

# New Jersey

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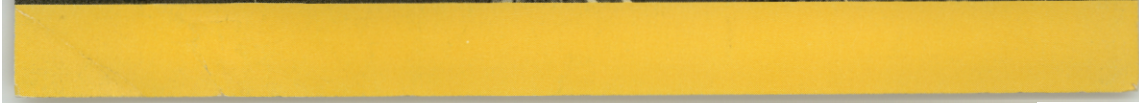
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# Outdoors

January, 1972



# Wildlife Conservation

By Joseph P. Richkus

*Sportsman and Conservationist*

In the past, wildlife conservation was something that too few knew the meaning of and still fewer people practiced. It is heartening indeed to know that more and more people are becoming conservation minded. Why? Because we have come to realize that to take all and replace nothing will eventually leave us with nothing. So today, we enjoy hunting and fishing governed by rules and regulations to utilize a resource and insure a breeding stock for tomorrow, not only for ourselves but also for our children and their children.

In pioneer days certain fish and game species were relatively abundant. The land had been only sparsely settled by Indians and their methods of taking fish and game, though crude, were efficient enough to provide them with their daily needs. For the most part the Indian was a true conservationist and took only what he needed.

From early Colonial times, history tells us, New Jersey was a natural hunting and fishing paradise. However, by the beginning of the 19th century most of the larger game animals had disappeared or were scarce. One hundred years later only remnants of the white-tailed deer remained. Fishing declined because of man's misuse of streams and lakes.

Conservation and protective laws came into being around the turn of the 20th century, enabling generations once again to enjoy these sports. Now it is our responsibility to maintain these sports for future generations.

Sportsmen have always been interested in wildlife and, by providing funds through license fees, have contributed not only to maintaining, but also to increasing, certain wildlife species.

Today we face the situation where each year the licensed sportsmen increase in number while the lands and waters available for hunting and fishing decrease. The draining of marsh lands, changes in land use, and changing agricultural practices, along with littering and property destruction by certain people, have contributed to the decline in areas available to the hunter and fisherman.

Birds and wildlife rely on many forms of vegetation for food and cover, and as homes for breeding and nesting. But as areas are destroyed,

*Continued on page 13*

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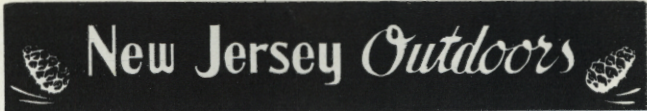
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*Cover — "Golden-crowned Kinglets"  
National Wildlife Federation*

Golden-crowned kinglets, while most often observed in New Jersey during the winter, may be seen at any time of the year in the state, especially in the evergreen forests of the mountains. They are tiny birds, even smaller than the chickadees. The male may be identified by the white stripe over its eye and its bright orange crown, and the female by its eye stripe and yellow crown.

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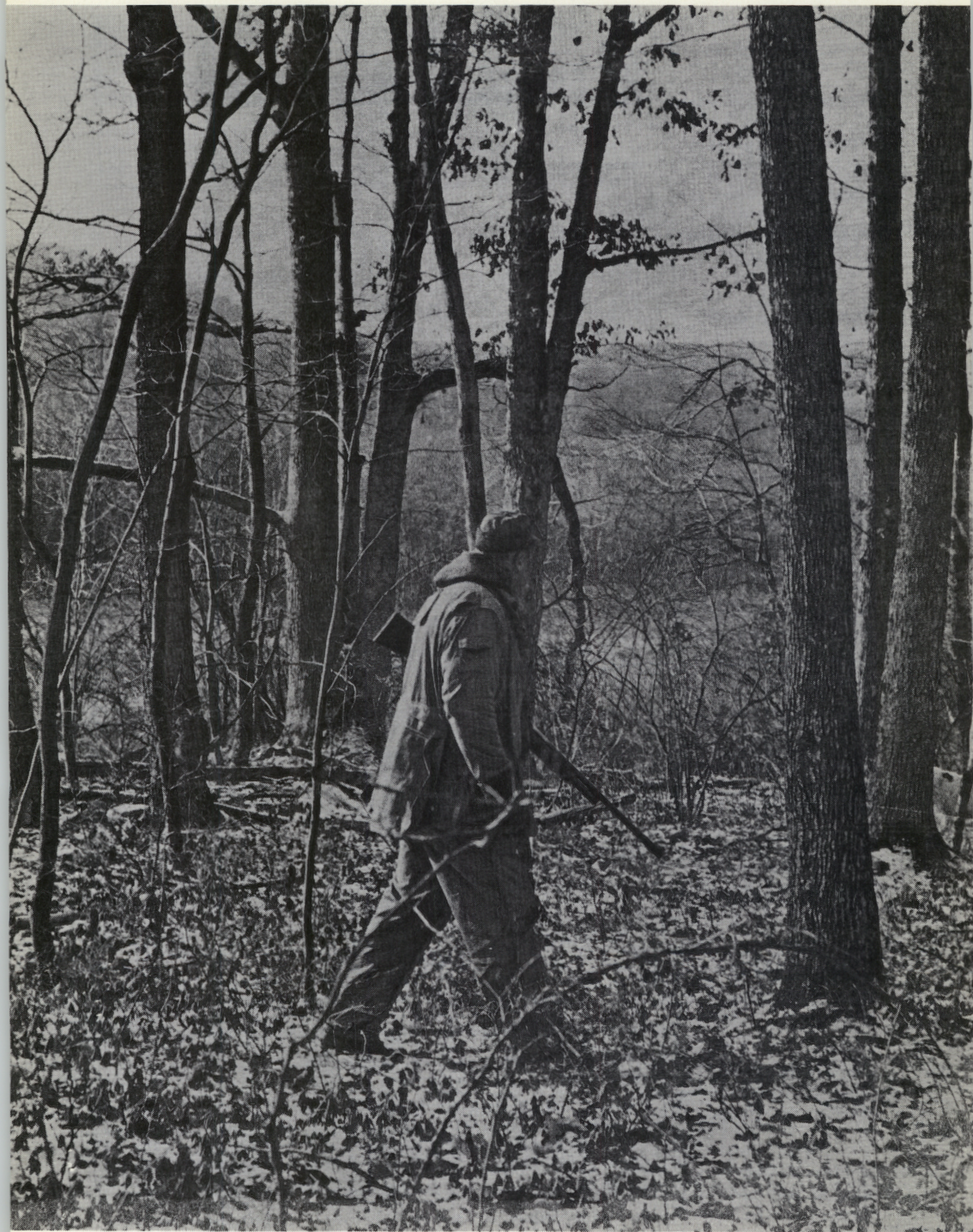
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# Insuring the Future of Hunting and Fishing

By Daniel A. Poole, *President*  
*Wildlife Management Institute*

To preface my remarks, I want to state a couple of basic assumptions. Assumption No. 1 is that biological considerations mainly should undergird our national approach to fish and wildlife management. Some may argue about how these should be put to use, but we are past the point of doubting that the biological requirements of fish and wildlife are the basis for management decisions. In the absence of this assumption, there is no effective way to protect either hunted or non-hunted species from abuse.

A corollary of this is that the collection and interpretation of information and the design and conduct of management programs can be accomplished best by persons trained and experienced in the biological field. The by-gosh days of fish and wildlife administration are as outdated as yesterday's news.

I hope we can agree, too, that much progress has been made in fish and wildlife administration in a few brief years. For example:

State and federal programs have been made much more stable

Partisan politics has been greatly reduced

Large sums of money are invested in resource enhancement

Nearly 5700 well-equipped conservation officers enforce the laws against those who misuse wildlife

Broad research is being done to uncover new facts

Some 85 U. S. and Canadian colleges and universities graduate about 9000 wildlife students yearly.

North America's endangered wildlife species are not the hunted; they are the non-hunted. Many of today's popular game species, at the point of extinction in the days of pioneer exuberance and biological indifference, attest to this fact.

But past accomplishments mean little to the future if we strive only to do more of the same. The hard fact is that public hunting has been and is based on a demand and supply situation over which wildlife administrators have impartial control. Hunters continue to increase. Some rationing already is necessary, and no one really knows where it will end. State wildlife

## . . . Insuring the Future

programs are geared to selling more licenses to generate more money with which to defray rising costs. The circle is tight.

Speaking nationally, the bulk of hunting is done on private lands. We license hunters in the expectation that the owners of land on which wildlife is grown will continue to provide access. In a way, the public lands states are no better off than others, for public lands offer only limited variety of the popular species. And even in the public lands states, questions are being asked about the rationale for continuing the long-time licensing systems, non-resident differentials, and all the rest. In short, state wildlife programs are based largely on selling licenses to take resources owned by all of the people but grown largely on someone else's land. To keep in step with that kind of polka requires a good ear and some fancy foot work.

But the band is beginning to change the tempo. Some observations of the Public Land Law Review Commission and the emergence of anti-hunting sentiment should convince even the heartiest skeptic, I hope, that there is more to fish and wildlife administration than biophilosophying and selling licenses.

To have hunting, there must be huntable supplies of wildlife. To have wildlife, there must be habitat. To enjoy wildlife, there must

be access to public and private lands. And to attempt to take wildlife, there must be public acceptance.

This latter facet—public acceptance—has much to do with the future of hunting. It is directly linked with anti-hunting sentiment. And it is in this important area that our wildlife agencies do the least.

In the view of my organization, hunting's future urgently requires that more attention be given to the public-acceptance factor. We envision four avenues of approach:

Better service to hunters

Better discharge of personal responsibility by the sportsman

Better understanding and service to landowners by both the wildlife agency and the sportsman

Better understanding among the profession as to what constitutes sport hunting.

Starting with service to hunters: All of us are aware of the intensification of anti-hunting sentiment. Its causes are many and complex. Some people plainly are against blood sport, and little probably can be done to change their views. They will not respond to explanation.

The great bulk of the people, however, are indifferent to hunting. Today, they apparently do not care if it continues or ceases. Who knows how they will react tomorrow? What is being done at least to maintain their neutrality? Could it be that we risk offending them?



*To have hunting there must be places, with wildlife habitat, on which to hunt*

Let me give some examples of where disservice is being done to hunters and hunting. In State X, pheasant or deer season opens on a weekend and thousands of anxious license holders turn out. Ranchers and farmers see mostly armed hoodlums, many not bothering to request permission to enter private lands, even where required. Property damage occurs and there is shooting near occupied buildings and settlements. Sometimes a hunter or two or even a non-hunter is shot or wounded. Farmers hang bells on livestock and pen their pets. Lands and roadsides are littered. Sportsmanship and hunting quality go out the window.

All this results in bad press and hard feelings. The hunter's image is tarnished. Landowners say never again, and more no hunting signs go up. Anxious parents write to the governor. Others root for anti-firearms legislation. Cynics say the game department does not give a darn because all it is interested in is selling licenses to get more money to do it all over again.

Now we can joke and laugh and say that is the way it goes. But remember, that also may be the way hunting goes—right out the window for many citizens.

In part, the future of hunting demands that the wildlife agencies—and they cannot do it alone—

### . . . Insuring the Future

are going to have to exploit every opportunity to make sportsmen of all hunters and to help give them a better public image. This will involve fundamental changes in hunter's attitudes, shooting regulations, licensing requirements, pro-

alternatives are clear. Doctors sometimes must argue with their patients in order to help them. Wildlife agencies should realize a similar client relationship with hunters.

My second recommendation is that much more be required from the individual sportsman. A Euro-



*The future of hunting and fishing must be made more secure*

iciency in firearms handling, and all the rest. Nationally, we have barely made a beginning on this aspect of the problem. We cannot wait much longer in some areas. State agencies have got to face up to their responsibility, even to the point of ramming it down the throats of sportsmen where the

pean once told me that few North Americans have any respect for the animal they shoot. "You are too intent," he said, "on getting your limit in the shortest time. The essence of the hunt is lost upon you." He may be right.

I have had my fill of wildlife agency news releases that begin

with the announcement that deer, pheasants, or some other animal will become a "live target" on opening day. I have read too many articles in which the game brought to bag per hour is compared with previous years, the total effect of which is to equate good hunting with the largest bag for the least time spent in the field. That is not hunting; it is shooting.

We have to shift the test of a good trip from a full bag to a pleasant day in the field. The German hunters may have something in their creed of reverence for death.

We also have to insist that the hunter accept more responsibility for the property rights of landowners. We have to require more from him in terms of safe gun handling, and we have to begin to hold him personally accountable for his misdeeds.

Very few states impose penalties against shooters who kill or harm their fellow man. In about 17, there are no game laws covering such accidents. Investigation and prosecution, if negligence is found, are left to local authorities. Criminal prosecutions and convictions are rare, as are penalties. Fines can be imposed and some states revoke licenses for a period of time for firearms accidents and violations. How well the revocations are enforced, no one can say.

I notice that Montana this year provided for a 10-year revocation of license on conviction and for

the payment of all associated expenses. In this whole area, as national summaries make clear, there is great need for more uniformity and for swifter enforcement and stiffer penalties. You can say, as we have in the past, that this is a matter for solicitors. But let me point out that little has been accomplished by following that route. Gun goons and outdoor rowdies are giving hunting and hunters a black eye. We must shape them up or ship them out.

My third suggestion is for more understanding and greater service to landowners by both the wildlife agency and sportsmen. This is nothing new. Leopold and his North American Wildlife Policy Committee called for it back in 1930. But on the whole, the states have done relatively little to curry the landowner's favor. Actually, we know relatively little about the landowner, why he does or does not permit hunting or what can be done to encourage him to maintain or plant wildlife cover. We do not know because little has been done to find out. Researchers have chosen largely to focus on animal biology. We have been slow, if not reluctant, to take sociologists, economists, political scientists, and other disciplines into our councils. We have faint communication with agricultural specialists, whose work has great impact on wildlife.

More must be done to provide a means of reimbursing landowners for damage done by hunters. A

### . . . Insuring the Future

number of states now require that auto owners have mandatory liability insurance before a license is issued. Does this suggest anything for wildlife departments and hunters? Would this be helpful in persuading more landowners to permit hunting and fishing on their lands?

A good step made several years ago was the drafting of a model liability relief act to protect landowners permitting recreation on their properties without charge. Many states have enacted it into law.

My fourth point calls for better understanding within our profession of the meaning of sport hunting. Too much, I believe, we accept the notion that more is better. But is it?

Anglers now can use electronics to locate fish. Natural knowledge is supplanted by mechanics. A big game hunter, fresh from a warm bed, attires himself with insulated clothing and electric socks, shoulders his precision-sighted rifle, and roars across the back country on his snowmobile or all-terrain ve-

hicle in search of game. A recent ad for a new shotgun sight claims its value for the man who does not have time for long hours of practice. Mount it on a gun, zip into the field, get your birds, and be home in time for lunch.

Has anyone stopped to ask, I wonder, what new technological developments the good Lord has hung on deer or elk or any other wildlife in these past few decades to better equip them to cope with the technically augmented sportsman? Where does application of technology exceed the bounds of sportsmanship? Do we have an obligation to blow the whistle on this type of thing?

By working in these four areas, the Institute believes the wildlife profession can help make the future of hunting and angling more secure. #

*Editor's Note:* This article is adapted from the author's remarks in opening a panel discussion at the Western-Midwest Wildlife Conference held in Aspen, Colorado, on July 22, 1971. The panel's theme dealt with "How will we handle future hunting and fishing?" #

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*The Division and the Council note with regret the passing of Charles O. Hayford, 86, on November 4, 1971. Mr. Hayford came to New Jersey from his native State of Maine in 1912 and established the Hackettstown state fish hatchery, which has been named in his honor. He retired as Superintendent of Fisheries Management in 1956. Mr. Hayford, a world-renowned fish culturist, was a past president and an honorary member of the American Fisheries Society.* #

## Hunter Safety Program

By Paul D. McLain,  
*Federal Aid Coordinator*

The New Jersey Hunter Safety Program is presently undergoing a long needed overhaul and refurbishing. Effective January 1, 1972, everyone applying for an initial firearm or bow and arrow hunting license must pass a hunter safety examination or show a hunting license from another state. This will mean that thousands of prospective hunters will be processed annually through the New Jersey Hunter Safety Program.

In the past, the New Jersey Hunter Safety Program has operated through the 650 volunteer instructors and conservation officers, processing about 10,500 firearm and 4,600 bow and arrow applicants annually.

Generally the instructions followed the NRA guide lines, but lacked a standardization of instruction on a state-wide basis. Some instructors devoted more time and effort to the students than others; and, it was obvious that the program should be revitalized and updated.

The sportsmen of New Jersey

will be happy to know that federal aid to wildlife money is now available for hunter safety training. An amendment to the Pittman-Robertson Act (P.L. 91-503) provided for the 10 percent excise tax on pistols and revolvers to be returned to the states for hunter safety and wildlife restoration activities. This amendment became effective in October 1970, and provided about seven million dollars to the states. The money is apportioned by the population of the state rather than by the number of hunters and size of the state as is the case with other federal aid to fish and wildlife funds.

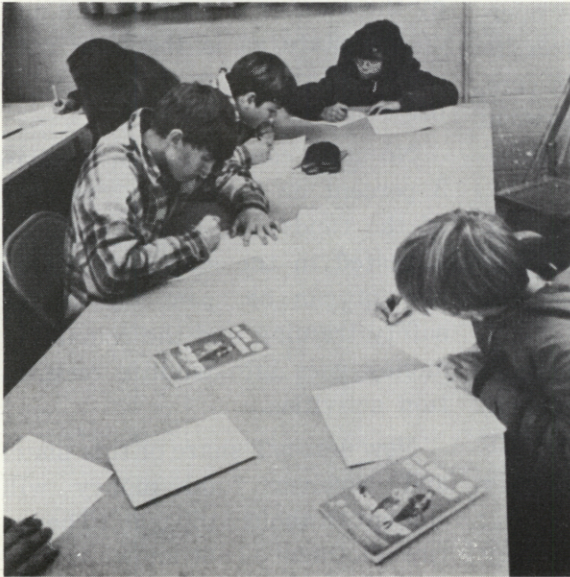
No state can receive more than 3 percent or less than 1 percent of the funds. Of the total funds allocated to the states, up to 50 percent can be spent for hunter safety training and the remaining money goes into wildlife restoration activities.

New Jersey's share of this pistol and revolver fund money will amount to about \$160,000. (The entire allotment is not known at this

*. . . Hunter Safety*



*A volunteer firearm safety instructor discusses safe gun handling with a class of first-time hunting license applicants*



*A written examination is given to students in the hunter safety course. The students must pass the examination before they are issued the certificates which allow them to purchase their initial hunting licenses*



*A student learns the proper method of safe gun handling from a volunteer firearm safety instructor. Field instruction involves shooting, handling guns under field conditions, and safe hunting practices*

*Field instruction includes the proper method of crossing fences, getting in and out of boats with guns, and other field safety training*



## . . . Hunter Safety

time.) Effective Oct. 1, 1971, a New Jersey Firearm Safety Federal Aid to Wildlife Project was inaugurated providing \$58,122.00 in Federal and state funds for a new hunter training program.

Two full time firearm safety officers are assigned to review and update our present hunter safety program. Their responsibilities will be in working with the local county conservation officers, firearm and archery instructors, and the Division's I and E Section in revamping our program to include a more standardized and uniform level of instruction. The course material will be increased to include such topics as hunter ethics, first aid, wildlife management, and other topics. However, the prime objective of this course will be HUNTER SAFETY with guns and bow and arrows.

What will this new Federal Aid to Wildlife Firearm Safety Program mean to New Jersey? First, it will provide the much needed funds to update our present program and provide training and

physical facilities for a more meaningful hunter safety program. It will allow the state to obtain Federal Aid money for time and mileage that the conservation officers and I and E personnel spend on duties related to the firearm and hunter safety program. Finally, it will provide a superior training program administered by better trained and equipped instructors. The students will have the advantage of a standard five-hour course of instruction divided between classroom and field instruction. They will have the opportunity to fire live ammunition and handle different types of guns and bows. They will receive a course in instruction covering a wide range of topics relating to safety, hunting, sportsmanship, laws, wildlife management, and hunting ethics.

Through this firearm safety program the Division of Fish, Game, and Shell Fisheries will be able to "reach" the young sportsmen to provide the proper indoctrination in the recreation of firearm and bow hunting which will make them better sportsmen and citizens of New Jersey. #

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The grand total, to the end of fiscal year 1970, for the number of students successfully completing the firearm hunter safety course in New Jersey, since the passage of the respective law in 1955, is 154,970. The comparable total for the bow and arrow hunter safety program, since 1958 when this instruction became mandatory, is 59,054 students. #

. . . Wildlife Conservation *Continued from Inside Front Cover*

wildlife populations decrease, necessitating today an awareness not only to maintain but to encourage creation of additional suitable wildlife habitat.

Realizing this, the Federal and State agencies, including the New Jersey Division of Fish, Game, and Shell Fisheries, have undertaken extensive habitat improvement programs. Working in cooperation with sportsmen's groups and individuals, the Division plants feed patches consisting of a variety of wildlife plants. In addition trees and wildlife shrubs are provided for planting on lands being managed for wildlife production.

Many organizations construct nesting boxes for various species, including wood ducks, raccoons, and squirrels, to replace the hollow den trees that have been removed from the environment. Hedgerow management, cutting back woodland edges and building brushpiles, all help in providing wildlife with food and cover.

Though many people have been conservation minded, they often do not understand the problems involved in dealing with the wildlife resource. People must understand that wildlife cannot be stockpiled and that habitat management plus hunting within the regulations, based on biological findings and set by the state, are the means by which this resource is maintained. #

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## Merit Award to Officer Mulvey

At the recent New Jersey State Policemen's Benevolent Association Convention in Atlantic City, a Division of Fish, Game, and Shell Fisheries employee, Conservation Officer Thomas J. Mulvey of Ocean County, was recognized for commendable service. The Certificate of Merit award, accepted by Conservation Officer Charles Torluccio, state delegate of



*Director Russell A. Cookingham, right, congratulates Conservation Officer Thomas J. Mulvey for commendable service. Chief Conservation Officer John C. O'Dowd, left, and Officer Charles Torluccio, second from right*

the Fish and Game Wardens P.B.A., Local 120, was presented to Conservation Officer Mulvey at a special ceremony in Trenton.

The commendation came as a result of Mulvey's apprehending an abductor and rapist this past spring while on patrol duty in the South Jersey woods.

On Tuesday, April 13, 1971, with a large fire burning in the Greenwood-Lebanon Forest Area, Officer Mulvey, at the request of fire fighting personnel, was patrolling the wooded area, checking cars for possible arsonists, and advising all motorists to leave the area.

Late in the afternoon, Mulvey stopped a man driving a V-W sedan and found a young woman, semi-conscious, beaten, and bound lying on the floor in back. Placing the suspect under surveillance, he radioed for assistance and was soon joined by Conservation Officers Bruce Young and Charles Torluccio, the Manchester Township Police, and an ambulance.

The abductor admitted to police that he had taken the young woman from an army post, beaten, and criminally assaulted her. As a result of Mulvey's action, the woman, who has since recovered, was saved from further bodily harm and even possible death.

Mulvey admitted being shaken by the incident, but added, "You really never know what you'll come across while patrolling the South Jersey woods." #

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# Men, Marshes, and Mankind

By Robert McDowell,  
*Public Information Assistant*



"Men, Marshes, and Mankind" is the role of conservation education in the effort to conserve the salt marshes in New Jersey. How we understand the relationships between men and marshes and how this may affect man's future on earth is the most important thing we can teach about this irreplaceable natural resource.

Historically, men have been drawn to the estuaries and marshes. Since the weather and the sea were more hospitable there and food was easily obtained, our first settlements in this country were made near estuaries. Seaports, located in and near the marsh, were the first stop in the new country, therefore, our first industry and commerce developed there. Materials, both raw and manufactured, were transported down rivers and then across the sea. This meant industry grew and the people were more attracted to the estuary. Now people come to the marsh to work, live, and play. We can easily see how far some estuaries have been developed by looking at New York Bay, Raritan Bay, and Delaware Bay. We can as easily see the effects of man on these areas; we can see the ditched and drained marshes, the sewerage outfall pipes, the garbage barges, the oil slicks, the walled in shoreline, the

### . . . Men, Marshes

rows of "ticky-tacky" houses, and the signs that say, "do not harvest oysters, mussels, or clams, polluted." These are the things we need to show and tell people about men and marshes.

Marshes are delicately balanced ecosystems containing relatively few organisms, compared to other ecosystems. The constant rising and falling of the tide, the salt in the water, and that transition between salt and fresh water make the marsh a harsh environment. Only a few species of grass are able to thrive in the marsh. Grass-

es are the living base of the marsh community; they stabilize the huge quantities of sediments that make up a platform on which other organisms live. Changes in the marsh community brought about by pollution, dredging, and draining easily upset and destroy the ecosystem.

The marsh has its beginnings in the uplands where small trickles of water gouge at the soil and carry small particles into a larger flow of water and then on to a major river, and finally deposit the carried material at the mouth of the river, the estuary. The marsh can be destroyed at any point in this process. Pollution may enter the

*We can easily see the effects of man on the marshes*





*The marsh has its beginning in the upland with small trickles*

river at many points or the river could be channelized and change the flow or other things could be done which will change the conditions downstream and cause a disturbance in the delicate marsh community. We can look at Raritan Bay and see an example of destroying a marsh at its source. The Raritan River has long been abused by man. It is the receiver of high quantities of industrial and domestic pollution and carries a heavy load of life smothering silt. The silt is the result of our poor land use practices in the watershed. All these things show their effect in the bay. Only a few of the life supporting grass species are left and

the result is low productivity and in some areas no marsh, just mud flats.

These are the things we need to tell people about marshes in our conservation education efforts.

Mankind has a lot to gain by conserving marshes. Ninety percent of all the commercially harvested fish that live in the sea would not exist without estuaries and the associated marshes. These fish either depend on the estuaries for all or part of their life cycle or they eat something that does. Without marshes statements like, "In the future man will gather his food in the sea," will be myths. Shellfish, waterfowl, furbearers,

### . . . Men, Marshes

and many other wildlife forms also depend on the salt marsh and with the loss of this habitat we would see these natural resources also lost to mankind.

Salt marshes can be managed so they will remain productive and be

there, that are constructed on platforms. Thus, the marsh would be virtually undisturbed and the tides would be free to flow keeping the marsh healthy and productive.

New Jersey has lost  $\frac{1}{4}$  to  $\frac{1}{3}$  of all the marsh areas on the entire east coast of the United States. Our state has only 200 more or less



*The role of conservation education in marshland conservation is . . .*

used by man. We have some examples where areas, with the proper diking and ditching methods, have been managed to produce fewer mosquitoes and yet retained their biological integrity. Some forward thinking people have even designed houses for the marsh, if it becomes necessary to put them

miles of sea coast compared to a total of 2500 more or less for the entire east coast and yet we have lost  $\frac{1}{4}$  to  $\frac{1}{3}$  of all the marshes. This is quite a record! Our marshes are not safe yet. The Wetlands Act is a step in the right direction but not a panacea. Much of the marshland is in private ownership and

many court cases will come and go before we know where we stand on the legal questions of salt marsh conservation.

These are the things we need to tell people about marshes and the future of mankind.

What have we done to tell people about these things? Very little. Everyone knows the bald eagle is an endangered species but few know why. This is where we have failed. People know that marshes are being destroyed but we have not informed enough people why it is a poor biological investment.

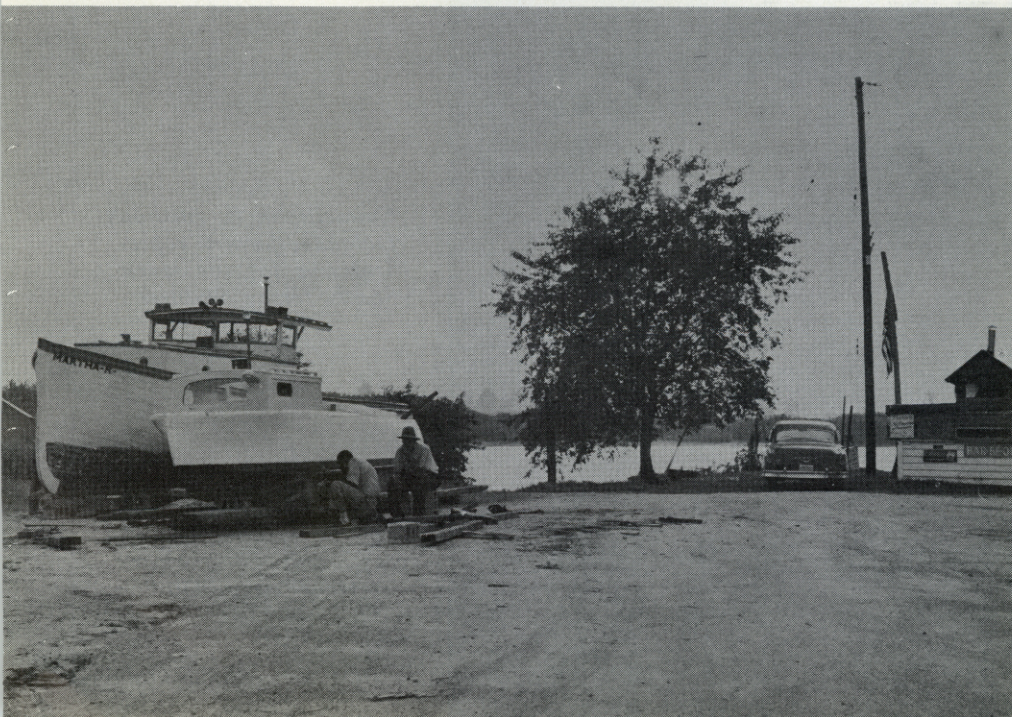
Most conservation education programs are little more than tours of trivia taking groups of people out to identify everything that is cute and cuddly or walks or crawls or just sits there. Few programs come to grips with real problems.

Conservation education in the marshes virtually does not exist in New Jersey. The closest programs of any significance are Pautuxent, Maryland, and Cape Cod, Massachusetts. A program of education in marsh management would be a good investment for mankind. We need a program using all the media reaching people of all ages and educational levels.

The role of conservation education in marshland conservation is telling people about men, marshes, and mankind. #

This article is based on a paper originally prepared for *The Sportsmen's Newsletter*, the publication of the New Jersey State Federation of Sportsmen's Clubs, a statewide organization of clubs and associate members, and an affiliate of the National Wildlife Federation.

*. . . telling the people about men, marshes, and mankind*



## Councilman E. Anthony Delgado

Fish and Game Councilman E. Anthony Delgado of Vineland is the farmer representative for the seven South Jersey counties, succeeding retired Councilman G. Albert Reid of Linwood. Mr. Delgado, who received the nomination to the post from the Cumberland County Board of Agriculture, is scheduled to serve until 1974.

Councilman Delgado, owner and operator of the DelMar Mink Farm, Inc., Vineland, is a member of the Cumberland County Board of Agriculture and is chairman of the county committeemen of the Farmers' Home Administration in Bridgeton. He is secretary of the New Jersey Fur Breeders' Association and has served as a delegate to the agricultural convention for the fur breeders. He is also a constable for the City of Vineland.

Raised on his parents' farm in Cumberland County, Mr. Delgado's interest in hunting and fishing began early in life. He was secretary of the South Jersey Sportsmen's League from 1953 to 1959, in 1958 he was awarded a plaque as the outstanding sportsman of the year, and he is a former member of the Atlantic County Fish and Game Protective Association. He is a member of the Cooper Swamp Gunning Club and the National Rifle Association. Although he enjoys both fresh and salt water fishing and deer and small game hunting, his favorite hunting is for black bears and wolves in wilderness areas of Quebec, Canada. Councilman Delgado is married, the father of two boys, and interested in 4H activities. #



*Councilman E. Anthony Delgado, farmer representative for the seven South Jersey counties*

# The Squirrels

## Species:

*Sciurus carolinensis* (gray squirrel)

*Sciurus hudsonicus* (red squirrel)

*Glaucomys volans* (flying squirrel)

## General Characteristics:

The gray squirrel is about 18 inches long, tail length about 8-9 inches, hind foot 2-3 inches; upper-parts grayish, underparts whitish.

The red squirrel is about 12-13 inches long, tail length about 4½ inches, hind foot about 2 inches; upperparts reddish, brighter in summer, sides grayish, underparts grayish, nearly white in summer.

The flying squirrel is about 9 inches long, tail about 4 inches and very flat, hind foot slightly longer than 1 inch; upperparts brownish, washed with pink, underparts white.

## Dentitions:

All species;  $\frac{1-0-2-3}{1-0-1-3} = 22$

## Range:

Gray squirrel: all of state, especially woods such as oak and hickory; found in parks.

Red squirrels: principally found in pine woods.

Flying squirrels: all wooded parts of the state.

## Life History:

Gray squirrel: active during daylight only. There are two breeding periods; January-February and May-June; two litters are born each year, after a gestation period of about 44 days. At birth, the young are hairless, blind and very small. Maternal care covers a period of about 6 weeks after which the young can care for themselves. Grays nest in hollow trees and in leaf nests in the tops of trees. Preferred food is mast—acorns, hickory nuts, etc., but they also eat seeds, fleshy fruits, leaves, shoots, buds, bark, tubers, fungi, insects, and birds' eggs, as well as domestic grain such as corn.

Less is known about the red squirrel, because only the gray is hunted and therefore studied in more detail. Breeding seasons are probably similar to the gray. The red squirrel is more destructive of buildings and chews holes into attics, garages and out buildings. Food of the red reflects its habitat; pine seeds and acorns are important in its diet. Cut twigs containing pine cones, and small



*The gray squirrel is the only one of our common squirrels that is regularly sought by most hunters*

heaps of the remains of pine cones can be found throughout the piney woods. The red is more active than the gray, seemingly never still; it also scolds with more vehemence, to the dismay of many deer hunters.

The flying squirrel is probably far more numerous in the state than most people realize, as it is almost entirely nocturnal. This squirrel does not actually fly, but, because of broad, lateral folds of skin extending from wrists to ankles, as well as a flat broad tail, is able to glide from the top of one tree to the trunk of another nearby. Nests are usually made in hollow trees, old woodpecker nests, but also in accessible attics. While these squirrels do accumulate seeds and some small nuts, they are not as destructive as either the red or gray squirrels. Food of flying squirrels are seeds, small nuts, fruits, berries, and animal foods such as insects.

#### **Management:**

Squirrels are best managed by preventing fires and overgrazing by leaving three or four den trees per acre and by leaving about ten mast-producing trees per acre to provide food. Principally the gray squirrel is hunted. Current laws regulate the daily take as well as the length of season. Squirrels are the third most popular small game species in the state.

#

# Keep Dog in Good Coat

## during Winter Weather

Extra attention to your dog's coat during the winter months pays dividends. During cold weather, pets usually spend much of their time indoors and often in overheated quarters. These conditions dry the dog's skin, give him a lack-luster coat, and may promote excess shedding.

Important as grooming is, healthy skin and coat starts within the dog from proper nutrition. Your dog does not need a different type of feeding for cold weather. Year-round, he will stay in good condition with regular meals of a complete and balanced dog food.

The right feeding should be followed up with frequent brushing to stimulate natural skin oils and remove dry and dead hair. Do this daily, if you can. The dog will feel and look better, and your furniture will be sprinkled less with loose hairs.

House pets sometimes like to lie near radiators or hot air registers. Do not permit this, since the dog overheats and dries his skin.

As a general rule-of thumb, it is best not to bathe dogs in cold weather. Bathing dries the skin and in winter it may risk chilling the dog. If a cleanup is needed, try a commercial "dry bath" product. Or you might take the dog outdoors in the snow for a romp. By running and rolling in fresh snow (probably easier for country rather than city people to find) the dog may clean himself.

Otherwise, go ahead and wet-bathe the dog, being sure to dry him thoroughly and to keep him in a warm, draft-free room for several hours afterwards. The same care also applies to the snow-damp dog.

Sweaters, raincoats, and boots can be practical gear for some dogs in winter, especially short-haired pets. Canine garments help keep the dog dry and spare you the task of toweling him off after he has exercised outdoors. Boots protect the city dog's pads from being irritated by salt or chemicals used to de-ice the streets. #

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*The Division and the Council are saddened to have to announce that Conservation Officer Richard Whitaker, 32, passed away on November 3, 1971. Officer Whitaker was assigned to Burlington County and had been with the Division two and one-half years.* #



## Oyster Shell Planting

By Chris Riley, *Shell Fisheries Consultant*

The pictures shown here represent a project sponsored equally by the Federal Government and the State Government, which has done much in aiding the recovery of the state's oyster industry. The project's state funds came from appropriation of the legislature and are administered by the Division's Bureau of Fisheries, Shell Fisheries Section.

In 1957 and 1958 the oysters of New Jersey, as well as surrounding states, were affected by a mysterious infection (M.S.X) which caused an approximate 85 percent decline in their production. In the ensuing years, the problem became less severe as oysters developed an

immunity to M.S.X. However, several other problems presented themselves as attempts were made to bring back the industry.

Oyster beds must be made and maintained with materials that will catch larvae produced by the oysters during the spawning season which, in New Jersey, begins in July of each year. The material used in New Jersey had been the empty shells coming from the oyster shucking houses. These empty shells are planted on the state's natural seed beds every year. Because of the decline in the oyster production there were fewer shells coming from shucked oysters. Consequently, it was neces-



*Oyster shells being washed from barge as the barge is towed over oyster beds*



## . . . Oyster Shell Planting

sary to find a different source of supply for these shells and also to find the money with which to finance their purchase.

Shells in Louisiana were being dug from reefs in its waters for years for various purposes and in the early 1960's the State of Maryland began digging reef shells (oyster) from its waters. This then offered New Jersey a source near home. But, where to find the funds?

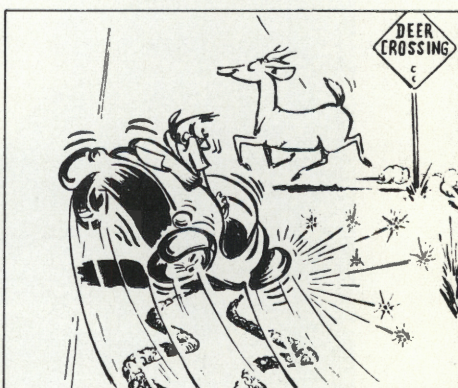
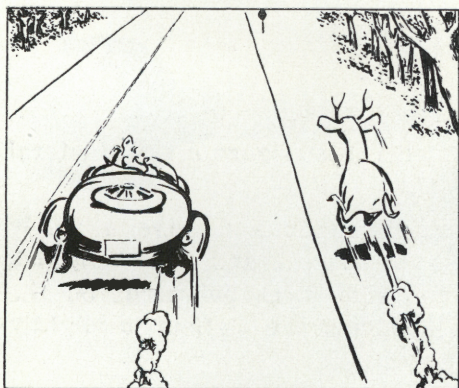
The then existing Division of Shell Fisheries, in 1965, found the source in the Federal Government budget which would allow it money on a matching basis.

Thus, July of 1965 saw the first of several years of shell planting in the waters of Delaware Bay and the Mullica and Tuckahoe Rivers. As of this writing, a total amount of 5,290,354 bushels of shells have been planted in Delaware Bay;

175,258 bushels in the Mullica River; and 36,553 bushels in the Tuckahoe River; for a total expenditure of \$905,862.00 of which New Jersey has paid 50 percent.

Beginning in 1955, the seed beds were being opened one year and closed the next because of the insufficient supply of seed oysters. Since the beginning of the planting of these shells in 1965, the Division has been able to open the beds every year and the oyster production has come back to slightly above one-third of its normal production.

The present condition of the Delaware Bay seed beds and the Mullica River beds are considered to be better than they have been for a long time. In each area, with only light spatfalls (spawning), these beds will hold the present production for two or three years. It has been quite evident in the past few years that the spatfalls are becoming more consistent. #



# Bitternut Hickory

(*Carya cordiformis*)

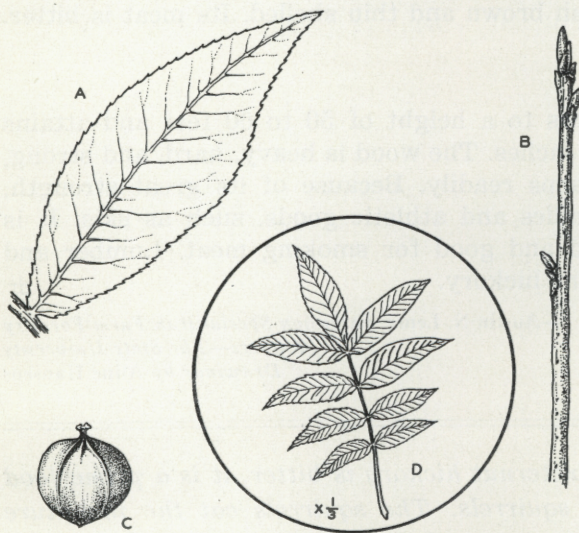
This tree is sometimes called swamp hickory, pecan, or pignut. It probably derived its real name from its bitter fruit. Bitternut hickory grows in a mixture with pin oak, American elm, and soft maple on swampy sites and in heavy or infertile soils.

## Range:

New Hampshire to New York, extreme southern Quebec, southern Ontario, Michigan, and Minnesota, south to southern Nebraska and eastern Texas, and east to northwestern Florida and Georgia.

## Leaves:

Alternate, compound, with 7 to 11 sessile or nearly sessile leaflets. The leaves are 6 to 10 inches long with the terminal leaflet 3 to



## Bitternut Hickory

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

6 inches long and 1 to 1½ inches wide. (See figure A.) The lateral leaflets are smaller. (See figure D.)

Leaflets are sharply pointed at the apex and have a finely to coarsely toothed margin. They are smooth and dark yellowish green on top and light green and sometimes pubescent on the bottom. The slender stem that supports the leaflets is slightly grooved and pubescent.

## Twigs:

Medium stout, greenish to grayish brown, and hairy toward the

## . . . Bitternut Hickory

apex. The terminal bud is  $\frac{1}{3}$  to  $\frac{3}{4}$  inch long with 4 angular, yellow, pubescent scales. The lateral buds are smaller. (See figure B.) The bark is light gray, thin, and tight with shallow fissures. It does not scale off like the bark on shagbark hickory.

### **Flowers:**

Male and female flowers appear in May when the leaves are about half developed. Male flowers are in catkins, clustered in threes, 3 to 4 inches long, which 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. Female flowers, 2 to 10 in number, appear in short spikes on the new growth.

### **Fruit:**

Nearly round and about 1 inch long with a thin yellowish-green husk that splits into four valves halfway from the tip to the base. The nut is light reddish brown and thin shelled. Its meat is bitter. (See figure C.)

### **Uses:**

Bitternut hickory grows to a height of 50 to 60 feet and attains a diameter of 12 to 24 inches. The wood is heavy, hard, and strong, but it shrinks and warps readily. Because of its great strength, it is used for tool handles and athletic goods, such as skis. It is an excellent fuel wood and good for smoking meat. Lumber and piling are derived from hickory. #

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

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*Although the meat of the bitternut hickory is bitter, it is a prime food of gray squirrels and red squirrels. The squirrels eat the immature nuts in late summer and store some of the ripe ones in the fall for use during the winter. In addition, deer and bears eat the nuts whole while many songbirds, and even grouse, glean the fragments left by carelessly feeding squirrels.*

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*The largest bitternut hickory listed by the Cooperative Extension Service of New Jersey, 12 feet and 4 inches in circumference at a point  $4\frac{1}{2}$  feet from the ground, is located in Maurice River Township in Cumberland County.*

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

By JACK SORDS

OIL FINISHING YOUR GUN-STOCK MAKES IT WATER-RESISTANT, AND IT WON'T WARP OR CRACK



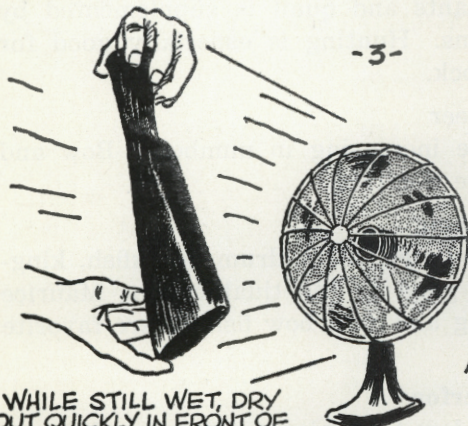
-1-

TO CLEAN OFF THE OLD FINISH, BRUSH ON VARNISH REMOVER THICKLY AND WIPE OFF IN ABOUT A HALF HOUR. MAKE SURE ALL THE OLD FINISH IS REMOVED



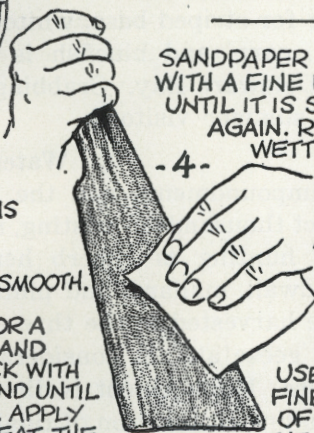
-2-

WITH THE WOOD NOW ENTIRELY BARE, SOP THE WHOLE SURFACE GENEROUSLY WITH A SPONGE AND PLAIN WATER



-3-

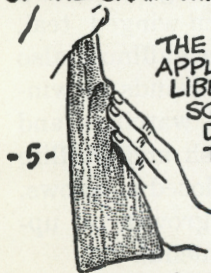
WHILE STILL WET, DRY OUT QUICKLY IN FRONT OF A FLAMELESS HEAT. WHEN DRY, PORTIONS OF THE GRAIN WILL HAVE RISEN



SANDPAPER THE STOCK WITH A FINE PAPER UNTIL IT IS SMOOTH AGAIN. REPEAT THE WETTING, DRYING

AND SANDING PROCESS AGAIN AND AGAIN, OR UNTIL NO GRAIN RISES WHEN WET.

USE THE FINEST GRADE OF PAPER FOR THE FINAL SANDINGS



-5-

THE STOCK IS NOW GLASS-SMOOTH. APPLY WARM LINSEED OIL LIBERALLY WITH FLEECE OR A SOFT RAG, THEN RUB UP AND DOWN ALONG THE STOCK WITH THE PALM OF YOUR HAND UNTIL ALL OIL IS WORKED IN. APPLY MORE OIL AND REPEAT THE RUBBING. WHEN IT SEEMS TO HAVE ABSORBED ALL THE OIL IT CAN, PUT IT ASIDE FOR A DAY; THEN APPLY MORE OIL AND RUBBING.

Even in this age of synthetic wood preservatives and finishes many people prefer the classic hand-rubbed linseed oil method for their gun stocks. The result is a practical and beautiful finish that may be polished by hand at any time.

#

## **Heislerville Tract**

The Heislerville Fish and Wildlife Management Area, consisting of approximately 2,800 acres, includes diked haying marshes, impoundments, productive tidal marshes, and fertile uplands. Located in Cumberland County, the tract takes in most of the area immediately west of Heislerville. Access includes Matts Landing, East Point, and Thompsons Beach Roads.

The tract was purchased in April, 1956, with money from hunting and fishing license fees. One hundred and thirty acres were purchased through the Green Acres Program and assigned to the Division. The area is managed for upland game, deer, fishing, and waterfowl.

### **Upland Game**

Native reproduction of pheasants and quail is supplemented by pre-season and in-season liberations. Hunting is especially good for pheasant, rabbit, quail, and woodcock.

### **Deer**

Deer are not plentiful but are increasing in numbers. Bow and shotgun hunters are welcome to use the area.

### **Fishing**

Fishing for striped bass, white perch, black drum, weakfish, kingfish, catfish, carp, and bluefish is good in the tidal creeks, Maurice River, and Delaware Bay. Crabbing and carp bow fishing are favorite sports with summer visitors.










### **Waterfowl**

Three impoundments and the low Cadwalader tidal marshes annually attract thousands of nesting, migrating, and wintering waterfowl. Black duck hunting is superb here, along with green-winged teal, widgeon, gadwall, mallard, and pintail shooting. Florida gallinule also nest and are harvested in the three impoundments. Thousands of wintering snow geese attract considerable numbers of bird watchers and photographers. Management is directed to improving fish and wildlife habitat, including restoration of tidal productivity on enclosed meadows, control of undesirable plants, promoting switch grass growth on uplands, and adequate waterlevel management in impoundments.

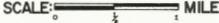
This area is being maintained by the Division for the licensed sportsmen of the state, although many citizens make use of it for other forms of outdoor recreation. Its program is financed by hunting and fishing license money of the sportsmen.

#

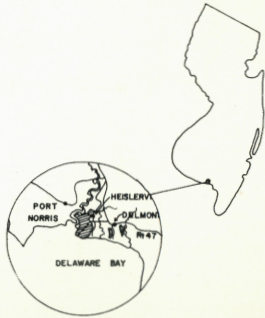
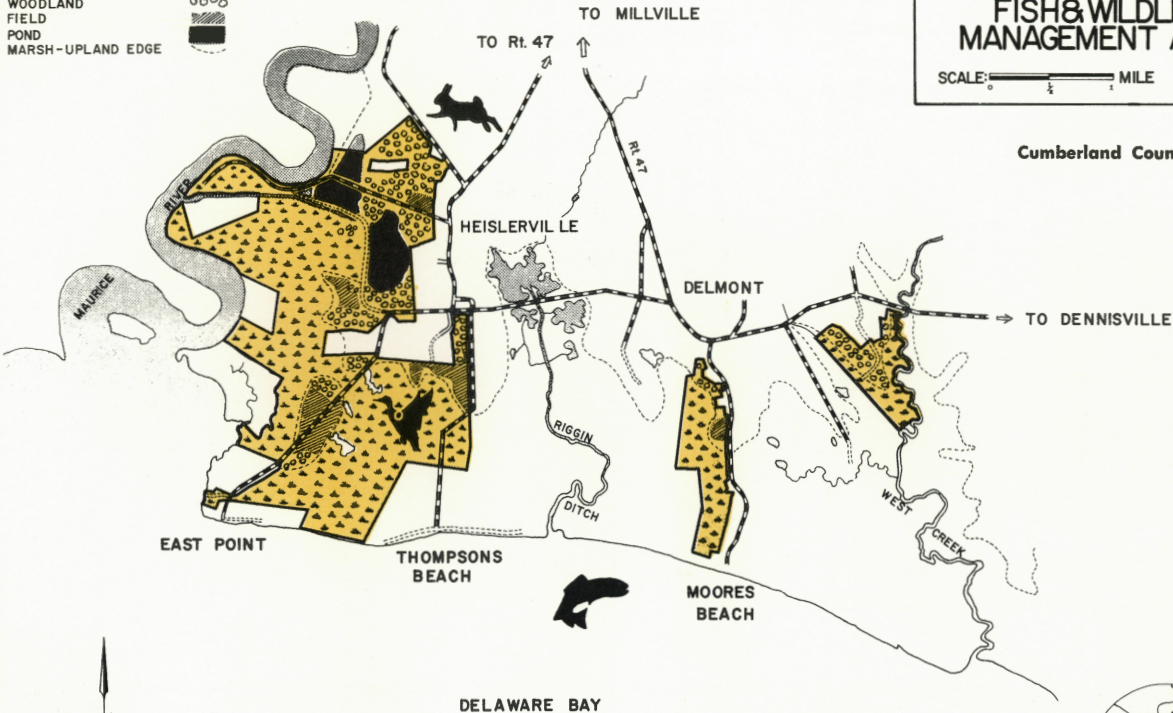
**SYMBOLS**

- ROAD (IMPROVED) 
- ROAD (UNIMPROVED) 
- TRACT BOUNDARY 
- SALT MARSH 
- STREAM 
- WOODLAND 
- FIELD 
- POND 
- MARSH-UPLAND EDGE 

**HEISLERVILLE  
FISH & WILDLIFE  
MANAGEMENT AREA**

SCALE:  MILE

Cumberland County



# ***Conservation Pledge***

**I Give My Pledge  
AS AN AMERICAN  
*To Save and Faithfully  
Defend From Waste  
The Natural Resources  
Of My Country—  
Its Soil and Minerals  
Its Forests, Waters,  
And Wildlife***

**Stop and think what the  
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decide what YOU can  
do to save our resources**

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