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New Jersey

Outdoors

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The Snow Year

and The Community of Life

By Ernest Swift, dec.

Some people like the four seasons. Winter, however, is complained of by those who can afford to complain, and used as a status symbol to retreat south during the snow months.

I like winter because of its uncompromising challenge. Even with modern conveniences, a good old-fashioned winter does not allow too many stupid mistakes or total irresponsibility.

This could be a year of the big snow in our northern regions. Snow years are cyclic as are rain years and drought. The term "snow year" has a particular connotation to natives. It means storms and drifts and shoveling; it means cold, clear dawns when smoke rises from chimneys straight as a gun barrel. It means sun dogs, and the house creaking as the frost fights to get in. It means white, windswept landscapes.

There was a time when winter meant huge wood piles, it meant sleighs, and gooseneck cutters and buffalo robes, the jingle of harness, and horses with their noses festooned with icicles.

Today, recreation knows no seasons. People ice fish, ski, and of late explore with snowmobiles. Ice fishing can be a test of stamina without a shanty or windbreak. Skiing has become immensely popular, and it is claimed that the snowmobile now allows people to explore the hinterlands. Snowshoeing is becoming a lost art, even with game agents.

I have always preferred snowshoes, plus a packsack containing a tea pail, black bread, and bacon. The travel is slower on snowshoes, but the education is much greater than with a snowmobile or just sliding down hill on skis.

What is there out in this winter desert that is of interest? Some people simply look without comprehending, others see and perceive.

There is a track in the snow. Should it be passed by without examination? Certainly not! Is it a fox or cat? It is hard to tell in the loose snow: and what is the animal doing, traveling or hunting? So the track is followed until a good print indicates a fox, and further trailing into a maple thicket tells that it is hunting mice. Here is a story etched in the snow. The predator fox which has been accused of killing off the

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Cover—"Fish at Twenty Below"—*Harry Grosch*

No matter how cold it gets there are always some frost bite anglers who will brave the wind and chill. For more on ice fishing, see pages 20 and 21 and the inside back cover.

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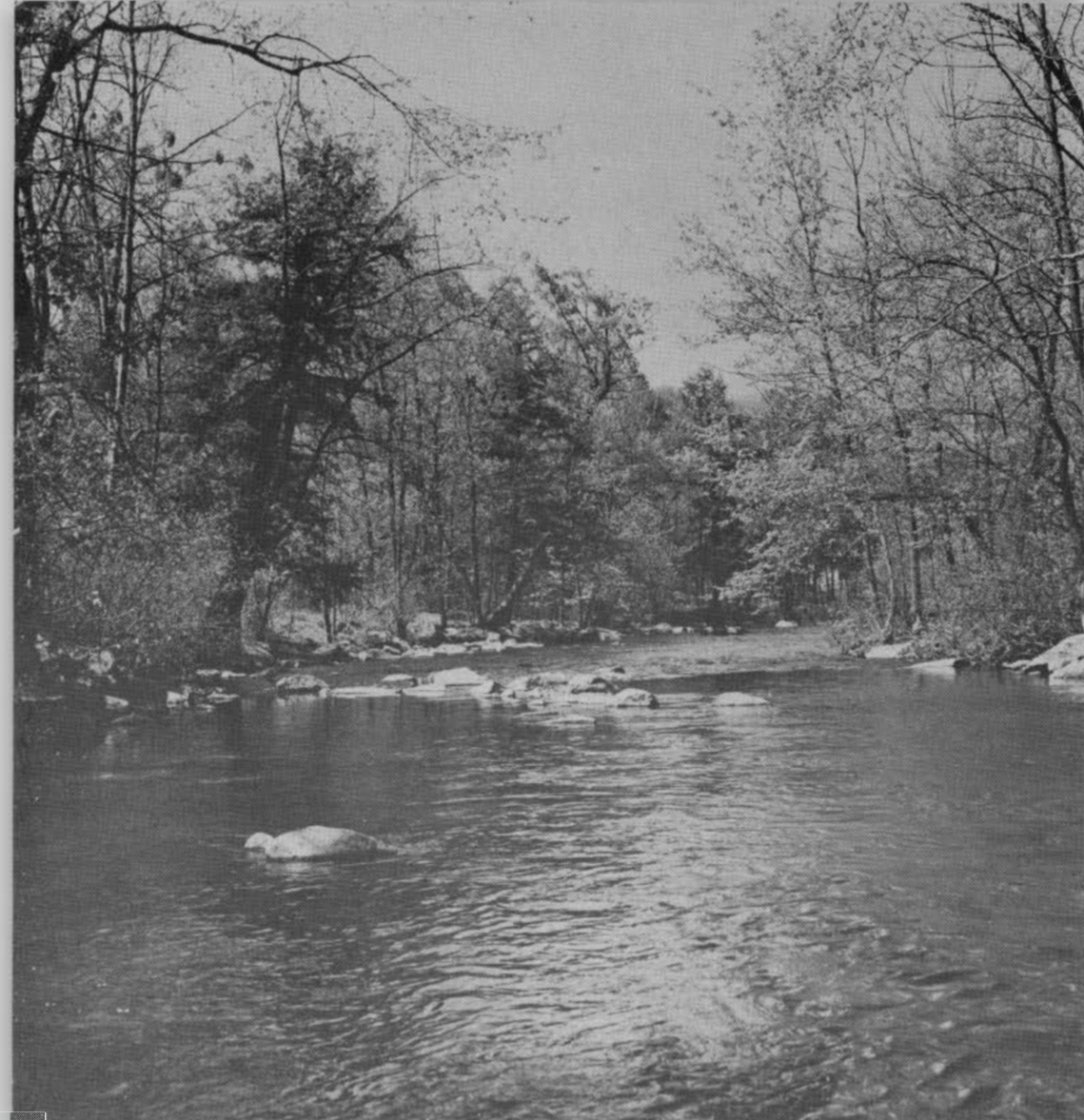
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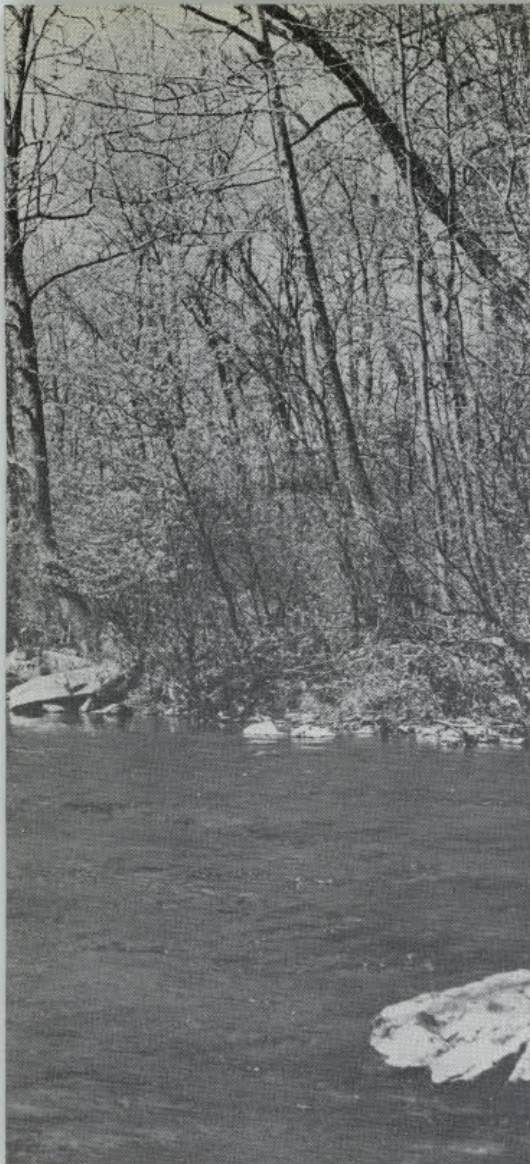
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Water! Water!

The affects of water on our environment
and affects on water in turn

*By Hil Zich,
Bureau of Fisheries Management*



The earth is a wet planet, we have some 330 million cubic miles of water which covers about $\frac{3}{4}$ of the earth's surface. It is therefore ironic that water should have always generated in man such passion, strife, and back breaking effort. We have either too little, and find famine or deserted areas or we have too much and are swept away by flood. And when there is ample supply, we waste and pollute it so much that scarcity looms. Water, in short, is a major problem and with growing populations, sprawling cities, rising standards of living, and evermore thirsty industries it is a growing problem. The trouble is that little water is directly available and what is available varies enormously in time and space. The predicted demand for water in this country in 1980 will be 600 billion gallons a day whereas the available supply is estimated to be only 515 billion gallons a day—a deficit of 85 billion gallons per day. Yet according to the National Committee on Natural Resources only about 6 percent of the average annual rainfall in this country is used by man. The problem, then, does not lie in the total availability of water. The total water resources are adequate but must be so regulated and managed that the water

. . . Water

is available when it is required, where it is required, in the right quantities, and qualities suitable for the various domestic, industrial, agricultural, and recreational water users.

Because of the sun's radiated energy water is always present in the atmosphere. Heat evaporates millions of tons of water into the air daily from the oceans, lakes, ponds, swamps, marshes, rivers, streams, brooks, soil, animal respiration, plant transpiration and respiration, and combustion from engines and fires. As the moist air rises it slowly cools and condenses into cloud formations. Under certain conditions precipitation occurs

in the form of rain, sleet, hail, or snow and it falls. As the precipitation falls through the atmosphere it absorbs gases such as oxygen and carbon dioxide and picks up dust particles, bacteria, and spores. And if the air is contaminated with industrial and automotive fumes, other gases such as sulfur dioxide, ammonia, and carbon monoxide are also absorbed and we have an example of air pollution affecting the quality of our water and environment. But other things happen to the water before it is evaporated back into the atmosphere to complete the water cycle. Since freshwater areas occupy only about 2 percent of the country's area, 98 percent of the precipitation must fall on land surfaces. But

Flood damage. We have either too much water . . .





... or too little water. Almost dry river bed

the water cycle does not bring the same amount of water to all communities because precipitation is not spread evenly over the country and within a region the water that falls is divided into separate watersheds.

The term watershed is new to many people but the increasing use of soil and water conservation measures is bringing the term into common usage. The well known phrase "water runs downhill" is a simple definition of a watershed. A watershed is any area of land that drains into a particular stream or body of water. When you were children you probably had a favorite mud puddle around your home in which you liked to play. The land area from which the water drained into the puddle was its watershed. If a small stream runs near your home it may be dry most of the year or it may flow

continuously. At any rate water from a few acres of land drain into that small stream. Those few acres are its watershed. This small stream and others like it run into a larger stream and the land areas drained by all these small streams make up the watershed of the larger stream into which they flow. Small watersheds make up larger ones and the ocean is the ultimate collecting basin for all the watersheds.

Within a region the water that falls is divided into separate watersheds and whether the water soaks into the earth to make up our ground water supply or runs off downhill to enter some stream as direct surface runoff depends largely upon the nature and condition of the soil and the vegetation cover on the soil. The capacity of the soil to store water within reach of plant root also varies with soils,

. . . Water

type and condition. Ground water, our underground reservoirs, contain more freshwater than all our surface reservoirs and lakes. Ground water is estimated to equal 10 years of average rainfall or 30 years of average runoff. About 18 percent of all water used in this country comes directly from underground sources through wells but in many areas the ground water is being used faster than the water cycle can replenish it. To complicate the picture, during sustained periods of fair weather when there is no precipitation the flow in streams and rivers and the levels in ponds and lakes is maintained by ground water.

On the surface—streams, lakes, and reservoirs are our major sources of available water. They supply 70 percent of the water used by towns, cities, and irrigation, 95 percent of the freshwater used by industry, and nearly 100 percent of that used by hydroelectric power. There is just so much water and the earth's water supply remains constant except for negligible amounts created or destroyed by chemical changes. Average precipitation in this country is about 30 inches or about 4300 billion gal./day—that is our total annual supply. Total steamflow and ground water amounts to about 8.5 inches a year or 1200 billion gal./day. That is the potential sustained supply for direct use which is



Our ground water supplies of freshwater exceed the water reserves in all our surface reservoirs and lakes



On the surface, streams, lakes, and reservoirs are our major source of available water. Inlet to Round Valley Reservoir

about 3 times the daily use now and about twice the predicted 1980 requirement.

In this area most of the surface runoff of precipitation that falls on the land or water that is withdrawn for municipal and industrial use is returned to the water cycle, a major portion of which is returned directly to the primary surface sources. Therefore, total annual stream flow does not basically fluctuate from year to year. We know that the *total annual stream flow* from large river basins is little changed through land and water

use. But the timing, the size of peak flows and the part of stream flow that comes from surface runoff, after periods of precipitation, and streamflow from ground water during fair weather have been greatly altered and through this alteration by deforestation, urbanization, industrialization, bad farming practices, and ineffective waste treatment the quality of freshwater has been altered.

Because water has an unique ability to dissolve and carry more substances than any other liquid, it is unable to remain entirely na-

. . . Water

tural in the water cycle. As precipitation falls it absorbs useful gases but it also has the ability to absorb undesirable and noxious

when used for recreation or wildlife habitat. Water as a habitat for fish must carry dissolved useful gases, minerals, and other substances of kinds and amounts non-toxic to fish. However the habitat

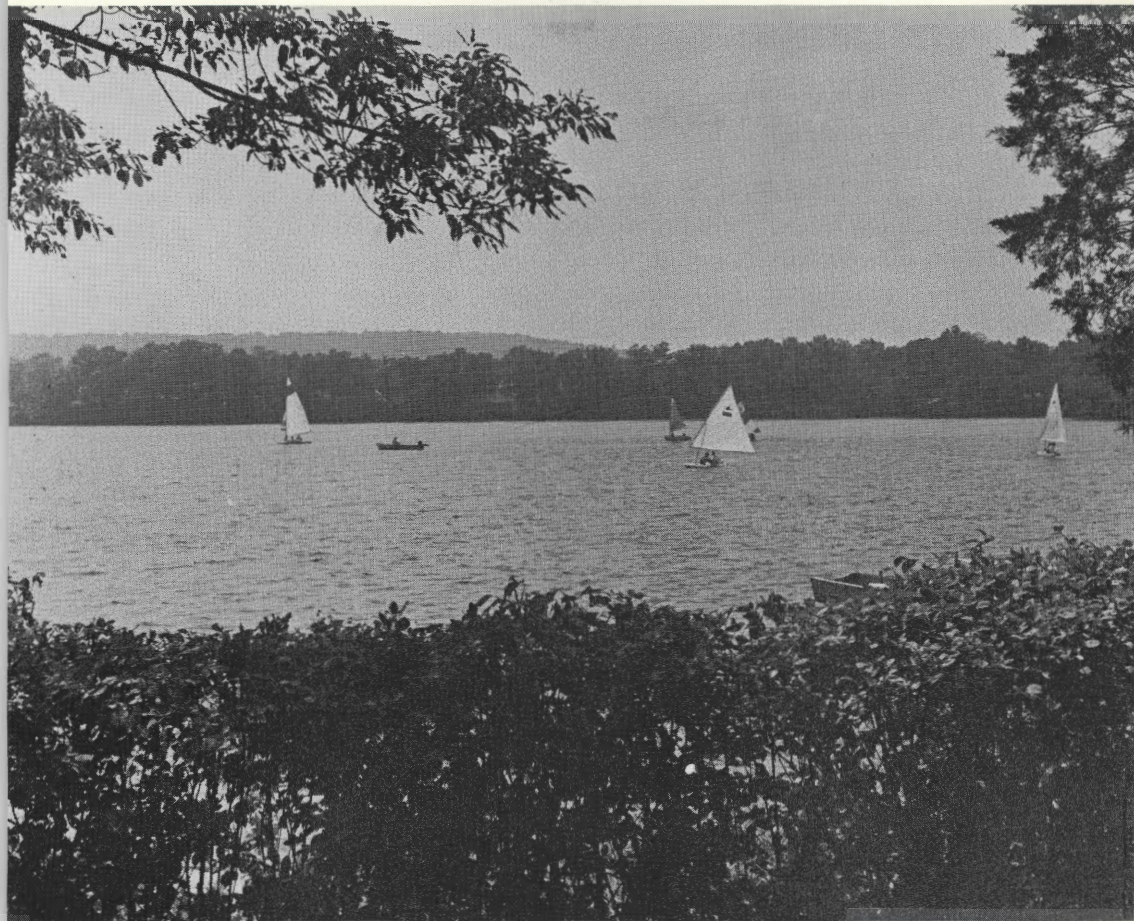


The increasing use of soil and water conservation measures is bringing the term watersheds into common usage

gases and in many cases water is fouled to some state of impurity before it reaches the earth's surface.

Water is the key to many kinds of recreation. It is indispensable to wildlife, which in itself is valuable to recreation. Water is neither withdrawn nor consumed or for that matter rarely polluted

also consists of physical features basically banks and channels, contours and depths of water with rocks, gravel beds, sand, silt areas, stumps, and fallen trees. Aquatic plants, filamentous algae, and shoreline vegetation are part of the physical as well as the biological environment. The biological environment also includes bacteria,



plankton, fungi, and invertebrate fauna. Some of these organisms are foods, some are enemies, some play a dual role being enemies to small fish while being food for large fish. The well being of a fish species is directly related to its ability to compensate for the pressure and stresses encountered in its relationship with its environment. Generally speaking the more desirable fish species are less tolerant of pressures and stresses placed on the aquatic environment.

Water is the key to many kinds of recreation, from all fishing and much hunting to boating and birdwatching

This is part one of a two-part article.

Nature's Little Litter Fighters

The animal kingdom has its own litter fighters. Many animals, birds, insects, and fish lend a helping hand, picking up the litter dropped by humans.

For the most part nature's litter fighters are looking for food or building material for their nests, but some apparently pick up stray objects just for the fun of it.

The possum will clean up virtually anything he can chew, and porcupines will eat or gnaw aluminum cans, rubber, old ax handles, and wooden scraps that have been handled by humans. They are seeking the salt content of this trash.

Pack rats commonly hide tin cans, bottles, bones, and scraps of metal in their nests. Beavers incorporate these same items of litter, plus old automobile tires, in their dams and lodges.

Buzzards and crows will eat many kinds of litter left along highways, on beaches, and picnic areas.

Robins, catbirds, house sparrows, brown thrashers, flycatchers, jays, squirrels, rats, and mice collect such litter as facial tissue, small rags and scraps of paper to line their nests.

Wrens, mourning doves, and starlings sometimes pick up discarded drinking straws and scraps of wire to construct their homes.

Many insects, including certain beetles and ants, hungrily clean up crumbs and scraps of food left around abandoned picnic tables. Some wasps shred waste paper for a building material for their nests.

In the water, crayfish, turtles, and catfish are efficient scavengers of edible litter, such as picnic remnants and discarded fish bait.

If people properly disposed of their trash in litterbags or litter barrels, the wild litter fighters might have to look a little harder for their food and nesting materials, but the out-of-doors would be a more beautiful place. And people would prove themselves to be as neat as our friends of the animal kingdom. #

The Fish and Wildlife Management Areas of the Division of Fish, Game, and Shell Fisheries and the State Forests of the Division of Parks, Forestry, and Recreation are open to all sportsmen licensed to hunt in New Jersey. The bulk of management areas were purchased with a portion of your license dollars, the forests chiefly from your tax money, with portions of all the lands acquired under the Green Acres Program. They are your lands to use. #



Of Bunnies, Boys, and Beagles

He doesn't actually run, or even walk, neither does he fly. Furthermore, he is small, seemingly vulnerable, and a favorite quarry of both man and beast. The simple arithmetic of survival, then, would seem to be against him. It isn't. For nature equipped this fellow to multiply as fast as all her subtractions. Sometimes even faster.

The subject, in case you haven't already guessed is the cottontail

rabbit, that round ball of fur punctuated by exclamation point ears at one end and a fat, fluffy period at the other.

The cottontail, along with his close relative, the hare, is the most popular game animal in the world. Each year more hunters pursue him, and burn up more ammunition in the process, than any other game species.

In fact, rabbit hunting may be



. . . Of Bunnies, Boys, and Beagles

one of man's oldest pastimes. Far back in the hazy history that is more supposition than record, humans hunted rabbits for both food and fur. Chances are man was but a minor threat to the rabbit in those times, well down the list of much more skillful and efficient predators.

Today, he plays a larger role in the rabbit harvest, and it's a good thing he does. For, the taming of the land in many areas has eliminated many of the rabbit's natural enemies and upset the balance of nature. Without man as a substitute control, we could well be up to our noses in a sea of bobbing bunnies. Years ago, a few dozen European rabbits, introduced into Australia where there never were any balancing predators, grew to billions in no time and almost ate

the Aussies off the continent. To this day, controlling the rabbit population in Australia is a constant problem.

In truth, man hunts the rabbit because he is so good to eat, so available, and so much fun to chase. A cottontail going flat out still can't make much more than 18 m.p.h. But he can change direction like a ricocheting bullet, zip through impenetrable brush, scoot under logs and, seemingly, disappear into thin air when he goes to ground. With eyes on the side of his head, he actually sees better to left or right than straight ahead, and perhaps this is why he zig-zags like a hemmed in half-back.

On the other hand, the cottontail's prairie cousin, the jack, has

managed to survive in open country because nature has equipped him to survive in his terrain. The jackrabbit often can outrun the opposition, at speeds up to 45 m.p.h., accelerated by soaring 20-foot leaps.

To most hunters, though, the cottontail is king. He can be found in any brushy area, alder thickets, edges of woods that border on crop fields, ravines and gullies, and just the other side of the old stone fence that separates your back yard from the trees. The best equipment for the chase is probably a quick-handling shotgun of 12 or 20 guage improved cylinder or modified choke, and No. 6 shot.

Another advantage of rabbit hunting is the excuse it provides

for owning a beagle or two. Most hunting is necessarily a quiet business. Sight is critical. Sound is something to be detected if possible, but never created if avoidable. Beagles on a bunny trail rend the fall and winter air with the soul-satisfying, joyous music of the little hound. It's a welcome change that invites another one of our senses to the thrill of the hunt.

And since many youngsters cut their hunting teeth on rabbits, the presence of a beagle is ideal. If the boy-dog combination is good, the boy-beagle one is near-perfect. Pair 'em up, plunk 'em down in cottontail country, and let their natural and noisy enthusiasm take over. It's one of the outdoors' most rewarding partnerships. #





Lose People To Find Hunting

By John Madson

There's a lot of competition for good hunting, and there's going to be more. One of our biggest hunting problems today isn't the absence of game, but the presence of people, and a good way to find hunting is by getting away from people. There are several ways to do this:

1. *Hunt in places that are inaccessible to other hunters.*

One way to find elbow room is to head for the Antarctic and have yourself a penguin shoot. If you can't work that out, just try some game cover that's over the hill and a twenty-minute walk from the road. It doesn't take much distance or many contour lines to discourage most hunters.

We have seen many deer hunters' footprints loop back into the woods for a few hundred yards and then return to the road. Few tracks ever got far from road or trail. It's the same with pheasants and ruffed grouse—both of which are heavily road-hunted. Get away from the roads and you'll get away from most hunters.

On a county plat map we once

noticed a freak stretch of river that ran nearly four miles through farm country without crossing a road. This was a guarantee of light hunting pressure. Sure enough, we found that a small flock of Canada geese had been using the middle part of this un hunted river for several weeks.

Try to wear out your hunting pants. Bust brush; get back into rough pockets of game cover on broken land, especially late in the season. If there's a tough place to hunt, hunt it.

2. *Hunt game that most other hunters ignore.*

How many men hunt sora rail, jacksnipe, and woodcock early in the fall? How many hunt gray squirrels? Bobwhite quail are almost un hunted in many northern parts of their range. Have you ever floated small streams for wood ducks? Or listened to a good hound run raccoons at night?

3. *Hunt popular game when and where most other hunters don't.*

We have had excellent late-season pheasant hunting in the exact

←—*This hunter is after elusive game in heavy cover*



Easy hunting is seldom productive

. . . To Find Hunting

centers of land sections. As the bird season wears on, many hunters wear out—and begin roadhunting. The center of a section is far from the road, usually out of sight, and farmers aren't inclined to be as fussy about clean-farming there. If there's cover in the remote center of a section, there'll usually be a few birds. Sometimes many.

Cornfielding mallards and geese is an art that takes a lot of doing, but it can be done. Not many hunters really work at hunting waterfowl in cornfields. But that's where many waterfowl are, and a few specialists know how to connect with them. You have to hunt game where it is, when it is.

Don't ignore the last few days of the season. We're thinking

mainly of the tail end of the pheasant season—usually snowy and cold, with birds bunched up in heavy cover and most hunters bunched up around television.

Sometimes a "poor" hunting season is good hunting. We once hunted a week during the "low" of the partridge cycle. During that week we saw only one other party of hunters. Yet, we had fair-to-good shooting. As it turned out, hunters were much scarcer than birds.

If hunting is fancy, fast and easy, chances are that someone else has gotten there ahead of you. A philosopher once said: "Let us leave easy tasks to men without imagination." Same thing with easy hunting. The hunter with imagination will have less competition, and probably more action. #

Ring-necked Pheasants

That gaudy import, the ring-necked pheasant, has been around for so many years that many people forget his alien lineage. One of the most popular of upland game birds, this Beau Brummell is a native of China and his first ancestors were brought to these shores towards the end of the last century. He, and his far drabber female counterpart, have adapted to our climes with remarkable alacrity.

They thrive on farm lands, in suburbia, in exurbia, or wherever there is sufficient cover to hide them (and their young) and enough weed seeds, berries, or farmer's grain to feed them. They love north Jersey swamps or the wide open expanse of cornfields in central New Jersey. Strangely, though, their natural range seldom extends south of the area of the furthest southern penetration of the glaciers. This is the apparent reason why the southern counties support few wild population's of pheasants. One theory is that there is not enough limestone in the soil (and in their grit) in these southern areas to provide sufficient calcium to sustain pheasants. There are other theories, too, however, and no one is sure of the answer—yet.

Regardless of where they are found, however, ring-necked pheasants are one of our sportiest, and challenging, upland game birds. #

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When Even Your Best Friends Won't Tell You

By Dick Dietz

He doesn't start as quickly as a quail, fly as fast as a teal, or corkscrew like a woodcock, but he's one of the most challenging game birds ever to slip from the sight of a hunter standing there with a wisp of smoke trailing out of an empty gun.

He's known correctly as the ruffed grouse, colloquially as a partridge in much of New Jersey, and respectfully as 'Mr. Ruff' by those who know him best.

Hunters tend to become addicted to a particular game species, and the dedication to the sport by duck, deer, and quail hunters is legion.

But it's hard to find a more rabid aficionado than grouse hunters.

Any discussion of grouse hunting techniques becomes automatically contradictory. The grouse is often one of the most difficult upland birds for dogs to hunt. And when you do find or develop a crack grouse dog, he's frequently mediocre on, or disinterested in, other game birds. It seems almost as if such a dog becomes even more addicted to this one quarry than the hunter himself. Yet the ruffed grouse is also one of the few upland birds you can actually hunt satisfactorily without a dog.



The ruffed grouse, known in much of New Jersey as partridge, is called "Mr. Ruff" by those who know him best



A crack grouse dog seems to become even more addicted to this one quarry than the hunter himself

Perhaps this is because it isn't too hard to learn and recognize the kind of cover he favors within his normal range. It is also the result of his tendency to hold tight and not be spooked by the noises you make plowing through the brush. In fact, one of the most successful ways of 'walking up' grouse is to move along at a steady pace and then stop dead periodically. It's the sudden silence that often disturbs him into exploding out of his cover with a racket that would unnerve Nimrod himself.

Fast shooting is a prerequisite for successful grouse hunting. If you don't get on him quick, he'll unfailingly put the biggest tree in the territory between you and him in nothing flat. Consequently, a light, fast-handling shotgun, open bored, and small-size shot is the most appropriate equipment.

Look for grouse in thicket pockets or draws on the sides of hills, in groves of nuts, fruits or berries, on abandoned farms, or the edges of apple orchards. Find a hemlock or pine stand in the midst of hardwoods, and you're likely to find grouse around the fringe. Chances are you'll have to find the good cover yourself, though. Hunters who will gladly give you their last dime become amazingly evasive when you bring up the subject of grouse cover. They tell the story of the fellow who borrowed his best friend's grouse dog one Saturday and kept the dog blindfolded during both ends of the trip. It isn't true, of course. He merely kept the dog's head below window level of the wagon.

My grouse cover? No secret at all. It's in the woods! #

Ice Fishing Has Its Rewards

Although many fair weather fishermen seem to love their sport, many of them just can not understand what is the strange attraction ice fishing has for some other anglers. Nevertheless, there are thousands of Garden State frostbite fishermen who forsake cozy homes for the frigid outdoors and a chance to chop, drill, or chisel a circular opening in a frozen sheet of water.

What compels otherwise warm and comfortable individuals to venture out into the teeth of a winter wind and dangle a line in hopes a vagrant perch will stray into the vicinity?

To the casual observer, such tribulations and slight rewards may seem incongruous. Even many experienced anglers who fish avidly in other seasons feel the prospects of defying winter's worst are hardly worth the effort.

However, ice fishing manages not only to hold its own, but it is rapidly increasing in popularity . . . and for a number of good reasons.

Within the shadows of many of New Jersey's large cities, youngsters and oldsters are able to get a taste of fishing in waters that are hospitable only when capped with ice.

The catch, when it occurs, can literally be a bonanza of sweet, toothsome food for the table. Loot by the pailfull can be carted home when the bluegill, crappie, yellow perch, or other pan varieties are schooling in the neighborhood, and big pickerel, or pike, sweeten the catch.

Best of all, ice fishing is a communal affair. The solitary, get-away-from-it-all attitude often associated with most kinds of fishing seldom appeals to ice addicts. The knot of humanity that can congregate in jovial harmony around a tiny spot is truly amazing.

If you wonder what motivates ice anglers, go watch them. You'll be surprised how so much chinnin' produces so much fishin'. #

Wildlife Harvest 1969-70 and Percent Change from 1968-69

Species	Estimated harvest		Change from 1968-69		
	1969-70	1968-69	Increase	Decrease	Percent
Pheasant	368,365	392,102		23,737	6.1
Rabbit	541,110	697,647		156,537	22.4
Squirrel	147,275	269,414		122,139	45.4
Quail	216,475	254,382		37,907	14.9
Grouse	44,515	57,580		13,065	22.6
Duck	232,885	247,597		14,712	5.9
Woodcock	111,090	127,614		16,524	12.9
C. goose	12,890	12,585	305		2.4
Brant	52,600	70,521		17,921	25.4
C. rail	7,995	11,564		3,569	30.8



Yes! Ice fishing has its rewards! Not only does this ice fisherman have a bonanza of sweet, toothsome food for the table, but he also is helping to keep prolific panfish populations in check. Very frequently perch and sunnies are under-harvested in lakes and become over-populated and stunted. Therefore, there are no size or bag limits on perch and sunfish.

Green Thumb Project

The Federal Green Thumb Project, sponsored by the Department of Labor to provide outdoor beautification work for citizens over 55 years of age, continued to function during the past year under the Bureau of Wildlife Management's supervision on the Clinton, Assunpink, Colliers Mills, Greenwood Forest, Tuckahoe, and Glassboro Wildlife Management Areas. A total of 55 men worked on these areas and planted



The Green Thumb Project in operation on wildlife management areas has been a valuable asset to the Division and sportsmen

over 60,000 multi-flora rose, 10,000 spruce, and 1,000 autumn olive. In addition, they salvaged lumber from four buildings, painted three buildings, constructed 22 raccoon traps, 50 rabbit traps, and built several mosquito traps. They assisted with the propagation of quail and with land clearing operations. They performed roadside beautification and maintained the Covell Hill Cemetery as an historic site near Clarksburg. #

The New Jersey Division of Fish, Game, and Shell Fisheries, in cooperation with the New Jersey State Federation of Sportsmen's Clubs, is again sponsoring the state big deer competition.

The competition is divided into two divisions; the 200-pound club (for weight) and antler score. Certificates and patches will be awarded to hunters killing a deer with an authenticated dressed weight of 200 pounds, or better. Trophies will be awarded for deer with the largest racks scored under the Boone and Crockett Club measuring system. The antler competition will be divided into two sections: firearm and archery, with typical and non-typical classifications in each. There will be first, second, and third places given for typical. One award will be given for non-typical.

Entry blanks available from the Division office, conservation officers, or fish and game wildlife management areas. Address all correspondence regarding this program to the New Jersey Division of Fish, Game, and Shell Fisheries, P.O. Box 1809, Trenton, New Jersey 08625.

Fishy Facts

Can fish make sounds? How well do they see? Can they distinguish one color from another? Do they feel pain?

These and other questions have fascinated fishermen since primitive man first wet a line. The answers to some of the angler's questions are purely academic, while others give clues to successful fishing.

Here are a few facts on which most scientists agree:

Can a fish feel pain when he's hooked? To some extent, but the sensation of pain is probably not as keen as it is in mammals. It's unlikely that hooked fish would pull so hard on a fishing line if such action greatly increased its pain.

Can a fish make sounds? Some make a grunting noise by forcing air from the air bladder through their mouths. Others gnash their teeth. Fishermen in Malaya put their heads in the water and can distinguish the direction and types of fish making underwater sounds (or so they claim).

How do fish manage to support themselves at various depths so effortlessly? Submerged, fish weigh little or nothing, because the total volume of water they occupy weighs about the same as they do. Bottom dwelling species are heavier than water.

How well does a fish see? Most biologists agree that fish see clearly at close range but that their distant view is limited. Fish can tell one color from another. And they have preferences. Bass, for instance, seem to favor red or yellow lures, while northern pike often show a preference for the red and white combinations.

Are fish smart or stupid? Ask any fisherman.

#

Attention Deer Hunters

The Bureau of Wildlife Management, New Jersey Division of Fish, Game, and Shell Fisheries, is currently conducting a deer tagging program to study deer travel patterns. Many deer have been tagged with metal cattle tags in each ear. In addition, colored plastic ear streamers were used for field identification. Deer captured as fawns were tagged with small monel metal tags which were also inserted in the deer's ear. To improve management techniques, deer tags, lower jaws of tagged deer, and relative information should be recorded and sent to the New Jersey Division of Fish, Game and Shell Fisheries.

Deer tag recovery report forms may be obtained from the Division office or from the October 1970 issue of New Jersey Outdoors.

#

The Cooper's Hawk

Species:

The Cooper's Hawk
Accipiter cooperii

General Characteristics:

Similar to the goshawk, but smaller, the cooper's hawk has relatively short wings and a long tail, and is almost as large as a crow; 14-20 inches long. The adults are blue-gray with reddish breasts; the immatures are brownish with lighter streaked breasts. These hawks are usually found in the woods and field edges, seldom in the open; they flap and sail, rather than glide and soar as do the broadwing hawks.

Range:

Most of the United States and southern Canada; migrates southward somewhat. Found in New Jersey in fewer numbers each year.

Life History:

At one time, the cooper's hawk was called "one of the commonest hawks in nearly all the United States." This hawk is one of the



The cooper's hawk is almost as large as a crow. The adults are blue-gray with reddish breasts

bird hawks, killing birds as large as chickens, and is probably responsible for much of the antagonism against hawks in general.

The adults usually make a new nest each season, but sometimes adults recondition an old crow's nest or a squirrel's nest. The new nest may be 24 to 28 inches wide and 7 or 8 inches deep. The nests are usually built in an evergreen tree, and placed 20-25 feet above the ground, but occasionally much higher. It has been known to nest on the ground. The nest is made of twigs and sticks, and usually lined with bark of pines or oaks. Feathers and down are added, and egg laying begins late in April, but may be as late as early June. There are usually four or five eggs in a clutch, but occasionally three or rarely six. Incubation is shared by both sexes, and is said to take about 24 days. The young are fledged at about five weeks of age, and the juvenile plumage is retained for about a year; the second year plumage is somewhat like the adult plumage, but has more streaking; the fully adult plumage is obtained in the third year.

"The Cooper's Hawk does more damage in the poultry yard than all other hawks put together," says Bent. It also eats nearly all species of birds, such as ducks, shore birds, game birds, small birds, other hawks, and owls, as well as rabbits, opossums, squirrels, rats, mice, and in fact nearly all types of birds, mammals, and many reptiles, and even some large insects. The flight is rapid and direct, and the hawk probably surprises much of its food on the ground, although it is a swift enough flier to pursue and capture its prey.

Even though this hawk does kill game birds, because it is becoming rare, it should not be killed.



*The cooper's hawk
has a long,
rounded tail*

Care and Use of Firearms

The national safety council reports that half of the accidental firearms fatalities in 1969 occurred in the home.

Many of these accidents occur because guns are improperly stored in the home. To help reduce these accidents, the national shooting sports foundation urges all gun owners to observe these simple safety rules:

After each outing, be especially careful to see that your guns are unloaded before bringing them into the house.

Once in the home, guns should be promptly cleaned and locked in a safe place. Ammunition should be stored and locked separately and the keys to these storage areas should be carefully kept out of the reach of children.

Finally, the head of the household should teach all members of his family safe gun-handling procedure and respect for a firearm. Even if the family does not own a gun, a youngster may come across one elsewhere. Proper training in the care and use of firearms will provide the youngster with the knowledge necessary to reduce firearms accidents. #



A Good Bet

Although on the average more than 200,000 squirrels are bagged by hunters in New Jersey annually, gray squirrels continue to be our most under-utilized common game animal. With the season open till February 6 this year, squirrels are a good late season prospect

The School of Hush

The best sports are ones that give a good contest, make you smarter, and prepare you for greater things.

Horse racing meets those standards. So does squirrel hunting, and it's cheaper in the long run.

Squirrel hunting is good for you. It will peel your eye, hush your football, callous your hunkers, deepen your patience, clear your ears, ease your fretting, and give you a chance to eat two breakfasts. We've never known a squirrel hunter who wasn't strong, quiet, and durable. So is an oak fencepost, but few posts go on to greater things. Squirrel hunters can.

Squirrel hunting is the great school of hush—basic training for almost any kind of hunting that needs a keen eye and a light touch. Nothing can equal it for teaching man or boy the ABC's of woods hunting. The squirrel hunter sees the woods and its citizens at the best time of day, and they will teach him much if he shuts up and pays attention.

We've known old squirrel hunters who paid such close attention that they grew moss on their north sides, and their gun stocks sprouted suckers and took root. The loudest noise they made was when they blinked every hour or so. In a good hickory grove, when the squirrels are working, a real hunter has been known to quit breathing for three days at a time.

That's what it takes to cut game, be it squirrel, or deer. Part of the fun of a squirrel hunt is knowing that about the same things would work for a trophy buck. The only difference is the load in the shell. The same basics, and the same frame of mind, apply to both. #

Land Acquisition

During the past fiscal year a total of 1,989.863 acres was purchased under the Green Acres Program and assigned to the Division of Fish, Game, and Shell Fisheries. A breakdown of this acreage on a County basis is as follows:

County	Acres 1969-70
Atlantic	268.60
Burlington	756.78
Cape May	263.93
Cumberland	170.70
Monmouth	24.281
Morris	97.946
Ocean	407.626
Total	1,989.863 acres

fall crop of ruffed grouse and pheasants is now busy protecting the young forest growth.

There are other small tracks which finally lead to a big oak with a squirrel nest in its upper branches. A squirrel has been exploring for acorns and hickory nuts—or just exploring.

Down at the creek the beavers have built themselves a dam. At the head of the pond is their house and feed bed of aspen and birch branches. A faint mist rises from the top of the house indicating that the family is snug for the winter. Off in an adjacent marsh are several snow-covered muskrat houses, and across the ice are the tracks of a small animal. They look like mink tracks, and when followed disappear under the ice. Mr. Mink would not be above killing an unwary muskrat in the murky water below.

Upstream the bank rises rather sharply. What is this deep groove in the snow? Why it is a slide where the otter have been frolicking.

So here we have a community of wildlife. The beaver found a suitable site for a dam, plus aspen and birch for food. The muskrats located in a back water where there was a winter's supply of aquatic plants and tubers. The beaver pond furnished winter quarters for trout, minnows, and suckers; and so the otter and mink found a happy hunting ground.

Where the beaver had done their logging the ground is tramped down by rabbits; a good place for a fox to get a quick meal. In the spring a pair of black ducks may pre-empt the pond and raise a brood. Of course, some trout fishermen will curse the beaver because their special brand of conservation is affected. Like many sportsmen, they fail to appreciate the community of life.

Some distance upstream the creek seeps out of a cedar swamp, where surrounding lowlands are covered with a growth of alders, ash, and maples. Deer trails disappear into the swamp, and on climbing over down timber there is a large area tramped down like a sheep pasture; and several deer flit away through the shadows of low-hanging boughs.

Many cedar, however, are stripped of their green needles as high as one can reach. The deer have been feeding on them as well as browsing on the ash at the perimeter of the swamp.

It is now time to hang a tea pail over a little fire, and put the bacon on a stick to sizzle. The frozen bread is placed on a piece of bark below the bacon so that the fat can drip down and thaw it out. Invariably, a jay, or a chickadee will perch on nearby branches hoping to share in the lunch. They are also important in this community of life.

The trek out of the woods follows a ridge through scattered hardwoods and the deep green of pine. There is a porky-hog up a hemlock getting his evening meal. This "varmint" is hated by the foresters. He doesn't fit into their life community.

There are low, scudding clouds of late afternoon, and the sharp rattle of popple branches as night closes down, bleak, cold, and unpromising. The pace is increased to keep the blood circulating and earlaps are pulled down. The winter wilderness seems ready to strike if there is some breach of judgment, such as falling into a spring hole or losing direction. That is part of the fascination of the snow country, the potential risk.

I could by no means count the many times and the many winters that I have lived these experiences; and now I go back to live them again. I always seem to need a refresher course on the beauty and vitality of nature; on the basic truths and lessons of ecology, survival and the harsh exacting laws of nature. These are things which feelingly persuade me what I am. They make me small and insignificant. This is no flattery.

Winter is a magnificent season of the year, and its educational lessons in resource management are just as important as any other. It has a great challenge if one likes challenges, and a pair of showshoes is the proper means of travel to properly absorb all of winter's wonderland. Do this and the year of the big snow will not be wasted. #

Calling Game

The art of calling game bears some relationship to the skill of a fine chef. Some people have it, others do not. In the James Bay area of Canada, Cree Indian guides, practicing an art as old as time, call geese with no artificial aids at all. Old-time guides on Barnegat Bay can fool the wiliest brant the same way.

Today, however, it is not necessary to be a Pied Piper. Artificial calls, which are actuated by lung power, are available and, with a bit of practice, anyone can learn to use them. True success in waterfowling requires the use of a call just as much as it involves proper blinds, firearms, ammunition, and clothing. One of the true joys of the sport is found in the ability to turn a passing flight of birds with a call and bring them back towards your spread of decoys.

In recent years, some actual recordings of the sounds of ducks and geese have been made. Federal law prohibits the use of these records for hunting, but the neophyte who wants to learn how to use a mouth call can find them of vast benefit as a learning aid. And, now is the time to start practicing for next season. #

Mockernut Hickory

(*Carya tomentosa*)

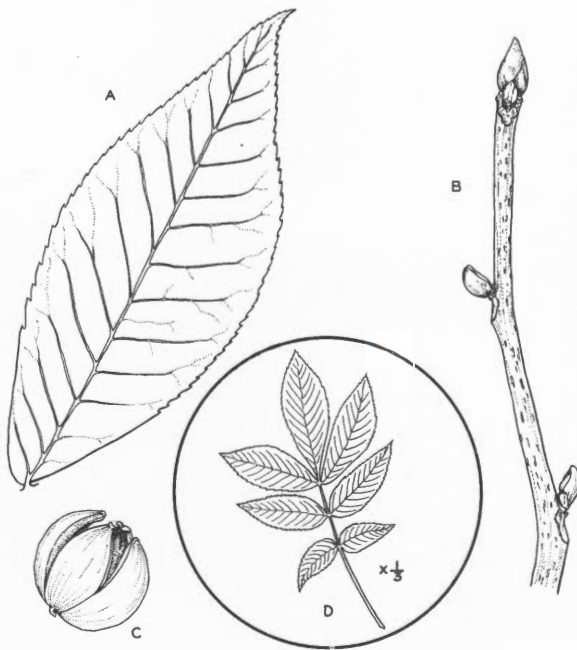
The name of this tree is derived from its tomentose or densely hairy leaflets. Sometimes it is called bullnut, white hickory, or hognut. It grows in a mixture with oaks and other hardwoods. Mockernut is capable of existing on poorer than average soils and on sites that are rather dry.

Range:

Southern New Hampshire and Massachusetts to New York, extreme southern Ontario, southern Michigan, and southeastern Iowa; south through Missouri, eastern Oklahoma, and eastern Texas; and east to northern Florida.

Leaves:

Alternate, compound, 7 to 9 sessile or nearly sessile leaflets. Leaves are 9 to 14 inches long, with the terminal leaflet being 4 to 6 inches long and 2 to 3 inches wide. Lateral leaves are smaller. (See figures A and D.) Leaves are sharply pointed at the apex and have a finely toothed margin. They are aromatic when crushed, a dark yellow



Mockernut Hickory

- A. Leaflet, single
- B. Twig, with buds
- C. Fruit, or nut
- D. Leaf, compound

green on top, and a lighter green on the bottom. They are pubescent on the bottom and have hairy, grooved leafstalks.

Twigs:

Stout; reddish to grayish brown; pubescent; and covered with pale, elongated lenticles. Terminal buds are $\frac{1}{2}$ to $\frac{3}{4}$ inch long, reddish brown, blunt pointed, and hairy. In autumn the outer scales peel off, showing the yellowish-gray, silky inner scales. Lateral buds are smaller and do not split open as early as terminal buds. (See figure B.) Bark on older trees is light to dark gray, tight, $\frac{1}{2}$ to $\frac{3}{4}$ inch thick, and rough with irregular furrows and ridges that have rounded edges.

Flowers:

Male and female flowers appear in May when leaves are about half developed. Male flowers grow in catkins, three to a cluster. They are 4 to 5 inches long and develop from the axils of the previous year's growth or from the inner scales of the terminal buds at the base of the current year's growth. From 2 to 10 female flowers appear in short spikes on new growth.

Fruit:

An egg-shaped or ball-like nut covered with a hard woody husk $\frac{1}{8}$ to $\frac{1}{4}$ inch thick. The reddish-brown, $1\frac{1}{2}$ - to 2-inch husk splits along 4 sutures to its middle or base. (See figure C.) The brownish nut inside the husk has four ribs, and the fruit is sweet.

Uses:

Ranges from 50 to 75 feet tall and 1 to 2 feet or larger in diameter. The wood is heavy, hard, and strong but not durable in the soil. It is used chiefly for tool handles, certain vehicle bodies, piling, rough lumber, fuel, and meat smoking. Also, it is in demand for certain sporting and athletic goods. #

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

The largest mockernut hickory listed by the Cooperative Extension Service for New Jersey, 8 feet and 5 inches in circumference at a point $4\frac{1}{2}$ feet from the ground, is located near the South Dennis Methodist Church, South Dennis, Cape May County.

The sweet meat of the mockernut hickory is a favorite food of gray squirrels. The squirrels eat the immature nuts in late summer and store some of the ripe ones later.

Guide to the

Mad Horse Creek Tract

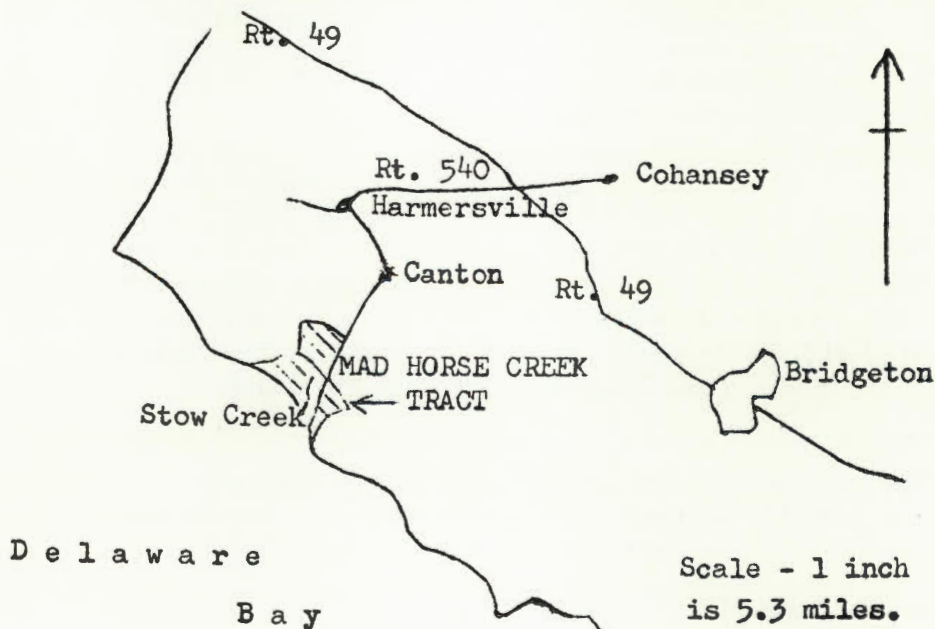
The Mad Horse Creek Fish and Wildlife Management Area is located near the town of Canton in Salem County. It comprises 5,244 acres of tidal marsh and upland. This tract is bounded on the southwest by the Delaware River, on the northwest by Fishing Creek, on the north by Buck's Ditch, Cat Gut, and Terrapin Gut, and on the east by Malepartis and Stow Creek.

This tract is primarily a waterfowl hunting area and one of the best in the state. There is a small amount of upland which supports good quail and rabbit shooting. Muskrat trapping is permitted during the open season.

Salt water fishing opportunities are very good in the streams and creeks within the tract and in the Delaware Bay, especially for striped bass and white perch.

A boat launching site is available at Mad Horse Creek which provides access to the Delaware River. This tract is maintained by the Bureau of Wildlife Management for waterfowl hunting and as a resting area for ducks during their migration.

To reach the Mad Horse Tract from the town of Bridgeton, take Route 49 about 7.4 miles west to the Cohansey-Harmersville Road (Route 540) and turn left. Proceed about 3.6 miles to Harmersville and then turn left and proceed to Canton. At the Richie Store in Canton, turn right and follow this road 2.6 miles to the entrance of the tract. #

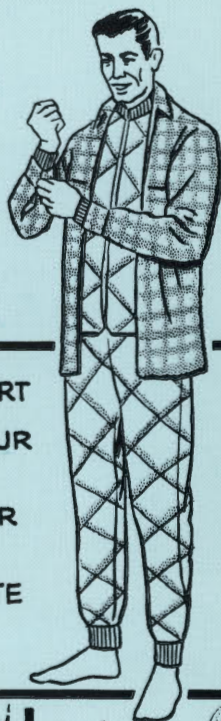


Fur, Fin ^{and} Campfire

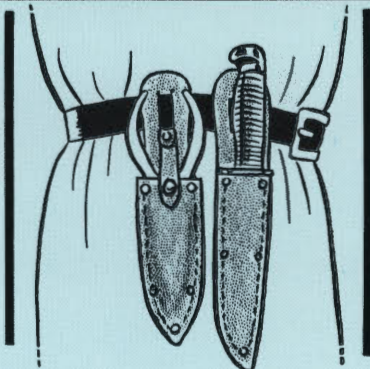
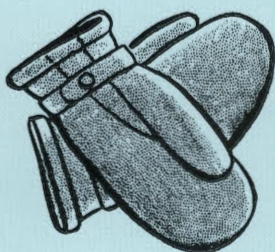
By BILL BERO

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WEAR FINGERLESS FISHING GLOVES.
A BELT AROUND THE WAIST WILL HOLD YOUR PLIERS AND KNIFE.
WEAR A GOOD CAP, WITH EAR MUFFS.
A THERMOS OF HOT COFFEE OR CHOCOLATE WILL HELP, TOO.



The ice fishing season is open this year from January 1 till February 14. Remember to buy your 1971 fishing license and obtain a compendium of the 1971 fish laws.

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