd., Trenton	Reported by Santiago Porcella, III
Magnolia, sweetbay <i>Magnolia virginiana</i>	4'10"	Ocean	Manahawkin Swamp, 1/2 way between road to AT&T site and the southern white cedars swamp	Reported by Louis E. Hand
Magnolia, umbrella <i>Magnolia tripetala</i>	4'4"	Mercer	63 Lovers Lane, Guernsey Hall, Princeton	Reported by John Kuser
Maple, coliseum <i>Acer cappadocicum</i>	12'4"	Mercer	Hun School, Edgerstoune Rd., Princeton	Reported by C. C. Bahrenburg, Hun School groundskeeper
Maple, Japanese <i>Acer palmatum</i>	6'7"	Essex	N.W. of Edison Home, Glenmont Llewellyn Park, W. Orange	Reported by Morris Highlands Audubon Society
Maple, Norway <i>Acer platanoides</i>	14'8"	Morris	On property of John Heilman, Green Pond Rd., 2 miles south of New-foundland, Rt. 513, Jefferson Twp.	Reported by Ronald J. Sheay
Maple, red or swamp <i>Acer rubrum</i>	20'0"	Salem	On property of Alfonso Smica, first lane east of Canton Church, 200 feet up lane from county road, Canton	Reported by Joseph A. Jacobs, 1928 Hillcrest Ave., Pennsauken
Maple, silver <i>Acer saccharinum</i>	19'5"	Morris	On property of Richard Gill, N. Main St., Boonton	Reported by Mrs. Paul Tilly, Boonton
Maple, sugar <i>Acer saccharum</i>	16'7"	Sussex	Sunny Vale Farm, Alt. Rt. 517, on knoll behind barn, Lafayette	Reported by Ronald J. Sheay
Mimosa. (See Silk tree.)				
Mulberry, red <i>Morus rubra</i>	13'8"	Essex	Parsonage Hill Rd., alongside drive to headquarters office, East Orange Water Reserve, Short Hills	Reported by Santiago Porcella, III
Mulberry, white <i>Morus alba</i>	15'5"	Atlantic	On property of Raymond Knudsen, north side of Salem Ave., .4 mile from center of Newfield	Reported by Louis E. Hand
Oak, bartram <i>Quercus x bartramii</i>	11'1"	Middlesex	East of hog pens, Cook College, New Brunswick	Reported by John W. Andressen, Cook College
Oak, basket <i>Quercus michauxii</i>	17'5"	Burlington	Oxmead Rd., 1/2 mile south of Masonic Home at Jacksonville Rd., before Rt. 295 overpass, Burlington	Reported by Louis E. Hand
Oak, black <i>Quercus velutina</i>	18'4"	Warren	Along Musconetcong River, Hazen	Reported by Dennis Breadie, Hackettstown
Oak, blackjack <i>Quercus marilandica</i>	8'6"	Burlington	In front of Apt. 4, Shady Oaks Apts., north on Rt. 530 (Hampton St.) 1/2 mile west of Hanover St. traffic light, Pemberton	Owned by Lewis-Chester Agency, Morris Ave., Union
Oak, bur or mossycup <i>Quercus macrocarpa</i>	12'8 1/2"	Middlesex	Cook College campus, New Brunswick	Reported by Erick Schallock and Nick Demico, Cook College

Species	Circumference	County	Location	Owner or reporter
Oak, bushes <i>Quercus x bushii</i>	9'10½"	Burlington	Behind Shady Oaks Apts., & Thompson's Lawn & Garden Supply, Rt. 530 (S. Pemberton Rd.), ½ mile west of Hanover St., Pemberton	Reported by Louis E. Hand
Oak, chestnut <i>Quercus prinus</i>	14'11"	Cumberland	On property of Philo Chapman, east on Garden Rd., 2 miles from Rt. 47, Vineland	Reported by Louis E. Hand
Oak, English <i>Quercus robur</i>	10'6"	Morris	Morris St. by Moore's Hardware Store and R.R. Station, Morristown	Reported by Morris Highlands Audubon Society
Oak, European white <i>Quercus petraea</i>	10'5"	Ocean	50 Cliffside Drive, Toms River	Reported by Pat Cipolletti, Toms River
Oak, laurel <i>Quercus laurifolia</i>	4'5"	Camden	Corner of Haddon and Hawthorne Ave., Haddonfield	Reported by C. Frazer Hadley, MD, 21 Haddon Avenue, Westmont, NJ
Oak, overcup <i>Quercus lyrata</i>	12'0"	Hunterdon	Main St. opposite monument of Bryan Realty, Flemington	Reported by Otto W. Kunkel
Oak, pin <i>Quercus palustris</i>	19'3"	Burlington	On Raptic property, north of Chesterfield Crossroads towards Crosswicks	Reported by John T. McNeil
Oak, post <i>Quercus stellata</i>	11'8"	Cape May	On property of Mrs. Donald Carroll, east side of Rt. 9, opposite Friend's Meeting House, 221 Shore Rd., Seaville	Reported by George H. Pierson
Oak, red <i>Quercus rubra</i>	17'7"	Bergen	In rear of 737 Wyckoff Avenue, home of R. Miller, Wyckoff	Reported by Deedee Williamson, 103 Wood Street, Wyckoff, NJ 07481
Oak, sawtooth <i>Quercus acutissima</i>	1'2"	Cape May	U.S.D.A. Plant Materials Center, Rt. 9, Swainton	Reported by Santiago Porcella, III
Oak, scarlet <i>Quercus coccinea</i>	17'1"	Burlington	On property of Capt. Henry, 139 E. Main St., Moorestown	Reported by Santiago Porcella, III
Oak, southern red or Spanish <i>Quercus falcata</i>	16'1¾"	Camden	Cherry Hill Baptist Church, Cherry Hill	Reported by Paul W. Keiser, 57 Cunningham Lane, Cherry Hill
Oak, swamp white <i>Quercus bicolor</i>	18'9½"	Burlington	On Rosebud Farms property, 1½ miles NNE of Juliustown on Springfield Meeting House Rd., Jobstown	Reported by Louis E. Hand
Oak, turkey <i>Quercus cerris</i>	11'6"	Union	On property of Mr. and Mrs. R. Whittington, 40 Forest Rd., Fanwood	Reported by Louis E. Hand
Oak, water <i>Quercus nigra</i>	5'9"	Cape May	On property of Leroy Garretson, Old Shore Rd., .2 mile north of Weeks Landing Rd., tree is 70 yards west of road, Erma	Reported by John T. McNeil
Oak, white <i>Quercus alba</i>	21'6"	Monmouth	Between Hornertown & Cream Ridge on Highway 37, (also known as 539), near fruit tree test plots. Tree is east of stream at NE of property on south side of Rt. 539, Cream Ridge, Upper Freehold Township	Reported by David C. Shaw, Supt., Shade Tree Commission, Holmdel Arboretum
Oak, willow <i>Quercus phellos</i>	21'4"	Burlington	On property of Cozy Morley. Beginning at Medford Circle, travel ½ mile west on Rt. 70, make right turn on Hartford Rd., travel ¼ mile to tree in field on east side of road, Medford	Reported by Richard L. Washer, Burlington County Agent, Mount Holly, and William E. Johnson, Church Rd., Medford
Osage-orange <i>Maclura pomifera</i>	12'3"	Burlington	Scully-Bozarth Post, VFW Grounds, 138 W. Pearl St., Burlington	Reported by John T. McNeil
Pagoda, Japanese. (See Scholartree.)				
Paulownia <i>Paulownia tomentosa</i>	13'10"	Essex	Glenmont Edison National Historical Site, Llewellyn Park, West Orange	Reported by George R. Crothers, Llewellyn Park
Pear, Bartlett <i>Pyrus</i>	7'5"	Union	Informal garden, Liberty Hall, Elizabeth	Reported by Santiago Porcella, III
Pear, Seckel <i>Pyrus</i>	8'8"	Union	Informal garden, in rear Liberty Hall, Elizabeth	Reported by Santiago Porcella, III
Pecan <i>Carya illinoensis</i>	6'7½"	Middlesex	Dudley and College Farm Rd., Cook College, New Brunswick	Reported by Eric Triplett and Steve Brodtkin, Cook College
Persimmon, common <i>Diospyros virginiana</i>	7'10"	Hunterdon	Behind dwelling on Lloyd Haas Farm on Flemington-Sergeantsville Rd., just beyond Sunset Village, about 100 feet into pasture, Flemington	Reported by William G. McIntyre

Species	Circumference	County	Location	Owner or reporter
Pine, Asutrian <i>Pinus nigra</i>	7'3"	Middlesex	Across from Cooper Hall, George St., New Brunswick	Reported by Bruce Clarke
Pine, eastern white <i>Pinus strobus</i>	12'6"	Mercer	On property of Dewitt Boyce, next to 229 Mercer St., Princeton	Reported by John Kuser
Pine, Himalayan <i>Pinus griffithii</i>	9'3"	Mercer	Harrison Street Playground, Princeton	Reported by John Kuser
Pine, Jack <i>Pinus banksiana</i>	3'1"	Bergen	Hackensack Water Co., Old Hook Rd., Harrington Park	Reported by Bruce Kulpan
Pine, Japanese red <i>Pinus densiflora</i>	4'2"	Mercer	On property of Louis Verbeyst, Carter Rd., Mt. Rose	Reported by John Kuser
Pine, Jeffrey <i>Pinus jeffreyi</i>	7'3"	Passaic	Informal garden, Skylands Manor House, Ringwood	Reported by Santiago Porcella, III
Pine, limber <i>Pinus flexilis</i>	3'10"	Middlesex	Blake Hall, Cook College, New Brunswick	Reported by Francine Rabinowitz, Cook College
Pine, loblolly <i>Pinus taeda</i>	6'1"	Cape May	In woods about 75 yards north of Town Bank Road and 0.6 miles west of Shun Pike Road, Cold Spring. On the property of Joseph Busby	Reported by Louis E. Hand
Pine, longleaf <i>Pinus palustris</i>	3'1"	Burlington	Green Bank State Forest, Green Bank	Reported by Santiago Porcella, III
Pine, pitch <i>Pinus rigida</i>	8'9"	Ocean	In woods 150 yds. N.W. of intersection of Stafford and Hilliard Blvd., Manahawkin	Reported by A. Morton Cooper, Ocean County Environmental Agency, 54 Washington Street, Toms River, NJ
Pine, pond <i>Pinus serotina</i>	3'8"	Cape May	In woods about 75 yards north of Town Bank road and 0.6 miles west of Shun Pike Road, Cold Spring. On the property of Joseph Busby	Reported by Louis E. Hand
Pine, ponderosa <i>Pinus ponderosa</i>	4'8"	Middlesex	Horticulture Farm #1, Cook College, New Brunswick	Reported by Eric Triplett
Pine, red <i>Pinus resinosa</i>	8'0"	Morris	College of St. Elizabeth, left of Admin. Bldg. Convent Station	Reported by Morris Highlands Audubon Society
Pine, scotch <i>Pinus sylvestris</i>	6'10"	Middlesex	Fresh Pond Rd., East Brunswick	Reported by Tom Varraso, Cook College
Pine, shortleaf <i>Pinus echinata</i>	7'1"	Burlington	On property of Walter G. Spaeth, 150 feet west of Camden Girl Scout Property line at head Lake, Friendship Rd., Tabernacle	Reported by Louis E. Hand
Pine, Swiss stone <i>Pinus cembra</i>	3'10"	Mercer	Hun School campus, Edgerstoune Rd., Princeton	Reported by C. C. Bahrenburg, Hun School groundskeeper
Pine, table mountain <i>Pinus pungens</i>	4'10"	Hunterdon	On property of Joseph Landro, Rt. 523, 1 mile N.E. of Sergeantsville	Reported by Vincent Abraitys, Hunterdon S.C.D.
Pine, Virginia <i>Pinus virginiana</i>	5'6"	Burlington	On property of Holy Trinity Evangelical Lutheran Church, Rancocas Rd., Burlington	Reported by John Kuser
Plane, London <i>Platanus acerifolia</i>	11'	Mercer	Blair Court, Princeton University, Princeton	Reported by Santiago Porcella, III
Poplar, or Eastern Cottonwood <i>Populus deltoides</i>	15'6"	Essex	225 Bellville Ave., Memorial Parkway, Bloomfield	Reported by Morris Highlands Audubon Society
Poplar, Lombardy <i>Populus nigra v. italica</i>	5'	Burlington	At S & R Service Station, Rt. 206, .5 mile south of Rt. 70 Circle, Red Lion	Reported by John Kuser
Poplar, white <i>Populus alba</i>	14'	Morris	On property of Archie Stiles, 596 Meyersville Rd., Gillette	Reported by Ronald J. Sheay
Redbud <i>Cercis canadensis</i>	10'	Gloucester	West side of Main St. near south blinker light, Newfield	Reported by John T. McNeil
Redcedar, eastern <i>Juniperus virginiana</i>	11'3"	Cape May	West side of Rt. 9, north of Clermont, South Dennis	Reported by John T. McNeil
Redwood, dawn <i>Metasequoia glyptostroboides</i>	11'0"	Morris	Cross Estate, Jockey Hollow Road, Morristown	Reported by Morris Highlands Audubon Society
Sassafras <i>Sassafras albidum</i>	15'8"	Burlington	On the Mt. Laurel Quaker Meeting House grounds, Mt. Laurel	Reported by Walter Cinkowski, Soil Conservation Service, Mount Holly

Species	Circumference	County	Location	Owner or reporter
Scholar tree, or Japanese Pagoda <i>Sophora japonica</i>	9'2"	Middlesex	Near pond on Cook College Campus, New Brunswick	Reported by Richard F. West
Sequola, giant <i>Sequoiadendron giganteum</i>	8'1"	Monmouth	Corner of Wigwam Rd. and Grand Tour, Navesink, Cook College	Reported by Paul Feldman, Cook College
Serviceberry, or shadbush <i>Amelanchier arborea</i>	7'6½"	Monmouth	On property of Dr. Thomas H. Lawrence, Middletown Rd., Holmdel	Reported by Edwin R. Keahey, c/o Bartlett Tree Expert Co., 443 S. Washington Ave., Piscataway
Silktree, Chinese or Mimosa <i>Albizia julibrissin</i>	7'5"	Mercer	On property of Kenneth Kline, 323 Second Ave., Hightstown	Reported by Santiago Porcella, III
Silverbell <i>Halesia monticola</i>	6'4"	Passaic	25 yds. North of Manor House Skylands, Ringwood	Reported by Santiago Porcella, III
Sourgum, or Blackgum <i>Nyssa sylvatica</i>	14'2"	Burlington	On the Ezra Estate (Stokelan), Eayrestown Rd., 1 mile north Rt. 70, Medford	Reported by Louis E. Hand
Sourwood <i>Oxydendrum arboreum</i>	2'7½"	Middlesex	Near Pond, Cook College, New Brunswick	Reported by William Grau, Jr., Cook College
Spruce, black <i>Picea mariana</i>	3'10"	Warren	Swamp, southwest of Sunfish Pond, Worthington State Forest	Reported by Robert L. Zellej, 167 Lincoln Ave., Yardley, Pennsylvania
Spruce, Colorado blue <i>Picea pungens</i>	5'	Mercer	On property of George Bush, 391 Nassau St., Princeton	Reported by John Kuser
Spruce, Norway <i>Picea abies</i>	12'3"	Mercer	Marquand Park, Princeton	Reported by Santiago Porcella, III
Spruce, Oriental <i>Picea orientalis</i>	9'8"	Mercer	Marquand Park, Princeton	Reported by Santiago Porcella, III
Sweetgum <i>Liquidambar styraciflua</i>	17'5"	Burlington	Close to the entrance of Fort Dix on Rd., ¼ mile north of High School, Pemberton	Reported by Dennis Perham, Fort Dix Forester
Sycamore <i>Platanus occidentalis</i>	21'8"	Warren	On Slacks Farm, Hope-Bridgeville Rd., Rt. 521, Blairstown	Reported by Santiago Porcella, III
Tulip poplar <i>Liriodendron tulipifera</i>	19'6"	Mercer	Children's Day School, 520 W. State St., Trenton	Reported by Santiago Porcella, III
Walnut, black <i>Juglans nigra</i>	15'2¾"	Burlington	In rear of Walter Dubrow property (Hereshome), Riverton Rd., Moorestown	Reported by Louis E. Hand
Walnut, English <i>Juglans regia</i>	15'7"	Hunterdon	2 miles south of Sergeantsville & about ½ mile east of Sandy Ridge; tree in pasture 200 feet south of Stewart Kean's house, Flemington	Reported by Otto W. Kunkel, Bureau of Forestry
Walnut, white or butternut <i>Juglans cinerea</i>	12'	Morris	Front of Pathmark Shopping Center, Kinnelon Rd., Kinnelon	Reported by Lucey A. Meyer, Kinnelon Environmental Commission
White cedar, northern, or Arborvitae <i>Thuja occidentalis</i>	6'0"	Morris	Sarah Frances Nursing Home, Boonton	Reported by Ms. Paul F. Tilly
White cedar, southern, or Atlantic coast <i>Chamaecyparis thyoides</i>	9'2"	Ocean	Very wet woods, ½ hour walk by foot, Manahawkin	Reported by Louis E. Hand
Willow, black <i>Salix nigra</i>	16'6"	Union	79 North Ave., Fanwood owned by Mr. & Mrs. Otchy	Reported by Fanwood Environmental Commission
Willow, brittle <i>Salix fragilis</i>	7'10"	Mercer	Along ditch 100 yards northeast of Kisthardt's, 1811 Princeton Ave., Trenton	Reported by John Kuser
Willow, weeping <i>Salix babylonica</i>	18'0"	Bergen	In rear of 17 N. Irvington Street, home of J. Wellington, Ridgewood	Reported by Deedee Williamson
Willow, white <i>Salix alba</i>	16'	Mercer	On property of Vladimir A. Metelsky, 143 North Harrison St., Princeton	Reported by John Kuser
Willow, yellow <i>Salix alba</i> var. <i>vitellina</i>	9'7"	Mercer	At foot of hill, Broadmead Rd., Princeton University, Princeton	Reported by John Kuser
Yellowwood <i>Cladrastis lutea</i>	10'1"	Mercer	On property of Ted Ziegenfuss, State Highway 29, .7 mile south of Pleasant Valley Rd., Titusville	Reported by John Kuser
Yew, English <i>Taxus baccata</i>	11'	Mercer	On property of Charles Fritsch, 80 Mercer St., Princeton	Reported by John Kuser



'KESTREL' PUFFS ONTO STATE REGISTER. The last functioning steam yacht on the East Coast—the Kestrel—has been added to the State Register of Historic Places by DEP. The 62-foot vessel (above) is presently owned by the American Maritime Academy and is docked in New York Harbor near West New York (Hudson County). The yacht, built in 1892, has a wooden hull and weighs 14 tons. The 85-year-old Kestrel, once a proud carrier of people and goods, is now used only on special occasions. (It needs the attention of an expert steam boiler operator to keep it from losing power on the water.) This floating historic site has been nominated by DEP for inclusion on the National Register. □

ISLAND BEACH BUS SHUTTLE ... AN IMMEDIATE SUCCESS

What can be described as economical, ecological, convenient and comfortable?—the Island Beach bus shuttle service is one good answer. The shuttle, which ran between Exit 81 (Toms River) of the Garden State Parkway and Island Beach, operated on Saturdays, Sundays and holidays from 9 a.m. to 6 p.m., on an every 20 minute schedule. The fee for parking in Toms River, transportation to and from the park, and entrance to the park was 50 cents. (The summertime parking fee for each car entering the park is \$5.) The buses were large and roomy enough to accommodate beach gear—even umbrellas. The bus service and low rate were made possible through the cooperation of numerous federal, state and local agencies.

DEP's Division of Marine Services, which administered the program reported that the shuttle service increased access to the beach (before this, the park would be closed when all the parking spaces were filled), helped alleviate traffic congestion, and minimize air pollution and conserved energy. And, the beach shuttle enabled more people to use the park without building more parking lots and destroying dunes. The service ended on Labor Day, September 5. □

A Public Service

TO REPORT AIR POLLUTION PROBLEMS CALL . . .

Complaints of air pollution violations, strong odors or fumes exceed all other reports of abuses to the environment received by DEP. This is especially true in the mild months when people spend more time outdoors and windows are open.

Anyone wishing to report such an occurrence during normal business hours should call the Bureau of Air Pollution Control field office in that area:

NEWARK (northern office), (201) 648-2075; SPRINGFIELD (metro office), (201) 648-2560; TRENTON (central office), (609) 292-6706; and CHERRY HILL (southern office), (609) 795-7390.

During off-hours (nights, weekends and holidays when state offices are closed) call the *Air Pollution Nightwatch*, DEP's special telephone answering service. The complaint will be promptly relayed to the proper individual in the appropriate part of the state. The numbers are: (609) 924-2043 or (201) 747-2662. □



A mature peregrine falcon which is both a federal and state endangered species. Peregrine falcons haven't nested in New Jersey or east of the Mississippi in more than 20 years. This bird was photographed at Barnegat Inlet.

\$2000 Penalty Levied for Killing of Falcon

DEP's Division of Fish, Game and Shellfisheries in mid July withdrew its complaint against a Dayton (Middlesex County) man who had been charged with killing a female peregrine falcon (an endangered species) when he agreed to pay a penalty of \$2,000 in an out-of-court settlement. The money will be paid to the Peregrine Falcon Fund at Cornell University for the purchase of another falcon. Cornell is working with the division on the state's endangered species program.

Deputy Attorney General Neil Magnus, who represented DEP in the case, said the defendant had also been charged with keeping the bird (stuffed) in his possession without a permit in violation of the state's Endangered and Nongame Species Conservation Act (N.J.S.A. 23:2A). The falcon was killed in September 1975 and the stuffed bird kept until May 1977. Under terms of the law a maximum penalty of \$3,000 for unlawfully taking the peregrine falcon and a maximum of \$3,000 for each day of possession could have been assessed by the court.

Paul D. McLain, deputy director of the division, said the peregrine falcon killed in Middlesex was one of three hatched at Cornell University in the spring of 1975 and released with leg bands and a radio transmitter from a site near Lincoln, Massachusetts in July 1975. The killing of the falcon is a setback in the effort to reestablish the bird east of the Mississippi River. The peregrine has not bred east of the Mississippi in over 20 years. McLain said that conservation officers are conducting a strict enforcement of all endangered species regulations. □



Followup report:

EPA ACCEPTS BYRNE'S PETITION FOR NATIONAL POLLUTION CONTROL STANDARDS FOR GLASS INDUSTRY

The federal Environmental Protection Agency (EPA) notified Governor Byrne on June 23 that it has accepted his petition to establish a national standard for control of air pollution from the glass industry. EPA Administrator Douglas Costle wrote that a proposed emission standard for the glass industry would be prepared within one year. (See these pages in May/June 1977 issue for full story.) □

HEADING FOR THE OUTDOORS? ... TAKE A 'TOPO' MAP

It was a busy summer at the map counter at DEP's Bureau of Geology and Topography—and it looks as though it will be a busy fall as well. Campers, hikers, hunters, fishermen and other open-air enthusiasts have discovered over the years that topographic maps are invaluable "silent guides." New Jersey 'topo' maps are color coordinated for easy reading and are available in different sizes and scales.

Since each state Atlas Sheet covers an area larger than that covered by 16 federal quadrangle maps, they are more convenient for use by hunters, fishermen and others interested in the regional picture of an area. (The U.S. Geological Survey (USGS) maps are attuned to local use as they indicate housing areas, factory locations, and the like. For publication and price list write to Publication Sales, DEP Bureau of Geology and Topography, Box 2809, Trenton 08625. □

Liberty State Park

PHASE II OF NEW YORK HARBOR CLEANUP BEGINS

Liberty State Park's shoreline is looking better as the result of the massive project to Clean up New York Harbor. The first phase of the cleanup (begun in August 1976) was completed in June and included clearing hulks of derelict vessels and rotting piers along a 500 foot shoreline area adjacent to the park. Phase II is now underway. This job includes removing the remainder of the debris at the southern end of the park and Black Tom Channel; and removal of the unsightly pipeline and trestle abandoned in recent years by an oil company in Caven Point Cove.

The Army Corps of Engineers is carrying out the project on a cost sharing basis: The federal government is paying 2/3 of the cost and New Jersey is financing the balance. DEP has thus far posted \$1.4 million toward the state's share out of 1974 Green Acres bond funds. □

STATEWIDE RECREATION PLAN

A statewide Outdoor Recreation plan being prepared by DEP will serve as the basis for actions to improve New Jersey's recreational resources and will analyze the need for additional recreational facilities. In addition, the plan will include detailed inventories of existing public and private recreational facilities and open space lands. This comprehensive plan will set the policy and priorities guiding the state's recreational development, open space acquisition, and assistance programs for local projects. Special emphasis is being placed on the recreational needs in urban areas and the needs of the handicapped. A public hearing was held on July 27 in Trenton. When the final version of the plan is adopted, it will qualify New Jersey for continued participation in the U.S. Department of the Interior's Land and Water Conservation Fund Program. □

TRASH COMPACTOR FOR MEADOWLANDS

Construction of a refuse compactor which will process 1,000 tons per day of solid waste into 3,000 pound high density bales began this past spring in the Hackensack Meadowlands. The bales will be used as base material for a park. DEP approved the plans for the \$6.9 million facility which will take 22 months to complete (Spring 1979). It will be the first major mechanized garbage disposal system to be built in the state and represents the first step in implementing the Hackensack Meadowlands Development Commission's solid waste master plan. □

FALLEN LEAVES MAKE GOOD COMPOST BASE

Burning leaves is a "No-No" in New Jersey, bagging them for the trash collector is a waste. Why not consider recycling them through a compost pile? Leaves make an excellent base for such a pile. Add grass clippings, vines, dead flowers, vegetable waste, kitchen scraps and weeds. These materials become rich organic matter after a winter in compost. Your 1978 garden will thrive—the compost is an excellent soil conditioner. □

Continued from page 16B

AUTUMN IN N.J.

Given below are four such beauty spots representative of the regions:

Northwest Region: Stokes State Forest, Phone 201-948-3820

Northeast Region: Ringwood State Park, Phone 201-962-7031

Central Region: Washington Crossing State Park, Phone 609-561-0024

Southern Region: Wharton State Forest, Phone: 609-561-0024.

Don't forget the film for the camera! □

BOATERS WHO DEFILE WATERS ARE SUBJECT TO LEGAL ACTION

The owner or person in charge of a boat that discharges waste, litter or any other material into the fresh or coastal waters of the state is subject to conviction as a disorderly person under terms of two measures which became law on June 1. Chapter 111, P.L. 1977 deals with coastal waters and the companion measure. Chapter 112, P.L. 1977, deals with fresh waters. □

For fiscal Year 1978

WATER RESOURCES PROGRAM

New Jersey's Water Resources Program for fiscal year 1978 was presented to the public at a hearing in late July. The program, to be carried out by DEP's Division of Water Resources, sets targets for water supplies, flood plain management, water pollution control, sewage facilities, and monitoring of hazardous substances in the state's waterways.

The plan includes an assessment of current water supply and pollution problems and strategies to solve these problems within the next five years. The program also includes the updated statewide priority list for funding of local sewer and water pollution control projects, which is a continuation of the state's extensive public works program. □

KIN-BUC LANDFILL ORDERED TO CLOSE

DEP ordered the Kin-Buc Landfill in Edison Township (Middlesex County) to stop accepting solid waste and close its operation within 30 days. The order, issued on June 27 by the department's Solid Waste Administration, also revoked the company's registration to operate the Kin-Buc II facility and denied approval of engineering plans for the site. The order resulted from numerous violations at the landfill which Kin-Buc Inc. was operating without DEP approval.

Beatrice Tylutki, director of the Solid Waste Administration, said 12 out of 16 inspections of Kin-Buc II this year revealed solid waste violations, resulting in the decision to close the landfill. Tylutki noted that the pattern of violations which led to the closure of Kin-Buc I had continued. □

PROTECTION FOR ISLAND BEACH

Legislation to preserve Island Beach State Park in its "present state for posterity" was signed into law by Governor Byrne on May 30. The law (Chapter 105, P.L. 1977) recognizes that Island Beach is one of the few natural expanses of barrier beach remaining along the East Coast, that it is valued for its topography, plant and animal life, and that it serves as a unique recreational and educational resource for the people of New Jersey. DEP's Division of Parks and Forestry is assigned the responsibility of preserving, maintaining and improving the park in a manner to best perpetuate the area's present physical state. □

CO'S CORNER

by C.O. Glen Hawkswell



MIXED UP RABBIT

A close friend of mine related this incident to me which occurred to him while trout fishing this season. For ten minutes he watched a cottontail rabbit swimming in the stream next to him. Next time he will bring carrots as well as worms for bait when he goes fishing. □

PLAYING POSSUM?

While patrolling Flatbrook Wildlife Management Area during the small game season, accompanied by Deputy Raser, I found a hunter with three pheasants in his game vest. Upon placing the three pheasants on the hood of the car and questioning the hunter, one hen pheasant decided to try and make a getaway by foot. With help from the Deputy, the pheasant, whose wings had been broken, was caught, and the hunter fined. Perhaps this pheasant had learned the "play dead" trick from the local possums. □

LUCKY BUCK

While on foot patrol with C. O. Cussen in the Whittingham Wildlife Management Area, during this past waterfowl season, we checked a hunter on his way into the swamp. Upon removing the license from its holder a dollar bill fell to the ground. The hunter said that the dollar has been his lucky piece since finding it five years ago. He believes it is the reason for his bagging a buck each year since finding it. Needless to say he didn't want to lose it. □

MUZZLE LOADER TRAINING

WILLIAM D. NEVINS - Hunter Education Coordinator

To prepare for the 1976 muzzle-loading rifle deer hunting season, the hunter education section contacted interested hunter education instructors for inputs to the program. It next set up an organizational meeting to establish a nucleus of instructors to train others in muzzle-loader techniques.

Two knowledgeable and experienced muzzle-

loader instructors, Dan Paolini and Kevin McGonigal, in cooperation with the Hunter Education Section, conducted a seminar for 34 instructors at the Colliers Mills Firearms Training Facility on September 12, 1976.

Following this initial session several groups of muzzle-loader instructors were formed to conduct courses in Sussex, Union, Burlington, Monmouth, and Ocean counties. Eventually the 14 instructors trained 181 students during the fall of 1976. □

ORPHANED RACCOON

A farmer I know quite well came across an orphaned baby raccoon still with its eyes closed. The raccoon would not take to a bottle and it seemed it could not survive. However, this farmer had just gotten rid of two litters of kittens and decided to give the raccoon a chance at nursing off of the two mother cats. This proved to be the answer as the two cats were able to mother and raise the raccoon. □

HUNTER EDUCATION CLASSROOM

The Sussex County Hunter Education instructors finally have a classroom of their own. Last fall a sixty-foot trailer was moved to the Whittingham Wildlife Management Area and converted into a classroom. This management area also includes an existing Hunter Education shooting range. It was a little rough at first for the students—all we had were a couple of standing lamps and an extension cord! Now there are overhead lights and heat. Thanks for bearing with us. □

BEWARE OF PETS THAT ROAM

This past March I received a call that there was a dead deer at Lake Tranquility in Sussex County. Upon arriving there and speaking to the caller, she related what had taken place. A dog had chased a doe into the lake and was attempting to drown it when her husband waded into the icy water and beat the dog off. They then brought the deer, which had gone into shock, to shore and administered mouth to mouth resuscitation on her. As quite often happens from experiences like this, the deer died from the shock. When I located and informed the owner of the dog of this incident, she found it hard to believe that her friendly pet could have done such a thing. More often than not, however, the dogs that chase and kill deer are household pets that have been let out for some exercise. □



Scanning the skies from the Montclair Lookout on a crisp October day.

HAWK-WATCHING HOT SPOT

BY WADE WANDER AND SHARON ANN BRADY

"In the Gap!" calls a voice. Eager eyes and peering binoculars swing to the west, seeking the fall's first migrating hawk. "It's a broad-wing!" someone else shouts triumphantly, identifying the first of what may be 28,000 hawks to pass the Montclair Hawk Lookout this season. *Montclair?* *Montclair New Jersey?* Yes—right in the middle of densely populated North Jersey lies an acre of clifftop that rivals world-famous Hawk Mountain as one of the East's best hawk-watching spots. But there aren't any hawks in the city, you say? True, hawks don't commonly breed in urban areas, but during migration (particularly fall migration) they may be seen anywhere. In country or city you may look up and see a lone red-tail sailing south or a "kettle" of a dozen (or a thousand!) broad-wings leisurely spiraling into the blue.

But certain spots are better for hawk-watching than others—and Montclair is one of the best. Located on the border of Cedar Grove and Montclair, on the crest of the First Watchung Mountain, the lookout occupies the cliff of an abandoned quarry. While it is the property of the New Jersey Audubon Society, the official hawk count is conducted by members of the Montclair Bird Club. At an elevation of 600 feet, the lookout offers partially obstructed views to the east, north, and west. These views are marked by geologic and landscape features used as reference points for indicating the locations of approaching hawks. Cries of "In the Gap! In the Vee!

Over the Corner Tree!" punctuate the autumn air—some days continuously, some days, alas, not at all.

Fourteen species of hawks have been seen from the Montclair Lookout, ranging from the tiny robin-sized American Kestrel and Sharp-shinned Hawk to the huge Bald and Golden eagles. The most abundant species is the Broad-winged Hawk (75 percent of all hawks seen during an average season). Peregrine Falcons and Golden Eagles, on the other hand, are extremely rare here—it's a momentous occasion when one of these birds is spotted.

When is the best time to see hawks at Montclair? The lookout is manned daily (weather permitting) from 9 a.m. to 5 p.m. (diehards stay later), from early September to early December (diehards stay later). But the best time during the season is largely determined by meteorological conditions. Days with strong north-west winds and rising afternoon temperatures (such as usually follow the passage of a cold front) are most likely to bring in the birds. Indeed, you can hardly go wrong visiting Montclair during such weather conditions, especially from mid-September through October. September witnesses the bulk of the broad-wings passing through—some days, when the weather conditions are just right, really stupendous numbers can be seen. A few years ago, almost 10,000 broad-wings were seen



Broad-winged Hawk. These medium-sized hawks (wingspread about 3 feet) are easily identified by the prominent white bands in the tail. (The broad-wing is a slow moving bird that hunts from a perch taking anything from insects to frogs.)



Osprey. Although primarily associated with water, "fish hawks" may be seen migrating overhead anywhere. Montclair had almost 500 of these birds fly by last year — 92 in a single day!



Sharp-shinned Hawk. Although not well known by many people, this small hawk is the second commonest species seen at Montclair. Note full crop of this individual — some small bird has just become lunch.

in a single day! And just last year, we were two of 20 or so very lucky people to witness the formation and pass-of the largest "kettle" or flock of broad-wings ever seen at Montclair: A mind-boggling 1300 birds, all wheeling overhead at once — a sight we will remember forever.

While these sights are truly remarkable, please *don't* come expecting arm's-length closeup looks at every hawk. Most soar by as mere specks in the sky — though identifiable to the experienced observer they can prove a frustrating mystery to the beginner. A stuffed owl displayed in a nearby treetop has, however, helped to attract many hawks in for a closer look — for them and for us.

Though most hawk-watchers crane their necks, strain their eyes, and freeze their toes just for the fun of it, hawk watching does have a serious side. The information gathered on species and numbers observed, under what weather conditions, and at what date and time of day, is forwarded to the US Fish and Wildlife Service for use in monitoring raptor populations. The

Montclair Bird Club has been recording such data since 1957, making it one of the oldest and most valuable sources of reliable information on hawk migration.

Additional pairs of eyes are always welcome to help scan the skies at Montclair, but if you can't make it there remember that Cape May Point in South Jersey and Raccoon Ridge and Sunrise Mountain in North Jersey are other excellent hawk lookouts. And if you can't make it to any of *them*, remember — just look up. . . . □

TO REACH THE MONTCLAIR LOOKOUT

Leave the Garden State Parkway at exit 151 (same north or south), take Watchung Avenue west for about 2 miles, and turn right on Upper Mt. Avenue. Travel about 3/4 of a mile and turn left on Bradford Ave. Take the second right, Edgecliff Rd., which is bordered by a small, unmarked parking area at the top of the hill. The trail from the southwest corner of this lot leads to the lookout. It's a good idea to bring a lawn chair.

PHOTOS BY THE AUTHORS

Kettle of broad-wings. About 300 of the 1300 broad-wings that circled over the lookout one September afternoon last year. Broad-wings are the only eastern species of hawk to migrate in groups.





DAVE BOOKMAN

NEW JERSEY'S SPORTFISHERY

BY WILLIAM FIGLEY
Assistant Fisheries Biologist

While recreational catch statistics may be viewed with interest by sportsmen, they are valuable and necessary tools to fisheries biologists. Reliable catch data provide biologists with the basis to assess and monitor the abundance of fish populations, to protect and manage fish stocks and to insure an equitable distribution of the harvest to all users, both recreational and commercial.

It is common contention that commercial boats with their huge nets catch many more fish than sportfishermen and that commercial fishermen are responsible for the over-harvesting of fish stocks. While on a one to one basis commercial fishermen do catch more, the vast number of sport anglers—charter, party, rental and private boat, bank, surf and spear fishermen—in total catch more of certain species than the commercial fishermen. For example, in 1970 the total U.S. recreational catch of bluefish and striped bass was 17 times that of the commercial catch (121 million vs. 7 million pounds for the bluefish and 106 million pounds for the striped bass). Other species in which the sport harvest outweighs the com-

mercial include weakfish, winter flounder, fluke, mackerel and black drum. Furthermore, New Jersey's recreational fishery is expanding rapidly, while its commercial fisheries have remained static over the past 40 years.

It is now evident that both commercial and recreational harvests must be considered in the management of marine fisheries resources. Detailed commercial landing statistics have been collected on an annual basis since 1939. Recreational catch statistics, however, are not readily available. Most of the surveys which have been conducted on sportfisheries were limited either to a short period of time, to a specific area, to certain species or to a specific type of angler. The intent of this article is to document some of the information which has been collected on New Jersey's recreational saltwater fishing harvests.

The first comprehensive survey of New Jersey's saltwater sportfishing harvest was conducted by

biologists of the Division of Fish and Game during 1952-1954. Fishermen were interviewed on the water to determine individual catches; total state landings were estimated from airplane counts of fishermen. Table 1 shows the species composition of the 1953 sport catch. The survey suggests that party boats did not fish for bluefish as they do now and that very little fishing was done from private boats. The biologists found that charter fishermen caught the greatest number of fish per man with 21, party boat fishermen averaged 15, fish, rental boat fishermen 1.7, surf fishermen 0.3 and bank fishermen 0.2. The total estimated sport catch was 13.3 million pounds between April and September of 1954. Considering the same species, commercial fishermen landed 16.7 million pounds during that period.

The National Marine Fisheries Service at the Sandy Hook Lab has been gathering information regarding party and charter boat catches since 1975. Unfortunately, only statistics

Table 1. Percent composition (by numbers) of New Jersey's recreational marine fish harvest during 1953.

Species	Party Boat	Charter Boat	Rental Boat	Bank	Surf
Bluefish	—	33%	1%	11%	16%
Fluke	21	30	42	34	15
Porgy	33	18	2	—	—
Weakfish	5	3	36	5	36
Kingfish	—	—	2	3	12
Sea Bass	33	2	2	16	1
Others	7	14	14	30	20

Table 2. Estimated catches of selected marine fishes by resident anglers over 18 during 1975.

Species	Number of Fish Landed			Total
	Ocean	Bay & River	Surf	
Bluefish ²	344,000	37,000	35,000	416,000
Weakfish ³	54,000	69,000	18,000	141,000
Striped Bass ³	73,100	2,100	67,400	142,600
Fluke ²	0	185,000	0	185,000
White Perch ²	0	4,000	0	4,000
Tuna ²	24,000	0	0	24,000
Mackerel ¹	119,000	0	0	119,000
Whiting ¹	71,000	0	0	71,000
Winter Flounder ¹	0	162,000	0	162,000
Cod ¹	8,400	0	0	8,400
Pollock ¹	35,000	0	0	35,000

¹January-June.

²July-December.

³January-December.

Table 3. Sportfishing Catches in Various New Jersey Estuaries

Species	Total Yearly Landings by Boat and Bank Fishermen				
	Great Bay (1969)	Great Egg Harbor (1971)	Upper Barnegat (1972)	Little Egg Harbor (1975)	Maurice River (1976)
Blackfish	1,800	0	461	1,086	0
Blowfish	597,553	3,986	30,062	72	0
Blue crab	11,834	21,369	457,444	284,398	277,553
Bluefish	48,158	11,737	42,117	32,927	86
Catfish	0	0	0	0	1,590
Eels	4,502	3,170	3,361	2,307	2,838
Flounder	67,431	11,132	51,415	16,607	0
Fluke	16,255	4,525	31,730	79,535	50
Herring	0	121	0	0	3,054
Kingfish	15,654	1,137	8,510	55	0
Porgy	5,743	48	1,721	670	0
Sea bass	868	605	7,955	21,793	0
Spot	0	0	0	463	7,160
Striped bass	41,223	678	2,688	55	0
Weakfish	7,050	2,009	41,320	11,414	1,797
White perch	209,115	10,188	12,541	53	22,838
Yellow perch	0	6,582	0	0	689
Others	6,687	15,730	9,611	7,446	3,700
Totals	1,033,245	93,039	700,936	458,881	321,355

for tuna and mackerel have been published. The estimated sport harvest of bluefin tuna during 1975 was 10,435 fish, 826 by party boats, 5,957 by charter boats and 3,652 by private boats. Because bluefin populations were and are at seriously low levels, another independent survey of the tuna catch was conducted by Cook College. This study estimated that 13,443 bluefin were landed during 1975; 1,001 by party, 7,401 by charter and 3,520 by private boats with an additional 1,521 being caught during tuna tournaments.

The Sandy Hook researchers estimated that party and charter boat fishermen caught 10 tons of mackerel during the fall run of 1975 and

1,018 tons during the spring run of 1976.

Another technique used to collect harvest data is a telephone survey of a randomly selected segment of the general public. This method was employed by Cook College biologists to estimate New Jersey's sport catch of selected marine fishes during 1975. 289 saltwater fishermen were contacted three different times during the year and asked what they had caught since the previous telephone contact. The results of the survey appear in Table 2. Since only residents of the state over 18 years old were included in the survey, the figures do not represent the total sport harvest from New Jersey waters. However, the data should reflect

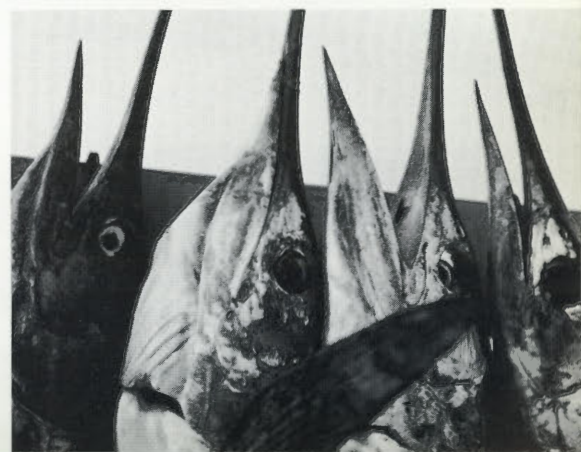
the relative importance of each species to saltwater anglers. The survey indicates that bluefish, striped bass and fluke are the most commonly caught marine species. Interestingly, the estimated tuna harvest was much higher than either of the previously mentioned surveys. This was probably due to respondents reporting many species, such as false albacore, bonito, skipjack, yellowfin and bluefin tuna, under the category "tuna."

As part of its Estuarine Inventory Project, the Division of Fish, Game and Shellfisheries has conducted detailed creel surveys of selected estuaries within the state. Data were collected through extensive personal interviews with fishermen and aerial surveys. Catch statistics indicate the relative importance of each species to the angler for any given estuary. They also suggest trends in fish population levels. For example, the statistics document the decline of the blowfish, kingfish and striped bass and show the increase in fluke, spot and sea bass numbers. In the five estuaries surveyed, boat fishermen caught about 85 percent of all the fish and crabs harvested, while bank fishermen caught only 15 percent.

During 1975, 16 marlin or tuna tournaments were held in New Jersey. These big game tournaments usually involve fishing the deep canyons 60 to 90 miles offshore. Contestants landed 1521 bluefin tuna, 158 yellowfin tuna, 41 albacore, 284 white marlin and 6 blue marlin.

Obviously, the present sportfishing data are insufficient to meet the management demands of this valuable resource. A comprehensive program to collect sportfishing catch statistics from all types of marine fishermen on an annual basis is needed. □

Fresh from the deep



Gathering in New Jersey

RICHARD LORE and LINDA LORE

PHOTOS BY WAYNE KASHINSKY

It started one early spring day while we were out birdwatching in the woods not far from home. Scattered bits of rubble and several ancient apple trees indicated that the spot had once been a home site. A random kick at the loose sandy soil close to a large old cedar tree unearthed a brick. But not your typical brick. This one was in pristine condition, with all four corners intact and completely free of mortar. Age had softened the original harsh red into a much warmer and richer orange-brown. Another kick revealed an identical specimen. With a stick we scratched away a three-inch layer of debris and discovered that our bricks were part of a neatly laid walk that had bordered at least one side of the old house. Subsequent excavation suggested that the now-missing house must have sheltered at least one family of brick freaks. Wide brick walks went in all directions. Many afternoons later, we had more than 4300 bricks stacked

neatly in our yard. Using a three-pronged digging hoe, it was possible to unearth about 100 bricks in 20 minutes or less. When loaded in the trunk of our sub-compact car 100 bricks made for a pronounced sagging of the springs, but no permanent damage was done.

Why this fascination with bricks? Somewhere there must surely exist a National Old Brick Collector's Association whose members treasure the variations in size, color, and markings of old bricks. If so, we have a good corner on the market. If not, old bricks that have been cleaned sell for 14 cents each in our area. Thus, our pleasant ventures into the fresh air coupled with some much-needed exercise also increased our net worth by more than 600 dollars! Of course, we didn't sell them. Half the fun is finding a use for your plunder. The old bricks and some railroad ties—also scavenged—produced a patio in our backyard that a contractor friend told us he could reproduce for \$2500.

The byways and woodlands of New Jersey may not always satisfy the purist who needs untouched and virgin wilderness. But from our point of view, the long history of human habitation in our state can make even a casual walk a rewarding venture; one can salvage and clean a variety of useful items from even the most forlorn area and possibly help conserve our limited resources. After all, huge amounts of natural gas

are used to make bricks.

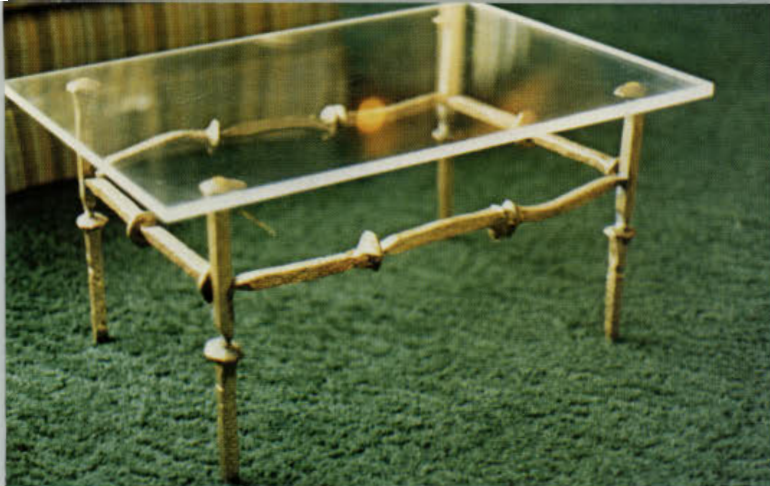
What to collect and where to find it? There are differences in technique that depend upon the nature of your area and your own inclinations. We're partial to woodland, deserted farms, and old home sites because one can also enjoy the walking and the solitude. One important rule: *Always* seek the permission of the landowners.

We harvest a great variety of wild fruits, nuts, berries, and vegetables. Farmed-out fields are an excellent source of wild strawberries, for they seem to thrive on poor ground. During the four-week fruiting season in late spring, we gorge ourselves on these delicacies and either freeze or make jam with the surplus. Some wild strawberries in New Jersey approach the size of the store-bought fruit. Picking is slow at first but you improve with practice. When you consider the labor and expense involved in growing your own strawberries, gathering wild strawberries is actually more economical. The economies of gathering become even more obvious with a little comparison shopping. The 15 pounds of frozen blackberries in our freezer cost us a pleasant afternoon in a local meadow. In the store, they would cost \$16.35. Remember also, you don't pay taxes on this "income" and freshness is guaranteed.

We also gather tender poke salit shoots and dandelion greens in the spring. Later, there are blackberries,

Despite a healthy demand and useful life expectancy of about 2000 years, the old bricks in this patio were thrown away. The wood chips and most of the plants were free for the taking, including the blooming groundcover (Ajuga) at upper left.





The base of this unusual table was made of used railroad spikes welded together and painted gold. They cost 25 to 50 cents each in specialty shops — or nothing if you walk along railroad tracks where ties have been replaced.



Cutting firewood is a pleasant activity. There are critical shortages of this resource in many parts of the world and this much energy would cost more than a week's salary.

walnuts, and both wild and domesticated fruits from abandoned trees. The best peaches we've ever eaten were of the old-fashioned, white-meat variety from a tree growing in the middle of Camp Kilmer. And don't neglect crabapples — they make a magnificent jelly. Of course, nobody throws away these delightful foods. But, as in the case of the asparagus that we harvest every year from an abandoned farm, most people ignore them and hence they go wasted.

Nor do we confine our woodland harvesting to just the warmer months. We take small amounts of ground pine and running cedar from the edges of swampy areas. The fragrance and lively green color of these small plants enhance any winter table's appearance and make lovely Christmas decorations. Similarly, windblown and dead trees provide us with sufficient firewood for long winter evenings. Chances are, the owner of the woodlot will be glad to have someone remove dead trees. There are few things more satisfying than a firewood sawing session in the woods. Watch also for construction projects that destroy trees. Often the foreman is glad to get rid of the logs — and the wood chips left behind from shredded branches make ideal mulch. An efficient fireplace or stove can cut fuel bills. A full cord — a stack measuring 4 x 4 x 8 feet — of well-seasoned hardwood is the equivalent of 150 to 175 gallons of fuel oil.

Many parts of the world are experiencing a critical shortage of firewood for cooking. Yet in our country, we ignore the huge collection of this precious commodity that accumulates in our own backyards and prefer to grill our steaks and hamburgers on inferior and overpriced charcoal that has been soaked with an even more costly "starter fuel." Try your next steak over a fire made

from well-seasoned hardwood twigs and branches. Keep the flames down and the smoke dense by placing wilted lettuce on the fire. You'll use no more super-market fuels.

Abandoned home sites can provide the elegant greenery to turn a so-so yard into a botanical showplace. Old-fashioned flowers and shrubs that have survived years of neglect are usually hardy and transplant well. One should only thin the plants by taking those shrubs and flowers that are choking out neighboring plants. We find that the most popular — and expensive — ground covers are widely available. In our yard we enjoy luxuriant growth of ajuga, periwinkle, pachysandra, and English ivy. Other plants and shrubs that were easy for us to find include lilac, forsythia, daffodils, laurel, iris, hosta, and several species of lily. Wildflowers should never be taken; many of them are protected by law in New Jersey. Moreover, they seldom transplant well because the restricted or specialized habitat that many wildflowers require can seldom be duplicated in your yard.

Apparently everyone in the country quit the home-canning business after World War II and either stored their jars in the cellar or threw them on the dump at the edge of the woods. They are perfectly usable today and we must have given away 200 of them to friends. But be careful — some of the older jars made of green or blue glass are valued by collectors and bring handsome prices. Of course, some old glassware and bottles command astronomical prices and if you come across an abandoned dump, it can be worth your while to do some digging. Take along a three-pronged digging hoe. Good books on old bottles are available and it does not take much training to know that one should discard the ornate wine bottles made in

1950 but treasure the thick-lipped old monstrosity that was thrown away in 1850.

Several years ago the county we live in purchased a nearby farm and proceeded to develop the area into a park. Only the grand old home and one utility building were to be saved. All the outbuildings, including two magnificent barns more than 140 years old, were to be destroyed. The site foreman readily gave us permission to take anything we wanted. He had examined the barns and could find nothing worth saving.

Of course, the foreman was completely adapted to our throwaway culture. Some of the exterior wood on the barns was rotten but the interior sections contained chestnut and poplar boards that were a magnificent 28 inches wide. The giant hinges and door latches had been beautifully handwrought by some artisan blacksmith and four large wooden pulleys were in perfect condition. We also saved a keg of nails; 200 pounds of fertilizer (no, it doesn't weaken with age); and numerous old bottles, tin containers, and hand tools. We left much more than we salvaged. Today not a trace of the barns remain. The hand-hewn oak beams, cedar roofing, and copper gutters and lightning rods, as well as the contents, were smashed and buried in a deep hole.

Some neighbors and friends think our hobby a bit strange. Moreover, a rational economist might be able to prove that our gathering activities would not be profitable if we were to charge an appropriate hourly rate for our time. (The same, of course, could be said for tennis or television watching.) But economics are secondary. We enjoy the hunt, the energy expended, and the thrill of engaging in this most ancient activity. After all, our ancestors were hunter-gatherers for quite some time. □

wildlife workshop for teachers

On May 20th, 21st, and 22nd, 1977 the second Wildlife Workshop for Teachers was held at the New Jersey School of Conservation located in Stokes State Forest. This second workshop was similar to the one held last year in that the Division of Fish, Game, and Shellfisheries supplied field biologists as instructors. This year's program was expanded to include the Division of Parks and Forests. Also, one instructor was supplied by the New Jersey School of Conservation.

Courses of instruction included Deer Management, Beaver Management, Wildlife Management Principles and Population Dynamics, Critter Catching, Habitat Manipulation, Bird Watching, Wildlife Materials, Wildlife Problems Simulation, Cold-Water Fisheries Management and Warm Water Fisheries Management. Additional courses in Forest Management and Nongame and Endangered Wildlife were offered for the first time this year. One hour of college credit from Rutgers University was also available for this workshop.

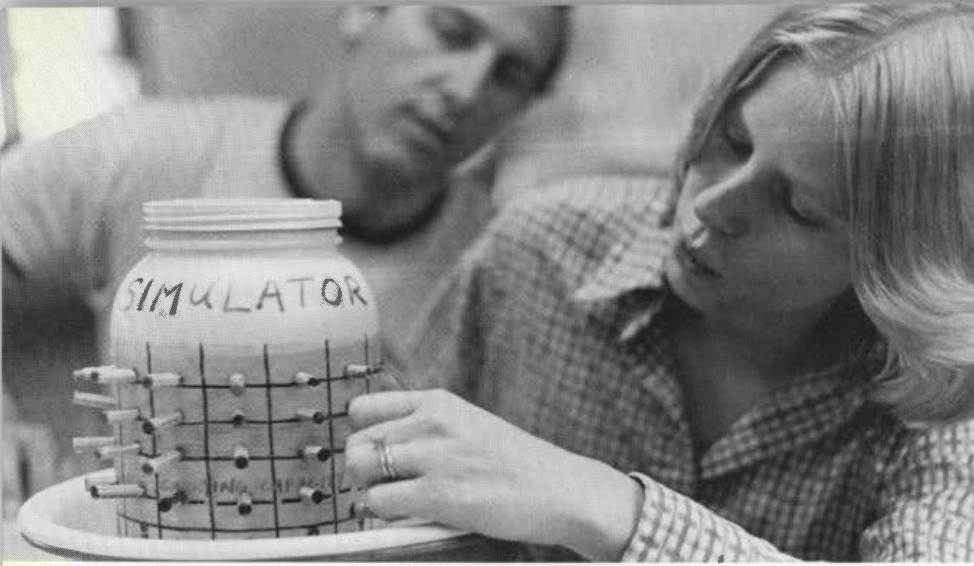
Approximately one third of the 108 teachers who participated in the weekend received scholarships supplied by the New Jersey Federation of Sportsmen.

A third Wildlife Weekend for Teachers will be held at the Conservation and Education Studies Center at Whitesbog on September 23, 24, and 25. Two new courses, Wetlands Management and Marine Fisheries, will be added to the curriculum. Because CESC is located in the Pine Barrens, this unique ecosystem will be discussed and utilized as a part of the learning experience.

Room and board accommodations at the Center are limited to 100 teacher-students. The fee for the weekend is \$35 and it includes room, board, and instruction.

For registration and information on the scholarships available from the New Jersey Federation of Sportsmen, call:

Robert McDowell
201-852-2565 or
609-292-9450



Using the simulator in the Population Dynamics Course



Bob Byrne demonstrates critter catching technique



Checking the catch in the Cold-Water Fisheries Management Course

Photos by Harry Grosch

Continued from page 9

bird watching

as small numbers of shearwaters, petrels and jaegers, can usually be found close inshore.

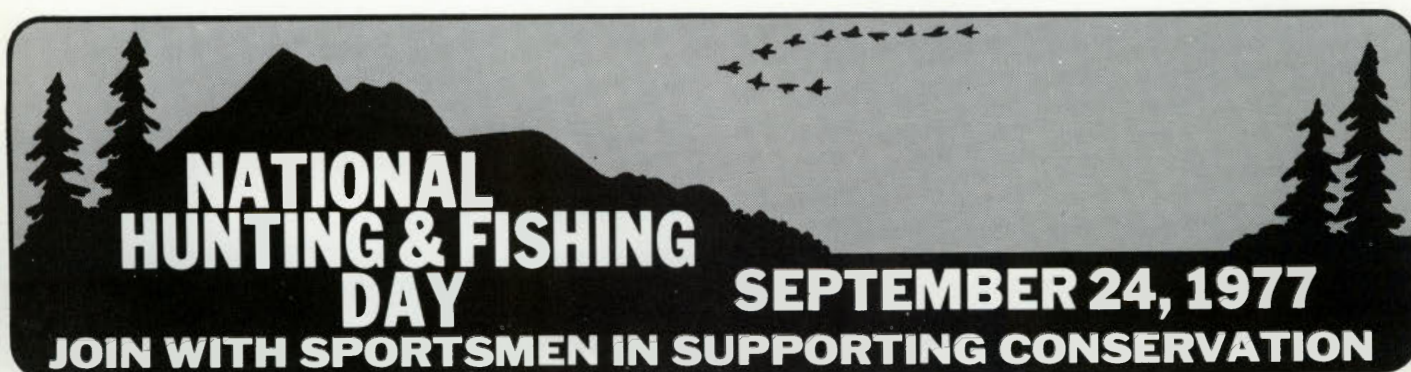
Party boats, which depart from Atlantic Highlands, Brielle, Barnegat Light, Cape May, and other New Jersey ports, are always willing to take along nonfishermen, often at a reduced fare. Names and phone numbers of boats are listed weekly in many local papers. Call the captain the night before you plan to go and learn how far out the boat will be going. Boats looking for cod or bluefish tend to fish farther out than those going for fluke or porgies. Generally, the farther east the boat goes, the better. Trips can be taken to Hudson Canyon in fall and spring aboard the Miss Barnegat Light (out of Barnegat Light) and Captain Charlie's Supercat (Atlantic Highlands), among others. In addition, parties of birders sometimes charter an entire boat which goes where the birds, not the fish, are most common. These are often the best trips of all. A recent Urner Ornithological Club—Delaware Valley Club trip logged Fulmar, Manx Shearwater, Leach's Petrel, Long-tailed Jaeger and Skua, in addition to the more common species—a dream trip to any pelagic birder.

Even a moderately cool day can be bitingly cold on the deck of a boat. Bring the warmest possible clothes—it is hard to keep binoculars steady when you are shivering from the cold and damp, and good birds are often missed when one must make frequent trips to a heated and sheltered cabin. In fall, winter, and spring, a heavy coat, warm boots, mittens or gloves, and if possible, waterproof jacket and pants, will make for a much more comfortable trip. Many people find Dramamine an essential—needless to say, seasickness is not a pleasant experience. Also necessary is a pair of binoculars, of between seven and ten power, the most useful magnifications for watching birds. A field guide is also helpful. Roger T. Peterson's *Field Guide to the Birds*, Chandler Robbins' (et. al.) *Birds of North America* or Richard Pough's *Audubon Water Bird Guide* all contain illustrations of pelagic birds and information on how to identify them.



Sooty Shearwater, May 31, 1975, Hudson Canyon

Many bird watchers often speak of the unpleasantness of pelagic birding, of seasickness, the cold and damp, the monotonous ride out and back. To me this is part of the trip's charm. We have all become rather tame, driving down to Brigantine or up to Stokes State Forest in search of a rare bird that someone else has found and kindly placed on the taped message of the New York Rare Bird Alert. I think many of us still dream of the days when a naturalist could paddle up a primeval river and discover a new species of animal, having faced privation, poisonous snakes, and Lord knows what. The frontier myth dies hard. Pelagic birding is not always easy. On a rough day in November it takes real fortitude to stand on deck for eight hours, hoping for a Puffin or Skua and usually not finding either. One often returns from an ocean trip feeling that the list of birds was truly earned, an uncommon feeling in New Jersey. Those who think that bird watching has become too much like coin collecting, should try the challenge of a boat trip on the Atlantic. □



**NATIONAL
HUNTING & FISHING
DAY**

SEPTEMBER 24, 1977

JOIN WITH SPORTSMEN IN SUPPORTING CONSERVATION

Jewels

bogs in New Jersey do not have peat bottoms, but the plants grow on very sandy soil which needs sanding only once in twelve years. There is a classic argument on the merit of peat or sandy bottoms with old timers mostly preferring peat, but the trend is to the sandier soils. Originally cuttings were planted about ten inches apart and runners soon formed a thick network over the bogs. The method now used is to spread runners from knife prunings on prepared soil and then disc them into the sand. The berries are borne on the upright stems which develop from the runners.

Each bog is surrounded by drainage ditches for flooding and irrigation. A dependable source of water is essential and the abundance of water in the Pine Barrens contributes to the success of cranberry culture here. The bogs are flooded during the winter months to prevent winter-kill and frost-heave to the plants. Bogs were originally drained in late March or early April and then weeded in preparation for the growing season. It is now traditional to "draw" the bogs on May 10. This late date eliminates some insect infestations and eases the frost control problem. Vines are pruned in the fall after the harvest and they are fertilized every three or four years.

The plants bloom in late June. The pale pink blossoms have recurved petals and stamens resembling a beak, from which came the original name "crane berry", since contracted to cranberry. The berries begin ripening as early as August in full sun, but deep down in the matted vines they redden much later. Cranberry bogs begin bearing fruit two to six years after planting.

The New Jersey harvest begins in mid-September and continues until late October, depending on the weather. Most growers "wet harvest" the fruit, which is sent to nearby Bordentown for processing. The bogs are flooded when the berries are ripe and motorized beater-harvesters with circular

hoops are run through the water over the plants. The revolving hoops separate the berries from their stems and leave a trail of the buoyant berries floating in their wake. The berries drift downwind toward one corner of the bog and loading equipment is moved into position with a conveyor placed near the confined berries. Workmen wading in the water guide the berries to the conveyor, which carries them up into trucks. The growers field-clean the berries, using "degrassing" equipment to remove weeds and trash.

Berries bound for the fresh market are harvested dry, as wet-harvested berries do not keep well even when properly refrigerated. Mechanized scoops—machines with revolving combs—have replaced the old-fashioned hand scoops once used by field workers.

At the packing house the firm berries are separated from soft ones by a machine which tradition says was developed on a principle inspired by the observation of early growers that sound berries bounce. Mechanical separators give each berry several chances to bounce over four-inch high barriers. Only lively ones go on to be screened and graded for color and size. Cranberries for the fresh market are blown free of chaff and packaged promptly. Those for ready-to-serve products are washed for immediate processing or frozen for later use.

New Jersey ranks third in the nation in cranberry production, behind Massachusetts and Wisconsin. Oregon and Washington also grow cranberries commercially. New Jersey bogs are confined to the Pine Barrens of Burlington and Ocean Counties and the annual crop value of \$3,000,000 or more is an important factor in the economy of the area.

Many bogs have been dredged, dammed, and deepened and are now the centers of year-round lake communities in the Pines. Medford Lakes, Tauton Lake, Lake Pine, and Centennial Lake are just a few which previously were working cranberry bogs. New Jersey's cranberry acreage now totals approximately 3,200 acres, down from more than 11,000 acres not too many years ago. Nevertheless, improved methods of harvesting and favorable weather produced an all-time high record crop in 1976.

Some of the photographs which illustrate this article were taken at the experimental bogs of the Rutgers University Blueberry-Cranberry Research Center near Oswego Lake. Mr. Philip Marucci, director of this project, said that New Jersey harvested approximately 260,000 one-hundred-pound barrels, surpassing the previous record high set on more than three times as much acreage.

Cranberries, formerly a twice-a-year holiday treat, are now served in many ways in all seasons. The industry not only survived the "Great Cranberry Crisis of 1959" (when the sale of berries was temporarily suspended after a chemical weedkiller, capable of producing cancer cells in mice, was found to be used in the bogs), but came back larger and stronger than before. At the Research Center at Chatsworth, work is constantly being done to improve the cranberry and there are high hopes for a cross which has been developed with high production potential and excellent flavor qualities.

Sparkling amid the greenery of the plants, floating on the dark "cedar water" of the bogs, or brightening a festive dinner table, the berries with the bounce are indeed jewels of the Pine Barrens. □

1976 Harvest



Continued from page 7

"V" is for Vulture

that vultures are snow white when young and that they have a tendency to "faint"? Intrigued by visions of fainting vultures, I asked Ed to elaborate.

Unaggressive and wary by nature, vultures are hard to get near and few people will handle them because of their reputation. Ed was surprised to find, therefore, that when a vulture is trapped and cannot escape, it "faints"—the muscles of its neck relax and the blood drains from its head, turning the face from red to gray. In this relaxed condition, the vulture is easily handled.

Turkey vultures are gregarious by nature and usually congregate during feeding and roosting. Ed first became interested in vultures when he noticed them congregating near his home each evening. He was curious about their habits and population dynamics. Ed wondered how far south they migrated after leaving northern New Jersey in October. Also, he wanted to find a means of determining the age of a turkey vulture (individuals have been known to live more than 25 years in captivity).

Ed Henckel has undertaken two research projects which he hopes will give him the information he seeks. First, he has adopted the technique of trapping birds live and unharmed so that he can tag them for future identification. The trap is a large, walk-in cage constructed of nylon mesh netting. Specifically designed for vultures, the trap has all the comforts of home—roost poles and a free meal. Attracted to the trap by dead bait, the vultures are "caught" when they walk in through a ground-level door. Theoretically, the door is "in only"; however, more than one vulture has simply walked out again after dining.

Over the last three years, Ed has banded 78 birds, tagging each with a pink wing streamer boldly numbered to aid identification of the birds at a distance. He has received reports of these pink-streamered vultures from as far away as Florida. So be on the lookout for Ed's tagged birds. If you see a color-marked vulture, please notify Ed at Camp Mt. Allamuchy, R.D. 3, Stanhope, New Jersey 07874



WADE WANDER

(201-347-5692) giving the date and location of the sighting and if possible the number on the streamer.

Research sometimes leads to unsuspected information. Already, Ed has gathered enough data from his vulture banding to clearly document the need for a new-size leg band for vultures and large hawks. Hawk banders have long recognized this need but could not prove it until the results from Ed's study became known.

This past summer, as a second phase of his research, Ed received state and federal permission to take two young vultures into captivity for a long-term study to determine a means of aging vultures. He will be looking at the change in a number of physical characteristics, including the development of facial warts, to see if there is a correlation with age. It is hoped that the results of this research will enable biologists to age the individuals in a population in order to determine the ratio of young to old birds. Such a ratio is an important statistic for monitoring the reproductive success and ultimately the status of a species.

Observing birds in captivity will also enhance Ed's ability to deal with wild vultures that are brought to him with injuries. He has had some success caring for vultures with broken bones. Indeed, the only aggressive vulture he has ever handled was one with a broken leg which I called to his attention. In appreciation for our concern, the vulture bit me while Ed was examining its leg.

Ed Henckel's interest in vultures is shared by Joe Jacobs. An amateur ornithologist from Pennsauken, Mr. Jacobs is recognized nationally for his 33 years of experience with New Jersey's endangered osprey. Mr. Jacobs' work with turkey vultures is

not as widely known as his osprey research; however, the knowledge he gains on the vultures is equally important.

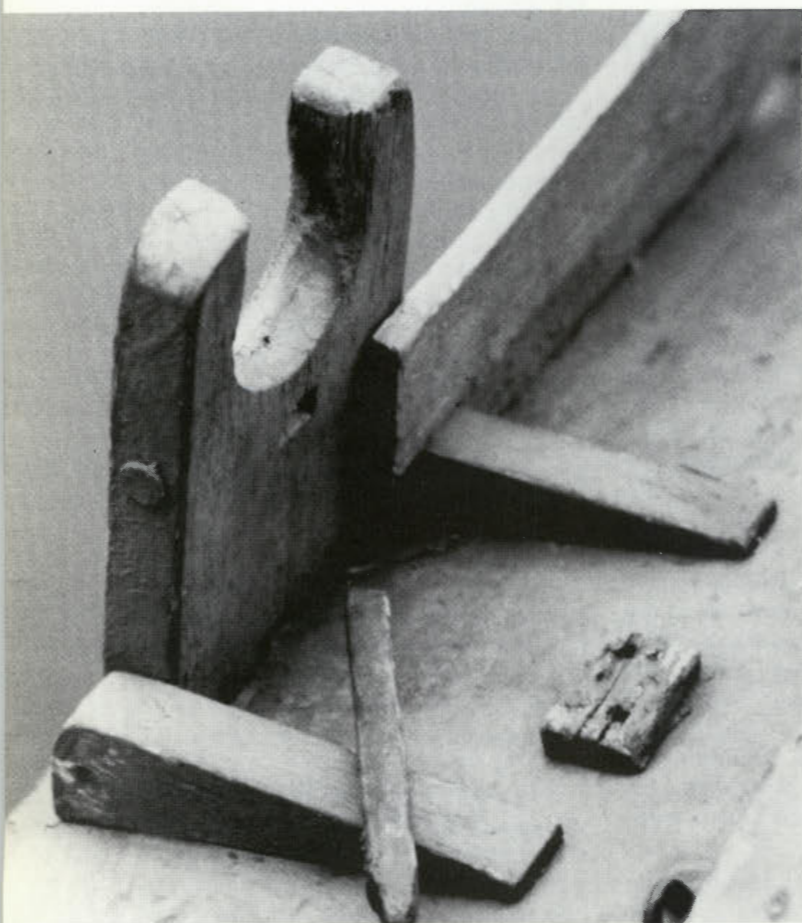
Banding of young birds on the nest is an important part of Joe's work with vultures. Such an activity may sound easy, as vultures nest on the ground in honeysuckle tangles, under overhanging rocks, and in hollow logs and rotten stumps; they have also been known to nest in caves. Vultures are highly secretive about the location of their nests, however, so the most difficult part of the banding is often finding the nest.

In 1969, Mr. Jacobs began to wonder if the vultures' reproductive potential in New Jersey might not be reduced because of loss of nesting habitat—forest and woodlots full of tangles and brush. So, he began a turkey-vulture housing project—creating nesting sites for the vultures. Recognizing the vultures' fondness for nesting in dark, cave-like locations, Mr. Jacobs built 14 vulture nesting boxes which resembled large dog houses. He set them out in likely locations and waited for results. One of the boxes was immediately stolen. However, five of the boxes have been used by nesting vultures over the years and he has banded a few young. He has not yet had any reports on his young birds. However, with species that can live more than 25 years, the researcher will have to be patient as he awaits banding recoveries.

The dedication and interest shown by people such as Ed Henckel and Joe Jacobs will go a long way in helping to dispel the myths and misinformation about vultures perpetuated over the years. The information they gather will help foster a greater understanding not only of the birds, but of the whole interdependence of man and the world around him. □

Sneak Box

examples of our forefathers' ingenuity. Since modern metal oarlocks were not available during the heyday of sneakbox construction, they used the most easily accessible and logical material—wood. A hunk of cedar approximately 1 inch thick by 10 inches long by 6 inches wide was cut and a circular notch carved into the top to accept the oar. A strip of leather about 1 inch wide was wound around the oar until thick enough to keep the oar from sliding through the oarlock. A hole was then drilled through the bottom of the lock (across the width) to accept a wooden dowel. The dowel was placed in a hole in a wooden block on each side of the oarlock and the wooden blocks were attached in their proper position to the deck. A notch cut in the inside face of the oarlock accepts a piece of wood approximately 6 inches long that is wedged between the lock and the deck when the oars are in use, holding them upright. By removing the sticks of wood, the oarlocks can be folded down out of the way when they are not in use. Pretty smart, huh?



The oarlocks on a Barnegat Bay Sneakbox best illustrate the ingenuity and resourcefulness possessed by our forefathers. The loose stick is placed in the notch on the inside face of the oarlock and wedged against the block of wood attached to the deck, holding the oarlock upright.

Now let's proceed toward the stern portion of our Barnegat Bay Sneakbox. See those pieces of wood approximately 6 inches high that run around the perimeter of the boat and stop at the rear of the cockpit? They are the decoy racks. Our forefathers designed them with one purpose in mind, but they've taken on a dual role as the hunting seasons have passed.

During those bygone days of market hunting, large rafts of decoys were used to lure the ducks and geese into range. By placing the decoys on their tails on the stern deck portion of the sneakbox, 50 or 60 decoys could be carried out to the gunning site while the racks kept them from sliding off into the water.

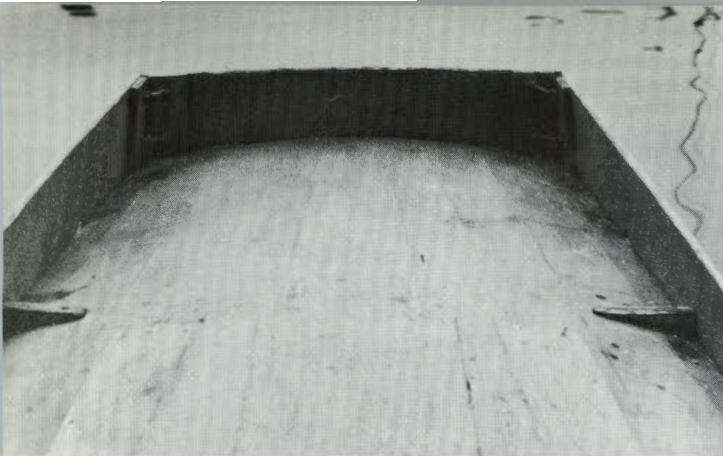
Today, most sneakboxes have a bracket bolted to the stern transom with a 3-to 7-horsepower outboard attached to it. Now, instead of sitting in the cockpit rowing, the hunter sits on the stern deck with an arm outstretched controlling the motor. This setup places considerable weight aft, forcing the rear deeper into the water than normal. Now our decoy racks serve to keep the hunter's bottom dry when the outboard is throttled down and the following wake catches up to the boat. (And there's still plenty of room to carry a dozen stool!) Decoy racks are usually made to be removable so they're not in the way during sailing or fishing trips, but many owners prefer to mount them permanently.

Check out the extreme stern end to see if some provision was made for a removable tiller. Although some sneakboxes were built with this attachment, many baymen preferred to do their steering while under sail with an oar hung over the side.

Let's go back to the cockpit and take a look inside. There's sure to be some sort of removable floor system. Because the occupant sits directly on the floor, this serves to keep him above that little bit of water that always manages to find its way into the bottom of the boat. The removable floor is a great aid when it comes to cleaning out the dead grass, mud, old sandwich wrappers, and other junk that finds its way to the bottom along with the water. Also, in cold weather the floor keeps the hunter a little bit warmer, since he does not have to sit directly on the inside of the hull which, in turn, is sitting directly on the cold mud or in the icy water.

Move the folded piece of canvas out of the way (used to cover the cockpit during stormy weather) and take a look at the construction. A steam-bent oak frame covered by cedar planking is your clue as to why these boats are not being built today in the former numbers. I'm afraid the knowledge and expertise it took to build these vessels have disappeared along with the baymen who built them. This is another reason why the Barnegat Bay Sneakbox should be brought to light as part of this state's heritage. Here's a product of New Jersey that has received national recognition, yet I'd wager 90 percent of this state's citizenry wouldn't know a sneakbox even if they were looking at one. The Barnegat Bay Sneakbox is part of New Jersey's proud past, and I'd hate to see it filed away in history without the respect and remembrance it so rightly deserves.

Before we thank the owner for allowing us to examine this piece of New Jersey history, there's one more item



The decoy racks enable the hunter to store large numbers of decoys on the stern deck. The hooks and eyes in the corners show these racks to be removable.

we must remember to look at. Get down on your hands and knees and look up at the bottom. You should see two runners equally spaced from the center. They could be made of oak faced with metal plates or brass half-rounds. You've probably already guessed what they are. That's right, they're the runners used for sailing across ice. They were used mainly during the days when hunters gunned right through the winter. If a hunter encountered ice enroute to the hunting grounds, the craft was pulled up onto the ice, out came the sail, and once again he was on his merry way. It was also during this time of year that a sneakbox was painted white and was gunned from while resting directly on the ice; our seasons today, however, are not long enough to warrant such a paint job.

O.K., so now the question arises. What do you do if you should find yourself in desperate need of a Barnegat Bay Sneakbox? Well, besides checking the boating section in the want-ads each week, I'm afraid all that's left is to once again start traveling the back roads and side streets of towns with names synonymous with duck hunting, such as Barnegat, West Creek, Tuckerton, or New Gretna. It can be a unique experience.

If you happen to stumble upon one for sale and the owner is aware of what he has, you could pay as high as \$300—even though it needs a complete overhauling. But don't be dismayed. You could also run into one that belongs to a man who is not a duck hunter and who goes on to explain that the sneakbox belonged to his wife's father or grandfather and would \$50 be too high a price to ask? Just try to stifle that grin until you get it hitched to your car and are pulling out of his driveway! Don't laugh—I've seen it happen both ways.

If you should be lucky enough to find an original version with an agreeable price, be aware that you will probably have to do some repair work. Also, I would plan on giving the hull one or two coats of fiberglass. Besides strengthening the hull and protecting it from wood-chewing ice, fiberglass is sometimes actually needed to hold the venerable craft together.

I witnessed one such repair job last fall on a sneakbox reported to be about 90 years old. The hull was in such sad shape that large pieces of paneling had to be nailed over the gaps to keep the fiberglass resin from running inside. I'm told it floats.

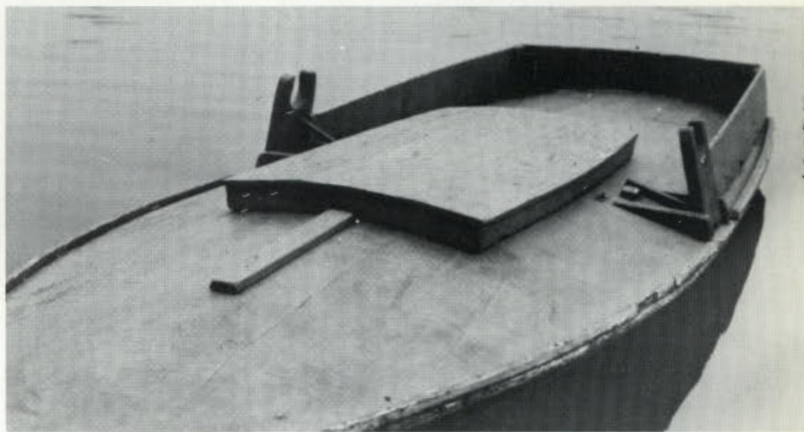
I also helped my neighbor restore an old sneakbox he had come across. Plans called for replacing the custom-made fiberglass deck and nosepiece, and re-glassing the hull, which was of a type of construction I had never seen before. Rather than the conventional planking over ribs, this hull was constructed of long $\frac{3}{4}$ inch by 1 inch cedar strips that had been placed over a form and nailed one to the other.

Anyway, the deck was removed (it more or less fell off) and the hull was placed upside down in order to sand off the old glass. No problem. The problem arose when the hull was turned over to replace the nose. The hull split directly down the center and my neighbor was left with two halves of a sneakbox lying on his garage floor! After a few words to Heaven that in no way could be mistaken for praying, we jury-rigged it back together and the job was completed without further mishap.

These two incidents show to what lengths a man will go in order to own a working Barnegat Bay Sneakbox. Although both my friends either owned or had access to perfectly good modern aluminum boats, they recognized the superiority of the Barnegat Bay Sneakbox when it came to duck hunting.

If you would like to try your hand at building a Barnegat Sneakbox, I would suggest writing to the boating editor of one of our major outdoor magazines for plans. This is the route I took. Although the actual construction can be frustratingly difficult unless you're a real expert at working wood, you'll feel a deep sense of pride and accomplishment when you finally finish.

The hatch cover on a Barnegat Sneakbox is left ashore when the craft is in use. The strip of wood in front of the hatch cover on this particular model covers the centerboard well.



Regardless of which way you choose to go, once you own and have gunned or sailed or fished from one of these spoon-shaped little vessels, I'm sure you'll agree you own one of the most versatile boats in the world. Hell, I'm seriously considering being buried in mine. I can picture it all now...as my Barnegat Bay Sneakbox and I are being lowered into the ground, the priest is saying, "He was a duck hunter to the end..."

how's your duck hunting I.Q.?

BY
ART WEILER, JR.



drake and hen mallard

ANDY WHITING

A chill comes over you as daylight nears. The warmth generated by your long boat trip into the swamp has been lost in the damp cold. Within reach lie the tools of the duckhunter—#4 hi-brass shells, duck call, camo net, hot coffee, and a huge lunch. (This lunch, no matter how large, never lasts past nine o'clock, for duck hunters are a hungry lot, fighting morning chills and expending nervous energy waiting for action.)

Instantly, you are alert as the first flight of ducks whistles overhead. You pray that no shots ring out to put the ducks into flight before the mist rises, for though the ducks are on the wing, they are just trading between open water and have not yet left the swamp. Ever so slowly the sunlight spreads from behind the horizon in the east. The ducks that moments ago were in flight have settled. The time to shoot is near and unseen hunters crouch tensely, scanning the horizon. Suddenly a shot rings out from far across the marsh, putting the ducks into flight. In ever-widening spirals the ducks circle to gain altitude, swinging within yards of the pin oaks on the far side of the swamp. Will they exit over your blind? Crouching low, you can only wait.

Mallards, big drakes, straight ahead only 20 yards up! Stiff fingers are immediately forgotten as the muzzle points skyward. Shots ring out from the hunter's gun, shots which the hunter never really hears, for the mind and eye are focused on the falling drake mallard. The dog is off and quickly returns, muddy and wet, but proudly bearing the elusive bird.

In 1975, this scenario was repeated 138,592 times in New Jersey according to the Waterfowl Survey of the U. S. Department of the Interior. When hunters buy the Migratory Waterfowl Stamp, or "duck stamp" as it is called, they help finance a multitude of studies in water-

fowl conservation. But unless the duck hunter fills out a Waterfowl Hunter Survey questionnaire or participates in the duck wing study, he may be unaware of the work done by state and federal biologists which are of benefit to all waterfowl hunters.

At the state level, the study of waterfowl is closely tied to wetlands ecology. Good duck populations can only exist in a healthy wetlands habitat. Waterfowl populations are a barometer of the conditions which exist in our valuable New Jersey wetlands. The duck surveys are a valuable aide to the waterfowl hunter who wishes to explore new hunting opportunities. For example, in the New Jersey Snow Goose Survey (project number W-53-R-4, 1975) one conclusion is that a *greater* harvest of this bird is needed to prevent habitat damage. Here is an opportunity for the asking. Furthermore, the same report indicates that the best times to hunt Snow Goose are during late November and late December. It gives the location of six wintering flocks and notes migration routes as occurring over the Tuckahoe Wildlife Management Area. With this information waterfowl hunters wishing to bag this beautiful bird can be in the right place at the right time, thanks to the work of the state biologists.

The Office of Migratory Bird Management (Fish and Wildlife Service, U. S. Department of Interior) undertakes many investigations, some of which are the studies by the Bird Banding Laboratory, Waterfowl Population Surveys, Dove and Woodcock Surveys, habitat requirement and regulations development, and of special interest to duck and goose hunters—the Waterfowl Harvest Survey. This survey compiles information from all the major bird flyways in the United States and Alaska. New Jersey is in the Atlantic Flyway, so let us

examine some points of interest. By the way, this information for New Jersey was supplied by the 1,486 New Jersey waterfowl hunters who completed questionnaires at the close of the 1975 season.

Let's take a quiz to discover your New Jersey "Duck Hunting I.Q."

- Which species of duck is bagged most by New Jersey hunters?
a. Mallard b. Scaup c. Black Duck
- What percentage of New Jersey waterfowl hunters are successful (bag one or more ducks/geese)?
a. 30% b. 60% c. 50%
- How many ducks does the average New Jersey hunter bag?
a. 10 b. 2 c. 4
- Which duck is *not* one commonly harvested by waterfowlers in the United States?
a. Greenwing Teal b. Black Duck c. Pintail
- Which goose species is harvested most in New Jersey?
a. Brant b. Canada Goose c. Snow Goose



wood duck

WADE WANDER

Answers

- Black Duck—25.77 as compared to Mallard
- 60%—62% of the hunters are successful.
- 4 ducks—4.4 ducks were bagged by the average hunter.
- Black Duck—Mallard, teal, and pintail are the most common ducks harvested in the U.S.
- Brant—57% of the geese harvested were Brant, 32% were Canada Geese, and 11% Snow Geese.

How did you score? Were you as successful in bagging ducks as the average New Jersey hunter? Whether you hunt in the saltwater tidal flats or in the upland streams and marshes of New Jersey, you share in the joy of misty mornings with your fellow waterfowlers. The game we seek and the environment in which it flourishes are protected in part by the duck surveys which we hunters support when we buy our licenses and stamps. Let us continue to show our support and help the wildlife biologists who protect and maintain the wetlands.

REMOVE THIS STUB BEFORE MAILING ANNUAL SURVEY OF U.S. WATERFOWL HUNTERS

PLEASE READ INSTRUCTION SHEET
COMPLETE QUESTIONNAIRE - MAIL TODAY

A. WATERFOWL HUNTING (INCLUDE SPECIAL DUCK SEASONS, IF ANY)

- GIVE TOTAL NUMBER OF DAYS ON WHICH YOU HUNTED WATERFOWL (DUCKS, GEESE, OR COOTS) DURING THE HUNTING SEASON. _____ DAYS
- WATERFOWL KILL: REPORT BELOW TO SHOW YOUR OWN PERSONAL HUNTING TOTALS. IF ANY SPECIES WAS NOT KILLED OR KNOCKED DOWN, ENTER ZERO (0).

I KILLED AND RETRIEVED:

____ DUCKS AND MERGANSERS
____ GEESE AND BRANT
____ COOTS (MUD HENS)
____ SEA DUCKS (SEA COOTS)

I KNOCKED DOWN IN SIGHT BUT COULD NOT RETRIEVE:

____ DUCKS AND MERGANSERS
____ GEESE AND BRANT
____ COOTS (MUD HENS)
____ SEA DUCKS (SEA COOTS)

- BANDED WATERFOWL: HOW MANY OF THE WATERFOWL YOU BAGGED THIS SEASON WORE METAL LEG-BANDS?

BANDED DUCKS _____ BANDED GEESE _____
IF KNOWN, PLEASE FILL IN THE FOLLOWING (SEE INSTRUCTIONS):

✓	BAND NUMBER	DATE SHOT	PLACE SHOT (NEAREST TOWN, ETC.)

- STATES HUNTED: PLEASE PRINT IN ALL STATES (AND FOREIGN COUNTRIES) IN WHICH YOU HUNTED WATERFOWL THIS SEASON AND LIST THE ADDITIONAL INFORMATION REQUESTED FOR EACH STATE.

STATES HUNTED→	1.	2.	3.
DAYS HUNTED			
DUCKS BAGGED			
GEESE BAGGED			

- NUMBER AND SPECIES OF GEESE KILLED AND RETRIEVED.

____ CANADAS _____ WHITE-FRONTED (SPECKS)
____ SNOW GEESE _____ SEA BRANT
____ BLUE GEESE _____ UNKNOWN
____ OTHER (NAME) → _____

B. HUNTING OF OTHER MIGRATORY BIRDS

- DID YOU HUNT ANY OF THE BIRDS LISTED BELOW THIS SEASON?

☐ YES ☐ NO

- IF YES, PLEASE CIRCLE THE SPECIES YOU HUNTED AND FILL IN THE NUMBER OF BIRDS YOU BAGGED (KILLED AND RETRIEVED).

MOURNING DOVE _____	OTHER RAILS (MARSH HENS) _____
BARNYARD PIGEON _____	GALLINULES _____
WOODCOCK _____	WHITE-WINGED DOVE _____
SNIFE _____	BAND-TAILED PIGEON _____
SORA RAIL _____	SANDHILL CRANE _____

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State of New Jersey



Dr. Joanna Burger with a wing-tagged gull.

wing- tagged laughing gulls

Juvenile Laughing Gulls have been wing-tagged with green or orange and green wing tags (and with U.S.F.W.S. metal leg bands) in Barnegat Bay to study behavior, migration, habitat selection and survival rates. The tags are round (2" in diameter) and numbered. Please report all sightings to Bird Banding Laboratory, Office of Migration Bird Management, Laurel, Maryland 20811. Please include date, time, location, color of tag, and number of tag if possible. Information may also be sent to Joanna Burger, Department of Biology, Livingston College, Rutgers University, New Brunswick, N.J. 08903.

FRONT COVER

A Young Goshawk — Photographed by Arthur Panzer (See article on page 18)

INSIDE BACK COVER

Fall Harvest Still Life in New Jersey — Photographed by David Campione

BACK COVER

Symphony of The Woodlands — Photographed by David A. Bast



