New Jersey Outdoors

February 1970

Competition *for all*

By Dick Dietz

Americans compete. Competition, in fact, is probably the single most distinguishing characteristic of American life. It is the cornerstone of our history, the essence of our society.

Americans compete in business, they compete in leisure. They compete actively, sometimes vicariously. But they compete. It's a natural enough heritage, seemingly. Competition with the wilderness settled this country. Competitive free enterprise built it.

Sports competition, of course, is a national preoccupation. And for those who excel, the rewards are great, in both fame and fortune. But not all are born with the physical attributes required to make the professional, collegiate, or even high school athletic ranks. And even for those who make it to the very top, fame can be fleeting and fortunes had better be conserved. For the same physical skills that permit such success are often also those most quickly eroded by the years, and not too many at that. Nor is there even any top level amateur competitive activity extant beyond college in many sports.

But somewhere across the land is a competitor who was always too small or too short or too slow or maybe too chubby, one who is now, perhaps, too old to make even the dimmest limelight in other competitive sport. Sometime in the near future this fellow, or one of the millions just like him, is going to sweat his way through a gruelling shoot-off to win a state, perhaps national, skeet title, or walk off the line with the Grand American Handicap in his pocket, or tack-drive his way to a major rifle championship. He could be a teen-ager with a lifetime of shooting competition ahead of him. He may be a graying veteran with a lifetime of shooting competition behind him.

The fact is that the competitive shooting sports offer a chance to compete, a chance to excel, a chance for lifetime participation to virtually anyone and everyone. Competitive shooting probably includes more father and son combinations than any other sport. It has proven to be an unmatched teacher of self-discipline and personal responsibility. It is one of the safest sports this side of tiddlywinks. And it is a growing sport.

What's the point? Very simple. Just that in these days, people—shooters or not—should be aware of this. #

New Jersey Outdoors

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

In This Issue

Cover—"The Beaver"—*W. D. Rodgers, Jr.*

The beaver, since the earliest days of recorded history in North America, has been one of our most valuable fur-bearers. Both the Indians and white trappers and traders actually used the pelts as a medium of exchange for many years. Even today, despite fur farms and imports of other furs, beaver pelts are one of New Jersey's most valued wild furs. For more on the beaver see pages 8 and 21.

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HUNTING
PROHIBITED

Summary of

Leasing Land

for Public Hunting

The following report by George C. Moore, Director of the Kansas Forestry, Fish and Game Commission, emphasizes the problems New Jersey faces and points out how fortunate New Jersey sportsmen are to have the Division of Fish and Game owned and managed Fish and Wildlife Management areas on which to hunt and fish

Each year we see more and more posted signs across the countryside. This is especially true in the vicinity of the major metropolitan areas. We do not know if more land is closed to hunting or whether these signs are notice to the hunter that he must have permission. I am sure some posted land is closed to all hunting but based on surveys and observations, I believe much of the posted land is being hunted by many people who have permission.

At any rate, more land is being posted and it is getting more and more difficult for many people to find a place to hunt. This is especially true for those individuals who have no relatives living in the country and those who do not have the opportunity or will not make an effort to meet landowners.

Due to the increased amount of posted land the Kansas Forestry, Fish and Game Commission is trying to find ways of furnishing public hunting. One major method is to license public lands such as Corps of Engineers, Bureau of Reclamation, and other federal lands and to purchase key-areas for public use. In a State such as Kansas where there is very little public land other methods must be found to develop public hunting. It is impossible for the Commission to acquire enough land for more than token public use. One method that is being considered is to lease hunting rights on private land. With this in mind, a questionnaire was sent to all contiguous 47 states to determine: (1) If they have a land leasing program; (2) If land was primarily forest land or grazing and farm land; (3) Whether or not a leasing program tends to close private land to hunting; and, (4) An estimated per acre fee for leased land.

Forty-five (45) states responded to the questions. I am sure there was some difference in interpretation of the questions but in general the answers are

← *Each year we see more and more posted signs across the countryside*

meaningful and give an indication of the problems facing the individual states. Generally speaking the states which have large amounts of public lands did not lease, or if so their efforts were directed toward specific problems or for specific specie management. This does not mean that these states did not have a license with federal agencies for game management on public land. Some states where considerable public land is present, are beginning to feel the pinch for places for public hunting and especially for certain species and are leasing for those species or they are considering it. Also, in some of the more heavily populated states where public land is present, they are leasing or considering leasing land for public hunting.

Out of the 45 states that replied, 24 are leasing land for hunting and 21 are not. Thirteen states west of the Mississippi River do not lease land whereas eight did. The reverse is true east of the Mississippi River where 17 states lease land and only seven do not. This indicates two trends; that is, in the eastern part of the country there is less public land than in the western states plus more people per square mile. There is, therefore, less need for public hunting land in most of the western states.

It appears from the data recorded in the questionnaire and from comments made by those who returned the questionnaire that two basic policies are followed in leasing land. *First,* all states have a license agreement with federal agencies for game management on federal lands where suitable for game management. *Secondly,* in the more urban eastern United States, many states lease low-use timber lands from pulp and paper and wood user companies for game management purposes. Other types of leases are for special use such as lake and adjacent marsh and pasture land which is managed primarily for waterfowl. There were isolated cases of special use leasing, such as 'put and take' pheasant hunting close to large metropolitan areas.

In general the need for public hunting land was in direct relation to the population densities and the amount of public land available.

The price paid varied so much that it is impossible to establish a trend. Generally, however, the price was governed by the amount of land that was available for hunting and the amount of good game habitat, by species, that was held in private or commercial hunting clubs. For instance, in the southeast much of the best deer and turkey habitat is leased by private hunting clubs, therefore, all of the states in that area have a well established program of leasing timber land for game management. The primary benefit is for deer and turkey hunting although it is not limited to these species.

Because the timber land is not used too heavily it is fairly readily available. In most cases no rental fee is paid, however, in all cases the fish and game departments furnish considerable services in lieu of lease fees.

Fees for timber land range from two cents to 50 cents per acre. Certain special use areas, such as good waterfowl marsh associated with grazing and 'put

Because timber land is not used too heavily, it is fairly readily available

and take' shooting land in Illinois, run as high as $1.00 per acre per year. One state purchases permanent hunting easements at about one-half the value of the land. New Mexico leased 100,000 acres for ten years for an advance lump sum of $50,000 or ½ cent per acre per year.

It is difficult to assess an average fee per acre for leasing but in some of the southeastern states where deer and turkey range is at a premium, the private clubs are paying as much as $0.50 per acre per year; however, no state is paying more than $0.20 per acre for timber land at the present time and most pay no fee but furnish many valuable services in return for hunting rights on timber land. In Ohio and the densely populated midwest, marsh land, farm and grazing land for pheasant and waterfowl management is leased for $1.00 per acre per year and is getting more critical each year. In the west and the timber areas of the eastern United States, public land is available or can be leased from timber users with no or very small rental fee.

At the present time no state felt that the leasing of land has any influence on closing adjacent land to hunting by permission. In some cases, however, competing for certain types of game habitat has increased the annual leasing rate.

In summarizing it is clear that the majority of the States are leasing land for public use. The population density and the amount of public land in a state directly effects the leasing program. Kansas, where the population is much less

than most of the eastern United States, has very little public land but because of the high use of the land, it is becoming a problem for many hunters to find a place to hunt. Commission surveys indicate that unsportsman-like conduct by many hunters and hunting without permission are the major factors in restricting hunting or closing land to hunting. The Commission is working diligently on methods to overcome these problems but they will never be completely resolved.

The problems around cities reflect the larger numbers of hunters

The worst problems are found around the larger cities and are associated with the urban populations. This does not reflect a greater percentage of poor sportsmen in urban areas but only reflects the larger number of poor sportsmen due to the larger population.

It is the responsibility of the Commission to make every effort possible to furnish the greatest recreational opportunity to the greatest number of Kansans. This is being done by encouraging people to ask permission to hunt and to be good sportsmen at all times. The Commission is also purchasing land for public hunting and especially for specie management. It is obvious that the state can not buy enough land to furnish public hunting for all sportsmen but

New Jersey sportsmen are fortunate since the acquisition of hunting lands was started long before World War II

this program should be continued. It should be re-evaluated periodically and should be directed toward a goal that will furnish maximum *opportunities*; maximum bags should be secondary.

It is time for us to analyze hunter interest, habits, travel habits, and pressures to determine if there are certain areas in which special efforts should be made to purchase land. Other areas may be more readily available or may be bought at less money, and may have equal management potentials, but if it is not used adequately, due to some reason, it should be carefully evaluated before it is purchased.

Leasing the hunting rights for the duration of the hunting season has been successful in many states and has proven a satisfactory way to furnish a place for many people to hunt.

Although most land in Kansas is intensively used for agricultural purposes, I believe there is a real opportunity to furnish hunting by leasing hunting rights. Many problems must be overcome and it may be necessary to add some controls and restrictions on hunters. The major obstacle appears to be a psychological block in the minds of many people that must be overcome. I do not think this program should be abandoned until much more study and adequate trials have been made. If leasing proves useful it may not be any more economical than acquisition, but, more selection or maximum hunter use is possible. #

The Beaver

are Back

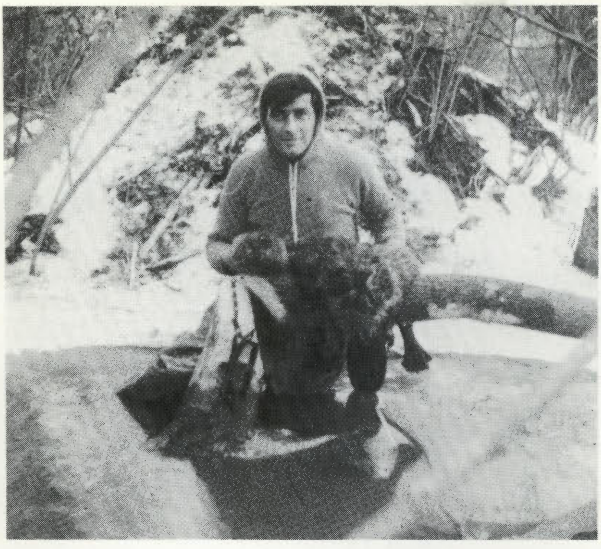
By Mike Pappa
New Jersey Trappers Association, Inc.

The beaver sign, which is again to be found along our lakes, rivers, and streams, is an exciting thrill for our modern man, for it reminds him of the frontier days when the mountain men opened up our country, while in pursuit of this fur-bearer.

There is no other animal in this country that has had such an important connection with our history and development than the beaver. This fur-bearer has been closely linked with the adventure and romance of the early pioneer days and at that time they were to the Indians as well as to the settlers a great and important source of food, as well as clothing.

The beaver pelts became a great medium of trade and were used the

Art Monto, examines some beaver cuttings. (Art took his limit of 5 beaver, 2 otter, during the 1968 season.)



Art, in front of beaver lodge, shows a comparison between a blanket beaver and a muskrat. Both animals were taken from this lodge.

same as money is at the present time. The fur attracted many traders and trappers and the business of handling the skins became an important commercial factor in promoting the early settlement of America.

So sought after was the beaver that he was fast disappearing from areas where he was once abundant; and then by the turn of the century he became reduced to the point of possible extinction. It was apparent that something had to be done to save the beaver, so many states closed the season on them and also set up programs to restock them in isolated places.

Through these conservation efforts the beaver was able to re-populate to the point where they now become too plentiful in certain areas and sometimes cause damage by flooding or cutting down someone's tree. When they begin to reach these heights in population they are brought under control. In New Jersey, these nuisance beaver will be live trapped and taken to a remote area, or an open season will be declared to allow the trapper to harvest them.

In January of 1968 an open season was declared on New Jersey beaver resulting in permits being issued to 99 trappers, of which 59 were successful in harvesting 196 beaver.

Results by county are as follows:

County	*Amount*
Atlantic	25
Burlington	15
Camden	8
Cape May	1
Cumberland	15
Gloucester	6
Hunterdon	2
Mercer	8
Monmouth	10
Morris	37
Ocean	30
Passaic	2
Sussex	37
Total	196

During the previous open beaver season (February 1964) there were 224 beaver taken by trappers.

As It Was

for the Passenger Pigeon

Part IV

This glance back into history gives us some insight on the now-extinct passenger pigeon that existed in almost unbelievable numbers in New Jersey about 100 years ago. The notes are based on a manuscript edited by Jacob H. Studer in the late 1800's and loaned to us by Arthur Downer.

The following account is taken from "Nuttall's Ornithology:"

"The Wild Pigeon of America, so wonderful for its gregarious habits, is met with, more or less according to circumstances, from Mexico to Hudson's Bay, in which inhospitable region they are even seen in December weathering the severity of the climate with indifference, and supporting themselves upon the meager buds of the juniper when the ground is hidden by inundating snows. In the west they are found to the base of the northern Andes or Rocky Mountains, but do not appear to be known beyond this natural barrier to their devious wanderings. As might be supposed from its extraordinary history, it is found with peculiar strength of wing, moving through the air with extreme rapidity, urging its flight also by quick and very muscular strokes. During the season of amorous dress it often flies out in numerous hovering circles; and while thus engaged, the tips of the great wing feathers are heard to strike against each other, so as to produce a very audible sound.

"The almost incredible and unparalleled associations which the species form with each other appear to have no relation with the usual motives to migration among other birds. A general and mutual attachment seems to occasion this congregating propensity.

Nearly the whole species, which at any one time inhabit the continent, are found together in the same place. They do not fly from climate, as they are capable of enduring its severity and extremes. They are even found to breed in the latitude of 51 degrees, round Hudson's Bay, and the interior of New Hampshire, as well as in the 32nd degree in the dense forests of the great valley of the Mississippi. The accidental situation of their food alone directs all their movements. While this continues to be supplied, they sometimes remain sedentary in a particular district, as in the dense forests of Kentucky, where the great body remained for years in succession, and were scarcely elsewhere to be found; and here, at length when the mast happened to fail, they disappeared for several years.

The rapidity of flight, so necessary in their vast domestic movements, is sufficiently remarkable. The Pigeons killed near the city of New York have been found with their crops full of rice, collected in the plantations of Georgia or Carolina; and as this kind of food is digested by them entirely in twelve hours, they must have traveled probably three or four hundred miles in about half of that time, or have sped at the rate of a mile a minute. With a velocity like this, our Pigeon might visit the shores of Europe in less than three days; and, in fact, according to Fleming, a straggler was actually shot in Scotland in the winter of 1825. Associated with this rapidity of flight must also be the extent and acuteness of their vision, or otherwise the object of their motions would be nugatory; so that, while thus darting over the country almost with the velocity of thought, they still keep up a strict survey for their fare; and, in passing over a sterile region, sail high in the air with a widely extended front, but instantly drop their flight at the prospect of food, flying low till they alight near an ample supply.

"The associated numbers of Wild Pigeons, the numerous flocks which compose the general swarm, are without any other parallel in the history of the feathered race; they can, indeed, alone be compared to the finny shoals of herrings, which, descending from the arctic regions, discolor and fill the ocean to the extent of mighty kingdoms. To talk of hundreds of millions of individuals of the same species habitually associated in feeding, roosting, and breeding, without any regard to climate or season as an operating cause in their gregarious movements, would at first appear to be wholly incredible, if not borne out by the numerous testimony of all the inhabitants of the neighboring districts. The approach of the mighty feathered army with a loud rushing roar and a stirring breeze, attended by a sudden darkness, might be mistaken for a fearful tornado about to overwhelm the face of nature. For several hours together, the vast host, extending some miles in breadth, still continues to pass in flocks without diminution. The whole air is filled with them; their muting resembles a shower of sleet, and they shut out the light as if it were an eclipse. At the approach of the Hawk, their sublime and beautiful aerial evolutions are disturbed like the ruffing squall

extending over the placid ocean; as a thundering torrent they rush together in a concentrating mass, and, heaving in undulating and glittering sweeps toward the earth, at length again proceed in lofty meanders, like the rushing of a mighty animated river. The evolutions of the feeding Pigeons, as they circle round, are both beautiful and amusing. Alighting, they industriously search through the withered leaves for their favorite mast. Those behind are continually rising and passing forward in front in such rapid succession that the whole flock, still circling over the ground, seem yet on the wing. As the sun begins to decline, they depart in a body for the general-roost, which is often hundreds of miles distant, and is generally chosen in the tallest and thickest forests almost divested of underwood.

"Nothing can exceed the waste and desolation of these nocturnal resorts; the vegetation becomes buried by their excrements to the depth of several inches. The tall trees, for thousands of acres, are completely killed, and the ground strewed with mossy branches torn down by the clustering weight of the birds which have rested upon them. The whole region for several years presents a continued scene of devastation, as if swept by the resistless blast of a whirlwind."

The migrations of the Passenger Pigeon seem to be undertaken more in search of better feeding-places than of a desire to avoid cold climates. They are found in the northern part of this continent as late as December and January. Their appearance is casual and irregular, like the Crossbills; they visit districts for several consecutive years regular and in large numbers, and then for a time there is not a single pair of them to be seen. Almost every year large flocks of the Passenger Pigeon can be seen in the several parts of North America, but they are only straggling parties. The large flocks are mostly seen in the Western States, where there is an abundance of food. As a general thing, it creates considerable excitement among the people when a Pigeon-roost is discovered. Parties will come a great distance armed with any kind of a gun or shooting-arm, to enjoy the sport and procure their part of the spoils. Toward night, when the birds return to the roost from their feeding-places, the shooting commences, the sportsman selecting his ground for his particular shooting-place. The Pigeons that are not wounded so as to drop down, fly off soon after the discharge by the gunner; and before the hunter has reloaded his field-piece, others have taken the place, and the shooting is repeated as long as there is light to attend to the guns. Collections are usually made in the morning, the supply generally being sufficient for all.

A curious circumstance regarding these birds is, that in a single tree I found sixty-two nests, and by far the most nests contained but one young Pigeon. Whenever there are two young squabs in the same nest, they are invariably a pair—male and female. The breeding-place of the Passenger Pigeon is always chosen with good judgment, usually a high-timbered forest, where

there is an abundance of beech-nuts and acorns, and where water is not far distant. The highest trees are selected to build their nests in. The voice of the bird at this interesting time is soft, resembling the words "coo, coo, coo," while at other times they will utter a quick "ki, ki, ki." The male shows at this time a proud carriage, and follows his chosen female, on the ground as on the branches, with spread tail and hanging wing, which he seems to drag after him. The body is carried in a more perpendicular position, the head being pressed forward; his eyes sparkle; he utters his "coo, coo, coo," lifting now and then his dropping wings, and flies a few yards forward, returning to his beloved female with caresses, and feeding her from his crop. The nest consists of a few dry twigs in the fork of a branch, and is very loosely put together, single trees containing from fifty to a hundred nests. The eggs which the nest contains are much rounded and pure white, the full complement being two to a nest. While the female sits, she is fed by the male, who during this time shows great care and tenderness for his mate. The young are fed by both parents until they are able to take care of themselves, after which they leave their parents and begin to wander.

The flesh of the Wild Pigeon is in no great esteem. It being rather dry and of a very dark color, although when kept in cages and fed on corn and buckwheat for some time, their flesh acquires great superiority.

In captivity, the Passenger Pigeon is easily kept for a number of years, and readily propagate. There is no zoological garden where this species is wanting. #

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Lead pellets in waterfowl gizzards generate toxic fluids that cause debilitation

Super-Soft Iron

May Solve Waterfowl Lead Poisoning Problems

In late 1965, the director of the U.S. Bureau of Sport Fisheries and Wildlife informed the leading American and Canadian makers of sporting firearms and ammunition that waterfowl losses caused by lead poisoning might shorten duck hunting seasons or force reductions in bag limits on certain flyways. Dabbling ducks, such as mallards and pintails, ingest spent shot picked up from marsh and feeding ground bottoms. Lead pellets in waterfowl gizzards generate toxic fluids that cause debilitation resulting in starvation or loss through predation.

Lead is universally recognized as the ideal element for shot in sporting ammunition. No other metal or compound offers matching physical or ballistic characteristics, with the exception of gold, silver and certain few precious metals. Nothing comes close to lead in terms of economy, availability, and production simplicity. Yet lead's toxicity when ingested by waterfowl threatens to limit waterfowling as a favorite recreational pursuit enjoyed by millions of American sportsmen.

Responding to the problem, the ammunition and firearms producers through their trade association, the Sporting Arms and Ammunition Manufacturers' Institute (SAAMI), began a research program to identify a non-toxic modification or substitute for lead in shotshells for waterfowling.

After careful review of proposals by three organizations known for expertise in the fields of metallurgy, physical ballistics and chemistry, the Illlinois Institute of Technology — Research Institute (IIT-RI) was selected to conduct a two-year research project. The Patuxent Wildlife Research Center at Laurel, Maryland, with staff of the Bureau of Sport Fisheries and Wildlife, were program cooperators. They furnished biological test facilities and consultation on ecological problems.

IIT-RI explored four general areas: 1) bio-chemical additives for lead that might render the metal harmless in waterfowl systems; 2) lead/iron/plastic composites; 3) plated or coated shot; and 4) iron shot.

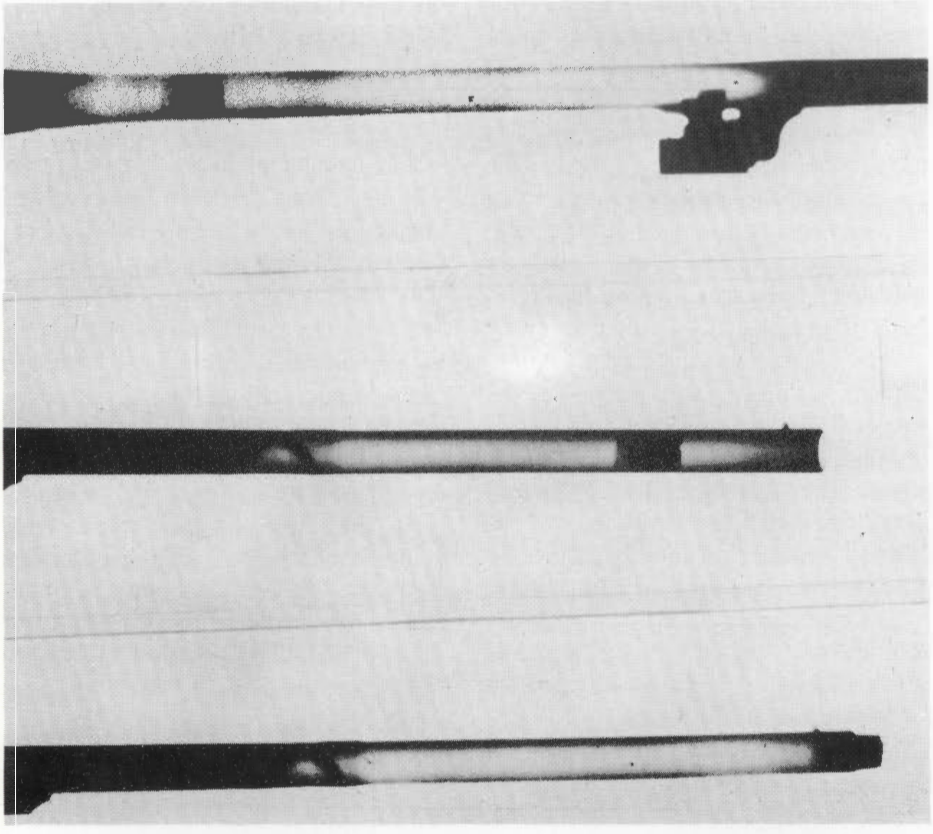
In an August 1969 statement, Ralph Andrews, Chief, Section of Wetland Ecology, Bureau of Sport Fisheries and Wildlife, said, ". . . the Patuxent Wildlife Research Center of BSFW screened more than 50 proposed materials and combinations of materials to assess possible toxicities. They found that alloying lead with other metals or coating it with plastics or inert metals did not prevent lead poisoning. . . . Shot pellets made from lead powder bound with a water soluble adhesive also failed to pass their tests. In short, no way was found to make lead acceptable."

The bio-chemical additive approach had generated early hope and

enthusiasm. It fizzled due to difficulties producing wire from which shot pellets might be made, and died when biological tests showed the materials were toxic.

Results of laboratory production efforts and biological testing with lead/iron/plastic composites mirrored those of the bio-chemical approach. The theory of reducing the amount of lead in a shot pellet while retaining a degree of density to achieve desired ballistic performance was logically acceptable. But it did not work in practice and tne research effort turned to iron shot.

Iron as a material for shot is not new. It is plentiful and relatively inexpensive. Iron shot is simple to make if uncontrollable size variations and countless non-rounds are acceptable. These shortcomings, added to relatively low density, mean that iron shot currently available gives unacceptable ballistic performance. This problem is further compounded by the fact iron shot as now being produced will erode or "scar" gun barrels and deform chokes. This wear-and-tear has not been successfully overcome by coating



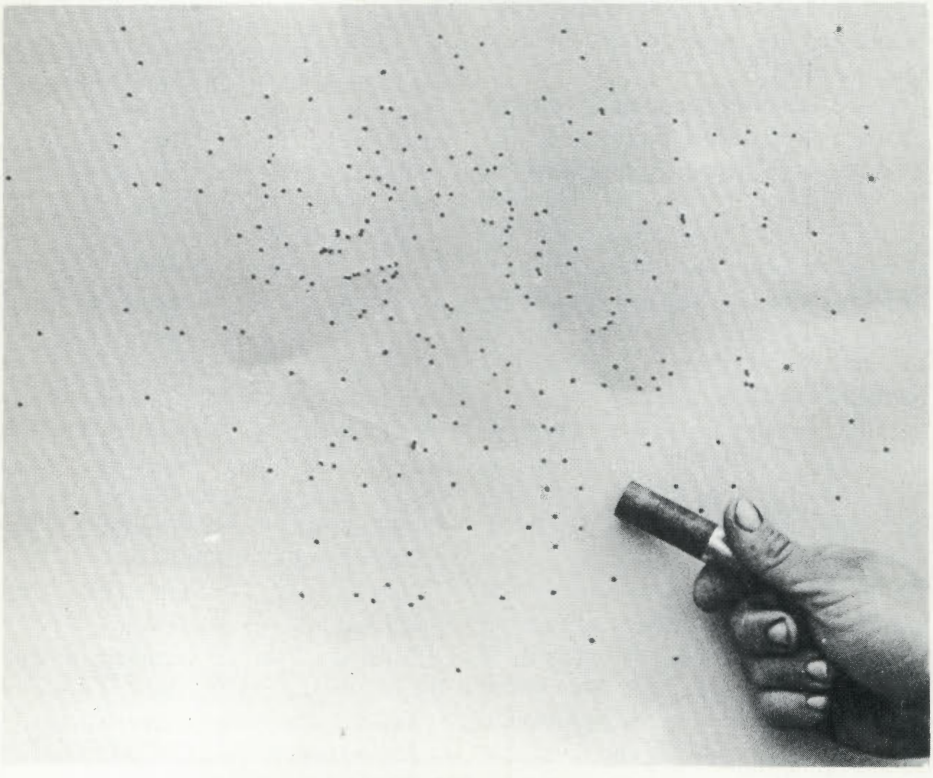
Iron shot now available "scars" gun barrels. X ray of shot in barrel

or plating iron shot with lead or other metals. Neither can the problem be solved by using plastic shot wrappers or containing wads.

Research efforts by IIT-RI found super-soft iron in wire form. They also found ways to process "hand-made" shot of this material to assure no adverse effects on gun chokes and barrels. The problem at this point is to find a practical mass production method for making spherical iron shot from super-soft iron.

Are there ballistic deficiencies in iron shot? Can a metal of less density than lead give killing shots?

These questions were answered through a series of "mortality efficiency" tests conducted at Patuxent Wildlife Research Center. In shooting tests using "hand-made" soft iron shot in loads equivalent to standard shells used in duck hunting, a conveyor for the birds produced approach angles exactly as in a true waterfowling situation and identical for each "flighted" bird. Electro-mechanical controls eliminated possibilities for human error or misjudged ranges and aiming leads.



What density is needed to produce killing patterns?

Test results satisfy the experts that shotshells with 1-oz. of #4 soft iron shot have almost identical "killing effectiveness" as comparable lead loads at "inrange" shots not exceeding 50 yards. In terms of shot-crippled

. . . *Super-Soft Iron*

birds, the tests indicated no appreciable difference between experimental iron shotshells and comparable lead loads. Evaluation of available data is continuing and a final technical report is planned for issue within the next few months.

Based upon the findings of this research, SAAMI has engaged IIT-RI to develop an economical process for the fabrication of a suitable iron shot. Indications are their efforts will be successful, according to IIT-RI's Dr. Tom Watmough. Meanwhile, ammunition producers are independently searching for production methods and potential suppliers.

While suitable iron shot, economically and ballistically acceptable, is on the horizon, American sportsmen and conservationists should understand that such shot is not actually in hand. The leading ammunition makers in North America are doing all possible to hasten the advent of such iron shot for duck and goose hunting, and have every reasonable hope it will eventually be available for loading.

When a substitute for lead shot does become available it will help substantially to remove a mortality factor that has plagued waterfowl for decades. At the same time, it must be remembered that suitable iron shot will not mean a total and immediate end to the problem. Tons of lead shot are presently on the bottoms of marsh and feeding areas where waterfowl have been hunted for a century or more. Some marsh beds do "turn over" and bury the shot; others remain dormant. Iron shot will not automatically eliminate the exposure to lead shot that dabbling ducks and feeding geese meet in many places but it will help.

And when that day arrives, the nation's waterfowl hunters must do their share through the graceful and willing acceptance and use of iron shot. The conversion will reduce and ultimately eliminate a major source of waterfowl losses. Fewer ducks dying from lead taken internally will mean more may be taken by iron shot externally.

This statement, prepared by SAAMI, is based upon the latest information and advice furnished by its Non-Toxic Shot Subcommittee (C. O. Williams, Chairman, Olin; B. D. Munhall, Federal; G. M. Calhoun, Remington: and L. C. Thompson, C-I-L), IIT-RI (Dr. Tom Watmough), and the Bureau of Sport Fisheries and Wildlife (Mr. Ralph Andrews). The members of SAAMI are:

Colt's Inc., Firearms Div., Colt Industries

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Ithaca Gun Company, Inc.

The Leisure Group, Inc.

O. F. Mossberg & Sons, Inc.

Olin Corporation (Winchester-Western Div.)

Remington Arms Company, Inc. (and Peters Cartridge Div.)

Savage Arms (Emhart Corporation)

Canadian Industries Limited (Associate Member)

Reproduced below is the "Recommendation for Iron Shot for Use in Shot Shell Loads" developed by IIT-RI and approved by SAAMI's Non-

Toxic Shot Subcommittee. This is not a "product specification." It is not a "product standard." It is an outline of the physical characteristics or qualities required in material found generally acceptable as a possible substitute for lead in shotshells.

Iron shot for use in shot shells whose intended use is the taking of migratory waterfowl must possess the following physical characteristics:

1. *Shot Size*
   #2 shot average diameter — 0.150 ± 0.004 in.
   #4 shot average diameter — 0.130 ± 0.004 in.
   The nominal number of shot per ounce of #4 shall be 180.
2. *Shot Hardness*
   The iron shot shall have a hardness after processing and heat treatment to meet the following requirements:
   Hardness, Nominal
   Diamond Pyramid Hardness (10 kg load) 65
   Knoop Hardness (500 g load and over) 76
   Conversion to other hardness values may be made by using the appropriate tables (ASTME-140).
   Hardness measurements made on this extremely soft material are sensitive to surface preparation and indentation location.
3. *Surface Condition of Shot*
   Iron shot as received will be free of corrosion and coated with graphite, aluminum or some suitable material to prevent corrosion and to permit free flowing.
4. *Sphericity of Shot*
   The sphericity of the shot shall be such that it will roll freely on a smooth surface.
5. *Packaging, Marking, etc.*
   Packaging, marking or other identification of the shot shall be as agreed upon between the vendor and the purchasing organization. Acceptance of the shot by the purchaser shall be on the basis of prior arrangement mutually agreed upon by purchaser and vendor. #

When the new shot is made available, hunters must do their share by willingly accepting and using the shot

Your Own Custom Rod

Not everyone can afford to buy a custom-built fishing rod, but everyone can afford to own one—provided he assembles it himself. That special measure of satisfaction found in possessing a finely crafted piece of equipment is available to anyone who devotes a few hours to the task, and at less cost than a comparable model purchased across the counter. Now, with winter here, is the time to start the project.

With the advent and refinement of modern fiberglass, custom rod making need no longer terrify the do-it-yourselfer. Excellent kits of components are available through sporting goods stores and mail order catalogs. You can select styles to meet every fishing need from ultra light spinning to heavy boat rods. Prices usually range from $7 to $15 and include everything but the labor.

The initial step in constructing a rod is to thoroughly familiarize yourself with instructions and all parts.

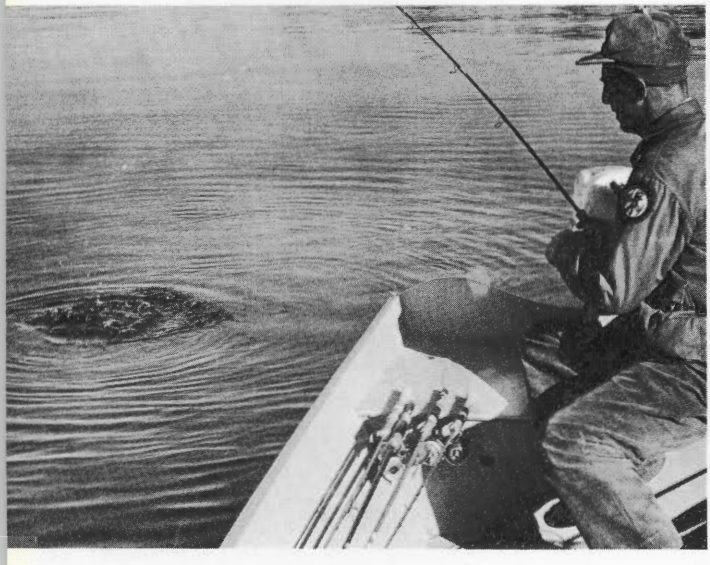
Depending on the type of rod chosen, cork grips and reel seats go on first. Handles for casting and saltwater rods are usually already made.

Position guides according to the maker's marks and wrap them on with thread, completing the job with an easily learned whip finish.

The tip is attached by dropping a dab of melted ferrule cement on the end and quickly slipping on the guide.

With some added wrappings for decoration and several applications of varnish, you have a rod to be proud of.

Sound easy? It is. The next thing you know, you'll be mixing components —matching spinning blanks with casting handles or any of several other combinations for special purposes. #



Fishing with your own custom rods can be most enjoyable

The Beaver

(Castor canadensis canadensis)

General Characteristics:

One of the largest rodents, the beaver when full-grown may be two feet long or more, not including the tail. The usual weight of the beaver is about 35 pounds, with a range of 30 to 60 pounds, occasionally more. When the beaver senses danger, it spanks its paddle-like, scaly tail to warn other beavers. The broadly webbed hind feet, dark brown color, two chisel-like, ever-growing incisor teeth in each jaw, beautifully glossy, soft, thick coat, and broad head with powerful jaws, makes this mammal well adapted for existance in upland, wooded swamps. By patient gnawing, the beaver can cut through the trunk of trees as much as two feet in diameter. Man has hunted beavers eagerly for hundreds of years for its valuable fur.

Distribution:

The North American beaver, which is closely related to the now-scarce European beaver, is widely distributed over the northern hemisphere from Alaska, east to Labrador, and south to Mexico.

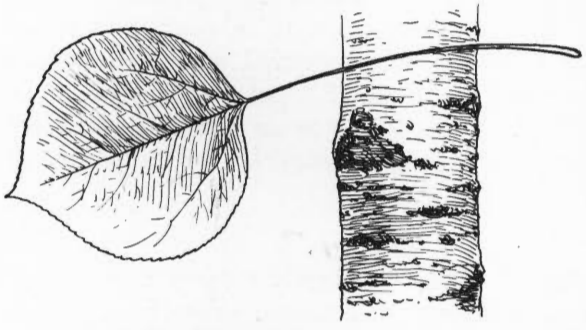
The beaver is one of the largest of the rodents

. . . *The Beaver*

Castor c. canadensis, the Canadian beaver, is the smallest of the eastern sub-species and sparsely populates some inland swamps throughout New Jersey.

Habits:

Beavers have long been known as the engineers of the animal kingdom. Their dams are cleverly built and are of remarkable strength, maintaining water deep enough around their lodges both in winter and the driest period of summer. In some locations,



Quaking aspen, a favorite food and building material of beaver

beavers prefer to burrow in the bank. When logs are too large to drag they cut canals, often hundreds of feet long, to facilitate transport to the dam site. Some of their food is stored in the lower chamber of the lodge or piled on the bottom of the pond where it is easily accessible under the ice. A roomy interior, with a dry platform, provides sleeping quarters and a place for occupants to feed on the bark of limbs dragged from the food pile.

Life History:

Mating takes place in late January or February. After a gestation period of approximately three months, each pair of beavers has from one to six (usually three or four) young born in April or May. The young, which are well furred and developed at birth, leave the lodge periodically to swim and feed. A colony usually consists of the two adults and their young of present and preceding years. Just before the birth of another litter, the two-year olds are driven out to establish new colonies, often miles away.

Food:

Tender twigs and bark of aspen, red maple, birch, willow, poplar, gum, magnolia, and other trees and shrubs.

Limiting Factors:

Populations of beavers could be affected in one way or another by floods, disease, over-trapping, landowner complaints, and the

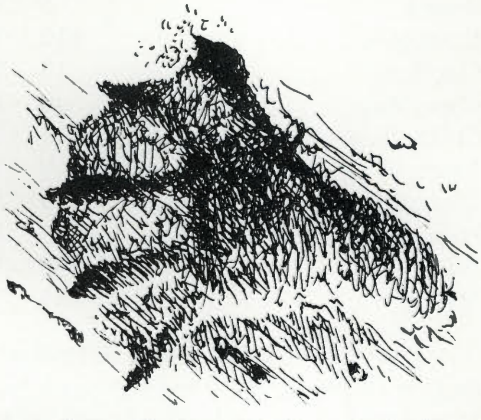
clearing of banks and flood plains of streams. Man, with his traps, is the prime predator.

Economic Importance:

Beaver pelts are valuable and are made into beautiful coats and other precious fur pieces. At one time, the pelts were so common that they were used as a substitute for money. Usually only the under fur is used with the long, coarse, guard hairs being plucked out. The under fur was once much used for making hats, called "beavers." This animal sometimes damages valuable trees, crops, and roads either by direct contact or by flooding. In isolated places, beavers are beneficial, conserving top soil, stabilizing water levels, and providing homes for fish and wildlife. Beaver meat is good and the tail a special delicacy. A valuable by-product is castoreum, used for making perfumes, scent, and lures.

Management:

Management in New Jersey is so directed to increase beaver populations in isolated areas and remove them from complaint areas. Beavers are protected by laws either by prohibiting trapping entirely or by limiting the harvest with special permits. Wildlife Control Representatives are continually live-trapping and



Hind foot print of a beaver. The signs of beaver—tracks, cuttings, lodges, and dams—are seen in a surprising number of places in the state

removing beavers from areas where their activities and dams result in landowner complaints. They then take the beavers to suitable remote locations to re-establish colonies where they have not lived for many years. Prohibiting the use of large body-gripping and other traps by law during years when both the beaver and the otter are to be completely protected, is wise management.

By Fred Ferrigno,
Bureau of Wildlife Management

Bow Deer Harvest

New Jersey bow and arrow hunters enjoyed another successful season as shown by the tentative harvest figures.

The deer report cards received by the Bureau of Wildlife Management totaled 1,347 as compared to 1,477 received last year. Last year's final tabulation showed 1,501 deer harvested setting our present record. Based on past experience, additional cards are expected, the result of various factors. All cards will be reviewed before the final deer harvest report and present county totals may change slightly.

Bureau of Wildlife Management Chief, George N. Alpaugh, remarked: "These figures show the proficiency of our archers, and the continued abundance of our herd through our deer management program." These figures also maintain New Jersey as one of the top states for archery hunter success ratios.

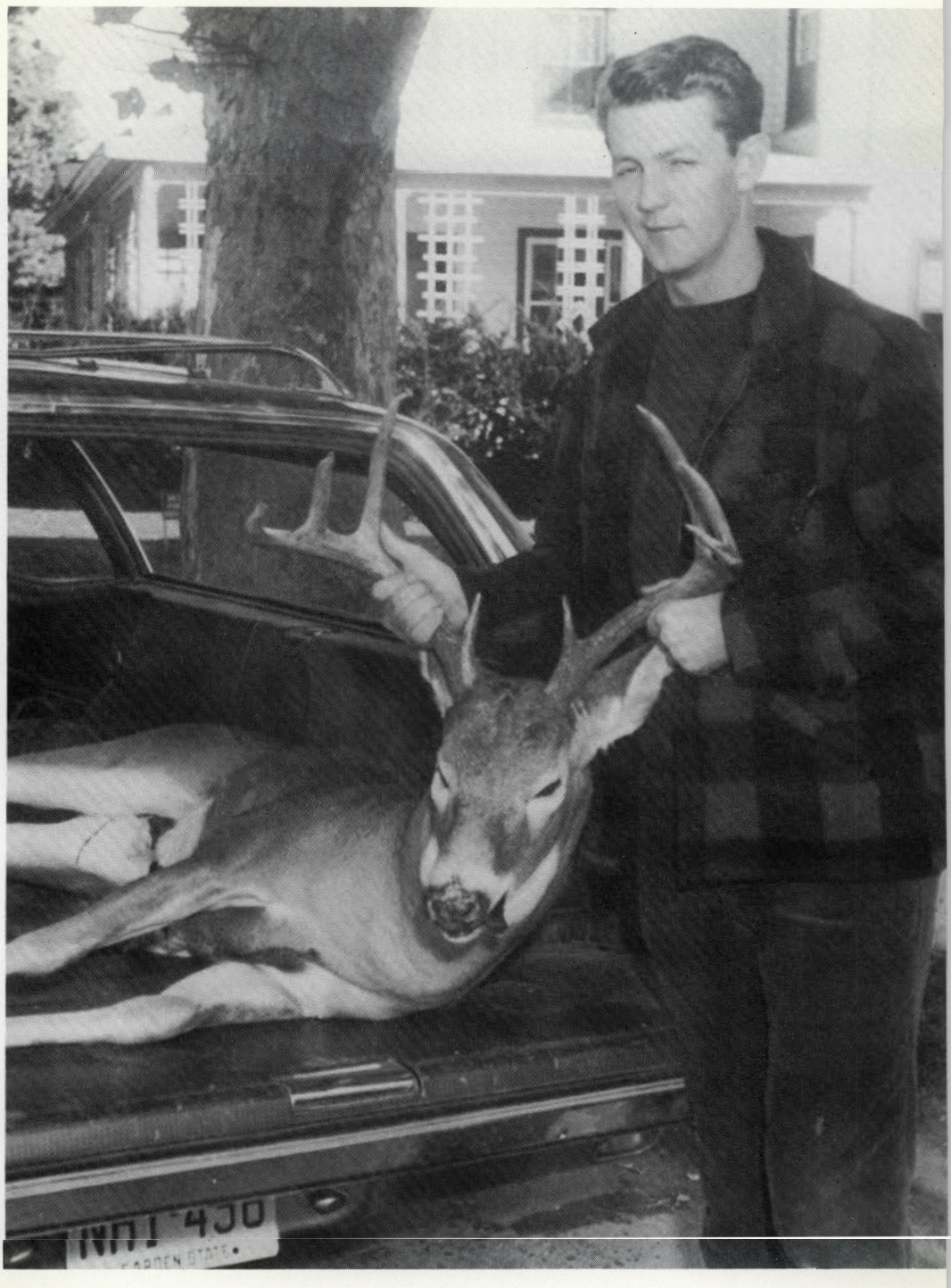
Hunterdon County, as in the past, again had the highest harvest, 303, followed by Warren, Morris, Atlantic, and Burlington. All of the above showed decreases with the exceptions of Warren and Morris.

The breakdown by county of cards received to date is as follows:

County	*Total*	*County*	*Total*
Atlantic	121	Middlesex	20
Bergen	5	Monmouth	30
Burlington	110	Morris	146
Camden	15	Ocean	73
Cape May	40	Passaic	20
Cumberland	71	Salem	35
Essex	0	Somerset	59
Gloucester	9	Sussex	77
Hudson	0	Union	1
Hunterdon	303	Warren	163
Mercer	49	Total	1,347

One entry in the 1969 200-pound Club was received during the past archery season, a 205 pound - 8 point buck. This animal was taken by Neil H. Dayton and witnessed by Conservation Officer Winfield Jess. Mr. Dayton of RD Bridgeton took his trophy deer on October 16, 1969, while hunting near Shiloh in Cumberland County. He is now eligible for an award at next spring's annual State Federation of Sportsmen's Clubs Convention. #

Neil H. Dayton, of Bridgeton, with his 205-pound, 8-point buck he downed near Shiloh in Cumberland County during the past bow season, making him eligible for the 200-pound Club



Smooth Alder

(Alnus rugosa)

Smooth alder is a tall shrub or small tree commonly found along stream banks and occasionally referred to as the speckled or black alder.

Range:

Eastern United States and Canada.

Leaves:

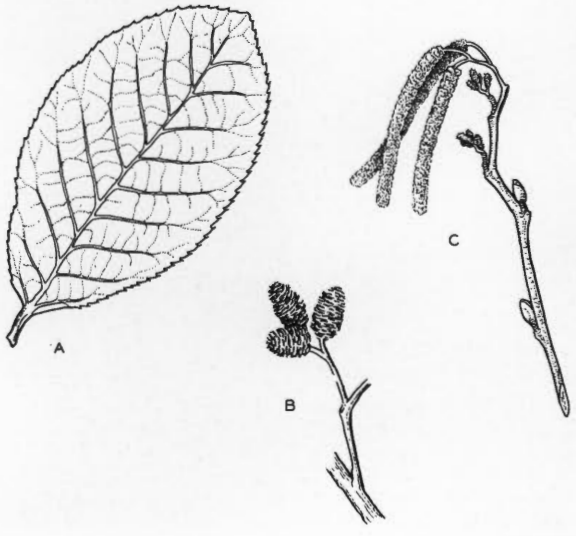
Simple, alternate, and obovate. They have a finely serrated margin and are 2 to 4 inches long with a rounded apex and a wedge-shaped base. (See figure A.) Leaves are dark green on top and a lighter green on the bottom with rusty hairs in vein axils. Veins are depressed on top and stand out on the bottom.

Twigs:

Slender with a zigzag appearance. At first they are greenish, but later they turn a grayish brown. Numerous lenticels give twigs a rough appearance. (See figure C.) Bark on older trees is often covered with white blotches. A distinctive winter characteristic is the stalked bud with two bud scales that meet but do not overlap.

Flowers:

Male and female flowers occur on the same twig. Flowers appear early in



Smooth Alder

A. Leaf
B. Fruit
C. Twig

the spring, both male and female having partially developed in the fall. Males are greenish aments, and 2 to 5 are arranged at the end of the twig, whereas undeveloped females, one-fourth to one-half inch long, usually occur 2 or 3 to a cluster. (See figure C.) Female flowers are greenish to purplish.

Fruit:

A woody, cone-like fruit one-half to three-fourths inch long. (See figure B.) It ripens in the fall and consists of many tiny nutlets borne in pairs at the base of each cone scale. The seeds are wind dispersed. The cone-like fruit serves as an easy means of identification because it frequently remains on the tree throughout the year.

Uses:

This shrub seldom reaches a size suitable for commercial timber. Its seeds serve as winter food for birds.

—Austin N. Lentz, *Extension Specialist in Farm Forestry*
Rutgers—The State University
Drawings by Aline Hansens

Don't make your boat shipshape by tossing your trash overboard. Carry your litter back to shore and put it in a proper receptacle. Let's all join the movement to keep the waterways and roadways of New Jersey clean.

Small Game Opener

Predictions of good to excellent small game hunting in New Jersey were borne out by opening day success. Bag checks were conducted by the Division of Fish and Game's Bureau of Wildlife Management at a dozen State Wildlife Management Areas and at Lakehurst Naval Air Station on November 8. A heavy turnout of hunters was recorded at all areas, and most tracts saw a harvest of species, comparable to last year.

The Flatbrook Wildlife Management Area again proved the most popular, with 1,859 hunters checked compared to 1,726 in 1968. An excellent variety of game was bagged at Flatbrook, including 530 pheasants, 69 rabbits, 17 squirrels, 32 woodcock, 33 grouse and 8 quail.

Colliers Mills Wildlife Management Area was one of 4 tracts with fewer hunters than last year, 1,100 compared to 1,147. The others were Clinton, 1,129, down 195; Millville 1,042, down 203; and Tuckahoe 476, down 64. Turnout at other tracts included Black River 1,122, up over 55; Assunpink 1,145, up 170; Glassboro 441, up 25; Whittingham 445, up 60; Manahawkin 393, up 35; Port Republic 350, up over 90. At Lakehurst, where civilian use is restricted to 100 hunters at a time, 183 checked in compared with 163 last year.

Pheasant hunters had the greatest opening day success, in numbers taken. However, several significant drops were recorded at Collier's Mills, from 423 to 356; Millville from 421 to 239; and Whittingham from 237 to 179. The largest gains were at Assunpink, 488 to 512, and Black River 201 to 321. Clinton led in the total pheasant harvest with 581.

The rabbit harvest as predicted, was spotty with 5 tracts showing increases and 7 decreases. The largest increases were shown at Whittingham, 99 to 146, and Assunpink, 32 to 87. Largest decrease was at Clinton, from 157 to 99.

Quail showed significant drops on most southern New Jersey tracts, with few exceptions. The one big exception being Assunpink where the harvest rose from 64 to 150.

Squirrels decreased on most tracts reflecting reduced populations due to poor mast crops the past few years.

Grouse rose on all but 3 tracts, and these located in South Jersey. Notable increases were Flatbrook, 33 up from 28 and Assunpink, 19 up from 1.

Woodcock continued to show on most tracts with reports equal to or slightly up over last year. This would suggest that the fall migration of this species is still in progress throughout the State.

Scattered reports of foxes bagged added to the variety of game taken by Garden State hunters on opening day. #

Remember to purchase your 1970 Fishing License and Trout Stamp early

Council Highlights

November Meeting

The regular monthly meeting of the Fish and Game Council was held in Trenton on November 19. Special meetings, executive sessions, and open sessions were held.

Unit Reports

The Bureau Chiefs made brief reports on the activities of their units. Mr. Peterman called attention to a record deer weighing 205 pounds taken with bow and arrow. Mr. Alpaugh advised that latest figures indicate a harvest of 1,347 deer during the 1969 archery season.

Fisheries

Chief Hayford was advised that, in order that the Director and the Council might be thoroughly informed on various activities and projects being carried on in cooperation with private and governmental agencies, fisheries personnel should be directed to furnish full reports to this office.

Legislation

Councilman Faunce asked the members of the Council to review legislation and submit any recommended changes or proposals to him at an early date in order that our legislative program can be prepared for the coming session of the legislature. Director MacNamara and Mrs. Musick are to draw up the changes that will be necessary to establish deer checking stations.

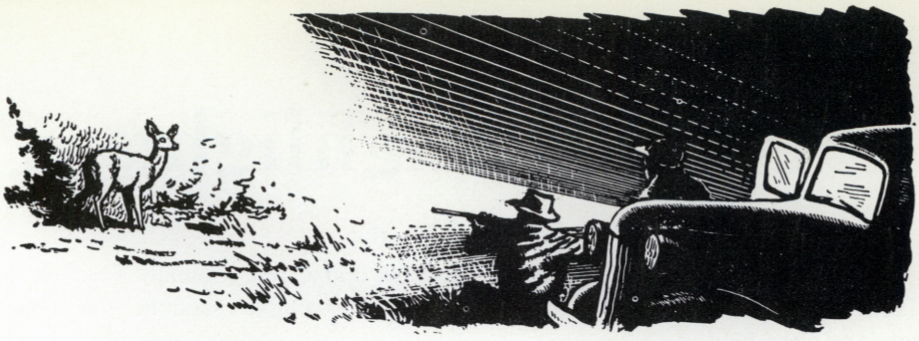
Finances

Councilman Webber advised that the Finance Committee met and has made arrangements for the Federation members of the Council to meet with the Board of Directors of the State Federation in an effort to develop recommendations regarding the finances of the Division.

Area Maps

The Council was highly pleased with, and commended the Bureau of Wildlife Management for, the excellent publication issued recently containing maps of the Fish and Wildlife Management Areas. The possibility of charging $2 for this pamphlet was mentioned, but it was felt that after the initial printing of two thousand has been used, an appropriate cover could be designed and thought given then to charging for the material. #

When you buy your 1970 Fishing License, remember to ask for a copy of the Compendium of New Jersey Fish Laws



Violators Roundup

Fishing Violations—$20.00

Alecia Miller, Deans; Stanley Kormsey, Philadelphia, Pa.; Robert Malatesto, Vineland; Henry Richardson, Wildwood; Geraldina Vasquez, Mahwah; Joseph Demarco, Elizabeth; Harold Robertson, Oakland; Ulysses Fields, Philadelphia, Pa.; Gary Black, Little Falls; Matthew Wade, Dorothy; William Johnson, Woodtown; William Clos, Mt. Holly.

Hunting Violations—$5.00

Ronald Anderson, Pennsauken; Larry Sasso, Ringwood; Howard Drake, Branchville; Quinton Carlson, Boonton; Robert Maxwell, West Creek.

Hunting Violations—$15.00

Mario C. Concorso, Perth Amboy.

Hunting Violations—$20.00

Steven Hoffman, Williamstown (2); Arthur Kelley, Colling Lake; Harry McIlvaine, Williamstown; Ronald Congalovich, Williamstown; John Polen, Clementon; Thomas Boals, Sicklerville; Anthony Petztillo, Williamstown; Walter Hertell, Mt. Holly; Joseph Dinardo, Gibbstown; Vincent LaRosa, Pedricktown; Robert Drummond, Woodstown; Anthony Barnakei, Vineland; Michael Rosimowicg, Metuchen; Thomas Bailey, Chesilhurst; Howard Hand, Barnegat, John R. Brinser, Mt. Holly; Jesse J. Leak, Trenton; John E. Trout, Heislerville; Paul T. Trout, Leesburg; John P. Richardson, Elmer; J. Colton Bansil, Mays Landing; Walter DaJnowski, Ocean City; Edward Smith, McGuire A.F.B.; Rocco Fucetola, Hammonton; Kile C. Jones, Williamstown (2); Robert Keefe, Stanhope; Karrol Haynes, Jamesburg; Randolph Scott, Milltown; George Binins, Jamesburg; Richard Williams, Milltown; Julius C. Laufner, Trenton; Boris Werosto, Trenton; Ronald Sohl, Trenton; Paul Czetto, Trenton; Thomas Siegrist, Paulsboro; Brian Carrodetti, Gibbstown; Frank Davis, Jr., Gibbstown; William Pastre, Goshen; Thomas Becica, Cape May; James Nash, Cape May; Thomas Dukes, Cape May; William J. Becica, Villas; Ervin H. Truesdell, Willingboro; Raymond Fraiser, Mt. Holly; James Smith, West Milford (2); John Layton, Corbin; Ralph Gorgo, Newfield; Lawrence Graham, Tuckerton; Everett Tullte, Jr., Denville; Frank Watson, Millville; Richard Chillari, Bridgeton; Dennis Harris, Cedarville;

William Schmitt, Millville; Jesse Still, Trenton; David Walker, Mt. Holly, James DeMore, Masonville (2); Chet Moncrief, Pleasantville; John Ferragut, Ridley Park, Pa.; Tom Parise, Vineland; Anthony Mattero, Boothwyn, Pa.; Edwin Raine, Salem (2); Bobby McGoha, Mullica Hill; Robert M. Stewart, Absecon; Benito Munoz, Mantua; Anthony Franciosa, Hanover; Richard Patricia, Elizabeth.

Hunting Violations—$25.00

Richard Jillard, Clayton.

Hunting Violations—$50.00

James Palmer, Anolon; Francis Ditzler, Anolon; Bruce Halbrerner, Cape May; John Layton, Corbin; Leroy Starn, Elmer; William Schmitt, Millville; Ronnie Philips, Millville; Michael Chatyrka, Collingswood; Chet Moncrief, Pleasantville.

Hunting Violations—$50.00 and Jail 10 Days

John C. Cooper, Pleasantville.

Hunting Violations—$80.00

Richard Sheppard, Newfield.

Hunting Violations—$100.00

Richard McGrantham, Jersey City (2); Richard Sona, Newark (2); Milton Frazier, Vincentown; Richard Grunow, Egg Harbor; Roger Carpenter, Egg Harbor; Carl Breece, Trenton; Bruce Halbrerner, Cape May; Philip Attermanson, Vineland; Joseph H. Southwell, Ft. Dix; Louis H. Jones, Queens, N.Y; Josephus Lyons, Queens, N.Y.; Werner Kupietz, Clifton; Robert Mackner, Browns Mills; Donald Garrison, Elmer (2); Walter Langley, Jr., Elmer; William Langley, Jr., Elmer; Joseph Malone, Elmer (2); John Ferzino, Highland Creek; A. Moneschio, Bound Brook; John Ely, Piscataway; Theodore Wajton, Colonia; James Smith, West Milford; James Denman, Butler; John Layton, Corbin (2); John Warfle, Millville; Leroy Starn, Elmer (3); Leslie Blizzard, Cedarville; William Schmitt, Millville (2); Ronnie Philips, Millville (3); Albert Cgyzewicg, Maple Shade; Edward Kriskinski, Linden; Chet Moncrief, Pleasantville; Lawrence Carty, Clementon; Robert L. DeHart, Springtown; Geraldina Pettiford, Newark (2); Edwin Raine, Salem; Bruce Cook, Keyport; Donald Kline, Browns Mills; Craig Carlisle, Bernardsville; Albert Henry, South Plainfield.

Hunting Violations $100.00 and Jail 20 Days

John C. Cooper, Pleasantville.

Hunting Violations—$200.00

Dominick Urbani, Plainfield.

Hunting Violations—$300.00 and Jail 60 Days

John C. Cooper, Pleasantville.

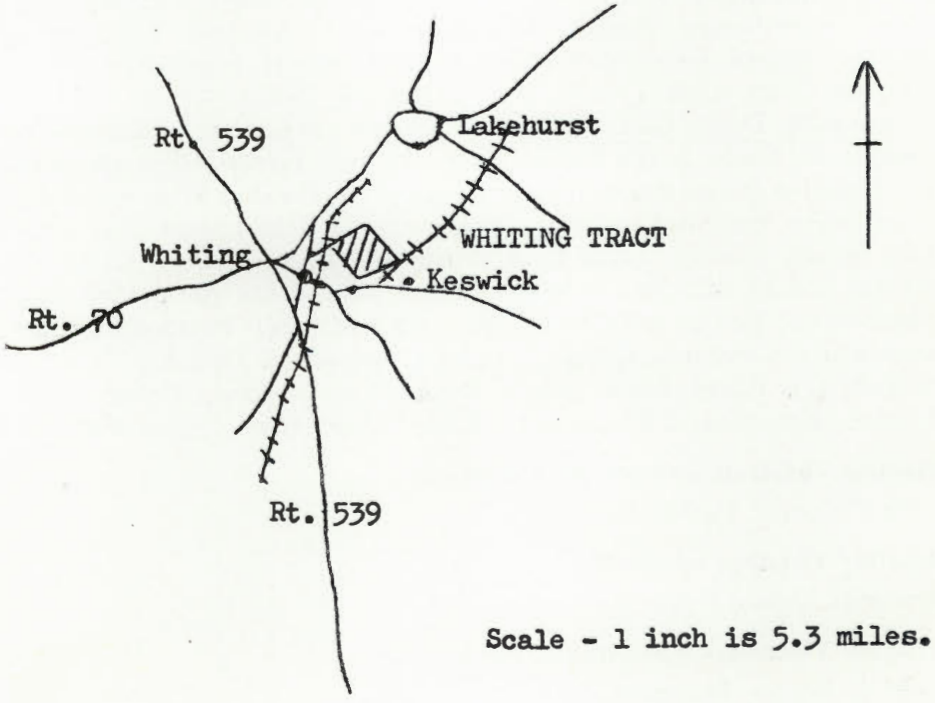
Guide to the

Whiting Tract

The Whiting Fish and Wildlife Management Area, consisting of about 1,200 acres, is located in Ocean County. The tract is bounded on the northwest by the Pennsylvania Railroad tracks, on the west by the Whiting-Wrangle Road, on the south by the Keswick Road, and on the east by a cleared fireline which runs from the Pennsylvania Railroad to the Keswick Road.

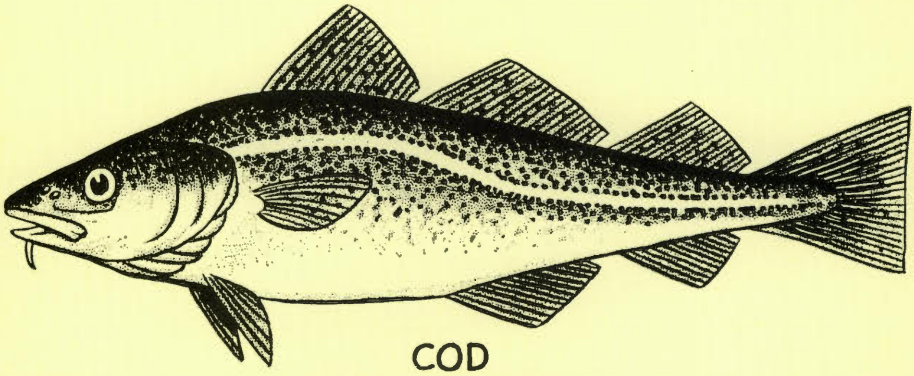
This tract is managed for upland game, primarily deer and quail. A total of 70 acres of fields has been cleared and planted on this tract. A five-acre impoundment has been constructed for waterfowl. This tract is stocked with both quail and pheasants during the hunting season.

To reach the Whiting Tract, proceed to the village of Whiting located on Route 539 near the junction of Route 70. From the town of Whiting follow the hard-top road, which parallels the railroad track, east out of town about one mile until the first sand road on the right which crosses the tracks. Follow this road over the tracks and bear left. This is the Wrangle Brook Road which cuts through this tract. #



Fur, Fin and Campfire

By BILL BERO

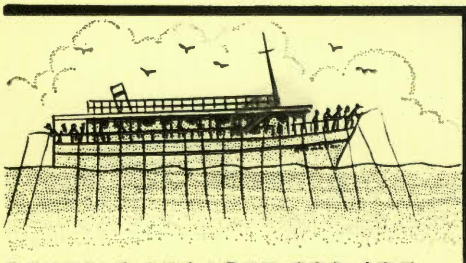


COD

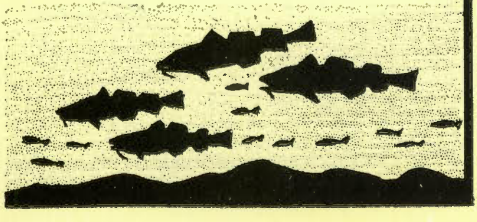
COD FISHING TIME IS HERE OFF THE ATLANTIC COAST AND MANY FISHING CHARTER BOATS ARE GOING OUT DAILY.

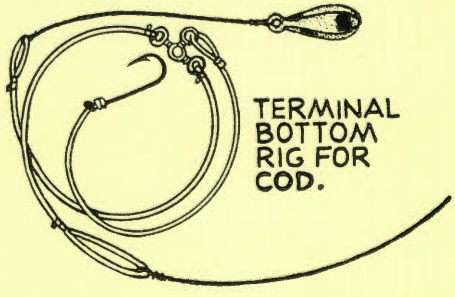
COD, AN IMPORTANT FOOD FISH, IS FOUND IN COLDER WATERS.

COD ARE BROWN OR DARK GRAY ON BACK, WITH WHITE ON THE UNDER SIDE. THEY HAVE BROWN DOTS ON THEIR SIDES.



SCHOOLS OF LARGE COD ARE FOUND IN DEEP WATER. WITH THE AVERAGE WEIGHT ABOUT 10 LBS. BUT SOME WILL WEIGH MORE.





TERMINAL BOTTOM RIG FOR COD.

USE A HEAVY BOAT ROD, A 1/0 REEL HOLDING 150 YDS. OF 36 POUND TEST LINE, A BIG HOOK, 6/0 TO 9/0 ON A 24" HEAVY LEADER, AN 8 TO 12 OUNCE BANK SINKER ATTACHED TO A 3-WAY SWIVEL. BEST BAIT TO USE FOR COD ARE CLAMS.

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