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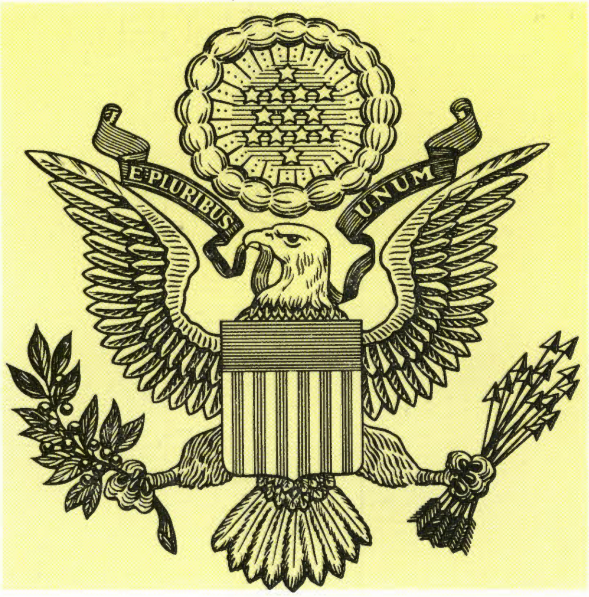
New Jersey Outdoors

Vol. 17, No. 8 | Division of Fish and Game | February, 1967



Symbol of Our Nation

The Bald Eagle

THE GREAT BIRD that for nearly 200 years has stood for the strength and freedom of America now needs the help of all Americans if it is to survive.

We all know the majestic bald eagle, although we may not have seen it in the wild. It emblazons the Great Seal of the United States, which since the days of George Washington has been stamped on certain official documents as the signature of our sovereign Nation.

As a symbol also of our nationhood, the design of the Great Seal is on one-dollar bills, military caps and buttons, medals, monuments. An olive branch and arrows in the eagle's talons denote strength in peace and war. A streamer in its beak bears our motto E PLURIBUS UNUM: "Out of many, one."

What the eagle stands for in our national life remains vital, but the eagle behind the symbol, the real eagle, is becoming rare. Once bald eagles flourished all over the United States. Today only 500 active nests are known in the 48 States, although a goodly number may still be found in Alaska amid unspoiled surroundings. What has happened to this king of the skies?

The bald eagle, like all living things, needs its own particular conditions in which to live, grow, and have young. It likes high trees for

Continued on Page 22

New Jersey Outdoors

Published monthly by the State of New Jersey Division of Fish and Game in the interest of conservation and restoration of wildlife and the betterment of hunting and fishing in New Jersey.

In This Issue

Cover—"The Bald Eagle"—*Bob Hines*

The full-color cover on this issue is a reproduction from the beautiful folder, "Symbol of Our Nation," produced by the U.S. Bureau of Sports Fisheries and Wildlife, John S. Gottschalk, Director. The Bureau, as a part of its effort to help perpetuate the endangered bald eagle, is offering the folder for sale at the nominal price of 50 cents each, through the Superintendent of Documents, Washington, D. C. See editorial for more details.

Vol. 17, No. 8 **February, 1967**

Publication Office: The Division of Fish and Game
P. O. Box 1809, Trenton, New Jersey 08625

Editor: R. Adams

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

Subscription: $2.00 a year, by check or money order, payable to Division of Fish and Game. Cash is forwarded at sender's 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.

A portion of the Clinton Tract, where the rabbit study was made

How Many Rabbits?

An Investigation of the Cottontail Rabbit Population on the Clinton Public Hunting and Fishing Grounds

By Fred A. Carlson, *Bureau of Wildlife Management*

During the fall of 1965, an initial cottontail rabbit (*Sylvilagus floridanus*) investigation was conducted on the heavily hunted Clinton Public Hunting and Fishing Grounds, Clinton. The objective of this investigation was to derive a population estimate and to draw from the data obtained as many conclusions pertaining to the cottontail rabbit population dynamics as possible.

Method

To determine an estimate of the cottontail rabbit population, a simple method based on the recapture

$$\frac{\text{No. of tagged rabbits shot (Nov. 6)}}{\text{No. of rabbits shot (Nov. 6)}} = \frac{\text{No. of rabbits tagged (Sept.)}}{\times\ \text{(September population)}}$$

of marked individuals, commonly known as the "tagging ratio" or "Lincoln Index," was employed.

Tagged individuals were established in the population as the result of live trapping of wild rabbits on the Clinton grounds. Recapture results were obtained from the hunter kill made on November 6, 1965, the first day of the small game season.

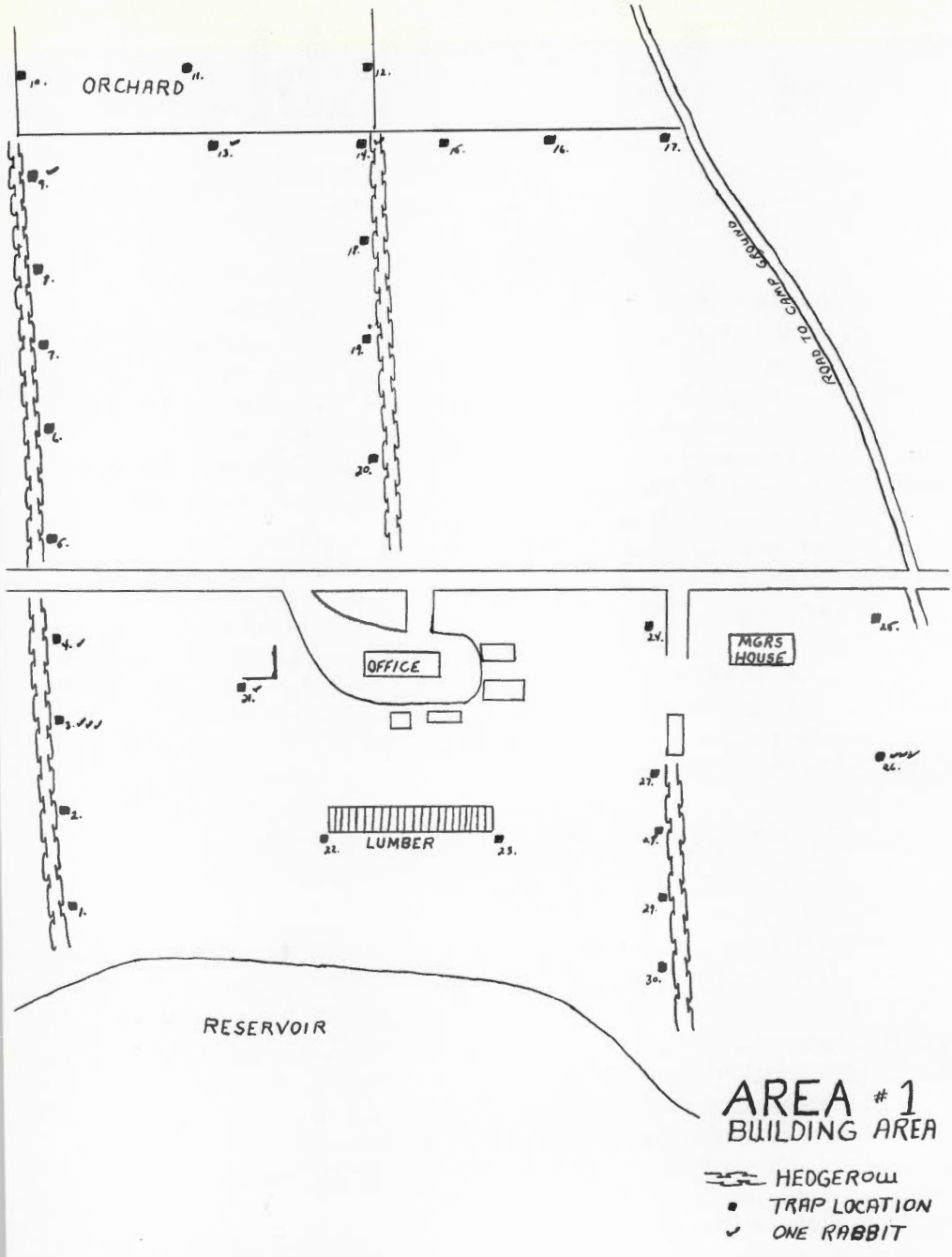
To introduce the tagged individuals into the population, five general areas on the grounds were live trapped, using 30 traps on each of four areas (areas 1-4) and 60 traps on one area (area 5).

The traps were arranged orderly and such that they could be easily checked by truck. Since the purpose of the trapping was mainly to introduce tagged rabbits into the population, the areas and traps were located where captures would be the highest. However, maps of each area and trap locations were made so the same locations could be used in succeeding years to provide a more accurate yearly comparison of trapping results.

The traps were baited with apples and tended at 7:00 a.m. and again at 5:00 p.m. each day.

Trapped rabbits were ear tagged, sexed, and released at the point of capture. A daily trapping record was kept.

The recapture period was November 6, 1965, the opening day of small game season, when all



This map, of Area #1, gives a general idea of how the traps were arranged during the rabbit population studies on the Clinton Tract

rabbits leaving the grounds were checked for tags. Therefore, rabbit return figures are quite accurate.

Results—Part I

During the trapping period, 50 cottontail rabbits were captured on the five trapping areas of the Clinton Public Hunting and Fishing Grounds. Thirty-one of the captured rabbits were wild (untagged), fourteen were tagged Rockport rabbits from two previous releases, and five were repeats.

On November 6, 1965, opening day, a complete car check revealed that 89 rabbits had been killed, 15 of which carried tags.

Now, however, the following must be noted to arrive at the ratio figures.

Firstly, on October 17, 1965, 34 tagged Rockport rabbits were liberated on the grounds. Since this liberation occurred between the trapping period and the recapture period, the tag returns from this release must be omitted from the recapture total and the kill total. There were two of these rabbits shot on November 6 and, therefore, for the purpose of deriving a population estimate, the total kill was 87 not 89 rabbits.

Secondly, during the trapping period, two of the eight tagged Rockport rabbits released during March of 1965, and 12 of the 35 tagged Rockport rabbits released on August 28, 1965 were captured. Since these 14 tagged rabbits were released previous to the trapping period, they were considered as wild rabbits and their tag returns were used in the final analysis. The total number of tagged rabbits present in the September popula-

The trapping schedule was as follows:

Area 1 and 2—September 4—September 10—7 days or 420 trap days
Area 3 and 4—September 16—September 23—8 days or 480 trap days
Area 5 —September 29—October 1—3 days or 180 trap days

Using the "tagging ratio," we have:

$$\frac{\text{No. of tagged rabbits shot (Nov. 6)}}{\text{No. of rabbits shot (Nov. 6)}} = \frac{\text{No. of rabbits tagged (Sept.)}}{\times \text{ (September population)}}$$

$$\frac{5}{87} = \frac{45}{x}, \text{ whence } x = \frac{(45)(87)}{5}$$

$\times$ (Estimated September Cottontail Poulation) = 793 or
Approx. 1 rabbit/1.3 acres
or .8 rabbit/acre

tion was therefore 31 native plus 14 Rockport or 45 wild rabbits.

Of the 45 tagged rabbits, five were killed on November 6. The other 10 of the 15 returned tags were not part of the 45 rabbits captured during the trapping period, and therefore are not included in the tag return figure but are used in the total kill figure.

In summary, 45 rabbits were captured and tagged during September, 1965, five of these tags were returned on November 6, 1965 and a total of 87 rabbits were shot opening day.

Results—Part II

The following data was obtained from the September, 1965, captures and the November 6, 1965, tag returns. No attempt was made to draw any conclusions from this data because of the sample size.

Rockport Rabbits

A 50:50 sex ratio of almost all juvenile rabbits was obtained. This corresponds to the composition of the rabbit release of August 28, 1965.

Summary

An estimated cottontail rabbit population, without a standard error of estimate, of 793 was determined by use of a "tagging ratio" method of censusing.

Other information obtained from the investigation was compiled and examined but no definite conclusions were made this time due to the small sample size.

Recommendations

Each year, an identical investigation should be made to furnish the additional information needed to establish trends and life tables from which vital rabbit population information can be derived. #

Capture Data

Total Cottontail Captures for September, 1965

Number of wild rabbits captured	31
Number of August 28, 1965 Rockport rabbits captured	12 (of 35)
Number of March, 1965 Rockport rabbits captured	2 (of 8)
Number of repeats	5
Total	50

Sex and Age Ratios of September Cottontail Captures

Wild Rabbits		
Adult	**Juvenile**	**Combined Ages**
M:F	M:F	M:F
4:12 or	11:3 or	15:15 or
25:75	79:21	50:50

Sex ratio for total of captured wild rabbits

Hunting Companionship

By Ted McCawley
Remington Arms Company

A good dog, fair marksmanship, a goodly number of shooting chances, and reasonable weather are all factors which contribute much to the enjoyment of a hunting trip, but unless one has good companionship along, there is something lacking in the day's pleasure.

A congenial, understanding companion who appreciates the little things that make up the delights of a day's hunt, who will congratulate when your gun pointing is effective or sympathizes when things go wrong, can turn rough going into genuine pleasure and make an empty game bag seem inconsequential. But a companion who ignores the well known rules of safe gun handling, is careless with matches, cigarettes, or the land-owners property or is continually grousing about conditions or his own luck, can wreck the pleasure of any hunting trip, no matter how successful it be from a shooting standpoint.

So make it a point to be a good hunting companion this year. Even if your hunting partner for the occasion is inclined to be a bit grumpy when things are not entirely to his liking, your own cooperative attitude in finding pleasure in the relatively unimportant things might well have the effect of lifting his cloud of gloom. There is, after all, far more to hunting than just the actual taking of game and sharing pleasure with another is just a part of it.

It's Easy

It is easy enough to be a good hunting companion. All you have to do is to have full consideration for your gunning partner and practice gun safety and the every-day principles of ordinary courtesy. If you are the guest, let the host dictate the order of the day . . . and enter into it enthusiastically. If you are the host, try to figure out what type or method of hunting will best please your guest . . . and check

with him on it. You'll find more congeniality, and pleasure, in a hunting trip if you'll make it a two-way street in cooperation.

Fair Share

Have a well understood shooting procedure before you start out. In other words, never try to 'wipe the eye' of your shooting companion. If quail is your game, shoot only at the birds on your side of the covey's rise. Take turnabout in shooting single birds. If you're duck hunting, don't spoil your companion's chances by firing too soon. Make sure he's ready and the birds are in range. And take those on your side of the blind only.

Safety Rules

Most every hunter, even a novice, is fairly well acquainted with the rules of safe gun handling. But make your knowledge obvious by your own gun handling. This gives your partner more confidence in you, particularly if he has never hunted with you before. Always handle your gun as if it were loaded. But don't have it loaded unless you are handling it. When you put a gun down, lean it against a tree, or carry it over an obstruction, always have the breech open. And never shoot at anything until you are sure of your target.

In the interest of your own success, if you're going deer hunting, always try your gun before you arrive in camp. And in testing that gun, use loads with the same powder charge and pellet weight that you will use in hunting. If you wait until you get to camp before you testfire your gun, the noise may spoil your chances to get a shot at game. Knowing where the load strikes at different ranges may mean the difference between a clean kill and a miss.

The Dog

If you're hunting upland game birds, don't try to handle your companion's dog. You are not familiar to the dog, your efforts might confuse him, and your companion is almost sure to resent it. Regardless of who killed the bird, let the dog retrieve it to his master if he desires.

If you're going into unfamiliar territory where there is a chance of your getting lost, get yourself a compass and learn how to use it. Area maps, showing ground contour, elevations, streams, etc., are usually available. These maps are exceedingly valuable to any sportsman venturing into strange areas. In some areas and for certain kinds of hunting; it is best to get yourself a guide. The fact that he's your guide doesn't mean he's also your servant. And don't try to run his business. You'll have a much better time if you'll place yourself in his hands and cooperate fully.

We and Our

When you go hunting with another gunner, never be a show-off. You may be a much better shot, but don't make him feel it. Let it be a 'we' and 'our' hunting trip and he'll be more than glad to go with you again." #

Camp Alhtaha

Boy Scouts follow the rugged road toward becoming conservation leaders of tomorrow.

By Edgerton Grant
Public Relations

Personnel of the Division of Fish and Game were proud last summer to work with 28 selected boy scouts eager to "follow the rugged road" toward becoming the conservation leaders of tomorrow.

The Program

Commissioner Robert A. Roe asked several divisions of the Department of Conservation and Economic Development to furnish qualified instructors for a conservation camp conducted by the Alhtaha Council, B.S.A. Scouts chosen by troops throughout the Council's Passaic County jurisdiction attended a week-long program of intensive training at Camp Alhtaha on Fairview Lake, Sussex County, prior to the regular camping season. Exposure to the spirit and interest of the youths involved made the assignment a most inspiring one for the fish and game men involved.

Instruction

The opening days of the camp were devoted to classes and field work in ecology, weather and climate, entomology, geology, soil and water conservation, plant and animal identification, boat and gun safety, archaeology, and forestry. The depth of their instruction in these fields might well be expected to leave the boys sated by the time wildlife and fisheries management were introduced. On the contrary, the scouts' interest never waned, as demonstrated by the frequency and intelligence of their questions.

Wildlife Management

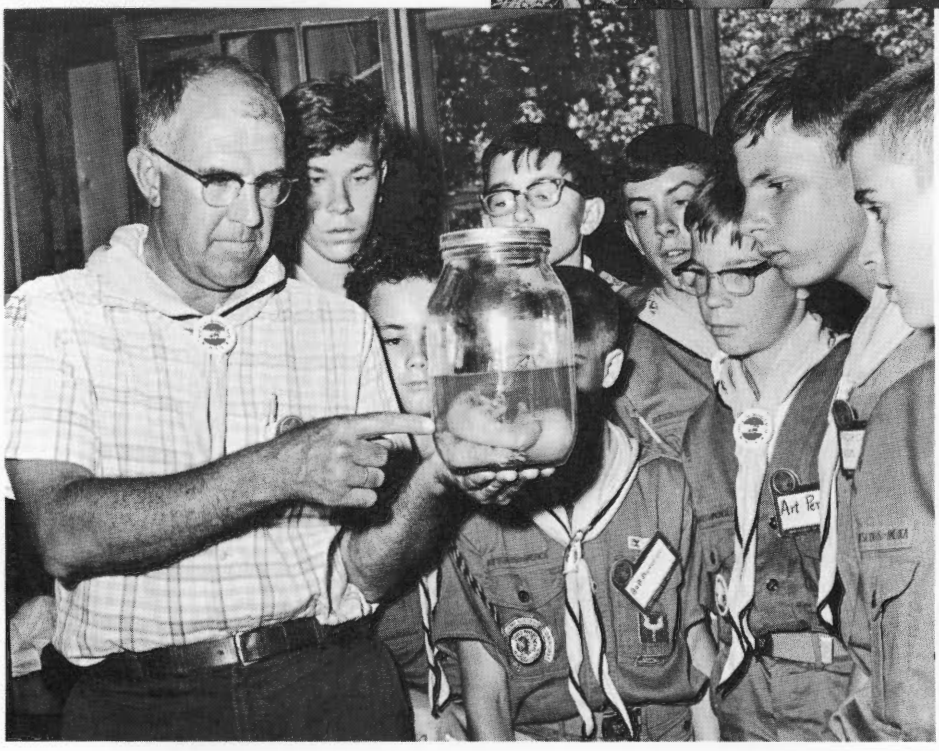
Pictures more than words will suggest the highlights of the presentations given by Wildlife Manager Bob Mangold and Fisheries Biologist Bob Stewart. Each utilized slides and "props" to illustrate an introductory evening talk in his field. Wildlife Manager Mangold used deer, his specialty, as an example of wildlife biology. He outlined the history of the New Jersey herd, and the facts of breeding, food, and antler and jaw development. He cited the problems posed by deer management and the aesthetic and recreational values of maintaining the deer herd to explain the basis for deer management.

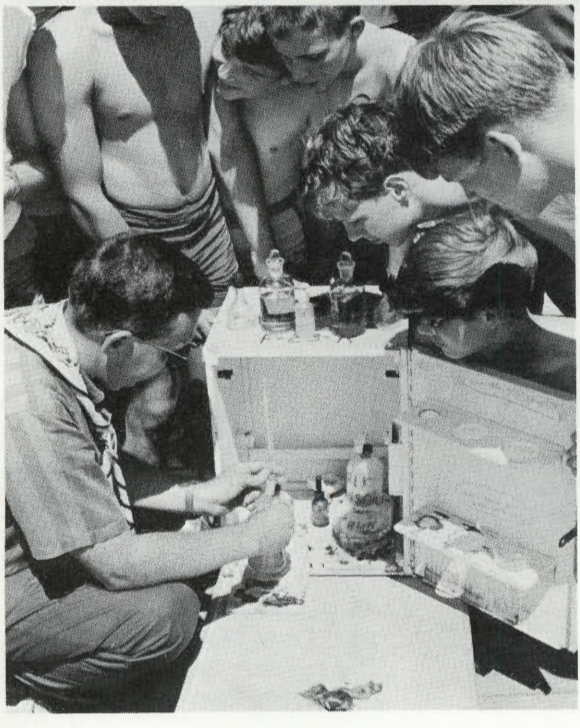
The following morning a field trip to the Flatbrook Public Shoot-

. . . *Camp Alhtaha*

Food and cover plants found on the Flat Brook Public Shooting Grounds are pointed out by Jim Munson, right

Wildlife Manager, Bob Mangold, below, shows scouts the development of a deer fetus with a preserved specimen





Scouts find, above, that a gill net set out over night, for a scientific collection, yielded numerous specimens

Scouts watch intently, left, as biologist Bob Stewart adds chemicals to a water sample to determine alkalinity and oxygen content of the water

Photographs by Harry Grosch

ing Grounds provided the opportunity to explain how these areas are bought and developed with hunting license monies. Bob and Wildlife worker Jim Munson showed a wealth of living illustrations of wildlife food and cover as well as habitat improvement techniques.

Fisheries Management

Costly water pollution and its abatement, trout research and management, and warm water fisheries research and management were shown in slides presented with detailed explanations by Biologist Stewart. Stream improvement methods were illustrated with a stream profile diorama.

Field Trip

Fairview Lake, naturally, was the scene of morning field investigations dealing with the fish population and the water chemistry and biology affecting fish life.

The scouts participated in obtaining specimens of aquatic life and suggesting possible steps to improve the fish habitat.

Coordination

Coordination of the Fish and Game Division participation was furnished by Information and Education Supervisor William Peterman, who also provided special instruction related to Merit Badges. The scouts were generous in their appreciation of the resource personnel, presenting special neckerchiefs and mugs to all, including a staff photographer and writer. These souvenirs will be cherished as mementos of a rewarding experience in dealing with an outstanding group of high-calibre, outdoor-oriented youth. #

Outdoor

Cracks and Tracks

"Sure, they're bear tracks. But, stop worrying. That critter is probably 20 miles from here by now."

First in Fur Value

Muskrats and Their Management

Part II: Research, Management, and Influences

By Fred Ferrigno,

Bureau of Wildlife Management

Photographs by the Author

For four muskrat trapping seasons in New Jersey, populations were estimated, quotas established, and the trappers catch examined in selected areas. On the basis of the information presented in Table 2, it was assumed that despite heavy trapping, trappers exhibited considerable difficulty in obtaining quotas. In 1951, even with 75 perment of the pre-season population removed, there was still sufficient brood stock left to provide for a good population the following year. Based on these data there are indications that 70 percent of the population of muskrats can be removed each season without seriously depleting the breeding stock. In fact, during this period, investigations on private marshes showed that underharvest of muskrats, resulted in extensive eat-outs that seriously reduced existing populations. It was, therefore, felt that good muskrat management

Table 2. Estimated population, trapping quotas, and yield of muskrats in a 42-acre impoundment, Tuckahoe

Year	Estimated Population	Quota	Total Yield	Percent of Pop. Harvested	Yield per Acre
1951	500	375	373	74.6	8.9
1952	525	420	363	69.3	8.6
1953	535	401	370	69.2	8.8
1954	1035*	791	459	43.5	10.9
1965	305	229	219	71.1	5.2

* Excessive flooding may have forced muskrats into ponds from adjacent tidal marsh.

could be summed up in the following statement: "Produce a good three-square or cattail marsh, provide proper water conditions, and trap it extensively to prevent the muskrats from eating it up."

Recent Decline

Trapper reports and population checks in many parts of South Jersey revealed that muskrats declined considerably during the 1963-65 period. It is during this same period, that new body-gripping traps were introduced, droughts were prevalent, the ten-year cyclic low was due, pesticide use increased, and marsh habitats were destroyed. Any one, or a combination of these conditions, could be responsible for the decline. On the basis of investigations carried on on some specific marshes, it was obvious that certain factors were responsible. Overall, there is a lack of positive answers. Therefore, we can only speculate on the basis of evidence gathered, trappers interviewed, and environmental associations.

Tuckahoe Area

On both the tidal marshes and impoundments, a dramatic reduction from abundance in 1962 to scarcity in 1963 was reported. Even those impoundments with favorable fresh water and food exhibited several years of under-population following 1963. Many trappers believed the latest body-gripping traps had an adverse effect on muskrat numbers. Although there is not any positive proof to substantiate this hypothesis, there is that possibility that newer equipment is contributing to over-trapping, especially on tidal marshes.

It is true that these new traps are making good trappers out of many individuals, are very lethal, and wring-offs seldom, if ever, occur. If these circumstances contribute to greater than 75 percent harvest, then care should be taken by the marsh owner or manager to maintain a balanced population and not seriously overharvest the fur crop. Studies are presently underway to determine the effects of modern traps on muskrats.

In the one, 42-acre fresh water impoundment managed especially for muskrats, the population decreased 58.2 percent in 1963. This decline occurred despite the fact that over 95 percent of the pond was dominated by cattail and other perennials. From an estimated population of 610 in 1962, muskrats decreased to 255 in 1963 and to 230 in 1964. There was a slight gain in 1965 to 305 muskrats.

All phases of reproduction in 1965 appeared excellent. Of a sample check of 68 muskrats, the 56 immatures represented a good survival ratio of 4.7 juveniles per adult. Placental inspections of three adult females averaged 12.4 scars per tract. At present, it is difficult to put the finger on any one definite limiting factor or group of factors that would cause such a sudden drop in the musk-

An ardent trapper displays his day's catch of muskrats from a coastal marsh

rat population in this area. Yet, the sharp decline suggests disease factors that have caused similar reductions in other states. It is possible that the deadly epizootic hemorrhagic disease struck this marsh in 1963, held over into 1964, but was no longer a serious lethal agent in 1965.

A complete tally of the number of muskrats trapped during the 1965-66 season, revealed a 71.1 percent harvest by trappers. New body-gripping traps were not too effective and little used in the flooded impoundment. Their efficiency increases on tidal marshes. Since this percentage take did not differ considerably from other years (Table 2.), there is no reason to assume that any degree of overharvest occurred. Ruling out overtrapping, adverse salinity (ranged .2 to 1.8 parts/thousand) and pesticides, it still leaves the possibility of a epizootic disease as the decreasing factor in this impoundment.

Habitat Destruction

The most devastating and long-lasting influence to any muskrat population is the elimination of proper food or water conditions. On the lower Delaware Bay marshes, mosquito control practices have had serious consequences on some important muskrat populations. Here dikes, sluice boxes, and sometimes pumps are used to exclude tide-water from

Before, a fine cattail marsh

Then, dikes constructed to contr

. . . *First in Value*

marshes in an attempt to strand mosquito larvae before they emerge as adults.

On one such area, Fishing Creek, the lowering of the water table as a result of diking has converted a previously important wet, tidal, cattail-cordgrass, marsh to a very dry, non-tidal, red maple-reed area. Prior to drainage, a marsh owner trapping the Fishing Creek area used to make several thousand dollars on muskrat pelts. Last year his total trapping earnings amounted to a mere $38.60.

Dredging of the Delaware River channel has also resulted in the total destruction of muskrat marshes. Oftentimes, the dredge material is placed within 20-foot dikes converting valuable marshes to upland areas.

The diked-in salt hay agriculture, which has engulfed 10,000 acres of marsh along the lower Delaware Bay, has destroyed some very fine muskrat marshes. Here again, the excluding of tides and desiccation of the marsh has been disastrous to muskrat populations.

The only marshes that have escaped habitat destruction have been those that are owned by state and federal government, sportsmen, trappers, and other landowners interested in conservation. State acquisition of tidal marshes has been and will continue to be a valuable asset to fur trapping. Each year thousands of muskrats are taken from state-owned meadowlands.

Predation

Of all the many enemies of the muskrat, the mink is by far the most serious. However, under proper water conditions even the mink has a doubtful net effect on

squitoes and lower water table *After, cattails replaced by brush and reeds*

muskrat populations. During recent years, drought exposure has promoted heavy mink and other predation in some local situations. Mink predation upon muskrats seems to be centered upon the restless, homeless, and the drought exposed (Errington, 1954).

Pesticides

Mosquito spraying, primarily with DDT, has been blamed by some sportsmen as a major factor in the recent decline of muskrat. To date, this assumption has not been substantiated by field data. Some samples of muskrats from Cumberland County revealed small quatities of DDT in their tissues. It is doubtful if this measured amount would have any serious effect on muskrat numbers or reproduction. Nevertheless, specimens are still being collected, especially from areas where there is indiscriminate spraying. When chemical analysis for pesticide residues are made, the results will be compared with examined muskrats from untreated areas.

Since Cumberland County has only recently established a mosquito commission, there are expansive marshes that have never been touched by insecticides. Yet these untreated areas experienced the same decline in muskrat numbers as the treated marshes. Some of the die-offs of muskrats reported by some trappers along the Delaware Bay marshes in 1963 were again more typical of the epizootic disease than that of chemical poisons.

Regardless of whether or not mosquito insecticides are responsible for muskrat mortality; there is not any reason why the important marshes have to be contaminated. Many of the tidal marshes that are of top value to the musk-

rat are of low enough elevation so that they are flooded daily by tides. Such marshes will not produce mosquitoes and should not be sprayed. Even in impoundments, the recommended and most effective control of mosquitoes is proper

Fur buyer with excellent quality black muskrat at left and a mink at right

water management. Owners should acquaint themselves with the water control techniques necessary to produce a minimum of mosquitoes and an abundance of muskrats.

Droughts

It is this writer's personal opinion that adverse or abnormal climate is an important limiting factor in population growth since it has essential bearing year-long on salinity, pH, dissolved oxygen, water tables, and food plants. Several repeated years of droughts (1963, 1964, 1965, and 1966) have adversely affected the growth of plant food, water levels, and other environmental conditions. South Jersey rivers such as Alloways, Maurice, Tuckahoe, Oronoaken, and others have been checked periodically from the head waters to their bay outlet to detect changes in water quality and vegetation.

For the most part the three years of below normal rainfall have brought about considerable changes. At designated locations, that were previously fresh water, there was in December, 1965, 20 to 30 percent sea water. With increases in salinities, the pH had increased from approximately 4.5 to 7.0. Sudden changes in both salinity and pH can temporarily lower the dissolved oxygen content of the water. In addition, these changes have converted stands of wildrice and cattail to salt marsh cordgrass.

Along portions of Alloways Creek, natural levees adjacent to ditches oftentimes are of such high elevation that they are not even flooded by spring (abnormally high lunar) tides. Therefore, the necessary water-logged condition of the surface of these important three-square marshes depend considerable on rainfall and stranded water. Recent lack of precipitation has dried out these marshes, with the undesirable salt hay gradually replacing the favorable three-square. Muskrats have deserted these dry areas and have concen-

Diked-in marshes managed for salt hay are not favorable to muskrats

trated along the creek banks. Of the few muskrats that remained the survival rate of their young appeared to be very low. Slightly raising the elevation of a marsh often provides better habitat for meadow mice and rats. These small rodents are often responsible for severe pelt damage.

Overall, it is believed that a resumption of normal rainfall for several years will solve many of our present low muskrat population problems. Providing that there are no other limiting factors at work, proper precipitation should improve food and water and raise the carrying-capacity of many of our marshes so that they support larger numbers of muskrats. In the meantime the Division of Fish and Game will continue to investigate various aspects of the biology and management of the muskrat. We are hopeful that these studies will lead to greater knowledge and improved management of this very important fur-bearer. #

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The Sportsmen's Friend

Stanley Switlik Honored

by the Fish and Game Council

The Fish and Game Council took time out from its October meeting to pay special tribute to one of the best friends the sportsmen of New Jersey have. The entire Council travelled to the Switlik Parachute Company in east Trenton to present Badge No. 1 as Honorary Deputy Conservation Officer to Stanley Switlik, industrialist, philanthropist, and true conservationist. Commissioner Robert A. Roe joined in honoring Mr. Switlik at a dinner following the ceremony.

Achievements

The story of Mr. Switlik's achievements in rising from an immigrant lad with an idea to one of the nation's largest parachute makers is a heartwarming tale in itself. The Council were taken on a fascinating tour of his plant, seeing the latest developments in parachutes, life-rafts, and similar items and the care that goes into their manufacture.

Keen Interest

Mr. Switlik first came in contact with the Division of Fish and Game in the mid 1930's. Director MacNamara recalls that even at that time he had a keen interest in fish, wildlife, and all phases of the out-of-doors. His first inquiry concerned information about the habits of beaver. Mac advised him on acquiring a pair for a small lake near his home, and the beaver family is still there today. As Mr. Switlik prospered and acquired large land holdings in Ocean County, he remembered his love of fish and wildlife which led him to make periodic donations of land to the Division.

Lake Success

His first gift was the site of Lake Success on the Colliers Mills Public Shooting Grounds. The historic lake was rebuilt with Pittman-Robertson Federal Aid to Wildlife Restoration funds. It is the best waterfowl area on the tract and has excellent pickerel fishing in the summer.

Something Valuable

At the Lake Success dedication in October, 1951, Mr. Switlik said, "I am just a plain conservationist and I love this wilderness around us. It was my dream quite a few years ago that this Lake Success, which is about 200 years old, should be rejuvenated and rebuilt." Foreseeing the continuing urbanization of the state he noted, "We have something very valuable in this part of New Jersey". He urged the state to undertake acquisition of remaining open land between Colliers Mills and Toms River, offering some of his own lands.

Stanley Switlik, center right, of New Egypt receives Badge No. 1 as New Jersey Honorary Deputy Conservation Officer from Fish and Game Council Chairman David H. Hart, left center, as Director Lester G. MacNamara looks on with Council members

Since then, he has given the Division the 1,200-acre Whitings Public Shooting Grounds, the 7,600-acre Greenwood Forest tract, and the 100-acre Butterfly Bog area. In addition, when he sought to sell other areas, he offered them first to Fish and Game, leading to acquisition of the 2,300-acre Pasadena Public Shooting Grounds, the 2,300-acre Manchester tract, and the lower end of Colliers Mills.

Latest Gift

His latest gift is the site for the 100-acre Prospertown Lake completed last summer. This is being managed for multiple-use recreations, affording swimmers who formerly used Colliers Mills Lake a site with lifeguard protection, as well as picnicking and fishing, including special fishing facilities for wheelchair veterans.

Other Interests

Mr. Switlik's generosity has not been limited to Fish and Game. He gave Camp Wanda to the Girl Scouts of America and built a lake for their use. His interest in youth has led him to donate substantial playground areas to Hamilton Township, Mercer County, and to make a substantial capital contribution to the school system in Jackson Township.

Besides making possible the construction of a modern school, which the Jackson Board of Education named for him, he also arranged for restoration of an historic one-room schoolhouse in the Township. Remembering the substantial acres of woodland in Jackson, as well as the dedicated efforts of volunteer citizens, he provided a firehouse.

Counsel Sought

In addition to his philanthropy, Mr. Switlik's wise counsel has been sought by Commissioner Roe, Director MacNamara, and others concerned with conservation of natural and human resources. His readiness to cooperate in all these respects has made him richly deserving and appreciative of the honor conferred on him by the Council. #

. . . *The Bald Eagle* *Continued from Inside Front Cover*

its big nest. It must be near water, for its food is mostly fish. It needs space, for it is fiercely independent.

As we build cities, airports, factories, highways, seaside resorts, we have been moving too close to the nesting places. We pollute waterways and so kill fish. Trees are cut down. Some eagles are shot illegally.

Steps have been taken to save the eagle, but they are not enough.

Nesting places on National Wildlife Refuges are closed off to protect the eagles during the nesting season. Some landowners have agreed to treat as sanctuaries thousands of acres where there are nests.

We should do more: Set aside, by purchase or other means, large tracts around nests near waterways. Encourage persons and organizations who own land to keep inviolate trees and space for eagles. Learn —all of us—about the eagle's plight and remember that it is part of a larger problem: The task of protecting for the well-being and enjoyment of all Americans always the resources, green spaces, and things of the spirit with which our country is blessed.

Let us reaffirm thus the mottoes on the reverse of the Great Seal, ANNUIT COEPTIS and NOVUS ORDO SECLORUM: "He (God) has favored our undertakings" and "A new order of the ages."

The ***Symbol of Our Nation*** is a document produced by the United States Department of the Interior, Fish and Wildlife Service, Bureau of Sport Fisheries and Wildlife, as a part of its continuing effort to alert Americans to the dwindling numbers of our national bird. We hope it will make more of us concerned about the future of the symbol of our country.

The Bureau is relying on sales of this folder to get it widely distributed. The Superintendent of Documents of the U. S. Government Printing Office ordered 50 thousand copies in the first printing. These will be sold at 50 cents per copy. When purchased in quantities of 100 or more, a 25 percent discount is available. Those purchasing copies for resale are also eligible for this discount.

The simple design of the folder makes it suitable as a display piece for bulletin boards in schools and libraries or for framing and hanging on walls of offices and elsewhere.

It will perhaps interest you to know that the folder is a by-product—a dividend of the Bureau's new book, ***Birds in Our Lives***, which was published in October. This comprehensive volume on birdlife and people has a chapter on our national symbol, the bald eagle. The frontispiece in it features the bald eagle—the same illustration which appears in this folder.

Fur, Fin and Campfire

By JACK SHERIDAN

A SPORTSMAN

CAN KEEP BUSY DURING THOSE LONG WINTER MONTHS BY:

WATERPROOFING YOUR MATCHES. DIP IN CANDLE GREASE, NAIL POLISH OR VARNISH AND PUT IN A DRY CONTAINER FOR YOUR NEXT TRIP AFIELD.

PAINTING UP YOUR LURES. LACQUER THEM AND WHILE STILL WET SPRINKLE SOME SILVER CHIPS ON THEM.

LABELING YOUR FLY ROD. WRITE YOUR NAME ON A STICKER AND AFTER IT DRIES, VARNISH IT. IF YOU LOSE IT, THE FINDER WILL KNOW WHOSE IT IS.

REMOVING RUST MARKS FROM YOUR TACKLE BOX. ANY ORDINARY HOUSEHOLD CLEANER WILL DO THE JOB. THEN PAINT OR SHELLAC IT.

The ice fishing season is open until February 19. Consult the Compendium of Fish Laws for details.

Red Oak

(Quercus borealis)

Red oak grows best on rich, well-drained soils. While the root system grows deep, it lacks a well developed tap root. This tree may be found growing with other northern hardwoods and white pine.

Range:

It grows from Nova Scotia to northern Georgia, west through northern Arkansas to Oklahoma, and north through eastern Minnesota. It is not found on the Atlantic Coastal Plains below Chesapeake Bay.

Leaves:

The leaves are alternate on the twig. They are 5 to 9 inches long and 4 to 5 inches wide. Each leaf has from 7 to 11 toothed lobes with sinuses extending half way to the midrib. A red oak leaf, when folded at the midrib, is often nearly symmetrical. (See figure B.)

Leaves are smooth on top and bottom except for occasional tufts of hair in the axils of the veins. They are a dark, dull green on top, often having a reddish midrib. The bottom of the leaves are pale green.

Twigs:

Moderately stout and greenish brown to dark brown. They are covered with pale lenticles and have a star-shaped pith. (See figure C.)

Terminal buds are about ¼ inch long with the greatest width near the middle, reducing in size to a sharp point at the tip. Around each terminal bud are usually clustered two or three lateral buds. The buds are light brown, usually free of a wooly covering and having numerous overlapping bud scales with slightly hairy margins. (See figure C.)

The bark of young trees is smooth and gray to brown in color. It gives the appearance of broad, flat plates on trees 10 to 15 inches in diameter. On the old trees the plates become ridged, rough, and rugged. The inner bark is reddish in color.

Flowers:

Staminate and pistillate flowers are borne on the same tree, usually in May, when leaves are half mature. The male flowers are borne in catkins 4 to 5 inches long. They are light green in color. Female flowers are borne on short spikes.

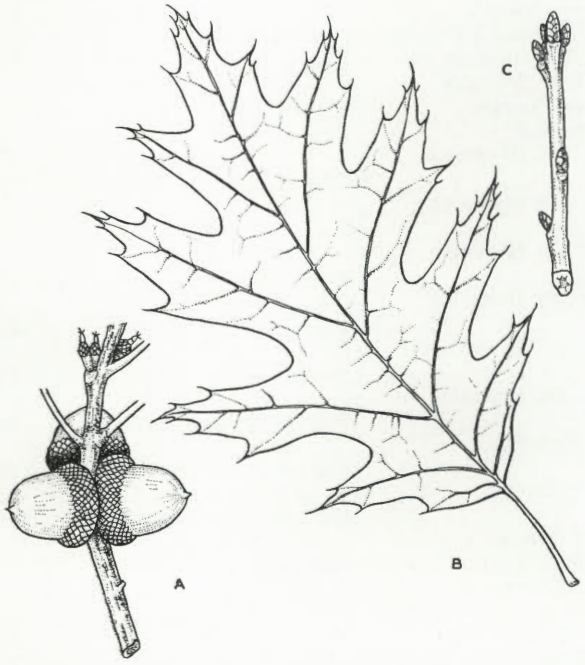
Fruit:

The acorns require two years to mature. One-year and two-year-old acorns appear on the same twig. (See figure A.)

Red oak bears big acorns often ¾ to 1 inch long. The acorns are somewhat barrel shaped, being rounded at the top, flat at the base, and resting in a broad, velvety, saucer-shaped cup. (See figure A.) The acorns are bitter to the taste.

Uses:

Red oak is one of the largest trees of the northern states. It often grows 70 to 90 feet in height and 2 to 4 feet in diameter. The lumber is highly prized for furniture and hardwood floors.



Red Oak

A. Acorns, on twig

B. Leaf

C. Twig, with buds

Shipyards use young, slender, strong red oaks for piling. Construction men and shipbuilders use the huge timbers where great strength is needed. It is common to see timbers 12 inches square and 20 feet long go into the shipyards.

Red oak does not make good fence posts unless treated with decay-resisting chemicals. The fast-growing red oak is desirable for street plantings and other ornamental purposes. #

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

Violators Roundup

Defendant	*Offense*	*Penalty*
Richard Rome, 25 Moran St., Newton	Angle closed waters	20
John Murphy, 53 Railroad Ave., Newton	Angle closed waters	20
Ronald M. Biss, 178 Lincoln Pl., Garfield	Use bait in fly stretch waters	20
Charles W. Kimble, Upper N. Shore, Culver's Lake, Branchville	Use bait in fly stretch waters	20
Stephen A. Lee, R.D. No. 1, Branchville	Angle closed waters	20
James Beatty, Jr., McCloud Rd., Lafayette	Angle closed waters	20
Willie Polite, Jr., 405 Broadway, Long Branch	Fish no license	20
Concepcion Rivera, 677 Scotland St., Perth Amboy	Fish no license	20
Charles Johnson, 5720 Chestnut St., Philadelphia, Pa.	Fish tidal waters w/o license	20
John Grooms, K672 Deerfield Dr., Seabrook	Fish no license	20
Lee R. Bradley, 475 Blvd., Hasbrough Heights	Fish no license	20
Joseph N. Main, 125 Central Ave., Hasbrouck Heights	Fish no license	20
Albert J. Dicocco, 642 Marlyn Rd., Philadelphia, Pa.	Fish no license	20
Joseph A. Maggio, 4 N. Granville Ave., Margate	Fish no license	20
Floyd R. Milhon, 5 N. Richards Ave., Ventnor	Fish no license	20
Warren O. Lund, Ocean Drive, Cape May	Poss. undersize lobster	20
John Welsh—Food Fair Stores, Rt. 130, Browning Lane, Brooklawn	Poss. undersize lobster	20
John Welsh—Food Fair Stores, Rt. 130, Browning Lane, Brooklawn	Poss. undersize lobster	20
John Welsh—Food Fair Stores, Rt. 130, Browning Lane, Brooklawn	Poss. undersize lobster	20
John Welsh—Food Fair Stores, Rt. 130, Browning Lane, Brooklawn	Poss. undersize lobster	20
John Welsh—Food Fair Stores, Rt. 130, Browning Lane, Brooklawn	Poss. undersize lobster	20
John Welsh—Food Fair Stores, Rt. 130, Browning Lane, Brooklawn	Poss. undersize lobster	20
Edwin R. Anderson, Jack Gordon Fisheries, 500 Dock St., Wildwood	Sell undersize lobster	20
Edwin R. Anderson, Jack Gordon Fisheries, 500 Dock St., Wildwood	Sell undersize lobster	20
Edwin R. Anderson, Jack Gordon Fisheries, 500 Dock St., Wildwood	Sell undersize lobster	20
Edwin R. Anderson, Jack Gordon Fisheries, 500 Dock St., Wildwood	Sell undersize lobster	20
James Evans, 323 S. Fish St., Darbey, Pa.	Fish no license	20
Aulander Daniels, 175 Long Branch Ave., Long Branch	Fish no license	20
Richard Brown, 8 Mountain Rd., Rockaway	Fish closed waters	20
Irving W. Harrison, 202 W. Baldwin St., Hackettstown	Fish closed waters	20
Thomas Nardone, 12 Valley View Terr., Washington	Fish closed waters	20
David J. Brown, 48 Chapman Pl., Glen Ridge	Hunt no license	20
Douglas G. Brown, 225 Forest Ave., Glen Ridge	Hunt no license	20
Clifford Horner, Jr., Taunton Rd., Marlton	Illegal poss. deer	100
James D. Bruce, 3020 Frankford Ave., Phila., Pa.	Fish no license	20
Edward F. Culwick, 28 Perry Dr., Trenton	Fish closed waters	20
Dominick Morrolli, Jr., R.D. No. 2, Stockton	Fish closed waters	20
Richard Souzzo, Box 26, R.D. No. 5, Flemington	Fish closed waters	20
Steven Wideman, Ferry Rd., No. 2, Flemington	Fish closed waters	20
Lawrence E. Tear, 185 Dewey St., Newark	Fish closed waters	20
William Cruse, Allen St., Lambertville	Fish closed waters	20
James Dowdy, 4 Allen St., Lambertville	Fish closed waters	20

Defendant	*Offense*	*Penalty*
Bauer Dredging & Cons. Co., Box 262, Bridgeport	Pollution	200
Joseph Jones, 3717 No. 16th St., Phila., Pa.	Fish no license	20
John F. Godown, 29 Wells Ave., Hampton	Carry gun in woods on Sunday	20
John L. Lewczyk, 11 Wisteria Dr., Fords	Loaded gun in auto	20
Bernard F. Ogara, 216 Mt. Vernon Ave., Orange	Fish no license	20
Edward Schuller, 316 Madison St., Passaic	Fish no license	20
Ted Grover, 370 Thomas St., Phillipsburg	Fish closed waters	20
Mark Hallick, Sooey Road, Chatsworth	Fish no license	20
Arno Kauth, 978 Flower St., Seabrook	Fish no license	20
James R. Quartarone, 1920 So. 17th St., Philadelphia, Pa.	Fish no license	20
Anthony J. Cutuli, 500 Davis Rd., Barrington	Fish no license	20
James E. Haynes, 111 Main St., Box 182, Hackettstown	Use bait in fly stretch	20
George T. Mitchell, 15 E. Pine St., Audubon	Fish no license	20
Norvel D. Wilson, 33 Burnet St., Newark	Fish no license	20
Henry L. Kelly, 41 Burnet St., Newark	Fish no license	20
Ronald Webb, Rm. 326, Greystone State Hosp. Morristown	Fish closed waters	20
Earl Torrence, 4304 Wayne Ave., Philadelphia, Pa.	Fish no license	20
Samuel Dantonio, 276 Walnut Ave., Bellmawr	Fish no license	20
David R. Deantonco, 843 Browning Rd., Bellmawr	Fish no license	20
Jack T. Payton, Box 71 RFD, Laurel Springs	Fish no license	20
Leon Maslowski, Black Horse Pike, Box 312, Sewell	Fish no license	20
Richard Maslowski, Box 129 - Garfield Ave., Sewell	Fish no license	20
John A. Rendfrey, 28 Pancoast Blvd., Delran	Fish no license	20
John Dogaluk, 15 Abbey Place, Trenton	Fish no license	20
Bruce W. MacPherson, Capstan Rd., Pinecliff Lk., W. Milford	Fish no license	20
Joseph J. Morgan, 189 Miller Ave., Paterson	Fish no license	20
Wayne Hietla, 228 Silver Ave., Hillside	Fish no license	20
Joseph Bueckle, 741 Front St., Dunellen	Fish closed waters	20
Roosevelt Worshim, 116 Gerard St., Potters	Hunt no tag	5
Carl Benson, 93 A Mary St., Lodi	Fish closed waters	20
Louis E. Schwarz, 344 Haledon Ave., Paterson	Fish closed waters	20
Raymond Ortiz, 115 Passaic St., Hackensack	Fish no license	20
Otto Johnson, 400 Wyckoff Ave., Ramsey	Fish no license	20
Matthew Volkov, 83 Spruce St., Paterson	Fish no license	20
Jacob Dallenbach, 350 Dunham's Cor., E. Brunswick	Fail to display tag	5
Thomas Lorell Tisder, Job Core Training Center, Hodgens, Oklahoma	Fish no license	20
Walter J. Hartmann, 1965 Sterling St., Philadelphia, Pa.	Fish tidal waters w/o license	20
Edward Nails, 904 Central Ave., Chester, Pa.	Fish tidal waters w/o license	20
Leroy Williams, 331 Harris Ave., Newfield	Fishing no license	20
Anatoly Grekow, 115 10th St., Passaic	Fish no license	20
Tom Spezzaferro, 32 Harford Pl., Belleville	Fish no license	20
James B. Welch, 324 Orendo Circle, Westfield	Bait in fly stretch waters	20
Robert Harrington, 43 Guy Street, Dover	Bait in fly stretch waters	20
Kenneth J. Dillon, Jr., 18 Hill St., Sussex	Loaded gun in auto	20
Paul E. Green, Box 69, R.D. No. 1, Mount Holly	Fish no license	14
		Bail Forfeit
Helen Rafferty, 333 Titan St., Philadelphia, Pa.	Fish tidal waters w/o license	Sus. Sen.

The most common deer hunting offenses recorded last year were as follow: uncased weapon (70), possession of deer (53), hunting deer closed season (28), hunting with aid of lights (24), and loaded firearm in vehicle (15).

Guide to the

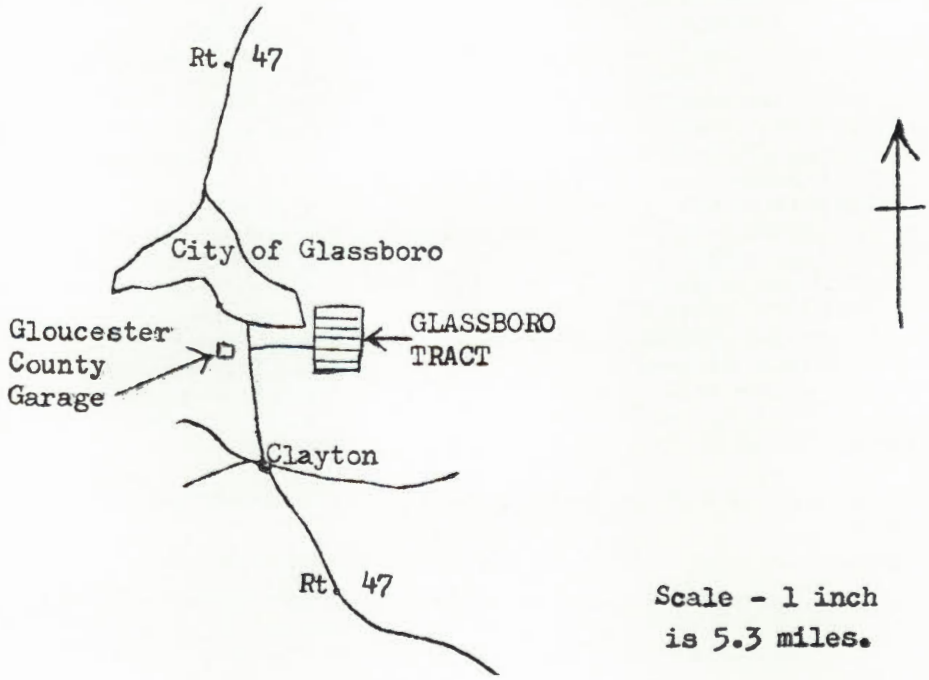
Glassboro Tract

The Glassboro Public Shooting and Fishing Grounds consists of 2,337 acres and is located in Gloucester County. There are presently fifteen fields being managed for upland game and the remainder of the tract is mostly woodland. There is a considerable portion of this tract in low brush and sweet gum swamps. This tract is bounded on the north by the old Jersey Central Railroad tracks, east by Downer Road, west by Delsea Drive, and south by the Wilson Lake-Clayton Road.

Upland hunting for pheasants, quail, rabbits, and squirrel is good on this tract. During the last few years deer hunting has improved in and around the tract. The tract is frequently utilized by Boy Scouts and other groups for camping.

The Bureau of Wildlife Management plants several of the food patches each year to soybeans, food patch, and winter rye to supplement the natural wildlife food and cover.

To reach the Glassboro Tract, take Route 47 south out of the city and head toward Clayton. Before reaching the town of Clayton, the Gloucester County Garage is on the right. Turn left on a road opposite the garage. This road proceeds through the tract. #



Council Highlights

November Meeting

The open session of the regular monthly meeting of the Fish and Game Council was held in Trenton on November 15. In addition to the Council members and Division personnel present the following persons attended: Edmond Shuler and John Kirk.

Deputy Quotas

Councilman Alampi stated that the Conservation Officers in Cumberland County would benefit from an increase in the quota of deputies in that county, and he made a motion that the quota of deputies be increased, where required. Motion was seconded by Councilman Wilson and passed.

Glassboro Tract

A letter was read from James P. Hayward, President of the Atlantic City Electric Company, thanking the Council for its expression of appreciation with regard to the removal of stumps on the power line right of way on the Glassboro Public Shooting and Fishing Grounds.

Salt Water License

Correspondence from John A. Rossi recommending a salt water fishing license was noted and referred to the Salt Water Committee for study and recommendation, bearing in mind the controversial nature of the proposal.

Shooting Franchise

Councilman Space reported that, in accordance with the action of the Council at the October meeting, the Game Committee had given consideration to the suggestion of installing a Winchester target franchise on one of the public shooting grounds as a means of providing additional income. It was their opinion that at the present time the Division should not participate in such an undertaking. One of the principal deterrents was our limited manpower and difficulties that would arise due to state regulations on overtime and the hiring of minors who would be needed to set up traps. Also to be considered was the possibility of causing a nuisance to residents in the area due to noise.

Therefore, the committee recommended that the matter be laid over for the time being. It was moved by Councilman Allocca, seconded

by Councilman Wilson, and passed, that the Council accept the recommendations of the committee.

Municipal Action

Councilman Allocca called attention to the attitude of municipalities with regard to ordinances prohibiting hunting. He commended the municipality of Colts Neck Township for their action in not closing the township to hunting and in preparing a flier informing the residents of their rights as property owners and advising them that, if they did not desire hunting on their property, they could post it. Mr. Allocca was to submit a copy of the flier and the name of the person responsible for it in order that Director MacNamara could send a letter of commendation to them. By motion, the Council approved of this action.

Bears in Captivity

Councilman Space referred to the recent incident at High Point State Park where a bear held in captivity bit off the arm of a three-year-old girl. In view of the fact that the bear is a game animal and existing laws contain no provisions in regard to keeping them in captivity, Mr. Space felt that it was the responsibility of this Division to endeavor to have regulations established in the interest of the public's safety. The matter was referred to the Game Committee for their review, consideration, and recommendations.

Tentative Hunting Seasons

Tentative dates for 1967 hunting seasons were set as follows:

Small game—open November 11 and re-open after deer season
Deer, bow and arrow—October 7
Deer, firearm—December 4-9

It is to be clearly understood that these dates are purely tentative and are subject to change.

Compton Creek

Councilman Richardson reported briefly on the efforts of the commercial fishermen to forestall the installation of a sewage treatment plant emptying into Compton Creek. They are maintaining their vigilance in an effort to keep this effluent out of Raritan Bay.

Monmouth County Board

Councilman Allocca advised that Monmouth County has established a board to decide on the placement of sewage treatment plants and they have been trying to have a representative of the Division of Fish and Game serve on the board. He suggested that the other Councilmen might investigate similar possibilities in their counties.

Coastal Patrol

Chief Mathis of the Coastal Patrol reported that coastal patrol personnel assisted the conservation officers with five arrests for waterfowl violations, and they also assisted the Bureau of Fisheries in their fluke study. He said that striped bass had been present in Delaware Bay, which was rather unusual for that time of the year. No problems were encountered with fishermen along the coast. Complaints of gill and stab netters operating too close to shore were checked and the fishermen were found to be properly licensed and operating in a legal manner.

Wildlife Management

Chief Alpaugh of the Bureau of Wildlife Management advised that from reports received, waterfowl hunters were very successful during the first half of the season. On the opening day of the small game season, lower hunting pressure was evident on some of the older public shooting and fishing grounds. This was attributed to the spreading out of the hunters to new tracts brought under the jurisdiction of the Division of Fish and Game. As time goes on and additional tracts are acquired, it is hoped that this distribution of hunting pressure will continue. One of the latest assignments received under the Green Acres Program was the railroad right of way at Black River, which will provide good access.

Reports that trappers have noticed a lack of young raccoon will be investigated by Chief Alpaugh.

Fisheries Management

Chief Hayford of the Bureau of Fisheries Management reported that, in cooperation with other states, Paul Hamer assisted in the tagging of 2,000 fluke in Pamlico Sound. He also reported that pickerel, catfish, and bullheads have shown up in Prospertown Lake at the Colliers Mills Tract. Bass in the two-pound class have been abundant in Spruce Run. At the fish hatchery, early spawning of trout commenced on October 13. This is significant because the earlier spawning takes place, the longer the growing season for the fish.

Public Relations

William Peterman, Supervisor of Public Relations, reported that four exhibits were erected during October. A series of Hunter Safety slides had been completed and distributed to the conservation officers for distribution to the hunter safety instructors. Our usual cooperation was being given to the State School of Conservation.

Law Enforcement

Chief Coffin of Law Enforcement reported that hunters conducted themselves in an orderly manner on the opening day of small game

season. The most common violation observed was for hunting before hours, and 55 summons were issued and 13 warnings were given to youngsters for this offense. Total apprehensions on opening day were 120, and 39 warnings were issued. To date, hunting accidents had been of a minor nature with a total of nine reported.

Arrangements have been made with the State Police to enroll the Conservation Officers in a training session for all enforcement officers, both land and sea. The officers will attend at different sessions and the course will cover rules of evidence, interrogation, searches and seizures, first aid, taking of statements, and will also include defensive auto driving to teach the officers means of protecting themselves. The only charge will probably be a nominal cost for lunch. The course will run from 9:00 a.m. to 4:30 p.m., and it should not be necessary for the men to stay overnight. However, in case of bad weather, accommodations will be available for them. #

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