

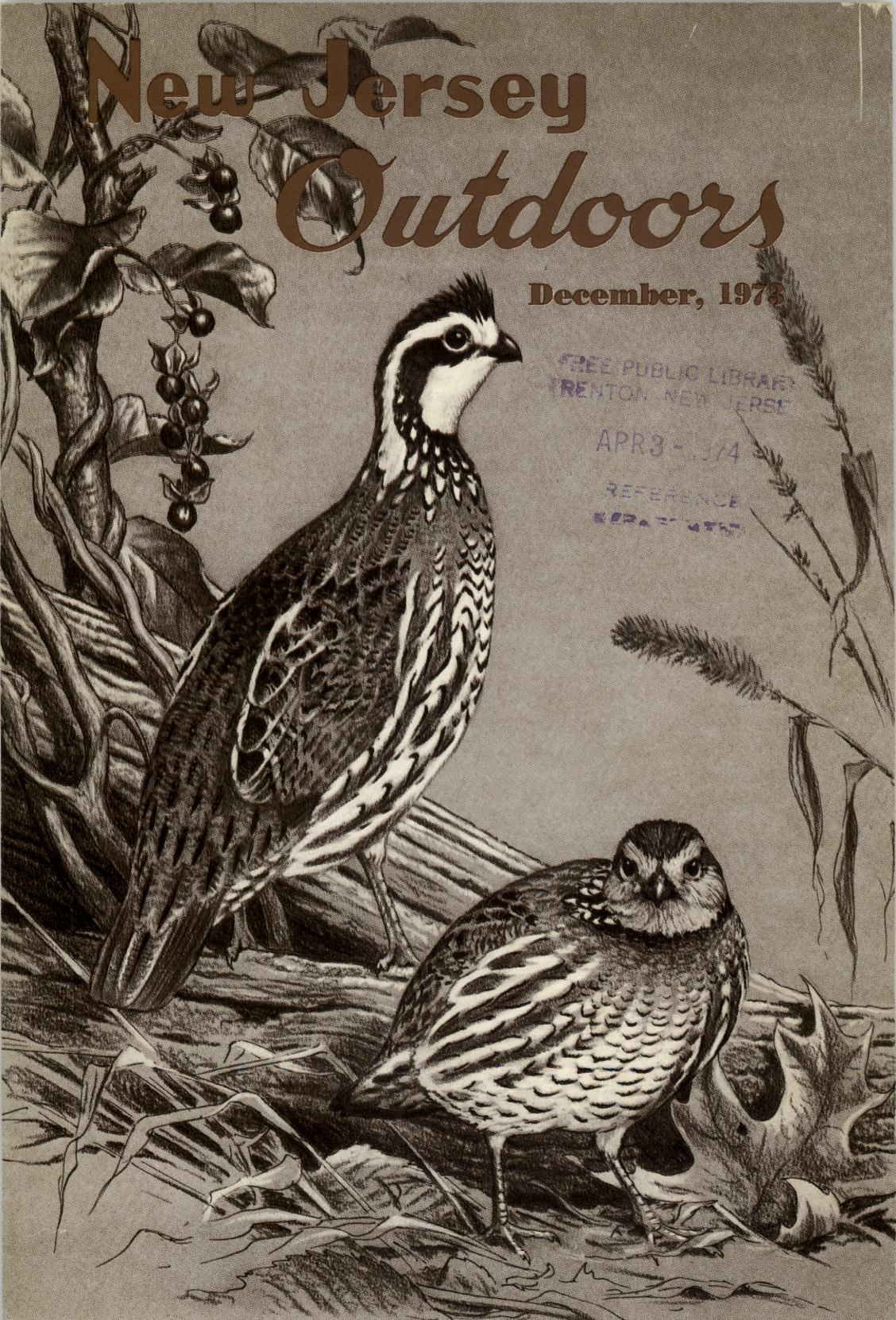
New Jersey *Outdoors*

December, 1973

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Conservationists Should Not Overlook the Old Guard

By Ernest F. Swift, Former Executive Director,
National Wildlife Federation

SIXTY YEARS AGO the professional workers in the field of conservation were a thin line of embattled crusaders. Down through the years their numbers have increased to become a formidable group with great influence on public thinking. But now from many a federal and state agency these old war horses are one by one, going out to pasture.

These early toilers in the vineyard helped plow the first furrows; they put out forest fires with their bare hands; they did the first silviculture work; they started the first tree nurseries; they ignored public ridicule and started research; they risked their lives to capture game violators at a time when law enforcement was not popular; they fought the politicians and the plunderers; they knew the fierce pride of accomplishment against overwhelming odds, and they knew the black despair of defeat.

As they pass on they are given a farewell dinner and possibly a plaque and a "Good Old Joe" handshake; and Joe passes out of the picture to do a little hunting and fishing, to dream and to watch the young sprouts take over.

Despite the fact that most of them worked for poor pay and sometimes no pay, the accumulated knowledge in those old heads is priceless.

With all the high-powered hue and cry for greater effort in conservation, who is more qualified to give community leadership than these pioneers? Conditioned by harsh realities they are for the most part a mixture of pride of accomplishment, humility, patience and vast experience. Appreciating the handicaps under which most public agencies operate, they are in a position to moderate the misunderstanding between the lay worker and the public servant. They are qualified to furnish the right type of leadership around which to build a vast army of workers, who now are sometimes confused and work at cross purposes.

There are many retired, unsung heroes willing to put their shoulders to the wheel, and most communities know who they are. I suggest the newcomers not overlook the chance to use their talents for the national good.

#

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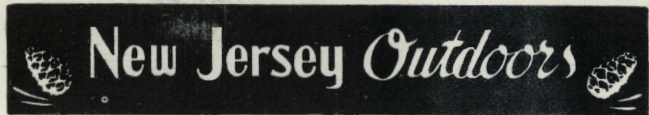
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Cover—"Bobwhite Quail"—Ned Smith

The bobwhite quail is the very essence of upland gunning for birds. The birds lie to the pointing dogs better than any other common game bird. They are strong, fast fliers that offer a great variety of shots.

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Quail

in winter

By THOMAS JOHNS

AS THE DAYS grow longer in January the sportsman has more daylight hours to spend afield. The warming rays of the sun invite the hunter to take to the open with gun and dog. One of the prime attractions for the gunner during the winter season is the quail.

The quail season this year is open all during January, in fact till February 2. During this time the outdoorsman can study the winter life of the bobwhite readily since the cover is pretty well down and open and the birds may be more easily observed. The snow offers opportunity to follow the daily movements of the coveys as the birds move about leaving tell-tale tracks. And, it is during the winter months that much valuable quail habitat improvement can be best done.

The Quail

The quail as he is known to hunters, or the bobwhite of the nature lover and bird watcher, is also

called partridge by many, especially in the south. Probably the quail's most fitting name is the full title of bobwhite quail. To dyed in the wool quail gunners the quail are simply "birds" while by scientists they are given the name *Colinus virginianus*.

The life of the quail during the entire year is both varied and interesting and is certainly worthy of a story in itself. For now we shall content ourselves with mention of some of the more interesting aspects of its winter existence.

Winter Coveys

During the cold months the quail continue the covey habits of the family group which were established during the fall. A modification of the family covey often results from gunning activities during the fall. The covey now may be comprised of not only the original cock and hen with their young but may also include individuals from other neighboring coveys broken

. . . Quail

up during the fall shooting. This "change of blood" is one of the beneficial effects of hunting the coveys.

Roosting

The birds of a covey feed together in a loose group. But, when they go to roost the covey system really exerts its most powerful influence. While roosting the mem-



Quail feed morning and evening

bers of the covey form a tight circle with their heads pointing outward and their tails pressed tightly together. This close body contact is believed to help keep the birds warm. The outward facing heads certainly help the birds see or hear threatening predators. Anyone who has ever been startled by the explosive flush of a roosting covey of quail knows why quail are commonly nicknamed "bombshells."

Foods

Of all our game birds quail are the most truly farm game birds.

The quail's love of and dependance on grains and legumes for food brings it almost surely to the farm lands. Even the wild seeds, and insects sought during the summer months, are most prevalent on farm lands rather than in the deep woods.

The bobwhite is an opportunist and will readily adopt the most available palatable food as its winter staple. In many sections of its range in New Jersey the chief winter food may be soybeans, in another corn, and in yet another ragweed seeds. Frequently coveys forced into the woods will do quite well on the mast of oaks, pine, and sweet gum.

Agricultural Changes

A generation or two ago buckwheat, when shocked or stored in barracks, was of paramount importance to quail. Many an old timer attributes the decline of quail in north Jersey to the abandonment of the growing of buckweat. Quite possibly this observation is true and another example of the effect on wildlife of a change in agricultural practices.

Cover

Winter cover is seldom a general problem in the better quail areas of New Jersey. Most such areas are in the pine belt and also have scrub oak thickets or honeysuckle. The pine trees, especially the saplings, and the ground rough provide splendid cover that holds up all winter. Oaks that retain some of their leaves through the winter and honeysuckle give excellent protec-

tion to the quail. Weed thickets, bramble growths, green briars, and brushy fence rows are desirable cover. The various components that make up the winter quail habitat provide roosting, resting, travel, feeding, and escape cover.

In areas where "clean farming" is practiced and large fields are typical, quail cover may be deficient or almost lacking and the birds will probably be practically absent. The closely grazed pastures and wire fences of dairy farms afford virtually no quail cover or food supplies.

Losses

As winter progresses the quail coveys almost invariably become smaller in number of birds as some



Quail roost in a circle

are harvested by gunners and other birds are taken by predators or succumb to the hardships of winter. Disease and accidents also account for some losses. While no one factor is in itself a serious inroad on adult quail populations, all added together become significant.

Perhaps the most important single limiting factor for our adult quail population in the winter is the weather. Yet, even this winter loss to the elements is complex, and a controversial subject among wildlife biologists. The complex includes, among others, the effects of extremely low temperatures for



They usually fly to cover

even short periods that may cause death by freezing, the influence of low temperatures that persist for long periods which may weaken the birds, and the results of deep snow or sleet that may cause starvation of the quail.

Nevertheless, even the effects of each or all of these influences may be greatly intensified or moderated by other factors—especially the general condition of the birds and the quality of the habitat. For example, during the severe weather of one winter New Jersey's loss of quail was in general astoundingly low. In most areas with abundant

. . . Quail

honeysuckle thickets quail fared quite well and mortality attributable to the weather was apparently negligible.

One noteworthy influence severe winters with heavy snows have is that they seriously curtail the sport of hunting. While winter gunning for quail on bare ground is top sport, hunting the coveys restricted and hampered by deep



Dogs that fetch are aids

snows is not the most sporting thing. For this reason many true sportsmen voluntarily forego hunting quail during periods of deep snow. (One winter the snow conditions were so adverse that the season itself was closed early. But, such extraordinary circumstances are, we trust, not likely to occur again for some time.)

Management Practices

As may be concluded from previous paragraphs, habitat and the

weather are the prime factors influencing quail populations. We can do little if anything to control the weather. However, even adverse effects of inclement weather may be markedly reduced if the habitat is approaching the optimum.

Quail as a Crop

If a given piece of land, say a farm, were being managed primarily to produce quail, remarkable results could be achieved. Wildlife managers know pretty well what the quail need and how to attain these requirements. However, most all farms are operated as business ventures that must yield the highest return to the farmer. And, money crops, not wild game, are at present the recognized ends sought. Perhaps someday, wildlife crops will be more generally accepted and appreciated as tangible products of the land.

Hunting

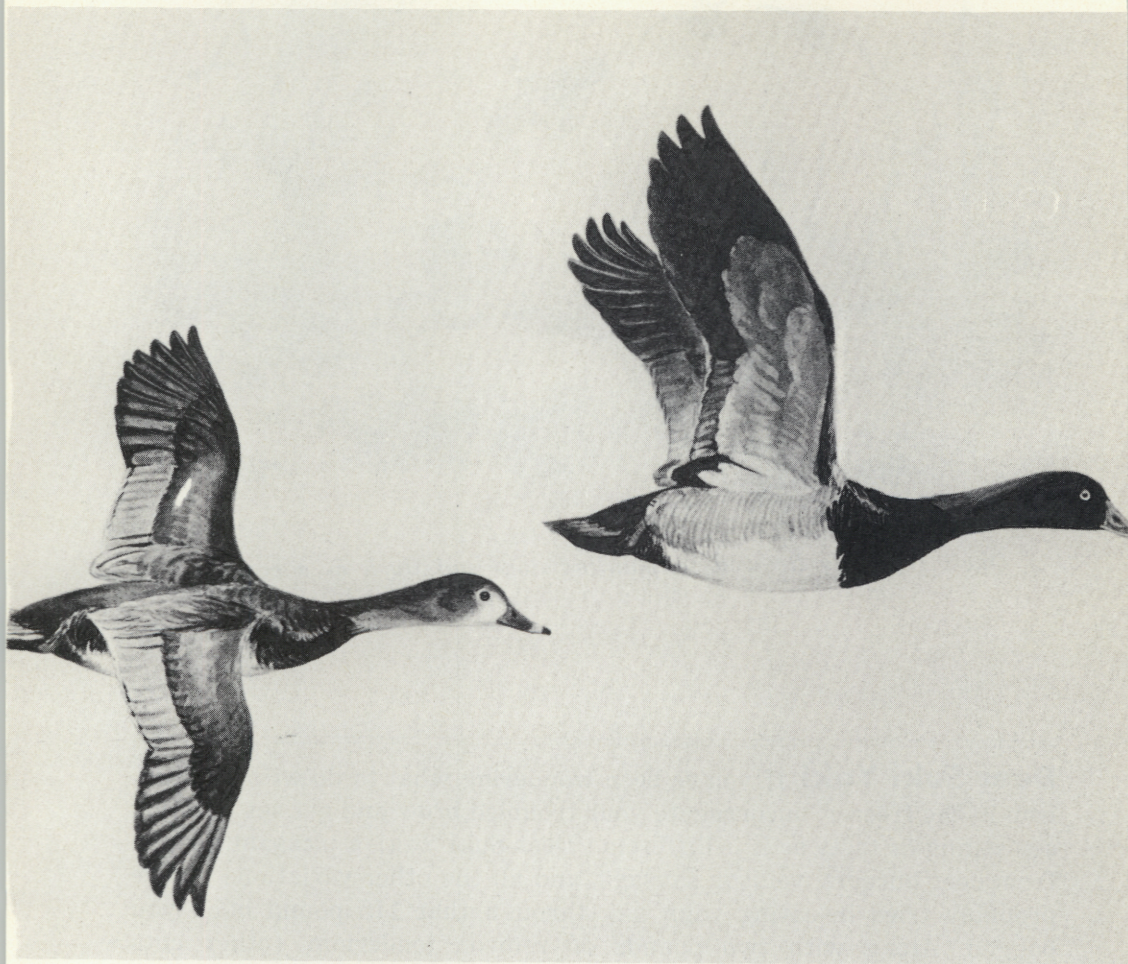
The bobwhite quail is the very essence of upland gunning for birds. The birds lie to the pointing dogs better than any other common game bird. They are strong, fast fliers that offer shots that run the gamut of easy to impossible. They are quite widely distributed in most of southern and much of central Jersey and are satisfactorily plentiful.

For a true appreciation of quail hunting a pointing dog, such as a setter, pointer, or Brittany, is a virtual necessity. And, a dog that will retrieve is an added asset. #



Quail generally lie well to pointing dogs and flush as a covey

Deer Suki Yaki If you've been wondering what to do with the venison in the freezer, uncorrugate your troubled brow and get set to enjoy something as tasty as it is different: Deer Suki Yaki, a pleasant change from deer burgers, venison sausage, and all the other variations you've probably tried in eating your way through that 175 pound buck you bagged. Along with two pounds of venison tenderloin (other cuts can be substituted), the ingredients needed are 10 mushrooms, 3 bunches of green onions, 3 stems of broccoli, 1 can of Chinese vegetables, 4 teaspoons of sugar, one-half cup of soy bean sauce and 1 can of dried noodles. Cut meat in paper thin slices about two inches square. Slice mushrooms thin. Cut onions in thin rounds. Slice broccoli in thin rounds. Render a piece of deer suet in very hot skillet. When rendered, put in vegetables. Cook several minutes. Then add tenderloin, mushrooms, sugar and soy bean sauce. Cook 10 minutes. Serve on rice and cover with onion rounds and dried noodles. #



Redhead Ducks

Our disappearing Cans and Redheads

By Art Hawkins

From Fins and Feathers

(Second of a two-part series)

Part I of this series provided evidence of the great popularity of cans and redheads, both as sporting and table birds, since the early days of American settlement. This part considers their precarious nesting grounds situation.

The glowing accounts of the great abundance of these birds recorded a century or more ago and the more recent reports of declining status were never documented numerically until after World War II. During the late 1940's and early 1950's, counting methods were devised making it possible to roughly estimate the size of can and redhead populations. For the first time, the sizes of these two bird populations could be compared with each other and with those of other duck populations.

During the same post-war period, methods which I have described in earlier issues of *Fins and Feathers* enabled management agencies to measure the annual harvest by hunters of these and other kinds of waterfowl. Banding programs were initiated on nesting, migrational, and wintering areas to determine

with great accuracy the distributional patterns of these birds and their total annual survival rates, i.e., what percentage of the population lived from one year to the next.

Detailed studies were initiated in the late forties and are continuing to increase knowledge about the habits and behavior of these popular diving ducks. It has become evident, as a result of these studies, that both species are strongly attached to the potholes and marshes of the prairies. For nesting, they don't like swamps and bogs or other conditions of the far north in which two other important diving ducks, the scaup and ringnecked duck (both of which hunters sometimes call bluebills), feel right at home.

Cans and redheads like to nest in ponds as small as one-tenth of an acre as long as they contain a fairly dense growth of cattail or bulrush in a foot or two of water. Often, these two species will nest on the same small pond but in the larger marshes, redheads are the more common nester.

Their strong preference for wet-

. . . Cans and Redheads

lands of the prairies has contributed to the declining status of cans and redheads. These same prairie ponds, so necessary for nesting, have been a primary target of farmers who consider wetlands a nuisance and-or an area that can be used to produce a crop.

Eager to help the farmer, the government has subsidized much of the drainage. The rate at which prime nesting habitat was shrinking caused conservation agencies to launch a massive campaign to save the wetlands. Sportsmen have been major contributors through their purchase of licenses, joining organizations like Ducks Unlimited, etc.

I won't dwell on wetland preservation efforts here. Suffice it to say that thousands of wetland nesting areas have been saved and new ones have been created. But, in the area where it counts most—the Canadian prairies—the loss continues and, consequently, the prime nesting range for cans and redheads continues to shrink. This is strike one on these birds.

Strike two on the nesting grounds comes with drought. The reason is easily understood if you know where these birds nest. They nest in an area where evaporation rates are high and rainfall is normally low.

Since the proper over-water nesting cover grows in water three feet deep or less and since hot

winds over the prairies may suck up that much water in a dry year, the possible effect on nesting cover is obvious.

After a winter of very light snow, like last winter, there is little or no runoff from snow melt. This means that the water in last year's cattails and bulrushes is already shallow when the birds arrive. Shallow water spells danger to the nesters. The water may retreat from the cover even while the birds set on nests, leaving the nests high and dry and exposed to such predators as skunks and foxes. These predators usually do not bother over-water nests.

Wet years are not always good production years either. Sometimes the water comes in cloudburst proportions and floods the over-water nests. Redheads are particularly susceptible to this kind of loss.

Another unfavorable wet situation follows a series of very wet years like the mid-fifties. Potholes and marshes fill to their maximum capacity and are much too deep for over-water cover to exist in the usual places. Instead, new beds of cover are established near the outer rims of the brim-full ponds.

Then, as more normal conditions return, the water leaves the high-water beds of vegetation so cans and redheads have no choice but to nest on mud flats.

In recent years, the raccoon has added to their woes by extending its range well into the prime nest-

ing area of cans and redheads. Raccoons enjoy swimming so over-water nests are well within range of their foraging activities. Add to that the remarkable intelligence of this mammal and it means bad news for these and other nesting birds.

When I first studied cans and redheads in southern Manitoba in the late forties and early fifties, raccoon had not yet arrived. In a normal year, about three out of four can and redhead nests produced a brood.

Recently, the success rate has been closer to one out of four in that area and the raccoon seems to be mainly responsible for this lowered success rate.

Farmers often make it easier for marauding predators by plowing to the water's edge or burning last year's cover. However, they are finding current prices for long-haired furs attractive enough to hunt and trap these animals on a large scale, thereby partially controlling predator numbers.

If the nesting situation as I have pictured it isn't bad enough, one more adverse factor can be added—namely, the interaction of these two species on each other. The culprits are some redhead hens which have the nasty habit of being parasitic on canvasback nests.

Occasionally, when good nesting sites are scarce, cans will lay eggs in each other's nests but this is no problem. The problem comes when aggressive redhead hens not only

deposit an egg or two in a canvasback nest but may even fight the laying can hen in the process. This may cause some eggs to roll out of the nest and be lost.

In extreme cases, it may cause the less aggressive can to desert her nest. Even when the parasitism occurs quietly, the added eggs may cause the can to quit laying before completing a normal clutch, presumably because the clutch feels like it is complete.

As a result of the parasitism, a large percentage of the can broods contain one or two redhead young. It is not too clear what proportion of the parasitic hen redheads finally establish a normal nest of their own (not all redhead hens are parasitic), but it appears likely that this sloppy way of doing business must be adverse to redheads as well as canvasbacks, another factor in their decline.

One other aspect of the nesting picture should be brought out. Here in Minnesota we have ponds that appear ideal for nesting cans and redheads, ponds that once were used for nesting but which—in recent years—are unoccupied.

The explanation seems to be that the cans and redheads once using this area no longer exist. They have been wiped out or reduced to a very low density, evidently by overshooting.

In summary, everyone interested in improving the status of cans and redheads must clearly understand the nesting situation. In

. . . Cans and Redheads

brief, it is this—the major nesting range for these two species is the small pond and shallow marsh habitat associated with the North American prairies.

Even within this prairie area, only those ponds offering over-water nesting sites, such as beds of cattail and bulrush, provide prime nesting places. Drainage continues to make serious inroads on this restricted nesting range despite multi-million dollar programs to save the wetlands.

Both drought and excessive rainfall or runoff are natural condi-

tions which periodically affect nesting success, but drainage does permanent damage. When habitat conditions are reasonably normal, nesting success for over-water nesters is high except in areas invaded by raccoons. No practical way is known to control raccoon damage, but current high fur prices may prove effective in reducing their numbers.

The parasitic habit of the red-head may reduce production success in both cans and redheads. A baffling problem is that of prime nesting habitat unoccupied for want of breeding stock, and this is a Minnesota problem. #

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. #

Oysters

in the Mullica and Tuckahoe Rivers

By Chris H. Riley,

Shell Fisheries Consultant

Photographs by Harry Grosch

There may be a great many of our readers who will be surprised to learn that both the Mullica and Tuckahoe Rivers produce oysters. Usually, when people speak of New Jersey oysters, one thinks of the largest New Jersey area, the Maurice River Cove area in the Delaware Bay.

While the production of these two rivers does not compare in volume with the Maurice River Cove industry, they are unique and important in that their physical nature permits only the taking of oysters from the so-called market beds by individuals. These market beds are worked by oystermen using only hand rakes and tongs from small boats or garveys. In the Maurice River Cove Section, over 90 percent of the oysters are gathered by larger boats using dredges.

For the better part of a half century a specific pattern for the oyster industry of the Mullica River has been followed. The seed beds in this river are small in size and hand tonging and promiscuous dredging would soon deplete them. Thus, the seed beds are worked only by one boat, which, until a few years ago, was leased by the

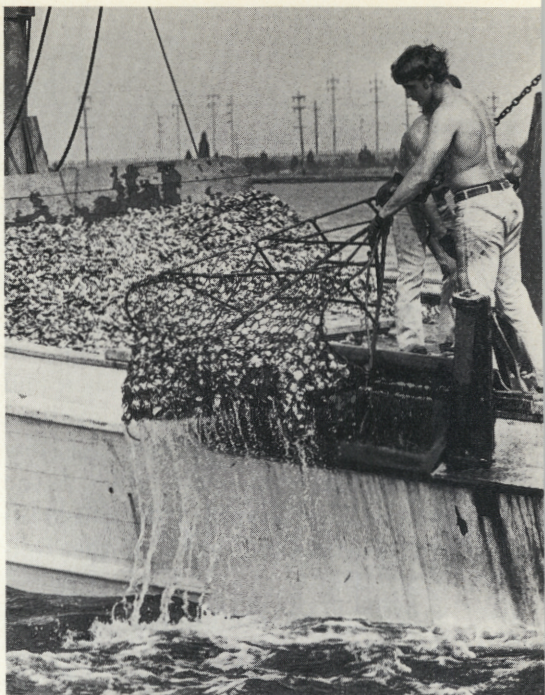
state. At that time the then Division of Shell Fisheries procured its own boat, the *Senator Sharp*. These beds, which begin just below the Parkway Bridge over the Mullica and continue upstream to the area adjacent to the mouth of Bass River, are never worked to a condition where they will not revitalize themselves.

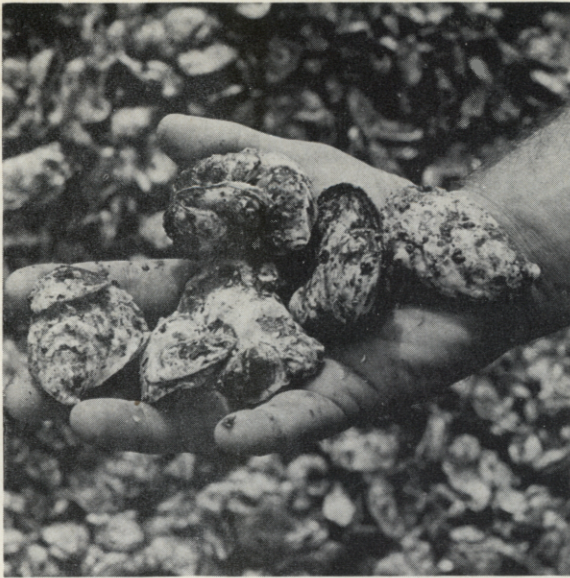
In the upper part of Great Bay, off Graveling Point, there are several small market beds in water of greater salinity than the aforementioned seed beds. Here the seed oysters from the Mullica are planted by the state where they grow more rapidly, and in a year or two have reached market size of three inches.

The seed beds do not produce enough oysters to supply all these market beds at one time, so only one or two of the market beds are planted each year with seed. They are closed until the oysters are large enough for market, while one or two of the remaining beds are opened. The beds worked that year are then planted the next season, usually in the spring. This process, if conditions are normal, assures the tongers a market season each year.

. . . Oysters

Dredging seed oysters from the Mullica River, right. Below, after dredge is dumped aboard, hands mound the dredged oysters





Size of the seed oysters

Once the boat is out in Great Bay and over the oyster beds, the seed oysters are shoveled overboard



. . . Oysters

A review of the six-year planting schedule between 1949 and 1954 shows an average planting of 15,700 bushels. In the past year 17,500 bushels were transplanted to the Fitney Bit Bed.

The existing statutes allow these tongers to take market oysters in the following four months of the year: October, November, April, and May.

For oyster production a suitable bottom must be found and kept since oyster larvae will cling only to something clean. Therefore, the Division must constantly replenish the bottom with oyster shells since they have been found to be the most suitable for this purpose.

On the Tuckahoe River, we find an entirely different picture in that

there are no distinct seed or market beds. When the area is opened, oysters are taken wherever they are found.

The Tuckahoe has produced very few oysters in the past decade or so and efforts are now being made to restore it. Shells are being planted to serve as cultch or a bottom on which seed oyster spat may catch. Also, oysters have been brought in from other areas to serve as spawners. In June of this year, 1,400 bushels of seed oysters were planted here that had been taken from the Mullica River.

During a three-year period 36,500 bushels of oyster shells were planted in the Tuckahoe River. There are encouraging signs that this river will again come back to production, and the shellfish management program will continue its efforts toward that end. #

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... the end of living and beginning of survival

"The Great Chief in Washington sends word that he wishes to buy our land. How can you buy or sell the sky—the warmth of the land? The idea is strange to us. Yet we do not own the freshness of the air or the sparkle of the water. How can you buy them from us? Every part of this earth is sacred to my people. Every shiny pine needle, every sandy shore, every mist in the dark woods, every clearing and humming insect is holy in the memory and experience of my people.

"We know that white man does not understand our ways. One portion of the land is the same to him as the next, for he is a stranger who comes in the night and takes from the land whatever he needs. The earth is not his brother but his enemy, and when he has conquered it he moves on. He leaves his father's graves, and his children's birth-right is forgotten.

"There is no quiet place in the white man's cities. No place to hear the leaves of spring or the rustle of insect wings. But perhaps because I am savage and do not understand—the clatter only seems to insult the ears. And what is there to life if a man cannot hear the lovely cry of the whippoorwill or the arguments of the frog around the pond at night.

"The whites too, shall pass—perhaps sooner than other tribes. Continue to contaminate your bed and you will one night suffocate in your own waste. When the buffalo are all slaughtered, the wild horses all tamed, the secret corners of the forest heavy with the scent of many men, and the view of the ripe hills blotted by talking wires. Where is the thicket? Gone. Where is the eagle? Gone. And what is it to say goodbye to the swift and the hunt, the end of living and beginning of survival."

Chief Sealth of the Duwanish Tribe in Washington wrote these words in a letter sent to President Franklin Pierce in 1855.



TIP UP

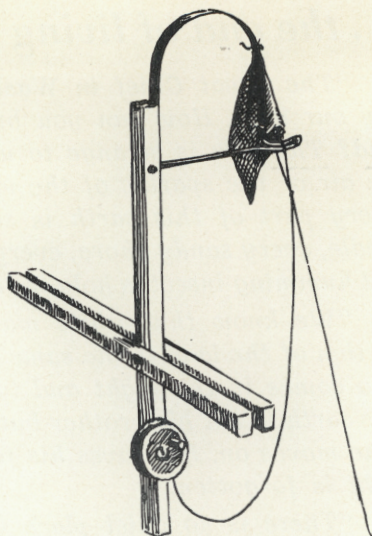
basic ice fishing tips

By ERNEST A. ROBERTS

WHEN THE CRY of "tip up" resounds happily over the frozen lakes of New Jersey during January, excitement runs high. The electrifying sensation of seeing the red flag of a tip-up snap up has a thrill all its own.

When a bluegill taking a cricket yanks a bobber down, when a trout rising to a fly swirls the water, or when a bass walloping a plug explodes the silence, most anglers experience chills—if its on their line. But, when a pickerel grabbing a minnow bait sets the red flag to vibrating, all ice fishermen snap to attention. The spontaneous cry rings out no matter whose flag is waving. Each man's bite is everyman's bite.

At any rate the very nature of the sport—its esprit de corps and carefree openness—keeps the old timers' interest and invites new-

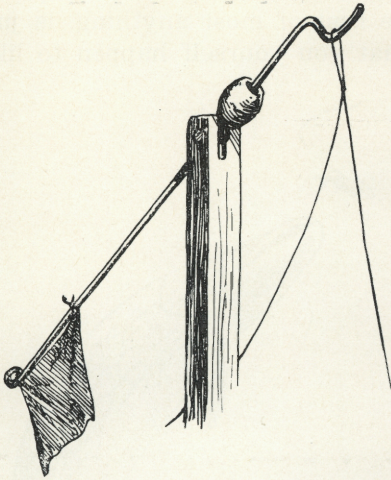


comers. And, the old timer's take great pride in telling the tyros what to use. The information concerning ice chisels, clothing, hooks, lines, and most other gear is surprisingly uniform.

But, the advice about tip-ups themselves and bait really snows most beginners. Every veteran seems to have drastically different, and frequently vehemently expressed, ideas on these items of ice fishing. For this reason as an ice fisherman of 35-years experimenting—and a fool to give advice—I hereby make this offering.

Tip-ups may be acquired in several ways. First, they may be purchased ready-made. Store purchased rigs are usually time-tested and perfectly serviceable. For the man who has not too much time, or is not handy with even simple tools, such contraptions are all well and good and do serve the purpose.

. . . Tip Up



Another style of tip-up

would be difficult not to miss bites. For this purpose the familiar little red flag is employed.

Although the flag itself is remarkably uniform the method of its activation and display is far from standard. All kinds of staffs, rods, springs, and gadgets are utilized. Tension, gravity, and what not are used to raise the flag.

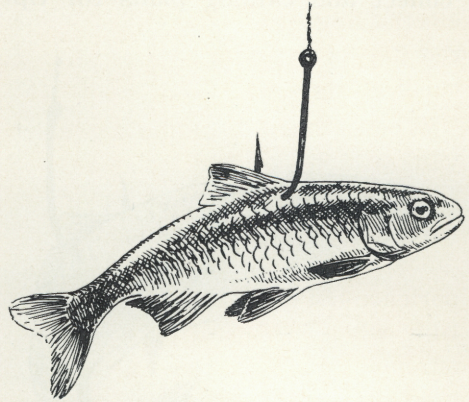
Triggers to release the flag at the right moment are to be found in numbers and varieties to put Rube Goldberg to shame. The flag raising system should be unfailing—in that it is non-freezing and balanced to release when a fish hits yet not respond to the breeze or the actions of the bait.

Between bites the tip-up is expected to hold the bait at the desired depth. Thus the line should be retained with enough tension to

keep the bait fish from pulling out additional line once the fishing depth is set. Yet, the line should run out freely as soon as a pickerel does take the bait. To meet this need the line may be knotted into a loop that is slipped over a triggered keeper, held by tension (such as a clip clothes pin), or retained by a reel drag. The line release is usually tied in with the flag mechanism.

Chief bugaboo of keeping a free running line is freezing of the line. To prevent freezing the reel may be mounted on the tip-up so that it is underwater when set. Or, the line spool may be a simple wooden one without intricate parts that operates despite icing-up.

Once again this little discussion merely covers a few ideas on the



Red fins are also good

essential needs that tip-ups should meet. I have not even attempted to offer definite plans because you will only change them anyway and use your own ideas—which is as it should be. And, furthermore, even if I presented a hundred plans, an

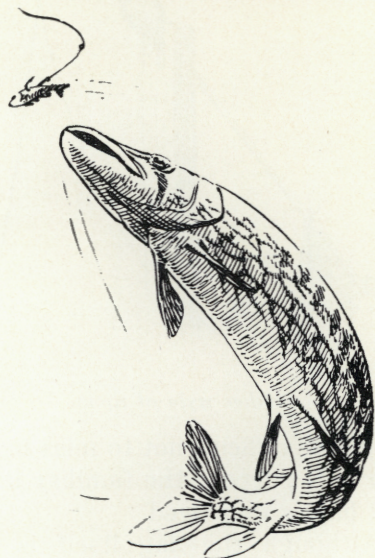
If you are lucky you can have a set of tip-ups willed to you, find a bunch in the attic, win them at the club meeting, or receive some for Christmas. But, how many of us are that lucky.

The usual, and most enjoyable and satisfying way to gain ownership of the ultimate in tip-ups is to construct your own. All you need is a spark of ambition, basic tools, suitable wood, fasteners, and imagination. In fact, rampant imaginations seem to be a part and parcel of tip-up manufacture. Standard plans for tip-ups are to be found in staggering numbers and endless variety. The beginner will usually be overwhelmed with the many types of tip-ups in use and non-use.

Back in the thirties I started to collect and catalog plans for tip-

with no end of varieties in sight when the war interrupted my great investigation.

At any rate, I have come to the conclusion that the best tip-up, like the best of most anything, is just what you yourself happen to like.

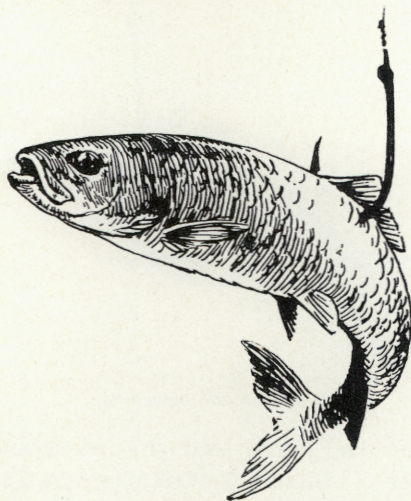


Pickerel are favored fish

Perhaps this is the real reason why there are so many kinds of tip-ups to be seen on our lakes. And, it is also likely the reason why most ice fishermen end up making their own outfits.

The design of a tip-up should be dictated by what is expected of it. Tip-ups perform several functions.

Primarily, the tip-up signals the fisherman when a fish has taken the bait. This "call to arms" is important in ice fishing since, unlike in ordinary fishing with a single rod and line, more than one tip-up is used usually. Therefore, without a conspicuous signal it



Herring are excellent bait

ups. Quite quickly I amassed how-to-do information on over a hundred different styles of tip-ups

army of veteran and neophyte ice fishermen would descend upon me for omitting a hundred other favorite designs.

The other item of ice fishing that often perplexes the newcomer is trying to select the kind of bait to use. Since most tip-up fishing is

fied. If the fish is hardy, lively, and shiny I feel more confident of success. Any common minnow, golden shiners, and dace are good. Small suckers are fine—if you take care not to use them in waters reclaimed by the Division of Fish and Game. My number one choice for



Catching pickerel through the ice offers lively winter sport

with pickerel in mind, some kind of live fish is almost always used for bait. Although most ice fishermen have pretty emphatic beliefs as to the kind of fish to use for bait, I honestly believe that any fish small enough for the pickerel to mouth and swallow makes usable bait. I have used with luck salt water killies, young sun fish, and even yellow perch fingerlings.

As long as the bait fish is from two to four inches long, I am satis-

bait, however, are land-locked herring, or minnies, when I can obtain them.

With these basic thoughts in mind a beginner at ice fishing can "break the ice" and at least get started in this, in my opinion, the greatest of winter sports. After one trip on the ice even the most retiring person is almost sure to come forth with his own strong convictions concerning tip ups and bait. #

States Invest \$315 Million Annually In Fish And Wildlife Management

A comprehensive survey of state fish and wildlife agencies just released by the Wildlife Management Institute shows that more than \$315 million is invested annually in managing the nation's fish and wildlife resources at the state level. The funds support research, management, land and water acquisition, protection, and other programs conducted by about 5,400 biologists and technicians, 5,800 conservation law enforcement officers, and nearly 7,000 clerical and support personnel.

The survey was conducted to detail the amount of money each state is investing in fish and wildlife protection and management; to list all sources of funding, state by state; and to give individual state agencies ideas for adequate program financing. Most states are hard-pressed to fulfill their fish and wildlife needs because of limited funds and rising costs.

According to the report, one year's hunting and fishing license revenues collected from 55 million hunters and fishermen account for about 62 percent of the states' total budgets. Federal aid for fish and wildlife amount to 15 percent, other federal aid 5 percent, agency lands and investments 6 percent, general fund appropriations 4 percent, earmarked state taxes and commercial revenues 1 percent each, and miscellaneous 6 percent.

Funding for federal aid fish and wildlife programs is derived from manufacturers' excise taxes paid by outdoorsmen on certain sporting equipment. That, added to license revenues increases specific sportsmen contributions to 77 percent of the total state investment in the protection and perpetuation of fish and wildlife.

The report reveals that state fish and wildlife agencies also provide broad public services for which they receive little or no compensation from most of the people served. Increasingly, agencies are being given responsibilities for such services as boat safety regulation and litter law enforcement. They have purchased and, at considerable costs, are managing millions of acres of lands and waters that provide general public recreational benefits, such as camping and boating, for which no use fees are received.

The survey report says that many wildlife agencies are attempting to initiate or expand nongame wildlife programs, but they have been largely unsuccessful in getting public funds for that purpose. The most equitable method for supplementing the traditional license revenue

source, WMI suggests, is through general fund appropriations. Efforts to get such funds, however, have been rebuffed by several legislatures and governors in the recent past, not so much on a lack of merit, but because competition for state funds is severe.

Potential sources of funds for state fish and wildlife agencies are identified in the report. They include increases in certain license and permit fees, additional federal aid through expanding excise taxes to include more kinds of outdoor sporting equipment, user fees for all recreationists on state fish and wildlife areas, volunteer stamps for sale to the non-hunting public to help finance nongame wildlife programs, revenue bonds, general obligation bonds, general fund appropriations, and state taxes on beverages or some other items of outdoor equipment.

WMI spokesmen said they are hopeful that the survey will help states obtain more adequate and equitable funding to manage all fish and wildlife. #

BUREAUCRACY AUF DEUTSCH . . . Sportsmen around the nation have for years complained that Federal, State and local hunting regulations are becoming far too complicated and restrictive. However, a recent news item would seem to indicate that American hunters have little to moan about after all. It reports that in Germany a Bavarian hunter must be at least 18 years old before he can plunk down \$12 for a license. He must also pass a six-month course covering hunting laws, customs and game management; must carry at least \$70,000 in personal and property liability insurance; and in order to go afield, must hire a qualified guide and get written permission from the landowner. *Weidmann heil!*

A SPORTSMAN, BY ANY OTHER NAME . . . A peek in the dictionary, and we turn up hunter, huntsman (huntress), shooter, and from the Bible, Nimrod. A quick glance at the world around us, and we find:

Sportif	French
Jaeger	German
Oilathlos (Filathlos)	Greek
Paani Kane (pa-ah-nee kah-nay)	Hawaiian
Shikari	Indian
Cacciatore	Italian
Venator	Latin
Jeger	Norwegian
Mysliwy	Polish
Okhotnik	Russian
Deportista, or Cazador	Spanish

Gun Owner's Creed

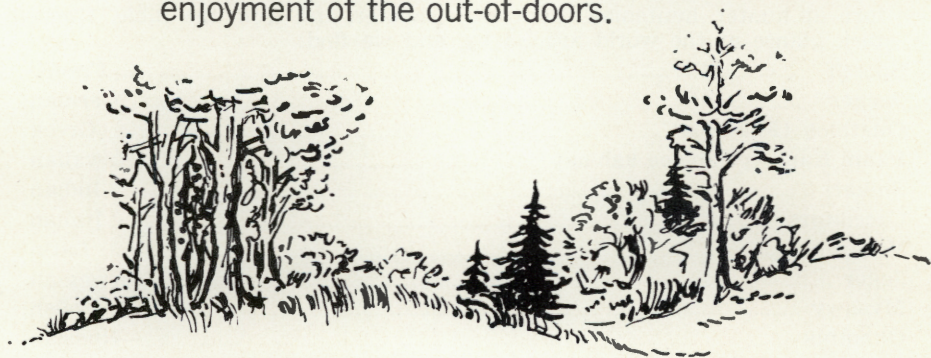
I accept the responsibilities that go with owning a gun and pledge myself to know and obey the laws governing the ownership and use of firearms;

I recognize that my gun manners reflect on all gun owners and I pledge to handle my firearms safely and courteously;

I respect the rights of others to enjoy the outdoors in their own way and I will be considerate of private and public property;

I will work to preserve from waste the wildlife and other natural resources of our country and for their wise use and enjoyment by all Americans;

I will walk with pride in the path of those before me who have helped to create and preserve our great national heritage, and will help to teach others an appreciation of nature and an enjoyment of the out-of-doors.



Estuarine Inventory

By John McClain

Bureau of Fisheries Management

An inventory of the major estuarine systems of New Jersey was initiated in 1968. Its purpose is to gather basic information concerning our estuaries. We want to know what species of fish inhabit them and the physical and chemical conditions under which they live; also, what uses man is making of the estuaries and their inhabitants both fish and wildlife. This basic information will enable us to determine the effects future modifications have on the estuary. Until now most of our information has been gathered after the fact.

The project is divided into three phases: (I) Fish study; (II) Chemical - physical study; and, (III) Use study.

In phase I, fish are collected at fixed stations throughout the estuary with trawl and seine nets. Larvae are collected in plankton nets. The fish are identified, counted, measured and weighed.

Phase II - Water samples are taken at fixed stations and analyzed at the laboratory. Some of the parameters recorded are temperature, salinity, dissolved oxygen, pH, carbon dioxide, phosphorous, and nitrogen. Fish samples are frozen for later pesticide analysis.

The physical parameters of the estuary are mapped.

Phase III - Aerial surveys of the estuary are made to determine the various activities and the number of people engaging in each. Creel censuses of bank and boat fishermen and waterfowl hunters are made.

As an example, the Mullica River-Great Bay Estuary was inventoried. Over 60 species of fish were found in the estuary. Young of most of the sought after salt water species were taken including bluefish, cunner, fluke, kingfish, striped bass, tautog, weakfish, and white perch. Species of interest to the freshwater angler included black crappie, bluegill, bullhead, pickerel, sunfish, white catfish, and yellow perch.

Mature specimens of these and other species were also common in the estuary as is seen from the estimate of over one million fish caught in 92,000 man-days of angling.

Other uses of the estuary include pleasure boating, bathing, shellfishing, birdwatching, crabbing, and waterfowl hunting. The estimated total usage of this estuarine system during the project year was 129,000 man-days. #

American Holly

(*Ilex opaca*)

American holly grows best on moist bottom lands but will persist on dry sites. It is very tolerant of shade and can compete successfully with other bottom land hardwoods.

Range:

The coastal plain and lower piedmont from Massachusetts to central Florida and west along the gulf to eastern Texas. This tree has been planted widely inland with limits being determined by winter temperatures.

Leaves:

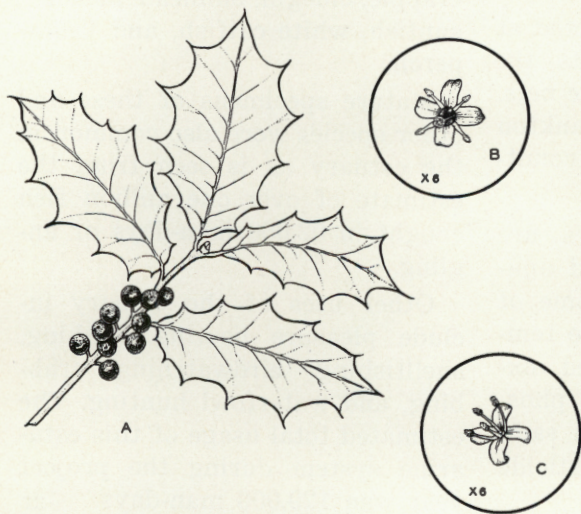
The tree is an evergreen. Its leaves are persistent, alternate, simple, smooth, shiny, dark green, and thick, with a wavy margin and spiny teeth. They range in size from 1½ to 3 inches in length. They have a short stout petiole. (See figure A.)

Twigs:

Slender, smooth, and light brown with a pointed terminal bud and small blunt lateral buds. Cuttings for propagation are made from young twigs. Bark on young trees is light to dark gray and smooth, becoming slightly rough as the tree grows older.

Flowers:

White or greenish flowers appear in the spring. Male and female flowers are borne on different trees, with an occasional exception.



American Holly

A. Leaves and fruit

B. Flower

C. Flower

Male flowers usually grow 7 to 9 to the stalk, whereas female flowers grow singly. (See figures C and B.)

Fruit:

A red drupe about one-fourth inch in diameter. (See figure A.) It contains 2 to 9 bony, one-seeded, flattened nutlets. The fruit often remains on the tree late into the winter.

Uses:

A medium tree reaching 50 feet in height and 1 to 2 feet in diameter. The tree is valuable for ornamental planting. Its branches are prized for holiday decorations. The berries serve as food for wild-life, and the wood is used for turning purposes. #

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

First Commission Authorization

This Act for the appointment of Commissioners for the better protection of the fishing interests of the State of New Jersey was approved March 17, 1870.

Whereas, both the marine and inland fisheries of this state are known to have deteriorated, and thus a vast amount of food supply for the people has been greatly reduced by causes which seem to be under the control of the Legislature, and that the present yield of fish, both from the salt and fresh waters, might be largely increased by proper measures of protection, therefore,

Section 1. *Be it enacted* by the Senate and General Assembly of the State of New Jersey, that the Governor of this State be authorized within fifteen days after the passage of this Act, to appoint two competent persons, whose duty it shall be to inspect the bay and river fisheries of this State and report upon the same, suggesting such legislation as may be most conducive to their protection and improvement.

Section 2. *And be it enacted*, That they shall continue in commission from the passage of this Act until otherwise ordered.

Section 3. *And be it enacted*, That this Act shall take effect immediately.

Round Valley Reservoir Boat Launching Ramp

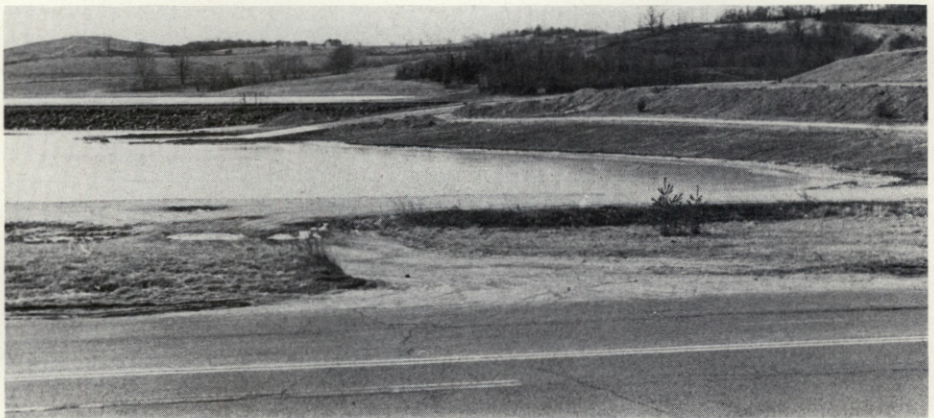
By A. Bruce Pyle, *Assistant Chief*
Bureau of Fisheries Management

The Division of Fish, Game, and Shell Fisheries has been concerned with the situation in regard to boat launching at Round Valley Reservoir for some time. Originally the launching site was on the west end of the reservoir, and more recently it was moved to the northwesterly "corner" near the permanent recreational pool. The first site was inundated by the rising reservoir and the second was prone to erosion.

As a result the Division initiated a project to construct a concrete ramp and paved parking facilities. The project is at the site of the most recently used launching area. The undertaking is financed to the extent of 75 percent by federal-aid-to-fisheries (Dingell-Johnson) funds that are derived from a federal excise tax on fishing tackle. Anglers and Hunters license money comprise the remaining 25 percent.

The accompanying picture illustrates the status of the ramp during construction. The reason for the 60 feet of ramp width is to provide for the simultaneous multiple launching of boats and to allow for vehicles to completely turn around on it. The latter aspect will become increasingly important as the reservoir level decreases, and eventually it is to be used for water supply. It is expected that future reduced water levels will necessitate that the ramp be extended, and this has been planned for.

Parking for 35 boats and trailers will be provided for in the paved area with supplemental parking available in an adjacent unpaved area. #



The Round Valley Reservoir boat launching ramp

Borders for Wildlife

One of the fundamental rules of game management is that wildlife is a product of borders and edges. Whether or not they have ever consciously thought about it, hunters recognize this picture every time they go afield in search of upland game. If you don't believe this, just watch how a savvy bird dog works. He doesn't waste much time on big open fields. Rather, he checks the hedges, brushpiles, and woodland borders.

It's really not hard to figure out why game favors these areas. All the things they find necessary for existence are located there. Sure they'll go out into the middle of a newly picked grain field to eat because it offers plenty of food, and they may like dense woods because of the protection they offer. But edges and borders give the advantage of both habitats and given their druthers, that's where most critters like to live.

Of course this fact of wildlife is also why small patch farms are more productive of game than some of the big consolidated operations. All too often, the big operators farm 'clean' and don't leave sufficient brushy borders to provide necessary food and cover for game. Such practices are really not necessary, however, since the clean fence lines don't really produce much in the way of crops. With a little cover, however, they can be home to many wild creatures including both song and game birds.

One of the main thrusts of modern game management is to try to convince people to increase and improve the edge areas on agricultural land. In large areas of open fields, this might call for fence row plantings of shrubs and trees to add cover. In big timber stands, it could mean creating openings where food producing shrubs and grasses could be planted. Obviously the formula will differ depending on the types of country and game involved. However, regardless of the area, giving wildlife an edge to live in will help give them an edge in numbers.

Brown trout were first stocked by the State in 1908 on an experimental basis, which proved successful and such stocking has been continued since 1910.

The first resident hunting license went into effect on July 4, 1909. A non-resident license had been in force for several years prior. The Division of Fish and Game became entirely self-sustaining in 1911.

Make Them Count

By Clark Webster, *Manager of Wildlife Management,*
Remington Arms Company, Inc.

One good way in which to enjoy the shooting season to the highest degree is to try to make every shot count.

This business of blasting away in the general direction of flying game in the hope that some of the shot will connect just doesn't pay off in the game bag. More important, it's apt to result in crippled game which will eventually die—and no sportsman can condone this.

The hunter who takes his time and makes sure that he is on his target and that it is in range before he presses the trigger is the fellow who will get his limit and serve the cause of conservation. Sure, game birds fly fast, but shot travels fast, too. And if the shooter does not crowd his shots, he'll find that he usually has plenty of time to point his gun properly before the game has passed beyond the effective range.

Most upland game birds will fly at the rate of about 40 miles per hour, some a bit slower and some a little faster. This depends on the species and whether or not the individual bird has attained full flight speed. Most shooting chances are rather tricky, particularly in heavy cover. Practically none are the same. But the average shot is only about 20 yards and a standard

Remington load of 1- $\frac{1}{8}$ ounces of #7 $\frac{1}{2}$ shot is traveling at the rate of about 600 miles-per-hour when about 20 yards from the gun.

When a game bird flushes, you do at least four things. Probably several other things happen, too, but these four are the most important. First, you estimate the range as best you can. Then you shift your feet into as comfortable a shooting position as possible, mount your gun and swing ahead of the target and, lastly, pull the trigger and, if you are shooting properly, follow through.

This sounds like a lot of time has been consumed before the shot is fired, but it isn't so much after all. Ballistics engineers have figured that you consume about one-fifth of a second in 'getting set.' Your bird, in this time, has flown about 18 feet. He'll fly another 18 feet while you're pulling the trigger. On the basis of an average shot charge velocity of 900 feet per second over your original range of 20 yards, the shot charge will require approximately one-fifteenth of a second to reach the crossing point with the path of the bird. In that time he will have flown an additional six feet, or a total of 60 feet from the time you saw him until your shot reaches him. #

Outdoor Picture Taking Hints

Lift the fish . . . now smile . . . hold it . . . Click!—and another picture is recorded for the family album. But was it really what you wanted to show, or will it look like all the other fish-holding photographs you've seen?

Chances are that unless some thought was given to composing the picture before the shutter was released, you're not going to capture the scene as you experienced it.

Photographing your family's fishing, boating, and other outdoor fun can be a rewarding hobby. And, almost any camera is suitable for general outdoor photography. In fact, knowing how to compose a scene is more important than having a lot of sophisticated equipment.

Consider the fish holding scene, for example. Why not show the fish being netted from a boat? Capture the action as the net is lifted—being sure to include the fisherman, of course. It's more interesting than a static picture where the subject holds a dead fish in front of him and stares straight into the camera. Or, have the angler grasp the fish by the lower jaw, raise it to eye level, looking at the fish and smiling. Then he can look at the camera and smile again for another interesting shot!

Want photos of the youngsters running the boat? Simply move in close on one side while he's at the wheel. Have the subject hold his head erect and look straight ahead. A girl should let her hair down so that it streams back in the breeze. Frame the picture so that it shows the subject, the wheel, part of the windshield, and some water. That's all you need to make the scene complete.

To add interest to a boating scene, shoot into the sun catching sparkles of light on the water and silhouetting your subject in the foreground.

When taking photographs of people in action you should move in close, fill the frame, and make your subject feel at ease. If you are not satisfied with the first effort, try the same pose again. After all, you want action and interest, not dead pan shots. #

New Jersey's Earliest Wardens

Few sportsmen may realize that our Division of Fish and Game first had its inception as a commission to supervise and control the food fishes of our waters. Its earliest wardens were fish wardens primarily concerned with marine fishes along our coast and rivers.

Hamburg Mountain Area

Sussex County

The Hamburg Mountain tract, located in Hardyston and Vernon Townships of Sussex County, is one of the most under-utilized of all the wildlife management areas.

Acquisitions began in July, 1940, and today this area totals over 3,636 acres. This area is being managed primarily for upland game and deer. The area is heavily forested and very mountainous. Because of this, access to the area is limited. Parking is limited due to the rough topography of the area.

The tract is administered from the office on the Flatbrook-Roy Wildlife Management Area.

Deer

This area is natural deer range and contains a large herd of deer. It is an excellent area for bow and shotgun hunters.

Upland Game

Because of the management employed, there is excellent rabbit, squirrel, and grouse hunting. This area has excellent grouse habitat. Hunting opportunities are very good as the area is not heavily utilized.

Ski Area

The area adjacent to the tract is becoming well known for its ski resorts. The two ski areas, Vernon Valley and Great Gorge, lease and utilize a small portion of the tract for their primary slopes.

Recreation

The area is being maintained and supported by the license money of the sportsmen of the state. The Division of Fish, Game, and Shell Fisheries welcomes all citizens to make use of the area for wildlife-oriented recreational activities such as bird watching, hiking, and photography. #

Initial Hunting License

All persons, adult or juvenile, applying for a Firearm Hunting License or a Bow and Arrow Hunting License must present to the issuing agent a previous year's license or a certificate showing that the applicant has satisfactorily completed the course in firearm safety or bow and arrow safety and proficiency, as the case may be, which shall be signed by an agent of the Division designated for the purpose. #

HAMBURG MOUNTAIN

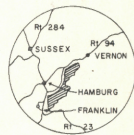
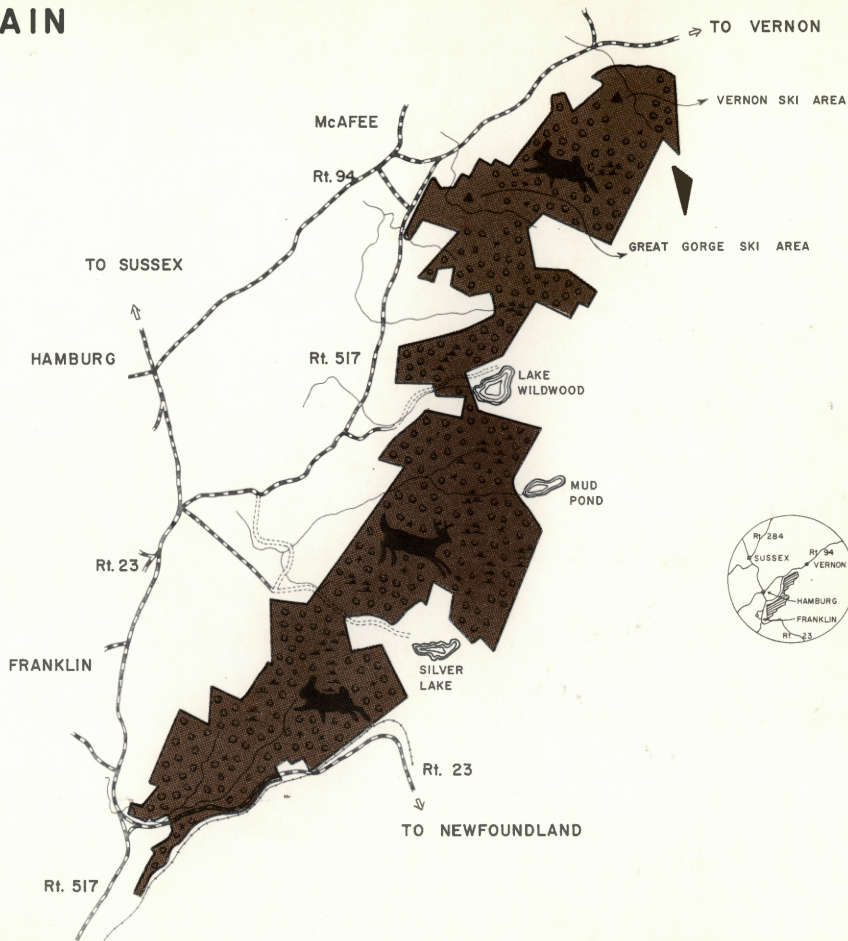
WILDLIFE MANAGEMENT AREA

SCALE:  MILE

Sussex County

SYMBOLS

ROAD (IMPROVED)
ROAD (UNIMPROVED)
TRACT BOUNDARY
FRESH MARSH
STREAM
LAKE
WOODLAND





**Division of Fish, Game, and
Shell Fisheries**

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