

# New Jersey

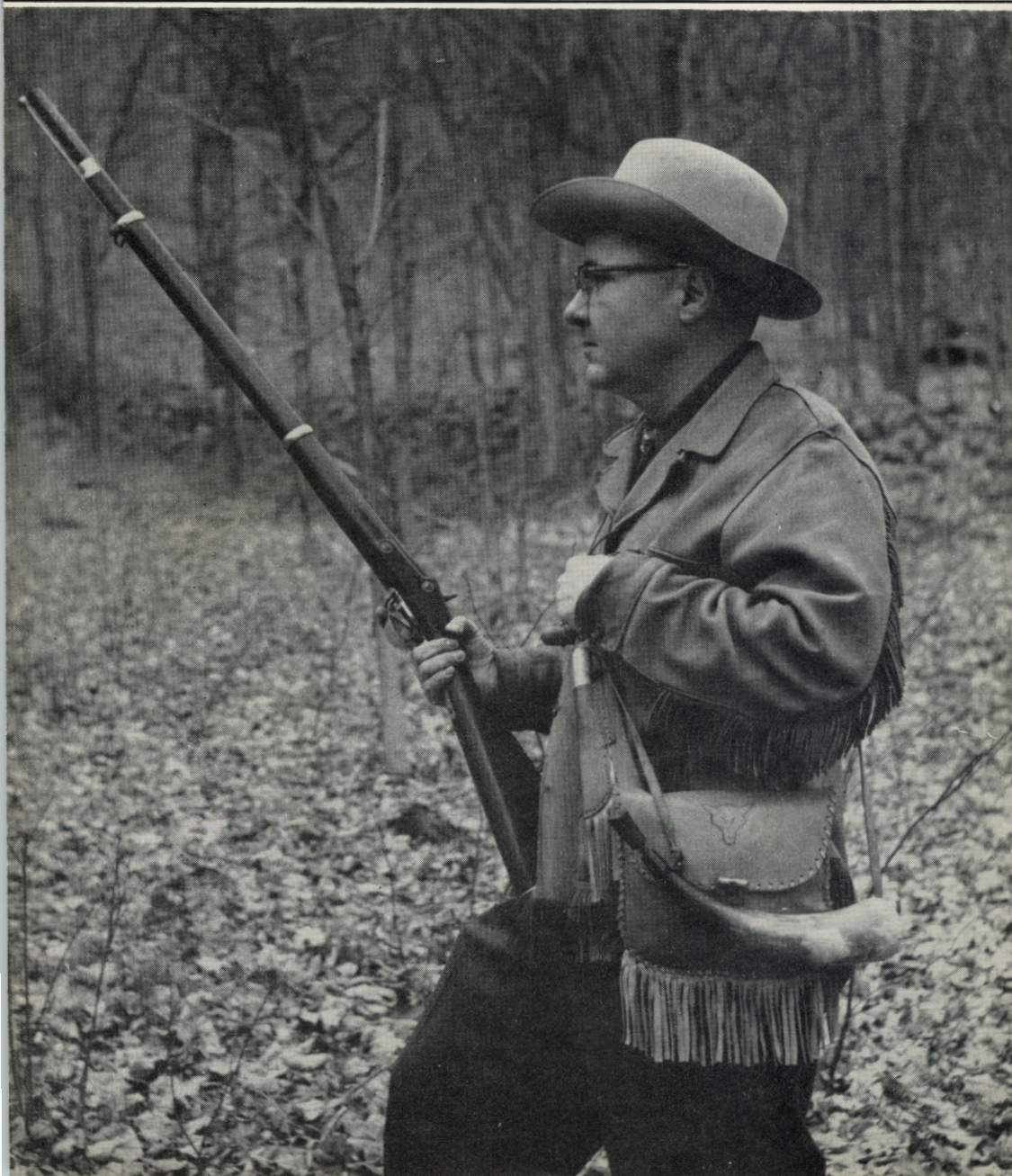
# Outdoors



Vol. 15, No. 9

Division of Fish and Game

March, 1965



# Pollution Control

## Doesn't Cost

## -It Pays

**E**VERY CITIZEN of New Jersey and the Nation should take an active interest in this year's National Wildlife Week observance, March 14-20. Sponsored annually since 1952 by the National Wildlife Federation, the world's largest citizen conservation organization, the observance is designed to focus public attention on an important conservation problem. This year, the subject is pollution control and prevention.

Clean water, of all our natural resources, is the most important and the most vital asset to every human being. Without it, there would be no life on this planet, and there is no synthetic substitute. And, we Americans are consuming water at an amazing rate.

Although each of us could survive on only six pints of water per day, we are using an average of 150 gallons per day for domestic purposes — drinking, bathing, cooking, doing the laundry, washing the car, watering the lawn, flushing toilets, and for other purposes. But it takes more than that to provide us with our food, clothing, and other things we use to maintain our high standard of living. Even if we could live by bread alone the water required to grow the wheat would come to 300 gallons per day per person. Another 2,500 gallons per day is needed to produce the milk, butter, eggs, cheese, and meat which make up so much of the present American diet. The total amount of water required to maintain our present standard of living actually comes to about 15,000 gallons per person per day.

The only way to supply that much water for present and future populations is to make every gallon in our rivers, streams, lakes, reservoirs, and irrigation systems count. We must stop pollution — domestic, industrial, and agricultural — before it starts, clean up waters that have been polluted in the past, and make every gallon available for more than a single use.

By 1980, America will need 600 billion gallons of water each day. We cannot afford to wait in the hope that additional water supplies, such as converting salt waters into fresh, will be available. The time to **Fight Dirty Water** is now!

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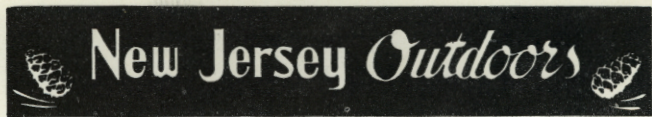
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Published monthly by the State of New Jersey Division of Fish and Game  
in the interest of conservation and restoration of wildlife and  
the betterment of hunting and fishing in New Jersey.

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#### Cover—"Woodchucks with a Musket"—William A. Hock

Howard L. Brant, Jr., author of our lead article in this issue, "Woodchucks — Black Powder Style," is all set with his muzzle-loader and gear to hunt woodchucks the way our forefathers must have enjoyed the sport. For a different and challenging way to hunt 'chucks, why not try Howard's method?

Vol. 15, No. 9

March, 1965

Publication Office: The Division of Fish and Game  
P. O. Box 1809, Trenton, New Jersey 08625

Editor: R. Adams

Second class postage paid at Trenton, N. J., and additional mailing office.

Subscription: \$2.00 a year, by check or money order, payable to Division of Fish and Game. Cash is forwarded at sender's risk. No stamps please.

Change of address: Should be reported directly to the Editor. Send both old and new address. The Post Office will not forward copies unless forwarding postage is provided by subscriber. Copies not delivered through failure to send change of address six weeks in advance cannot be replaced.

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# Woodchucks—

## *Black Powder Style*

by Howard L. Brant, Jr.

*Photographs by William A. Hock*

**Woodchuck hunting** is usually synonymous with the ultra-velocity, telescope sighted, high powered rifle. Although I have hunted 'chucks with every thing from a .22 long rifle right on up to the .220 Swift class, I have now found a new way to hunt these animals and one thats really lots of fun. For real sport try shooting woodchucks with muzzle-loaders, loaded with black powder and ball!—Be it flintlock or percussion, shooting black powder in a "front-end loader" is a real experience.

### **The Arms**

There is no sportier or better target for these old charcoal burners than Mr. Woodchuck. Muzzle loaders were becoming popular in the 1950's. When the Civil War Centennial started in 1961, muzzle-loading really blossomed, with ardent gun fans buying everything from original front-end loaders to new reproductions of these time-honored antique arms.

In as much as original, shootable antique arms are extremely

high priced in today's market and since shootable pieces are becoming extremely rare and really should be saved for posterity, a new reproduction of one of these arms will suitably serve the purpose for hunting. However, reproductions are not quite as aesthetic as the originals.

Shown in the accompanying photographs is a reproduced Remington Model 1863 Percussion Musket of .58 Caliber (one of the basic issue weapons of the Civil War). This particular arm shoots well loaded with 60 grains of FFG black powder and a Minie ball of approximately 550 grains.

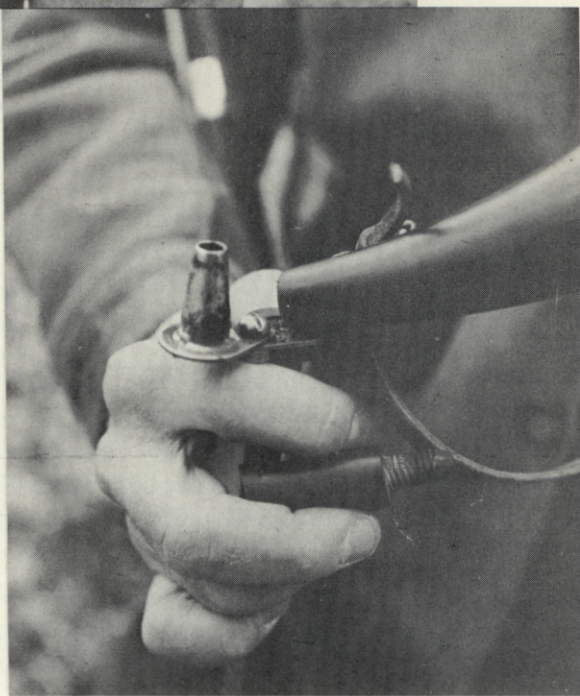
### **Equipment**

Aside from the rifle, a "black powder" hunter would need this additional equipment: A hunting pouch of sorts to carry his equipment consisting of percussion caps, powder measure, black powder, nipple wrench, extra nipple, grease, musket balls, and cleaning equipment. For that extra touch he can add a powder horn to carry his

← *The muzzle-loader's hunting equipment—rifle, hunting pouch, powder horn, powder measure, musket balls, percussion caps, and cleaning rod*



*(Above) Loading the muzzle-loader—pouring the powder into the powder measure*

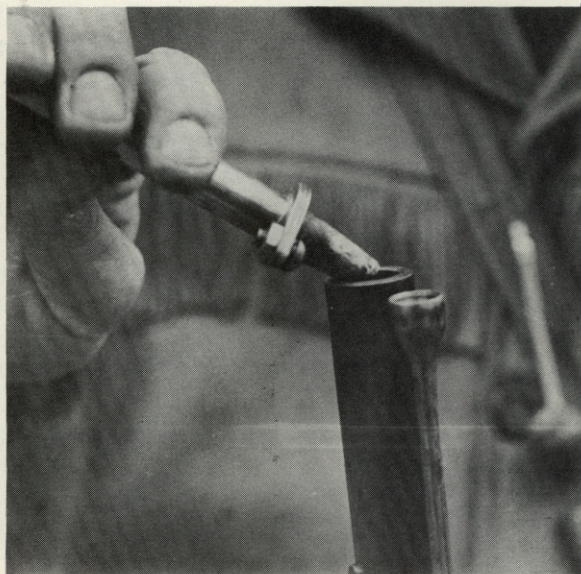


*(Right) close-up of pouring the powder into the powder measure*

## . . . Black Powder

powder. And if he is a "flinter" (a person who shoots flintlock arms) he would need this additional equipment: Extra flints, patching material, patch cutting knife, patch grease or tallow, FFFFG priming black powder, balls, and a short starter. He should also have a bullet mold and plenty of lead at home for casting the bullets or

on the fired cap, rest the butt of the rifle on the ground. Measure your powder charge into your powder measure and then pour the charge down the barrel (tamping the barrel to settle the powder). Take a Minie ball and using heavy grease, (Crisco or the like) grease the base of the bullet and the grooves around the bullet. Place the ball into the muzzle and with the ramrod push the bullet down



*Loading the muzzle-loader—pouring the measured powder down the barrel of the musket*

balls. Cost of a complete percussion outfit should be in the \$100 to \$150 bracket. Flintlock arms and equipment runs up into the \$200 to \$300 bracket.

### **Percussion Loading**

The procedure to load a percussion muzzle-loading rifle is as follows: Fire a few percussion caps to make sure the vent hole is clear at the beginning of a days hunt. Then, leaving the hammer down

firmly against the powder charge. Cock the hammer to half cock, place a percussion cap on the nipple and she's ready to go!

### **Flintlock Loading**

The procedure to load a flintlock muzzle-loading rifle takes a little longer and is described as follows: Make sure your flint is sharp and is fixed to the hammer to insure maximum efficiency. Prime the priming pan with fine

## . . . Black Powder

(FFFFG) black powder and fire to clear the touch hole. Then rest the butt of the rifle on the ground. Measure your powder charge into your powder measure and pour the charge down the barrel, once again tamping the barrel to settle the powder. Then take a piece of patching material that has been greased and place over the muzzle. On this patching material place the ball and with your short starter, ram patching material and ball into the muzzle until the ball is flush with the muzzle. Taking your patch knife, cut off the surplus patching material. Now you can ram the ball and patch down the barrel with your ramrod until it rests firmly against the powder charge. Open the frizzen and prime the piece with FFFFFG black priming powder. Close the frizzen and cock the hammer to full cock and you are ready to touch 'er off!!

Although these descriptions appear to be lengthy and time consuming, a trained man can load these weapons in an amazingly short time. In fact, a well-trained rifleman of the Civil War era could load and fire 4 to 6 aimed shots per minute from a percussion musket!

### **The Hunting**

Getting back to 'duck shooting with these weapons—Don't get me wrong, you can't reach out and tumble over a woodchuck in the "next county" as you can with our present day souped-up rifles. With the fixed open sights of a muzzle-loader and the nature of the weapon, you certainly cannot expect too much in the way of hitting woodchucks beyond 100 yards. But again, this is a different and unique style of groundhog hunting. However, in its own right, these antique arms shoot quite accurately.

After loading your muzzle-loader,



*(Left) loading the muzzle-loader — placing the musket ball in the barrel*

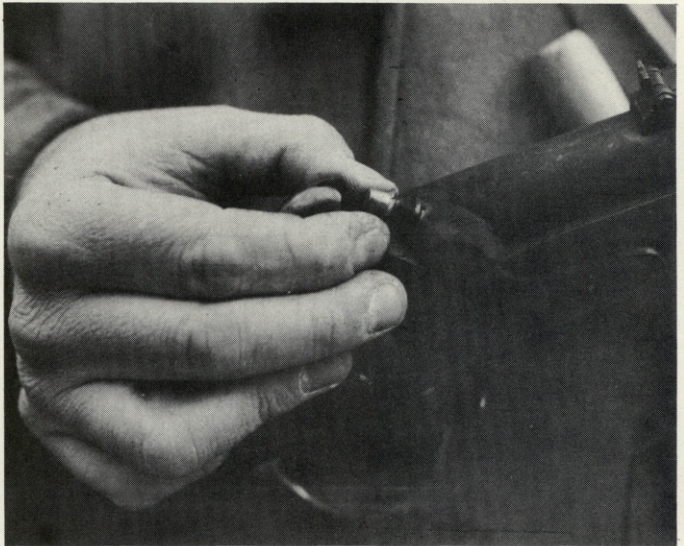
*(Right) ramming the musket ball home on the powder charge*



March, 1965



*Loading the muzzle-loader — placing the percussion cap on the musket nipple*



*Close-up of placing the cap on the nipple*



*With a bellowing roar and a cloud of smoke the shot is away!*

### . . . Black Powder

you must know how to stalk and get as close as you can to your quarry before 'touchin' 'er off.— And what a shot it is—With a bellowing roar, a streak of flame and a cloud of smoke—you have got your shot away!!

With a good pair of binoculars, a reliable musket, filled powder horn, and hunting pouch with ac-

cessories plus your New Jersey Hunting License and a Woodchuck Rifle Permit, you are all set to go black powder woodchuck hunting.

Fellow gun-bugs, burning black powder in a muzzle-loader is an old American heritage. From Concord Bridge to the skirmish lines at Gettysburg, the muzzle-loader helped to form our great Nation and it is truly fun to shoot and hunt with. . . . #



**Division of Fish and Game  
Pollution Unit Aims for**

# **Clean Waters**

**for now and tomorrow**

*by* Edgerton Grant

"What's killing the fish in the Blank River?" I asked John Koszrzewa as I glanced in at the chemical lab during a short visit to the Division's Freshwater Fisheries Laboratory at Lebanon.

### In the Lab

"You're the tenth person to ask me that, and I only got water samples this morning," the Division's Pollution Unit's usually cheerful chemist growled in reply. With this retort John returned to his retorts and other apparatus used in analyzing water samples.

Actually, I had not been aware that a very recent fish kill had occurred in the river. I did, however, know that it was one of the streams that was being intensively studied by the pollution unit. Possibly, I thought, the fresh water samples taken shortly after this recent kill would furnish the key to the mystery of what was hurting the fish life in the river.

As I watched John work, I be-

came fascinated by the effects of his procedures. To a beaker full of a translucent deep green liquid, he would add a few drops of a clear fluid. He shook it, and it turned a bright orange; as it settled it gradually became orange-pink. To a water sample he slowly added what appeared to be the same green liquid. It settled to the bottom, and in some cases had turned wine red. This, John explained, showed the presence of zinc.

### Testing

Not all the effects were so startling. There were a number of beakers of water with appropriate chemicals being heated over bunsen burners. A couple of samples were "cooking" in a large open gas oven. In still other cases chemicals were dripping slowly into water samples. This process is called titration, I assumed because the dripping chemical is permitted to flow at such a tight rate.

As John explained what he had

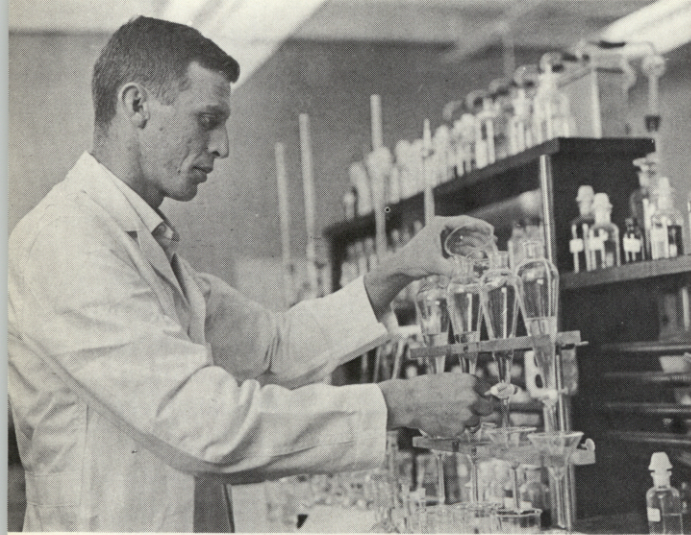
*Clean waters, such as those shown on the opposite page, are the aim of the Pollution Unit. Dirty waters, such as these to the right, are the bane of all citizens*



## . . . Clean Waters

to do, my hope of witnessing a miraculous discovery of the lethal chemical grew dim. Each water sample had to be tested for a wide range of chemicals; some of those

principally at isolating the chemical or compound that had killed the fish. Once this was known, steps could be taken to eliminate it from effluent. Although his research could develop evidence for prosecution, his main aim is to eliminate dele-



*Principal Chemist  
John Kostrzewa testing  
water samples in the  
Division's Pollution  
Control Unit laboratory*

he rattled off were cyanide, various acids, and ammonia. The samples themselves were numerous, having been taken at various points around, above, and below the point where dead fish were found as well as at, above, and below the entrance of various sources of effluent into the stream. Each gallon jug containing a water sample was tagged with the source, and each time John poured out a beaker full to make a test, he had to mark the beaker. The water samples were all shades of brown, from a slightly muddy color to one jug of pure effluent that was almost black.

John's efforts were aimed prin-

terious chemicals from the stream, preventing future fish kills. Most companies will cooperate if they can be shown what to eliminate.

### **Samples**

In order to ascertain the harmful chemical, some of John's water samples must include the "slug"—that is the discharge that had caused the fish kill. This is not always easy, since the lethal effluent flows downstream and dissipates fairly rapidly. It is rare that a constant toxic flow enters a stream; rather, a small "slug" of some poisonous chemical is inadvertently discharged. For this

reason it is vital that fish kills or other signs of pollution be reported immediately to the nearest Conservation Officer, so that water samples can be obtained promptly.

### A Grant

John's lab was full of modern scientific apparatus. Among the devices were a centrifuge, a fluorometer, a spectro photometer, a steam bath, an oven with taps for air, gas, cold water, and vacuum, a reflexing device to test chemical oxygen demand, numerous bunsen burners, and countless test tubes, beakers, and elaborate combinations of glass and rubber tubing. A grant from the U.S. Public Health Service had enabled the state to buy the equipment as well as to hire John and assign a biologist and a worker to the Pollution Unit. New Jersey's grant was one of three initial grants made by the Public Health Service to fish and game agencies for long range pollution studies. Shortly before my visit, the first year's report had been found sufficiently satisfactory to justify continuation. If the state continues to achieve good results, other states will be urged to model pollution projects along similar lines.

### Bioassays

Since John's work would keep him well into the night, I decided not to bother him further. I went downstairs to the unit's bioassay lab. Here, the carefully controlled temperature makes it a pleasant place on a hot summer day. Outside of the air conditioner

the room's most prominent feature is a tank full of fathead minnows used in testing water samples. All around the room were jars of water samples, each containing five minnows. Each sample was marked to indicate the source of the sample and the time the minnows had been put in. Fisheries worker Joe Schmeltz explained that each sample contained two liters of water. If fish died, the time was noted and the information was given to John, so he could concentrate his chemical analysis on that sample, and to Conservation Officer Walt Robinson if prosecution was in order.

### Effects

Joe indicated that he would probably have to spend part of the weekend checking to see if fish had died in recent samples. He also planned to go down to the Blank River and get more samples. He and Biologist Jim Barker were also engaged in testing samples for dissolved oxygen and biological oxygen demand. Low "D.O." and high "B.O.D." are two basic indications that a water sample is not healthy for fish. They must have a high level of dissolved oxygen to live, and competition from other oxygen-demanding biological forms reduces the amount available.

Jim explained that his principal responsibility is to study long range biological effects of various effluents on streams. He is concerned not only with fish but other "biota" such as plants and bottom organisms. Such organisms pro-

## . . . Clean Waters

vide food, shelter, and spawning grounds for fish, and a change in this environment will have lasting effects on fish populations. This aspect of pollution has been studied much less than more obvious signs such as killing or driving out of fish, but its long term effects on fish life may be far more drastic.

His initial efforts are concentrated on the effects of chemical company effluents on the Toms and Raritan rivers and the effects of sewage treatment plants on the Metedeconk and Musconetcong. He is engaged in taking and analyzing fish samples and bottom samples above and below sources of effluent in these streams. Water samples are given to John to analyze. Both will switch from their long range studies if a serious fish kill occurs.

### **Enforcement**

It was some weeks before I caught up with Walt Robinson, the Unit's enforcement officer. He spends nearly all his time in the field, following up calls from regular Conservation Officers, talking to witnesses of apparent pollution, gathering evidence in the event of possible prosecutions, conferring with local health officers, and talking to officials of the many industries throughout the state which might create pollution problems. He had put 22,000 miles on his car in the last six months.

As we drove from our meeting place to an industrial town, he said that one of his biggest problems

was finding clothing suitable both for meeting executives and tramping around muddy ditches. Much of Robby's work involves talking to executives of companies with waste disposal problems. Usually they are interested in cooperating and working out methods of avoiding pollution at least to the extent that better methods are economically feasible. If they are in doubt, the idea of a \$500 fine can make cooperation quite enticing, especially when they know that a second conviction for pollution will cost \$1,000.

### **A Problem**

Our first stop was at the local Board of Health office. We met a local health inspector who, Robby told me, was one of the most diligent in the state in following up pollution problems with the many industries in the town. He had asked Robby to stop by with regard to several problems.

We drove through a heavily industrialized area. The health inspector said that he hoped that a trunk sewer would soon be extended to this section, furnishing a permanent solution for several problem companies. Meanwhile, he was hopeful that one of the biggest problem industries was really cooperating. A surprise visit would confirm that the company was carrying on a program of trucking out waste as they had said.

Robby said he has visited the company, a wire manufacturer, about 50 times in the last four years, and had had them in court

once. He asserted that he would charge them again if they were not cooperating.

Their problem involved disposal of acid produced in "pickling" wire. The acid drained into an artificial lagoon which tended to overflow into a creek unless it was cleaned out regularly. The company had called up the Health Department to witness the initiation of a program of trucking out the waste as well as the purchase of large quantities of lime to neutralize the acid. Now we were going to check that they were carrying out the program.

### Checking

We drove back to the lagoon and walked into the woods behind it. The signs of past overflows were very evident in the form of dead vegetation and frost-like crystals all over the ground. There were

no signs of any recent overflow, and the lagoon was at a low level.

Robby took out a kit for checking PH—the degree of acidity or alkalinity. He took a water sample from a lake behind the lagoon. He added a few drops of chemical and shook it. It turned a pale red. By comparing it with a color chart, he ascertained that the sample had a PH of five. While still acid, this was vastly better than the reading of one which some previous samples had shown. A reading of seven is neutral; each lower reading is vastly more acid. Here and there we could see patches of green where vegetation was coming back.

### Cooperation

We went up to the company's office. Robby commended the owners for their progress. They seemed sincerely interested in continued

*Pollution Control Officer Walter Robinson collecting and testing samples*



## . . . Clean Waters

cooperation. They thanked Robby for one suggestion he had made. They had previously drained everything, including rainwater, into the lagoon. His suggestion that some of this could be diverted had greatly slowed up the rate at which the lagoon filled. They also said they were now running PH tests when-

attitude had been urged at a recent industrial convention which these owners had attended. The willingness of industry to cooperate will be a real boon in the battle to preserve clean water.

### **A Report**

Next we went to check out a report of discoloration in a stream. We drove across a railroad yard, parked and walked to a railroad



*James Barker, Fisheries Biologist, with gallons of stream water samples*

ever they dumped and were diluting the acid with lime and water when necessary.

Robby urged them to keep up the good work, and we left. In the car we agreed that their spirit of helpfulness was one that was growing throughout this type of industry. He understood that this

bridge. We quickly spotted a whitish fluid dripping out of a pipe. The health inspector knew that the pipe ran from a place where tank trucks are washed out. These trucks carry many varieties of fluid, some highly dangerous, and their cleaning is supposed to be done with great care. Apparently,

some of the effluent from the washing was leaking (fortunately slowly) into the pipe entering the river. Robby said he would return and get samples to confirm the leak and to analyze the possible ill effects so that it could be stopped or the company prosecuted.

### **A Sportsman**

After a bite of lunch, we went out to the bay area of the town. A sportsmen's club had sent Robby a written complaint about a serious oil spill. The complaint had been sent about a month after the incident, a serious handicap at the start of the investigation. We contacted one of the sportsmen who agreed to meet us in half an hour. During the interim we found the dock of the company involved. They knew of the incident, but insisted that nothing harmful had been spilled. Robby explained the law to them in the event that further investigation warranted filing a complaint.

We returned to meet the sportsman. He told his version which differed in many points from the written complaint. He told us that another local health inspector had investigated and taken water samples.

We returned to the board of health office. The other inspector was there. He had not taken samples, because he had found nothing to warrant such action. Apparently the company's version was substantially correct. Certainly, if any pollution had occurred, the evidence was totally inadequate for prosecu-

tion. We had spent much of an afternoon proving that we could prove nothing.

This incident was a graphic illustration of the need for promptness and accuracy in reporting pollution. Promptness in this instance might have enabled Robby to learn what really had occurred. He or another Conservation Officer could have gotten samples that would have been valuable for analysis if not prosecution. All Conservation Officers are trained to take the proper water samples, since Robby, with the entire state to cover, cannot be everywhere. A fresh sample is the most valuable for John's chemical analysis, as well as being vital for a successful prosecution.

### **For Tomorrow**

Pure water is in ever-increasing demand, for drinking, for many forms of recreation, and for industry itself. The ability of a body of water to support fish life is important not only for the sport provided, but as a sign of the water's suitability for other important uses. The many hours spent by John in analyzing the components of polluted water, by Jim in studying the effects of effluents on the chain of life in a stream, and by Robby in educating and prosecuting to prevent harmful materials from entering a watershed can go a long way toward providing a workable solution to one of today's most complex problems. The aim of the Fish and Game Pollution Unit is no less than to insure pure water for tomorrow's needs. #

# Stream Pollution Control Program

by Ernest R. Segesser, *Supervising Engineer*  
Stream Pollution Control Program  
New Jersey State Department of Health

*Photographs Courtesy of Crane*

THE WORD "Program" in the phrase "New Jersey's Stream Pollution Control Program" is somewhat vague and probably connotes some activity that seems far removed from many of our readers. Actually, in New Jersey, "stream pollution control" means all of us. It relates, of course, to the New Jersey State Department of Health and other state agencies, but it also includes the New Jersey Water Pollution Control Association, elected or appointed officials, mayors, councilmen, freeholders, senators, assemblymen, congressmen, committeemen, planners, zoners, conservationists, health officers, engineers, private developers, industrialists, manufacturers, scholars, the press, the general public and, of course, those responsible for the administration and operation of stream pollution control projects.

## The Future

The past year's program has viewed the problem in terms of "the future." What do we mean when we speak of "the future?"

Do we mean tomorrow, next year, 10 years hence or the next generation? I submit that our definition of the "future" is of academic concern—since the "future" is already upon us. Changes in our environment do not occur as a result of a passage of time but from sequence of events. This is important, for in New Jersey the sequence of events rush upon each other to such an extent as to cause the mind to spin in disbelief.

I have reviewed the 25th anniversary program of the 1940 meeting of the New Jersey Sewage Works Association. If you have the opportunity to review this document, I would suggest you do so. It is most interesting. Let me recite some of what was said by some of the participants at that time . . . "When we speak of imponderables, attention is necessarily called to a slowing down of general population growth . . ." "There is no reason to suppose from the past history of construction that there will be any important abatement of construction in

the next 10 to 20 years." ". . . It is very fitting for us to take stock in what has happened in our particular field of sanitation during the past 25 years and by taking

Great Britain, France, Greece, Spain or Italy.

Our population continues to grow at the rate of 100,000 per year and there is no end in sight. Where



*Detergent suds overflowing in a municipal sewage treatment plant*

stock of what has been accomplished in the past we will be enabled to lay out our work for the future . . .”

Less than two years later, an event occurred — World War II. Observe what has been wrought as a consequence of just that *one* event!

### **Growth**

A slowing down of population growth? Why, New Jersey is now the most densely populated state in this nation! With the exception of Holland, it has more people per square mile than any country in Europe including West Germany,

corn tassles waved in the breeze a short time ago, we now witness a veritable sea of roof tops. Where rabbits romped in some remote field a short time ago, we now witness the operations of a giant industrial complex. Where the gentle lapping of waves was all that could be heard along the shore of some isolated bay a short time ago, we witness not a sea of roof tops but of boats squatting in their own filth.

All of this growth can only be the result of and can only be sustained by a prosperous industrial community. This is the case in

## . . . Pollution Control

New Jersey. There are some 10,000 industries in this state each employing over 100 people. New Jersey is dependent upon its industrial prosperity and growth. And yet, we must establish some perspective as to who should be the beneficiaries of our type of society.

### **Precedence**

We are exposed to the complaints of all quarters. There are those who wish to have things as they had been centuries ago. There are those who must literally be forced to recognize the concept that our waterways are not subject to defilement just because of some riparian - rights considerations. Which end of this spectrum shall take precedence? I am sure that all of us must agree that in New Jersey neither extreme can justify their position for very long.

### **Construction**

Our state is almost an island, and upon examination of any map it can be likened to a human hand with its myriad veins, arteries and capillaries serving to nurture, support, and serve. Our 9,000 miles of New Jersey waterways nurture, support, and serve many millions of human beings, and thousands of industries. We seem to have been able to meet all such needs—or have we? From 1929 to 1938 some 57 million dollars worth of sewerage construction work was completed in New Jersey. In the period from 1939 to 1948, these were, of course, the war years,

some 49 million dollars of work was placed in operation. In the period of 1949 to 1958, 275 million dollars worth of work was completed.

However, during the past *five* years alone, 232 million dollars worth of work has been approved and we anticipate that as much as 700 million dollars worth of stream pollution control projects will have been constructed or placed on the drawing boards in the next ten years. This is a great deal of money and has, at this time, probably placed the State of New Jersey in what could be the leader in pollution control not only in this country but throughout the world.

### **Statistics**

We challenge any other state to meet some of the statistics that follow. Over 90% of this state's population and over 98% of this state's industries are provided with sanitary sewer facilities. Septic tanks serving individual households are being eliminated twice as fast as they are being installed. With two exceptions, there is no one municipality whose entire sewer system is not discharged into a treatment facility. In one of these instances construction of a secondary treatment facility has been initiated and we anticipate the other to resolve its problem within the next year.

Those who are advised of this and who are in the stream pollution control business listen to such statistics in disbelief. How this has been accomplished has been re-

lated to you many times in the past. And yet, it is frustrating, to say the least, that most of our citizenry and many in elected or appointed positions have little knowledge of what has been accomplished in this State.

What I am about to say now might seem to be negative and would appear to disregard all that *has* been accomplished in the past. I hope this may result in further discussion and perhaps a re-examination of your own position. It may offend or disturb those who have thought a good job had been done. It is, however, meant to be constructive.

### **Complacency**

I sincerely believe that there have been too many bouquets prepared with great nicety to be thrown hither and yon in self-adoration. This applies to every conceivable quarter having a direct and indirect interest in this continuing and complex problem. Next year will mark the 50th anniversary of the New Jersey Water Pollution Control Association with Atlantic City being not only the scene of this commemoration but also that of the Water Pollution Control Federation. I have reviewed many of the old Sewage Works Journals, the Water Pollution Control Federation Journals, and many trade publications. I was struck with the overwhelming amount of work involved in reporting the numerous papers and technical treatises on sewage and industrial waste treatment. Setting

all of these publications side by side would put Doctor Elliott's 5-foot Harvard bookshelf to shame.

It would be a most imposing work to behold; and yet, what has come out of it? What has all of this effort amounted to? What have all of these words, computations, equations, theories, graphs, studies accomplished? What have all of the thousands upon thousands of man hours in laboratory work produced? Of course, such efforts are invaluable. I wish only to point out that despite all of the effort and documentation, this nation has facing it both a Senate investigation and a Congressional investigation on stream pollution in order to consider the enactment of federal intervening laws. Is this any reason to be complacent?

### **Influence**

You might wish to review this year's program and those of the past several years and compare their content with that of the 25th annual meeting. The difference in program content and concept would be quite obvious. The participants of that past program were operators, consulting engineers, chemists, equipment manufacturers, and State Health Department engineers. There was not one mayor, freeholder, planner, conservationist, industrialist, or member of the press on that program.

### **Planning**

I say that the time has now come for elected or appointed officials to cease living in the past. Can you imagine any municipal,

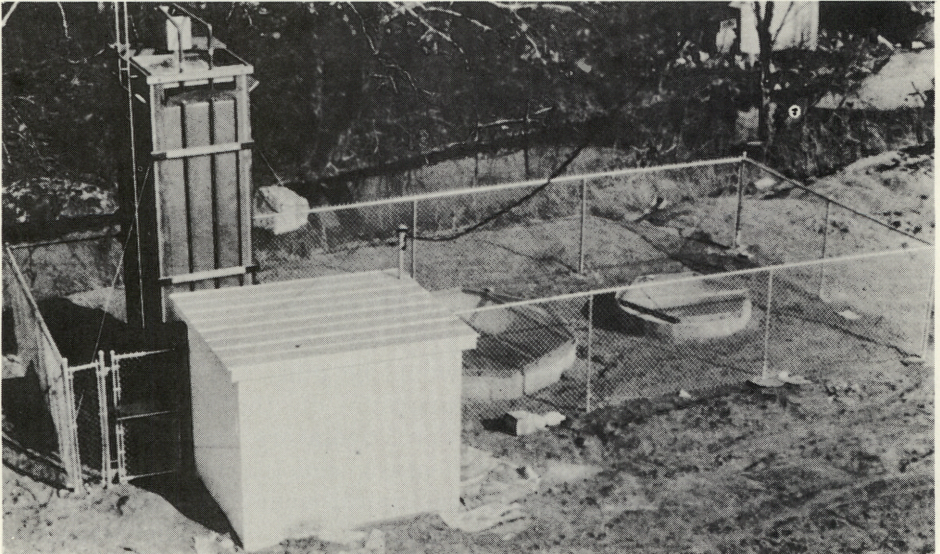
## . . . Pollution Control

county, or state road building agency constructing a network of roadways without considering the manner by which such a network can be tied into existing or planned roads in some other town, county, or state? Of course not! And yet, in many cases this is exactly the situation in relation to planning and constructing sewerage facilities. Roads are provided to transport people and goods. Sanitary sewerage facilities are provided to transport and treat the wastes of a community. To disregard all that

has come for those in elected or appointed positions to face up to the fact that leadership must be provided even though it might mean defeat at the polls. Certainly, something of lasting significance would have been gained thereby.

### **Responsibility**

The time has come for the engineering profession to assume its responsibility in the broadest possible sense and in a totally positive manner. Too many, I am sad to report, "engineer" a project with a set of rubber stamps. More time and effort must be spent in pro-



*A modern, compact, and efficient sewage treatment installation*

makes sense for political expediency or because of years of provincialism does seem to be illogical except for selfish political motivations. If this be the case, then the best interests of the people are not being recognized. The time

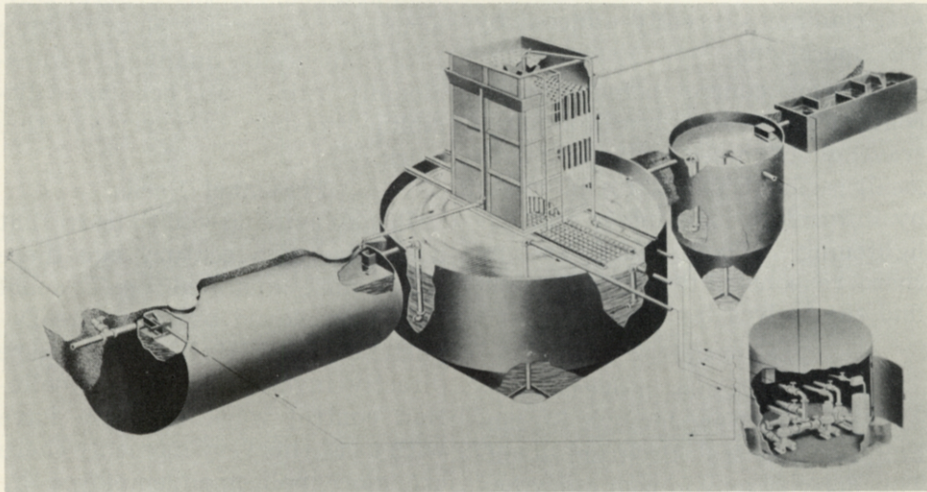
viding the guidance, the persuasion and the logic necessary as a real engineering service—not just a drawing board design. There are too many who are taking the easy course. There are always too many excuses. If this continues, engi-

neers may suddenly find that some state agency has been established to undertake the real responsibilities that they should assume.

### Industry

The time has come for industry and industrialists to abandon their present position of isolation and

directly into the waterways of this State either with or without treatment. There have only been a handful of industries with waste treatment that have assumed the necessary construction for treatment on a voluntary basis. Most of the industries that now have



*Diagram of the sewage treatment plant shown on the opposite page*

secrecy by real hardheaded planning where location sites are under consideration. Industry must also come to grips with the eventual need of cleaning up our streams and waterways. We have seen too much industrial reticence to accept such responsibilities either because of competition from within or competition from without. Despite the fact that "industry recognizes its responsibility to the community," I would be inclined to question whether this represents the position of the vast majority of our industrial community. There are perhaps not more than 200 industries discharging their wastes

treatment facilities have done so either by persuasion or by legal action instituted by the State Department of Health.

### No Isolation

The time has come for those concerned with the operation and maintenance of stream pollution control projects to take stock of themselves. The day of the Imhoff tank is over. They may have a relatively simple operation today. A year hence they may find themselves overwhelmed with an expensive biologically sensitive treatment plant filled with electronic gadgetry. Many people in this state are becoming acutely aware

## . . . Pollution Control

of the presence of treatment installations. Duties can no longer be carried out in isolation. There are now high value properties existing downstream and even in the immediate area. There are water supplies, fishermen, boaters, bathers, clambers directly affected by the operations.

Pollution control personnel must continue to study; read; inquire; travel about; must participate with local, regional, and state interests by informing, explaining, and enlightening. They must assume these responsibilities or they will find themselves far behind.

### **New Jersey**

I would be remiss in overlooking something of New Jersey's Stream Pollution Control Program itself. This activity as you well know has for many years been a function of your State Department of Health. The State of New Jersey and in particular your State Department of Health must also recognize its responsibilities and must remedy its shortcomings. We are living in a dynamic, prosperous, and wonderful State. There are many services and law enforcement programs in effect in New Jersey. The Stream Pollution Control Program is but just one of them. We can point with pride to our past accomplishments. However, we can only do so for a relatively short period of time.

The Stream Pollution Control Program is confronted with the actual, practical, day-to-day, down-

to-earth resolution of stream pollution problems that affect all of us. Plainly, this takes people. We do not need theoreticians, researchers, and scholars. The more esoteric considerations of stream pollution control are certainly needed and as many have indicated this is a role for the Federal Government to assume. New Jersey's Program needs qualified, professionally trained, and scholastic disciplined people to carry on this work.

### **Personnel Needs**

It may astound you to learn that a quarter of a century ago there were more qualified professional people employed by the State Department of Health who were directly involved in stream pollution control work than we have with us at this very moment. There are more policemen employed by the City of Burlington with a population of less than 15,000 than there are engineers and technicians employed by the State Department of Health in stream pollution control work. We have experienced a vast increase in work load and responsibilities to the public.

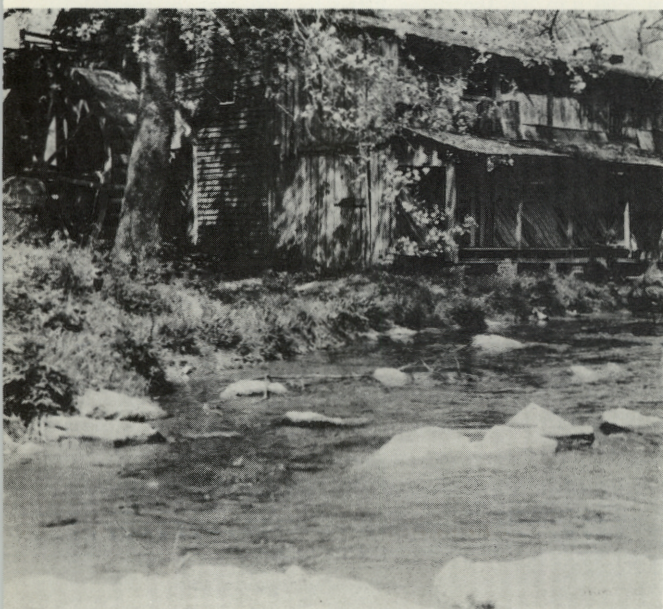
We now have 6½ million people living in this state. Their mere presence together with the maintenance of a huge industrial complex results in the discharge of some 1 billion gallons per day from over 600 municipal and industrial waste treatment facilities into the waters of this state. There are very few waterways that do not receive these wastes.

The people of the State of New

Jersey continue to demand cleaner waters. This demand must be recognized and met. The Stream Pollution Control Program has the time consuming, difficult role of influencing and directing those in a responsible position to recognize the urgency of intermunicipal, regional and drainage basin master sewerage planning. All of the ac-

with available manpower less than we had a quarter of a century ago. I submit that the State of New Jersey also has a responsibility that it is obligated to assume. We ask your support in meeting this challenge.

Every one of us must in his own fashion readjust his perspective and possibly re-examine his



*Section of a stream on which foam formerly rose as high as six feet before installation of a treatment plant*

tivities necessary to protect, maintain, improve, or restore the quality of every mile of our waterways are too numerous to mention at this time. Those of you who are interested in these specific functions and activities can readily obtain this information from us.

For this state to meet the demands of every interest and group, it must have qualified and inspired people. I wonder how long we will be able to perform our functions

past contribution to the control of stream pollution. The past 25 years was a period of growth — from adolescence to manhood. By the end of the next 25 years, the courage, intellect, and dedication of mature, honest men serving a highly complex society will have formed an indelible part of New Jersey's stream pollution control pattern.

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Based on a paper presented at New Jersey Water Pollution Control Association Annual Meeting — Atlantic City, April 23, 1964.

# 1965 Fishing Regulations

Following the public hearing held at the State Labor Building, Trenton, on September 8, 1964, the Fish and Game Council of the Department of Conservation and Economic Development, adopted the following regulations for the 1965 fishing seasons. These regulations, as provided by R. S. 13:1-B-33, are known as the Fish and Game Code and supersede the statute laws insofar as these items are concerned and all previous code regulations respecting fishing are hereby rescinded. Code regulations are effective until amended or repealed.

## Trout

1. The trout season for 1965 shall commence January 1, 1965, and extend to midnight, March 14, 1965. The trout season will re-open at 8:00 a.m. EST, Saturday, April 10, 1965, and extend to and include February 28, 1966, except that the waters listed below shall be closed to all fishing from 5:00 a.m. on the dates listed to 5:00 a.m. of the following morning; included in these waters are all feeder and tributary streams for a distance of 100 feet from the main channel. (See separate regulations for Greenwood Lake, and for the Delaware River between New Jersey and Pennsylvania.) The closed hours for waters listed below shall be standard time or daylight saving time, whichever is official in New Jersey on the given date.

### Atlantic County

Birch Park Ponds—Northfield—April 26; May 3, 17.  
Hammonton Lake—Hammonton—April 26; May 3, 17.

### Bergen County

Hacksack River—Poplar Road to Westwood Ave.—April 19, 26; May 3, 10, 17, 24.  
Indian Lake—Little Ferry—April 26; May 10.  
Pascack Creek—Dam at Woodcliff Lake to Westwood Ave. Bridge—April 19; May 3, 10, 17.  
Ramapo River—Mahwah Township Line to Oakland—April 22, 29; May 6, 13, 20, 27.  
Saddle River—Lake Street, Upper Saddle River to Route 4—April 26; May 3, 10, 17.  
White's Pond—Waldwick—April 26; May 13.  
Wild Duck Pond—Ridgewood—April 23.

### Burlington County

Strawbridge Lake—Moorestown—April 26; May 12.  
Sylvan Lake—Burlington—April 26; May 12.  
Woolman's Lake—Mt. Holly—April 26; May 12.

### Camden County

Back Run—Berlin—May 6, 11.  
Big Lebanon Run—Turnersville—May 6, 11.  
Columbia Lake—Maple Shade—May 6, 11.  
Ellisburg Creek—Ellisburg—May 6, 11.  
Grenlock Lake—Turnersville—May 6, 11.  
Hopkins Lake—Haddonfield—April 21; May 4.  
Munn's Lake—Haddonfield—April 21; May 4, 18.  
Rowands Pond—Clementon—April 21; May 4, 18.  
Square Circle Lake—Gibbstown—April 26.  
Woodcrest Creek—Woodcrest—May 6, 11.

### Cape May County

Dennisville Lake—Dennisville—April 26; May 10.

### Cumberland County

Clarks Pond—Bridgeton—April 26; May 10.  
Mary Elmer Lake—Bridgeton—April 26; May 10.  
Shaw's Mill Pond—Newport—April 26; May 10.

### **Essex County**

Branch Brook Park Lake—Newark—April 23, 30; May 7, 14, 21.  
Diamond Mill Pond—Millburn—April 23, 30; May 7, 14, 21.  
Verona Park Lake—Verona—April 23, 30; May 7, 14, 21.

### **Gloucester County**

Almonesson Lake—Almonesson—April 22; May 10.  
Harrisonville Lake—Harrisonville—April 20; May 10.  
Iona Lake—Iona—April 20; May 4, 10.  
Logan Lake—Repaupo—April 20; May 4, 11.  
Mullica Mill Pond—Mullica Hill—April 20; May 10.  
Raccoon Creek—Ewan to Swedesboro—April 20; May 10.  
Swedesboro Lake—Swedesboro—May 4.

### **Hudson County**

Hudson County Park Lake—North Bergen—April 23, 30; May 7, 14, 21.

### **Hunterdon County**

Alexauken Creek—Route 202 to Delaware River—April 20; May 4, 20, 27.  
Amwell Lake—Linvale—April 21, 28; May 13.  
Capoolong Creek—Pittstown to So. Br. Raritan River—April 22, 29; May 6, 13, 20, 27.  
Delaware-Raritan Canal Feeder—Raven Rock to Hunterdon Co. Line—April 22, 29;  
May 6, 13, 20, 27.  
Locketong Creek—Route 12 to Delaware River—April 20; May 4, 20, 27.  
Mulhockaway Creek—Norton to Pattenburg—April 20, 27; May 11.  
Musconetcong River—Lake Hopatcong, Morris County, through Morris, Sussex, Warren  
and Hunterdon Counties to Railroad Tunnel below Bloomsbury, Hunterdon County—  
April 23, 30; May 7, 14, 21, 28.  
Raritan River—South Branch—Morris Co. Line to Somerset Co. Line—April 21, 28;  
May 5, 12, 19, 26.  
Rockaway Creek, North Branch—Mountainville to Meadow Lane, Rt. 517 to Whitehouse—  
April 20, 27; May 11.  
Spruce Run—Camp Watchung to Union Bridge Road—April 20, 27; May 11.  
Spruce Run Reservoir—April 21; May 13.

### **Mercer County**

Assumpink Creek—N. J. Turnpike to 100 ft. below Whitehead Rd., Mercer County—  
April 20, 27; May 4, 11, 18, 25.  
Delaware-Raritan Canal Feeder—Hunterdon Co. Line to Yardley Bridge—April 22, 29;  
May 6, 13, 20, 27.  
Stony Brook—Woodsville to Port Mercer—April 20, 27; May 4, 11, 18, 25.

### **Middlesex County**

Farrington Lake—New Brunswick—May 5, 19.  
Hook's Creek Pond—Cheesequake State Park—April 21, 28; May 5, 12, 19.  
Lawrence Brook—Dam at Farrington Lake to Dam at Main St., Milltown—April 21, 28;  
May 5, 12, 19, 26.  
Matchaponix Brook—Mount Mills to Spotswood—April 28.  
Roosevelt Park Lake—Metuchen—April 21, 28; May 5, 12, 19.  
Wigwam Pond—Jamesburgh—April 21, 28; May 5, 12, 19.

### **Monmouth County**

Big Brook—Marlboro—April 22; May 5, 19.  
Englishtown Mill Pond—Englishtown—May 5.  
Garvey's Pond—Navesink—May 3, 19.  
Hockhocks Brook—Tinton Falls—April 22; May 5, 19.

**March, 1965**

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Hop Brook—Holmdel—April 22; May 5, 19.  
Manasquan River—Rt. 23 to Allenwood—April 19, 26; May 3, 10, 17, 24.  
Mohawk Pond—Red Bank—April 26.  
Old Mill Pond—Villa Park—April 26.  
Shadow Lake—Red Bank—April 26; May 19.  
Shark Park Pond—Hamilton—May 3.  
Spring Lake—Belmar—April 19; May 17.  
Takanassee Lake—Long Branch—April 26; May 19.  
Topenemus Lake—Freehold—April 19; May 17.  
Willow Brook—Holmdel—April 22; May 5, 19.  
Yellow Brook—Colts Neck—April 22; May 5, 19.

### **Morris County**

Beaver Brook—Lincoln Park, Comly Rd. to Pompton River—May 11, 18.  
Beaver Brook—Rockaway, Ford Rd. to Rockaway River—April 20; May 3.  
Black River—Rt. 206, Chester to dam at lower end of Hacklebarney State Park—  
April 22, 29; May 6, 13, 20, 27.  
Budd Lake—Budd Lake—May 7.  
Burnham Park Lake—Morristown—May 3.  
Gruendykes Mill Pond—Hackettstown—April 23, 30; May 7, 14, 21, 28.  
Kakeout Brook—Butler—April 22; May 6, 20.  
Lake Hopatcong—Lake Hopatcong—April 22; May 13.  
Lake Musconetcong—Netcong—April 21.  
Mt. Hope Pond—Mt. Hope—April 28.  
Musconetcong River—see closures Hunterdon County.  
Pompton River—Rt. 23 to D. L. & W. R. R. Bridge at Lincoln Park—April 20, 27;  
May 4, 11, 18, 25.  
Raritan River, So. Branch—Rt. 46 to Hunterdon Co. Line—April 21, 28; May 5, 12, 19, 26.  
Rockaway River—Milton to Boonton—April 19, 26; May 3, 10, 17, 24.  
Speedwell Lake—Morristown—April 28; May 20.

### **Ocean County**

Metedeconk River, North Branch—Aldrich Rd. Bridge to Jct. with County Route 549—  
April 19, 26; May 3, 10, 17, 24.  
Metedeconk River, So. Branch—Bennetts Mills to Lakewood—April 26; May 3, 10, 17, 24.  
Toms River, North Branch—Holmansville—April 26; May 3, 10, 17, 24.

### **Passaic County**

Barbour's Pond—West Paterson—April 27; May 13.  
Goffle Brook—Hawthorne—April 29; May 13.  
Oldham Pond—North Haledon—April 29; May 13.  
Pequannock River—Macopin Intake to White's Bridge, Hamburg Tpk.—April 22; May 6.  
Pompton River—Pompton Lake to D. L. & W. R. R. Bridge opposite Lincoln Park—  
April 20, 27; May 4, 11, 18, 25.  
Pompton Lake—Pompton Lakes—April 27; May 11.  
Ringwood Brook—Ringwood State Park—April 22, 29; May 6, 13, 20.  
Sheppard's Lake—Thunder Mountain, Ringwood Boro—April 22; May 6.  
Wanaque River—Excluding Wanaque Reservoir and Lake Inez, Passaic County—  
April 22, 29; May 6, 13, 20, 27.

### **Salem County**

Hancock's Sandwash Pond—Salem—April 20; May 12, 18.  
Schadler's Sandwash Pond—April 20; May 12, 18.

### **Somerset County**

- Lamington River—Dam at Burnt Mills to Jct. with North Branch—April 20, 27;  
May 4, 11, 18, 25.  
Passaic River—Davis Bridge to Dead River—April 21, 28; May 5, 12, 19, 26.  
Peapack Brook—Dam at Hills Hardware to North Branch Raritan River—April 27;  
May 4, 11, 18, 25.  
Raritan River, North Branch—Far Hills to So. Br. Raritan River—April 20, 27;  
May 4, 11, 18, 25.  
Raritan River, South Branch—Hunterdon County Line to Dalrymple's Bridge—  
April 21, 28; May 5, 12, 19, 26.

### **Sussex County**

- Andover Jct. Brook—Rt. 206 to Millers Sheep Ranch—April 19; May 4, 10.  
Big Flat Brook—100 ft. above Steam Mill Bridge on Crigger Rd. to Delaware River—  
April 23, 30; May 7, 14, 21, 28.  
Clove River—100 ft. above Colesville Bridge to upper end of Clove Lake—  
April 29; May 12, 19.  
Cranberry Lake—Cranberry Lake—April 27; May 7.  
Lake Ocquittunk—Stokes State Forest—April 23, 30; May 7, 14, 21, 28.  
Lake Wapalanne—Stokes State Forest—April 23, 30; May 7, 14, 21, 28.  
Little Flat Brook—100 ft. above Rt. 206 to lower end of State property at Bevans—  
April 19; May 6.  
Lubber's Run—Hopatcong—Bear Pond Rd. to Lake Lackawanna Dam—  
April 19; May 4, 10.  
Musconetcong River—see closures Hunterdon County.  
Papakating Creek—100 ft. above Frankford Plains Bridge to 100 ft. below Lewisburg  
Creamery Bridge—April 29; May 12, 19.  
Papakating Creek, West Branch—100 ft. above upper Woodburn Pond Bridge to Papa-  
kating Creek—April 29; May 12, 19.  
Paulinskill River—Lime Crest Bridge, Lafayette Twp. to Warren Co. Line—  
April 23, 30; May 7, 14, 21, 28.  
Pequest River—Springdale—Rt. 206 to Warren Co. Line—April 19, 26; May 3, 10, 17, 24.  
Saw Mill Lake—High Point Park—April 23, 30; May 7, 14, 21, 28.  
Seneca Lake—Sparta Township—April 29; May 10, 19.  
Sparta Glen Brook—Glen Rd. to Sparta, Franklin Rd.—April 29; May 4.  
Stony Lake—Stokes State Forest—April 29.  
Swartwood Lake—Swartwood Lake—April 29; May 13.  
Walkill River—W. Mt. Rd. to Rt. 23, Hamburg, Sussex Co.—April 23, 30; May 7, 14, 21, 28.  
Wawayanda Lake—Highland Lakes—April 27; May 13.

### **Union County**

- Rahway River—Union County—April 23, 30; May 7, 14, 21, 28.

### **Warren County**

- Beaver Brook—Lake Justit Road to Pequest River—April 29; May 13, 17.  
Blair Creek—Blair Falls to Blair Lake—April 23; May 13, 21, 28.  
Dunnfield Creek—Entire length—April 21; May 5, 19.  
Jacksonburg Brook—Mingle Bridge to Paulinskill River—April 21, 29; May 14, 28.  
Mt. Lake—Buttsville—April 19, 27; May 4, 11, 18.  
Musconetcong River—see closures Hunterdon County.  
Paulinskill River—Stillwater to Delaware River—April 23, 30; May 7, 14, 21, 28.  
Pequest River—Sussex-Warren Co. Line to Delaware River—Apr. 19, 26; May 3, 10, 17, 24.  
Pohatcong Creek—Rt. 69 to Delaware River—April 20, 27; May 4, 11, 18, 25.  
Silver Lake—Hope—April 19, 26; May 3, 10, 17.  
VanCampens Brook—Sussex Co. Line to Delaware River—April 21; May 5, 19.

2. There will be no minimum size on trout.

3. Creel limit, 6 trout per day, whether taken in fly-fishing or other waters, except

## **. . . Fishing Regulations**

as noted on the Paulinskill and Musconetcong no-kill stretches. Possession limit is one day's catch.

4. Landlocked salmon if caught may be retained during the open season for trout prescribed herein.

5. Spruce Run Reservoir shall be closed to all fishing until 8:00 a.m. on April 10, 1965, when trout fishing will begin.

### **Fly-Fishing Waters**

From and after 5:00 a.m. on Monday, May 3, 1965, the following stretches are hereby designated as fly-fishing waters:

1. Big Flat Brook, Sussex County—from the concrete bridge on Route 206 downstream to the end of the Roy Tract, a distance of approximately four miles, except that portion known as the Blewett Tract regulated below.

2. South Branch of the Raritan River, Hunterdon County—the stretch of water known as the "Ken Lockwood Gorge", a distance of approximately two and one-half miles.

3. Musconetcong River, Morris and Warren Counties—the stretch starting at the bridge on Schooley's Mountain Road, extending downstream approximately one mile to the entrance of the river into the Cook Chemical Works Pond opposite Cedar Castle. This stretch is designated as no-kill area after May 3 and all trout caught must be returned to the water unharmed.

From January 1, 1965, to midnight, March 14, 1965, and from 8:00 a.m. on April 10, 1965, to midnight, February 28, 1966, the following stretches are open to fly-fishing only, except on the days when closed for stocking during April and May.

1. Paulinskill River, Sussex County—from the dam at Paulinskill Lake downstream for a distance of approximately one mile to the marker sign erected by the Division. This stretch is designated as a no-kill area and all trout caught must be returned to the water unharmed.

2. Paulinskill River, Sussex County—that portion known as the Emmons property, starting at the Fredon-Stillwater Road, for a distance of approximately 1¼ miles upstream to a marker sign. This stretch is designated as a no-kill area and all trout caught must be returned to the water unharmed.

3. Big Flat Brook, Sussex County—that portion known as the Blewett Tract, clearly defined by marker signs.

The following regulations shall apply to the above designated fly-fishing waters:

1. Fly-fishing only shall be permitted from 5:00 a.m. Monday, May 3, to and including November 30, except in Paulinskill and Flat Brook as noted above. Whenever fly-fishing only is permitted, daily starting time shall be 5:00 a.m. and closing time shall be 9:00 p.m.

2. Not more than 6 trout may be killed daily. Trout in excess of this number may be caught provided such trout are immediately returned to the water unharmed, except that the Paulinskill and Musconetcong fly-fishing stretches are designated no-kill areas and all trout caught in these stretches must be returned to the water unharmed.

3. No bait or lures of any kind may be used except artificial flies which are expressly limited to dry flies, wet flies, bucktails, nymphs, and streamers. Expressly prohibited are metal, plastic, or wooden lures, plugs, spinners, and flies with spinners attached, or any multiple-hooked device. In the Paulinskill and Musconetcong no-kill areas, only barbless hooks may be used.

4. Also expressly prohibited are spinning reels or any type of angling whereby the fly is cast directly from the reel.

5. No person may have in possession while engaged in angling on the waters

designated as fly waters between May 3 and November 30, 1965, or in the Paulinskill and Flat Brook as designated above, any natural bait, live or preserved.

### **Baitfish**

It is prohibited to net, trap, or attempt to net or trap any type or species of minnow or baitfish from March 14 to June 12 from that section of any water that is stocked with trout, except that landlocked alewives may be taken in fresh water by special permit issued by the Division at its discretion. From and after June 12, any type or species of minnow may be taken provided that they be limited to 35 per day per person; and any seine so used shall not be greater than 10 feet in length and 4 feet in depth; and any minnow trap so used shall not be larger than 24 inches in length, nor have a funnel mouth greater than two inches in diameter.

### **Snagging Prohibited**

The foul hooking of largemouth or smallmouth bass, pickerel, or trout shall be prohibited in open waters. Any of the aforementioned fish so hooked must be immediately returned to the water. This shall not apply to fish so taken through the ice during the ice fishing season. (See separate regulations for Greenwood Lake, and for the Delaware River between New Jersey and Pennsylvania.)

### **Warm Water Fish**

1. During 1965, there shall be no closed season in open (unfrozen) waters on pike-perch (walleyed pike), pickerel (Eastern or chain, sometimes called pike), smallmouth (black) bass, and largemouth (Oswego) bass. (See separate regulations for Greenwood Lake and for Delaware River between New Jersey and Pennsylvania, and see ice fishing regulations.)
2. Closed seasons are hereby eliminated in open (unfrozen) waters on all fresh water fish except brook, brown, and rainbow trout, and on striped bass in fresh water.
3. The size limits on rock bass, calico bass, crappie, and pickerel are hereby eliminated in all waters except Lake Hopatcong. In Lake Hopatcong there shall be a minimum size of 15 inches for eastern chain pickerel. (See separate regulations for Greenwood Lake.)
4. The provision that a person may not take or have in possession more than 25 in the aggregate of fish commonly classed as fresh water game and food fish is hereby abolished. (See code for bag limits on individual species.)
5. The minimum length of largemouth (Oswego) bass and smallmouth (black) bass in all waters shall be 9 inches.
6. Daily bag and possession limit for largemouth (Oswego) bass and smallmouth (black) bass shall be not more than 5 in the aggregate. (See separate regulations for Greenwood Lake, and the Delaware River between New Jersey and Pennsylvania.)
7. Fishing for all species of fresh water fish is permitted 24 hours daily except on those days that certain trout streams are closed for stocking during April and May and except in the Paulinskill and Musconetcong no-kill fly-fishing stretches where fishing is restricted from 5:00 a.m. to 9:00 p.m. daily. The Musconetcong no-kill area does not take effect until May 3.
8. In the Paulinskill and Musconetcong no-kill areas, only barbless hooks may be used.

### **Ice Fishing**

1. The ice fishing season for all species will be from January 1, 1965, to February 14, 1965, inclusive. (See separate regulations for Greenwood Lake, and the Delaware River between New Jersey and Pennsylvania.)
2. Not more than 5 tip-ups or lines may be used by each fisherman and all such devices must be clearly marked with the name and address of the user.
3. A 3-hook jig, not larger than ½" from point to point, may be used during the

## . . . Fishing Regulations

regular ice fishing season. When ice is present after February 14, all species except pickerel, largemouth bass, smallmouth bass, and trout, may be taken with a 3-hook jig as specified. (See separate regulations for Greenwood Lake, and for the Delaware River between New Jersey and Pennsylvania.)

4. There shall be no bag limit on white or yellow perch taken through the ice.

### **Angling in Trout Stocked Waters**

Between March 14 and 8:00 a.m. EST on April 10, 1965, it shall be unlawful to angle with fly, bait, or lure, hook and line, or with bow and arrow, in ponds, lakes, or those portions of streams that were stocked with trout for the 1964 season. Angling, however, is permitted in Lake Hopatcong, Big Swartswood, Farrington, Waywayanda, Cranberry, Harrisonville, Musconetcong, Pompton and Budd Lakes, and the Delaware-Raritan Canal Feeder, provided trout are not taken. This restriction shall apply to all waters on which closed intervals are prescribed during the 1965 trout season in that period of time from April 19 to May 28, both dates inclusive.

The sections of streams listed below will be open to angling through April 4, 1965, and closed from that date to 8:00 a.m., April 10, 1965, except trout cannot be taken between midnight March 14 to 8:00 a.m., April 10, 1965.

1. South Branch, Raritan River. Entire river downstream from Bridge at Dart's Mills on Rt. 523.
2. North Branch, Raritan River. Entire river downstream from U. S. Rt. 22 Bridge.
3. Ramapo River. Entire river downstream from W. Oakland Dam.

### **Bow and Arrow Fishing**

It shall be legal to take any species of fish except brook, brown, or rainbow trout, landlocked salmon, largemouth bass, smallmouth bass, pickerel, or walleyed pike at any time by use of a long bow and arrow with line attached, provided a person has a proper fishing license. (See separate regulations for Greenwood Lake, and for the Delaware River between New Jersey and Pennsylvania, and for streams stocked with trout for 1964 season.)

### **Greenwood Lake**

In cooperation with the New York State Conservation Department, the New Jersey Division of Fish and Game announces the following regulations for Greenwood Lake, which lies partly in Passaic County, New Jersey, and partly in Orange County, New York. These regulations are made a part of the New Jersey State Fish and Game Code and will be enforced on the whole lake by the Conservation authorities of both States.

	<i>Season</i>	<i>Size</i>	<i>Bag Limit</i>
Trout	No closed season	None	3
Largemouth and smallmouth bass	No closed season	9 inches	5 singly or in aggregate
Eastern chain pickerel	No closed season	None	10
All other species	No closed season	None	None

On Greenwood Lake, it shall be illegal for any ice fisherman to use at any time more than five tip-ups or lines per angler, and such tip-ups or lines must be plainly marked with the name and address of the angler.

On Greenwood Lake, fishing will be permitted 24 hours a day.

Either New York or New Jersey fishing licenses will be honored on all of Greenwood Lake.

Bow and arrow fishing for carp, suckers, herring, catfish, and eels will be permitted in Greenwood Lake by properly licensed fishermen.

### Delaware River Between New Jersey and Pennsylvania

In cooperation with the Pennsylvania Fish Commission, the New Jersey Division of Fish and Game announces the following regulations for the Delaware River between New Jersey and Pennsylvania. These regulations are made a part of the New Jersey State Fish and Game Code and will be enforced by the Conservation authorities of each state.

	Season	Size	Bag Limit
Trout	April 15-Sept. 30	10 inches	5
Largemouth and smallmouth bass	No closed season	9 inches	6 in all
Walleyed pike (pike-perch) and pickerel	No closed season	None	6 of each
Striped bass	March 1-Dec. 31	12 inches	None
Baitfish, fish bait	No closed season	None	35
All other fresh water species	No closed season	None	None

Fishing licenses of either state will be recognized in the Delaware River from water's edge to water's edge and fishermen will be permitted to take off in a boat from either shore and on returning, have in possession any fish which may be legally taken; however, any person fishing from the shore must obtain a license in that state on whose shore fishing is done. Residents of Pennsylvania must possess a New Jersey non-resident license if they fish from the New Jersey bank, and residents of New Jersey must have a Pennsylvania license if they fish from the Pennsylvania bank.

Angling may be done with two rods and two lines or two hand lines or one of each. Not more than three single hooks or three burrs of three hooks each may be used per line.

While fishing through holes in the ice for fish not protected by closed season, five tip-ups or any combination of five devices that will include tip-ups and not more than two rods and lines or two hand lines or one of each may be used.

Spears (not mechanically propelled) and long bows may be used to take shad, eels, carp, suckers, herring and bullheads by properly licensed fishermen, except within fifty rods (825 feet) of an eel weir.

Baitfish may be taken and possessed for personal use only, but not to exceed 35 per day.

Eel weirs for the catching of carp, catfish, eels, and suckers only, may be operated under permit from the Division of Fish and Game at any time of the year and at any time of day.

#### Tributaries of the Delaware River Between Trenton Falls and Birch Creek Where Tide Ebbs and Flows

The seasons, sizes, and bag limits established for the taking of fresh water game fish in the tributaries of the Delaware River between Trenton Falls and Birch Creek shall be the same as those previously outlined for all waters of the State, other than the Delaware River between New Jersey and Pennsylvania, and Greenwood Lake where special regulations apply.

(Note: Birch Creek is located in Gloucester County approximately one mile north of the Salem County Line.)

#### Regulations Pertaining to Exotics

No person shall liberate any crocodile, alligator or other reptile not native to this State.

These 1965 Fishing Regulations are presented merely for your convenience in planning vacations and fishing trips. Consult Compendium and Fish Laws for details and laws in full

# Council Highlights

## December Meeting

The regular monthly meeting of the Fish and Game Council was held in Trenton on December 15. The members present were: Chairman Hart, Councilmen Alampi, Lunsford, McCloskey, Space, and Totten.

The minutes of the previous meeting were approved.

## Open Session

Councilman Charlesworth was not present for the Open Session. In addition to the members of the Council and staff, the following persons were present: Charles Wright, John Russack, Edwin Cooper, and Ralph Alloca.

## License Revocation Appeal

An appellant appeared before the Council and appealed for the reinstatement of his hunting license privileges which had been revoked following two convictions for hunting before hours and hunting deer with both a rifle and bow and arrow under control. After due consideration, the Council passed a motion denying the request.

## Land Administration

The Council was informed that by Administrative Orders 53 and 56, the Black River Project, (Alexander and Melinda Williams property) and the Harrisonville Lake Project, (Samuel Weigel Estate property) had been assigned to the Division of Fish and Game for administration.

## Posting of Land

Councilman Alampi stated that he had received a complaint from Burlington County sportsmen that the English Setter Club had posted its property against hunting. Mr. Alampi said this is unfortunate since our state property adjoins that of the English Setter Club and in 1964 the English Setter Club received 275 quail from the state for field trials.

The Director was to write a letter to the English Setter Club advising them that unless they removed their signs within five days of the receipt of his letter, they would be ineligible to receive birds from the Division of Fish and Game for their field trials since it is the policy of the Division that no birds will be placed on posted land. Mr. Alampi suggested that a Conservation Officer call on the club representatives after they receive the Director's letter.

## No-kill Trout Fishing

A letter was read from Richard Phillips, Trenton, expressing interest in seeing more trout fishing areas set aside for no-kill-no-take

fishing and recommending that consideration be given to permitting the use of flies tied on ordinary hooks and the retention of fish over 15 inches which are caught in these areas. The Council will give consideration to Mr. Phillips' suggestion when they next establish fishing regulations.

### **Special Deer Permits**

The Council briefly discussed the fact that while 13,620 permits were drawn for the special deer day, only 13,019 were returned and actually issued. In future years, some consideration should be given to devising a method to prevent this from occurring.

### **Violators Roundup**

Councilman Space referred to the several pages of violators' names which are printed monthly in *New Jersey Outdoors*. It was his opinion that this space could be put to much better use by being devoted to articles which would be educational and interesting to the readers. Of all the states which publish magazines, only two or three carry a similar listing. Director MacNamara suggested publishing several issues without the list of violators to ascertain what the reaction would be.

The decision of the Council was that the Public Relations Committee should meet and give consideration to the idea and submit recommendations to the Council at a future meeting.

### **Forked River Personnel**

Councilman Alampi requested that a letter of commendation be sent to Philip Grant, Superintendent of the Forked River Game Farm, and to the Youth Center located there for the wonderful job they did in putting a roof on the catching pen. Mr. Alampi said they did an excellent job.

### **Hen Pheasants**

Councilman Alampi suggested that the Game Committee meet and give consideration to not liberating hen pheasants in January. He felt these birds could be better used, perhaps by liberating them on the Public Hunting Grounds and allowing them to be harvested under a pheasant stamp. Director MacNamara said if this were done, protection might as well be taken off all over the state. Councilman McCloskey said the fact that 50,000 birds are liberated and 150,000 are harvested proves that the birds must reproduce.

### **Rabbit Trapping**

Councilman Alampi expressed interest in a rabbit trapping project to be carried out by local sportsmen in closed areas, the animals to be reliberated in areas open to hunting. He said that all that would

## **. . . Council Highlights**

be required would be a few box traps and the cooperation of a man to ear tag and reliberate the animals. He earnestly believed this program would be beneficial and involves only a minimum of effort and expense.

Councilman Space, chairman of the Sub-committee on Upland Game, was to call a meeting of the committee in Trenton on January 5 when this matter was to be considered.

### **Wawayanda Tract**

Councilman McCloskey reported that the sportsmen were very disappointed to find that the Wawayanda Tract was open only to bow and arrow hunting. He said that he was surprised himself to find that this tract was not open to firearm hunters.

Director MacNamara stated that Wawayanda was assigned by Commissioner Roe to be administered by Forests and Parks because activities on the area will include swimming, boating, camping, picnicking, and hiking. The only involvement our Division will have will be fishing and hunting. Separate policies are developed for each area administered under the Department of Conservation and Economic Development. On inquiring of Acting Director McCabe, he was advised that a program had not as yet been established for Wawayanda, and the boundaries have not been determined as yet. Therefore, for the time being, the area would be open only to bow and arrow hunting.

Councilman McCloskey made a motion, seconded by Councilman Space, that Commissioner Roe be requested to review all the Forests and Parks lands that are closed to hunting with the idea of opening as many as possible to hunting and fishing. Motion carried.

### **C. O. Harold Chitwood**

Councilman McCloskey reported that Conservation Officer Harold Chitwood has taken up residence in Morris County and is doing an excellent job in carrying out his duties. The sportsmen of the county are pleased with his performance.

### **Public Grounds Fees**

For the benefit of the public present, Chairman Hart advised that during the Executive Session the Council had adopted a program of charging fees for various uses of the Public Hunting and Fishing Grounds facilities. The program will be initiated only on areas where it will be feasible to administer. The Council recognizes that the areas have been purchased by the license buyers, but they are heavily utilized by picnickers and bathers, which use necessitates expense on the part of the Division. It is the intention to develop an equitable program

to collect revenue from them. Publicity will be given to the plan when it has been definitely established on which tracts the fees will apply.

### **Public Relations**

Jules Marron, Supervisor of Public Relations, reported to the Council that he was to terminate his activities with the Division of Fish and Game as of December 31, 1964, and was to resign, following his vacation on January 31, 1965, to take up new duties with the Planning Board of Sussex County.

The Council expressed their sincere appreciation to Mr. Marron for his fine efforts during his years of service with the Division of Fish and Game.

### **Fisheries Management**

Robert Hayford, Chief of the Bureau of Fisheries, reported that in going over the fish sizes with Superintendent Williams, it appears that the fish did not fare as badly as would be expected in view of the unfavorable conditions this past summer due to low, warm water. The fish were to be checked in January to definitely determine what the program will be for the spring.

Chief Hayford reported that Commissioner Roe has given approval to setting up a warm-water program and this project will be activated soon. One of the first things that will be done will be to have Fisheries Biologist Essbach contact the Conservation Officers in each county to ascertain from them what sources of salvage fish are available and to get their opinions on conditions in various waters in their counties. This will furnish some good information as a basis for the program. This same procedure was followed and proved satisfactory in the trout stocking program when Willis Beatty contacted all the Conservation Officers concerning conditions in the trout waters in each county.

### **Wildlife Management**

Councilman Space stated that years ago, an area near Smoke Rise Mountain was an open field with low brush and was inhabited by a great many deer. Now the brush and trees on this area have grown to tall trees and the foliage is no longer available as browse to deer which are now very scarce there. He inquired what could be done to secure the cooperation of the Bureau of Forests and Parks so that such areas could be burned over to make them revert to good habitat for deer.

Chief Alpaugh stated that this is referred to as ecological succession. The brush in fields grows up and closes out light, which prevents the growth of succulent plants for deer. As far as the State

## . . . Council Highlights

Parks and controlled burning are concerned, at the present time he did not think Forestry would go along with our thinking. This is true not only in New Jersey but in other states where, generally speaking, it is not always possible to grow maximum crops of both forest trees and wildlife on the same area; one or the other must be favored. Our foresters are primarily interested in growing trees. In their administration they would be opposed to any controlled burning which would increase hardwood habitat for deer. However, the primary purpose in managing our own areas is for wildlife, and we are interested in cutting back the natural succession into what is referred to as the field stage, before it goes into the forest stage.

Mr. Alpaugh stated that several years ago a program of controlled burning was considered with the Foresters but they were interested in developing a pure stand of pine. However, we were interested in growing wildlife, and a pure stand of pine is not conducive to deer. Acorns play an important part in the mast of deer and supply fat to carry them through the winter months.

Mr. Alpaugh said he would be happy to meet with Mr. Space to discuss various aspects of our wildlife management program.

### **4-H Chick Program**

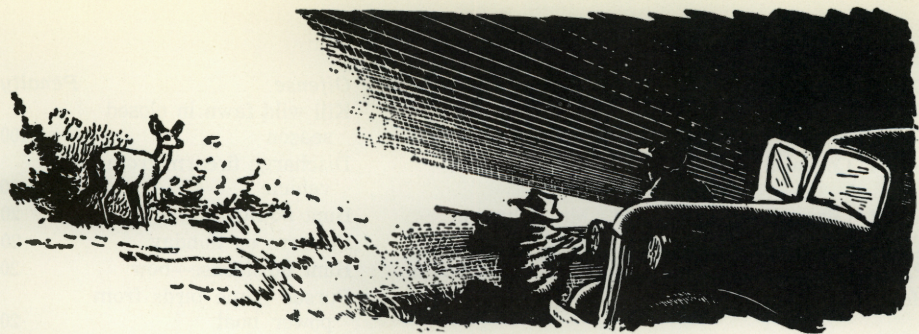
Mr. Alpaugh reported that under the 4-H Chick Program, 10,800 quail chicks were distributed and 9,284 were raised and liberated at a total cost of \$10,656.60, and that 10,779 pheasant chicks were distributed and 8,823 liberated at a cost of \$2.15 each. The total cost under this program was \$29,646.05. This coincides with the thirty thousand dollars which had been budgeted for this program.

### **Public Hunting Grounds**

Mr. Alpaugh stated that our Public Hunting Grounds are continuing to be more heavily utilized and we can expect their popularity to increase yearly. This year, stockings were carried out an average of three times during the week and this program seemed to produce good results and was favorably received.

### **Law Enforcement**

William P. Coffin, Chief Conservation Officer, reported that hunting pressure appeared to be down during the deer season. Reports from the field were that, except for the deer hunting clubs, pressure in the field was generally down. Reports received as of this date from approximately half of the Conservation Officers indicate that 93 apprehensions were made during the firearm deer season. Of these, 45 were for loaded gun in the car. #



## Violators Roundup

<i>Defendant</i>	<i>Offense</i>	<i>Penalty</i>
Roland Blair, 19 Merriam Ave., Newton	Hunt no license	20 jail
Roland Blair, 19 Merriam Ave., Newton	Three illegal missiles	100 jail
Roland Blair, 19 Merriam Ave., Newton	Hunt with .22 pistol	20 jail
James H. Kline, Sherman Ave., Vineland	Fish no license	20
Carmen J. Decinque, 744 Belmont Ave., Collingswood	Take fish by means other than angling	20
Patrick J. Monahan, 948 Park Ave., Collingswood	Take fish by means other than angling	20
Steven Kaplan, 608 Cedar Ave., Collingswood	Take fish by means other than angling	20
Frank Testa, 2506 Central Ave., Union City	Hunt no license	20
Harold F. Cannata, Jr., 518 18th St., Union City	Hunt no license	20
Teddy Kosloff, 285 North Highland Ave., Merian Station, Pa.	Fish no license	20
Wm. J. Carr, 44 Highfield Rd., Bloomfield	Fish no license	20
Philipp Brockstedt, 103 Monochie Ave., Monochie	Fish no license	20
Donald J. Mastrogiovani, 505 Palisades Ave., Jersey City	Fish no license	20
Donald A. Spadaro, 7 Wilson St., Clifton	Fish no license	20
Albert Bowers, 319-15th Ave., Paterson	Small bass in possession	20
Naverne F. Nichols, 73 Hillside Ave., Newark	Fish no license	20
James B. Lee, 322 W. Market St., Newark	Fish no license	20
James L. Gaymon, 254 Prince St., Newark	Fish no license	20
Richard J. Hoffman, 638 Glenwood Ave., Hillside	Fish no license	20
John Gray, 103-14th & Camden Sts., Newark	Fish no license	20
Scott Young, Jr., 100 Remsen St., E. Brunswick	Fish no license	20
Frank Stanle, Jr., R.D. No. 1, Delsea Dr., Dennisville	Hunt no license	20
Frank Stanle, Jr., R.D. No. 1, Delsea Dr., Dennisville	Loaded firearm in vehicle	20
Frank Stanle, Jr., R.D. No. 1, Delsea Dr., Dennisville	Possession uncased firearm	100
Eagle Dye & Finishing Co., Lippincott Lane, Mt. Holly	Allowed deleterious substance in State waters	200
Winfield C. Burnum, 915 Mt. Vernon Ave., Haddonfield	Hunt migratory waterfowl at wrong hours	20

## . . . Violators Roundup

<i>Defendant</i>	<i>Offense</i>	<i>Penalty</i>
Neil I. Cornwell, Howard Blvd., Mt. Arlington	Kill wild fawn in closed season	100
Neil I. Cornwell, Howard Blvd., Mt. Arlington	Discharge firearm from vehicle	20
Neil I. Cornwell, Howard Blvd., Mt. Arlington	Hunt no license	20
Thomas Bell, 36 Harvard Rd., Pennsville	Firearm on Sunday	20
Paul R. Yurko, 41 Brainard Ave., Port Monmouth	Hunt no license—bow	20
Howard J. Kelly, 919 Columbia Ave., Cape May	Pursue game birds from power boat	20
Robert A. Lummis, 131 E. Commerce St., Bridgeton	Pursue game birds from power boat	20
Robert C. Grissom, 2909 Yorkship Rd., Camden	Illegal missile	100
Owen Daniels, 212 S. 5th St., Camden	Fail to exhibit license	20 jail
George A. Philpott, 502 Pennsylvania Ave., Earleton (Cherry Hill)	Fish no license	20
George A. Philpott, 502 Pennsylvania Ave., Earleton (Cherry Hill)	Fish no license	20
Charles E. Royson, 525 Simpson Ave., National Park	Fish no license	20
Thomas W. Hollywood, 2 Second Ave., National Park	Fish no license	20
Robert Ackland, 13 Hampton St., Cranford	Hunt woodchuck without license	20
Ronald Stankiewicz, 16 Melbourne Ct., Woodbridge	Hunt migratory waterfowl wrong hours	20
Thomas Tremko, 17 Laurel Ave., Pequannock	Possession male pheasant wrong season	100
Frank P. Baffige, 368 Nesbit Terr., Irvington	Hunt on Sunday	20
James Monahan, 38 Morgan Pl., No. Arlington	Hunt on Sunday	20
Anthony Rosetta, 122 Ridge Rd., Lyndhurst	Kill rabbit closed season	20
Nancy T. Boisvert, 10 Maple Walk, Camden	Fish no license	20
Ira P. Webb, 1191 Monmouth Rd., Mt. Holly	Tag not displayed	5
Steve Rodvansky, 19 Dunlop Drive, Parlin	Kill one duck closed season	20
Steve Rodvansky, 19 Dunlop Drive, Parlin	Kill one protected shore bird	20

18th Annual

## *Middlesex County Junior Sportsmen's Show*

Rutgers Field House, New Brunswick

**March 23 -27, Inclusive**

Daily—9:30 a.m.—10:00 p.m.

Saturday, March 27—9:30 a.m.—5:00 p.m.

**Many Exhibits—Rod and Gun, Archery, Skin Diving, Movies,  
Special Events, Conservation, Fish and Game, and Nature**

**No Charge for Admission**

**Irving Sosin, Chairman**

# Fur, Fin *and* Campfire

By JACK SORDS

EARLY SPRING, WHEN THE WATER RUNS HIGH, IS A GOOD TIME TO USE WORMS FOR BAIT



SOME EFFECTIVE WAYS TO CATCH FISH WITH WORMS



A LARGE GOB OF WORMS APPEALS TO CATFISH



A SMALL, LIVELY WORM HOOKED IN THE CENTER SO BOTH ARE FREE TO WIGGLE GETS PAN FISH



WHEN FISHING ALONG THE BANKS OF STREAMS, YOU CAN PROTECT YOUR WORMS AGAINST POSSIBLE ACCIDENTAL LOSS BY TYING CAN IN A FORKED STICK PUSHED INTO THE GROUND



PLACE THE HOOK THROUGH THE WORM IN VARIOUS PLACES FOR SUCKERS



TROLLING A JUNE-BUG SPINNER AND WORM IS FINE FOR CATCHING WALLEYES. HOOK THE WORM THROUGH THE END



A GOOD TROUT-GETTER IS A WORM TRAILING ITS FULL LENGTH BEHIND A SPINNER

The month of March is a good time to visit the Charles O. Hayford Fish Hatcheries in Hackettstown and the Pequest Fish Rearing Station. Now is also the time to scout the trout streams and lakes and line up places to fish. And, remember to buy your 1965 fishing license and trout stamp early.

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DESTROYS PROPERTY VALUES



ENDANGERS HUMAN HEALTH



# FIGHT DIRTY WATER

NATIONAL WILDLIFE WEEK • MARCH 14-20, 1965