

# New Jersey



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### Cover—"A Fishing Family"

A fishing family takes time out for lunch.

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New Jersey State Library



Some Notes on the

# Snakes

of New Jersey

by Fred Space, Member, Fish and Game Council

**There are more** fallacies about snakes than any other wild creature on earth.

## Rattler and Copperhead

In New Jersey we have just two kinds of poisonous snakes, the timber rattlesnake and the copperhead. Many of the harmless species are often mistaken for these poisonous ones and are unnecessarily killed.

The timber rattlesnake and copperhead are usually found in ledgy, wooded, hill country in North Jersey. Occasionally the rattler is found in the swamp areas of South Jersey. The rattler and copperhead hibernate in the rocky ledges during the winter months. On the warm spring days they come from hibernation but do not venture too far from the den until all signs of frost are gone.

For those poisonous snakes that give birth to live young, the rattlesnake and the copperhead, the mating takes place at this time. The females return to the den in

the late summer and give birth to the young near the den entrance. A mother snake has absolutely no motherly instinct and when the young are born they have to fend for themselves. Baby rattlesnakes and copperheads are poisonous at birth.

Timber rattlers vary in color from a buttercup yellow to a black velvet. The color of a snake has no bearing as to the sex. The yellow type is more common in New Jersey.

## Feeding

Snakes in general eat but few times a year, swallowing their food whole. They have a unique system of dislocating their jaws and can swallow a small rodent, squirrel, frog, or bird much larger than their own diameter. After eating, there is a bulge in the snake's stomach and its skin is stretched.

## Shedding

As a snake grows, the skin starts to peel off around its lips and eyes, shedding from the head back, as

← *Author Space with rattlers and other snakes in his snake den*

## . . . Snakes

we might pull off a sock inside out. Each time the rattler sheds its skin the snake gains a new button or rattle. Thus, having eaten and shed several times in a season, the rattler gains several

sacs located on each jaw, giving the well-known triangular shape to the head of the poisonous snake.

### Striking

These snakes usually situate themselves at a likely spot where a small rodent, such as a mouse,



*The rattlesnake is characterized by its rattle which, incidently, is not an indicator of the snake's age*

buttons. These are loose shell-like attachments at the end of the tail and are easily pulled or worn off during the snake's journey through rocks and forest debris while searching for food. Therefore, the number of rattles have no bearing as to the age of the snake.

The rattlesnake and copperhead are equipped with two long, sharp, curved hollow teeth, called fangs, on the upper jaw. The fangs are attached via a tube with the poison

rat, chipmunk, or squirrel, might pass. In a split second the snake strikes and injects the poison fluid into the bloodstream of its victim. Within minutes, or even seconds, the small creature is unconscious and then dead. The venom, circulated in the bloodstream, tends to help digest the meal after it has been eaten. Thus the rattlesnake does not always rattle before it strikes. If it did, the snake would soon starve to death as these small

creatures would stay out of its reach. Without a doubt many a rattler is born and dies in the woods and never shakes its rattles once in its lifetime.

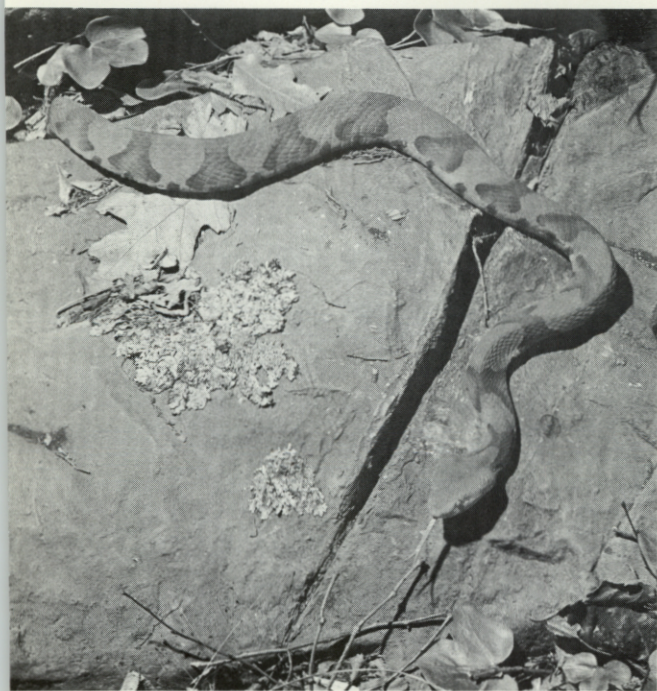
### The Copperhead

The copperhead is more widely distributed over New Jersey than the rattler. Due to its well-camouflaged colors of dark and light copper tone with the "hourglass" design, it blends in well with

A 36-inch copperhead is large. However, specimens have been noted at nearly 4 feet in length.

### Copperhead Bites

While the bite of a copperhead is dangerous, it is not as poisonous as the timber rattlesnake. Its fangs are shorter, and its venom is not as virulent. And, the amount of venom injected into its victim of lesser quantity. In habits the copperhead is very quiet, prefer-



*The copperhead has light and dark copper colors that form hourglass designs on its back*

leaves. Being a night feeder, the copperhead travels mostly after dark and stays hidden in the tall grass and weeds or under an old log or rubbish pile during the day, thereby being able to survive the expanding population better than the rattler.

ring to lie still when an intruder enters its lair, and escaping detection thanks to its pattern and colors. Seldom will it make any attempt to strike unless very definitely annoyed, attacked, or stepped on.

Many cases of copperhead bites

## . . . Snakes

have been related to persons wearing low shoes, the bites being near the ankle.

A snake does not have to coil to strike. A snake cannot jump or spring. About two-thirds of its body must remain on the ground, the remaining one-third being its striking distance.

When disturbed or frightened many species of snakes shake their

Poisonous snakes have venom to kill their food with, not to bite people. Therefore, if we are unfortunate enough to be bitten, it is because we surprised the snake, stepped on it, or in some way tried to harm it. The snake was striking for self-protection.

### **Water Snake**

The common water snake is widely distributed over New Jersey where it is found in or near rivers, streams, lakes, ponds, and swamps.



*The water snake, right, is often mistaken for the copperhead, left*

tails and, if among dried leaves, create a definite buzzing sound resembling the rattlesnake's.

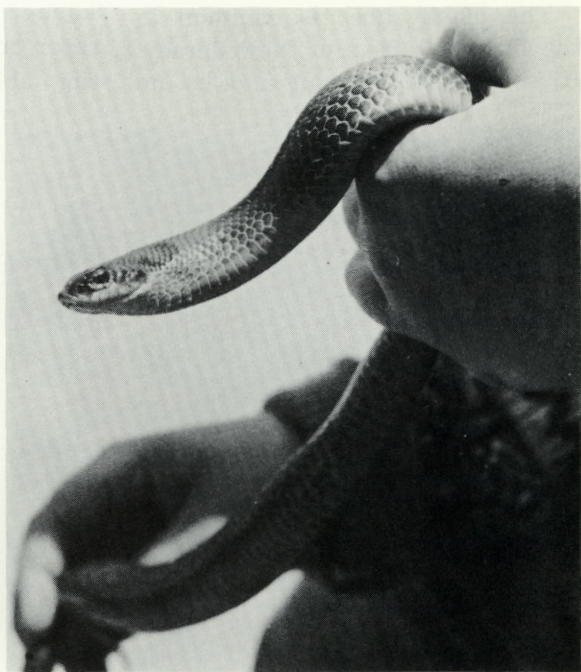
Most snakes will coil and fight bravely if cornered, but at the first opportunity will quickly turn and glide to some crevice or other place of safety.

This species is often mistaken for the copperhead. The markings, closely resembling the copperhead's, have brown and orange bands in an irregular design. When disturbed the water snake often flattens its head to resemble a poisonous snake.

The common water snake spends most summer days sunning near the water's edge. When danger approaches, it silently glides into the

known as the "hissing adder." When danger approaches, it flattens its neck and head, raises it in a dangerous striking pose, and

*The hognose snake is distinguished by its sharp, upturned snout. It is not a poisonous snake*



water undetected. This snake has the ability to stay under water for several minutes.

The water snake does less for mankind than any other species, feeding on fish and frogs. It rarely kills a rodent.

There are no poisonous water snakes in New Jersey. The water moccasin, or cottonmouth moccasin, is not native to our state.

### **Hognose Snake**

The hognose snake is becoming very scarce in New Jersey. This little fellow is the clown of the reptile kingdom and is commonly

hisses profusely. If an attempt is made on its life, the hognose immediately rolls on its back with mouth open and tongue out, usually regurgitating any food eaten recently. Its assailant, thinking he killed the snake, is surprised when the reptile slowly returns to its natural position and glides away.

The hognose snake has many colors and designs, from black to a yellowish-brown and a pattern resembling that of a timber rattlesnake.

The average length of hognose snakes is about 24 inches. A very

## . . . Snakes

beneficial rodent controller, it should not be killed.

### **Black Racer**

The black racer is common in the farming areas of New Jersey. It is valuable to man and by no

body erect while hunting for food. When a mouse is located it rarely escapes. With agility and speed the black racer soon overcomes its prey and grasps it in its mouth. Though not a true constrictor, the racer crushes the life from its victim, shifting its hold rapidly as



*The pilot black snake has white flecks on its body and white scales on its belly, whereas the black racer has a slate or blue-black underside*

means should be killed. It has an average length of 3½ feet and a slim body.

A tireless traveler, with a never ending appetite, the racer eats hundreds of small rodents in its lifetime.

The black racer is often observed gliding through the fields with its head and upper one-third of its

not to be bitten itself. Some racers, with a bluish appearance, are known as blue racers, but they are of the same species.

### **Pilot Black**

In the mountainous areas of New Jersey we have a huge black snake called the pilot black or mountain black. The white flecks on its body and white scales on its belly dis-

tinguish it from the black racer.

The pilot black acquires a greater length, sometimes 6 feet, and has a massive body. Its chief food consists of rodents. However, its ability to climb trees often gets the pilot black into trouble when it can not resist destroying a nest of birds.

The pilot black is a true constrictor, grasping its prey in its

snake and copperhead. They live peaceably together in activity and in hibernation.

### Pine Snake

The pine snake is found in the pine barrens of South Jersey. Its habits resemble those of the pilot black.

The average length of a pine snake is about 5 feet and its diameter about 2 inches. It is a very

*The pine snake is a beautiful creature with black and white speckles covering its body*



mouth and quickly winding its body tightly to crush the victim. When in captivity the racer readily becomes tame and really makes a good pet.

Contrary to belief, the black snake is not an enemy of the rattle-

beautifully designed creature with black and white flecks covering its entire body.

The pine snake's chief foods are rodents, but occasionally a bird. It, like the pilot black, is a constrictor. Pine snakes become quiet

## . . . Snakes

after gentle handling and sometimes make good pets.

### **Milk Snake**

The milk snake is very often mistaken for the copperhead. Its average length is about 30 inches, with a long slim body banded with stripes around its body of brown and cream. The milk snake's head has very little distinction from its neck, whereas the copperhead's neck is only about one-third of the width of its head.

The milk snake does not, and can not, milk cows. First, there is no suction within the snake to draw the milk. Secondly, each snake is equipped with four rows of tiny, needle sharp teeth, all facing back. These work in unison to force the whole food into its stomach. If the milk snake should grasp the tender skin of a cow's teat, these teeth would penetrate and the cow would kick the snake to death. Thirdly, (if the snake were not killed by the cow) with the four rows of teeth imbedded in the skin of the teat, the only recourse for the snake would be to swallow the rest of the cow—not likely. The milk snake is a very beneficial rodent controller that should not be killed.

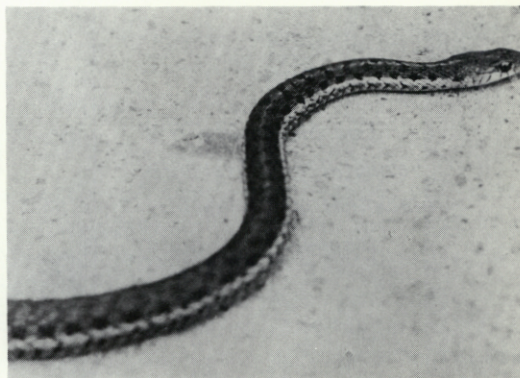
### **Garter Snake**

The garter snake is by far the most common species of snake in New Jersey. Being one of the smaller varieties, it is able to squeeze into the tiniest masonry crack and dwells in some of our

more urban areas. The garter snake attains a length of about 18 inches and is not much larger around than your finger. The parallel stripes of yellow and black down its back distinguish it from the rest of the common snakes. Garter snakes have a fear of man and usually slither into a hole when we approach. Eating insects, small rodents, and occasionally a toad, puts garter snakes on our beneficial list. Do not kill them.

### **Little Green Snake**

The little green snake, or grass snake, is often encountered on our lawns. It is usually not larger



*The garter snake is very common*

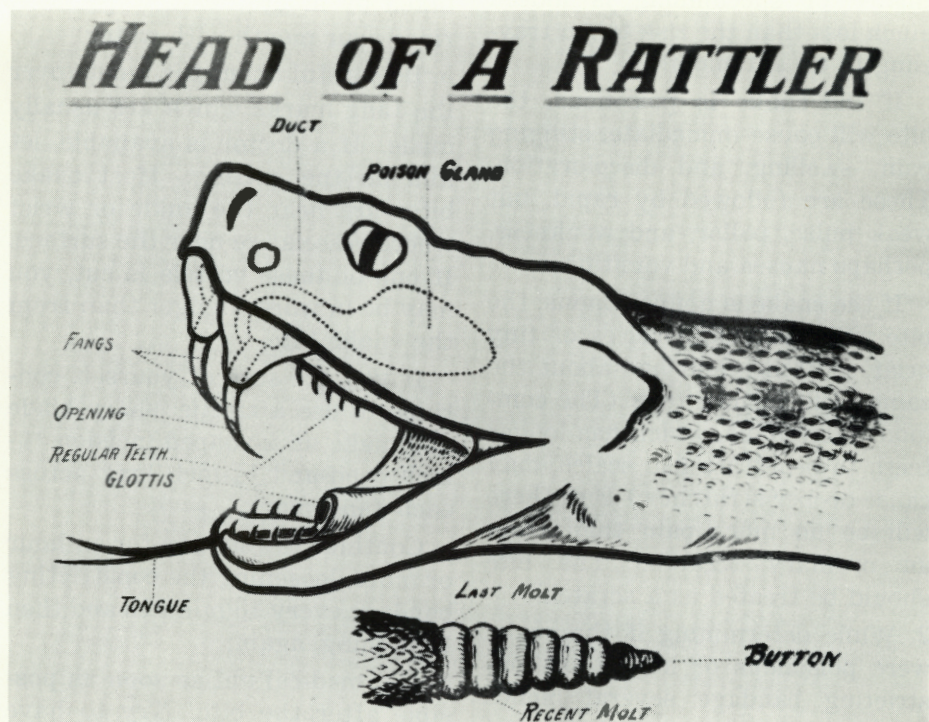
than a pencil in diameter, about 12 inches long and green in color. The little green snake glides about the grass, undetected and eating insects. Since it is beneficial, do not kill it.

### **Snake's Tongue**

The snake has a multi-purpose tongue. It is the snake's feeler, temperature gauge, nose, taster, and ears. During its natural life,

the snake's forked tongue is continuously flicking in and out of its mouth. If anything unusual is happening in the area, the snake

Here are a few positive ways to identify a poisonous snake native to New Jersey. There is a pit on each side of the head between the



senses this thru its tongue. When the television antenna was invented with two prongs, it was nothing new. The snake had a two-pronged antenna for many hundreds of thousands of years.

The snake's tongue is not a stinger. If it touches anyone, it is harmless.

Black snakes, pine snakes, and milk snakes lay eggs in the soil where they are incubated by the sun. The copperhead, rattlesnake, water snake, garter snake, and hognose give birth to live young.

eye and the nostril. The pupil of the eye is vertical, like that of a cat, so that the snake can see after dark.

The head is triangular shaped, wide at the jaw, with a very narrow neck. The body is quite heavy for the length of the snake.

#### What to do if Bitten

If a snake should bite you (or someone near), follow these steps: 1. Be calm, (or make the victim calm). You are not at all likely to die. The rattlesnake and copperhead found in New Jersey are not

## . . . *Snakes*

considered to be *deadly* poisonous. Yes, they are venomous. But, your chance of succumbing is indeed much less than the risk taken traveling in an automobile.

If the snake is poisonous, the bite will cause immediate, stinging pain, swelling, and discoloration. These are followed by rapid, but weak pulse, pallor, and weakness, perhaps nausea and vomiting.

If the snake is nonpoisonous, the bite will resemble a series of tiny briar scratches and has about the same feeling and effect. (The common watersnake, which has longer teeth to penetrate fish scales, may cause deeper scratches.) But, there will be no more pain than from an ordinary scratch. The bite should be treated as a scratch.

2. While determining if the snake were poisonous or not, tie a constricting bandage several inches above the bite to retard the circulation of the surface vessels. But, do not tighten it enough to shut off deep lying vessels. By this time you will know if the snake were poisonous by the effect on you (or the victim). If you are still in doubt, continue first aid.

3. Apply ice or ethyl chloride to the area to slow circulation. Do not exert yourself (or let the patient exert himself). Call a doctor. (It is good if you have enough help to carry the patient.) *Keep calm.*

4. Apply suction by mouth, or suction cup from a snake bite kit

(usually available at your drug-store). Try to remove as much venom as possible from the wound. The venom is not poisonous if taken by mouth. But, if possible, rinse your mouth with water.

5. Be careful about the x-cuts over the fang marks which are usually made. If a doctor is available, let him do the cutting. Most snake bites are near the ankle or wrist where vessels are near the surface. If one of these vessels is cut, you may be in worse danger than from the snake bite.

If you are sure of yourself continue to use a sterile, sharp blade and make an x-shaped incision  $\frac{1}{8}$ -inch deep and  $\frac{1}{4}$ -inch long across each fang mark.

Continue the suction for an hour or more, loosening the constricting bandage every 15 minutes and then tightening again.

6. Get medical aid as soon as possible after the bite. Try to have someone else drive if transportation is necessary, while you continue the suction.

If the snake is available take it along for positive identification. Take no alcohol. *Keep calm.*

Slow down that old ticker. Keep circulation to a minimum.

### **Precautions**

In this age of outdoor recreation we should be extremely careful of where we walk and avoid stepping on or near a snake. Never step over a larger stone or log. Step up on such objects and take a long step off as snakes often lie just

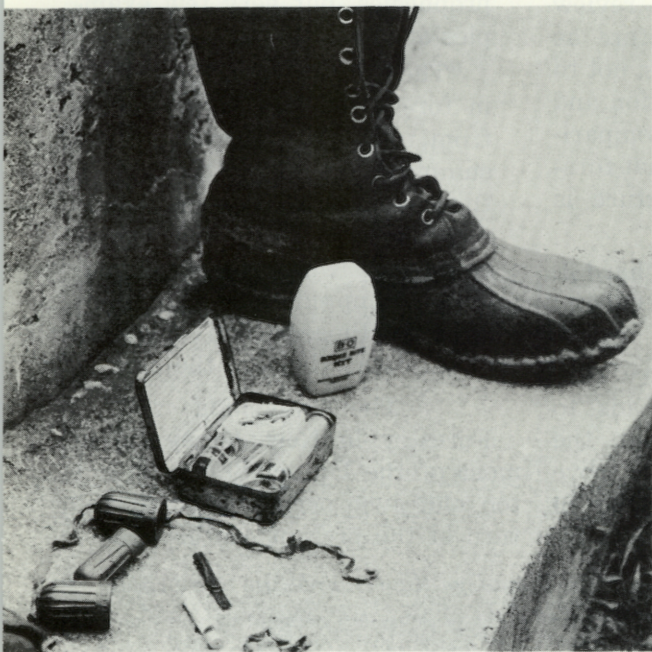
underneath them. By taking the long step you will be out of reach of the snake.

Campers should avoid pitching their tents in areas that have not been cleared of brush and debris or in the vicinity of rocky ledges. Keep your eye on the old stone wall fences should you be crossing one. Keep your camping area clean. Watch the woodpile, as a

less. Leave the handling of poisonous ones to the professionals. If a snake is dead, be extra careful, It is like a loaded gun. The venom still is available if a fang should scratch you.

A 12-inch leather shoe is ideal for camping and hiking in snake country.

Familiarize yourself with the snakes of New Jersey. Look in



*Boots at least 12 inches high are a must in snake country. And, a snake bite kit, such as one of the three usual types shown, should be carried*

snake may be hiding there. Keep your bedding and clothing hung when not in use.

Never put your hands on or around rocks or logs; never walk where you cannot see; never go out at night without a light; never tease or molest a snake.

Do not attempt to pick up any snake you are not positive is harm-

your encyclopedia or visit the zoo so that you can identify each species.

If you should see a snake while hiking in the mountains or swamps, regardless of species, *do not kill it*. The snake is another member of our fast disappearing wildlife, and has a place here on earth with the rest of us. #

Where to in

# Forest Management

in New Jersey

By George R. Moorhead

Forest Management Section, Bureau of Forestry  
Department of Conservation and Economic Development

**S**INCE experience is a good teacher, I propose to review briefly what has gone before as related to forestry. I do this, not to establish a base for prediction and forecast, but chiefly for comparison and because I believe that forecasting too far in the future is hazardous.

I should like to quote Richard J. Gonzales, Director, Humble Oil and Refining Company.

"Man's innate curiosity concerning the unknown leads to endless speculation about the future, though no one can prove what the years ahead hold in store for us. History records in-

numerable examples of erroneous prophecies, but very few examples of unusual prescience."

"The greatest cause for failure in forecasting the future stems from two related erroneous assumptions: (1) that events in the recent past serve as a guide for all future time and (2) that technology will never again undergo unpredictable changes such as those which have occurred many times in the past."

## The Awakening

Forestry in New Jersey, as in most of the United States, is not too old. Just prior to and at the turn of the present century, there

*The goal of forest management is to manage the resources for the people*



was a general awakening to the need for forest resource management throughout the country.

Legislation was passed in this state in 1894 calling for a forest survey, and accordingly, the "Re-

advocates of the adoption of a policy looking toward the preservation of the forests of the state. During the legislative sessions for some years past, efforts have been made to instill into the

*The author marking  
mature timber in  
preparation for a  
logging operation*



port on Forests" was published in 1899. Quite a few prominent men participated in the writing of this report—among them Gifford Pinchot.

#### **Creation of Commission**

The report of 1899 combined with the critical forest fire situation undoubtedly created the impetus which led to the creating of the Forest Park Reservation Commission in 1905.

From the first Annual Report of the Forest Park Reservation Commission 1905:

"For a number of years there have been in New Jersey ardent

minds of the legislators the importance of this matter, but no definite action was taken until the session of 1905. Governor Stokes should be accorded the credit for this legislation, for in his inaugural address he took up the subject of forestry in New Jersey in a very definite manner and urged that this important question be given immediate attention in this state. As a result of the Governor's strong words, Hon. Alexander R. Fordyce, a member of the House of Assembly from Middlesex County, introduced a

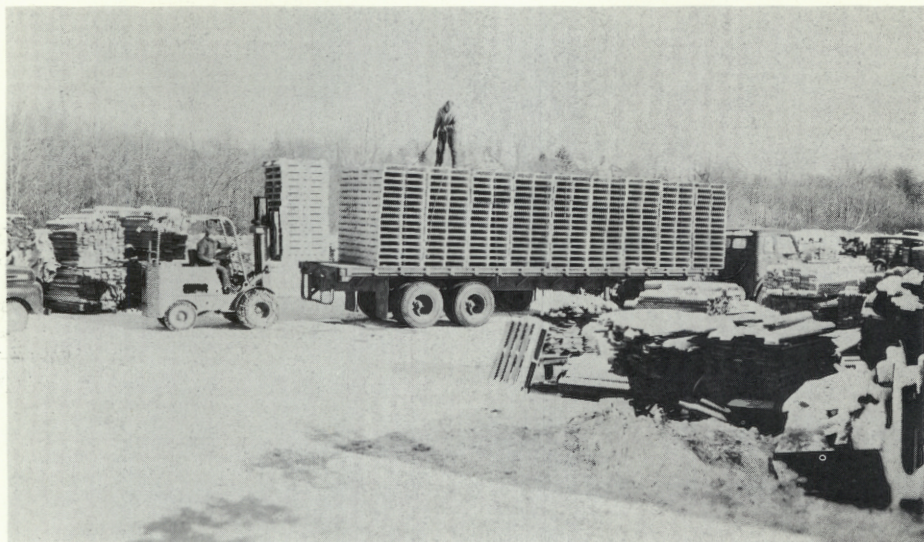
## . . . Forest Management

bill which provided for the appointment of a State Board of Forest Park Reservation Commissioners. This bill passed both

the woodland was privately held. This situation still applies today.

### **Basic Goal**

There have been administrative, organizational, and policy changes since the early days of the Forest

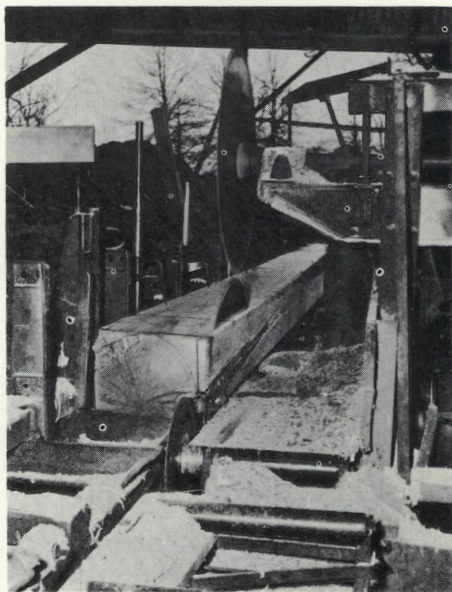


*Forests must continue to produce many of our basic needs*

branches of the legislature un-  
animously and was made a law  
by the approval of the Governor  
on March 22, 1905.”

### **Early Emphasis**

It was realized that control of fire was of utmost importance, so the major emphasis in the early years was concentrated on its control. In addition, work was started on the acquisition and management of state forests and a program of cooperation with private landowners to establish forest management on their lands. The early administrators recognized the importance of the management of private woodlands because most of





*Loading logs on a logging truck in Morris County woods*



*Splitting cordwood with power*

Park Reservation Commission, but the basic goal of the initial legislation was very much the same as that of today—the management of a resource for the benefit of the people of the state.

#### **More Production**

With limited area and increasing demands, we must produce more goods and services from the land we have. Over the years we have learned to do this and I feel confident that we can continue to increase productivity on a multiple use basis. We are constantly gaining new knowledge, acquiring new

## . . . Forest Management

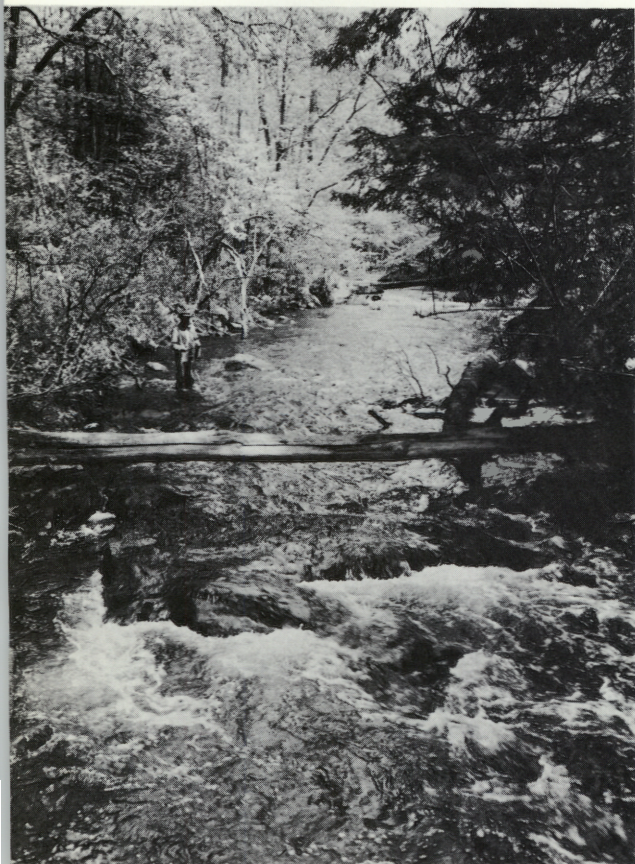
techniques, and working on a high level of cooperation with other resource managers.

### **For Consideration**

How can we continue to produce and provide for more of the needs of people as the demands increase? I offer the following for your con-

But, contrary to my comments on forecasting, I believe this figure will remain fairly constant for quite a few years to come. Woodland is being converted to other uses but by the same token many farms are going out of production and much of this area is being occupied by trees.

The woodlands are the "Sleeping Giant." Practically all the desired



*Forest management of a woodland could be the manipulation of vegetation to help increase water production*

sideration. Currently, 46 per cent of New Jersey is woodland. This figure is the same as given in the 1899 report. There may eventually be a decrease in this 46 per cent.

uses and benefits accruing from multiple use management stem from the basic, central core of a properly managed forest. And, the area is kept fully productive.

The job of the forester is that of a land manager. His task is to maintain healthy, fast growing, vigorous trees and associated vegetation of the land. With this solid base management, techniques and practices can be adjusted at any point in time to provide a maximum of any one or combination of multiple use benefits.

To illustrate: Management techniques and practices in the woodland could be the manipulation of vegetation to control both density of trees and ground cover for increased water production. Or, it

*Grouse, right, nesting in protection of the top of a felled tree*



*Piling slash, left, after logging to establish cover for wildlife*



could be the clearing of land for food strips or other adjustments for wildlife. As the demand for recreation increases, it could be clearing or heavy thinning to provide the environment and the aesthetics most desired.

In addition, the forest under management, is producing income to pay for carrying charges and a substantial benefit to the overall economy.

With the optimum established base, it is possible to do many things. It is much more difficult to start with nothing and build up. #



## New Jersey's

# Feed Grain Program Benefits Wildlife

by Robert P. Lipman, *County Office Manager*, Morris-Sussex-Warren,  
Agricultural Stabilization and Conservation Office

The 1964 Feed Grain Program offered opportunities for the sportsman, land-owner, and farmers to increase the wildlife on their properties that they own, or lease for hunting purposes. The following three items could be utilized in conjunction with the United States Department of Agriculture program for the year:

1. Food Patches.
2. Refuges.
3. Cover.

Under the 1964 program, farmers could establish food patches on diverted acres under this program provided they met the re-

quirements as set forth by the Division of Fish and Game and the Agricultural Stabilization and Conservation County Office. The plantings could be one of the seed mixtures recommended by the Division of Fish and Game and distributed to the local soil conservation districts, or they could be any of the normal grain crops planted by farmers in the area.

The refuge areas could be composed of shrubs or wildlife plantings provided by the soil conservation districts, or they could be groups of trees planted according to specifications set by the New

Jersey Forest Management Section of the Department of Conservation and Economic Development.

In some counties partial payment for establishing the above practices may be made through the ACP Program administered by the local Agricultural Stabilization and Conservation Office.

Cover must be maintained on all land diverted under the 1964 Feed Grain Program. This cover should be very conducive to the breeding and hatching of young wildlife. In many counties the local ASC committees have recommended that mowing of this cover be delayed until after the young rabbits and pheasants have had an opportunity to start their growth. They have also recommended that the mowing be done at a sufficient height to

give the wildlife adequate cover to move about in safety. This practice should also be looked upon with favor by the sportsmen since it gives the wildlife partial cover and at the same time does not give it a jungle through which it must move during the hunting season.

Farmers should notify their local ASC offices if they wish to take advantage of some of the above items in the future. Since some of the shrubs and food patch mixtures are limited in supply, the farmers should contact their soil conservation district office early in order to be assured of supply needed for their project.

For further details, contact either your local ASCS Office or the Division of Fish and Game. #

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## Deer Law Violators Pay Dearly

Illegal night deer hunting cost violators nearly \$13,000 during the first seven months of fiscal 1963-64.

Chief Conservation Officer William P. Coffin reported that 67 incidents of "jacking" were uncovered between July 1 and January 31. A total of 131 persons, including nine juveniles, were apprehended.

All told 299 complaints were filed, with 214 found guilty and 24 not guilty. The remainder 61 counts are still pending in the courts. Appeals have been filed in four cases.

Fines totalling \$12,765 have been levied. In addition, four defendants have been committed to jail for a total of 198 days, and four juveniles have been adjudged delinquent.

Chief Coffin stated, "This exceptional law enforcement record is a tribute to the dedication of our 40-man force. The long hours of night work they must spend to make these arrests are the most difficult and hazardous part of their duties. We are extremely proud of these men."

Fish and Game Director Lester G. MacNamara also cited the work of the deputy conservation officers for special commendation. Noting that deputies serve without pay Director Lester G. MacNamara said, "Many of these apprehensions would not have been possible without their aid and with the cooperation of local and state police and interested citizens. This type of coordinated effort is vital to the effective law enforcement we need to maintain New Jersey's valuable fish and wildlife resources." #

## New Jersey Fresh Water Game Fish Records

<i>Species</i>	<i>Weight (lbs.—ozs.)</i>	<i>Length (inches)</i>	<i>Girth (inches)</i>	<i>Year</i>	<i>Where Caught</i>	<i>By Whom Caught</i>
Brook Trout	6 8	28½	15½	1956	Lake Hopatcong	George J. Hornung, Long Branch
Brown Trout	16 11	30	21¼	1964	Greenwood Lake	Howard Devore, Midvale
Rainbow Trout	8 5	24	16¾	1964	Greenwood Lake	Fritz Benzavitch, Fairlawn
Landlocked Salmon	8 0	24⅝	15	1951	New Waywayanda Lake	John A. Mount, Phillipsburg
Smallmouth Bass	6 4	22⅝	15⅝	1957	Delaware River	Earl H. Trumppore, Trenton
Largemouth Bass	10 12	25½	21	1960	Mt. Kimble Lake	Logan B. Whitesell, Gillette
Chain Pickerel	9 3	27	—	1957	Lower Aetna Lake	Frank McGovern, Medford Lakes
Calico Bass	3 5½	19	15¼	1961	Alloway Lake	William Hanna, Philadelphia, Pa.
Rock Bass	1 1¼	12½	10	1932	Bradys	Wm. Bickel, Paterson
Channel Catfish	28 0	37	24	1918	Greenwood Lake	Bill Otten, Paterson
White Perch	2 8	17	—	1950	Lake Hopatcong	Robert Huber, Belmar
Yellow Perch	* 4 3½	—	—	1865	Bordentown	Dr. C. C. Abbot
Striped Bass	23 8	40	21	1952	Union Lake	Mrs. Albert Beebe, Millville
Bluegill	2 0	11¾	13⅞	1956	Farm Pond, Wantage Twp.	Silas Matthew, Jr., Sussex
Walleyed Pike	12 12¼	32½	18¾	1934	Delaware River	Stanley Norman, Paterson

\* World Record

## New Record

### Rainbow Trout

The fish pictured at the right is the new state record rainbow trout. The big 'bow, 8 pounds, 5 ounces, was caught by Fritz Benzavitch of Fairlawn while fishing in Greenwood Lake on June 12 of this year. The former record was 7 pounds, 15 ounces from Lake Hopatcong in 1963.



## New Record

### Brown Trout

A new record brown trout was taken from Greenwood Lake this season by Howard Devore of Midvale on June 8. The brownie weighed 16 pounds and 11 ounces. The old record was a 13-pound, 2 ounce fish from New Wawayanda Lake in 1956.

\* \* \*

Both of these new record trout shown on this page were taken on spinning tackle with alewife herring for bait. Numerous other trout over five pounds have been landed in Greenwood Lake this season.





# Wawayanda Lake

## Sussex County

Area: 255 acres

Elevation: 1,152 feet

Maximum depth: 82 feet

Mean depth: 30 feet

Recently acquired by the State of New Jersey through the Green Acres Program, Wawayanda Lake is outstanding for its aesthetic value and future recreational potential. It is situated in a large, wooded tract in the northeast corner of Sussex County. This tract, now under state ownership, lies northeast of the Hamburg Mountain Public Hunting and Fishing Grounds operated by the Division of Fish and Game. It is also bordered by additional unspoiled woodlands maintained by the City of Newark as watershed property.

Originally known as Double Pond, the two lakes were united by damming and raising the water level sometime during the mid 1800's when the tract was acquired by the Thomas Iron Company. Subsequently, the property was purchased by the New Jersey Zinc Company to provide sources of timber and water for mining operations. It will now be maintained by the state as a very desirable, natural type, recreation area.

### Drainage Basin

The lake is located in the Wallkill River drainage. Its primary feeder stream, Sucker Brook, comes from Highland Lakes with

two lesser streams flowing in from the south end. The outlet, Wawayanda Brook, flows north into New York State, then south again into New Jersey where it enters Po-chung River. This eventually flows north and joins the Wallkill River in New York, which ultimately drains into the Hudson River.

### Physical Features

The shoreline is almost entirely forested with maple, oak, and hemlock. The shallow or littoral area of the lake bottom consists of 10 per cent rock and ledge, 5 per cent gravel, and 5 per cent sand. Muck and silt occur in the two deep basins. These basins, which once comprised two separate lakes, are now separated by a shoal with about five feet of water over it. Several small islands add to the charm of this picturesque lake.

### Water Chemistry

The water ranges from mildly acidic on the bottom to mildly alkaline at the surface; the pH ranges from 6.7 to 7.3. When the lake was surveyed in July, 1951, an oxygen deficiency was found below 75 feet in the 80-foot basin and below 46 feet in the 60-foot basin. Temperature conditions at that time, plus the availability of

## . . . Wawayanda Lake

adequate oxygen, were found suitable for trout survival at depths of between 10 and 65 feet in general.

### **General Fishery Conditions**

As a whole, fishing here is fairly good. Early reports indicate that large trout have been taken frequently although there are no recent records of trout from this lake. Now that the lake is under state jurisdiction and is being stocked, good trout fishing will be available. Trout should grow to large size on the abundant landlocked herring present.

*Largemouth Bass*: Probably the most important warmwater game species in the lake. An abundance of fingerlings was noted during survey work. Good numbers of adult bass are taken and their growth rate is good.

*Smallmouth Bass*: Not abundant. No young found during survey. Competition with largemouth bass and other species is probably adverse. A few adults are normally caught each year.

*Chain Pickerel*: Fair fishing available predominantly during early spring and through the ice. Deep water fishing is best.

*Yellow Perch*: Good fishing for this species. Nine to ten-inch perch were the dominant size collected during the survey. However, their rate of growth was slower than in most north Jersey lakes.

*Calico Bass (Black Crappie)*: Good fishing available at time of survey but lack of fish below

four years of age indicated that the population was reaching a low point. Rate of growth for calicos was average.

*Sunfish*: Fairly abundant but not actively sought by anglers. Three species are present, the pumpkinseed, bluegill, and red-breast in that order of density. Bluegills between nine and ten inches in length were not uncommon in the survey nets.

*Bullheads*: The northern brown bullhead occurs here and reportedly they furnish "pretty fair" fishing, probably night fishing by local anglers is most popular.

*Forage and Miscellaneous Species*: Both landlocked herring and eastern golden shiners are abundant. Therefore good sources of forage, particularly the herring, are available to game fish.

### *Species Found in Wawayanda Lake:*

Largemouth bass, smallmouth bass, eastern chain pickerel, yellow perch, calico bass (black crappie), bluegill sunfish, pumpkinseed sunfish, redbreasted sunfish, northern brown bullhead, grass pickerel, landlocked herring, golden shiner, common sucker, bluespotted sunfish, tadpole madtom.

*Reported*: Trout

### **Management Plans**

In view of the fact that Wawayanda has such a fine potential as a trout lake, management for trout will be stressed. In addition emphasis should be placed on developing the bass, pickerel, and forage species combinations.

# Council Highlights

## May Meeting

The open session of the regular monthly meeting of the Fish and Game Council was held in Trenton on May 12. In addition to the members of the Council and staff, the following persons were present: John Russack, Roy Williams, Edward Jackson, William Backus, and Robert Vreeland.

### Law Enforcement

William P. Coffin, Chief of Law Enforcement, reported that his section is generally in good shape but light on manpower. Conservation Officer Mulvey has returned to work and Conservation Officer DeSimone was expected to return to work at the end of the month with a complete bill of health.

In matters of prosecutions, Chief Coffin reported that there were not as many violations involving juveniles this year as there were last year.

He reported there seems to be an increase in fishing interest in the Delaware River. Shad fishing there is reported as slow. Personnel of the Law Enforcement Unit cooperated with the Delaware River Basin Commission in a study the Commission is conducting on the Delaware River.

### Fisheries Management

Robert Hayford, Chief of Fisheries Management, reported that as of May 8, there had been 409,580 trout stocked. A total of 148,000 fish remained for stocking the rest of the month. Many excellent reports have been received from fishermen. A new sorter in use at the hatchery has resulted in fewer small fish being stocked. The stocking of the Delaware and Raritan Canal and Harrisonville Lake has worked out quite satisfactorily, and fishing at Wawayanda Lake and Pompton Lakes has been reported as excellent.

Councilman Alampi commended Chief Hayford and his staff on the fine trout received in South Jersey and said that as a result of stocking efforts, fishing interest has almost doubled. Mr. Alampi suggested that when stocking is planned in a county, the distribution personnel should be certain to contact the Conservation Officer of the County beforehand.

### Coastal Patrol

Newman Mathis, Chief of the Coastal Patrol, reported that shad fishing in the Hudson River has been much lighter this year than in pre-

## . . . Council Highlights

vicious years. The past season yielded very good catches of winter flounder along the coast. Shad fishing in Delaware Bay has been very good but the market price dropped so low that it was not worthwhile to continue fishing. He reported that all boats and equipment are in A-1 condition.

### **I. and E. Meeting**

Councilman Godown, Chairman of the Information and Education Committee, advised that the committee was to meet at 7:00 p.m. on May 27 at the Italian-American Sportsmen's Club. (This meeting was held as scheduled.)

### **Public Relations**

Jules Marron, Supervisor of Public Relations, reported that April was a busy month for his staff, and approximately four thousand miles were traveled in carrying out the duties of his unit. He further reported that his unit is assisting in the setting up of a proposed program of conservation education for adults in Burlington County.

Councilman McCloskey requested the assistance of Mr. Marron in laying out a youth conservation program for a fair in Morris County. The Council had no objections to Mr. Marron assisting the Morris County sportsmen in this detail.

Mr. Marron asked what the Council's policy would be this year in regards to exhibiting at fairs. The Council made no change in their previous policy of participating in the major fairs.

### **Wildlife Management**

George N. Alpaugh, Chief of the Bureau of Wildlife Management, reported that birds at the three game farms are doing well. Quail production was slow due to cold weather, but it was expected to pick up as the weather warmed. He reported that the mirrors installed along the Garden State Parkway to deter deer from crossing the road have not been in operation long enough to judge their efficiency, but his staff is keeping the project under observation.

### **Other Activities**

Mr. Alpaugh further reported that the planting season was upon us and personnel of the farm game unit were busy in South Jersey and would work their way north. Many requests have been received from sporting clubs and individuals for assistance under this program. A timber contract has been awarded in South Jersey which should

yield about five thousand dollars to the Division. The bids are out on the parking area and ramp for the APW project at Tuckahoe.

Councilman Alampi inquired what disposition is to be made of the houses on the Hepner tract. He stated that several of the houses are being damaged by vandals and he believed that one of our employees was desirous of moving into the house near the large storage barn. Mr. Alpaugh will check into the possibility of an employee residing in one of the houses.

### **Ramapo River Access**

Councilman Alampi inquired about the possibility of acquiring an access site on the Ramapo River under Green Acres. Director MacNamara felt this was highly unlikely since there are about four hundred projects pending now under the Green Acres program.

### **Pompton Lakes Access**

In regard to the possibility of acquiring an access site on Pompton Lakes, Councilman McCloskey advised that a letter has been received from the Board of Education there stating that it is not possible for them to dispose of any of this property since they acquired title to it under condemnation proceedings. Chief MacNamara advised that he and Chief Hayford had visited the area and checked a site which seemed fine. However, the owners were not interested in selling. The Division will continue investigating the possibility of acquiring an access site on this lake.

### **Federal Hatchery Possible**

Director MacNamara reported that the Federal Government has expressed an interest in acquiring a hatchery site in New Jersey and he advised that if the Division is successful in securing the Whittingham Tract, we could offer the use of the spring on this property to the Federal Government.

### **1964 Hunting Regulations**

For the benefit of the public and press present, the Council reported that suggested regulations for the 1964 hunting season had been submitted by the Game Committee for consideration and action of the Council at the June meeting. The suggested regulations were released for public reaction.

### **Pollution Reporting**

Robert Vreeland advised that the Federation's Pollution Committee is anxious to meet with the Council's Pollution Committee to establish a cooperative procedure of reporting pollution incidents. Mr. Vreeland

## . . . Council Highlights

was advised that in the interest of expediency, Chief Hayford, the office of the Division of Fish and Game, or the Conservation Officer of the county should be notified of any incidents of pollution or fishkills. A notification form used by the Federation in reporting pollution cases is to be submitted to Director MacNamara for possible revision and suggestions on means of effecting speedier notification of incidents of pollution. #

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### Spruce Run Reservoir Closure

The meeting was adjourned and a public hearing was conducted on the amendment to the 1964 Fish Code which provides that the waters of Spruce Run Reservoir shall be closed to all fishing from the effective date of this amendment until promulgation of the 1965 Fish Code, or, in the absence of any provision to the contrary in the 1965 Fish Code until 8:00 a.m. on the date set by the State Fish and Game Council for the April re-opening of the 1965 trout season.

The purpose of the closing it to give the fingerling kamloops trout and rainbow trout recently placed in the reservoir an opportunity to achieve greater growth and provide the best possible fishing.

There were no comments from the floor and the Council re-convened and passed a motion adopting the amendment. #

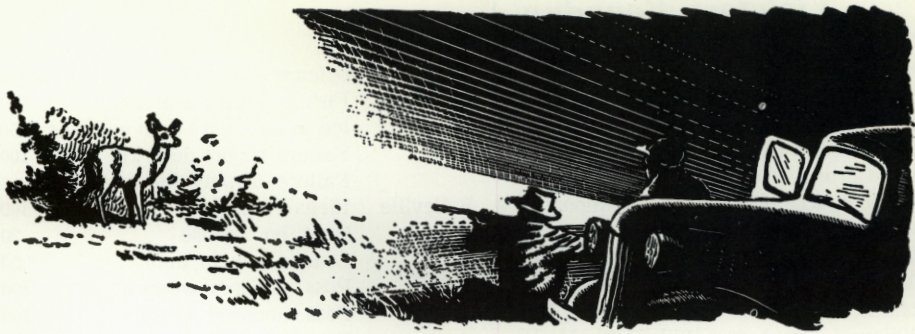
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## Nature's Thrills

By Marion R. Lovell

Give me a stream rich in rhythm  
of bubbles and ripples in tune.  
Let me smell fragrant ferns on a bank,  
and bathe in sunshine 'til noon.  
Thrill me with a sparrow's song,  
Or some insect that is strange to my eye.  
Show me something to warm my heart,  
Such as a fledgling just learning to fly.  
Dazzle me with splashes of color—  
Perhaps wild iris or buttercup.  
Fill my stein with the wonders of nature,  
I promise I'll drink it up.  
Just let me sit by the edge of a stream,  
Dreaming that I'll get my wish—  
Me on one end of the rod  
And on the other end—a fish.



## Violators Roundup

<i>Defendant</i>	<i>Offense</i>	<i>Penalty</i>
Joseph Rathbone, 9 Park Place, Pennsville	Deer—closed season (hunt)	100
Richard A. Blackmond, U.S. Army Box 275, Lewisburg, N.C.	Loaded gun in car	20
Van Neil Morgan, U.S. Army, New Smyrna Beach, Fla.	Loaded gun in car	20
Calvin Venuto, Salem Manor, Salem	Hunt deer—closed season	100
Alex J. Massa, 529 E. Second St., Moorestown	Firearm in woods on Sunday	20
Donald M. Osmun, Jr., 136 Walnut St., Westville	Firearm in woods on Sunday	20
Robert Salter, R.D. #1, Princeton	Poss. illegal missile	100
Anthony Scarpa, E. Garden Rd., Vineland	Hunt no license	20
David C. Staples, 2283-10th St., Akron, Ohio	Fish inland tidal waters no license	20
Wladimir Kuznecow, 522 Plum St., Vineland	Fish no license	20
Charles W. Cox, 1506 Bay Ave., Ocean City	Poss. wild deer	100
Jack Silver, Capitol Plaza, Trenton	Poss. offer to sell 1 striped bass less 18"	20
Jack Silver, Capitol Plaza, Trenton	Poss. offer to sell 1 striped bass less 18"	20
Jack Silver, Capitol Plaza, Trenton	Poss. offer to sell 1 striped bass less 18"	20
Jack Silver, Capitol Plaza, Trenton	Poss. offer to sell 1 striped bass less 18"	20
Jack Hickman, Jr., Alder Ave., RFD, Pleasantville	Fail report deer killed 1963 season	100
Elvin D. Bailey, School House Lane, Corbin City	Fail report deer killed 1963 season	100
Millard Oliver, 105 Church St., Swedesboro	Hunt no license	20
Donald Gandy, Delsea Dr., Dennisville	Illegal missile	100 Prob.
J. Wesley Goodfellow, 100 Dawn Dr., Mt. Holly	Loaded gun in car	20
J. Wesley Goodfellow, 100 Dawn Dr., Mt. Holly	Illegal firearm	20
Robert Oliver, 3 Hitchner Lane, Salem	Hunt no license	20
David H. Holling, 6412 Columbia Ave., No. Bergen	Illegal firearm	20
Joseph Spada, 2303-40th St., No. Bergen	Illegal firearm	20
Fred W. Bramick, 3701 Bergen Tnpk., No. Bergen	Illegal firearm	20
Randolph Camper, 93 Ogden Ave., Port Norris	Illegal firearm	20
Randolph Camper, 93 Ogden Ave., Port Norris	Loaded gun in car	20
Joseph Maccri, 553 No. Second St., Vineland	Failure report deer	100

## . . . Violators Roundup

<i>Defendant</i>	<i>Offense</i>	<i>Penalty</i>
Charles DeCarlo, 220 Sylvandell Ave., Edison	Fish in closed waters	20
Jacob Conrad, 16 Sheffield Dr., Newark	Ice fishing more than one hook	50
John Pierotti, Cumberland Ave., Milmay	Failure report deer kill	100
John Gerardi, 314 Broadway, Bayonne	Failure display hunting tag	5
Rocco N. Castiello, 219 No. Bellmount Ave., Belleville	Illegal missile	100
Donald W. Jolly, 131 E. Pacific Ave., Pleasantville	Hunt no license	20
Thomas Pannak, 6 Thompson St., Raritan	Loaded gun in auto	20
Thomas Pannak, 6 Thompson St., Raritan	Poss. uncased weapon	100
John E. Polnik, 2601 Hamilton Terr., Union	Poss. uncased weapon	100
William J. Grant, 2987 Willard Pl., Union	Poss. uncased weapon	100
Robert R. Hergula, 2564 Buns Pl., Union	Poss. uncased weapon	100
James B. McCullen, 40 Broad Way, Laurel Springs	Fish no license	20
Jessie Lee, 520 Merchant St., Cherry Hill	Hunt no license	50 Bail forfeited
George L. Diele, Jr., 165 Brook St., Bayville	Poss. firearm on Sunday	20
Richard H. Walling, Box 259 Rt. #9, Lanoka Harbor	Poss. firearm on Sunday	20
Myrtle M. Parker, Rt. #9, Manahawkin	Loaded gun in auto	20
James E. Carnek, Box 37, Manahawkin	Loaded gun in auto	20
Robert Bell, 1056 Mary St., Elizabeth	Poss. pheasant before hours	20
Joseph Alvino, Church St., Newfield	Hunt before hours	20
Joseph D. Seeney, R.D. #2, Dover, Delaware	Fish no license	20
Phillip Modelle, West Wheat Rd., Vineland	Hunt before hours	20
Buckley H. Modelle, West Wheat Rd., Vineland	Hunt before hours	20
Russell H. Kyzer, R.D. #2, Boonton	Poss. uncased weapon	100
James W. McLaughlin, 3152 N. Stillman St., Phila. 32	Non-resident, fish no license	20
Thomas Johnston, Jr., 59 S. 2nd Ave., Mine Hill	Hunt before hours	20
Gordon T. West, 124 Dupont Ave., Gibbstown	Loaded gun in auto	20
Bradford Spencer, 137 Spring St., Trenton	Loaded gun in auto	20
David Yale, R.D., Stewartsville	Kill doe deer	100
Anthony D'Augustine, 380-B West Ave., Old Bridge	Squirrel closed season	20
Anthony D'Augustine, 380-B West Ave., Old Bridge	Discharge gun near dwelling	20
Richard G. Castelland, 711 Park Ave., Lakewood	Fish no license	20

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# Fur, Fin <sup>and</sup> Campfire

By BILL BERO

## GOING CAMPING?

Here are a few tips on what to take along...



**GO LIGHT, BUT TAKE NECESSITIES.**

**FOR SLEEPING... TENT, STAKES, ROPES, POLES, GROUND CLOTH OR OIL CLOTH, SLEEPING BAGS, NEWSPAPERS FOR INSULATION.**

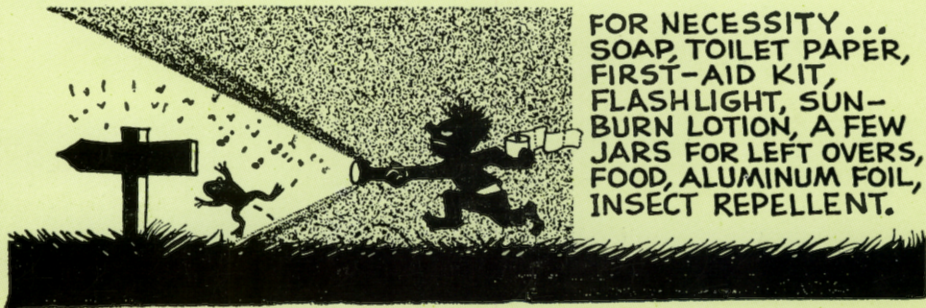
**FOR PREPARING... SHOVEL AND AXE.**

**FOR FOOD... MATCHES, COOKING UTENSILS, KNIFE, COFFEE POT, CAN OPENER, BOTTLE OPENER, POT HOLDERS, FRYING PAN, CHARCOAL AND CHARCOAL LIGHTER, PICNIC COOLER, AND FOOD.**



**FOR THE TABLE... PAPER PLATES, EATING UTENSILS, PLASTIC TABLE CLOTH.**

**FOR NECESSITY... SOAP, TOILET PAPER, FIRST-AID KIT, FLASHLIGHT, SUN-BURN LOTION, A FEW JARS FOR LEFT OVERS, FOOD, ALUMINUM FOIL, INSECT REPELLENT.**



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