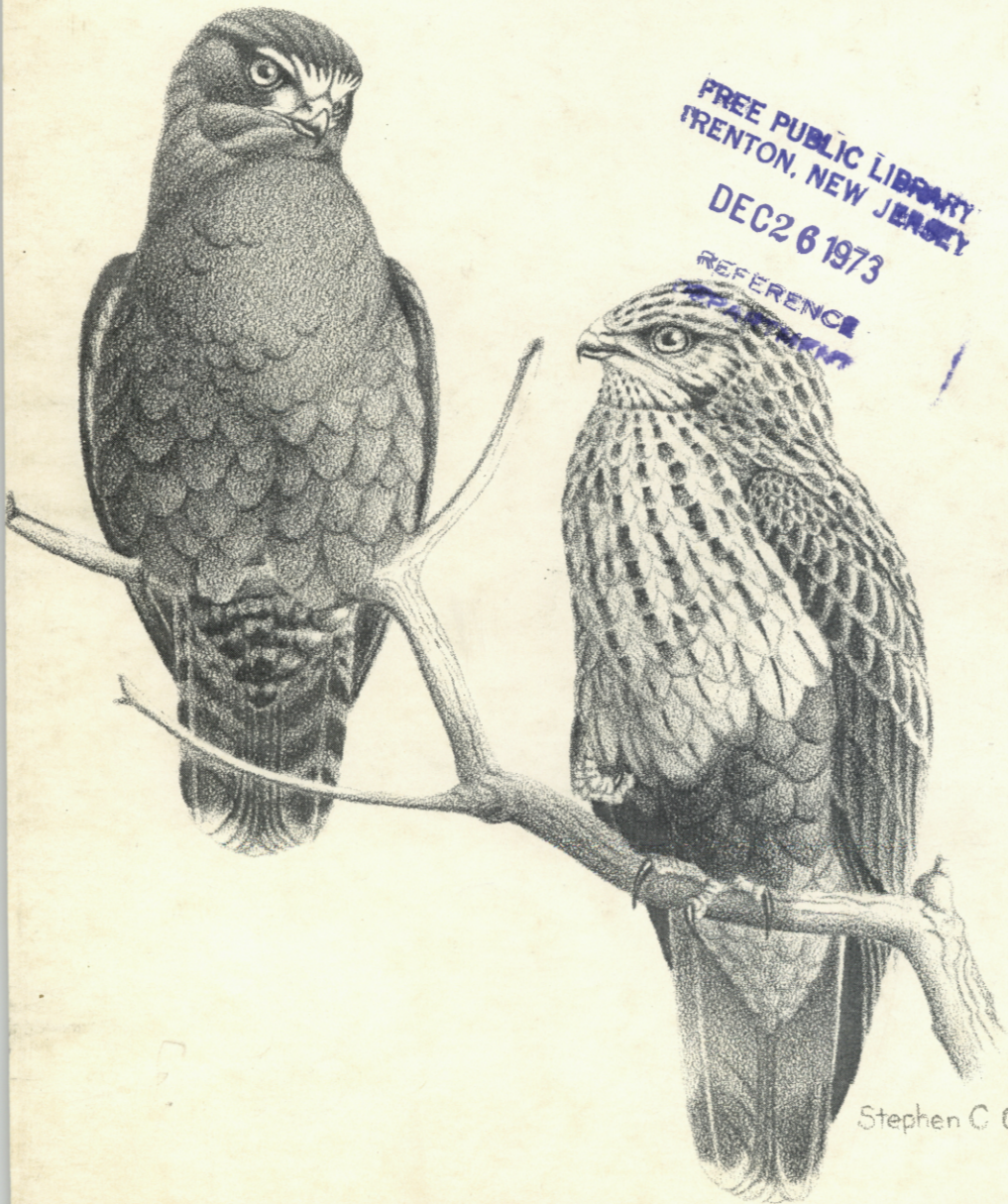


Balcony

New Jersey *Outdoors*

January, 1973



FREE PUBLIC LIBRARY
TRENTON, NEW JERSEY
DEC 26 1973
REFERENCE
SERIALS

Stephen C Quinn

They've All Got Friends

By Thedora E. Schubert

Public Information Assistant

The State of New Jersey allocates responsibility for New Jersey's wildlife to the Division of Fish, Game, and Shell Fisheries in the Department of Environmental Protection. The term "wildlife" includes more than just rabbits and deer and pheasants and trout; it also includes songbirds, reptiles, amphibians, and the myriad other forms of creatures indigenous to New Jersey. Because of the enormity of this responsibility, the Division simply does not have the time or manpower to look after all its charges on an individual basis.

This does not mean, however, that the Division has no concern for "non-game" species, while in fact many of these non-hunted birds and animals prosper on Fish and Wildlife Management Areas throughout the state. These fertile areas are specifically managed to produce food and cover for wildlife, thus benefitting more than just game species. People who familiarize themselves with these public lands are often pleasantly surprised by the variety and numbers of birds and animals.

In this day and age of specialization where every sport, hobby, religion, food fad, art, and literature have their following, so it is with animal lovers. Dogs and cats are common household pets, yet even they evoke extremely specialized interest through the various breeds and the qualities they embody. Field trial enthusiasts know only the excellence of performance they strive to instill in their dogs while show dog breeders seek to produce a specimen which as closely as possible resembles a written standard. Tropical fish owners delight in the beauty of their brightly colored finned charges while canary raisers strive for ever more melodious singers.

Then there are the specialized interests who take under their wing the wild creatures whom they are seldom permitted to possess, but whom nonetheless they admire and defend. So it is that New Jersey houses several organizations devoted specifically to at least one type of animal or bird. Devotion to these creatures, however does not necessarily imply ability to manage or maintain populations of these favored animals, rather it indicates simply a preference for that species.

The Division of Fish, Game, and Shell Fisheries sometimes offends these groups by setting seasons for the harvest of these creatures, a

Continued on page 31

State of New Jersey

William T. Cahill
Governor

Department of Environmental Protection

Richard J. Sullivan
Commissioner

Division of Fish, Game, and Shell Fisheries

Russell A. Cookingham
Director

Fish and Game Council

Al Toth, Chairman,
North Brunswick ('72)
Raymond Baker,
Monmouth Jctn. ('73)
John B. Cavagnaro,
Vineland ('75)
E. Anthony Delgado,
Vineland ('74)
George H. Demarest,
Hillsdale ('75)
Randle N. Faunce,
Delanco ('74)
Neal Munch,
Freehold ('75)
Raymond T. Richardson,
Port Monmouth ('72)
Joseph Schollenberger,
Holmdel ('72)
Steven Tczap,
Clifton ('73)
Charles Webber,
Westwood ('73)

Public Relations

William E. Peterman,
Supervisor

Law Enforcement

John C. O'Dowd,
Chief

Wildlife Management

George N. Alpaugh,
Chief of the Bureau

Fisheries Management

Robert A. Hayford,
Chief of the Bureau

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.

In This Issue

They've All Got Friends	Inside Front Cover
For Better Fishing	2
Outdoor Education Program	10
Essex County Fish Program	14
The No-Longer Ivory Tower	18
Ground-breaking at Assunpink	25
An Old Quarrel	24
Sweet Gum	25
They Come For Our Mice	27
The Coyote	29
Junior Sportsmen's Show	31
Walpack Tract	32
Walpack Tract Map	Inside Back Cover

Cover—"Rough-legged Hawks"—Stephen C. Quinn

Severe Arctic winters and a decrease in rodent populations drive these large soaring hawks to the United States in search of food. Protected by state and federal laws, birds of prey should not be destroyed. For more on the rough-legged hawks see page 27.

Vol. 23, No. 7

January, 1973

Publication Office: Room 702, Labor Building, John
Fitch Way Plaza, Trenton, N. J. 08625

Mailing Address: P. O. Box 1809, Trenton, N. J. 08625

Editor: R. Adams

Second-class postage paid Trenton, N. J. 08608, and additional mailing office.

Subscription: \$3.00 a year, by check or money order, payable to New Jersey *Outdoors*. Cash is forwarded at senders risk. No stamps please.

Change of address: Should be reported directly to the Editor. Send both old and new address. The Post Office will not forward copies unless forwarding postage is provided by subscriber. Copies not delivered through failure to send change of address six weeks in advance cannot be replaced.

All unsolicited material is sent to the magazine at the risk of the sender.

Permission granted to reprint with credit to New Jersey *Outdoors*.



For Better Fishing

A Winter Trout Stocking Program

By Robert H. Soldwedel

Assistant Fisheries Biologist

Photographs by Harry Grosch and Robert H. Soldwedel



Charles Masser, left, and Author Robert H. Soldwedel tagging and measuring trout and recording the data before transporting the fish to Spruce Run Reservoir for stocking

Normally, New Jersey's trout stocking program is confined to a two and one-half month period running from mid-March through May. During this period over 500,000 trout must be distributed from the Charles O. Hayford Fish Hatchery at Hackettstown to streams and lakes throughout the state. This places a tremendous burden on the hatchery staff and equipment and often the trout are not as well distributed as we would like.

If we could spread the distribution of trout over a greater period of time it would facilitate greater individual attention for each body of water on our stocking schedule. However, stocking in June and July and even after mid-May is biologically unsound in most of our streams and lakes because of high water temperatures and low flow conditions. One possible solution to this problem would be to initiate our stocking program during the winter, thereby giving us time to provide a more conscientious spreading of trout and alleviating our tight distribution schedule, which, as it stands now leaves little room for maneuvering to meet unexpected problems that are always encountered.

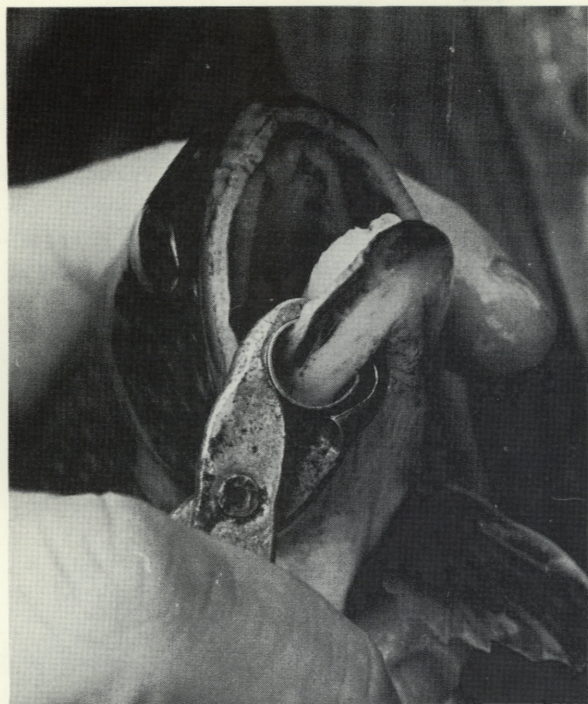


Charles Masser checking trout on measuring board

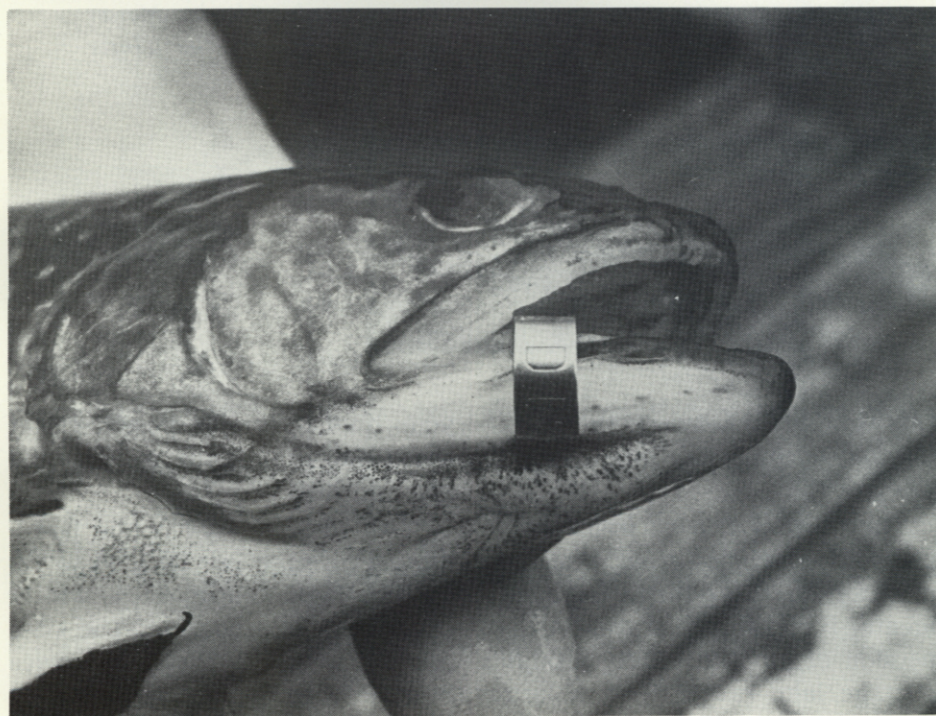
. . . For Better Fishing

However, before we rush into such a program there are many questions for which we should have answers. For example, if we stock trout in December, how many will

be left for opening day in April, and thereafter in May? Surely, if the number of trout caught from a December stocking is substantially less than from a March stocking, the December releases are not in the best interests of the anglers,



Jaw tag being applied to trout, left, and, below, trout with jaw tag. This tag is what fishermen should look for on trout and report for better fishing



. . . For Better Fishing

who are the ones paying the bill. Therefore, such stocking should not be continued. Previous studies have shown that this is what we could expect to happen if we applied this program to streams; however, in large impoundments

concentration at the point of release. Also, during the interlude between stocking and opening day there would be a chance for the trout to shake off the shock of being transported and to adapt to their new environment, thereby enabling them to give a better account of themselves on the end of



Trout being stocked in Spruce Run Reservoir by Charles Masser during the winter

this time lapse between the stocking and opening day might not be so critical.

There could also be positive aspects of a winter trout stocking program in these large impoundments; for example, a greater dispersion of stocked trout throughout the lake rather than a large

your line. It is also possible that the trout may gain weight and grow an inch or two.

With these questions and possibilities in mind, we decided to research the potential of a winter trout stocking program. The sites selected for the study were Spruce Run Reservoir and Round Valley



Angling pressure, as represented by the number of vehicles parked at the boat launching area, at Round Valley Reservoir on opening day last year

Reservoir, two relatively new bodies of water which are rapidly gaining popularity among New Jersey's trout fishermen.

One hundred similar sized trout of each of the available species (brook, brown, and rainbow) are being stocked in each reservoir once a month from December through March. This procedure will provide a month versus species comparison of returns. We intend to run this study over a three year period, duplicating every facet of the operation each year. If the results obtained are consistent over the three years of the study (which began in the winter of 1969/70) we should have the information necessary on which to base our future course of action.

So that the trout involved in the monthly stockings can be distinguished, each fish has been marked with a numbered monel metal tag in its lower jaw. Each trout's tag number and its length is recorded for future reference. The date and point of release of each trout are also filed. Through this procedure, when we come into contact with a tagged trout at some future date, we shall have all the information necessary to determine its growth and extent of travel.

The most critical part of the program, on which hinges the success or failure of the evaluation, is the cooperation of the individual angler in reporting the capture and size of tagged trout. Although we do not expect 100 percent angler

. . . For Better Fishing

cooperation in returning the tags, we do make the assumption that the rate of tag return response remains constant for each species and for each stocking. Obviously the greater the angler cooperation, the more valid our evaluation.

To facilitate this cooperation, we have provided tag receptacles accompanied by explanatory post-

major access points and at boat launching areas. For convenience, a measuring board, card storage drawer, and card deposit box are provided at each station. To date, angler cooperation at both reservoirs has been inspiring. Nearly 500 cards reporting the sizes and tag numbers of caught trout were received during 1971.

The size data is very valuable to us in determining the growth rates



Angler cooperation in returning tags and supplying information about trout caught, at an unmanned checking station where the anglers check their own fish and leave the data and tag in a receptacle

ers at all access points to Spruce Run Reservoir and Round Valley Reservoir. Angler response stations containing cards for reporting size and tag number of each trout have also been set up at

of the trout and just how well each group of fish has adjusted to the reservoir's environment. With the data provided by the individual angler thus far, we have been able to judge the growth rates of the



Expectations of trophy trout were realized when Bob Sentz, right, brought in this ten-pound brown trout for checking by Author Soldwedel

brown trout as excellent and to predict with some degree of certainty what can be expected in the way of a trophy fishery in the coming years. The relative returns between the different species of trout and the time at which they are released are becoming apparent.

Preliminary indications show the return of these winter-stocked

fish on par with fish stocked in regular pre-season operations and that they are larger, more robust, and of better color. With every tag return we learn a little more, and the more we know, the more optimistic the future of trout fishing in these reservoirs appears. It is a simple case of the angler helping us and, ultimately, himself. #

Outdoor Education Program

An Innovative Experience for Eatontown School Pupils

By John A. Haas, *Outdoor Education Coordinator,*
Eatontown Public Schools

Our Environment, Its Relation To Man, and How to Understand and Preserve It are long range objectives of Eatontown's Environmental Education Program.

Most people are of the opinion that the preservation and enhancement of our environment involves some simple courses of action such as more and better sewerage treatment facilities, improved management of solid wastes, and the implementation of our pollution standards. These factors are indeed important, but certainly not the answer. The answer lies in the development of an environmental ethic within our citizenry, especially the young, because they will inherit the earth and plot the course of environmental preservation or destruction.

Aldo Leopold, the famous conservationist, describes the problem in his classic book *Sand County Almanac*: "There are two spiritual dangers in not owning a farm. One is the danger of supposing that breakfast comes from the grocery and the other that heat comes from the furnace."

His analogy suggests a lack of man-land relationship. This relationship is the basis of an environmental ethic.

Eatontown's Environmental Education Program is a comprehensive multi-disciplinary program which is used to supplement and enrich the regular school program. The outdoor education activities are correlated with the existing curriculum and course of study. Anthony Palmisano, Superintendent of Schools, comments "We want our students to have first hand experiences, the type of experience-curriculum advocated by John Dewey who believed that children should get out of their classroom in order to learn through association and related experiences. These experiences would better prepare the students to relate to the real world in which he must work and play.

Eatontown's Environmental Education Program utilizes many public facilities. These public facilities provide students with the opportunity to study in the many natural areas of New Jersey. Our

program at Sandy Hook State Park includes the barrier beach and the wetlands. For many of our students it is their first opportunity to explore this environment.

At Allaire State Park the children have the opportunity to study the flood plain forest, a deciduous

programs are conducted at or by personnel from: Brigantine National Wildlife Refuge, Monmouth County Park Systems, Monmouth Museum, and the New Jersey Division of Fish, Game, and Shell Fisheries.

The focal point of the environmental education program is Wa-



Young ecologists collect aquatic specimens during pollution study

forest, and the pine barrens. Also, they study man-land relationships at the Deserted Village of Allaire and handicapped students hike the Allaire Braille Trail. Other pro-

ter Gate Environmental Education Center. The center is a cooperative effort between the Eatontown Public Schools and the National Park Service at the Delaware Water Gap

. . . Outdoor Education

National Recreation Area. The center provides resident or overnight programs for the boys and girls of the Eatontown schools. The resident experience is unique because the students and teachers work and live together in a student community.

The majority of the programs at Water Gate occur within 100 yards

of our center. However, programs are implemented at other facilities. For example, in Stokes State Forest groups participate in fossil hunting, ecologically exploring a beaver dam, hiking Tillman Ravine, and visiting Sunrise Mountain. Groups also visit Flatbrook Wildlife Management Area to observe wildlife management and conservation practices.

John Addeo, Principal of Wood-



An environmental education program with outdoor experiences creates an environmental awareness and environmental ethic . . .



*... while enriching
and enhancing every
educational discipline
of a regular school
program*

mere School in Eatontown, commented "Through our Outdoor Education Program, our students are learning the value of man's responsibility to animals, fish and fowl alike. Programs at Brigantine, Sandy Hook, and Water Gate have taught our children that man must take a hand in providing living and breeding places for all creatures. The students have been shown that continued abuse of our marshes, wooded areas, streams, and oceans will eventually mean extinction of many mammals, fish, and birds.

Not only would this affect the beauty of nature but the day of the sportsman would come to an end."

An environmental education program with outdoor experiences creates an environmental awareness and environmental ethic while enriching and enhancing every educational discipline of a regular school program. The benefits of this program are numerous—especially when one considers the fact that our children will inherit the earth. #

Essex County Park Commission Fish Program

"Give me a fish and I eat for a day. Teach me to fish and I eat for a lifetime." Each summer, the Essex County Park Commission, with the help of the Garcia Company and the Division of Fish, Game, and Shell Fisheries teaches youngsters from the urban areas how to fish. Though their equipment is simple—cane poles, bobbers, and worms—and their catch small, the enthusiasm generated is great.

Many of these children will never fish again, but the memory of the experience may last a lifetime. In addition to the "fish-in" the Division personnel give talks on the wildlife in New Jersey and its values. And judging from the expressions on the kids faces, the program is a success!

#



Bob McDowell, Division of Fish, Game, and Shell Fisheries, I & E Assistant, with the aid of a study skin, lecturer—relating the fishing program to wildlife in New Jersey



Technique of cane pole fishing is taught by Fish and Game and Park Counselor instructors



Over 50,000 worms were used during last year's program. Photo shows instructor and aides of the program sorting and counting the worms



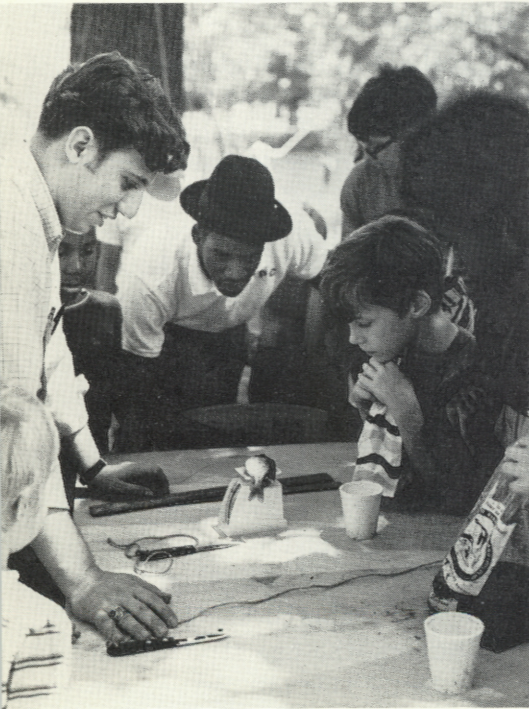
Peter Barrett, of Garcia Company, demonstrates the art of fixed reel casting



Everyone has a chance to practice. Some fish, while another helps bait books



A young boy fishes amid trash tossed in by thoughtless litter-bugs. It is hoped that programs of this kind will make the youngsters think twice before emulating parents and peers who litter



Park Commission staff member weighs one of the fish caught while kids look on

By Harry Grosch

Report from

The No-Longer Ivory Tower

by Ann Camp,

Information and Education Staff

On a hot, humid Saturday in late spring a group of students were gathered in a remote area of the pine barrens counting the immature acorns on plots of scrub oak. Starting at the top of each shrubby tree they carefully counted down each branch. Tallies of the numbers of acorns were compiled. It was slow, hot, tedious work.

The students were all enrolled in the wildlife biology curriculum at the College of Agriculture and Environmental Science at Rutgers University. They were counting acorns as part of a special research project. The data was also needed by Leonard Wolgast, a professor at Rutgers who was doing research for his doctorate.

Mr. Wolgast is now Dr. Wolgast and many of the students who helped count acorns have graduated from Rutgers. But studies on the mass production in scrub oak are still going on at the university.

Concerned with problems in their home state of New Jersey, the professors and students in the wildlife biology curriculum work closely with the biologists in the Division of Fish, Game, and Shell

Fisheries. Both benefit from the liaison. Working with the university, the Division can often get answers to some of its problems with a minimum of expense. An example of this is a computer program written at the university that will compile and evaluate in two minutes all the data collected at checking stations during the deer hunting season. This information was previously arrived at after three months of continuous hand calculations.

A real aid to the students is the opportunity to meet and work with professional wildlife biologists in their field of interest. Last spring two students, Katherine Semple and Mark Shedlosky, worked closely with senior deer biologist Robert Lund on a new technique of aging deer. This technique, based on the sectioning of the incisors (front teeth), may be more accurate, especially in South Jersey, than the old method that determined age by the amount of wear on the teeth. The method in combination with a statistical sampling technique will enable deer biologists to determine the age structure of a deer herd. This information can

then be used to work up an effective management program.

Acorns from the scrub oak trees in the pine barrens are the largest food source for deer in that region. For many reasons the crop varies from year to year. When the amount of acorns produced is

nel indicated to him the need for research in this area. Since 1967, when the project was first started, Dr. Wolgast has isolated some of the important genetic and ecological factors that influence acorn production. Sophisticated research techniques and mathematical mod-



Dr. Leonard Wolgast, left, and Dr. James Applegate check data on a recent project at Rutgers University

small, the deer suffer. Body size is reduced and many bucks will fail to produce antlers. The number of deer that can be harvested is reduced; hunter success is lowered. Dr. Wolgast's scrub oak project was started when Division person-

els have helped to show how these separate factors behave in combination. Dr. Wolgast has concluded that some of the factors that influence acorn production can be manipulated to help manage the deer herd in South Jersey.

. . . Ivory Tower

This fall waterfowlers were deprived of the Atlantic brant when the season on this fine game bird was closed on the Atlantic flyway. New Jersey's marshes and estuaries are the wintering grounds for about 90 percent of all brant in the flyway. Winter food supply

in deciding allowable harvest rates for brant and possible manipulation of the winter food supply.

In a highly urbanized state such as New Jersey, the most densely populated state in the nation, managing people is often as necessary as managing wildlife. Dr. James Applegate, a recent addition to the wildlife biology curriculum, is cur-



Dr. James Applegate is currently doing research that may help determine why a person approves or disapproves of hunting

in these areas is a potential limiting factor in the brant population. Joseph Penkala's graduate research at Rutgers' will center on a study of the fall and winter food habits of the Atlantic brant in New Jersey. Surveys of the extent and location of the preferred and staple winter foods will be of use

rently doing research that may help to determine why a person approves or disapproves of hunting. With the aid of student surveys and the New Jersey poll, Dr. Applegate is learning the social, cultural, and economic backgrounds of people that approve or condemn hunting.

The information Dr. Applegate is gathering would prove valuable should the "preservationist" doctrine of no hunting be brought forth for statewide voting. As some communities in New Jersey

Power consumption in New Jersey has become a real problem. Nuclear generators may help to meet the power need. But, in the process of generating electrical energy, a nuclear generator takes



Dr. James Applegate would like to find out how our public hunting and fishing areas can be used for maximum benefit to the sportsmen and the general public alike

have banned or have tried to ban hunting within their boundaries, the day could come when the future of hunting in our state could be decided by ballot.

Another side of Dr. Applegate's studies has to do with the use of land. He would like to find out how our public hunting and fishing areas can be used for maximum benefit to the sportsmen and general public alike.

up water from a nearby source. The water is eventually returned to the source, but unless routed through a cooling tower, it is returned at a considerably higher temperature. Heated water dumped back into a stream, river, bay, or other water body can precipitate fish kills or enhance the growth of unwanted algae. But if water from a bay or other salt water body is sent through a cooling tower, a

. . . Ivory Tower

salt spray is emitted as a by-product. What the effect of this salt might be on the wildlife in the area of the proposed Forked River nuclear generator, the Forestry and Wildlife Biology Section set out to determine. Students William Clark, Joseph Penkala, Kathy Turick, Robert Craig, and Philip Sczerzenie worked with Dr. Wolgast, Dr. Applegate, and research associate Robert Rogers to find out if wildlife would be adversely affected by the additional salt in their environment.

Working with the Jersey Central Power and Light Company, they determined that the amount of salt added to the area would be considerably less than that normally found at nearby Island Beach. Lists were then compiled of all land dwelling vertebrates, including reptiles, amphibians, mammals, and birds in each of the two areas. Of the two hundred and seventeen species in the Forked River area, 143 are also found at Island Beach, where ground level salt concentrations are, on the average, ten times greater.

Many nights were spent in the library, reviewing all the literature on salt tolerances of the wildlife. Where information was not avail-

able, tolerances for related species were used to arrive at a conservative estimate. After evaluating all the literature, their research, and consulting with professors in the Department of Zoology and Soils, the group concluded that the projected salt deposition at Forked River would be of no harm to the wildlife in the area.

Both Dr. Wolgast and Dr. Applegate enjoy hunting and fishing, as do many of their students. Other students prefer a non-consumptive use of New Jersey's wildlife for themselves, but support the sport of hunting. In time these students will be helping to decide the future of wildlife and related activities. By working with people directly involved in game and other wildlife management, they are learning what will be involved. And it is knowledge that they could never get merely by attending lectures.

Working together, the Division of Fish, Game, and Shell Fisheries and Rutgers University can help to improve the wildlife situation in New Jersey. Their combined talents mean more wildlife for the hunter and the non-hunter alike. The ivory tower image has crumbled, at least as far as wildlife biology is concerned. #

Please give your CORRECT POST OFFICE ADDRESS and ZIP CODE
for change of address, new subscriptions, and renewals.

If your post office address is different than your municipal address,
please make certain that you send us your post office address.

Ground-breaking at Assunpink Area



Ground-breaking ceremonies at the Assunpink Fish and Wildlife Management Area emphasize the continuing progress of work on this popular Central Jersey tract. Left to right, George N. Alpaugh, Chief of the Bureau of Wildlife Management; Al Toth, Chairman of the Fish and Game Council; Phillip Alampi, Secretary of the Department of Agriculture; Russell A. Cookingham, Director of the Division of Fish, Game, and Shell Fisheries; Neal Munch, Councilman; and Frank Tourine and Fred Schmidt of the Assunpink

Below, a group touring Site 18 on the Assunpink Area



An Old Quarrel

By Thedora Schubert,
Public Information Assistant

Modern man rebels against so many laws which constantly remind him of what he may not do. Yet, perhaps subconsciously he admits that the laws do have a purpose. Hunters argue about set seasons for game and write letters to their Fish and Game Council about revising these laws.

An annual report from the Fish and Game Commissioners reads as follows: "It is manifestly impossible to frame a game law which will be satisfactory to all, and the complaint will probably ever be heard that there was more game when there was less legislation. That is undoubtedly true, but the fact should be remembered that New Jersey's population has increased greatly of late years and that not only are the guns more numerous and more deadly, but that with the spread of civilization, the area where game will thrive has become annually more reduced. The increase of gunners has been in an inverse ratio to the decrease of game covers. This fact was well recognized some years ago, but of late it seems to have been practically lost sight of, for the history of legislation for the past few years shows that gunners are afforded

more liberties and that the seasons for killing game have been increased when just the opposite should have resulted".

Yes, that's all true, says a 1972 hunter. There are fewer places to hunt and too many hunters in my favorite area, and I'm not sure but what there's less game, despite what the wildlife biologists say.

Then let me tell you, Mr. Hunter, that the above quoted paragraph was written in an 1899 annual report by Fish and Game Commissioners equally as concerned about New Jersey's hunting laws as your Fish and Game Council is today.

The laws are written for the benefit of you and the game you pursue, so read your compendium closely, learn the life history of the game you hunt, and perhaps you will realize why the laws are set up as they are.

And if you'd like to know more about the management areas the Division of Fish, Game, and Shell Fisheries maintains for your benefit, send \$2 to the Division, P. O. Box 1809, Trenton, N. J. 08625, for a copy of *Fish and Wildlife Management Areas*, a comprehensive treatise locating public hunting areas. #

Hunting grounds and fishing waters belong to us all. Don't be a thief, robbing the country of its natural beauties by leaving your litter all around. Keep New Jersey's great outdoors clean and attractive.

Sweet Gum

(*Liquidambar styraciflua*)

Sweet gum, red gum, ling, bilsted—they are all the same tree. It is the only tree in New Jersey with a star-shaped leaf. It belongs to the same family as witch hazel.

Forest neighbors of the sweet gum are the red maple and black gum. All of these trees like moist bottom land soils. They will even grow in standing water for short periods of time; so look to the wet soils for sweet gum. Sweet gum reseeds naturally, often forming dense forests when it is young.

Range:

This tree is generally a coastal plain species. It lives, however, from southern Connecticut to Florida and west through central Ohio, southern Illinois, Missouri, and Arkansas, and eastern Texas.

Leaves:

It has a star-shaped leaf that cannot be confused with a leaf of any other tree. (See figure A.) The leaves are attached alternately on a twig, 3 to 5 inches long, and often wider than long.

Occasionally the leaves may have 7 lobes instead of the usual 5, two of the lobes being small and located at the base.

Twigs:

Hairy at first, smooth later on and light brown to dark-reddish brown. The twigs are roughened by raised leaf scars. (See figure B.) After the second year the twigs often grow corky-winged projections. (See figure D.) There are other trees that have winged projections, but the combination of the star-shaped leaf and the wings on the twigs make it a "marked tree."

Flowers:

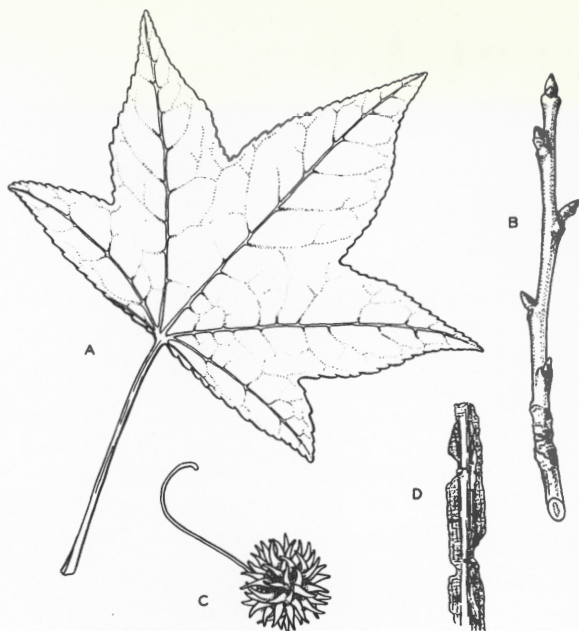
Staminate and pistillate occur separately on the same tree. In early spring the greenish flowers, in clusters 2 to 3 inches long, produce the pollen for the greenish, seed-producing flower that develops into the ball-like fruit.

Fruit:

The fruit looks like a little ball hanging at the end of a string. The ball is about 1 to 1½ inches in diameter and is made up of many capsules having a spiny appearance. (See figure C.) Often the balls hang on the tree far into the winter.

Uses:

In addition to being a very attractive ornamental, it is also a valuable timber tree. Average trees reach 2 to 3 feet in diameter and 50 to



Sweet Gum
 A. Leaf
 B. Twig
 C. Fruit
 D. Twig, with
 winged projections

75 feet in height. Heights of 150 feet and diameters of 4 to 5 feet have been attained.

The trees are often sawed into short logs, then peeled into veneer and made into baskets. Many New Jersey peach baskets are made from sweet gum.

Veneer and lumber of this tree is used for furniture and general construction. The wood can be stained to resemble more expensive hardwoods. The hardwood is sometimes called satin walnut.

When incisions are made in the tree, a resin is given off. The resin is almost identical to Oriental storax used for perfume. #

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

Ducks Unlimited, an organization of sportsmen started in 1937, has rebuilt and restored more than a million acres of prime waterfowl habitat. DU members have also planted thousands of acres in waterfowl food. All of the funds have come from sportsmen and will help assure the future of waterfowl in America. An added benefit of DU programs is that hundreds of non-hunted species of game such as shore birds, swans, and marsh birds survive because of DU habitat development. Anyone who enjoys wildlife is indebted to DU projects.

They Come For Our Mice

By Theodora E. Schubert

Public Information Assistant

On a four-foot wingspread the American rough-legged hawk glides south to the United States from its summer grounds to the north in search of a food supply. An ever dwindling supply of lemmings, meadow mice, and other small rodents up north during the

around the beginning of November and stay until early spring, living generally in meadow, swamp, and marsh habitats where mice abound. Opportunistic feeders, these noble-looking birds earn a good living at man's expanding open dumps where rats abound. Look



Rough-legged hawks are shown here in two of their color phases dark and light. The dark phase has a dark body, with some specimens virtually black. The light phase has a dark belly and a light tail with a dark band

harsh winter accelerates the southward movement of these handsome predators, so named for the leg feathering which extends down to the feet.

These beneficial hawks make their appearance in New Jersey

closely at the gulls circling over the Hackensack Meadows and you may, with sharp eyes and a little experience, see a rough-legged hawk in the vicinity either hovering on its broad wings over a likely rodent-site or perched indiffer-

. . . For Our Mice

ently on the cross beams of a high-tension tower.

For those of you who haunt the Jersey coast, the salt marshes have their share of big, dark hawks which may be roughlegs. Marsh hawks and red-tailed hawks are large dark birds, so take a field guide along and watch the bird's actions to help identify it. A red-tail seldom hovers and a marsh hawk seldom sits. To add to the mix-up, the roughleg comes in

three color phases—an almost totally black phase, a normal dark-brown above, light below phase, and a very light all-over color phase.

Being rat catchers enhances the roughleg's usefulness. Seldom do they take game species, particularly since their feet are remarkably small for so large a bird. A rat is about the biggest prey they can catch and hold, so indiscriminate shooting of these arctic visitors is inexcusable.

Now is a good time to subscribe to *New Jersey Outdoors* or renew your current subscription to the magazine

You may use the subscription forms below to subscribe, renew, or order gift subscriptions to *New Jersey Outdoors*

To: New Jersey Outdoors, P. O. Box 1809, Trenton, N. J. 08625

Please enter my subscription (at \$3.00 per year) for 1 year 2 years
 3 years for \$8.00 new renewal

Name

Street

Post Office State Zip Code

Please send a subscription (at \$3.00 per year) for 1 year 2 years
 3 years for \$8.00 new renewal

Name

Street

Post Office State Zip Code

From

The Coyote

Species:

Coyote—*Canis latrans*

General Characteristics:

A dog-like animal, with five toes on each front foot and four toes on each hind foot. The coyote is distinguished by its long bushy tail which droops when the animal is running. Total length about 42-48 inches; the pelage is fairly long and heavy, grizzled buff, greyish and black, with underparts whitish; tip of tail is black. Weight about 35-40 pounds. Its yapping howl identifies it.

Dentition: $\frac{3-1-4-2}{3-1-4-3} = 42$

Range:

Central and western United States. Has been introduced in eastern states accidentally. New York state has a few areas where they are termed wild canids. Only accidental in New Jersey.

Life History:

The coyote is noted as being the "voice of western wilderness." A very clever predator, avoiding the average hunter or trapper



*Coyote &
Sackrabbit*

. . . The Coyote

easily. The coyote, like most predators, eats what is most readily available, and in the wild, native rodents and small birds, grouse rabbits, prairie dogs, etc. are its usual fare, with poultry, pigs, lambs, calves, and fawns included when easily obtained. This little prairie wolf has caused much animosity from farmers and ranchers, and vast sums of money have been spent on eradication. In some cases, removal of coyotes has resulted in dramatic increases in native rodents, which have caused ranchers and farmers more damage in lost grazing and broken legs on livestock, than all the coyote predation prior to controls. Man should learn to live with his environment instead of constantly seeking to improve it.

The coyote is rather a "pair-loner," preferring to hunt in pairs than in groups, and it appears to pair more or less permanently. Five to seven young are born in early April in a den, a burrow or cave in the rocks.

Due to its speed and wariness, the adult usually escapes from any enemies. However, the wolf, golden eagle, and great horned owl may prey upon the young animals.

In recent years, rabies and mange are two diseases which have drastically reduced populations of red foxes, especially in eastern United States. The coyote is subject to both diseases, as well as several species of tape worms and other parasites and diseases. It is to be hoped that no more animals are accidentally released in the eastern states, and that no one deliberately releases a coyote here. The west appears to be its natural home, and there it should remain, and be allowed to remain in reasonable numbers. #

—Robert E. Mangold
Bureau of Wildlife Management

LIBERATION AND POSSESSION OF COYOTES

23:4-63.1. Penalty for liberation and possession of coyotes. (Approved April 22, 1939.) No person shall liberate a coyote within this state, under a penalty of one hundred dollars (\$100.00) for each offense.

23:4-63.2. (Approved April 22, 1939.) No person shall have a live coyote in possession in this state except by permission of the board, under a penalty of one hundred dollars (\$100.00) for each live coyote so had in possession.

. . . They've All Got Friends *Continued from Inside Front Cover*

necessary biological tool in keeping a healthy, viable population within its natural limits in the state. The Division is often accused of not enforcing regulations already in effect but no one seems to find the money to back up the increased staff necessary to cover the entire state.

These specialized groups can serve as an excellent source of information about specific bird, mammal, fish, reptilian, amphibian, or non-vertebrate populations in New Jersey and they should be willing and eager to disseminate this information to others sharing similar interests. Attempts at preserving rather than managing these animals only yields over-populations with resultant starvation and disease transmission. One need only look at mans' overpopulation in some areas of the globe to see the mental and physical problems which are today's greatest insult to our good earth. A sincere interest in the total environment is needed from all those involved with wildlife, an interest which may one day give the earth a reprieve from our slovenliness. #

Junior Sportsmen's Show

The twenty-sixth annual Junior Sportsmen's Show will be held from the 4th through the 7th of April at the Rutgers University Fieldhouse, College Avenue and Senior Streets, New Brunswick. Al Toth of North Brunswick, show chairman, states, "We already have more than 12 interesting and educational displays approved, and expect that some 35 exhibits will make up the show this year."

The show is outdoors orientated, with displays of hunting, fishing, and camping. In addition to the exhibits, there will also be a stage and movie program presented Wednesday, Thursday, and Friday evenings. The annual award to the Junior Sportsman of the Year will be made Friday, April 6, at 7:30 p.m.

Among the exhibits this year will be a class in making artificial fishing flies to be held each night by the New Brunswick Division of Recreation under the supervision of Sampson J. Brown, city director of social services.

There is no charge for the show, which is produced each spring by a committee of 200 volunteer outdoorsmen for the Central New Jersey area. #

The National Wildlife Theme for 1973 Is "Discover Wildlife-It's Too Good To Miss"

The symbol is an infant wood duck emerging from its nest

Walpack Tract

The Walpack Fish and Wildlife Management Area, one of our older tracts, is located in northwest Sussex County, approximately five miles west of Walpack Center.

The subject area is administered from the office of the Flatbrook-Roy Fish and Wildlife Management Area, Route, 521, at Bevans, between Layton and Flatbrookville.

Parking

Licensed hunters and fishermen are welcome to use the area during the legal, open seasons. They are requested to use the designated parking areas. No roadside parking is permitted.

Upland Game

Management procedures on the area consist of plantings, hedge-rows, and cuttings to provide upland game habitat. The principal native species are grouse, woodcock, rabbit, and squirrel. The Division's stocking program includes pre-season and in-season pheasant releases.

Deer

Bow hunters and firearms hunters find the Walpack tract to be a good area. This section of the state is natural deer range.

Waterfowl

The area provides a limited amount of hunting for wood duck, black duck, and mallard early in the season.

Fishing

The Big Flatbrook, considered to be one of the most famous trout streams in New Jersey, flows through the tract. Brook, brown, and rainbow trout are stocked at regular intervals during the season.


General

The tract was purchased in June of 1932 with money from hunting and fishing license fees. Today the area contains 587 acres of woodland and fields. It is being managed for upland game, deer, and fish. Camping is permitted in limited areas.

The tract is maintained and supported by sportsmen's license money. #

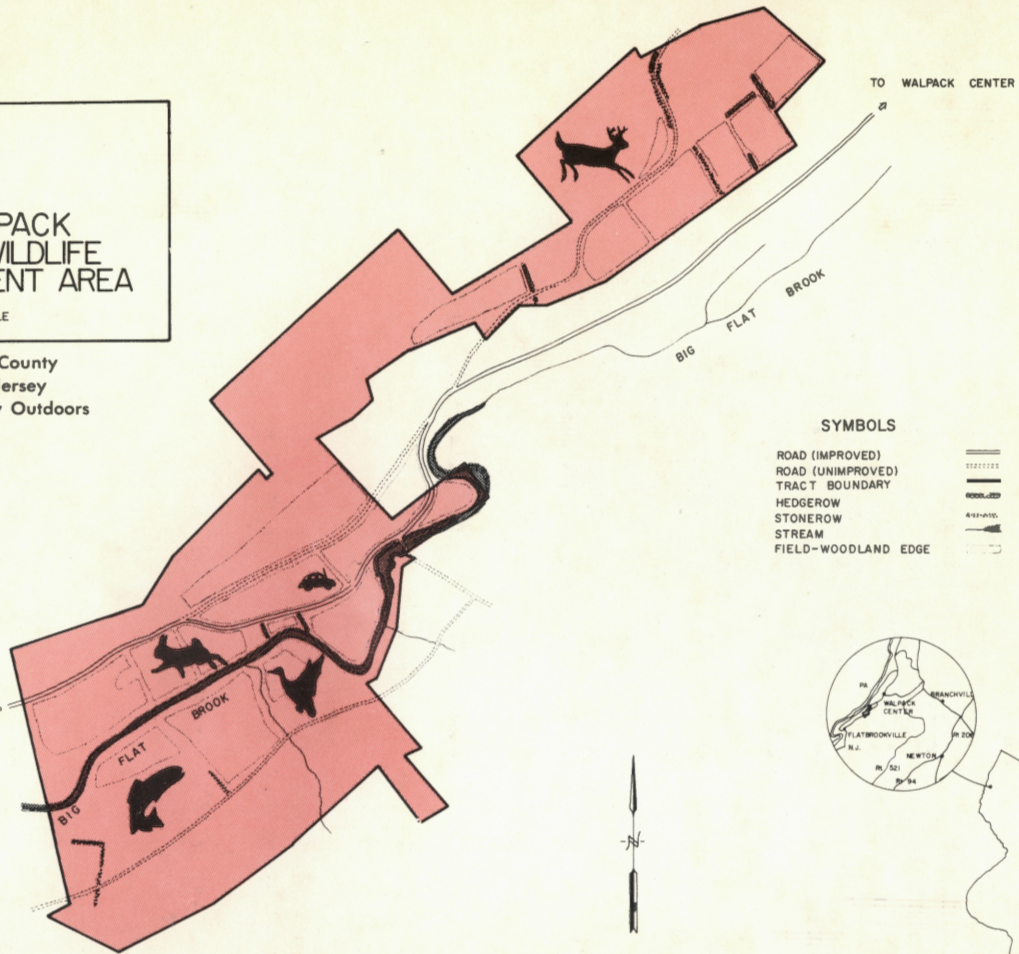
—*William M. Smith,*
Bureau of Wildlife Management

WALPACK FISH & WILDLIFE MANAGEMENT AREA








SCALE:  MILE

Sussex County
New Jersey
New Jersey Outdoors

TO FLATBROOKVILLE



SYMBOLS

ROAD (IMPROVED)	
ROAD (UNIMPROVED)	
TRACT BOUNDARY	
HEDGEROW	
STONEROW	
STREAM	
FIELD-WOODLAND EDGE	



It's time to renew your
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*

New Year's Resolution
for the true sportsman

New Jersey Outdoors
P. O. Box 1809
Trenton, N. J. 08625

*Second class postage
paid at Trenton, N.J.
and additional office.*