

New Jersey

Outdoors



Vol. 14, No. 8

Division of Fish and Game

February, 1964



Threat and Challenge

An Editorial . . . It would be an ironic footnote to history if one of our liberties — the “Right to Keep and Bear Arms” as guaranteed in the Second Amendment of the Bill of Rights — were to be sacrificed in the name of our late President, who was himself a member of the National Rifle Association. We need not state that honest gun owners everywhere are being challenged with the most serious threat to their constitutional right to private ownership of firearms — a threat more serious than ever before, at both the national and state level. We sincerely urge that each and every man who cherishes this right do his utmost to defend his heritage for future generations as others have done for us in the past. We urge that you write your congressional and state legislators and reaffirm your dedication to the principle of the ownership of firearms by all free, non-criminal, mentally sound adult Americans. We are not against any law that deprives the criminal, the mentally ill or the untrained juvenile of access to firearms. But we are unalterably opposed to the deprivation by bureaucratic and autocratic restriction of firearms owned by the vast majority of honest citizens. We have yet to witness any “gun law” that effectively disarmed the criminal. Unfortunately, the record is full of abuses inflicted upon honest men by sweeping anti-gun laws. Once a law is passed, a near miracle is required to reverse it. Now is the time to fight anti-gun laws — not when it is too late.

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In This Issue

Threat and Challenge	C-2
Pesticide-Wildlife Merry-Go-Round . <i>Bailey B. Pepper</i>	3
The Tomcod	<i>George F. Ruppert</i> 12
Fur, Fin and Campfire	<i>Bill Bero</i> 17
Things to do Indoors	<i>Goodwin and Grosch</i> 19
Planting Trees for Wildlife	<i>George N. Alpaugh</i> 22
How to Plant Trees	<i>Austin N. Lentz</i> 25
Council Highlights	26
Violators Roundup	31

Cover—"Angler's Itch"—*Harry Grosch*

Along about this time of the year most every died-in-the-wool fisherman begins to feel the urge to go fishing—and to think and dream of fish. With the urge and dreams comes action. On a cold wintry night that action is as often as not a bit of fly tying. (For more things to do indoors during the winter see page 19.)

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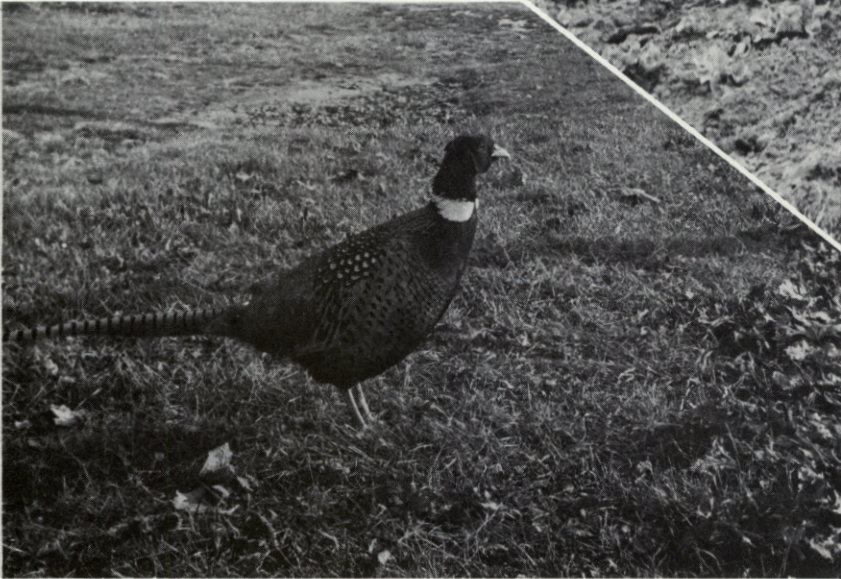
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New Jersey State Library

It would be difficult for most New Jersey farmers to remain in business without currently effective pesticides. In this article Dr. Pepper considers various aspects of the relationship between these pesticides and wildlife that are often overlooked in such discussions of the problem.





The Pesticide-Wildlife Merry-Go-Round

Bailey B. Pepper, Chairman
Department of Entomology and Economic Zoology
College of Agriculture, Rutgers, The State University

February, 1964

3

. . . *Pesticide-Wildlife Merry-Go-Round*

One of the most popular subjects in American society today is the great debate, or should we say confusion, on the question of economic poisons and their effect on our fish and wildlife resources.

I am especially glad to have an invitation to prepare a statement of my views on this most important subject. From the very outset may I say that in my opinion there has been an unusually large amount of talk and writings on the subject, much of which is without foundation or justification. It is merely a matter of many people becoming great experts overnight on subjects in areas in which apparently they are little informed. In many instances it is a case of the frying pan calling the kettle black and vice versa.

My views on the subject may possibly be regarded in some quarters as those of a layman—from the standpoint of the fish and wildlife disciple venturing to express opinions in that area. However, I can say with considerable pride that I am a country boy reared on a farm and from as far back as I can remember took great interest in our natural resources. I have been an ardent fisherman from pre-school days to the present and have enjoyed as much as any other living individual the privilege of hunting rabbits, squirrels, and quail in the Piedmont section of South Carolina. The whistle of a

bobwhite still gives me a thrill and heightens a sincere desire to have a bountiful supply of fish and wildlife for the enjoyment of generations to come. As an entomologist a large portion of my life has been devoted to the search for ways and means to control noxious insects while at the same time protecting the beneficial forms of insect life. This combination of deeply rooted interest in wildlife and professional experience in insect management is not necessarily a guarantee of objectivity in presenting the facts, but it is hoped that the two can contribute more than a small measure of influence in that direction.

Some Background

We only have to go back approximately 50 years to the time when there were no pesticides as we know them today. Earlier, it is true, as far back as 100 or more years, there were a few natural products that were used as pesticides primarily for the control of insects. However, these were common road dust, wood ashes, tobacco materials, and so forth, and did not include the types of materials which we know as pesticides today. Paris green, a by-product of the paint or pigment industry, was first discovered to have insecticidal value and was according to the earliest records, recommended for control of potato beetle in the United States about 1865. Unfortunately, or fortunately as the case



Over the years there have been marked changes in agriculture

may be, Paris green was very toxic to vegetation and received very limited use.

It was not until the discovery of calcium and lead arsenate following the turn of the century that pesticides really became important in American agriculture. Following the advent of DDT during the Second World War and the wide use of other synthetic organic insecticides, came astounding successes in the general area of pest control. Until that time, however, pests of agricultural and public health importance were handled as best possible with sanitation, crop rotation, and biological and climatological means.

Natural Factors

Over the years there have been marked changes in agriculture and in the way people live and react.

The wilderness has been transformed into cities and great urban areas. Small fields have been combined into large fields. Great forest areas have been completely eliminated in many sections of the country and particularly in the eastern United States. In man's effort to make a more pleasant place to live and to make greater financial gains many of the natural factors have been lost or greatly reduced.

Nevertheless biologists, including the entomologist, have persisted in concerning themselves with utilization of natural factors such as biological agents, and climatic and geographical factors in the suppression of unwanted organisms and the protection of all beneficial organisms whether they be insects or others. However, to read some of the overnight experts, bio-

. . . Pesticide-Wildlife

logical control, plant resistance, and ecology are brand new tools for insect control.

Biological Controls

The New Jersey Agricultural Experiment Station from its very inception has devoted tremendous effort and large sums of money for investigations of biological control of insects and in many instances these biological control processes are exceedingly effective. Our mosquito control program in tidal areas is based on biological agents, namely the surface feeding minnows which destroy the larval stage of the mosquito. The biological control of several agricultural pests has been and still is reasonably effective, but the price squeeze on the farmer has made it necessary for him to resort to a more positive method of handling his problem, namely the use of pesticides. It would be difficult for most of the New Jersey farmers to remain in business without currently effective pesticides.

Erroneous Concepts

In regards to the pesticide question there are certain erroneous concepts when we are led to believe that pesticides are usually broadcasted over everything that grows. In fact, many of our short-term crops, including many vegetables and small grains, never receive any pesticide treatment. To be more specific, New Jersey produces thousands of acres of spring lettuce.

Seldom does more than 2 or 3% of this acreage receive an application of a pesticide. Our wheat crop has a very serious pest, the Hessian fly, that would greatly reduce or destroy the crop if it were not controlled. This species is controlled simply by an escape mechanism whereby the planting of the crop is delayed until the female flies have died in the fall. There are many other cases which might be cited.

Pesticides are expensive, generally speaking, and are used in agriculture only when absolutely necessary; however, the "Madison Avenue expert" implies a flagrant and generous use of pesticides over every square foot of land and water surface of the country. Yes, it is true that in some few cases pesticides are overused. And, of course, this can and sometimes does lead to difficulty. Such cases are, however, uncommon.

Team Effort

We are indeed fortunate in this state that multi-interest groups are anxious to work together. Members of the Agricultural Experiment Station staff have had outstanding cooperation from other state and federal agencies in the search for a solution to our problems. The personnel of the Division of Fish and Game and that of the Division of Resource Development have cooperated to their fullest in research programs related to mosquito control. Through the cooperative efforts of everyone concerned, ex-

tensive studies on the use of pesticides for mosquito control have been in progress for several years and are being continued. These studies are concerned not only with the control of mosquitoes but also are directed towards finding the effects of such applications on wildlife and the food chain organisms.

We now are accumulating a great deal of information, which will gradually reach publication

directed to agricultural and forest pest control and again the results are most encouraging.

Loose Talk and Ethics

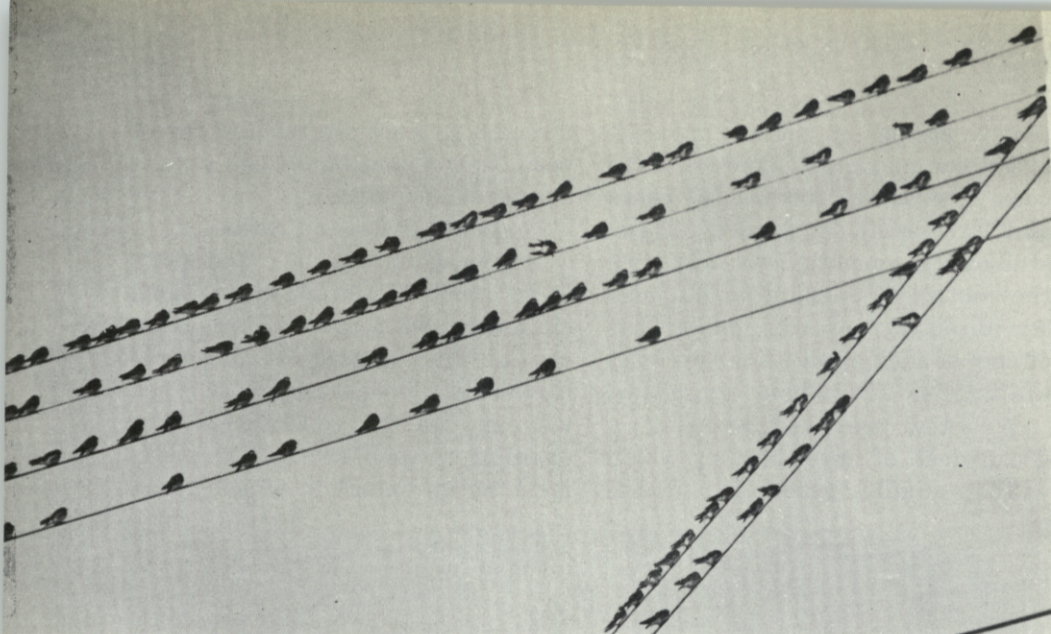
It is most unfortunate that there is so much misinformation being circulated both pro and con concerning the hazards of pesticidal chemicals. Time is long past when we can deal in generalities. For example, I read recently a statement by an expert in which he in-



Agriculture and wildlife must often share the same land and water

form, on the effect of pesticidal material on wildlife and on the food chain organisms on tidal marshes and on other wet lands. The picture is not nearly as bleak as some individuals would lead us to believe. Cooperative efforts are also

timated that anyone should know that 164 parts per million of DDT is a fatal dose. Fatal to what? And how administered? How consumed? A fraction of a part per million of DDT in solution in which some insects are submerged will



It appears strange that certain species do not seem to be affected

. . . Pesticide-Wildlife

kill 100 percent of the specimens. On the other hand there are records of certain animals containing many times this amount in body fat but apparently they live very happily.

The point I attempt to make here is merely that one cannot assume that the chemical affects all animals to the same degree. If we are speaking of the bluejay, we should use only data that apply to the bluejay and not attempt to extrapolate bluejay data to the white-tailed deer or data that are applicable to mammals to fish or invertebrate animal organisms. I am appalled to read articles by eminent scientists in which they intimate that little or nothing is known of certain subjects.

One example is the question of accumulation of pesticides in the

soil. In 1948 members of the Entomology staff at the State Experiment Station initiated extensive, broad-scale experiments on the rate of buildup and longevity of pesticide residues in the soil. Much of this work was done in cooperation with the Bureau of Plant Industry, Agricultural Research Service, U.S. Department of Agriculture, and other experiment stations. Five locations were chosen in the United States for these studies. Two U.S.D.A. Technical Bulletins have been published on this work. Both chemical analyses and bioassays of soil demonstrated that DDT and other chlorinated hydrocarbons and some of the organophosphorus compounds are dissipated from the soil at a rather rapid rate. More precise studies show that DDT is broken down in the soil to less toxic and non-toxic compounds relatively rapidly.

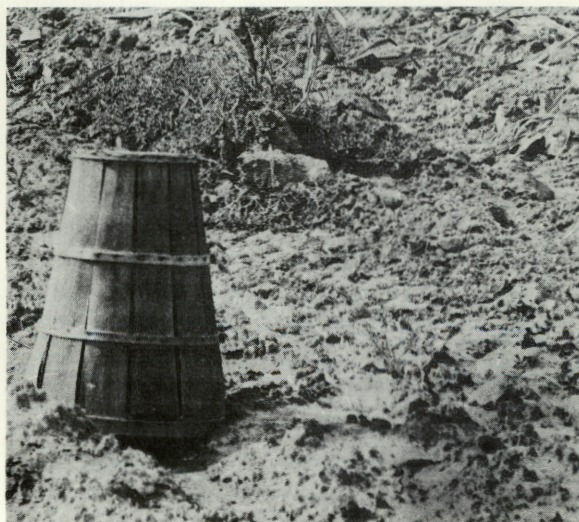
Studies in New Jersey and elsewhere show that repeated applications of pesticides to crops under controlled conditions do not accumulate in the amounts expected. This can be accounted for in part by the effects of sunlight and other climatic factors on the pesticide deposits. Another area of work, which I believe is of great importance, is the matter of leaching of pesticides. Under conditions of test in New Jersey the common pesticides such as DDT, dieldrin, parathion, and others move very slowly vertically and laterally. Surface run-off is another matter.

Research Needs

I believe everyone will agree that we need to strengthen our research program across the board. As one examines the reports and recommendations of many groups there is a great hue and cry for more research. It is, however, disappointing that most of the suggested research is in the direction of the

insects and the insecticides. For example, the Subcommittee on Research Needs of the Committee of Pest Control and Wildlife Relationships, Division of Biology and Agriculture, National Academy of Science, National Research Council publication 920C, 1963 issued a report Part III, Research Needs, consisting of 28 pages including the summary. There is not a single instance where research in the wildlife area is suggested other than one entitled "Wildlife Movement in Response to Pesticides." Have all of the research requirements on wildlife relationships been filled? Would it not be advisable to conduct some research on the wildlife per se, such as studying the mechanisms of poisoning or determining whether wildlife species in the environment build or develop resistance to the pesticide?

Certainly, we need more research on insect control, on the mode of



Studies on the accumulation of certain pesticides in the soil indicate that they are broken down relatively rapidly

. . . Pesticide-Wildlife

action of insecticides, more specific insecticides, insecticides that will be less toxic to man and animals,

beneficial effects from exposure to these same materials, e.g., a possible cure for cancer, heart disease, or other human ailments. And before the chapter is ended we may



There are probably more pesticides applied per acre to apples and peaches than any other commodity

more research on the manipulation of biological agents, more research in the broad field of ecology and how we can take greater advantage of the climatic and physical factors in pest control. And possibly most important of all, we should look at the long range effects of pesticides on the environment with great enthusiasm. This should be done on the broadest scale.

Many of the overnight experts speak only of the possible adverse effects that pesticides may have on man and animals from the standpoint of human and animal diseases. Should we not also look with equal vigor to the possibility of

find that pesticides used under some conditions materially help us to increase our fish and wildlife resources.

Effect on Wildlife

Some species of wildlife certainly are not adversely affected by pesticides. In recent years it has been vividly demonstrated that the deer population in New Jersey, particularly in the northern half of the state, is not seriously affected by the supposedly heavy use of pesticides in orchards. There are probably more pesticides applied per acre to apples and peaches than to any other commodity. Yet many

of these orchards are severely damaged by deer and the deer populations are on the increase.

What about the tremendous increase in bird damage to crops during the past few years? Might this be the result of pesticides in agriculture? No, I do not think so. But, it seems strange that the application of pesticides has been blamed

tions of Endrin originally intended for insect control.

I might also add that one of the most important areas of pest control today is the control of vertebrate pests such as rodents and deer for which wildlife groups have found no practical solution. These particular species drink the so-called contaminated water, con-



Despite spraying the deer populations are on the increase

for the destruction of some birds while others appear to thrive, multiply, and cause increased damage. The orchard mouse population has not been seriously affected, or does not stay affected, by heavy applica-

sume the so-called contaminated food, and continue to multiply, while at the same time fending off man's best efforts at protecting his crops from destruction by such vertebrate pests. #

for winter sport
why not try

the Tomcod

by George F. Ruppert

The tomcod, found in the Hudson River in the fall and winter, has a wide range throughout the cold waters of the world.

Funk and Wagnalls *New Standard Encyclopedia* identifies the tomcod, one of the small codfish of the genus *Microgadus*, as *Microgadus tomcodus* of the Atlantic coast, or *Microgadus proximus* of the Pacific. They are very abundant and of considerable importance as food.

Coldwater Fish

The National Geographic Magazine, January-June 1951, page 555, shows photographs of a family of Eskimos fishing through four feet of ice off Little Diomed Island in the windswept Bering Strait. Eskimo fishermen exhibit two tomcod caught with bright glass bead lures. (Little Diomed Island once owned by Russia was sold to the United States in 1867. It lies off the coast of Kotzebue, Alaska, within the Arctic Circle.)

Incidentally, on Wednesday evening November 13, 1963, on television Channel 11 on *Bold Journey*, Louis Huber of Seattle, Washington, narrated a film of his visit

to Alaska's Little Diomed Island which is near Russian Territory. The program showed Eskimos fishing for tomcods.

Both Coasts

In her book *North American Game Fishes*, Doubleday & Co. 1945, Francesca La Monte, Secretary of the International Game Fish Association and Assistant Curator of Fishes at the American Museum of Natural History has this to say on page 96 under the title, Tomcod, Genus *Microgadus*:

"The fish also known as frostfish is caught incidentally by anglers on both coasts and is a smaller edition of the cod. . . . The Pacific species runs from Monterey, California, to Unalaska in the Aleutian Islands. The Atlantic species runs from the Gulf of St. Lawrence to Virginia."

Description

In his *Field Book of Marine Fishes of the Atlantic Coast*, G. P. Putnam's Sons, New York and London, Charles M. Breder, Jr., Research Associate at New York Aquarium and chairman and curator of the Department of Fishes and Aquatic Biology at The

American Museum of Natural History, describes the tomcod *Microgadus tomcod* (Walbaum) as follows:

"Occurs from Labrador to Virginia. Feeds largely on small invertebrates and to some extent on fishes. Spawns from November to February near shore or in streams that are practically fresh. The eggs are heavy non-adhesive and average 1.7mm in diameter.

many hours of sport has never been given the publicity afforded many of the better known species such as flounders, fluke, bluefish, or even white perch.

Along the Palisades

Along the foothills of the Palisades on the banks of the Hudson River from the George Washington Bridge north to the Tappan Zee Bridge lies an area widely



The author with a good string of tomcods—Alpine

The average number a female deposits is about 25,000 and the maximum is nearly 40,000. They hatch in about 35 days at a temperature of 40° F. In the southern part of their range tomcod move offshore in the warmer weather seeking colder and deeper water. They seldom exceed a length of a foot but records reach up to 15 inches and 1¼ pounds."

This little fish that gives anglers

known as the Palisades Interstate Park. Recreational facilities in the form of fishing, hiking, and picnicking are enjoyed here by thousands of people every year. This is the area where I fish for tomcod.

In the Hudson

The tomcod, as we have read, is a relative of the codfish and is a cold water fish. He makes his appearance in the Hudson River

. . . The Tomcod

from about October 15 to December 31, according to weather conditions and water temperature. The fish at that time are on their spawning run up the Hudson River to brackish water where the fresh water of the Hudson River running

fresh water to begin the cycle all over again.

Fishing for tomcods in the spring should be very good as the fish have spawned and are hungry and should bite readily.

Incidentally, the Hudson River is not a river at all as it flows through Hudson, Bergen, and parts



A light surf rod and 10- or 12-pound line are about right

south meets the salt water of the sea as it enters the river from the lower bay and flows north. Here the tomcod stays and spawns from January to April.

After spawning the tomcod again enters salt water and begins his migration to the sea where he will remain until the following fall. Then he will again enter the river to make his spawning run up to

of Rockland Counties but is actually an "Estuary" defined as a broad mouth of a river into which the tide flows. It is an inlet of the sea. The Hudson is truly a river above tide water.

Other Fish

Along with tomcods there are other fish to be caught in the Hudson River in season, such as striped bass, shad, catfish, eels,

and crabs. Sturgeon are also in the Hudson. The shad and sturgeon are not on the list of rod and reel fish as they are caught in nets by commercial fishermen.

The Fishing

Tomcod fishing in the Hudson River today may not be as good as it was years ago. At one time pollution was severe but an attempt to clean up the river has helped to a degree. However, constant dredging to deepen the in-shore waters to allow boats to enter and leave the marinas has

after a season of trout and bass fishing in lakes and streams during the summer and until ice fishing time.

It might be mentioned here that, while trolling for salmon in Puget Sound in the State of Washington, your author has caught tomcod much larger than those found here.

Tackle

The tides in the Hudson River are very strong and it requires tackle appropriate for this kind of fishing. Fresh water spinning rods



View of the dock at Alpine, looking upriver to the north

removed much of the smaller marine fish life on which the tomcod fed.

Tomcod fishing has offered the fisherman recreation in the fall

and reels loaded with 4- or 6-pound monofilament line are not recommended. A light surf rod of 7 to 9 feet with a heavy duty reel and 10- or 12-pound test line is

. . . The Tomcod

about right. You will need at least two ounces of lead to hold bottom and most likely three ounces.

Rigging up should proceed as follows: Attach the sinker to the end of the line and tie two salt water snelled hooks size 8 or 10



The Palisades Interstate Park area is also interesting historically—Cornwallis' Headquarters

on the line far enough apart to prevent snagging. Individual hook spreaders should be used to hold the hook away from the line.

Bait

The most popular bait for tomcod fishing in the Hudson River seems to be the salt water sandworm. Other baits have been used from time to time but without much success. A small piece of the worm about one-half inch should be used with the point of the hook slightly exposed as the tomcod is quite a bait stealer. Also, the blue claw crab in the Hudson is another bait stealer.

The tomcod can be easily prepared for the table. It does not

require scaling or boning. Sever the head, clean out the body cavity, fry, and serve.

The Fishing Area

The Palisades Interstate Park Commission has done a fine job in preparing this area for the recreation and enjoyment of all the people. There are miles of trails,

picnic tables, field ovens, and a sufficient play area for the children. There are rest rooms, food and beverage machines, benches, and fresh drinking water. For the fisherman, both along the pier and rock wall, there is a wide concrete walk with a macadam road leading to it. Benches anchored to the walks are there for your comfort.

The area may be reached via route 9W on the Palisades Interstate Parkway. Roads lead down to the shore from Alpine and from Palisade Avenue, Englewood.

Tomcod fishing can be fun. Try it sometime. It may surprise you.

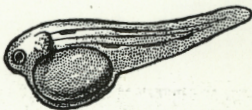
Fur, Fin ^{and} Campfire

By BILL BERO

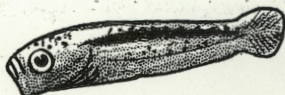
The COD, one of the important food fishes in the world, is also one of the scavengers of the seas.



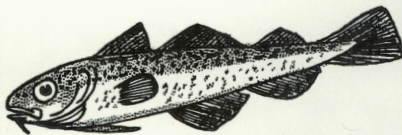
COD-EGG



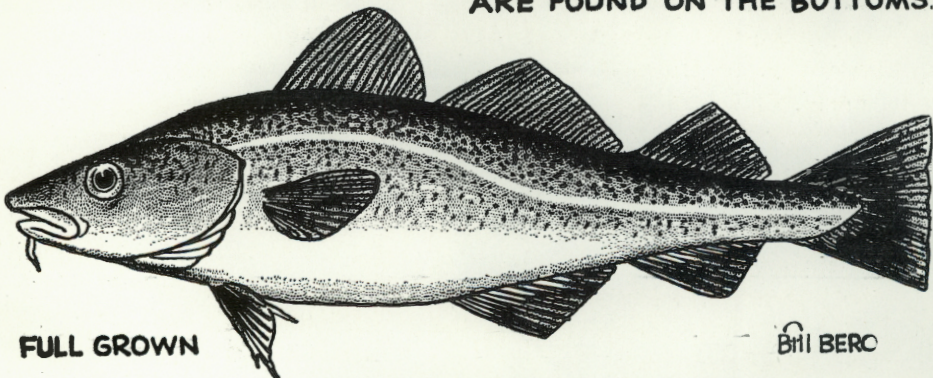
JUST HATCHED



2 OR 3 WEEKS OLD



4 TO 6 MONTHS OLD



FULL GROWN

Bill BERO

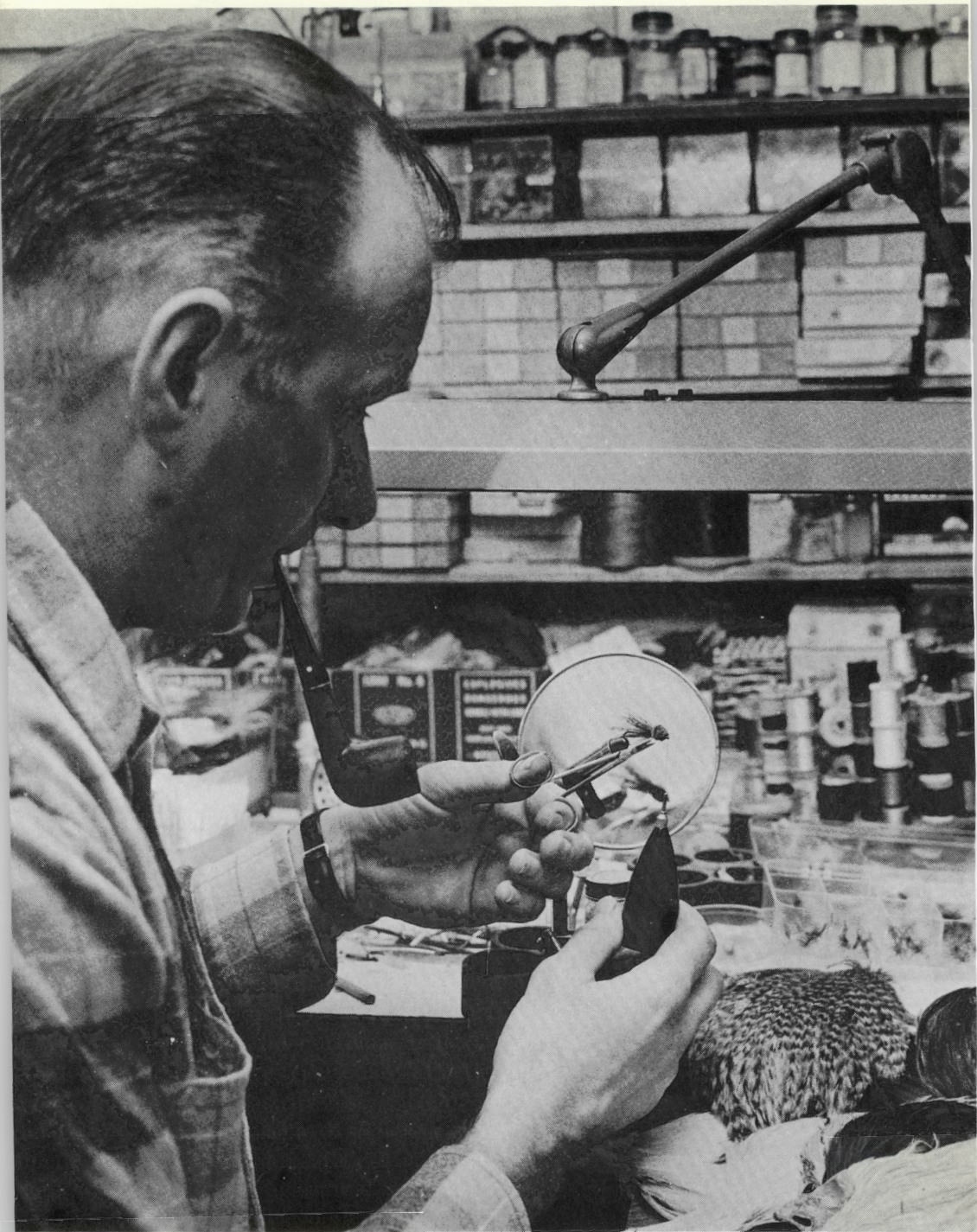
HE'LL EAT ANYTHING, THEY SAY, AND REPORTS ARE THAT COD HAVE BEEN CAUGHT WHICH HAD SCISSORS, WATCHES, RINGS, PIECES OF BOOTS, HARD-BOILED EGGS AND EVEN AN ALARM CLOCK IN THEIR STOMACHS.

ONE THEORY IS THAT THESE ITEMS, WHICH MAY HAVE BEEN THROWN OR FALLEN OVER BOARD FROM BOATS, ULTIMATELY ACQUIRE SOME MARINE GROWTH AND A COD, WHICH IS A GLUTINOUS FISH, JUST NATURALLY PICKS UP ANYTHING IN SIGHT.

COD HAVE AN ELONGATED BODY WITH 3 DORSAL AND 2 ANAL FINS AND A SINGLE BARBEL UNDER THE CHIN. THEY MAY REACH 150 LBS. IN WEIGHT BUT THE AVERAGE GO ABOUT 20 LBS.

ANGLERS USE MANY-HOOKED HAND LINES OR TRAWLS. COD ARE FOUND ON THE BOTTOMS.

The cod, the full-sized "cousin" of the little tomcod, is a prime favorite of winter salt water fishermen. They have been caught up to 57½ pounds in New Jersey waters.



Things to do indoors

During the winter you, as a sportsman and outdoorsman, can profitably spend many enjoyable hours indoors on bad-weather days and evenings working on your equipment. In addition to fly tying you could rewind and refinish your fishing rods. With the new glass rod kits and rod blanks available nowadays it is not difficult even to build your own rod

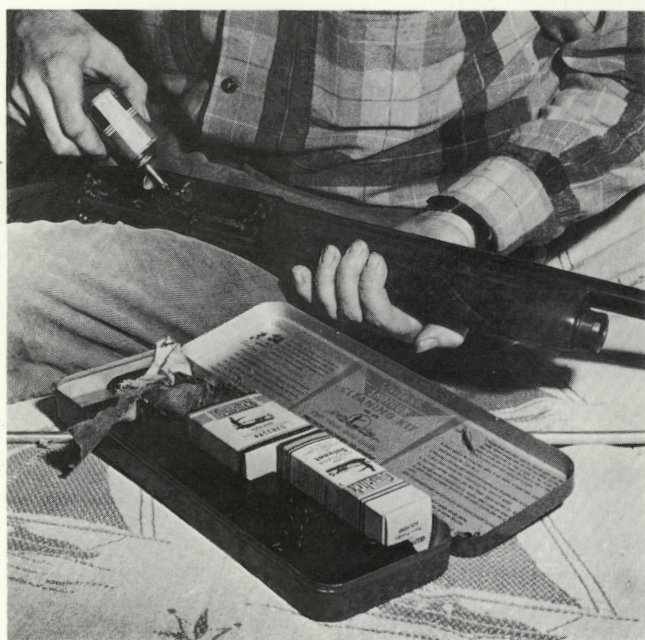


You could probably improve the operation of your reels by cleaning and oiling them. The life of your lines could be extended by proper storage—off the reels

*By Harry Goodwin
Photos by Harry Grosch*

. . . Things to do

The quiet days and nights of winter are also a good time to overhaul your outboard motor, as well as your boat or canoe. The mechanical condition and the safety gear should be checked



Even though you may be still using your guns you should clean and oil them regularly. Before storing them do an especially thorough job. Now is the time to check your gun to be certain whether or not it needs a trip to the gunsmith for repairs or servicing



And, finally, you can read for both pleasure and profit. Winter is the time to relax and dream of hunting and fishing to be, while learning more about your favorite sports and the outdoors

Planting Trees For Wildlife

by George N. Alpaugh, Chief
Bureau of Wildlife Management

Game habitat restoration is the most basic of modern game management methods and is the one that comes nearest to being a "cure all" for any dwindling wildlife population.

Game habitat is the complex of water, soil, and plants in which game birds and mammals live. It is the "life range" that must include winter cover, escape cover, roosting cover, food and water, and cover in which to mate, play, loaf, and rear young. A lack of any of these cover requirements must be corrected if the habitat is expected to support game in harvestable numbers.

Trees, vines, shrubs, bushes, grasses, and sedges account for most types of cover. Where these are lacking in kind and quality, man's intervention is a necessity. The grasses, sedges, and small shrubs appear relatively early on the ladder of succession, so man needs only to manipulate these areas into suitable game habitat. (See "Ecological Succession," by George N. Alpaugh, *New Jersey Outdoors*, February 1962.)

Proper tree planting is very important in establishing other habitat units. Here are a few answers to questions that might help anyone contemplating planting trees for wildlife.

Where To Plant

The most desirable trees will not always grow on all sites. Make a reconnaissance to see what trees are growing on an area similar to the one to be planted. If these trees are desirable, you can be almost sure they will grow in your area. If you have a choice, plant evergreens on slopes, thus preventing erosion and creating excellent winter cover. A good book on trees, listing soil, exposure, moisture, and tolerance requirements can be invaluable when deciding where to plant trees. Your state Bureau of Wildlife Management will supply aid upon request.

What To Plant

Woody plants that are of value to game for food and cover are almost too numerous to mention. The availability of beneficial species usually dictates the kind to



The planting of the proper trees on suitable land . . .



. . . can result in improved game habitat

. . . Planting Trees

be planted. The Division of Fish and Game will supply a limited number of these plants at no cost to the potential planter—plus free advice. All requests must be made prior to the end of February to be considered for the following spring.

When To Plant

Planting of seedlings should be done in the spring of the year, after all frost is out of the ground. Seedlings in northern New Jersey should be planted between March 30 and April 30. Seedlings in southern New Jersey should be planted between March 20 and April 15.

How To Plant

Seedlings can be planted either by hand or by machine. The deciding factors are the number of trees to be planted, slope, competing vegetation, nature of the soil, size of the stock, quality of workmen, and the economic breaking point between the two methods.

The tools used in hand planting are grub hoes, dibbles, mattocks, tile spades, long- and short-handled shovels. The mattock is usually the fastest and least fatiguing tool to use. Good workmen will plant in holes at the rate of 75 to 150 trees per man-hour. Hand planting is by far the most desirable for relatively small wildlife plantings.

Planting machines are used on

large areas and on open, relatively flat terrain. A crew of three men with a planting machine and tractor will plant 1,000 to 2,000 trees per hour. This method is usually quite expensive and, unless large unbroken areas are to be planted, it is not often economical for wildlife plantings.

How Many To Plant

The most common spacing in tree planting is six feet by six feet. This means that 1,210 trees can be planted to the acre. Although this is most common, the author believes that a wider spacing would be of more value to wildlife. A 6x6 spacing operates on the premise that early crown closure is beneficial to good timber production. A 7x7 spacing will increase the time interval to the crown closure period by two or three years or even longer in most species. If future management is in the economic picture, the 6x6 planting should be followed. When the crown closure begins, thin the plantings by cutting the trees halfway through, then bend them to the ground. Pruning of intermediate branches is also a management tool.

Remember, when planting for wildlife, that the edge effect is an all important factor, i.e., interspersion of cover. Large blocks of one type of cover deplete the carrying capacity of any game range. Many ½-acre blocks will far out-weigh the value of one 10-acre block.

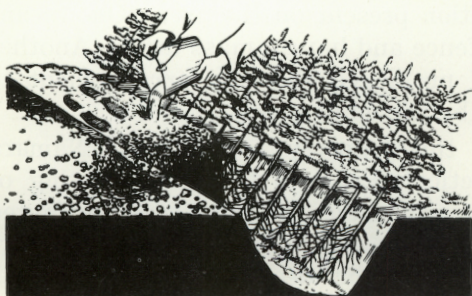
How to plant Trees and shrubs

By Austin N. Lentz, *Extension Forester*
Rutgers, The State University

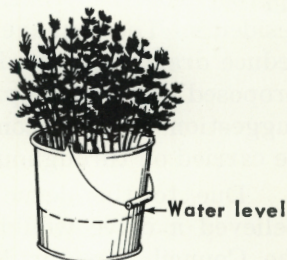
PREVENT TREE ROOTS FROM DRYING OUT BY AVOIDING EXPOSURE TO SUN AND WIND

Unpack trees immediately after they are received.

- A. Keep roots wet while you dig a trench in a shady place.
- B. Place roots of trees in trench.
- C. Pour water around the roots.
- D. Cover roots with soil.
- E. Pack soil firmly.

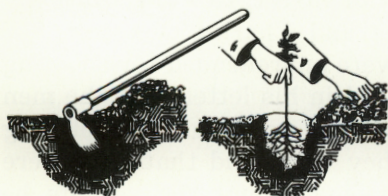


If sod is heavy —
scalp spot and plant tree in center



When ready to plant, carry trees in pail with water.

Plant trees as shown below.



1. Dig large hole.



2. Set just deep enough to cover roots.



3. Pack soil firmly.



4. Firm the soil about the roots with the heel.

Council Highlights

November Meeting

The open session of the regular monthly meeting of the Fish and Game Council for November was held in Trenton. In addition to the Council members and Division personnel present the following persons attended the session: Roy Williams, Edward Jackson, John Russack, Nelson Benedict, Bill Backus, Herb Blackwell, and Robert Vreeland.

Pomona Reservation Deer

Councilman Charlesworth reported that he had met with Col. Harrison, officer in charge of the Pomona Federal Reservation where deer are creating a problem and endangering planes landing on the runways. This reservation consists of 5,000 acres, completely enclosed by chain link fence. The area is closed to hunting by all except employees who annually harvest approximately five deer from the grounds. At the present time the management has a permit to kill deer but this approach to the problem has not met with the approval of the local residents. The management is anxious that some action be taken to reduce drastically the deer population present on the area. One means proposed was to drop part of the fence and have a mass drive. Another suggestion was for some type of prolonged shooting arrangement to be carried on throughout the year by the employees.

Due to the dense cover on the property Director MacNamara believed a drive would be impractical. Prior to the next meeting of the Council Director MacNamara will have the matter investigated by the Wildlife Control Representatives to ascertain just what procedure would be the best to follow in reducing this deer herd. A report will be made at the next meeting of the Council.

Rifle Permits Revoked

A letter was received from Conservation Officer Norman Gebhart, Middlesex County, in which he stated that he had confiscated the rifle and vermin permits of John Monath, 5 Taylor Street, Newark; Anthony Digirolamo, 40 Dassing Avenue, Newark; and Charles Quaback, 737 S. 18th Street, Newark. These three men were apprehended for shooting pheasants out of season. Mr. Gebhart stated in his letter that the men made a special point, before the finding of the evidence, of displaying these permits to prove what sportsmen they were, and that they were only shooting crows. Mr. Gebhart recommended that the permits be revoked as he felt this was a privilege they did not deserve. On motion of Councilman Charlesworth, seconded by Councilman Godown, and passed, the Council accepted the recommendation of Conservation Officer

Norman Gebhart and revoked the rifle and vermin permits of Mr. Monath, Mr. Digirolamo, and Mr. Quaback.

Clinton Public Grounds

A letter received from Harry Nelson, the Secretary of the Morris County Beagle Club, was read to the Council. Mr. Nelson advised that the Morris County Beagle Club was very pleased with the condition of the grounds at the Clinton Public Shooting and Fishing Grounds during their recent field trial. The excellent condition of the facilities added to the success of their trial and they wished the Council continued success in maintaining the grounds in a satisfactory condition.

Use Fee

A letter from John Moraski, Secretary of the Sunrise Rod and Gun Club, Inc., Red Bank, was read. Mr. Moraski expressed the strong support of his organization on the Council's efforts to raise additional funds through a Use Fee.

Licenses for Handicapped Persons

In a letter from Charles Kappes, Pittsburgh, Pennsylvania, Mr. Kappes urged the Division to give special consideration to handicapped persons and suggested provisions be made for them to fish without a license. The Council will give this suggestion consideration when legislation is being reviewed for 1965.

Ordinances Prohibiting Hunting

For the benefit of the public and the press, Chairman Hart reported that at the morning session the Council had a lengthy discussion with a Deputy Attorney General concerning the ordinances prohibiting hunting which are being passed by townships and municipalities. He stated that the Council was gravely concerned over the passage of these ordinances which strike at the very foundation of the hunting structure in New Jersey. Chairman Hart has requested the office of the Attorney General to do everything possible and advise the Council what steps the Council must take toward preventing the enforcement of these ordinances.

Wildlife Management Report

George N. Alpaugh, Chief of the Bureau of Wildlife Management, reported that to the time of his report, 831 deer had been killed by bow and arrow hunters. He stated that the waterfowl survey was then under way and figures had been sent to the Council. The first day of hunting season was quite successful. The 1811 gunners checked on the Flatbrook Tract had killed 629 pheasants, 464 rabbits, and 115 grouse. Mr. Alpaugh felt this grouse kill was very significant and indicated a good increase in the grouse population. On the Clinton

. . . Council Highlights

Tract, which is less than 900 acres, 1786 hunters were checked on the opening day. They had in possession 645 pheasants, 183 rabbits, 4 quail, 31 squirrels, 5 grouse, 7 woodcock, 6 foxes, and 1 duck.

Mr. Alpaugh believed that this heavy use of our public shooting grounds gives indication of the amount of work which must be done to keep our facilities in condition to meet the demands of the sportsmen.

Four bands have been returned from tagged rabbits, two from the Clinton Tract and two from the Glassboro Tract. Chief Alpaugh reported that pheasant stocking was at the time being continued. Councilman Alampi commented on the wonderful condition of the pheasants that were reared at our farms this year and said that the superintendents of the farms are to be congratulated on their efforts in producing such fine birds.

Fisheries Management Report

Robert Hayford, Chief of Fisheries Management, reported that two of our Fisheries Biologists were successful in securing eggs from three ripe fluke which they obtained about 20 miles off the coast. They kept the eggs alive for about 40 hours and hope to propagate them to about one-half inch in length. They will then have a collection of a series of eggs in the different stages of growth. This will be a great help to our biologists in identifying eggs taken in plankton nets.

Mr. Hayford also reported that 54,000 brook trout have been placed in the Pequest Hatchery. Approximately 25,000 rainbow trout will be added as other pools are finished. He also stated that 20,000 rainbow trout were stocked in the tributaries of Spruce Run.

Work is continuing on the investigation of Toms River. On a recent visit to the Toms River Chemical Company our biologists sighted three or four instances where the process used by the Chemical Company might be contributing to undesirable effluent.

Round Valley Fence

Councilman Godown questioned why a fence was erected at Round Valley Reservoir. Director MacNamara advised that this was done as a safety measure for the public and also to protect the structure itself. He said that sportsmen would probably have limited hunting there through access at a check gate. He said that departmental arrangements have not yet been worked out and no regulations have been issued on the types of boats which will be permitted on the reservoir.

Law Enforcement Report

Chief Coffin reported that on opening day a group of officers was on hand at the Clinton Tract and the hunters were quite orderly. No

shots were fired before 9:00 a.m. However, ensuing Saturdays had not been as orderly and he planned to bolster his enforcement officers each Saturday to keep illegal actions in check. The Law Enforcement Unit was continuing its control measures against deer jacking and have been successful in apprehending violators. Deer hit by cars were averaging about one a day on the Garden State Parkway and Route 539 in Ocean County.

In regard to the offer of the Gloucester County sportsmen to pay for the rental of two walkie-talkie sets to be used by the Conservation Officers during the waterfowl season, Chief Coffin reported that this project did not materialize because after checking the possibility of renting this equipment from the Motorola Company, which now has the State contract on radios, he found that the cost would be \$132 a month instead of \$18 a month which he had originally understood it would be.

Coastal Patrol Report

Newman Mathis, Chief of the Coastal Patrol, reported that two men in his unit were laid off. These men had been hired to provide added patrolling in Raritan Bay while porgies were present. These fish had left the bay. Heavy concentrations of striped bass were providing excellent sport for fishermen along the coast. The Coastal Patrol gave assistance to Senator Harrison Williams during October when the Senator and a group of observers were taken down the inland waterway from Atlantic City to Townsends Inlet. This trip was made at the request of Senator Williams who desired to view first-hand the areas in which projects of the Army Engineers and the Green Acres program will be located. In accordance with the request of Councilman Charlesworth, Mr. Mathis will include in his monthly summary report a list of apprehensions and convictions made by the Coastal Patrol Unit during each month.

Raritan Bay

Councilman Godown was of the opinion that conditions in Raritan Bay were well under control and asked whether Captain Mathis had been having any special trouble with trawlers and what could be done to improve the situation. Captain Mathis pointed out that the number of trawlers operating in the bay has increased greatly the past several seasons and will probably continue to increase as more trawlers come up from Florida to take advantage of summer fishing. While the number of trawlers continues to increase, our patrol force does not. And, it is almost impossible for our two boats to cover adequately the bay where probably 35 trawlers are operating. He stated that, if the bill drawn last year had been passed, it would have helped the situation. Then a certain portion of the bay would have been open to fishermen,

. . . Council Highlights

which would have been easier to control, and revenue would also have resulted to the Division from this legislation.

Bass Rearing

Councilman Charlesworth inquired what progress was being made on the subject of rearing bass at the Fish Hatchery, which had been discussed at a previous meeting. Director MacNamara advised that some bass have been raised at the Fish Hatchery for release in Spruce Run and Round Valley. However, financially, the Division is unable to embark on any special bass rearing program.

Councilman Totten suggested that our personnel investigate the feasibility of using farm ponds for the rearing of bass on a cooperative basis similar to the program carried on with the 4-H cooperators in the rearing of pheasants and quail.

South Jersey Hunting

Councilman McCloskey reported that he had taken a three-day hunting trip in South Jersey and had availed himself of the facilities on the state-owned public hunting and fishing grounds. He said he was amazed at the paucity of hunters using the tracts in South Jersey as compared to the large number who use state-owned grounds in North Jersey. He suggested that more effort should be made to make the North Jersey sportsmen aware of these facilities through press releases.

Pompton Lakes Access

Edward Jackson expressed concern because the August Minutes of the Council stated that the matter of securing access to Pompton Lakes would not be placed on the agenda until information developed which could produce some definite action. Councilman McCloskey assured Mr. Jackson that the matter was still under investigation and that no action could be taken concerning the Board of Education property since it was necessary to await the results of a referendum.

Fishing Vessel Identification

Since many of the public are unable to identify the various types of vessels used in commercial fishing along our coast, this lack of knowledge results in the assumption that these vessels are fishing illegally when actually they are not. Herb Blackwell suggested that an article be published in *New Jersey Outdoors* portraying the silhouettes, of the various types of boats used. Thus, when, for instance, a vessel is seen close to shore, it could be recognized as a menhaden vessel rather than a food fish vessel and misconceptions would not arise concerning the legality of its operation. #

Violators Roundup

<i>Defendant</i>	<i>Offense</i>	<i>Penalty</i>
Andrew D. Shafer, Sugarman Ave., Millville	Hunt no license	\$20
Robert Fladger, 1267 S. Ringgold St., Phila.	Fish no license	20
Robert J. Florio, 30 Lafayette Ave., Westburg, N. Y.	Hunt no license	20
Peter Tilstra 503 Bryant Pl., Fairlawn	Fish no license	20
Arthur F. Hertz, Longwood Lake Rd., Oakridge	Fish no license	20
Joseph Delregro, 10 Melba Way, Westwood	Fish no license	20
Richard J. Madden, 2137 43rd St., Franklin	Fish no license	20
Paul B. Madden, 124 Main St., Franklin	Fish no license	20
Guenter Ladwig, 2014 Osfwood Tr., Union	Fish no license	20
Odd Gabralsen, 608-8th Ave., Brooklyn	Fish no license	20
Peter T. Zimmerman, 65 Curie Ave., Clifton	Fish no license	20
Alan Randolph, 500 S. Center St., Orange	Fish no license	20
Geoffrey G. Smith, 85 Inwood Ave., Upper Montclair	Fish no license	20
Leo J. Smith, Jr., 403 Main St., Riverton	Gun on Sunday	20
Kenneth A. Deffer, 2137 43rd St., Pennsauken	Gun on Sunday	20
James E. Grach, 209 79th St., No. Bergen	Hunt no license	20
Vincent Weoemeyer, 1009 87th St., No. Bergen	Hunt no license	20
Andrew White, 643 N. 35th St., Phila.	Fish no license	20
John Carter, 713 Adam Ave., Woodbine	Fish no license	20
Vincent Didato, 7137 Dorel St., Phila.	Fish no license	20
Richard Love, 98 Ludlow Ave., Jersey City	Procure lic. wrongfully	100
Ernest W. Rogers, 416 Poplar St., Delanco	Hunt no license	20
Armando Reta, 1440 Poppy St., Browns Mills	Fish no license	20
Armando Reta, 1440 Poppy St., Browns Mills	Illegal poss. large mo. bass	20
Rexanne Morrow, 241 Rosewood Ave., Clifton Heights, Pa.	Fish no license	20
George Morrow, 241 Rosewood Ave., Clifton Heights, Pa.	Fish no license	20
Robert A. Dent, 18 Oak Place, No. Caldwell	Fish no license	20
John Kisyluk, 114 Pershing Ave., Iselin	Fish no license	20
David Tutt, 453 Lincoln Ave., Wyckoff	Fish no license	20
Troy Austin, 225 15 Hillside Ave., Queens Village, N. Y.	Fish no license	20
Lloyd Higgins, 37 Harrison Ave., No. Plainfield	Fish no license	20
Donald W. Bush, 568 W. Shore Tr., Sparta	Fish no license	20
Wm. F. Collins, 39 Ridgeway Ave., Oaklyn	Poss. protected shore bird	20
Gayton J. Capelli, Hankins Ave., Nesco	Fail to exhibit license	20
Wm. J. Lewin, 104 E. Ormond Ave., Oaklyn	Poss. protected shore bird	20
Arthur N. Taylor, 426 Wesley Ave., Ocean City	Poss. protected shore bird	20
Arthur M. Reed, 363 44th St., Sea Isle City	Hunt from power boat	20
Kenneth M. Ellis, 6976 38th St., Riverside, Calif.	Fish no license	20
Ernest Madar, 1207 Roberts Ave., Mays Landing	Fish no license	20
Nicholas Seeler, Box 139 B. Gardenal, Sewell	Fish no license	20
Webster Webb, 336 New St., Quinton	Fish no license	20
Dominic Pinciotti, 51 Foster Ave., Sharon Hill, Pa.	Fish no license	20
Thomas McVey, 112 E. 23rd St., N. Wildwood	Tag not displayed	5
Harold F. Verity, Swainton Rd., Goshen	Hunt from power boat	20
Edward Schaffer, Rt. 23, Oak Ridge	Place screen in stream without permission	100
Byron D. Speidel, 107 Dewey Rd., Cheltenham, Pa.	Hunt no license	20
Thomas P. Caprio, 835 S. Clinton Ave., Trenton	Hunt no license	20
Robert C. Colletti, 375 Hamilton Ave., Trenton	Hunt no license	20
Charles Gathers, 89 Dunn Lane, Pennsville	Loaded gun in auto	20
Charles Gathers, 89 Dunn Lane, Pennsville	Illegal firearm	20
Sammy C. Borner, 3427 Sheridanville, Fort Dix	Illegal poss. bass	20
Sammy C. Barner, 3427 Sheridanville, Fort Dix	Illegal poss. bass	20
Sammy C. Barner, 3427 Sheridanville, Fort Dix	Illegal poss. bass	20

. . . Violators Roundup

<i>Defendant</i>	<i>Offense</i>	<i>Penalty</i>
Everett Mooney, 305 A.R.S., McGuire A.F.B.	Hunt aid of lights	20
Charles E. Bray, 1702 Grove St., W. Belmar	Poss. protected bird	20
Richard Hausman, 229 9th St., Morgan	Kill protected bird	20
Kenneth Drew, 14 Franklin Pl., Montclair	Kill protected bird	20
Othello J. Bonifazi, R.F.D. Groveville Rd., Yardville	Firearm on Sunday	20
Edward Gray, 21 High St., Metuchen	Hunt closed season	20
Sherwood Phillips, 148 Shore Dr., Bricktown	Poss. bird closed season	20
James Evans, 59 Holsman St., Paterson	Fish no license	20
John Ferraro, 61 Feronia Way, Rutherford	Fish no license	20
Robert Ferraro, 83 Raymond Ave, Nutley	Fish no license	20
Robert Laird, 129 Cambridge Ave., Saddle Brook	Fish no license	20
Rinaldo Fiorino, 30 Butler St., Paterson	Fish no license	20
Warren T. Planker, 78 Rose Pl., W. Paterson	Fish no license	20
Andrew Boradnax, 520 Manhattan Ave., N. Y., N. Y.	Procure lic. wrongfully	100
Joseph T. Sette, 42-42 80th St., Elmhurst, N. Y.	Fish no license	20
Sudie Malloy, 37 Ernest St., Nutley	Fish no license	20
Casper E. Taylor, 332 Summer St., Paterson	Fish no license	20
Stanley Taylor, 102 Hamilton Av., Paterson	Fish no license	20
Gerio A. Bartirono, 67 Warwick St., Newark	Hunt no license	20
Samuel J. Cauca, 18 Calumet St., Newark	Hunt no license	20
Frank Elias, 20 Norwood Road, Hanover	Fish no license	20
Donald Bradley, 4410 N. Y. Ave., Union City, N. J.	Hunt no license	20
Edward Kaluzny, 171 Sunset Ave., N. Arlington	Fish no license	20
John Leahy, 22 Cypress St., Carteret	Fish no license	20
Michael D. Saski, 24 South St., Franklin	Hunt on Sunday	20
Patrick J. Saski, 24 South St., Franklin	Hunt on Sunday	20
Kenneth Rose, 812 Poole Ave., Hazlet	Hunt no license	20
Richard Orchison, Laurelton Trailer Pk., Bricktown	Fish no license	20
Thomas J. Pandolfi, 28-15-42nd St., L. I. C., N. Y.	Hunt no license	20
Frank Hartley, 3917 N. 7th St., Phila.	Fail to exhibit license	20
Philip J. Nobile, 21 Oregon Ave., Hazlet	Hunt woodchuck no permit	20
Alexander Schaeffer, 318 Morris St., Gloucester City	Fish no license	20
Albert Yanusitus, 56 Cleveland St., Orange	Loaded gun in auto	20
James K. Baum, Pitman Downer Rd., Sewell	Hunt no license	20
Joseph M. Cheripko, 539 Watson Ave., Woodbridge	Fish no license	20
Einar T. Sondergaard, 3006 Hurley Pd. Rd., Glendola	Kill protected bird	20
Joseph Espiniera, 259 Mt. Vernon Ave., Orange	Gun on Sunday	20
Paul McCormick, 353 S. Center St., Orange	Gun on Sunday	20
Erwin H. Schlenger, Kings Hwy., Clarmont	Hunt from power boat	20
Saverio La Mandra, 94 Iroquois Ave., Lake Hiawatha	Illegal missile	100
Dorothy Knight, 64 Pine St., Bridgeton	Fish no license	20
Hidenori Shinohara, 2612 Broadway, N. Y. 25, N. Y.	Kill protected bird	20
Hidenori Shinohara, 2612 Broadway, N. Y. 25, N. Y.	Kill protected bird	20
Hidenori Shinohara, 2612 Broadway, N. Y. 25, N. Y.	Hunt on Sunday	20
Ellis G. Axelson, 132 N. Missouri Ave., Atlantic City	Fish no license	20
John R. McAllister, 953C Kennedy Ct., Fort Dix	Illegal poss. largemouth bass	20
Paul L. Cortey, Box 246 Trenton Rd., Browns Mills	Illegal poss. largemouth bass	20
Erma J. Simmons, 3302 Nelson Cts. Apt. G, Fort Dix	Fish no license	20
Eugene Kislan, 211 Federal St., Jamesburg	Illegal missile	100
Albert Kislan, 211 Federal St., Jamesburg	Illegal missile	100
Andrew Bozarth, Main St., Chatsworth	Hunt deer closed season	100
Anthony Aiello, 7 Medbourne Ave., Irvington	Fish no license	20
Eddie R. Bogart, 9 Hylan Blvd., Staten Island, N. Y.	Gun on Sunday	20
Patrick Boylan, 355 E. 187 St., Bronx, N. Y.	Gun on Sunday	20
John C. Monath, 57 Taylor St., Newark	Pheasant closed season	20
Clifford Armstrong, Delmont Road, Delmont	Discharge firearm upon road	20

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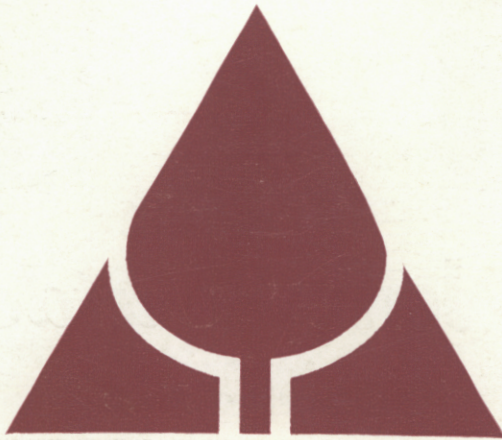
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