

# New Jersey *Outdoors*

February - March, 1973



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# Discover Wildlife

## 1973 National Wildlife Theme

The theme of the 1973 National Wildlife celebration, sponsored each year by the 3 and ½ million member National Wildlife Federation and its state affiliate, the New Jersey State Federation of Sportsmen's Clubs, is "Discover Wildlife—It's Too Good To Miss." Focus of the event will be on the simple, yet exciting, joys that can be found by Americans of all ages in the outdoor, natural world.

The executive vice president of the NWF, Thomas L. Kimball, commented on the Wildlife poster symbol, a young wood duck shown just emerging from its nest. "All that newly-hatched duck has to do to break out into the natural world is take that first step out of the nest," Kimball said. "And it's nearly as easy for people to take that same step, to break out into nature and see what beauty it has to offer."

During this year's Wildlife celebration, Kimball urges that families "get out and enjoy our wild resources. The experience can open up an entirely new world."

"Too often," Kimball said, "American families see wildlife and the rest of the natural world only through attractive magazine pictures. It's out there to be experienced right now and it really is too good to be missed!" #

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### **Shirley Temple Black Chairman of National Wildlife 1973**

Shirley Temple Black, former child star and Special Assistant to the Chairman of the President's Council on Environmental Quality, has been named Honorary Chairman of the National Wildlife event for 1973. Mrs. Black has been very active in public service in recent years, serving as a delegate to the United Nations and leading the fight against the crippling disease multiple sclerosis. She has also been particularly involved in U. S. environmental affairs.

In October 1972, Mrs. Black accompanied CEQ Chairman Russell Train and NWF Executive Vice President Tom Kimball with the U. S. Delegation to Moscow for Soviet-American environmental negotiations. She also served with the U. S. Delegation to the precedent-setting U. N. Conference on the Human Environment held in July 1972, in Stockholm, Sweden. #

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# New Jersey *Outdoors*

New Jersey *Outdoors* is published monthly by the New Jersey Division of Fish, Game, and Shell Fisheries of the Department of Environmental Protection in the interest of the natural resources of fisheries and wildlife and the betterment of hunting and fishing in New Jersey.

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### Cover - "Young Wood Duck" - *National Wildlife Federation*

A young wood duck popping out of its nesting box is as much a part of spring as the annual National Wildlife celebration. Soon the little woodie will grow to become one of our most spectacular waterfowl. Photographed by Jack Dermid, this picture highlights the 1973 National Wildlife theme, "Discover Wildlife—It's Too Good To Miss." For more on the theme see page 16 and for more on the wood duck see page 30.

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# Deer

## and the People of New Jersey

By Dr. James Applegate

*Assistant Professor of Wildlife Biology*

College of Agriculture and Environmental Science  
Rutgers University

Thumbing through TV Guide you are likely to find a full page ad urging you to fight the sport of hunting with letters and contributions. Your favorite celebrity's picture may adorn the ad along with many others as added persuasion. While such things may appear to be comic nuisances to hard core hunters who speak of "little old ladies in tennis shoes," notice is currently being served that the people who would ban hunting are becoming politically active, and doing it rather effectively. Here in New Jersey an increasing number of townships are in some stage of drafting bans on hunting. A handful of people legally handcuffed the Department of Interior when they halted a needed harvest of deer in the Great Swamp National Wildlife Refuge. Recent restrictions on harvest by trapping adds another example, and the list is growing.

Wildlife management is more and more having to take into account the ideas and attitudes of

people. Any information that can be gathered regarding the people-wildlife interface will, hopefully, lead to more rational decisions in wildlife management as new problems arise. With this justification, the forestry section at Rutgers is investing a significant portion of its wildlife research effort in studies designed to shed light on people and their attitudes toward and desires for wildlife in New Jersey.

One study should be of particular interest to the readers of *New Jersey Outdoors*: It involves attitudes of New Jersey residents regarding deer hunting. Have you ever wondered how many New Jersey residents have ever hunted? How many do not even know anyone who hunts? How many are in favor of deer hunting? How many opposed? And what percent of the general population do you think would know that fawns are spotted? Our study gave us some interesting information which may answer some of your questions.

In May of 1972 we selected a

← *One study involves attitudes of New Jersey residents regarding deer hunting*

## . . . Deer

sample of 1,200 New Jersey residents in such a way that every person in the state, 18 years of age or older, had an equal chance of being polled, and then, in the same way a Gallup or a Harris poll would predict an election vote, we asked them several questions about themselves and their attitudes about deer hunting. While 1,200 people may seem small next to the state's population, some statistical concepts used routinely in research allow us to show that our estimates are within about 2 percent of the figures we would get if everyone in the state were polled.

Our study showed that about one-fourth of the population (24 percent) had hunted at some time in their lives, but that only one-third of that number (8 percent) have hunted in the last two years. More than one-half of the people who have never hunted said that they had no members of their family or close friends who hunted either. This group comprises 44 percent of the state's population.

As you might expect, whether the respondent was a man or a woman had a significant effect on the answer to this question. Only 8 percent of the ladies had ever hunted compared to 43 percent of the men. What you might not expect is that there are a lot of people from our most densely populated counties who hunt. Let's consider the Big Five of Northeastern New

Jersey for instance-Bergen, Essex, Hudson, Passaic, and Union Counties-where almost half the state's population lives at an average density of about 4,900 people/square mile. Seven percent of our sample from this area said that they had hunted in the past two years while 48 percent said they did not know anyone who hunted. Compare this to the response from our South Jersey sample of Atlantic, Burlington, Cape May, Cumberland, Ocean, and Salem Counties, where about 10 percent of our population lives at an average density of about 300 people/square mile. Here 12 percent are still hunting and 35 percent have no close friends or family who hunt. The figures from these diverse areas are different, but they are closer than we would have expected. Some quick math-multiplying the percent of our sample that hunt by the number of people who live in these areas-shows us that almost half of the state's hunters live in that crowded Northeast corridor, and gives pause to our traditional idea of the hunter as a rural woodsman.

We asked the people whether they approved or disapproved of deer hunting, and after they responded we asked them whether they felt strongly or mildly about their approval/disapproval. Fifty-four percent of the sample said they approved of deer hunting, 38 percent said they disapproved and 8 percent were undecided. Of inter-

est to us was the further division of approval and disapproval into the strong and mild categories. Eighteen percent said they strongly approved while twice that many (35 percent) said they mildly approved. On the other hand, while only 12 percent said that they mildly disapproved of deer hunting, more than twice that proportion (26 percent) said that they strongly disapproved. More on this later.

Who approves and who disapproves? Again, there is a difference between men and women, but a careful look at our data showed that this difference really reflected a difference in association with hunting rather than an effect of sex. That is, the most important factor in determining a person's attitude about hunting is his past association with hunting, and since men are more closely associated with hunting than are women, more men approve of hunting than do women. Nonetheless, an analysis of that large group who have never hunted and know no one who does showed a tendency for greater disapproval by women than men. So there may be some basis for the "little old lady in tennis shoes" cliché—at least the "lady" part. We did not ask our respondents about preferences in shoe apparel but we did ask them their ages. As a result of that analysis, maybe we should change our cliché to the "little young lady in tennis shoes," because there was a tendency in both

sexes for the respondents in their late teens and twenties to disapprove more frequently than the older respondents.

The number of people in a respondent's home county was also related to his attitude about deer hunting—people from our more urban areas tended to disapprove more frequently than people from our less urban areas. While this difference can be explained to a large degree by the differences in association with hunting which have already been pointed out, there are differences within association groups that are related to county population. In other words, if a person has never hunted, he is more likely to disapprove of hunting if he is from the crowded Northeastern counties than if he is from one of the less-crowded counties.

We wanted to ask a question that would indicate how much people knew or did not know about deer. Our choice of that question took much time and pre-testing. We wanted a question in which guessers would answer incorrectly and also one in which somewhere near one-half the respondents would answer correctly. We first drew up a list of candidate questions and then began pre-testing—calling a small number of people and asking the questions. There were some interesting insights obtained during this period, though only insights, since the number of respondents was too small and too

## . . . Deer

local to generalize. A high percentage of people know that adult male deer are called bucks, and likewise for does and fawns. Of interest was the Walt Disney influence, as most incorrect responses for the immature deer were "Bambi." Also in this pre-test, we learned that, in general, people do not recognize the rapid turnover of individuals in our deer population. When asked how long the average buck lives in New Jersey, most people guessed five years and many guessed 10 and 20 years instead of the actual two years that is the case. In re-

sponse to another question: "How old are bucks when antlers first appear?," one woman was sure that they were born with them. While we have never doubted that birth is an uncomfortable experience for a doe, we felt that even the natural childbirth fans would hesitate at the prospect of aiding in this delivery.

The question that we asked in the large sample was to describe the coat of a newborn deer. Only 29 percent of the general population described it correctly as spotted, mottled, flecked, white dots on brown, or something similar. The closer a person was associated



*Most people questioned knew that adult male deer are called bucks*



*Relatively few people correctly described a fawn's coat*

with hunting, the more likely he was to have answered the question correctly. Only 19 percent of the people who have never hunted answered correctly compared to 61 percent of those who have hunted in the past two years. Of people who have never hunted, however, the question was answered correctly more frequently by people who approve of hunting than by people who disapprove. In addition, younger people were correct more times than older people and the more formal education a person had, the more often he answered correctly. Finally, the population density of a respondent's home county was related to the percent-

age of correct responses-urban residents answering incorrectly more often than rural residents.

So much for reporting the numbers, what is the significance of them?

While it appears that sport hunting is still approved of by the majority of citizens, there is no cause for hunters to rejoice in these numbers. The margin of approval is painfully small, and that margin is built on the mild approval category. Since political issues are routinely resolved on the vote of people who are committed to an issue, we might expect none of the people in the "mild" categories to vote if hunting were put

## . . . Deer

to a political question—they probably would not bother getting involved. The decision would then fall to the activists, and the abolitionists would probably outvote the sportsmen. Our estimate from this study is that, of the total population over 18 years of age, 18 percent strongly approve and 26 percent strongly disapprove. While the hunters have been talking to themselves, arguing about doe harvests and lamenting the passing of open land, I would find it no surprise to look up in the near future and find it illegal to hunt in the State of New Jersey.

Is sport hunting gaining or losing ground? Our study has occurred at one point in time, and there are no previous studies with which to compare it in order to judge this trend, but some predictions can be made, and the sport hunter will not be encouraged by them. New Jersey will continue to urbanize, and we can expect that citizens reared in more densely populated areas will have less opportunity to understand hunting and wildlife. Since the strength of support for sport hunting comes from some association with hunting in a person's cultural background, we can also expect that the margin of approval will decline in the future, and that the pressures to ban hunting will increase rather than decrease.

If you are an ardent hunter, you are now wondering, "Is there any

hope?" Yes, I think there might be. The salvation of sport hunting, if it can be saved, will be through understanding and logic rather than emotion filled charges and counter-charges. While the people who would ban hunting are sincerely concerned for animals, arguments are based on honest emotional responses. Unfortunately, the counter-arguments of most hunters I have listened to are also drawn from an emotional commitment to a sport that means a great deal to them. Arguments for hunting need not be emotional. There is an overwhelming amount of factual information that can be used in defense of sport hunting. The hope that I see for hunting is that hunters must understand the biological basis of their sport and be willing to defend it on a rational level rather than on an emotional level. In my experience, a bag stocked with some sound biological information can work wonders in a discussion with hunting opponents. I have found that most people are very willing to listen. I have also found that the majority of opponents have formed an opinion with very little factual information and are willing to change their position.

The cure, of course, begins at home in stocking your bag with the facts and understanding that you will need at cocktail parties and other encounters. Information of this nature is best obtained from some excellent books that are available on wildlife and wildlife



*If you are an ardent hunter, you are probably now wondering if there is any hope for the future of sport hunting*

management. Every hunter should read Aldo Leopold's *Sand County Almanac*—a classic insight into a great conservationist's love of nature and of hunting. An excellent series of booklets on individual game species (deer, rabbits, pheasants, grouse, and mallards) is published by Olin Mathieson's Conservation Department. Our *Wildlife Legacy* by Durward Allen and *Wildlife Biology* by Ray Dasmann are two outstanding books on general wildlife management concepts. Finally, the Wildlife Society has recently published an excellent book on the subject entitled *A Manual of Wildlife Conservation*.

Before sending the new evangelists for sport hunting into battle, let me make one further point. The people who would ban hunting are motivated by a concern for wildlife. The people who hunt are moved by the same concern for the well being of wildlife species. As such, we should be natural allies in the battle for the protection of our shared values. At a time when all species of wildlife are under increasing pressures from environmental changes, the ultimate tragedy would be the loss of our common goal because our energies were expended fighting each other. #

# The Best in Many Years

## *Prospectus on the 1973 Trout Season*

By A. Bruce Pyle

*Assistant Chief, Bureau of Fisheries Management*

Productive trout fishing experiences are the result of a combination of factors primary of which are trout production at the hatchery, the application of proper stocking practices, weather conditions, and angler proficiency.

With regard to the production of trout at the New Jersey (Charles O. Hayford) State Fish Hatchery, it is the best it has been in many years. While much of the credit for this must go to Hatchery Superintendent Robert Williams, his assistant John Lane, and their team of hatchery personnel, Mother Nature must be given a share of the credit for the disproportionately abundant supply of water she provided during 1972.

Increased water in the hatchery increases the flushing rate of trout wastes from the rearing ponds, improves dissolved oxygen concentrations, stimulates trout metabolism and thereby growth, and reduces the incidence of serious disease problems. The end product of these combined factors is a bumper crop of trout which appears as though it will be available for stocking in 1973. In addition, the federal government is supplementing this crop with a substantial number of trout.

Of particular importance to trout anglers is the fact that rainbow trout make up a greater percentage of the trout to be stocked. This is important because rainbow trout are more readily caught than the brown trout which comprise the bulk of the remaining trout to be stocked. This should not be construed to imply that the rainbow is an easy trout to catch. But, if we stocked brown trout only for those who measure the success of a fishing trip on the number of trout caught, there would be a substantial reduction in the percentage of productive fishing trips. Since their production was phased out at the state fish hatchery, brook trout will be supplied in limited numbers by the U. S. Fish and Wildlife Service. Because of their greater tolerance for acid conditions, brookies will be reserved for stocking solely in the low pH waters of central and southern New Jersey.

Proper stocking practices include (1) the fitting of stocked trout, by species, to those particular environmental conditions in the available array where they can best survive and thereby be available to the anglers, and (2) stock-

ing the trout when and where they are most needed and provide the greatest angler satisfaction.

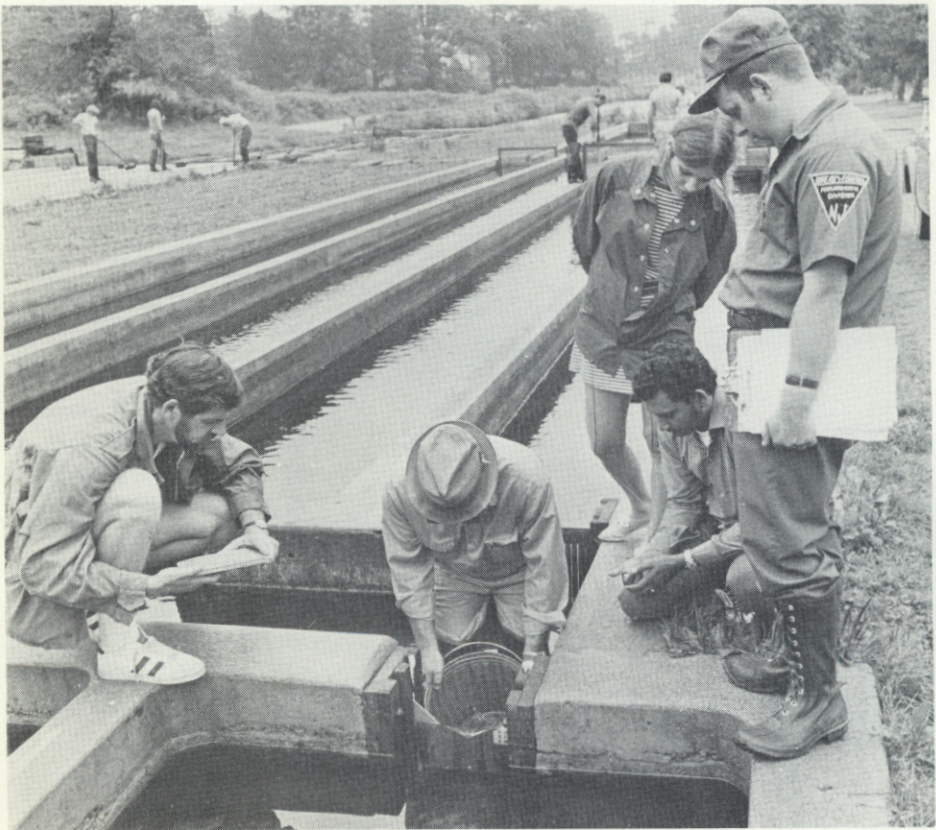
In my March 1972 *New Jersey Outdoors* article entitled "Prospectus for the 1972 Trout Season" I described the various research findings that were implemented for the purpose of improving angler satisfaction. Those pertinent to the placement of trout in an environment in which they could best survive included:

(1) Limiting the stocking of acid waters to the acid-tolerant

brook trout, thereby reducing the possibility of loss;

(2) Stocking as close to the opening of the season as possible those waters where trout survival is dependent upon water temperature; i.e., in waters where because of their chemical characteristics trout required a temperature of at least about 45°F. to permit their physiological adjustment and survival;

(3) Rearranging the pre-season trout stocking schedule to provide for the latest possible stocking of



*Abundant water supplies have favored hatchery production*

## ... Trout Season

major streams, thereby reducing by about 40 percent the probability for loss of trout in such waters due to high flows. Major lakes were moved to the fore of the pre-season stocking period to provide for this.

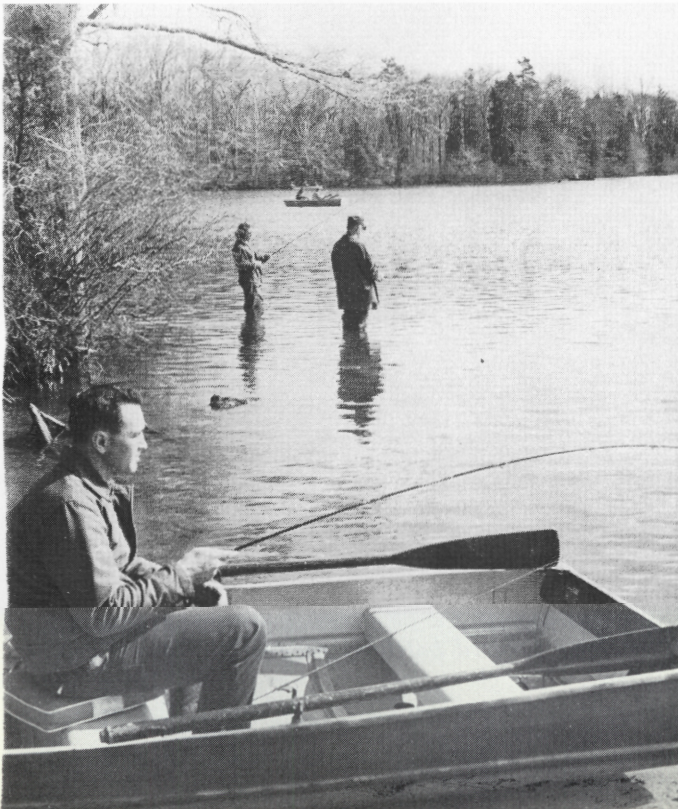
Another research benefit that has been applied and has contributed to angler satisfaction, but has not previously been mentioned, is the adjusting of the stocking schedule so that as many trout as possible are made available when they are most in demand and when they will provide the highest returns to the anglers.

Studies have shown that the peak angler effort occurs on the opening day of trout season. Thereafter it drops at varying rates. On the Flat Brook the average rate

of decrease was 0.33 angler per day.

In relation to this the trout stocked for the opening of the season are harvested at a rate somewhat less than those stocked during the first five weeks after the opening of the season, and the poorest returns come from trout stocked after about the fifth week of the season. It is readily apparent therefore, that the greatest benefit from the trout can be derived by stocking as many as possible during the first five weeks of the season.

Another factor contributing to the poor showing of trout stocked later is increased mortality due to the influence of high water temperature as it relates to reduced fish condition and the increased manifestation of disease.



*The stocking of major lakes during the fore of the pre-season stocking period allows later stocking of the major streams thereby reducing the probability for loss of trout in the streams due to high water flows*



*Brook trout will be reserved for stocking the acid waters*

For 1973, in our planning to provide for the greatest angler benefit that can be attained from stocking the additional trout available, we have taken the timing aspect into serious consideration. As a result, first emphasis will be placed upon distributing the additional trout during the five weeks following the opening of the season, and second emphasis will be on pre-season stocking.

The other factors necessary to a productive trout fishing experience are the weather, which is up to the Lord, and your angling proficiency. Since we like to see satisfied and happy anglers we will be striving to carry out our plans as described. So, if we are successful, you are adequately proficient in your angling, and the Lord graces us with good weather we, together, should have an excellent 1973 trout season. #

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## ***Fisheries Management***

In cooperation with U.S. Geodetic Service, a new gaging weir designed to pass spawning anadromous herring has been completed and installed in the Tuckahoe River at the head of the River Gaging Station.

Research on the Anadromous Fish Project revealed that shad have been reported in the Passaic River in the Dundee Dam Area (East Paterson).

Electrofishing surveys in Spruce Run Creek and Mulhockaway Creek uncovered spawning runs of brown trout in both waters.

The second release of the fall-winter experimental trout stocking program at Spruce Run Reservoir was made on December 20 with three hundred trout (one hundred of each species; brook, brown, and rainbow) stocked.

The year-long field work phase of the current Upper Barnegat-Metedeconk River estuary system study ended in November and data is now being analyzed. #

# The General Public

By Paul D. McLain,

*Federal Aid Coordinator*

*Photograph by the Author*

During the past 40 years of wildlife management literally millions of sportsmen's dollars have gone into the acquisition, development, and management of fish and wildlife habitat. The principal aim of management programs are to provide greater hunting and fishing opportunities for those who are paying the bill. However, due to this habitat acquisition, management, and research by the various state fish and game departments, tremendous outdoor recreation potential has been created for the non-consumptive public.

The birders, the hikers, campers, weekend sightseers, picnickers, and nature students have made great use of the fish and wildlife development areas created entirely at the sportsmen's expense.

Since wildlife development programs foster production and utilization of non-game, in addition to game species, many of New Jersey's fish and wildlife management areas are now utilized to a greater extent by the general public than they are by the sportsmen who paid for the acquisition, development, and management of the lands.

A perfect example is the 14,000-acre Colliers Mills Fish and Wildlife Management Area in northwestern Ocean County. This tract was acquired in 1943 after a wild-fire ravaged the pine and oak woodlands. During the past 30 years under federal aid to wildlife research and development programs, a total of 350 acres of lakes and ponds have been constructed and over 1,000 acres of fields cleared, limed, fertilized, and seeded to wildlife food and cover crops. Aside from a healthy deer herd, a good supply of rabbits, quail, grouse, beaver, otter, squirrel, and other game species, the managed area also supports many species of song birds, shore birds, waterfowl, and species of plants common and also presently rare in the "pine barrens."

The development work has provided access by 20 miles of graveled road to all parts of the 14,000-acre tract and the lakes and ponds are constantly being maintained to provide for public utilization.

Day use studies at Colliers Mills during the past 15 years indicated that about 160,000 persons entered the area annually for recreational



*The general public  
has made great use of  
the fish and wildlife  
management areas  
created entirely at the  
sportsmen's expense*

purposes. Of this number only about 20,000 were licensed upland game hunters, 7,000 were archers, 500 were trappers, and the remaining were primarily non-license buying citizens enjoying the recreational opportunities supplied at the expense of the sportsmen: Citizens who purchase hunting and fishing licenses and who contribute to our federal aid to fish and wildlife programs through the excise tax on arms and ammunition and on sales of certain types of fishing tackle.

While most of our state parks and forests charge on a per car or per person basis to enter, the Division's 134,000 acres of fish and wildlife management areas are open free to the public! The sportsmen's dollar is also expended to maintain the roads, pick up trash, develop camping facilities, and police the area for vandals and illegal activities.

Are the sportsmen complaining about the multiple use of their areas by the public? Not to any

great extent at the present time. However, the sportsmen, who have paid and are now paying the bills, certainly have the right to expect the support of the non-hunting and fishing public, if not financially, then at least in principle when it comes to legislation and restrictions which would adversely affect sportsmen's interest.

The present anti-hunting, anti-trapping, pro - preservation - of - everything philosophy is biologically in conflict with proper use of the resources. Through proper research, land acquisition, development, and management programs, the sportsman's dollars can be made to provide a greater recreational opportunity not only for the license buying hunters and anglers, but for the general public. Any legislation, restriction on management, or curtailment of biologically accepted and practical management programs will result in the loss of the recreation potential for everyone. #



## Discover It's Too Good

What a view this young wood duck has from his pond. It's a fantastic view of a whole new world of feathers, broken eggshells and other ducklings!

This wildlife world is full of new sounds and sights. Above the water, a muskrat makes mini waves as he moves to the shore where a young wood duck is nesting. A strange sound, "chug-o-rum, chug-o-rum," fills the air. It's the sound of a muskrat making a nest. A title of "musician of the pond."

For a young wood duck, joining this exciting new world is a splash, and he's there, swimming on his way across the pond, past the water lilies.

You too can discover a world full of wildlife. It's there in your back yard bird feeder. The way you enjoy wildlife can be a whole new world of insects, or maybe you're interested in using your skills against those of an elusive buck or a native trout. It's all about your feelings for things wild. There are many, many ways of enjoying the outdoors up to you.

It's Spring. What better time to be outdoors? Don't pass up the chance to miss.



# Wildlife Not To Miss

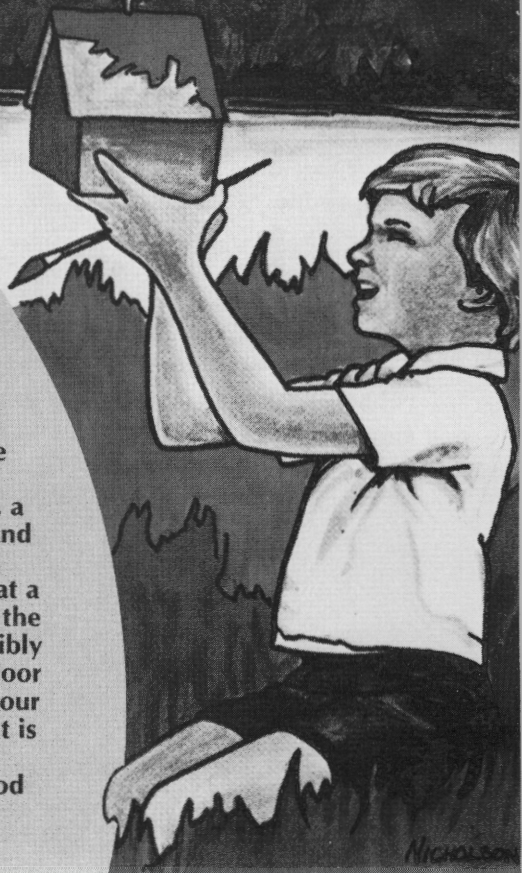
the edge of his nesting box high above the  
wildlife, and very different from the dark nest-

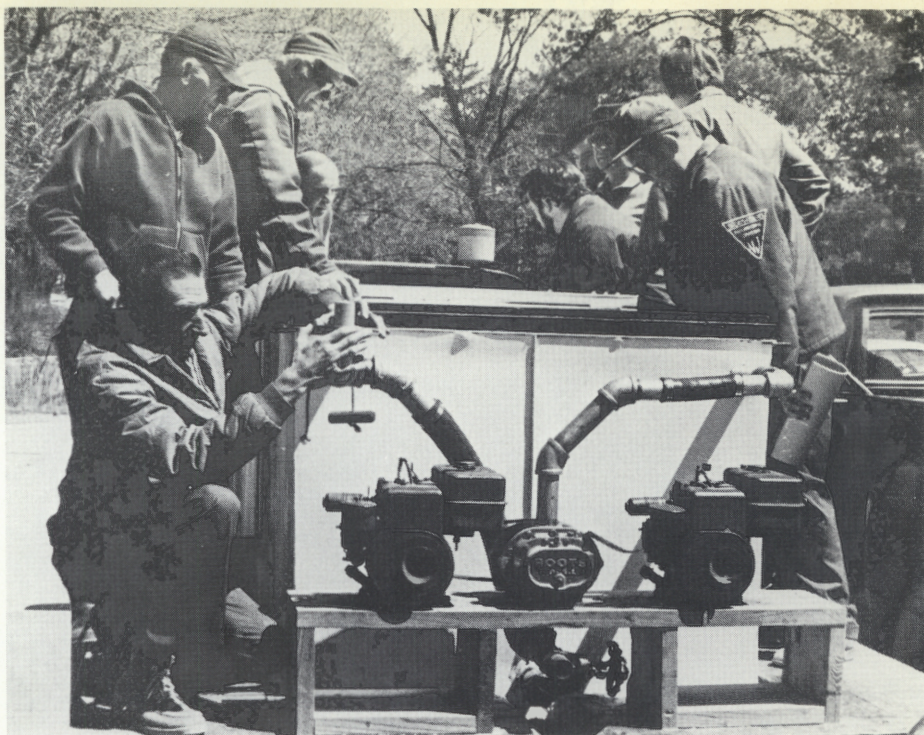
s. A red-winged blackbird calls out from the tip  
dles along with a mouth full of marsh grass. He  
er and her fawn search for succulent water plants.  
as a bullfrog competes with the blackbird for the

ld comes easily. All it takes is a leap, a short fall, a  
ond, discovering water bugs, turtles, mosquitos and

1 the vacant lot, woodland, prairie, marshland or at a  
varied as the wildlife you're seeking. Try exploring the  
amera to capture the graceful flight of a bird. Possibly  
e discoveries. Maybe you'll want to test your outdoor  
ou like writing, you might want to try describing your  
joying and appreciating wildlife. How you enjoy it is

p the opportunity . . . discover wildlife. It's too good





## **New Aeration System for Fish Truck**

Division of Fish and Game Maintenance Foreman Ted Vaughan, left foreground, tests new aeration system which he installed on a state fish hatchery distribution truck. The new system utilizes an air blower which delivers high volumes of air under low pressure through two large air stones located in each of four compartments containing trout. Filtered air intake is centrally located above the tank top in picture. Tank sides, top, and bottom have been insulated with sheets of sponge rubber to retain low water temperature. White exterior reflects the sun's rays.

#



*Bubbling action created by air blower can be increased or decreased. This system is superior to water re-circulation pumps and should enable poundage carrying capacity of each trout distribution truck tank to be increased 50 to 100 percent*

## For places to fish

# Waters Stocked With Trout

Trout fishermen may easily find a place to fish on opening day of trout season, and later, by referring to this list of waters stocked with catchable-size trout by the Division. This tentative list shows the number of catchable-size trout stocked or to be stocked by opening day.

### Pre-season Stocking — 1973

#### Key to Abbreviations

- S - Small waters — trout 7 to 9 inches  
M - Medium waters — trout 7 to 10 inches  
L - Large waters — trout 7 to 18 inches

#### Atlantic County

Birch Park Pond—Northfield .....	L	760
Hammonton Lake—Hammonton .....	L	760

#### Bergen County

Hackensack River—Old Tappan to Harrington Park .....	L	1,200
Hohokus Brook—Allendale to Ridgewood .....	S	300
Indian Lake—Little Ferry .....	M	800
Pascack Creek—Montvale to Westwood .....	M & L	500
Pond Brook—Oakland .....	S	50
Ramapo River—Mahwah to Oakland .....	L	4,100
Saddle River—Saddle River to Grove Street .....	L	1,800
Tienekill Creek—Closter .....	S	250
Whites Pond—Waldwick .....	M	600

#### Burlington County

Crystal Lake—Willingboro .....	L	700
Strawbridge Lake—Moorestown .....	L	900
Sylvan Lake—Burlington .....	L	1,200
Woolman's Lake—Mt. Holly .....	L	900

#### Camden County

Big Lebanon Run—Turnersville .....	L	820
Grenlock Lake—Turnersville .....	L	700
Hopkins Pond—Haddonfield .....	L	700
Rowands Pond—Clementon .....	L	800
Square Circle Lake—Gibbsboro .....	L	580

#### Cape May County

Dennisville Lake—Dennisville .....	L	450
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#### Cumberland County

Cooper Mill Park Pond—Vineland .....	M	450
Manantico Creek—Millville .....	M	180
Mary Elmer Lake—Bridgeton .....	L	500
Maurice River—Jessup Bridge .....	L	600
Shaw's Mill Pond—Newport .....	L	580

## . . . Water Stocked

### Essex County

Branch Brook Park Lake—Newark	L	900
Diamond Mill Pond—Millburn Township	L	900
Verona Park Lake—Verona	L	900

### Gloucester County

Greenwich Lake—Gibbstown	L	1,200
Harrisonville Lake—Harrisonville	L	700
Iona Lake—Iona	L	720
Mullica Hill Pond—Mullica Hill	L	600
Raccoon Creek—Ewan to Swedesboro	L	140
Swedesboro Lake—Swedesboro	L	700

### Hudson County

Hudson County Park Lake—North Bergen	L	900
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### Hunterdon County

Alexandria Brook—Milford	S	200
Alexauken Creek—Mount Airy	M	360
Amwell Lake—Ringoes	L	700
Back Brook—Ringoes	S	280
Beaver Brook—Annandale to Clinton	S	500
Capoolong Creek—Pittstown	M	940
Delaware-Raritan Canal—Raven Rock to Hunterdon County Line	L	1,520
Everittstown Brook—Everittstown	S	275
Frenchtown Brook—Frenchtown	S	405
Hakihekake Creek—Milford	S	200
Little York Brook—Little York	S	430
Lockatong Creek—Milltown	M	700
Milford Brook—Milford	S	310
Mt. Pleasant Brook—Mt. Pleasant	S	250
Mulhockaway Creek—Norton to Pattenburg	M	300
Musconetcong River—Rt. 31 to Delaware River	L	5,580
Prescott Brook—Round Valley	S	320
Raritan River, S. Br.—Hunterdon County Line to Three Bridges	L	6,680
Rockaway Creek, N. Br.—Mountainville to Whitehouse	L	320
Rockaway Creek, S. Br.—Lebanon to Whitehouse	S	280
Round Valley Reservoir—Lebanon	L	8,000
Spring Mills Brook—Milford	S	100
Spruce Run—Glen Gardner	M	720
Spruce Run Reservoir—Clinton	L	7,500
Sydney Brook—Sydney	S	250
Tetertown Brook—Tetertown	S	500
Wichecheoke Creek—Prallsville	S	320

### Mercer County

Assumpink Creek—Carnegie Rd. to 100 ft. below Whitehead Rd.	L	500
Colonial Lake—Trenton	L	520
Delaware-Raritan Canal—Hunterdon County Line to Yardley Bridge	L	2,600
Rosedale Lake—Rosedale	L	800
Stony Brook—Woodsville to Port Mercer	L	2,440

### Middlesex County

Bissets Pond—South River	M	100
Farrington Lake—New Brunswick	L	4,360
Ireland Brook—Fresh Ponds	S	140
Lawrence Brook—Milltown	L	1,160
Roosevelt Park Lake—Metuchen	L	880
Wigwam Pond—Jamesburg	L	280

**Monmouth County**

Big Brook—Marlboro	M	50
Englishtown Mill Pond—Englishtown	L	140
Garvey's Pond—Nevasink	L	500
Hockhocksen Brook—Tinton Falls	M	260
Manasquan River—Farmingdale to Allenwood	L	4,650
Mingamahone Brook—Farmingdale	S	420
Mohawk Pond—Red Bank	L	400
Pine Brook—Tinton Falls	S	75
Ramanesson Brook—Holmdel	M	760
Shadow Lake—Red Bank	L	900
Shark River—Hamilton	M	180
Spring Lake—Belmar	L	900
Takanassee Lake—Long Branch	L	280
Topenemus Lake—Freehold	L	600
Willow Brook—Holmdel	M	50
Yellow Brook—Colts Neck	M	310

**Morris County**

A.B.C. Pond—Roxbury Township	M	250
Beaver Brook—Rockaway	M	420
Black River—Milltown to Hacklebarney State Park	L	1,320
Budd Lake—Budd Lake	L	1,860
Burnett Brook—Ralston	S	140
Burnham Park Lake—Morristown	L	500
Den Brook—Union Hill	S	100
Drakes Brook—Flanders	S	340
Electric Brook—Schooley's Mountain	S	120
Flanders Brook—Flanders	S	180
Gruendykes Mill Pond—Hackettstown	L	400
Guard Lock—Saxton Falls	L	700
Hibernia Brook—Hibernia	S	280
Indian Brook—Mendham	S & M	570
Kikeout Intake Reservoir—Kinnelon	L	600
Lake Hopatcong—Lake Hopatcong	L	9,172
Lake Musconetcong—Netcong	L	1,860
Ledgewood Brook—Ledgewood	S	400
Mill Brook—Center Grove	S	500
Mt. Hope Pond—Mt. Hope	L	800
Musconetcong River—Sussex County Line to Hackettstown	L	4,320
Pompton River—Rt. 23 to D.L. & W.R.R. Bridge, Lincoln Park	L	440
Raritan River, S. Br.—Rt. 46, Budd Lake to Hunterdon County Line	L	2,240
Reservoir Brook—Brookside	S	100
Rhinehart's Brook—Hacklebarney State Park	S	220
Rockaway River—Milton to Boonton	L	8,360
Speedwell Lake—Morristown	L	700
Stickles Brook—Boonton Township	S	120
Trout Brook—Hacklebarney State Park	S	100
Washington Valley Brook—Morristown	S	220

**Ocean County**

Metedeconk River, N. Br.—Georgia to Greenville	L	860
Metedeconk River, S. Br.—Bennet Mills to Lakewood	L	600
Prosperstown Lake—Prosperstown	M	400
Toms River, N. Br.—Holmansville	L	340

**Passaic County**

Barbour's Pond—near Paterson	L	800
Belcher's Creek—West Milford	S	220
Cooley's Brook—Browns	S	100
Lafayette Pond—Hawthorne	M	320

## . . . Water Stocked

Oldham Pond—North Haledon	L	700
Pequanock River—Smith Mills to Butler	L	800
Pompton Lake—Pompton Lakes	L	2,220
Pompton River—Pompton Lakes to Rt. 23	L	2,380
Ringwood Brook—Ringwood	M	100
Sheppard's Lake—Thunder Mountain	L	700
Wanaque River—Greenwood to Pompton Lakes	L	2,800

### Salem County

Hancock's Sand Wash Pond—Salem	L	500
Schadler's Sand Wash Pond—Penns Grove	L	400

### Somerset County

Harrison Brook—Liberty Corner	S	100
Lamington River—Burnt Mills	L	280
Passaic River—Basking Ridge to Dead River	L	1,500
Peapack Brook—Gladstone	M	450
Raritan River, N. Br.—Far Hills Jct. to S. Br. Raritan River	L	2,340
Raritan River, S. Br.—Neshanic Station to Dalrymple Bridge	L	1,220
Rock Brook—Zion	S	280
Toms Brook—Martinsville	S	220

### Sussex County

Alms House Brook—Myrtle Grove	S	100
Andover Jct. Brook—Andover Jct.	M	180
Beaver Run—Beaver Run	S	180
Bier's Kill—Shaytown	S	50
Big Flat Brook, upper—Saw Mill Lake to Rt. 206	S & L	740
Big Flat Brook, lower—Rt. 206 to Delaware River	L	7,200
Black Brook—Beaver Lake Mt.	S	100
Black Brook—McAfee	S	100
Clove River—Colesville to Sussex	M	480
Cranberry Lake—Cranberry Lake	L	1,860
Culver's Lake Brook—Branchville	S	100
Dragon Brook—Cranberry Lake	S	75
Dry Brook—Branchville	S	75
Glenwood Brook—Glenwood	S	75
Hardystonville Brook—Hardystonville	S	100
Hunts Lake Brook—Yellow Frame	S	100
Kymer's Brook—Andover	S	75
Lake Ocquittunk—Stokes State Forest	L	900
Little Flat Brook—Hainesville to Bevans	M	1,040
Lubbers Run—Lake Lackawanna	S & M	240
Mill Brook—Montague Township	S	160
Musconetcong River—Lake Hopatcong to Sussex Co. Line	L	780
Neldon Brook—Swartswood	S	75
North Church Brook—Monroe	S	100
Papakating Creek—Pelletown to Sussex	M	420
Papakating Creek, W. Br.—McCoy's Corner	M	220
Parker Brook—Stokes State Forest	S	120
Paulinskill River—Lafayette to Stillwater	L	2,300
Pequest River—Springdale, Rt. 206 to Warren Co. Line	L	440
Quarry Brook—Sussex	S	100
Roy Spring Brook—Stillwater	S	100
Saw Mill Lake—High Point Park	L	700
Seneca Lake—Sparta Township	L	400
Shimers Brook—Montague Township	S	120
Sparta Glen Brook—Sparta Glen	M	400
Sparta Jct. Brook—Sparta Jct.	S	100

Stony Brook—Stokes State Forest	S	100
Stony Lake—Stokes State Forest	M	700
Swartswood Lake—Swartswood	L	6,540
Tar Hill Brook—Lake Lenape	S	75
Trout Brook—Middleville	S	160
Tuttles Corner Brook—Tuttles Corner	S	100
Wallkill River—Sparta to Hamburg	S & L	1,740
Wawayanda Lake—Wawayanda Lake	L	6,360
Yellow Frame Brook—Yellow Frame	S	100

**Union County**

Ash Brook—Clark Township	S	140
Green Brook—Scotch Plains	S	220
Rahway River—Springfield to Rahway	L	3,200

**Warren County**

Barker's Mill Brook—Vienna	S	100
Bear Creek—Southtown	S	100
Beaver Brook—Hope to Pequest River	M	600
Blair Creek—Blairstown	M	160
Blair Lake—Blairstown	M	500
Buckhorn Creek—Roxburg	S	220
Dark Moon Brook—Johnsonburg	S	100
Delawanna Brook—Delaware	S	180
Dunnfield Creek—Dunnfield	M	520
Furnace Brook—Oxford	S	260
Honey Run—Hope Township	S	75
Jacksonburg Brook—Jacksonburg	M	280
Johnsonburg Creek—Johnsonburg	S	75
Lomison's Glen Brook—Lomison's Glen	S	100
Lopatcong Creek—Harmony to Phillipsburg	S	800
Low's Hollow Brook—Broadway	S	240
Mill Brook—Broadway	S	100
Mountain Lake—Buttzeville	L	3,580
Muddy Run—Hope	S	100
Musconetcong River—Hackettstown to Rt. 31, Hampton	L	6,260
Paulinskill River—Stillwater to Hainesburg	L	4,900
Pequest River—Long Bridge to Belvidere	L	3,600
Pohatcong Creek—Mt. Bethel to Carpentersville	M & L	2,750
Pophandusing Creek—Hazen to Belvidere	S	420
Roaring Rock Brook—Brass Castle	S	260
Silver Lake—Hope	L	500
Trout Brook—Hackettstown	S	240
Trout Brook—Hope	S	75
Van Campens Brook—Millbrook	M	750
Yard's Creek—Hainesburg	S	200

## *Middlesex County Junior Sportsmen's Show*

Rutgers Field House, New Brunswick

**April 4 - April 7, Inclusive**

Many exhibits—rod and gun, archery, skin diving, movies,  
special events, conservation, fish and game, and nature

No charge for Admission

Al Toth, Chairman

February - March, 1973

23



## Open House at the Fish Hatchery

Traditionally the Division holds "open house" at the Charles O. Hayford Fish Hatchery in Hackettstown during March as shown in these scenes. However, the Hatchery is open every day of the year and welcomes one and all during specified hours during the daytime. It is a fine opportunity for an interesting family outing in the open and a chance to introduce non-anglers to the wonderful world of fish and fishing.

*Boy, did you ever see  
so many trout*



*Boys will be boys*



*And, girls will be girls*

*Photographs by  
Harry Grosch*

# Fishing Starts at the End of the Line

When is the end of something actually the beginning?

The end of a fishing line is truly the beginning, as far as a fish is concerned. For this is what a fish sees first, and how well the line is rigged is important to angling success.

Leaders are important to every kind of fishing. They lessen the chance of a fish seeing the line, and absorb punishment by rough-mouthed fish. Bass anglers working brush-filled lakes often use a "shock" leader—a short piece of 25- or 30-pound-test monofilament—that lets them get the fish on top the water and to the boat. Fly fishermen use fine leaders which are hard to see. Fish with sharp teeth or rough mouths require a wire leader.

Hooks should fit the fish. Bass anglers prefer sizes 1/0 down to a #5. Panfish take a #8 to #10 hook, trout even smaller. Freshwater hooks are black or bronzed. Use tinned hooks in saltwater to resist corrosion. The smaller the hook, the larger the number given it. Bait fishermen prefer a hook offset from the shank; trollers like a straight hook.

Never use more sinker than needed to get the bait down to the desired level. Sliding sinkers are preferred for catfish, other angling where it is best to let the fish run with the bait before striking, and for bass-fishing with plastic worms. Split shot is good for panfish, adding small amounts of weight to heavy rigs, and for putting salmon eggs or worms on the bottom of swift streams.

Always use the smallest possible swivel for the needed strength. Make sure swivels are in good working order, and discard any that are not. Saltwater anglers concerned about fish striking shiny swivels use black ones instead of brass. #

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## To Avoid the Crowds Fish the Smallest Waters

On the opening day of trout season April 7, anglers wishing to avoid the crowds should seek out the small and medium size streams. Many of these receive little attention as anglers tend to concentrate on the ponds and larger streams. Actually, because of their size the smaller streams, like the smaller ponds, are warmed more readily by the sun than larger waters. And since trout in early spring require warmth to stimulate their feeding, angling in the smaller streams is about as good as can be had.

The reverse of this is true with large lakes. In these the best fishing occurs about the last half of May with earlier stocked fish providing the catch. #

# Douglas-fir

(*Pseudotsuga menziesii*)

Douglas-fir, sometimes called coast Douglas-fir, red fir, Douglas spruce, or Oregon Douglas fir, is one of the most important evergreen timber trees in the United States. It is not a native of New Jersey, but it has been widely planted throughout the state.

## Range:

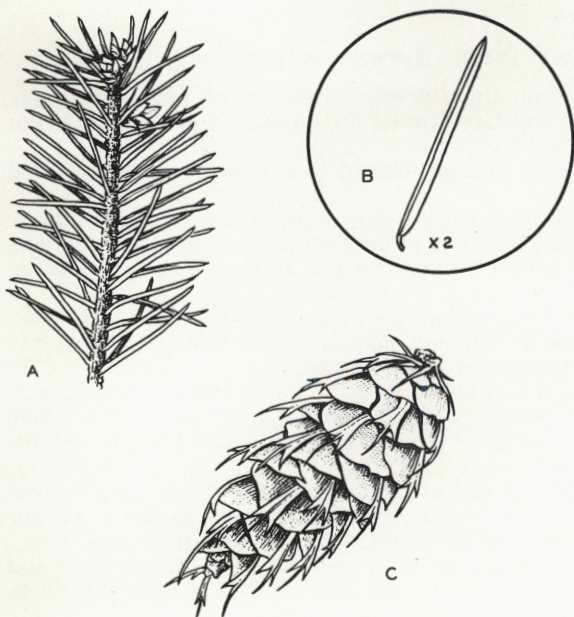
It is a native in the forests from the Rocky Mountains to the Pacific Coast and from Mexico to British Columbia.

## Leaves:

A single, flat, linear, straight or curved evergreen leaf. It is about 1 inch long, and the leaves sometimes tend to be spirally arranged around the twig. (See figures A and B.) The leaf is yellowish to dark green, having a row of white stomata on each side of the mid-rib on the bottom of the leaf. Leaves remain on the tree for about eight years.

## Twigs:

Nearly smooth and marked with oval scars after their leaves have fallen. (See figure A.) Branchlets are pendulous, and buds are sharp-pointed, spindle-shaped, and reddish brown. Bark on young



## Douglas-fir

- A. Leaves, on twig
- B. Leaf, single
- C. Fruit, or cone

stems is smooth except for resin blisters. On old trees the bark is thick and shaggy.

**Flowers:**

Orange male flowers arise from the axils of the leaves on branchlets formed the previous year. Reddish female flowers occur at tips of branchlets. Flowering takes place during spring and summer, depending on the locality of the trees.

**Fruit:**

A bristly cone with three-lobed, fork-like bracts. (See figure C.) Cones are 2 to 4 inches long and ripen during August and September. Seeds are oblong, triangular, and winged. There are two seeds borne under each cone scale. About 42,000 seeds are required to make a pound.

**Uses:**

The Douglas-fir sometimes grows to a diameter of 8 to 10 feet and a height of over 300 feet. Its principal users are for building and construction purposes, including lumber, piling, and plywood. It is used for railroad ties, fuel, barrel staves, flooring, boxes, crates, and fence posts. In New Jersey and in other parts of the country, it is in demand for Christmas trees and ornamental purposes. It is one of our most useful trees. #

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

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## Subscribers of New Jersey Outdoors

You have noted for some time the extreme tardiness of our publication, **New Jersey Outdoors**. Many of you have taken the time to write us inquiring as to the problem and voicing your feelings.

I'm not going to offer alibis or excuses, except to say we have experienced a series of production problems.

These problems have caused us to take a very serious look and re-evaluate our publication. Should we cease publication, or does its value as a public relations tool warrant continuing it? As it presently exists, it is a detriment to our program instead of an asset.

After considerable time and deliberation, we in the Division and the Department feel it does serve an important function, should be continued, and that the associated problems are in the process of being resolved.

Our present goal is to bring the publication up to date, and the first step is being taken with the combined February-March issue. To compensate for this combined issue, all subscribers will have their subscription extended to receive the twelve issues subscribed for.

We desire to improve the content and at the same time are planning a "new look" for the magazine so that it will appeal to the various segments of our population concerned and interested in New Jersey's wildlife.

We ask your cooperation in bearing with us and that our faith in you and your faith in us will pay off in an improved Division of Fish, Game and Shell-Fisheries wildlife publication.

Russell A. Cookingham  
Director

## Council Highlights

### Members and Chairman Sworn In

Harry McGarrigel of Atlantic City and David Hart of Cape May now represent the commercial fishing industry on the New Jersey Fish and Game Council. They succeed Raymond Richardson and Joseph Schollenberger.

Alex Toth of North Brunswick was sworn in for another four-year term as Fish and Game Council chairman.



*Deputy Commissioner Joseph Barber, left, installed Fish and Game Council Chairman Alex Toth, second from left, for a second four-year term and also swore in new Council members David Hart and Harry McGarrigel. Division Director Russell A. Cookingham, who was present at the ceremony, is at right*

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### Law Enforcement

A Roselle Park market owner has been successfully apprehended for selling illegal size lobsters.

A Ridgfield Park hunter has been fined for an illegal deer with antlers screwed into its head.

Conservation officers have been concentrating their efforts in protecting canvasback and redhead ducks in upper Barnegat Bay where a good concentration of these waterfowl winter.

Illegal possession of non-native and protected wildlife continues to be a problem for conservation officers. The public is reminded that wildlife belongs in the woods, not in the home. #

# The Wood Duck

## Species:

The wood duck  
*Aix sponsa*

## General Characteristics:

A rather small duck, found usually in fresh water streams and ponds, and only occasionally along the edges of the salt marshes. The wood duck is one of the most colorful of the waterfowl, the male with a crest, and iridescent green, bronze, and purple plumage on the head, a red eye, white throat, chestnut chest, greenish back, and white belly. The voice is more of a squeal than a quack. The tail is considerably longer than that of other ducks. Found usually in pairs or small groups. Because it breeds in New Jersey and even south of the state, it is one of the earlier migrants, thus avoiding the ice in fresh water ponds and streams.

## Range:

All of New Jersey and eastern United States; migrates in September and October. Winters in southern states and Mexico in inland ponds and streams.

## Life History:

The wood duck is one of the tree-nesting ducks, using large woodpecker holes or other cavities. The location may be close to the ground or as high as 50 feet in a large tree. It will readily accept a nest box prepared for it. The usual clutch is 10 to 15 eggs, and the incubation period is about 28 to 31 days. After hatching, the hen leaves the nest and calls to the young birds from the ground. They readily jump out of the hole and fall to the ground, apparently without injury. The hen conducts the brood to water, preferably a wooded stream, but tree-lined ponds are also used. The young quickly learn to chase insects and feed on tender vegetation. The diet of the adults is mixed seeds, fruit, berries, nuts, and acorns, as well as more normal duck food such as wild rice, pond weed, duck weed, and other vegetation.

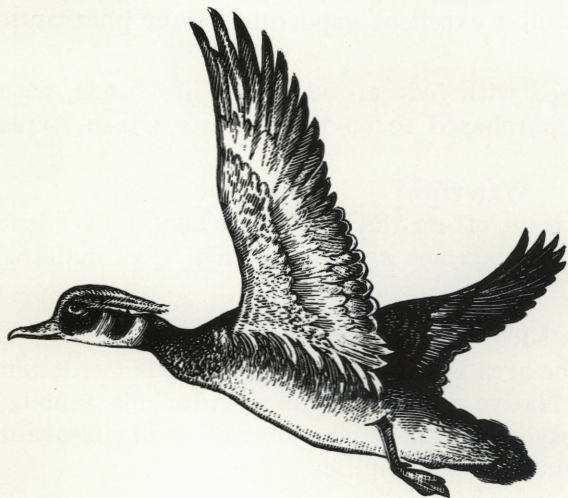
## Environmental Resistance:

*Weather*—Generally, weather has less influence on the wood duck than on other species of waterfowl, as the nesting location as well as diet is somewhat different from other waterfowl.

*Disease*—Probably seldom gets lead poisoning or botulism due to different feeding habits. May be subject to bird malaria and possible sarcosporidiosis.

*Predators*—The raccoon is probably the most serious threat to the wood duck, by reason of nest location in trees. Other predators may include weasels and mink, as well as duck hawks. Ducklings may be taken by turtles, fish, and mink.

*Hunting*—One of the more popular inland ducks. The wood duck was in some danger in the early 1900's; but, a closed season until



*The wood duck, which is one of the most colorful of waterfowl, has a crest on its head. When flying the wood duck shows a light-colored belly, a rather long, dark tail, and dusky wings*

1941 resulted in increased numbers. Because of early migration, New Jersey hunters do not enjoy a very long season.

#### **Management:**

A reduced daily bag limit has helped increase the abundance of this popular waterfowl. One very popular and effective practice is the creation and erection of nest boxes. These can be made of boards, boxes, barrels, stove pipe, tar paper, or other materials. They should be 8 to 10 inches wide, 10 inches from front to back, and at least 20 inches high. The nest should be placed on a tree or post with a collar or other predator guard to prevent raccoons from entering the nest. The hole can be circular, about 4 inches in diameter, or rectangular or elliptical, 3¼ inches high by 4 inches wide.

#

—Robert E. Mangold,  
*Bureau of Wildlife Management*

# **Nantuxent Area**

## **Cumberland County**

The Nantuxent Fish and Wildlife Management Area is located in Cumberland County four miles west of Cedarville. Follow Bay Point Road from the center of town to the first crossroad, where a left turn will lead to the area. This tract has a total of 962 acres of which approximately 800 acres are marshland. The upland portion is farmland and offers the small game hunter excellent opportunities for pheasants, rabbits, and quail.

This tract was purchased with federal aid to wildlife funds, with the exception of 129 acres purchased through the State Green Acres Program.

### **Waterfowl**

The marshland of this tract offers the waterfowl hunter excellent hunting opportunities. Principal species are black duck, teal, mallard, pintail, and geese.

### **Upland Game**

The upland portion of the area is managed to provide the maximum food and cover for wildlife. Native species on the area include rabbits, pheasant, and quail. Pre-season and in-season liberation of pheasant and quail offer additional hunting opportunities.

### **Deer**

The area offers a limited amount of deer hunting for both the shotgun and bow enthusiast.

### **Trapping**

The mink and muskrat population on the area offers trapping opportunity during the winter months.

This area is being maintained 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 license money of the sportsmen. #

—*William M. Smith,*  
Bureau of Wildlife Management

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## ***Information and Educational Unit***

Programs on various phases of Division activities have increased through public awareness of the environment. Schools, agencies, and organizations have received lectures, slide talks, displays, and films. #

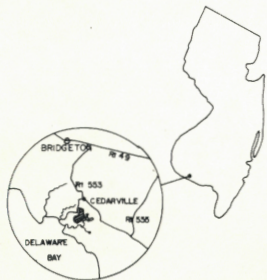
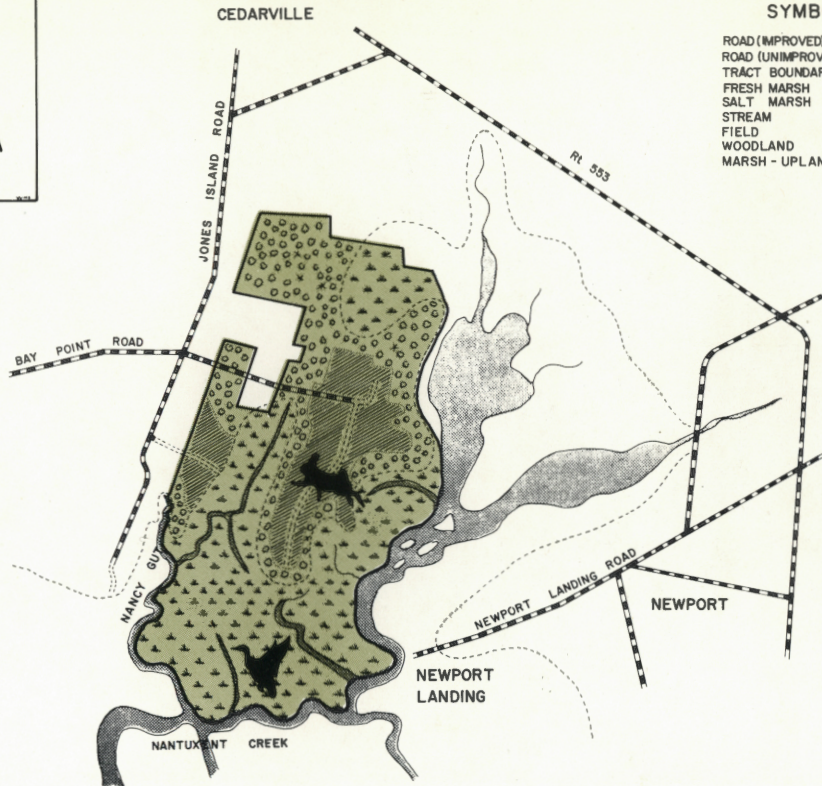
Cumberland County

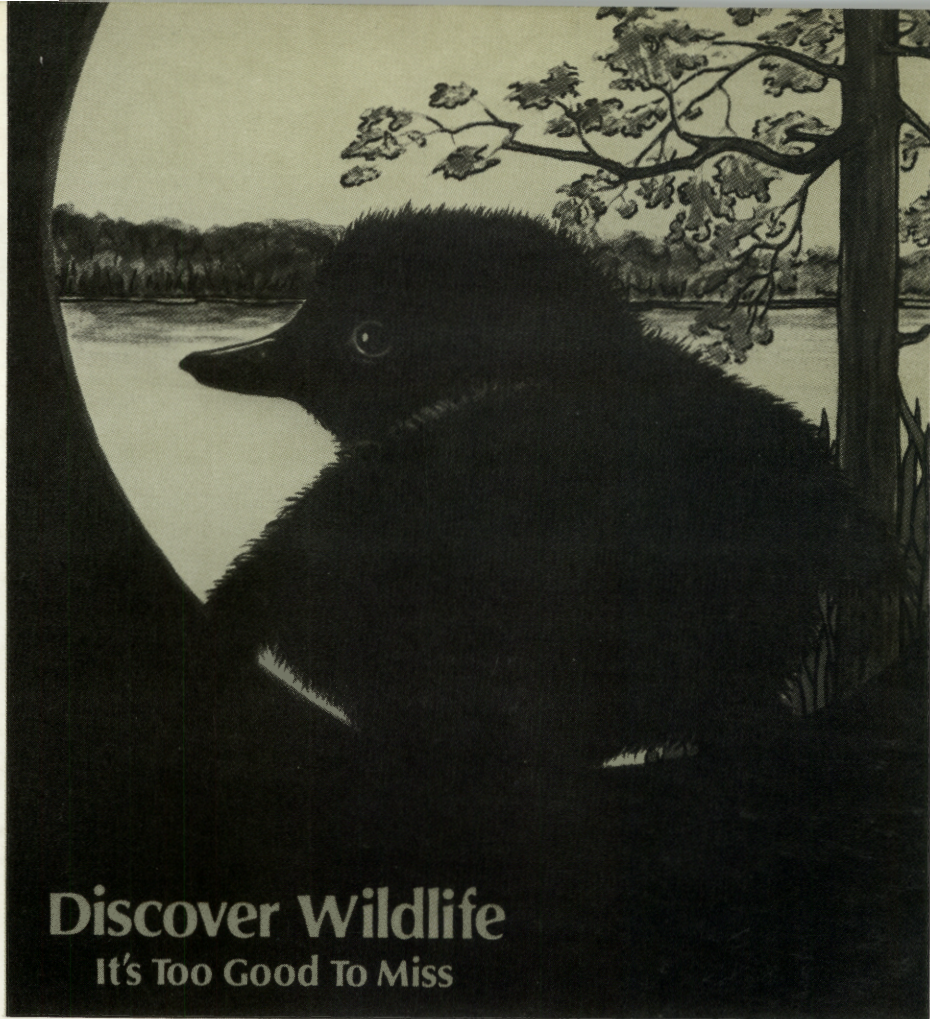
# NANTUXENT FISH & WILDLIFE MANAGEMENT AREA

SCALE: 0 1/4 1/2 MILE

## SYMBOLS

- |                     |             |
|---------------------|-------------|
| ROAD (IMPROVED)     | ———         |
| ROAD (UNIMPROVED)   | - - - - -   |
| TRACT BOUNDARY      | · · · · ·   |
| FRESH MARSH         | ▲ ▲ ▲       |
| SALT MARSH          | * * *       |
| STREAM              | — — —       |
| FIELD               | ▨ ▨ ▨       |
| WOODLAND            | ○ ○ ○       |
| MARSH - UPLAND EDGE | - · - · - · |





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