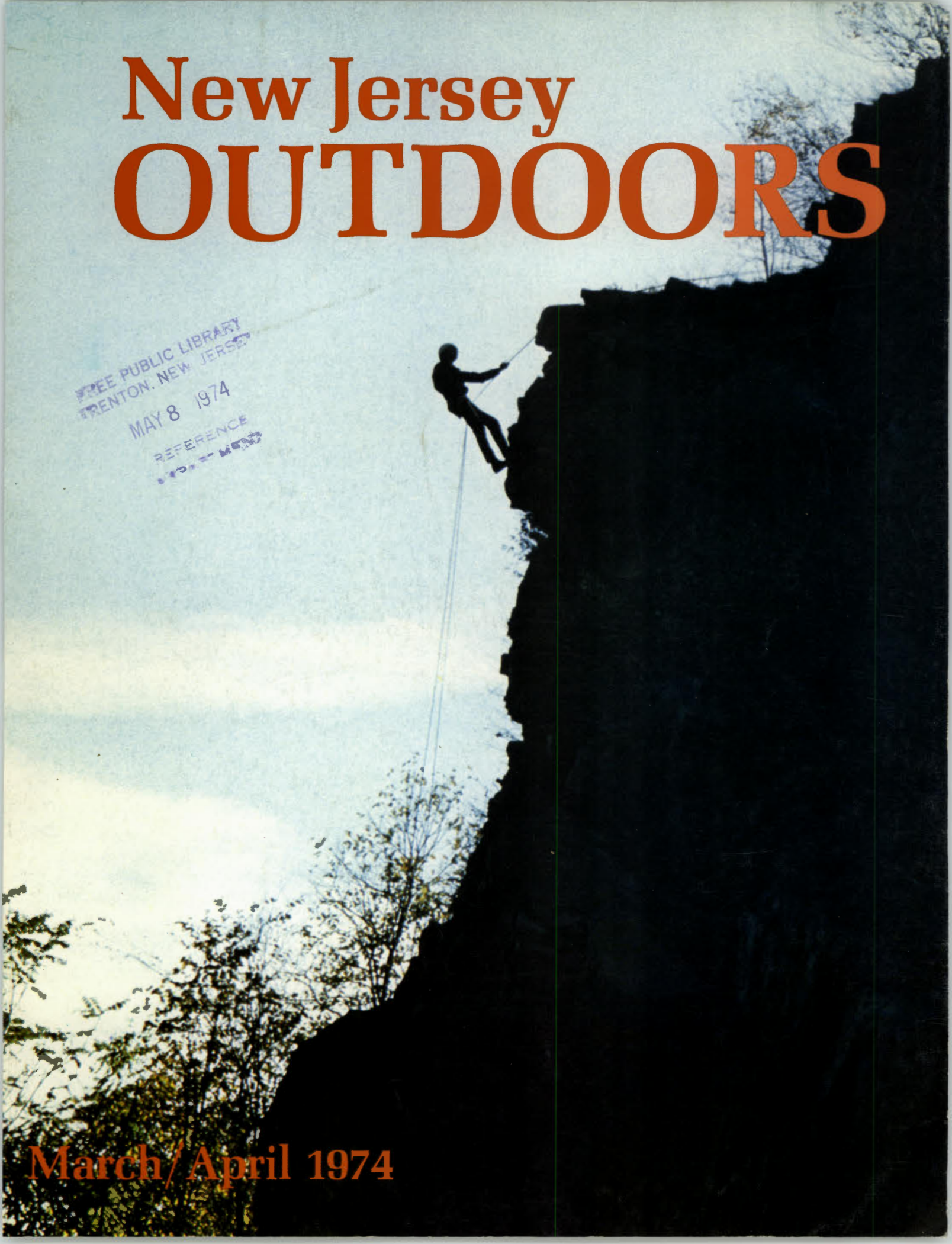
New Jersey OUTDOORS



March/April 1974

This young angler will grow up and be a true sportsman. Maybe his Dad taught him right—he knows where trash belongs—in a trash barrel, not in the stream or in the bushes. But we see many fathers setting poor examples for their youngsters by tossing beer cans in fishing waters, littering the banks with sandwich wraps, and then complaining about the lack of fish. REMEMBER—SPORTSMEN DON'T LITTER, SO DON'T BE A SLOB.

NEW JERSEY OUTDOORS is published bi-monthly by the Division of Fish, Game and Shellfisheries of the Department of Environmental Protection of New Jersey. This publication is dedicated to the wise management and conservation of our natural resources and to foster a greater appreciation of the outdoors.

Second-class postage is paid at Trenton, N.J. and additional mailing offices. Subscriptions are $3.00 per year and three years for $8.00 payable by check or money order to New Jersey Outdoors Publication Office, P.O. Box 1809, Trenton, N.J. 08625. Change of address should be reported to the above address. Send old and new addresses and the zip code numbers. The Post Office will not forward copies unless forwarding postage is provided by the subscriber. Allow six weeks for change of address to take effect. Unsolicited material is sent to the magazine at the risk of the sender. Permission granted to reprint with credit to New Jersey Outdoors.

March/April 1974
VOL 1 NO 2

New Jersey OUTDOORS

FEATURES

This . . . Mob Scene Opening Day, Small Game

. . . or this, First Saturday of Controlled Hunting

Photographs by Harry Grosch

the Controlled Hunting EXPERIMENT

DID IT WORK?

by
Jim Applegate
Assistant Professor of Wildlife Biology, Rutgers University
and
Frank Tourine
Assistant Wildlife Biologist,
N.J. Division of Fish, Game and Shellfisheries

Many years ago foresighted game managers realized that there were problems ahead for hunting in New Jersey. Our population was growing. More people meant more hunters. More people also meant more houses for people to live in, and more hunting land going under the bulldozer.

Those farsighted managers believed that a place to hunt was going to be harder and harder to find in New Jersey. They decided that the State should be taking steps to insure that people would always have a place to hunt.

That decision led to the land acquisition program of the Division of Fish and Game. Since then the State has obtained over 131,000 acres of land. These tracts are administered as Fish and Wildlife Management Areas throughout the state.

But problems didn't stop with the acquisition of land. Many hunters used the areas, and most of the game crop was harvested early in the season. The problem was temporarily solved through in-season stocking of game farm birds. Then started a vicious cycle. More birds attracted more hunters who needed more birds. The birds were supplied, and they attracted even more hunters.

The cycle brings us to where we are today when thousands of hunters crowd onto the public lands during the first Saturdays of small game season. The word "Clinton" brings thoughts of armed lines of combatants, instead of a beautiful tract of rural countryside.

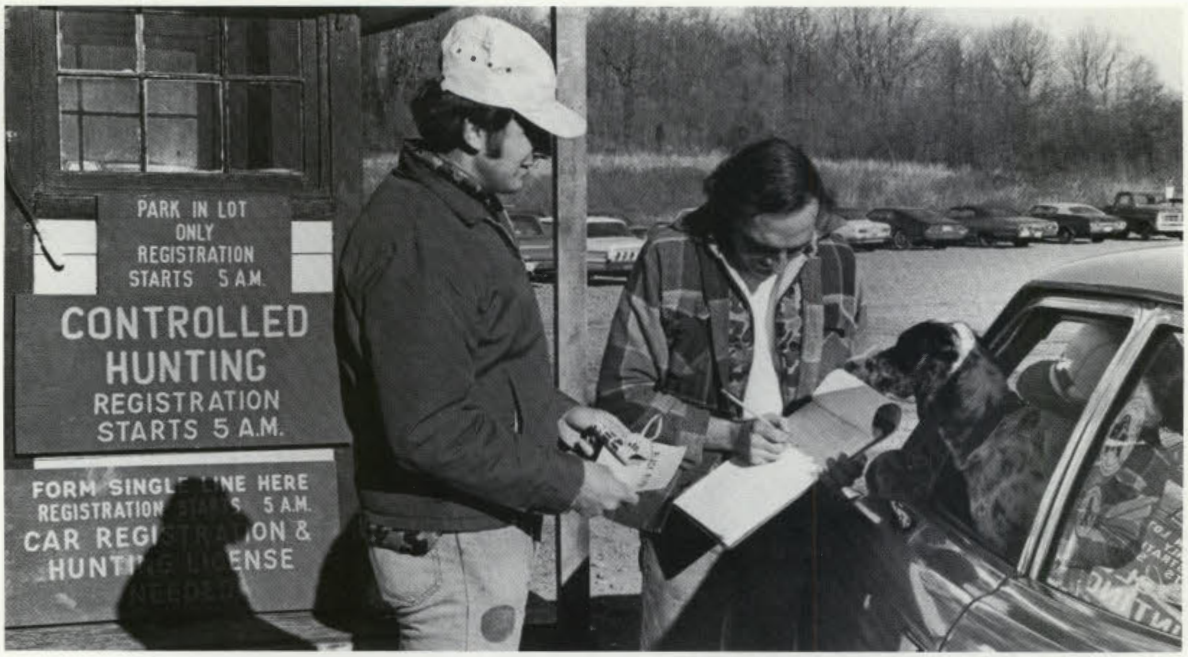
Those who hunt on public lands express concerns at the carnival atmosphere that prevails on opening day of small game season. The hunter who is fortunate enough to hunt on private land shakes his head about the shenanigans of the "Public Shootin' Grounds," and mumbles something about a ten-foot pole.

There is another group of people whose opinion should concern us, too—the people who have never hunted and who have no direct contact with hunting. A previous study showed us that almost half of the state's population (44%) falls into this category and that their opinion of hunters and hunting tends to be rather low. If they think that Saturday on a public shooting ground is all there is to hunting, can you blame them for not understanding the motives of a hunter?

The Division of Fish, Game and Shellfisheries is concerned with the problems of too many hunters on too little space. The problems had to be confronted. An initial step was learning more about the people who use the public lands.

What do those who hunt public land during the heaviest use periods really think of hunting under these conditions? To find out we surveyed 155 hunters who were at the Assunpink on opening day of 1972. (During that day 2176 hunters crowded onto the tract's 3,000 acres.)

We asked them to rate the experience that they had had that day and then asked them their reasons for their opinion. The general reaction was negative, with only



Registration at Black Rock Wildlife Management Area

30% of the hunters rating it any better than "Fair." The overwhelming reason for negative ratings was "too many hunters!"

We found that only a small minority of the hunters (8%) were opposed to the idea of limiting the number of hunters on public lands. A majority (61%) said that limiting numbers would be a great improvement. We also found that most (58%) had access to private land. Only 27% said that they would have no place to hunt if they could not hunt on the Assunpink.

The concern of State game managers turned into action during the 1973 hunting season with an experimental program that limited the number of hunters on selected public lands during heavy use days.

The managers established a limit on the number of hunters at Port Republic, Assunpink, and Black River tracts. All hunters were required to register at a check station before hunting on the tract during 5 heavy-use days (Thanksgiving and all Saturdays prior to deer season). When the quota was reached, no more hunters were allowed to enter. As hunters left, however, their permits were reissued to others.

How did the experiment work? Perhaps the best way to evaluate the program is to measure the reaction of those who used the system. Again we sampled those who hunted the Assunpink. This time we talked to those who hunted during the days when registration was required.

Our interviews indicated an increase in the rating that hunters gave their experience at Assunpink. A majority of 74% said that they liked the registration procedure and rated their day as fair to excellent. Negative reactions were attributed to such things as "not enough birds," "I have to get up too early," and "I didn't like waiting to register." A few felt that there were still too many hunters, but most sensed a great improvement in the crowded conditions.

So the people who are using the tracts during controlled hunting days are enjoying it more. Have we solved the problem? Not entirely. Having to register at a booth is an unnatural thing for a hunter to do, and we shouldn't expect him to be happy at the idea. He'd be happiest with a few buddies, hunting in an area where he's not likely to see another hunter.

But we are in New Jersey, and that means hunting in a state where there is an average of 953 people per square mile. It's a minor miracle that hunting still exists in such a state! If it is to continue, we must expect inconveniences that the Pennsylvanian wouldn't dream of. Hunting by registration on selected public lands will probably be one answer to the problem that will continue.

Let's emphasize that this is not the only answer that the Division is looking at in its fight against the MAN-LAND crunch. New lands are being bought at every opportunity. The Division is also attempting to shift some of the weekend pressure to weekdays by stocking birds *every day of the week!* Some fantastic sport is available on public lands on Monday through Friday with crowds that are generally one-tenth the weekend numbers. We'd like more people to give up a Saturday for a weekday to even out the pressure.

There are no easy answers to the problem. Hunting by registration, we expect, is one answer that will continue. With continuing improvements in our method of administering controlled hunting, we hope that we can make it as small an inconvenience as possible.

bounty system in NEW JERSEY

EDITORIAL COMMENT: *As we have emphatically stated in the body of the article, the Division of Fish, Game and Shellfisheries is against the payment of bounties for predator control. In this day and age, the bounty system simply does not work; it is expensive and ineffective and open to fraudulant practices. The bounty system may have served a purpose in the colonial America of 1675 or 1709 but not the 20th century.*

by G. N. Alpaugh, Chief
Bureau of Wildlife Management

Did you know that eight New Jersey counties and three municipalities pay bounties? The bounty system is nothing new. History records that Henry VIII in the 16th century assessed his landowners for a bounty on crows, choughs and rooks. Queen Elizabeth empowered the church wardens to levy a tax on land and use the funds for bounties on certain hawks, kites, buzzards, shag, cormorant, weasel, stoat, wildcats or "other ravening birds and vermin".

The use of the bounty system in the United States for the control of certain species of wild animals started back in colonial times and is recorded as follows:

Early appearance in the United States (protection of property and livestock) Pennsylvania—1683, New Jersey —1675, Vermont—1779.

Bounty Payments System in New Jersey:

Year

1675 — 15 shillings for each grown wolf.
1682 — 15 shillings for each wolf.
1697 — 20 shillings to each Christian and 10 shillings to each Negro or Indian for each grown wolf; 10 and 5 shillings respectively for whelps.
1692 — 30 shillings for each wolf except in Somerset County where it was 22 shillings.
1695 — Bounty law repealed leaving each town or hamlet authority for the destruction of wolves.
1709 — Act for destroying wolves, crows and black birds.
1713 — Act to encourage the killing of wolves, panthers and red foxes.
1744 — Act to encourage the destruction of crows, blackbirds, squirrels and woodpeckers in the counties of Gloucester, Salem, and Cape May.
1751 — An act to encourage the killing of wolves and panthers.
1902 — $3 bounty on red foxes.
1906 — Fox bounty re-enacted.

STATEWIDE FOX BOUNTIES

County	County Bounty?	Bounty Amount	Municipal Bounties?	Municipalities and Amount
Atlantic	Yes	$5.00	No	–
Bergen	No	–	No	–
Burlington	No	–	No	–
Camden	No	–	No	–
Cape May	Yes	$3.50	No	–
Gloucester	Yes	$3.00	No	–
Cumberland	Yes	$5.00	No	–
Essex	No	–	No	–
Hudson	No	–	No	–
Hunterdon	No	–	Yes	Franklin Twp. $5.00 W. Amwell Twp. $2.00
Mercer	Yes	$3.00	No	–
Middlesex	No	–	No	–
Monmouth	Yes	$3.00	No	–
Morris	No	–	No	–
Ocean	Yes	$3.00	No	–
Passaic	No	–	No	–
Salem	No	–	Yes	Pittsgrove Twp. $2.00
Somerset	No	–	No	–
Sussex	No	–	No	–
Union	No	–	No	–
Warren	Yes	$3.00	No	–

Number of Counties Paying Bounty: 8 (38%)

Number of Counties Not Paying Bounty: 13 (62%)

Number of Counties Paying Bounty Affected By S-708: 1 (Mercer)

Number of Municipalities Paying Bounty: 3

In New Jersey it has been the practice for some counties and townships to pay a bounty on foxes. It has been noted that foxes continue to be present in counties and townships paying bounties, and the existing populations are comparable to those in counties and townships in which no bounties are paid. In other words, bounties do not provide a cure.

It should be noted that the Division of Fish, Game and Shellfisheries recommended for many years against the payment of bounties on any species of wildlife in New Jersey. The predator problem in New Jersey is local in character. In areas where poultry are reared on open range, a food supply is created that offers easy utilization for several species of animals. Predator problems can develop from the killing actions of stray dogs, raccoon, weasels, foxes, mink, feral house cats, skunks, opossum, great-horned owls, and several species of hawks. Losses in young chickens on range can be considerable as a result of the predation of any of the above-listed animals. An additional bounty on foxes would not alleviate the damage that does occur from other animals and might not reduce damage by foxes because there would be no intensification of effort in the locality where damage is occurring. The same factors would apply in areas where sportsmen or landowners might feel that certain wildlife populations were in jeopardy due to predator activity.

The predator control program sponsored by the Division of Fish, Game and Shellfisheries of New Jersey is predicated upon the basis that the degree of control should be determined by the need for control. Under this policy, when a person has severe damage, an intensive control program is carried out on his property to remove the offending animal or animals.

This work is carried out by four professional trappers who are capable and efficient in removing all types of predatory birds and animals when these animals are doing damage. In addition, these men operate on an extension basis. County-wide demonstrations have been held with other groups, farmers and sportsmen to demonstrate the proper methods of trapping. Advice is given in regard to protective measures that a farmer or sportsman can take to help themselves. This is a service that has been well received. It is efficient, free of fraud, accomplishes a seasonal reduction of predators in the locality where damage is heavy, and it is not as costly as a bounty system.

It is the modern and progressive method of dealing with the predator problem in New Jersey. It is designed to give service to those citizens of this state who are suffering from the depredations of predatory birds and animals. The value of the program is recognized and it contains none of the stigma that is associated with the bounty system.

GARDEN STATE

Julian Moynahan, Garden State,
a novel. 1973 Little Brown and Company 6.95

Few authors of rank have depicted New Jersey in fiction. John Updike's Poorhouse Fair is set in New Jersey, but the story unfolds almost entirely indoors. William Carlos Williams' novels portray the hard life of mill town immigrants at the turn of the century, but the flora and fauna seldom enter into these books. Cameron Hawley's hero in the Lincoln Lords is a business man jockeying to acquire a desirable industrial site. One searches in vain for a novel in which man confronts the natural elements. Perhaps the passive geography of most of New Jersey invites such neglect and surely our gentle terrain has long suffered abuse. Early travellers from abroad commented on the unkemptness of New Jersey farms. As for the shabbiness of our towns, one needs only to drive along routes 130 or 80 or a dozen others for verification of such abuse.

Julian Moynahan's book, Garden State, by its very title raises our hopes for a New Jersey novel of merit. In it, a giant pharmaceutical firm covets a large tract next to the ritzy section of a small mid-Jersey town. A minority of the residents, the town's upper-crust, opposes the take-over, but the majority, hungry for tax ratables, wants to sell immediately. The town council is divided 3 to 2 on the issue but the company, with the connivance of the mayor, moves to bribe the fourth and deciding member. So the stage is set, a contest to determine the most socially desirable use of the abandoned farm. Will it become the site of yet another glass and concrete construction lurking behind its link-wire fence or will it be allowed to return to its virgin state?

Enters now the anti-hero Howard Butler. He is a township resident who owns a strategically placed ten-acre parcel of land within the boundaries of the disputed tract. Howard is forty-six years old, has just lost his high-paying job in New York City (which he secretly hated), is separated from his wife, estranged from his teen-age daughter and rebuffed by his old girl friends. He retreats to his ten-acre plot—first buying a complete set of Thoreau's works, and with the aid of a handyman, also a middle-aged drop-out, tries to start up a tree nursery. It is tough going and the meagre rewards are more therapeutic than financial. But instead of developing this theme of man and nature, the author propels his hero toward a pat awareness of the restive 1960's.

Welcome to the Sixties, Howard. Here and there the author does evoke the beauties of nature but he is consistently distracted by Howard's ego. Moynahan can be quite clever and there are some amusing set pieces: The tumultuous town-meeting scene and the college re-union, but one wishes he would dwell more upon the Garden State, upon the geometric beauty of the level fields, the myriad vegetation and the quiet beauty of streams and woods. A children's book by Stephen Meader comes to minds, but Meader's New Jersey is that of a 150 years ago. Perhaps what I am longing for no longer exists. Moynahan's dedicatory phrase may say it all, "To the Millstone River Valley and to the memory of lost green fields."

By Charles Perrone,
Burlington Community College

Harry Grosch

Editorial Comment: The author is the 1973 recipient of the Frank G. Helyar Sophomore Award, which is based on character, scholarship, and personality of the student. Mr. Krug is a member of the N.J. Water Pollution Control Association and the only student member of the Ad Hoc Water Quality Control Committee of New Jersey.

YOU CAN DO SOMETHING ABOUT WATER POLLUTION

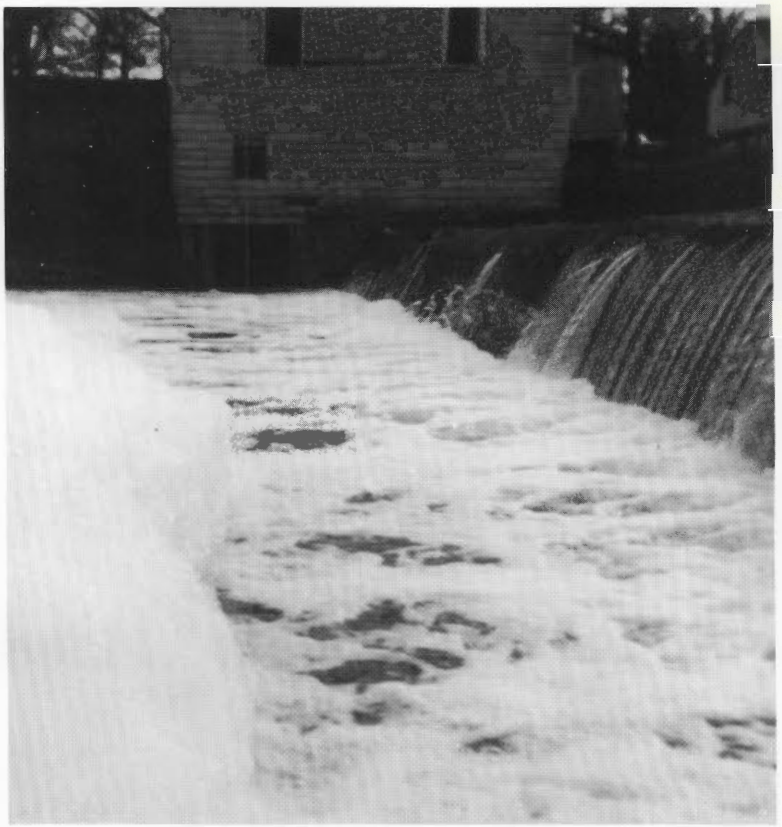
Edward C. Krug
Water Resources Major
Rutgers University

Lovers of the outdoors, haters of overcrowded parks and polluted fishing holes, high school and college students with Hach Test Kits and associated teachers, rod and gun clubs, watershed associations and people tired of drinking foul-tasting water, now you can do something about your plight. You are the cavalry. Public Law 92-500, Water Pollution Control Act amendments invites public participation in the battle against water pollution. The E.P.A. is asking for your help and for the first time you are in a position to help yourselves. Without your help the job cannot be done. Because the water pollution control agencies are undermanned, they can only exert occasional pressure on polluters. The industrial polluters are in business to make a profit and operate at the lowest cost possible. Thus, the situation demands voluntary public cooperation.

It is obvious to freshwater fishermen who have fished in New Jersey for any length of time that we are losing more and more fishing waters to pollution. It is also obvious that the numbers of New Jersey fishermen are increasing, thus, putting more pressure on the dwindling quality fishing resources of the state.

All past efforts to improve or even only to maintain the status quo of existent water quality have failed. To those who believe this to be an extreme statement, note the following quote, ".... the national effort to abate and control water pollution has been inadequate in every vital aspect." This was the finding of a two-year study done by the Senate's Subcommittee on Air and Water Pollution, Committee on Public Works. These are the people who gave us most of our major water pollution control legislation.

Prior to 1972 the most comprehensive legislation in this area the Water Quality Act of 1965, failed, as it simply attempted to prevent further deterioration of existing water quality. It was a defensive measure only. However, a much more ambitious, aggressive piece of water pollution control legislation now exists. It was made into law on October 18, 1972 and is called Public Law 92-500, or the (federal) Water Pollution Control Act Amendments of 1972. This mandate goes on the offensive in the water pollution fight; its function is to *improve* the quality of the nation's waters. The key word here is "improve."



Edward C. Krug

Much less ambitious laws have failed. But from past failures some lessons have been learned: good "tools" have been made available, much expertise gathered, new and better attitudes acquired. In short, there is hope in Public Law 92-500 for New Jersey's waters and our fishing pleasure.

One new and important "tool" of this law is a good definition of what is pollution, which we have never had before. You can imagine how difficult it was to prove in court that somebody was polluting, because a realistic legal definition of pollution did not exist! Only the most spectacular environmental insulters were getting successfully prosecuted. Up until P.L. 92-500, the definition of water pollution was effluent* limitations based on the ability of receiving waters to assimilate waste and remain within assigned surface water quality criteria. This definition is deficient in that it relies on the fallacy of dilution as the solution to pollution. Also, it is extremely difficult to make concise correlations between effluent limitations and water quality standards. The result was the frequent inability to defend this old definition of pollution in court.

Under the new law, however, pollution is defined by effluent standards, i.e. limits on amounts of certain substances that may be allowed in the liquid waste discharge. If these limits are exceeded, that effluent discharge is pollution. Effluent standards were also present in the previously mentioned 1965 Act but this new definition of pollution is not undermined by any false dilution concept as was present in the 1965 Act. Neither is the new definition of pollution made complicated and ineffective by requiring effluent standards to be correlated to surface water quality standards for bodies of water which are always changing in both volume and water quality themselves. This new description of pollution goes into effect December, 1974.

The largest and most effective "tool" of the 1972 Act, that was largely unused before, is public participation. It is in the spirit and letter of this law to liberally seek information from and disseminate information to the general public, as well as to encourage public participation in all aspects of planning and enforcement of water pollution control efforts. After December 1974 you the

Water pollution is a pervasive problem. Shown here is the picturesque Millstone River at Manville on Sunday, November 18, 1973. It was estimated by the New Jersey Department of Environmental Protection that 100,000 fish were killed in the lower fifteen miles of this river during a three week period of November. Extensive foaming of this stretch of the Millstone River was not an uncommon occurrence in 1973.

private citizen concerned about water pollution can even sue the government** for not doing its job.

This is certainly a novel development. Any of us who have tried to extract information out of our governmental agencies will recognize what a big about-face this is. Even government has trouble getting information out of government.

That lawmakers have finally realized that millions of people working on a water pollution problem are better than thousands is reflected in the 1972 Act. They know that the effort required to achieve the major goal of P.L. 92-500, zero water pollution by 1985, makes the N.A.S.A. effort of the 60's a comparatively minor one. Unlike the man on the moon project, the 1972 Act allows you to contribute your time and labor to the antipollution effort. The EPA cannot do it alone; they need you. The fish and other wildlife need you too.

Literature put out by the EPA on PL 92-500 emphasizes the public participation aspect of the mandate. Most media coverage of the Act does not. The majority of mass media publicity is on the "special interest" aspects of it, the parts that are of interest to effluent dischargers like the effluent discharge permit system, and treatment technologies required. Here you find many phrases meaningless to you and me alike, ".... best available demonstrated control technology by May 1974 .... best practicable water pollution control technology by July 1, 1977 .... best available technology by July 1, 1983...." and so on. Unless you are an omniscient deity or Mr. Spock of the Starship Enterprise, this is only so much vague and nebulous talk. What is *best available technology?*

What we should be informed about is how do we find out what is allowed to come out of those pipes into our fishing and drinking waters! What is considered pollution? It is our right to know.

The public up to now has not been much of a factor as we have not had knowledge. By knowledge I mean how do we know what is pollution, even if there was a good definition of it? You see a pipe. What do you test its water for? You don't know what is in it. If only by chance you find something in it, how much of that substance for that *particular effluent* is considered a pollutional level? But now that information will be made available.

Now you can play an important role, for you are the best enforcement agency ever devised. You are always there, not just four times a year or so. The polluters will know that you know. And you can be a factor in water pollution control.

To help yourself and the aquatic flora and fauna of New Jersey write to the U.S. Environmental Protection Agency, Washington, D.C. 20460. Ask for the guidelines for public participation in the water pollution control program. Ask questions, give opinions, participate. This means *you*.

* effluent means liquid waste

** Government here meaning the administrator of P.L. 92-500. Now this is the U.S. Environmental Protection Agency (EPA). When New Jersey's Department of Environmental Protection (DEP) qualifies, it will eventually become the administrator of this law for New Jersey.

Harry Grosch

salt marsh water management programs

By Steve Perrone

A multi-year water management program to encourage the return of waterfowl to South Jersey salt marshes in increasing numbers should prove its worth in future duck hunting seasons.

A series of ponds in the South Jersey wetlands in Atlantic, Cumberland, Ocean and Cape May counties are being studied as to water chemistry, water conditions, wildlife utilization and plant succession.

The objectives of the study are to promote growth of waterfowl and food plants, eliminate production of mosquitoes, retard the spread of undesirable perennials, maintain water levels during droughts, and restore tidal productivity.

Fred Ferrigno, project leader and senior biologist in this area, said that proper water level management and the wise use of pesticides has restored many waterfowl food plants previously lost through the encroachment of perennials such as cattail and reed.

The lush millet growths and the emerging spike rush at several ponds attest to the success of this water management program. Further proof is provided by the return of large groups of waterfowl which were observed in several areas.

CAPE MAY COUNTY PONDS

(Tuckahoe Wildlife Management Area)

The three ponds in this area are in various stages of water management.

Pond No. 1 is in the final stages of perennial plant control. High water levels were maintained in 1972 through 1973.

Pond No. 3 is currently kept at five inches of water above the meadow. This, along with good tidal flow, has produced excellent stands of spike rush, which is a desirable waterfowl food. Perennial plants (weeds) are well under control in this area.

Pond No. 2 is unique among all the impoundments because it is managed as a fresh water pond for fishing. Every other year the water in this pond is lowered to meadow level to allow wild millet to grow naturally. In the fall the pond is reflooded to provide excellent food and resting areas for migrating waterfowl.

In addition, largemouth bass fishing has been excellent in this pond. Bass as large as ten pounds have been taken and five or six pounders are not rare.

ATLANTIC COUNTY PONDS

(Tuckahoe Wildlife Management Area)

All three ponds here are being managed for growths of spike rush. Four to six inches of water is maintained over the marsh and usage by waterfowl is always good. Canada goose liberations over the past few years have resulted in a number of breeding pairs nesting in the area.

OCEAN COUNTY PONDS

(Manahawkin Wildlife Management Area)

There are six ponds being water-managed here. Ponds No. 1 and 2 are freshwater and will remain as reservoirs for the other four ponds. Largemouth bass have been stocked in these ponds in 1972 and have shown remarkable growth to over seven inches in length the first year. Ponds 3, 4, 5, and 6 are built with low dikes and small spillways so that extreme tides can flow over the dikes to replenish the ponds. Spike rush is raised in these ponds and waterfowl usage is very good.

CUMBERLAND COUNTY PONDS

(Heislerville Wildlife Management Area)

The three ponds in this area are in an earlier development stage than the others.

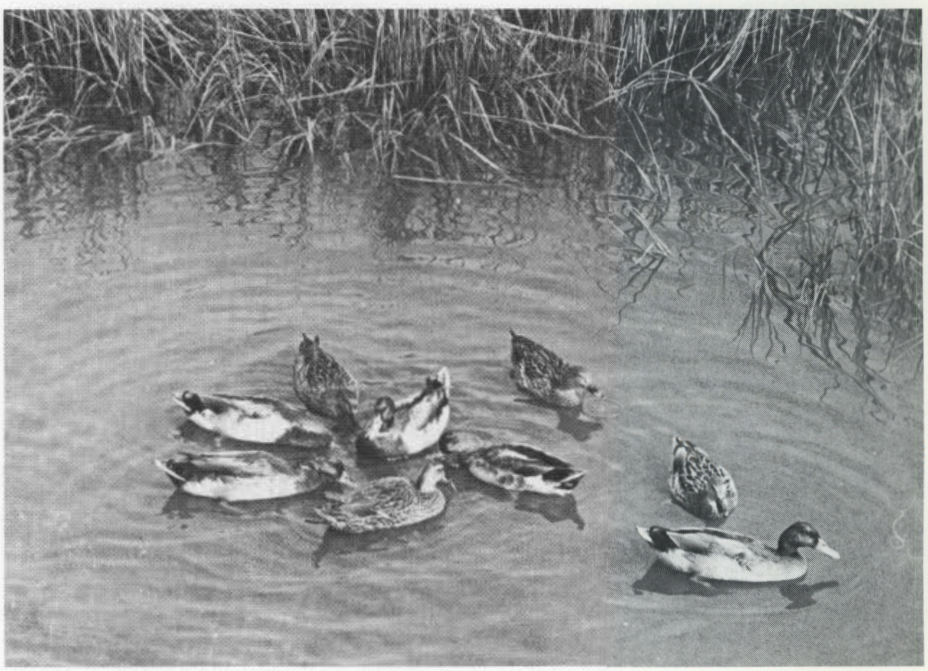
New spillways were constructed on Ponds 1 & 2 in 1972 which greatly increased tidal flow and resulted in a healthy algae mat on the impoundments. This mat is rich in grass shrimp, amphipods and other small crustaceans which provide excellent waterfowl feeding.

The increased tidal flow has enabled the ponds to become excellent crabbing areas. Each week hundreds of crabbers use the area to catch uncounted bushels of crabs.

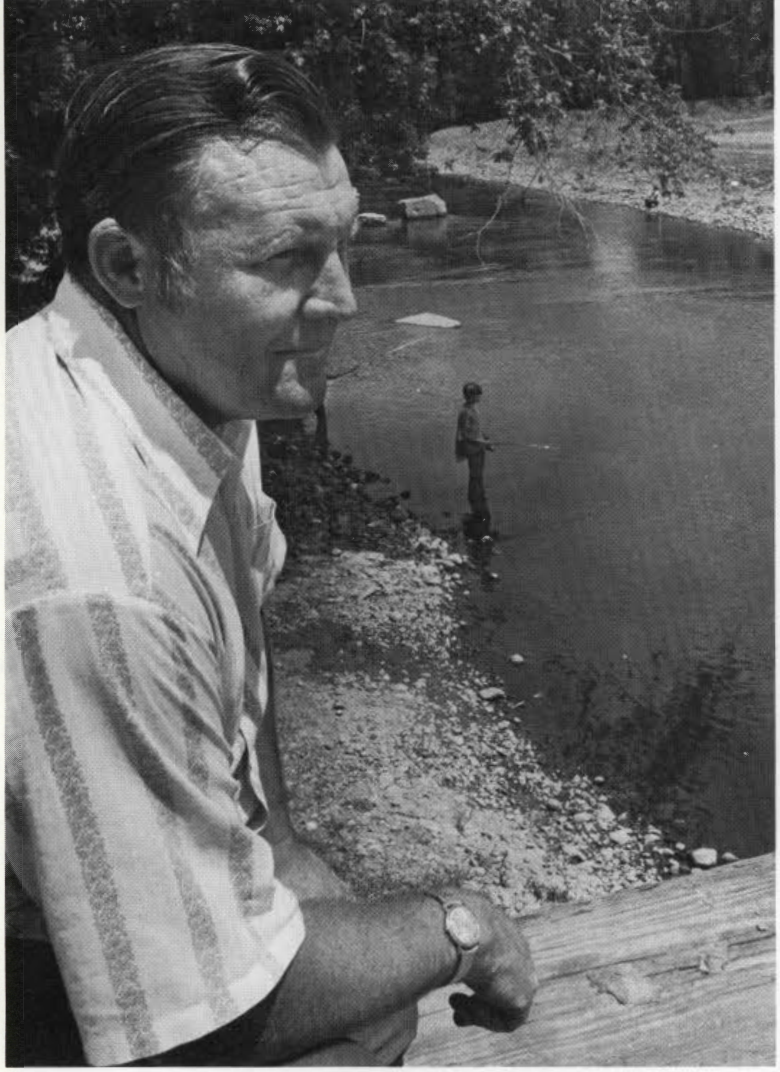
Also, many estuarine fish, including weakfish and blackdrum fingerlings, enter these ponds to feed and grow.

Pond No. 3 will be managed with optimum water levels to promote growth of wild millet. In 1972, ditching and diking was used in cooperation with the mosquito commission to isolate town drainage from the impoundment. Waterfowl usage in this area has been low because of inadequate food sources. Future use will increase with the production of waterfowl plants.

The Division of Fish, Game and Shellfisheries water management program is a long range plan; and the program is constantly improved through progressive evaluation. But, each year the fruits of this program show up in increased waterfowl and fisheries production for the New Jersey sportsmen.



Lush millet growths on both sides of the pond (top left) illustrate the success of the program. The return of waterfowl offers further proof. (Right)



come fish at my place

by Steve Perrone

Jim Potash loves to fish. And, because he loves fishing and enjoys watching the growing youngsters take to fishing, he has done something about it.

Jim, an active businessman and sportsman, who has lived in the Oakland area all his life, made some extensive stream improvements on the Ramapo River in the vicinity of Muller's Island. He then opened up about 4,000 feet of river banks on his land to the local fisherman of all ages.

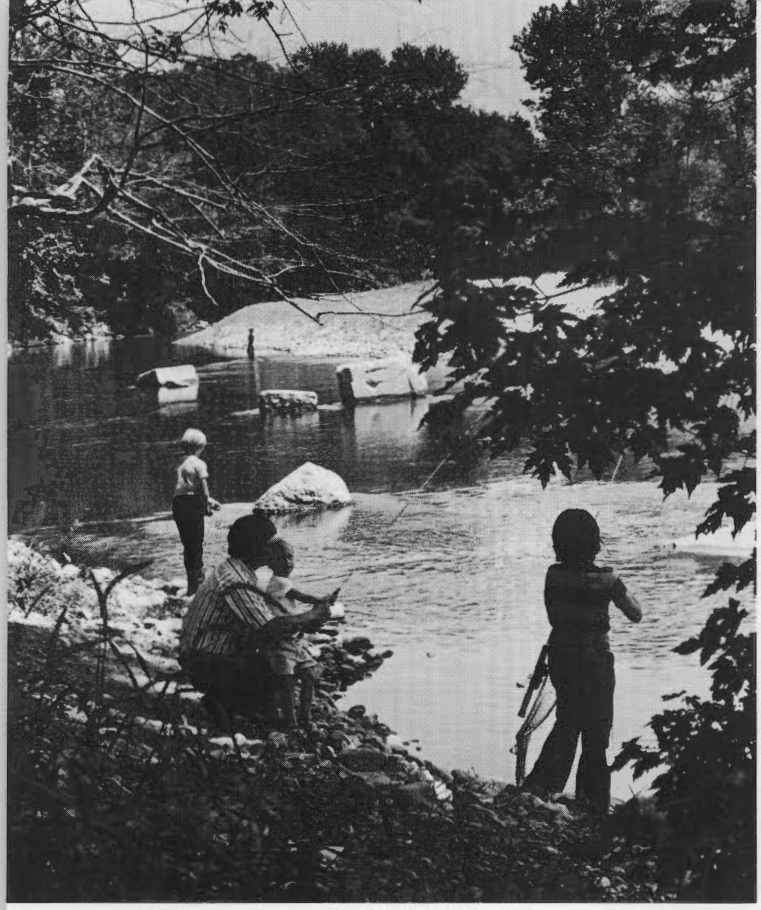
As an avid fisherman, Jim Potash was very disturbed about the amount of land being lost every year to posting and to land development. And because he was in a position to do something about it, he cleaned up the river, built up and seeded the river banks, and opened the area for the local fishermen — the youngsters — and the not-so-youngsters.

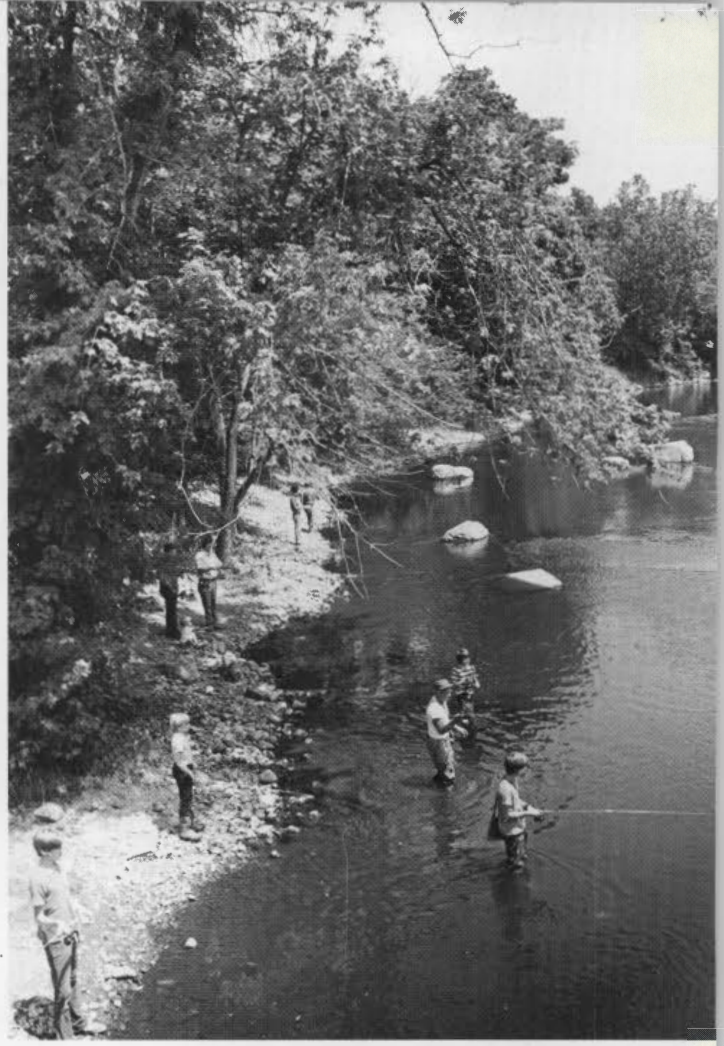
Not-so-youngster Herb Jacobs said, "I lost the biggest bass I've ever seen right along this bank here. He took my eight pound test line and never stopped."

His story was backed up by Frank Scardo, a section fire warden from the New Jersey Bureau of Forestry, who said, "That's right, I've seen all kinds of fish taken out of this area; bass, pickerel, white perch and catfish."

Bob Klaus, a conservation officer from Clifton said, "Not only does Jim encourage fishermen to fish from his property, but he provides parking space, trash barrels for trash, and there's no charge."

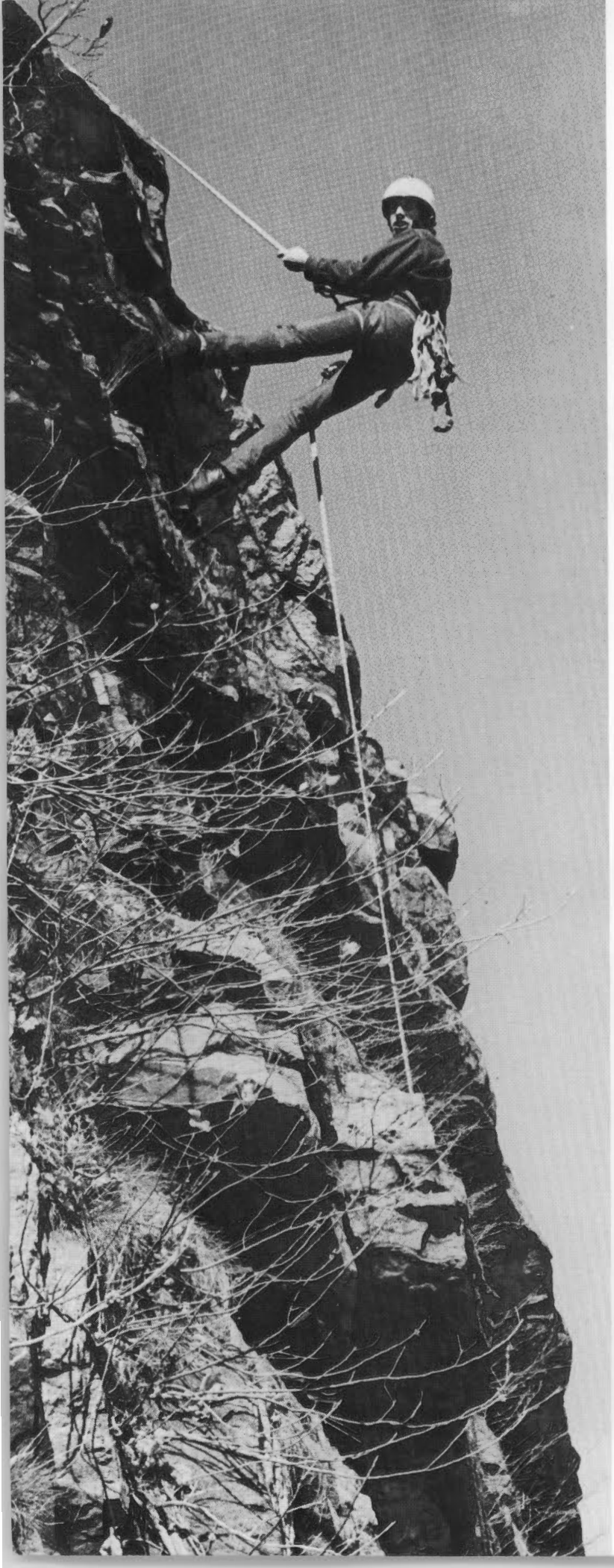
Jim plans to develop his acreage alongside the river into a 30-acre lake which he would then turn over to the township for recreational use. This would mean that the youngsters and not-so-youngsters will always be able to fish that bend of the Ramapo.





Jim Potash gazes across the river and recalls that barefoot, tow-headed youngster who often fished that bend of the Ramapo . . . Was it that long ago?

Photographs
by Harry Grosch



ROCK CLIMBING in New Jersey

By Jim Merritt

Montclair State College,
New Jersey School of Conservation

Photographs
by Harry Grosch

Rock climbing is one of the most adventurous of the outdoor sports. The experience of scaling a vertical rock face several hundred feet high provides a person with thrills and excitement not found in any other activity. Increasing numbers of men and women seek to challenge themselves by climbing. This is a sport which combines proper techniques with physical attributes of balance, strength and coordination.

New Jersey residents will find that the Kittatinny Mountains of Warren and Sussex counties offer numerous small rock faces which are ideal for beginners in rock climbing. Later when the climber has more experience higher cliffs such as those in the Delaware Water Gap and the Shawangunk Mountains of New York State may be attempted.

For teaching beginning climbing the experienced climber or leader will go to the top of the cliff by some relatively easy route, secure himself and then throw the rope down to the climber waiting below. This rope is made of nylon and has a strength of better than 5,000 pounds, so there is little chance of a rope breaking. This rope acts as a safety line. The climber ties himself to the end and each time he moves up the leader takes in the slack. If the climber falls he is held immediately and can get back on the rock to resume climbing.

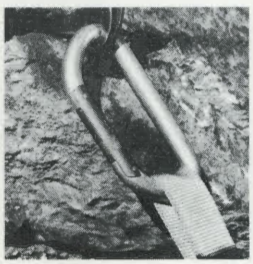
Author brake bar repelling, same as leg repelling, except using mechanical device

Hand grip; jamming fingers into rock crevice

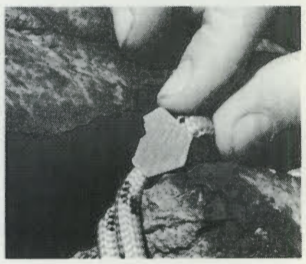
Bolen knot

Tool — a piton

Climbing boot toe grip in rock crevice



A piton and snap ring or carabiner with sling

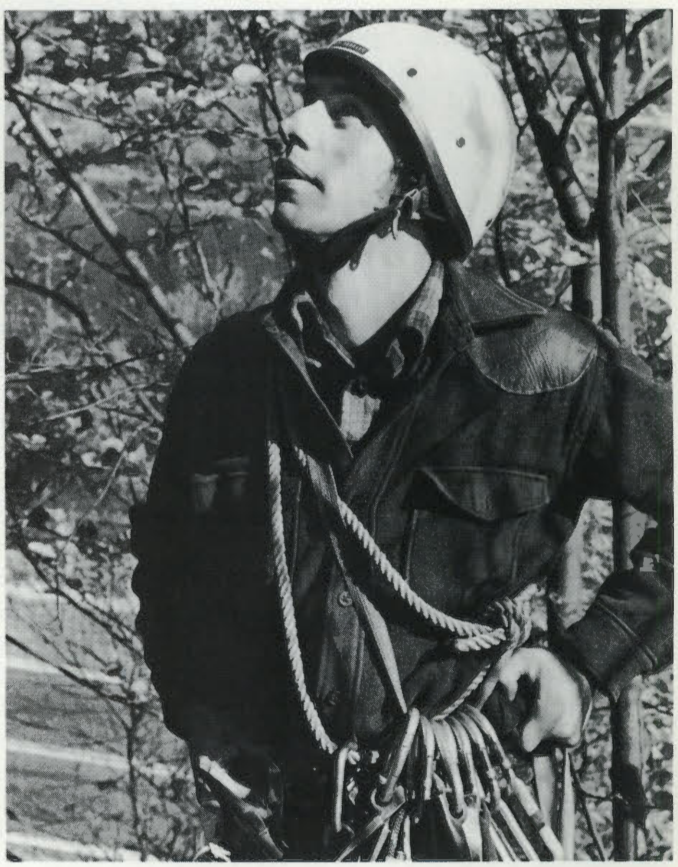


Tool — a nut in crevice

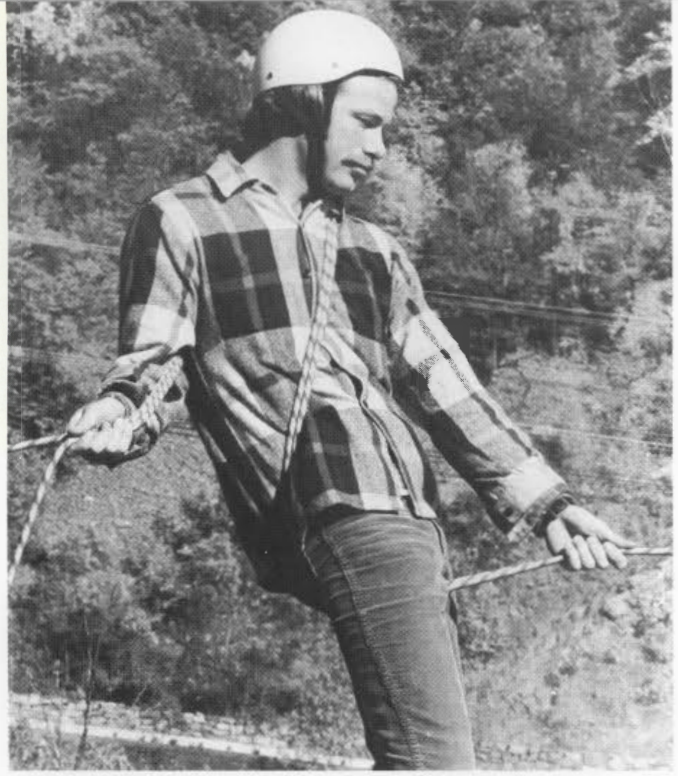
The method of controlling the rope is known as belaying. Although belaying is not complicated, the person managing the rope must be constantly alert to go into action instantly if the climber falls. The rope between the climber and belayer must be kept tight at all times. The leader at the top of the cliff has now assumed this responsibility. Each time the climber takes a step up the leader pulls up the rope. The rope passes around the leader's body and due to the friction that this creates and the method of holding the rope, a small person can easily arrest the fall of a much larger person. If the climber wants to change his position on the cliff, he may call for "slack" and the leader will give more rope. Occasionally a beginning climber will get himself into a position where a fall seems imminent. At this point he may call for "tension." The leader will take in the rope until it is so tight that it holds the climber in place on the cliff. This means that the climber has relied on the help of another and this is generally considered poor technique.

A good climber uses balance more than strength. The climber tries to keep his weight directly over his feet as much as possible. Special boots with very stiff soles make this easier to do. Many times the climber will be able to stand on a very tiny ledge because his boots allow his weight to be more evenly distributed. For hand holds the climber may make use of bumps and protrusions on the rock wall or cracks in the face of the cliff. Often the climber will jam his open hand into a narrow crack, make a fist, and then use the friction of the rock against the back of his hand and fingers to support his weight or keep him in balance. An expert climber will make use of hand and footholds that the casual observer would not even notice. He will work out combinations of hand and foot holds in advance so he knows exactly where he is going to move next. In this way he does not waste his strength while he is dangling from a rock ledge. It is often said that a good climber climbs with his head more than his hands and feet.

Having reached the top of the cliff the climber can walk down the easy way or he may rappell. Rappelling is a method whereby the climber may quickly and

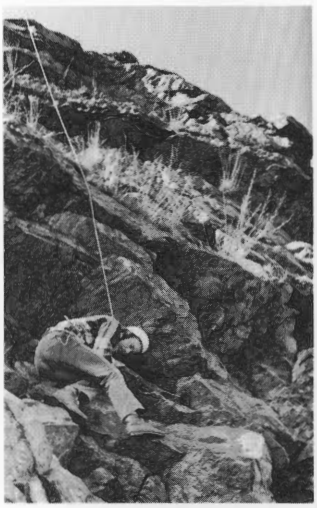


The author with his climbing gear



Bob Chandler shows proper repelling technique, — rope can go on either shoulder

Louisa Schillinger climbing while Jim Merritt belays



Bob Chandler belayed from top and working on difficult overhang

Author, leg repelling

easily descend instead of climbing back down. The climbing rope is secured by passing it around a tree or other secure anchor. Then both ends of the rope are thrown to the bottom of the cliff. The rappeller attaches himself to the rope in such a way that the friction of the rope running over his body or a special brake bar attached to a metal snap link called a carabiner will allow him to control his descent. The most frightening thing about rappelling is that the climber must go backward down the cliff, leaning out to keep his body perpendicular to the rock face. Occasionally the top of the cliff protrudes above the lower rock wall. In this case the climber does a free rappell. That is he is suspended completely in mid air throughout most of his descent.

As the climber becomes more skilled he is able to climb higher cliffs which are more technically difficult. Working in pairs, the leader scales the face while the second person, the belayer, plays the rope out. As he moves upward the leader places gear on the rock face to protect himself. The leader may use his hammer to drive a metal spike or piton into a crack. Properly driven pitons have tremendous holding power, but they do damage the rock. Increasingly climbers are using nuts on wire or nylon slings for protection because they do not damage the rock. Nuts come in assorted sizes and shapes so that when the proper one is selected it will jam tightly in the crack. Great care must be exercised in wedging the nuts so that they will not work loose. Once the nut or piton is securely fastened the climber clips in a carabiner and runs the rope through it. The belayer holds the rope, and should a fall occur, the climber will be held near the last point of protection he placed on the rock.

Those who are interested in learning to rock climb should seek the guidance of a skilled leader. Good equipment is expensive, but absolutely necessary for safety. Many beginners get started climbing by joining an outing club or similar group. The Appalachian Mountain Club with headquarters in Boston, Massachusetts, is the largest organization in the East that teaches climbing. Groups like these can make available the equipment necessary for a safe and enjoyable experience.

THE DESTRUCTION OF THE AMERICAN CHESTNUT

A CASE OF "INSTANT PATHOGENICITY"

ROBERT R. FALES *Ecology Program, Department of Zoology, Rutgers University*

"Under a spreading chestnut-tree/The village smithy stands. . . ." These words begin Henry Wadsworth Longfellow's famous poem "The Village Blacksmith" written in 1839. Although the tree mentioned was not really our American chestnut, it might well have been. At that time, *Castanea dentata* was one of largest and commonest trees in the eastern United States. Today it no longer exists as an important forest species. Indeed, it barely exists at all. The story of the destruction of this tree is a classic example of a host-parasite relationship in which the parasite was an "instant pathogen"; that is, one which the American chestnut had not previously encountered in its evolutionary history.

Prior to the early 1900's, this magnificent member of the Beech family with its wide-spreading branches, long serrated leaves, and delicious nuts in spiny burs was an important constituent of the eastern deciduous forest community. Its range extended from Maine, New Hampshire, Vermont, Ontario, and Michigan south to Delaware and Indiana and along the Appalachian mountains to Virginia, Kentucky, Tennessee, the Carolinas, Georgia, Alabama, and Mississippi. The chestnut attained its largest growth on the western slopes of the southern Alleghanies. F. Schuyler Mathews in his *Field Book of American Trees and Shrubs*, published in 1915, renders the following description:

> It is generally 50-70 and occasionally (in woodlands) 120 feet high, with a trunk diameter of 6-9 feet. The brown gray trunk often massive and straight, or quite as often short and divided into heavy ascending boughs terminating in slender branchlets.
>
> At the age of 5 years the chestnut bears fruit, and in 15 years it is valuable for timber. It is indeed a most extraordinary and rapid-growing tree.

Few, if any, other species could compare with Mathews' "extraordinary tree" in sprouting vigor, growth rate, and product yield. Its light, soft, durable, pale brown wood was used extensively for furniture, picture frames, railroad ties, fence posts, pilings, and tannin extract. In fact, a number of communities in the southern Appalachians whose economy was based on the tannin extract industry depended almost entirely upon the American chestnut for their produce. Chestnuts were also highly prized as shade trees and ornamentals and their fruits were consumed by man and various wildlife species.

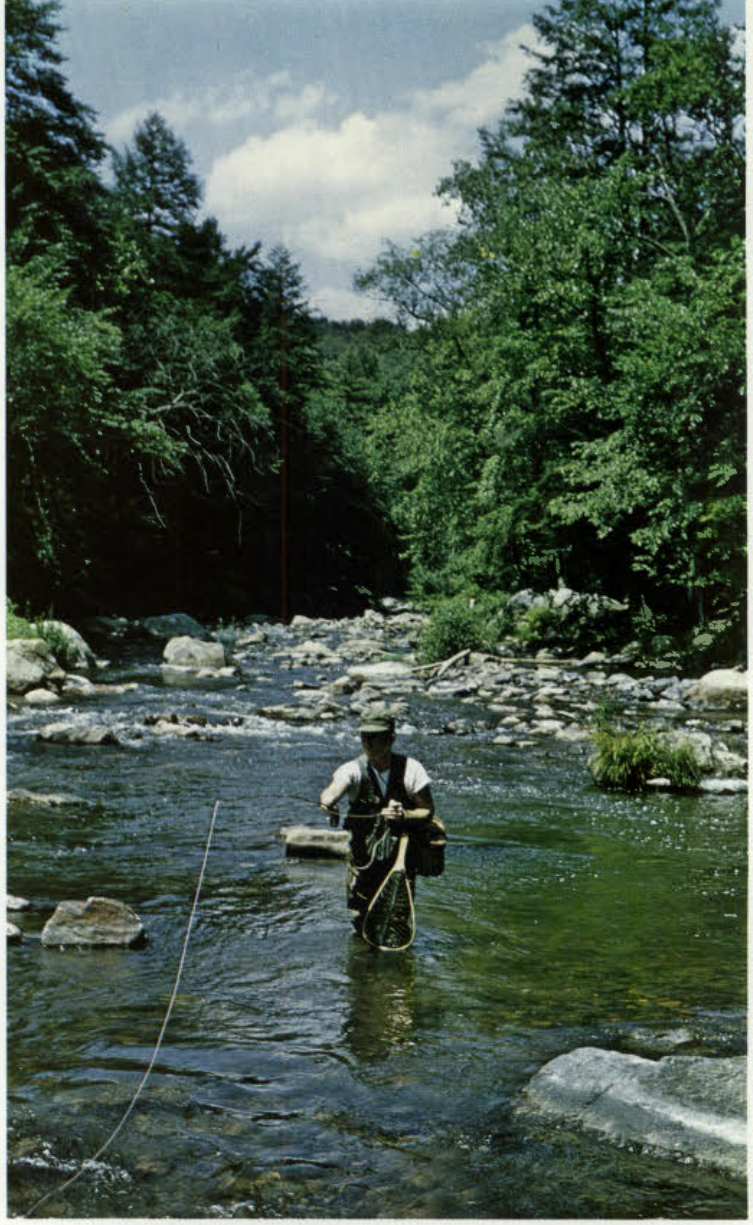
In 1904, Dr. H. W. Merkel of the Bronx Zoological Park in New York reported that many of the American chestnuts there seemed to be dying of a fungus disease. Mathews noted in his book that great numbers of the trees had been destroyed ". . . especially in northern N.J., and in the immediate vicinity of New York and Philadelphia." The fungus, *Endothia parasitica* or chestnut blight as it became known, is a member of the Ascomycetes, or sac fungi, which was probably introduced into New York with a cargo of Asian chestnuts around 1900. The fungus causes reddish cankers to appear on the trunk and branches of the infected tree followed by withering and death due to a complete stoppage of water conduction through the tissues. Although tannic acid is toxic to many fungi, the blight fungus produces an enzyme which readily breaks down tannins, thus rendering ineffective that which may have been the chestnut's only defense against the exotic invader.

The blight's wind- and bird-borne spores were quickly spread. The area of 80% infection increased southwestward across Virginia at the rate of 24 miles per year and by 1930, areas as far as western North Carolina were heavily infected. Large sums were spent attempting to find a point of attack somewhere in the life history of the fungus, but without success and the blight eventually spread to the entire range of the chestnut, almost completely eliminating it. Because the root system is more resistant to the fungus than is the trunk, new sprouts grow up continually, but most are killed before they are more than one or two inches in diameter. Very few sprouts survive to bear fruit.

The passing of the American chestnut resulted in an economic setback to the forest industries. When the loss was measured in terms of the difference between chestnut and those species which replaced it, the estimated reduction in returns from the various states ranged from 15 to 50 percent.

The lesson to be learned from this experience is to beware of producing more instant pathogens, either by the sudden or rapid introduction of an exotic species into a system lacking sufficient natural controls or by causing abrupt or stressful environmental changes which decrease the capacity of systems to control their own natural pathogens.

trout fishing prospectus



By A. Bruce Pyle
Assistant Chief Bureau of Fisheries

There's more to fishing than standing elbow to elbow for stocked trout on opening day. Certainly there is excitement in waiting for the first "hit" and reeling in your first trout of the season.

But we like to think that angling pleasure and satisfaction also includes finding that special spot, before or after the trout stocking season, and matching your fishing skills with the brownies and rainbows that survived the opening day crowds.

And angling satisfaction is more than "limiting out" and rushing home with your string . . . It's a way of communicating with the natural elements, the spongy feel of a riverbank beneath your tread, the spring sounds of wooded areas and quiet streams, and for some, the opportunity to "think things out" away from the hub-bub and competition of civilization.

Photographs by Harry Grosch

Trout angling satisfaction in any given year is the product of many factors including hatchery production, the stocking program, regulations, weather, etc. When judged on the first three factors, 1974 promises to provide above average trout angling opportunity. Only time will determine the nature of the weather and other factors that will ultimately decide the extent to which this opportunity can be converted to angler satisfaction.

Trout production at the Charles O. Hayford State Fish Hatchery, as based upon conservative estimates made in January, 1974, together with federally produced trout allocated to New Jersey indicates that approximately 605,000 trout will be available for stocking in 1974. This includes 314,000 yearlings and 291,000 of the larger two year olds. The total exceeds the established stocking requirements by about 74,000 and plans have been made to utilize these surplus or bonus trout so that they will contribute to maximum angler satisfaction.

The cataract problem at the fish hatchery which caused the Division to destroy some 175,000 yearling brown trout will necessitate a shift to the stocking of rainbow trout in some waters, particularly those where the trout holdover potential is slight or absent. Waters such as Lake Hopatcong, Lake Wawayanda and the Spruce Run and Round Valley Reservoirs where the put-grow and take (holdover) fisheries are maintained largely by brown trout will be given preferential consideration in the allocation of this species.

The loss of these 175,000 brown trout will, of course, reduce the number of trout that could otherwise be stocked. But the extra fish raised as a precaution against such losses, the trout being supplied by the federal government, and the fact that a large percentage of the fish destroyed were destined to be held for stocking in 1975 all have contributed to minimizing the impact of this loss upon the 1974 stocking program. We are already striving to refurbish our brown trout stocks for the 1975 season.

Previously the terminology "establblished stocking requirements" was used. This is the number, some 531,000 in 1974, of catachable trout that is considered necessary to stock in the fulfillment of our annual program. Trout available for stocking beyond this number represent a bonus. During good production years, for example, those associated with high ground water flow and mild winter weather, the bonus has been substantial while in poor production years it has been minimal. In general New Jersey anglers have been "lucky" because even in poor production years there has been a bonus. Sometimes this was possible only because of trout provided by the U.S. Fish and Wildlife Service. In 1973 almost 767,000 catchable trout were stocked in New Jersey which represents a bonus of approximately 237,000 trout. Of this total, better than 660,000 were raised at the Charles O. Hayford State Fish Hatchery and this, incidentally, established a new record.

However, with the rising costs of trout production coupled with the rising costs of Division operation it has become necessary to consider cutbacks, and the Fish and Game Council upon the recommendation of the Bureau of Fisheries and the Division Director adopted the "established stocking requirements" as the production goal for the hatchery. This figure is not to be exceeded by more than established estimated percentage of fish that are held to offset production losses. Thus, it is extremely unlikely that bonuses in the future will be as large as those of the past.

The lack of a large bonus, however, does not mean poorer angling. Research into New Jersey's trout stocking program has uncovered much that has enabled us to provide equal or greater angling satisfaction with proportionately less trout. Earlier stocking practices had most of the bonus trout being stocked late in May and into June after angler

1974 PRE-SEASON TROUT STOCKING LIST

	Size	Number
Atlantic County		
Birch Park Ponds	L	760
Hammonton Lake	L	760
Bergen County		
Hackensack River	L	1200
Hohokus Brook	S	300
Indian Lake	M	800
Pascack Creek	L&M	500
Pond Brook	S	50
Ramapo River	L	4100
Saddle River	L	1800
Tienekill Creek	S	250
White Pond	M	450
Burlington County		
Crystal Lake	L	400
Strawbridge Lake	L	580
Sylvan Lake	L	800
Woolman's Lake	L	580
Camden County		
Big Lebanon Run	L	820
Grenloch Lake	L	520
Hopkins Pond	L	460
Rowands Pond	L	800
Square Circle Lake	L	580
Cape May County		
Dennisville Lake	L	360
Cumberland County		
Cooper Mill Park Pond	L	240
Manantico Creek	L	180
Mary Elmer Lake	L	280
Maurice River	L	600
Shaws Mill	L	580
Essex County		
Branch Brook Park Lake	L	580
Diamond Mill Pond	L	580
Verona Park Lake	L	580
Gloucester County		
Greenwich Lake	L	1000
Harrisonville Lake	L	620
Iona Lake	L	720
Mullica Hill Pond	L	360
Raccoon Creek	L	140
Swedesboro Lake	L	640
Hudson County		
Hudson County Park Lake	L	580
Hunterdon County		
Alexandria Brook	S	200
Alexauken Creek	M	360
Amwell Lake	L	220
Back Brook	S	280
Beaver Brook	S	500
Capoolong Creek	M	940
Delaware Canal	L	1520
Everittstown Brook	S	275
Frenchtown Brook	S	405
Hakihokake Creek	S	200
Little York Brook	S	430
Lockatong Creek	M	700
Milford Brook	S	310
Mt. Pleasant Brook	S	250
Mulhockaway Creek *	M	100
Musconetcong River	L	5580
Prescott Brook	S	320
Raritan River—So. Br.	L	6680
Rockaway Creek—So. Br.	S	280
Round Valley Reservoir	L	2000
Spring Mill Brook	S	100
Spruce Run	M	720
Spruce Run Reservoir	L	1500
Sydney Brook	S	250
Tetertown Brook	S	500
Wichecheoke Creek	S	320
Mercer County		
Assunpink Creek	L	500
Colonial Lake	L	520
Delaware-Raritan Canal	L	2600
Rosedale Lake	L	500
Stony Brook	L	2440
Middlesex County		
Bissetts Pond	M	100
Farrington Lake	L	1360
Ireland Brook	S	140
Lawrence Brook	L	1160
Roosevelt Park Lake	L	460
Wigwam Pond	L	280
Monmouth County		
Big Brook	M	50
Englishtown Mill Pond	L	140
Garvey's Pond	L	280
Hockhocksen Brook	M	260
Manasquan River	L	4650
Mingamahone Brook	S	420
Mohawk Pond	L	240
Pine Brook	S	75
Ramanesson Brook	M	760
Shadow Lake	L	580
Shark River	M	180
Spring Lake	L	580
Takanassee Lake	L	280
Topenemus Lake	L	360
Willow Brook	M	50
Yellow Brook	M	310
Morris County		
A.B.C. Pond	M	120
Beaver Brook, Rockaway	M	420
Black River	L	1320
Budd Lake	L	360
Burnett Brook	S	140
Burnham Park Lake	L	280
Den Brook	S	100
Drakes Brook	S	340
Electric Brook	S	120
Flander's Brook	S	180
Gruendykes Mill Pond	L	140
Guard Lock	L	440
Hibernia Brook	S	280
Indian Brook	M&S	570
Kikeout Intake Reservoir	L	300
Lake Hopatcong	L	3172
Lake Musconetcong	L	360
Ledgewood Brook	S	400
Mill Brook	S	500
Mt. Hope Pond	L	540
Musconetcong River	L	4320
Raritan River, So. Br.	L	2240
Reservoir Brook	S	100
Rhinehart Brook	S	220
Rockaway River	L	8360
Speedwell Lake	L	400
Stickle Brook	S	120
Trout Brook	S	100
Washington Valley Brook	S	220
Ocean County		
Metedeconk River, No. Br.	L	860
Metedeconk River, So. Br.	L	600
Prospertown Lake	M	400
Toms River	L	340
Passaic County		
Barbour's Pond	L	360
Belcher's Creek	S	220
Cooley's Brook	S	100
Greenwood Lake **	L	0
Goffle Brook Park Pond	M	320
Oldham Pond	L	360
Pequannock River	L	800
Pompton Lake	L	720
Pompton River	L	2820
Ringwood Brook	M	100
Sheppards Lake	L	360
Wanaque River	L	2800
Salem County		
Hancock's Sand Wash Pond	L	260
Schadler's Sand Wash Pond	L	400
Somerset County		
Harrison Brook	S	100
Lamington River	L	280
Passaic River	L	1500
Peapack Brook	M	450
Raritan River, No. Br.	L	2340
Raritan River, So. Br.	L	1220
Raritan River, Duke Island County Park	L	500
Rock Brook	S	280
Toms Brook	S	220
Sussex County		
Alms House Brook	S	100
Andover Jct. Brook	M	180
Beaver Run	S	180
Bier's Kill	S	50
Big Flat Brook, Upper	L&S	740
Big Flat Brook, Lower	L	7200
Black Brook, Beaver Lake	S	100
Black Brook, McAfee	S	100
Clove River	M	480
Cranberry Lake	L	360
Culver's Lake Brook	S	100
Dragon Brook	S	75
Dry Brook	S	75
Glenwood Brook	S	75
Hardystonville Brook	S	100
Hunts Lake Brook	S	100
Kymers Brook	S	75
Lake Ocquittunk	L	580
Little Flat Brook	M	1040
Lubbers Run	M&S	240
Mill Brook	S	160
Musconetcong River	L	780
Neldon Brook	S	75
North Church Brook	S	100
Papkating Creek	M	420
Papakating Creek	M	220
Parker Brook	S	120
Paulinskill River	L	2300
Pequest River	L	440
Quarry Brook	S	100
Roy Spring Brook	S	100
Saw Mill Lake	L	580
Seneca Lake	L	140
Shimers Brook	S	120
Sparta Glen Brook	M	400
Sparta Jct. Brook	S	100
Stony Brook	S	100
Stony Lake	M	400

1974 PRE-SEASON TROUT STOCKING LIST

	Size	Number
Swartswood Lake	L	540
Tar Hill Brook	S	75
Trout Brook	S	160
Tuttles Corner Brook	S	100
Wallkill River	S&L	1740
Wawayanda Lake	L	600
Yellow Frame Brook	S	100
Union County		
Ash Brook	S	140
Green Brook	S	220
Rahway River	L	3200
Warren County		
Barkers Mill Brook	S	100
Bear Creek	S	100
Beaver Brook	M	600
Blair Creek	M	160
Blair Lake	M	140
Buckhorn Creek	S	220
Dark Moon Brook	S	100
Delawanna Brook	S	180
Dunnfield Creek	M	520
Furnace Brook	S	260
Furnace Brook Impoundment	L	500
Honey Run	S	75
Jacksonburg Creek	M	280
Johnsonburg Brook	S	75
Lomison's Glen Brook	S	100
Lopatcong Creek	S	800
Low's Hollow Brook	S	240
Mill Brook	S	100
Mountain Lake	L	580
Muddy Run	S	100
Musconetcong River	L	6260
Paulinskill River	L	4900
Pequest River	L	3600
Phatcong Creek	M&L	2750
Pophandusing Creek	S	420
Roaring Rock Brook	S	260
Silver Lake	L	280
Trout Brook — Hackettstown	S	240
Trout Brook — Hope	S	75
Van Campens Brook	M	750
Yards Creek	S	200

* Only upstream of Rt. 173.

** Stocked only after the opening of the trout season.

interest had substantially waned and when the warmer waters and reduced stream flows contributed to decreased trout survival. Now we plan for the stocking of the anticipated surplus or bonus in the waters and at the time when this bonus will provide the maximum in angler satisfaction.

For example, in 1974 the bonus trout will be stocked by maximizing the truck loads during the first four or five weeks of inseason stocking. In 1973 the large number of bonus trout were allocated to lakes and ponds during the preseason stocking period, to the state's major streams during the week following the opening of the season when trout normally are not stocked, and to all waters normally stocked during the first five weeks of inseason stocking.

This minimized losses due to high preseason streamflows and put the fish where they were most in demand or where they would stay until conditions were right for them to contribute to angler satisfaction. Indications in the form of angler comments and trout stamp sales suggest that these measures produced the desired effect. And further, it is possible that the larger than usual stockings in the "put-grow and take" trout lakes previously identified could provide substantial benefits in the form of large trout to the 1974 trout fishing season.

Another contribution to the success of the 1973 trout stocking program which we plan to continue in 1974 is the float stocking of the North and South Branches of the Raritan, and the Manasquan River. The Branches were floated by Bureau of Wildlife personnel and the 'Squan by volunteers which were largely private citizens and included Mr. John Doman, Mr. George H. Kromelbein, and Mr. Michael Babaj of the Division of Parks and Forestry at Allaire State Park. Also, consideration is being given to the addition of other streams to the float stocking list. There is no doubt that this practice makes better use of the limited stream mileage available and contributes to less crowded angling conditions.

The only major regulation change relating to trout for 1974 was the establishment of the "Natural Trout Fishing Area" on Mulhockaway Creek in Hunterdon County. Anglers fishing this 0.3 mile stretch of stream and its tributaries on state property should be aware of the one fish (twelve inch minimum length) possession limit in force while fishing here and the fact that only artificial flies (dry flies, wet flies, bucktails, nymphs, and streamers) with barbless hooks are allowed. Additional fish may be caught but they must be released to the water immediately and unharmed.

In all waters except those restricted to fly fishing the *catch limit* is six trout. This regulation was brought to the fore in 1973 and after a year to allow anglers to become acquainted with it, enforcement is expected to increase. The regulation is intended to reduce gluttony among anglers, reduce the mortality of fish caught and released, and spread the harvest and angler satisfaction among more anglers. Remember, the maximum number of trout that a person can take, catch or kill in one day is six, regardless of the number or types of waters fished.

We in the Division of Fish, Game and Shellfisheries believe that we have provided what we can to the ingredients for a fine trout season. Now with some assistance from the weather coupled with the expertise of the New Jersey angler the season cannot help but be a success.

TRY PLANTING FOR WILDLIFE

By **George N. Alpaugh,** *Chief*
and
Fred Carlson, *Assistant Wildlife Biologist*
Bureau of Wildlife Management

A renewed interest in wildlife conservation has prompted many private land owners to set aside land areas for wildlife usage. These areas, once planted with the recommended vegetation, can be a great source of pleasure for the entire family, whether used for bird-watching or to harvest game species during the hunting season.

A reconnaissance of available wildlife food and cover may reveal that the area is deficient in food. If wildlife is expected this deficiency must be corrected and spring plantings for wildlife can be the corrective measure.

The most popular planting for wildlife used by N.J. wildlife managers is the food patch. The type of vegetation already present on an area will determine the quantity of the planting, but generally speaking, one 1/4 acre food patch per twenty-five acres is sufficient.

New Jersey Food Patch Mixture, numbers 1 and 2, are recommended for planting throughout the state. These plantings primarily benefit seed-eating birds such as ringnecked pheasants and bobwhite quail, but other species will also be attracted.

The food patch is fairly easy to plant, uses a minimal amount of equipment, and is a proven success. The area selected for the planting should be plowed, harrowed, limed, and fertilized (in that order) before being seeded.

N.J. Food Patch Mixture No. 1

Buckwheat	10 lbs.
Minnesota Sorghum	9 lbs.
Millet (German)	10 lbs.
Proso	10 lbs.
Greeley Kaffir	9 lbs.
Sudan Grass	5 lbs.
Soybeans	10 lbs.
Cowpeas	13 lbs.
Rape	5 lbs.
Flax	10 lbs.
Vetch	9 lbs.
	100 lbs.

N.J. Food Patch Mixture No. 2

Buckwheat	15 lbs.
German Millet	15 lbs.
Sudan Grass	15 lbs.
Soybeans	25 lbs.
Cowpeas	25 lbs.
Rape	5 lbs.
	100 lbs.

The preparation of a good seed bed is important to the growth of the plant, and subsequent seed production. The rate of seed per acre, amount of lime and fertilizer, size of patch, and the dates for planting can be found on the accompaning chart.

Other annual and/or perennial plants are of a value to wildlife also. A landowner has an excellent opportunity to encourage increases in harvestable wildlife crops on a strip of cropland bordering woodlands.

Where a field lies next to the woods, a shaded strip along the border usually yields little in the way of crops. A border of legumes (Lespedeza sericea or Lespedeza bi-color) planted in such a situation is valuable to wildlife.

Perennial plants can be planted in areas where annual care is not economical. Power right-of-ways, wood roads, odd corners, and soil bank fields are good places for plants such as Birdsfoot trefoil, Burnet grass and mixtures.

Both New Jersey Food Patch Mixture No. 1 and No. 2 can be purchased from any Agway feed dealer. Additional information on these mixtures is available from Fred Carlson, Assistant Wildlife Biologist, at the Clinton Wildlife Management Area in Hunterdon County.

Harry Grosch

RECOMMENDED SEEDING GUIDE FOR WILDLIFE PLANTINGS

Seed	Rate of Seed Per Acre	Lime	Fertilizer	Size of Patch	North Jersey	South Jersey
					DATES	
ANNUAL WILDLIFE PLANTINGS						
N. J. Food Patch Mix	20 lbs. per acre	According to lime requirement test 6-6.5 pH	300-400 lbs. per acre 5-10-10	1/4 to 1 acre	5/25-6/15	5/15-6/15
Rye	1-1/2 – 2 bu. per acre (by weight)	Same	Same	Up to 5 acres	9/1-10/1	9/1-10/15
Wheat	1-1/2 – 2 bu.	Same	Same	Up to 5 acres	9/20-10/10	10/1-10/20
Sorghum	30-40 lbs. per acre	Same	Same	Up to 5 acres Strips preferred	5/20-6/20	5/15-7/15
Soybeans	1-1/2 – 2 bu. per acre (by weight)	Same	Same	Up to 5 acres	5/25-6/20	5/15-7/5
Corn	10 lbs.	Same	400-500 lbs. per acre 5-10-10	Up to 5 acres	5/1-6/1	4/20-6/15
Millet (Japanese)	25 lbs.	Same	300-400 lbs.	Up to 5 acres	5/26-6/30	5/15-7/15
Buckwheat	1-1-1/2 bu.	Same	300 lbs. per acre 5-10-10	1/4 to 1 acre	6/20-7/15	6/15-7/25
PERMANENT WILDLIFE PLANTINGS						
Lespedeza sericea	12 lbs.	Maintain pH 5.8	300 lbs. per acre 0-14-14	Long strips	Early Spring	Early Spring
Lespedeza bi-color	5 lbs.	Maintain pH 5.8	Same	Same	Early Spring	Early Spring
MIXTURES						
Oats Lespedeza sericea Burnet grass	1/2 bu. 10 lbs. 7 lbs.	Maintain pH 6.0	Same	1/4 acre or strips 20' to 50' wide	Early Spring	Early Spring
Lespedeza sericea Burnet grass Red-top clover	10 lbs. 7 lbs. 1 lb.	pH 6.0	Same	Same	Not Recommend.	Early Spring
Lespedeza sericea Burnet grass	10 lbs. 8 lbs.	pH 5.8	at seeding 300 lbs. 5-10-10	1/4 acre strips 25' to 50'	Not Recommend.	Early Spring
Timothy Meadow fescues Reed canary grass Orchard grass Crimson clover Kentucky bluegrass	3-1/2 lbs. 2-1/2 lbs. 1-1/2 lbs. 3-1/2 lbs. 2 lbs. 3 lbs.	pH 6.0	300-400 lbs. per acre 5-10-10	Long strips	Early Spring	Early Spring

The South Jersey Wetlands Institute

by Shayna Panzer

The road between Exit 10B of the Garden State Parkway and the town of Stone Harbor has suddenly sprouted with signs that say, kindergarten style, "Turtle Crossing" Toward the end of that road stands an attractive building, topped with a little balconied tower. It houses the South Jersey Wetlands Institute, dedicated to the study and preservation of one of the state's most important natural resources—the wetlands.

Funny road signs at turtle crossings to help in reducing road kills of endangered terrapins.

Photos by Dr. Arthur Panzer

Before environmental awareness entered our national consciousness, the wetlands were regarded alternately as a nuisance that had to be sprayed to kill the insect pests that bred there, or as valuable real estate that could be drained and sold off for summer homes or industry. But all that is changed now. Under the provisions of the Wetlands Act of 1970 and the Coastal Acts, the New Jersey Department of Environmental Protection is charged with controlling their commercial development and protecting them from damage.

"Coastal wetlands," explains Mike Criss, Assistant to the Director of the Institute, "are a natural nutrient trap. They provide a lot of food for young marine organisms to feed on. It's estimated that 70 to 80% of the state's commercial and sport fish species depend on them at some point in their life cycles."

The southern New Jersey wetlands were formed by mud and sand washed to the coast by the Raritan, Navesink, and other rivers to the north, and carried down by ocean currents to form barrier islands and low-lying marshes washed by salty seawater and local inland freshwater. Thus, the water in them is brackish—a mixture of the two — and the water level rises and falls with the ocean tides. In contrast, a swamp usually found inland in a depression of ground, is covered with fresh water, and the water level, while affected by rainfall or drought, does not change from day to day.

The wetlands support a complex food chain. Tiny aquatic organisms are preyed upon by insects, which, in turn, are eaten by fish, frogs, and small birds. Then, bigger fish and birds eat them. At the top of the chain are the largest birds and Man. If the chain is poisoned at some point, for instance by spraying with DDT, the poison moves up through the insects, the fish that eat them, and into the large birds and Man. That is how it happens that the Bald eagle, and now the Osprey, another large, fish-eating bird of prey, are disappearing from New Jersey. The DDT has entered their bodies through the poisoned food they have been eating. Their bodies have no mechanism to excrete the chemicals, which build up and cause them to lay eggs with shells so thin that they break prematurely.

an inhabitant of the marshes

The birds cannot reproduce themselves, and when DDT builds up in their bodies to a high enough level, they eventually go into convulsions and die. Man is eating the same fish that the Bald eagles and Ospreys are eating. No one knows what the ultimate effect of this will be. The use of DDT has been partially banned in the United States, but other poisons, just as pernicious, from sewage, insecticides and industrial waste, are still entering the wetlands.

The South Jersey Wetlands Institute is partly the creation of the late Herbert Mills, an enthusiastic amateur naturalist. Upon retirement as an executive with the H.J. Heinz food company, he went to work for the World Wildlife Fund, an international conservation organization that counts among its movers and shakers such people as Prince Philip of England, and Prince Bernhard of The Netherlands. Under the guidance of Mr. Mills, the World Wildlife Fund purchased 5,500 acres of wetlands near Stone Harbor, and donated 34 acres to the S.J.W. Institute. The building was financed with contributions from private individuals and various foundations, including one endowed by Mr. Mills' former employer, the H. J. Heinz Foundation. It was dedicated in Sept. 1972, by His Royal Highness, The Prince of The Netherlands.

S.J.W. Institute is run by a Board of Trustees, represented by Miss Marion Glaspey, President, and Lehigh University, represented by Dr. Sidney Herman, Director. The facilities are open to researchers from other colleges and universities if space is available.

The building, of natural shakes and shingles, sits at the end of a crushed (recycled) shell driveway in the middle of the marshes. From the tower at the top, there is a fine view of egrets and herons fishing, swallows flying in and out of man-made nesting boxes or swooping through the air devouring mosquitoes, and an empty osprey nest on a specially constructed high pole with a framework on top. These are put up all over osprey habitat in southern New Jersey to entice nesting pairs away from telephone poles.

Indoors, there is a small dormitory, offices, and a large lecture hall decorated with pictures by well-known wildlife artists like Guy Coheleach and F. Lansdowne. There is a beautiful and extensive shell collection taken from local beaches in winter when storms and high waves wash them up. Of special interest to children are the aquariums, filled with fish, crabs, and other wetlands organisms. In a tank by itself is a young Diamond-backed terrapin.

"This is the species we're trying to help with those funny signs along the road that say 'turtle crossing,' " says Mike Criss. "These turtles come up on land in early summer to lay their eggs. What with houses and roads and all, every year there are fewer places for them to do it. We actually found one in July, trying to deposit eggs on the Institute driveway". Many terrapins are hit by motorists. It is hoped that the signs will reduce the number of road kills.

The S.J.W. Institute is open to the public. It entertains visiting school groups and sponsors a Friday evening lecture series and Wednesday evening nature films during the summer.

To get to the Institute, take the Garden State Parkway to Exit 10B and turn east toward Stone Harbor. The building is on the right, about one mile before the center of town.

right in your own backyard

by
Art Weiler, Jr.

As the smoke from your pipe curls 'round the room, dreams of a new hunting season swirl in your head. Grouse in Maine, pheasants in South Dakota, deer in New York state, quail in Virginia—this is the stuff that dreams are made of. Pipe dreams are a pleasant way to pass the time until next hunting season, but for most of us these things will not come to pass in the near future. Next fall we are going to face the hard reality of the energy crisis and the duties of family and work that keep us close to home. That limits a lot of us to hunting in our home state of New Jersey which might seem to predict slim pickins and heavy crowds. All considerin', New Jersey still has some outstanding hunting if you know how and where to find it. That's what my story is about—the "how" and "where." I'm not going to name spots that are thick with birds—you won't find them unless you belong to a club or preserve. I am going to tell about some of the methods I have used to find wild places and wild birds *in the most densely populated state in the Country.*

Let's start with the "how." Take out a road map of N.J. Mark your hometown and then draw a circle of 25 mile radius around it. You won't find quality hunting in the areas where a hundred other guys are heading for—forget the well-known state hunting areas and places near main roads. Take a close look at the map and try to find a spot without too many roads near it. Next look for some mountains or swamps or river bottoms. Most hunters are open field gunners—they never think to climb a mountain or push through a swamp. If you're willing to explore a little, a lot of rewarding hunting awaits you. Look for some railroad tracks. If you can locate a deserted or little-used railroad you've found a brushy haven for gamebirds. Next look for rivers and high tension lines—tough walking, but that's where other hunters are not and where the game is! Put on a pair of waders and walk a shallow stream—you'd be surprised by the number of animals that seek food and cover along small and large streams.

I know I've included a lot of "how" in my tellin' "where" but I must add two more "how" points: Number one—hunt small woodlots if they look promising. A lot of hunters pass up good spots because they are small. Don't rush through these spots. Hunt them slow and easy—you'll be surprised. Number two—be a sportsman in the true sense of the word. Ask landowners for permission, watch where you're shooting, try limiting yourself to six shells a day. After all, hunting is a sport of woods and fields—enjoy the out-of-doors and maybe next fall you will realize that there is a lot of great enjoyment hunting right in your own backyard—the Garden State.

For Eagle Watchers

Bald eagles, the national bird and one of the endangered wildlife species in the United States have been wintering in New Jersey. Biologists with the new state Endangered and Nongame Wildlife Project of the Division of Fish, Game and Shellfisheries estimate that about 10 adult and juvenile bald eagles spent the winter in the counties of Salem, Cumberland, Burlington, Ocean, Bergen and Warren.

The bald eagle has shown a marked decline in numbers throughout the United States during the past several years, probably due to the indiscriminate use of pesticides and the loss of suitable habitat. Research has shown that the reproduction of the eagle has been greatly reduced due to high preponderance of infertile eggs and also thin shelled eggs which break under the weight of the incubating birds. The infertile and thin-shelled eggs are caused by DDT which enters the body through contaminated food eaten by the eagle.

The signing of the U.S. Endangered Species Act in December 1973 resulted in new legislation which will provide a higher degree of protection for the "endangered" and the "threatened" species. The legislation will encourage federal and state partnership through a ten million dollar grant-in-aid program and stimulate studies to identify endangered and threatened wildlife species, and develop management programs. The act will also extend protection to certain species, prohibit unauthorized importation or exportation, taking, possession, sale, delivery and transportation of endangered species. It will also require all importers and exporters to acquire permits, and all wildlife must be imported through officially designated entry ports.

Russell A. Cookingham director of the New Jersey Division of Fish, Game and Shellfisheries, said that the New Jersey Endangered and Nongame Project will cooperate and participate in all federal programs designed to preserve and manage the state and national endangered and nongame wildlife species. "The Endangered Species Act of 1973 is a giant step forward in federal legislation to protect and adequately manage certain wildlife species which might otherwise become extinct in this generation," said Cookingham.

The division's nongame biologists are interested in obtaining information of the number and location of any bald eagles occurring in New Jersey. Anyone sighting a bald eagle is asked to contact either Paul D. McLain or Thedora Schubert at 609-292-2965.

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A Happy Angler
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CAN YOU TOP THIS?

The biggest brown trout in the state, but not a record catch. . .

It reads like a fishy fish story—but it actually happened in the state of Colorado and the man it happened to is still in a state of shock.

The fish was so big it knocked the man down when he tried to catch it.

It happened on December 2, 1973, when D. L. Wells of Bayfield was attempting to salvage fish from the stilling basin below Vallecito Reservoir. The rest of the water was being drained from the stilling basin in order to remove large chunks of concrete and reinforcement bars that had fallen into the basin.

To prevent the wasting of any fish trapped behind in the small puddles and pools, the public was invited to salvage the fish for their own use rather than have them wasted. And Wells was knocked down by the giant German brown trout in one of these large puddles. Then he jumped on it and wrestled it to dry ground.

When first weighed, the giant brownie tipped the scales at an even 31 pounds. When weighed officially the following day by Wildlife Conservation Officer Gene Bassett on a state approved scale, the brown weighed 28½ pounds and was 33 inches long.

Had it been caught by hook and line, it would have beaten the present state record by better than four pounds. But to make the record book, a fish must be taken by hook and line. Sorry, Mr. Wells.

from the northeast conference chairman

The 1974 Northeast Fish and Wildlife Conference was a tremendous success. The late February meeting at the Playboy Club Hotel in McAfee, N.J. attracted a record 636 attendees, representing 20 northeastern states and canadian provinces.

The attendees represented the various fields of wildlife conservation including Wildlife Management, Fisheries Management, Law Enforcement, Information and Education, and Conservation Engineering. Papers and panel discussions covering all aspects of this broad field was presented during the conference.

Of special note was the high student registration of 115 wildlife majors from 21 universities and colleges.

This was especially pleasing because we made every effort to attract these students with an interesting program designed by people from our own Rutgers University.

Of course, the success of the conference was due to the great efforts of many people, both in planning stages and the actual work. Although they are too numerous to mention here, I want to express my personal thanks to all these people. And I also want to thank the Sportsmans-Industry Council for their fund raising efforts which made the conference possible.

Sincerely,

Bob McDowell

Division of Fish, Game and Shellfisheries

The American Bald Eagles are by Albert Earl Gilbert, one of America's leading wildlife artists. The American Bald Eagles were recently published and are now available in full color print from the National Wildlife Art Exchange, Inc., P. O. Drawer 3385 - Suite 903, Vero Beach, Florida 32960. The prints are suitable for framing, hand numbered, signed by the artist, and published only in Guaranteed Limited Editions. They are copyrighted by and reprinted with the express written permission of the National Wildlife Art Exchange, Inc. (Eagle Watchers—See article on page 30)