ANNUAL REPORT

New Jersey
Department of Conservation
and Economic Development

Division of Fish and Game

FOR THE FISCAL YEAR
COMMENCING JULY 1, 1948
AND ENDING JUNE 30, 1949

STATE OF NEW JERSEY
DEPARTMENT OF CONSERVATION AND
ECONOMIC DEVELOPMENT
DIVISION OF FISH AND GAME
Trenton

To The Honorable Alfred E. Driscoll, Governor, and Members of the Senate and General Assembly of the State of New Jersey:

As required by law, we submit herewith the annual report of the work of the Division of Fish and Game for the Fiscal year covering the period from July 1, 1948, to June 30, 1949.

Very respectfully,

FRANK J. VALGENTI, JR., *Chairman,*
JAMES C. SALVATO
HERMAN S. JOHNSON
CHARLES A. CAMPBELL
JAMES W. HAND
WM. R. M. LONG
HENRY W. JEFFERS, JR.
RODERICK D. MACDOUGALL
ALVIN W. STRING
DAVID H. HART
CHARLES M. CUBBAGE,

Council Members.

LIST OF COUNCIL MEMBERS HOLDING OFFICE AT THE DATE OF THIS REPORT

June 30, 1949

FRANK J. VALGENTI, JR., *Chairman* ..... Madison
JAMES C. SALVATO ..... Paterson
HERMAN S. JOHNSON ..... Neptune
CHARLES A. CAMPBELL ..... New Brunswick
WM. R. M. LONG ..... Haddonfield
JAMES W. HAND ..... Millville
HENRY W. JEFFERS, JR. ..... Plainsboro
RODERICK D. MACDOUGALL ..... New Vernon
ALVIN W. STRING ..... Harrisonville
DAVID H. HART ..... Cape May
CHARLES M. CUBBAGE ..... Port Monmouth

ANNE E. SULLIVAN, *Secretary*
Office, State House Annex, Trenton, N. J.

CHARLES O. HAYFORD, *Superintendent of Fish Hatchery,* Hackettstown
L. G. MACNAMARA, *Superintendent of Game Management,* Pittstown
EDWARD H. ROTH, *Superintendent of Quail Farm,* R.D. No. 3, Lakewood
ROBERT BUNTAIN, *Superintendent of Game Farm,* Hackettstown
JULES W. MARRON, *Supervisor of Public Relations,* R.D. No. 3, Newton

LIST OF FISH AND GAME WARDENS HOLDING COMMISSIONS AT THE DATE OF THIS REPORT

Frederick C. Craig, *Protector* ..... Hackettstown
G. I. Hall, *Assistant Protector* ..... Salem
James H. Treloar, *Assistant Protector* ..... Newton
John R. Hugg, *Assistant Protector* ..... West Caldwell
John C. O'Dowd ..... Trenton

Alfred F. Bakley ..... Washington
David W. Brocer ..... Montville
Everett Carmelia ..... Mt. Holly
Frank T. Clark ..... Columbia
Oscar S. Clark ..... Vineland
William P. Coffin ..... Somerville
Clifford Cudney ..... Jamesburg
Matthew W. Engels ..... Woodstown
J. Howard Ferry ..... Jersey City
Joseph F. Gallo ..... Mays Landing
Wesley Gibbs ..... Vincetown
John W. Graham ..... Swedesboro
George E. Groves ..... Bridgeton
Richard K. Hall ..... Audubon
H. Howard Harrison ..... Waretown
J. Lester Hyde ..... Newton
William R. Hutchison ..... Berlin
William J. Jeschke ..... Pine Beach
Alfred S. Jones ..... Hancocks Bridge
Francis L. Jones ..... Stone Harbor
Norman P. Kraeuter ..... Clinton
Karl Kristiansen ..... Fair Haven
Harry J. Morrison ..... Sussex
Thomas J. Mulvey ..... Cranbury
Carl W. Newman ..... Dover
Thomas F. Nolan ..... Mercerville
Eugene W. O'Neill ..... Clinton
Walter Robinson ..... Orange
Dana J. Saxton ..... Absecon
Andrew Shraw ..... Springfield
Leo F. Shurr ..... Far Hills
Thomas L. Spencer ..... Hackensack
Garret Westerveld ..... Paterson
Roy H. Williams ..... Pompton Lakes

Foreword

by Frank J. Valgenti, Jr., Chairman

It would be a happy task if this report of the Fish and Game Council could be presented on a note of optimism for the future of hunting and fishing in New Jersey. We may be justified in hoping for better things for the angler but neither the facts nor our consciences will permit any delusion with regard to upland hunting. An increasing population, industrial expansion into rural areas, modern agricultural practices all combine to retire the land from hunting opportunity. Land which remains suitable becomes subject to terrific pressure with resultant burden upon the game and friction between landowners and hunters. As the demand increases more land is posted and as more land is posted the pressure becomes correspondingly intense on the remaining supply of land and game. Add to this distressing situation unexplainable losses of breeding stock and the picture is far from bright. There are no panaceas to afford relief nor do we believe there exist methods of immediate and simple solution for this dilemma. We are convinced, however, that if there is a solution it lies not in the policies of the Council but in a sympathetic appreciation of this situation by the license buying public; such an appreciation as will express itself in conduct gentlemanly, tolerant and sportsmanlike, designed to alleviate and not intensify the problem. In that course only is there hope for the continuance of upland hunting on an open basis.

SUMMARY OF ACTIVITIES 1948 — 1949

The following is a brief summary of propagation and liberation of fish and game and of wildlife conservation activities during the fiscal year beginning July 1, 1948, and ending June 30, 1949.

FISH AND GAME LIBERATION

Pheasants — 37,655, of which number 17,911 were propagated and distributed from State-owned farms; 1,388 purchased from licensed dealers; 18,356 raised to adult stage by 4-H Clubs and others from day-old chicks hatched at State farms.

Quail — 11,919, all raised at the State Quail Farm.

Rabbits — 2,539, all purchased from the west.

Fish — 1,054,913, propagated and distributed from the State-owned hatcheries, comprised of the following species: trout over legal size, 404,490; trout under size, 14,000; bluegill sunfish, 484,885; large-mouth bass, 142,735; small-mouth bass, 8,803.

In addition, 104,106 fish, as listed, were netted from various reservoirs and other closed waters and redistributed: large-mouth bass, 3,794; pickerel, 387; sunfish, 16,718; yellow perch, 55,296; calico bass, 4,200; catfish, 15,761; bluegill sunfish, 450; white perch, 7,500.

The market value of all fish and game liberated was $479,441.64.

The receipts from resident and non-resident hunters' and anglers' licenses were $757,381.50.

LAW ENFORCEMENT

A total of 1,495 cases were prosecuted, which represents an all-time record number of arrests in New Jersey. Penalties totaling $46,856.25 were collected for these violations.

LICENSES ISSUED

1947	1948
238,355	251,083

1948 DEER KILL

The legal deer take during the five-day firearm season was 3,249. The special bow and arrow deer hunting season of five days resulted in a kill of but one deer by 804 specially licensed hunters.

LATEST REPORT OF FISH AND GAME TAKEN

The 1947 tabulation of fish and game reported taken indicates a big increase during that year. The percentage of licensees reporting was 38%. A comparison of the 1946 and 1947 figures follows:

	1946	1947
Deer	3,043	3,938
Pheasants	211,460	292,303
Quail	28,004	38,535
Rabbits	794,136	1,092,169
Gray Squirrels	152,624	385,604
Grouse	9,188	14,800
Woodcock	5,856	12,804
Ducks	96,451	103,431
Geese	965	1,963
Trout	607,640	1,316,595
Bass	246,401	368,544
Pickerel	208,724	352,224
Mink	420	1,140
Muskrat	204,081	218,732

PREDATORY VERMIN CONTROL

During the fiscal year, 75,034 predatory birds and animals were reported taken by the wardens, wildlife managers, trappers and holders of special vermin control permits. The figure for the previous year was 64,774.

GAME MANAGEMENT

The Federal Aid-to-Wildlife project operating on agricultural lands for the development of food and cover facilities was expanded during the year to include 172 farms. The development of marshland and other lands was maintained at its former level, and research work in regard to waterfowl, rail and muskrat was increased under a federal project.

The New Jersey Hunter Cooperative Plan was maintained during the year with 129 landowners and embraced a total of 11,059 acres.

Food patch installation is becoming increasingly popular with farmers and sportsmen as they realize the importance of food in the management of wildlife. Although this activity was curtailed due to the severe drought, 509 patches were planted. Much progress has been made in the installation of perennial food plants, principally Lespedeza.

Deer management work was stressed in an attempt to find an economical solution to the deer damage problem in agricultural areas. A total of 119 deer were live-trapped and removed to new locations, experimental diversionary food plots were planted in some areas, four permanent deer repelling fences constructed, three electric fences built, and many applications of repellent sprays made.

Miscellaneous activities included the live removal of 30 beaver and their reliberation in areas where they would not cause damage; 2,414 squirrels, 116 raccoons and 45 rabbits were live-trapped in metropolitan areas and released in rural districts.

LEGISLATION

Chapter 38 — Approved March 28, 1949. In view of the revision of the State courts abolishing the office of justice of peace, the bounty law was amended to provide for the taking of affidavits by municipal magistrates.

Chapter 39 — Approved March 28, 1949. This act provides for the payment of the affidavit fee to the officer preparing the certificate in bounty claims.

Senate Joint Resolution No. 4 — Approved April 28, 1949. Authorized the designation of the gorge in the Raritan River, acquired by the Division as a public fishing ground, as "The Ken Lockwood Gorge" as a memorial to Kenneth F. Lockwood.

IN MEMORIAM

WHEREAS, Malcolm J. Dunn, Superintendent of the Forked River Game Farm, died on March 24, 1949; and

WHEREAS, Mr. Dunn had been employed in the service of the State fish and game administration in the State of New Jersey for the past thirty-seven years and was superintendent of the Forked River Game Farm for the past seventeen years; and

WHEREAS, during this long period of association in fish and game work Mr. Dunn had endeared himself not only to the various Commissions and Councils under which he served but also to all sportsmen in New Jersey by his genial and kindly personality, his great knowledge of pheasant rearing, and his intensely loyal and efficient service.

NOW, THEREFORE, BE IT RESOLVED, that this Council does hereby pay public tribute to the outstanding service rendered by Mr. Dunn to the sportsmen of New Jersey and does also acknowledge the great loss occasioned to this Department and to the cause of conservation by his untimely passing.

BE IT FURTHER RESOLVED, that this resolution be spread on the minutes of the Council and a copy thereof be sent to the family of Mr. Dunn.

GENERAL

FISH AND GAME COUNCIL

Colonel Arthur F. Foran, of Flemington was selected to continue as Chairman until April 1, 1949, when the new council, as provided under Chapter 448, of the Laws of 1948, took office.

Under the new act, the Fish and Game Council is composed of eleven members, appointed by the Governor, with the advice and consent of the Senate. Three of such members are farmers, recommended to the Governor for appointment to the Council by the agricultural convention held in accordance with statute; six of such members are sportsmen, recommended to the Governor for appointment by the New Jersey State Federation of Sportsmen's Clubs; and two of such members are commercial fishermen. One of such farmer representatives and two of such sportsmen representatives are chosen from among residents of the following counties: Bergen, Essex, Hudson, Morris, Passaic, Sussex and Warren; one of such farmer representatives and two of such sportsmen representatives from among residents of Hunterdon, Mercer, Middlesex, Monmouth, Ocean, Somerset and Union; and the same proportion of representation from the third district comprising Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester and Salem Counties.

The term of each member of the Council was to be four years, except the first appointments under the law which were to be for the following terms: two for one year, three for two years, three for three years, and three for four years, each commencing on April 1. The term of each of the first appointees, as well as the Chairman of the Council was designated by the Governor when making the appointments.

Of the former Council only one member received reappointment as a sportsman representative, Frank J. Valgenti Jr., who was designated as Chairman by Governor Driscoll, and whose term is four years. The other sportsmen representatives are: James C. Salvato, of Paterson, four years; Herman S. Johnson, Neptune, three years; Charles A. Campbell, Highland Park, two years; William R. M. Long, Haddonfield, two years; James W. Hand, Millville, one year.

The farmer representatives appointed are: Henry W. Jeffers, Jr., Plainsboro, four years; Roderick D. MacDougall, New Vernon, two years and Alvin W. String, Harrisonville, one year.

The two commercial fisheries' representatives are David H. Hart, Cape May, three years, and Charles M. Cubbage, Port Monmouth, three years.

FISH AND GAME CODE

The act providing for the reorganization of the Fish and Game Council also authorized and empowered them to establish regulations after a specified procedure to be known as the Fish and Game Code. The authority granted permits the Council to:

a. Establish, extend, shorten or abolish open and closed seasons.
b. Establish, change or abolish bag limits, possession limits and size limits.
c. Establish and change territorial limits for the pursuit, taking, or killing of any or all species or varieties of fish, game birds, game animals, and fur-bearing animals.

d. Prescribe the manner and the means of pursuing, taking, or killing any species or variety.

By virtue of the power granted, after public hearing on April 20, 1949, new trout regulations for the year were adopted as follows:

1. The trout season which started at 8:00 a.m. on April 15 will extend uninterruptedly to September 30, 1949. Fishing shall be from daylight to 9:00 p.m., EST, except in designated fly-fishing areas.

2. The legal size will remain at 7".

3. Until 9:00 p.m., EST, on May 14, 1949, the daily bag limit will remain at 10.

4. From 6:00 a.m., EST, on May 15, 1949, to the end of the season, the daily bag limit will be reduced to 8 trout, of which number not more than 4 may be taken from the fly-fishing waters hereby specified.

FLY FISHING WATERS

5. From and after 9:00 p.m., EST, May 14, 1949, the following two stretches of water are designated as fly-fishing water:

   a. Big Flat Brook, Sussex County — from the concrete bridge on Route 31 downstream to the end of the Roy Tract, a distance of approximately four miles.

   b. South Branch of the Raritan River, Hunterdon County — the stretch of water known as the "Ken Lockwood Gorge," a distance of approximately two and one-half miles.

6. Fly-fishing only shall be permitted in the above-mentioned stretches from 6:00 a.m., EST, May 15,1949, to and including September 30, 1949.

7. Daily fishing hours shall be from 6:00 a.m., EST, to 9:00 p.m., EST, in the fly-fishing waters.

8. Not more than four trout may be killed daily in the designated fly-fishing waters.

9. In designated fly-fishing areas no bait or lures of any kind may be used except artificial flies which are expressly limited to dry flies, wet flies, bucktails, nymphs and streamers. Expressly prohibited are metal, plastic or wooden lures, plugs, spinners, spinner flies and any fly to which there is attached or tied, or which is used in combination with any metal or plastic or other contrivance of any substance or sort.

10. Also expressly prohibited in these fly-fishing areas shall be any type of angling whereby the fly is cast directly from the reel.

It is anticipated that changes will be adopted shortly in the game regulations for the coming Fall in accordance with the newly delegated power of the Council.

WARDENS' SERVICE

There were two additions to the force of Wardens during the fiscal year, Everett Carmelia, of Mount Holly, and Joseph F. Gallo, of Mays Landing.

Andrew Drysdale, of Chester, has been serving as temporary Warden in Warren County due to the absence from duty of Warden Alfred F. Bakley as a result of an automobile accident.

LAW ENFORCEMENT

Prosecutions were brought in 1,495 cases, which, for the second consecutive year is an all-time record. Penalties totaling $46,856.25 were collected for these violations.

A three-day training conference for the Wardens was held in March in cooperation with the New Jersey State Police. In the future such conferences are planned to be held annually since much valuable and instructive information was brought out at the conference.

The number of arrests made by each Warden, by Deputy Wardens, and by other complainants, together with warnings issued during the year are as follows:

	Arrests	Warnings
Williams	101	24
Hutchison	77	....
Brocker	69	57
Mulvey	62	23
Graham	61	9
Groves	58	5
Newman	58	52
Coffin	51	75
Nolan	51	30
Gibbs	46	1
Spencer	45	27
A. Jones	44	38
Shurr	44	30
Jeschke	42	15
Gallo	42	16
R. Hall	35	....
Hyde	35	4
F. Clark	34	14
Engels	33	45
Morrison	32	54
Ferry	30	13
Westerveld	28	17
Robinson	25	20
Cudney	24	29
Carmelia	24	7
Harrison	22	9
Saxton	22	10
O. Clark	20	18
Kristiansen	20	20
Drysdale	19	20
F. Jones	19	4
Shraw	13	2
Bakley	12	6
Kraeuter	11	17
O'Neill	8	5
Mathis	7	....
Treloar	5	....
Piercy	3	....
Craig	2	....
G. Hall	1	....
Hugg	1	....
Deputy Wardens	122	....
Other complainants	37	....
	1,495	**715**

Appeals were taken in 24 cases, 15 defendants found not guilty, 16 placed on probation to make payment, 23 committed to jail, and sentence was suspended in 31 cases. Six guns were confiscated and 63 licenses revoked.

Prosecutions according to districts were as follows:

First District:	
Sussex, Warren, Passaic, and Hunterdon Counties	287
Second District:	
Bergen, Essex, Hudson, Middlesex, Somerset, Union and Morris Counties	454
Third District:	
Mercer, Monmouth, Ocean, Burlington Counties	374
Fourth District:	
Cape May, Camden, Cumberland, Gloucester, Salem and Atlantic Counties	380
	1,495

Offenses for which prosecutions were brought are as follows:

LICENSE VIOLATIONS: Fishing without, 292; hunting without, 137; trapping without, 14; false information, 28; procuring wrong, 39; loaning, 2; refusal to show, 9.

FISHING VIOLATIONS: Closed season, 63; illegal netting, 10; illegal fishing, 2; under-size fish, 34; illegal bait, 4; excess bag, 18; set lines, 3; trout fishng before hours, 4.

HUNTING VIOLATIONS: Closed season, 63; aid of lights, 45; from auto, 11; after hours, 76; on Sunday, 55; illegal removal game, 6; before hours, 3; hen pheasant, 1; within 300 feet of dwelling, 1; mutilation of game, 9; possession protected birds, 13; while intoxicated, 1; failure to display tag, 23; from motor boat, 10; excess bag, 7.

DEER VIOLATIONS: At night, 30; short-horn, 1; closed season, 39; doe deer, 21; illegal possession, 6; with dogs, 2.

FIREARM VIOLATIONS: Loaded in vehicle, 104; closed season, 8; illegal firearm, 122; illegal missile, 90; alien firearm, 8; discharging from highway, 6.

TRAPPING VIOLATIONS: Closed season, 18; illegally, 1; stealing traps, 2; stealing muskrats, 5.

MISCELLANEOUS VIOLATIONS: Dog at large, 7; pollution, 6; trespass on game preserve or hatchery, 4; short lobster, 3; drawing off waters, 1; illegal possession of raccoon, 6; illegal crabbing, 1; impersonating deputy warden, 2; illegal posting, 1; crab with spawn, 3; short crab, 13; diamond-back terrapin, 1; interference with officer, 6.

CONSERVATION EDUCATION AND PUBLIC RELATIONS

The Division has had continued demand for lectures and motion pictures on conservation education. An aggregate of over 300,000 youths and adults attended the Division's lecture and motion picture programs, tours and conferences. Adult groups requesting programs were service clubs, garden clubs, nature clubs, school faculties, colleges, parent-teacher associations, veteran organizations, Y.M.C.A. clubs, granges, church groups, agricultural associations and sportsmen's clubs. Youth groups included 4-H, F.F.A., school assemblies, Boy Scouts, Junior Sportsmen's clubs, boys' clubs, etc.

During the fiscal year only one large display was made in cooperation with the New Brunswick Junior Sportsmen's Show. The show was attended by more than 15,000 persons.

The Division again assisted in the Conservation Workshop for Teachers, held at the Trenton State Teachers College. Contributions for tuition fees of teachers attending the Workshop were made by garden clubs, sportsmen's clubs, granges and individuals.

As stated many times, the most lasting antidote to the basic problem of the conservation and restoration of our State's resources of soil, water, forests, minerals, fish and wildlife, is the essential education of its people in conservation practices. In keeping with the continued effort of this Division to help foster such conservation education in cooperation with the various State departments, we are pleased to report that we now have in operation the first School of Conservation in New Jersey. This school is offering summer courses sponsored by the New Jersey State Department of Education, in cooperation with the Department of Conservation and Economic Development. The school is located at a camp on Lake Wapalanne, Stokes State Forest, Sussex County. Its purpose is to instruct teachers, who, in all levels of public education, are more and more frequently called upon to teach some phase of conservation. Far too many teachers do not have the knowledge, experience or attitude to deal with the subject adequately. The social, economic and scientific implications of conservation are considered collectively. Discussion periods are interspersed with field trips in company of experts, and visual aids are used extensively. Our Supervisor of Public Relations is a member of the faculty and no doubt our numerous programs during the past years have helped to create the demand for teacher conservation education.

The State Grange Conference at Atlantic City, the Farm Bureau Conference and Agricultural Week at Trenton, and the National Wildlife Conference at Washington, D. C. were attended. The Division also took part in four radio programs and many still and motion pictures were added to our library.

In cooperation with Metro-Goldwyn-Mayer, producers of "The Yearling," the Division shipped a yearling white-tailed doe deer to the school children of Uraguay, South America, as a good-will ambassador from the school children of New Jersey. Accompanying the deer was a Spanish version of the motion picture film.

For the first time in New Jersey a cooperative duck rearing project was conducted in the spring of 1948 with the following results: There were 947 day-old ducklings distributed and 807 were reared at no cost to the department and released in inland waters, making a percentage of .85 plus ducks reared. There were fifteen cooperators in nine counties. In the spring of 1949, many of the ducks were noted to have bred in the wild, which should afford some inland waterfowl shooting in farm areas where water impoundment has been recommended.

The day-old pheasant chick program has again exemplified its value as a farm wildlife program. The efforts of youths, farmers, landowners, and sportsmen brought this program to a successful conclusion. In 1948, 18,356 pheasants were reared by 157 participants in 19 counties of our State. A record of 6,837 birds were reared in one county as an experiment to prove that this program can produce a sufficient number of birds in a county for fall distribution and spring stocking. In another county, through the cooperation of a sportsmen's group, a county-wide publicity campaign was conducted through the facilities of the press, radio and schools, which resulted in producing 706 birds for releasing during their first year under the program. Payment to individuals for the rearing of birds also aids in keeping lands open to hunting, keeping grain standing for food, and assisting in protection. A "pride of possession" exists in the various townships of a county, which acts as an incentive to produce and protect on a competitive basis with neighboring townships. Payment for rearing birds also provides additional cash incomes to be used in many ways, i.e., college tuition, purchase of livestock, improvement of rearing facilities, etc.

This year, with few birds purchased from dealers, there were less birds distributed than last year. We would, in all probability, have had more closed land and a wider breach between the farmer and the department had it not been for the additional thousands of birds reared and released under the chick program. The estimated acreage of land opened and kept open, not including pasture or plowed lands with good to excellent game cover, was 86,700, this figure being based on an average of one hundred acres per farm.

It is estimated that over $15,000 was paid by the participants to local merchants in the various counties for feed, $6,500 for equipment, wire, feeders, and electrical power, and approximately $13,000 for labor, ets. All of this money, a total of over $34,500, was spent in New Jersey.

Experiments in using radiant heat for rearing were begun by a member of a 4-H Game Bird Rearing Club, with an 83% livability resulting. This is the first time radiant heat has been used in the brooding of pheasants in our State, and the results obtained show that a larger number of chicks can be reared at one time without a brooder or crowding. With the entire floor being heated, there are no cold sections and the chicks are never chilled. Also, with the heat being on the stomach instead of the back of the bird, it helps to bring out back feathers faster which, in turn, helps to stop cannibalism.

Several sportsmen's clubs paid participants for holding over a number of pens of birds reared by 4-H and F.F.A. members until after the hunting season or until spring. Flocks were culled and a ratio of four hens to one cock bird were held. Here again the opportunities for farmer-sportsman relationship were made possible.

The program has been of great value in the experience gained by the layman; more farmers and sportsmen know something about how and what to do than ever before. It created the incentive to practice game management on privately owned lands at no cost to the department. In the areas where projects were in operation, personal ownership helped to materially reduce law violations and over-shooting, encourage proper managment of the crop, and maintain predator control on a community basis. Almost without exception, the successful projects were those in which cooperative interest was shown by wardens, sportsmen, 4-H and vocational leaders who, through personal contact, kept the program active.

GAME

GAME FARM REPORTS

Forked River Farm

The pheasant record at this farm for the calendar year of 1948 was as follows:

Breeding birds on hand January 1, 1948		1,169
Young birds on hand January 1, 1948		1,412
Eggs laid	49,459	
Eggs set	41,850	
Birds hatched		25,975
		28,556
Spring distribution		357
Fall distribution		8,834
Day-old chicks distributed		13,825
Birds died or escaped		3,415
Breeding birds on hand December 31, 1948		1,456
Birds held for spring distribution		669
		28,556

Rockport Farm

The pheasant record at this farm for the calendar year of 1948 was as follows:

Breeding birds on hand January 1, 1948		1,387
Young birds on hand January 1, 1948		202
Young birds transferred for breeders		50
Eggs laid	36,881	
Eggs set	35,578	
Birds hatched		25,344
		26,983
Spring distribution		150
Fall distribution		9,077
Young birds transferred for breeders		50
Day-old chicks distributed		14,620
Birds died and escaped		1,709
Breeding birds on hand December 31, 1948		1,277
Birds held for spring distribution		100
		26,983

Quail Farm

The quail record for the calendar year of 1948 was as follows:

Breeding birds on hand January 1, 1948		85
Young birds on hand January 1, 1948		5,425
Eggs laid	26,471	
Eggs set	23,552	
Eggs distributed	500	
Birds hatched		18,758
		24,268
Spring distribution		4,467
Fall distribution		7,727
Birds died and escaped		6,770
Breeding birds on hand December 31, 1948		0
Birds held for spring distribution		5,304
		24,268

WILDLIFE MANAGEMENT ACTIVITIES

During the past year, management was applied to the manipulation of varying types of environments in order to overcome some evident limiting factors that control the production and maintenance of wildlife within the State. The food and cover development project operating on agricultural lands as a Federal Aid-to-Wildlife project was expanded to include 172 farms. The development of non-agricultural lands and marsh lands was maintained at its former level, and research work in regard to waterfowl, rail and muskrat was enlarged under a Federal Aid-to-Wildlife project.

Under Federal Project 19-D 4,000 acres of farmland were mapped and cover-typed, and many visits and discussions were held with individual farmers and sportsmen' clubs throughout the State. The cooperation of the Soil Conservation Service, County Agents, and 4-H leaders was very helpful in bringing this program of farm game restoration to maturity.

PLANTINGS MADE ON THE FARMLANDS OF THE STATE UNDER FEDERAL AID PROJECT 19-D DURING THE FISCAL YEAR 1948-49

Plantings Made on 54 Farms

Species of Plant	Number Planted
Bittersweet	400
Rosa multiflora	11,000
Norway spruce	17,500
White pine	500
Easter larch	500
Douglas fir	250
Highbush cranberry	100
Tartarian honeysuckle	160
Lespedeza bicolor	9,600 ft.

In addition, 3,550 feet of hedgerow were pollarded, supervision was given to the construction of one farm pond and plans drawn for two others, one fence built to protect a food patch from grazing, construction of 24 feeding stations on farmlands, and 19 talks were given to 4-H Clubs, Granges and sportsmen's clubs in regard to the perspective, object and procedure of the plan.

During the year, the New Jersey Hunter Cooperative Plan was maintained in the following areas:

Organization	Number of Landowners	Acres
Guinea Hollow Rod & Gun Club	51	2,051
Bloomsbury Rod & Gun Club	15	1,774
Flemington-Raritan Rod & Gun Club	20	2,034
Reaville Rod & Gun Club	17	1,800
Whitehouse Rod & Gun Club	12	1,400
Brainards Rod & Gun Club	14	2,000
	129	11,059

Marsh development and marsh restoration was confined to the Tuckahoe-Corbin City area. Very noticeable increases in waterfowl breeding, waterfowl broods, and fall, winter and spring waterfowl populations have been recorded. Utilization of the area by the sportsmen of the State has increased greatly. In addition, the result of hunting effort has increased from .79 ducks per hunter per day in 1947 to 1.91 ducks per hunter per day in 1948. An estimated total of 5,000 muskrats were removed by the people of the State during the regular trapping season. Sora rail and Florida gallinule made their initial appearance on the area in September 1948 and were present in shootable quantities. It was definitely established that the Hooded Merganser now nests on the area A large number of ducks and Clapper rail have been banded on and near the area, thereby contributing to the overall knowledge in regard to these species. It was definitely established that some of the Clapper rail nest twice in one season and bring off successful broods from both nesting efforts. A total of 15,350 fish was taken from the waterfowl impoundments in the spring of 1949 for distribution throughout the State. It is expected that this project will be brought to completion during the fall of 1949 and other marshes placed under development.

Other development and maintenance procedures were carried on by Wildlife Managers and Helpers. Additional duties were game distribution, supervision of the game farms, land acquisition and appraisal, deer trapping, live beaver trapping, live-trapping of miscellaneous animals such as raccoon, squirrels and rabbits from metropolitan areas, deer fence construction, planting trees, shrubs, vines and herbaceous plants, planning and mapping State-owned areas for development, protection against fire, patrol, and distribution and redistribution of the day-old pheasant chick program. The following table shows the accomplishments on each area during the year.

WORK ACCOMPLISHED ON THE SEVERAL PUBLIC SHOOTING GROUNDS

DURING THE FISCAL YEAR 1948-49

	Tuckahoe	Haleyville-Millville	Glassboro	Flat Brook	Clinton	Colliers Mills	Rowands Pond	Egg Island
Dike constructed	4585 ft.	450 ft.	.....	....	....	.....	....	.....
Circulating ditch	400 ft.	.....	.....	....	....	.....	....	.....
Gravel hauled	1918 yds.	.....	.....	10 yds.	....	.....	....	.....
Sod bank constructed	2527 ft.	.....	.....	....	....	.....	....	.....
Salt ponds constructed	10	.....	.....	....	....	.....	....	.....
Ditch plugs constructed	3	.....	.....	....	....	.....	....	.....
Upland food areas constructed	.....	43.5 A.	4.2 A.	....	....	19 A.	....	.....
Fire break constructed	.....	44,655 ft.	.....	....	....	.....	....	.....
Boundary line established	.....	34,766 ft.	.....	....	....	.....	....	1000 ft.
Buildings dismantled	1 barn	.....	.....	....	....	.....	....	.....
Road constructed	.....	2650 ft.	.....	....	....	21,120 ft.	....	.....
Hedgerow pollarded	.....	.....	1600 ft.	....	1 A.	.....	....	.....
Bridge constructed & repaired	2	.....	.....	1	....	1	....	.....
Spillway constructed & repaired	.....	.....	.....	....	....	1	1	.....
Nursery constructed	.....	.....	.....	....	....	5 A.	....	.....

Food patch installation is becoming increasingly popular with farmers and sportsmen as they realize the important role of food in the management of wildlife. This practice, which dates back to Kublai Khan and his Mongolian Empire, serves primarily as a source of food and, to a lesser degree, as cover. Much progress has been made in the installation of perennial food plants, mainly Lespedeza, but experimental plantings of Astralagus chinensis, Astralagus falcatus, and Baptisia australis were made. New strains of Lespedeza bicolor, Lespedeza japonica intermedia and Rosa multiflora were also made experimentally.

Food patch installations were made as follows:

Number Food Patch and Field Plantings Made by the Game Management Unit during the Fiscal Year 1948-49 on the Public Shooting and Fishing Grounds and Other Lands

Location	Food Patch Mixture	Lespedeza sericea	Rye	Wheat	Corn	Buck wheat	County
Flat Brook	32	.....	2	....	1	2	Sussex
Roy	4	.....	....	....	3	....	"
Wallpack	9	.....	....	....	1	....	"
Hainesville	9	.....	....	....	1	....	"
Berkshire	10	.....	....	....	....	....	Morris
Clinton	46	.....	....	10 A.	32 A.	....	Hunterdon
Colliers Mills	18	10 A.	10 A.	....	....	....	Ocean
Manahawkin	29	.....	....	....	....	....	"
Port Republic	14	.....	....	....	....	....	Atlantic
Tuckahoe	18	.....	....	....	....	....	Cape May
Haleyville-Millville	95	5280 ft.	....	....	....	....	Cumberland
Glassboro	55	5000 ft.	7	....	....	....	Gloucester
Metuchen Rod and Gun Club	20	.....	....	....	....	....	Middlesex
Squankum Rod and Gun Club	15	.....	....	....	....	....	Gloucester
Williamstown Rod and Gun Club	20	.....	....	....	....	....	"
Clayton Rod and Gun Club	10	.....	....	....	....	....	"
Hercules Rod and Gun Club	1	.....	....	....	....	....	Ocean
	405						

In addition, the Federal Aid-to-Wildlife Farm Game Restoration Project 19-D-2 made it possible to accomplish the following food patch installations:

	Number Patches
Warren County Rod and Gun Club No. 1	4
Bloomfield Anglers' and Hunters' Assn.	7
Western Rod and Gun Club	1
Maple Shade Sportsmen's Club	2
Walnut Brook Fish and Game Assn.	4
Roxbury Sportsmen's Club	4
Central Jersey Beagle Club	3
Alliance Rod and Gun Club	4
Macopin Sportsmen's Assn.	13
Weekstown Rod and Gun Club	4
Bloomsbury Rod and Gun Club	10
Flemington-Raritan Rod and Gun Club	7
Boy Scouts of America	9

Holiday Rod and Gun Club	2
Washington Rock Rod and Gun Club	1
Reaville Rod and Gun Club	2
Brainards Rod and Gun Club	1
Liberty Corner Rod and Gun Club	1
Guinea Hollow Rod and Gun Club	1
Landowners and farmers (17)	24
	104

This activity was curtailed due to the severe drought, with a total of 509 food patches having been planted.

In order to improve cover facilities, the following plantings were made:

Trees, Woody, and Miscellaneous Plantings Installed on the Public Shooting and Fishing Grounds During the Fiscal Year 1948-49

	Flat Brook	Colliers Mills	Tuckahoe	Haleyville-Millville	Glassboro
Red Pine	3,000	.....	.....	.....	.....
Rosa multiflora	2,000	.....	.....	.....	.....
Lespedeza bicolor border	.....	2,500 ft.	.....	19,900 ft.	5,000 ft.
Brasenia	.....	.....	900	.....	.....
Water millet	.....	.....	1900 lbs.	.....	.....
Lespedeza bicolor and Lespedeza sericia	.....	.....	.....	5,280 ft.	.....
Miscellaneous shrubs	.....	416	.....	1,403	.....

Deer management work was stressed in order to endeavor to find an economical solution of the problem of damage that these desirable big game animals cause to agricultural crops. Six additional traps and and two carrying cases were constructed and a total of 119 deer was live-trapped and removed to new locations. Many of these animals, the sex ratio of which was 61 male and 58 female deer, were ear-tagged. Experimental diversionary food plots were planted in cooperation with the 6666 Deer Club at Weymouth, Indian Mills Gun Club, Elmer Deer Club at Jenkins Neck, the Hercules Rod and Gun Club near Bamber Lake, and the Ten Prong Deer Club. In addition, four permanent deer repelling fences were constructed to protect crops, three electric fences were built, 146 complaints of deer damage were received and investigated, nine damage rechecks were made, 100 electric fence rechecks made, 25 repellent trials were rechecked, and a total of 55 permits to kill deer were issued. This work is carried on as a Federal Aid-to-Wildlife project and a comprehensive progress report has been completed.

Miscellaneous activities included the live removal of 30 beaver and their reliberation in areas where they would not interfere with the activities of citizens of the State. Similarly, 2,414 squirrels, 116 raccoon, 45 rabbits, 4 opossum, 2 woodchucks and one fox were live-trapped in the metropolitan areas. The squirrels and rabbits were liberated in the rural districts, the raccoon were given to raccoon hunters' associations for release, and the remainder were given to the trailside museums and displays of county parks for educational purposes.

A total of 424 predatory animals and birds were removed from State-owned lands. This aggregate included 10 stray dogs, 54 skunks, 24 cats, 43 crows, 30 owls, 23 foxes, 180 hawks, 13 snakes, 22 opossum, and 25 weasels.

During the year, a total of 15 field trials were held on State-owned lands, and a total of 37 held within the State. This includes 16 beagle trials, eight coonhound trials, 27 bird dog trials, and one fox hound trial.

A total of 11 arrests for infractions of the game laws was made by the Wildlife Managers and turned over to Fish and Game Wardens for prosecution.

Eighty-nine talks and motion picture presentations were made to sportsmen's clubs, Kiwanis, Rotary, and Granges throughout the State. Collaboration was given in the compilation of a booklet on marsh restoration, and two radio appearances were made.

DEER

The regular deer season of 1948 produced a legal kill totaling 3,249, which was a decrease of 689 deer over the previous year. This drop is attributed to the fact that hunting was only permitted from Monday through Friday, no Saturday falling within the season. Hunting pressure is much greater on holidays and Saturdays than during the week. Also, the weather was very rainy on two of the hunting days, thus further limiting the kill of deer.

The following shows the number of deer taken in each county during the five-day season:

County	Legal	Illegal
Atlantic	195	5
Bergen	72	3
Burlington	468	2
Camden	51	....
Cape May	44	....
Cumberland	114	2
Essex	47	....
Gloucester	14	....
Hunterdon	210	14
Mercer	82	6
Middlesex	21	....
Monmouth	83	1
Morris	504	19
Ocean	371	4
Passaic	157	8
Somerset	215	9
Sussex	358	15
Union	11	....
Warren	232	11
	3,249	99

The second year of the special bow and arrow hunting season resulted in a kill of only one deer, which occurred in Somerset County.

There were 804 persons taking out special licenses for the purpose of hunting with bow and arrow.

The deer killed throughout the State during the fiscal year, in addition to those taken legally or illegally during the season, included 677 animals accidentally killed by automoblies, trains or other means, or under special permit when damaging crops.

HUNTING ACCIDENTS

The total number of hunting accidents reported during the year was 36, four of which proved to be fatal. Twenty-two accidents occurred during the small game season and 14 during the deer season. Eight in-

dividuals suffered self-inflicted injuries.

Ten of the injured were under eighteen years of age and of this group, three caused their own injuries.

Nine of the injuries were caused by persons unknown and their ages are therefore unrecorded. Of the balance, nine accidents were caused by persons under 18.

PREDATOR CONTROL

The speial predator control force employed by the Division took the following predators during the fiscal year:

Foxes	1,382
Skunks	1,218
Woods cats	349
Opossum	567
Hawks	328
Weasels	304
Crows	736
Snakes	59
Turtles	33
Snapping turtles	95
Red squirrels	59
Great-horned owls	59
	5,179

FISH

REPORT OF HATCHERY OPERATIONS

	Inches	Raised July 1, 1948 to June 30, 1949	Disposed of	Estimated Number on hand
Brook Trout	3-4	150,000	.....	150,000
" "	4-5	150,000	.....	150,000
" "	7-9	62,892	22,892	40,000
" "	8-10	18,000	8,000	10,000
" "	9-11	46,100	46,100	.....
" "	10-12	35,190	35,190	.....
" "	11-12	11,690	11,690	.....
" "	12-13	10,000	10,000	.....
" "	12-16	6,550	6,550	.....
Brown Trout	3-4	214,000	14,000	200,000
" "	4-5	210,000	.....	210,000
" "	6-8	30,000	.....	30,000
" "	7-9	30,000	.....	30,000
" "	8-10	80,385	70,385	10,000
" "	10-12	53,616	53,616	.....
" "	11-13	8,000	8,000	.....
" "	12-13	20,542	20,542	.....
" "	12-14	3,000	.....	3,000
" "	12-16	4,732	4,732	.....
Rainbow Trout	2-3	150,000	.....	150,000
" "	3-4	150.000	.....	150.000
" "	5-6	20,000	.....	20,000
" "	7-9	40,000	.....	40,000
" "	8-10	34,288	29,288	5,000
" "	10-12	52,312	52,312	.....
" "	12-13	23,869	23,869	.....
" "	12-14	3,000	.....	3,000
" "	12-16	1,324	1,324	.....
Large Mouth Bass	1-2	125,000	.....	125,000
" " "	2-3	178,290	53,290	125,000
" " "	3	33,550	33,550	.....
" " "	3-4	30,500	30,500	.....
" " "	4-5	16,500	16,500	.....
" " "	5	145	145	.....
" " "	5-6	2,900	2,900	.....
" " "	6	100	100	.....
" " "	6-7	1,850	1,850	.....
" " "	7-8	3,900	3,900	.....
Small Mouth Bass	1-2	10,000	.....	10,000
" " "	3	2,025	2,025	.....
" " "	3-4	3,925	3,925	.....
" " "	4-5	2,000	2,000	.....
" " "	6	125	125	.....
" " "	14	289	289	.....
" " "	16-18	439	439	.....

	Inches	Raised July 1, 1948 to June 30, 1949	Disposed of	Estimated Number on hand
Bluegill Sunfish	1	273,500	23,500	250,000
" "	1-2	292,750	292,750	.....
" "	2-3	168,000	168,000	.....
" "	5	100	100	.....
" "	6-8	535	535	.....
		2,765,913	1,054,913	1,711,000

The trout distributed this year averaged the largest in size in the history of the hatchery, and the output in tonnage was one of the greatest. There were no serious out-breaks of disease, and losses from parasites and various bacterial infections were normal.

The State suffered a severe drought commencing the middle of May, with the result that the Hatchery had less water with which to operate than at any time in its 37 years at Hackettstown. Coupled with the drought, exceptionally high temperatures during June caused great anxiety and necessitated constant vigilance. Many years of experience and a thorough knowledge of the best utilization of the available water supply proved of untold value.

During the year, experiments with new fish foods were conducted which will be of advantage to us in the future. New refrigeration was installed to permit the carrying of a larger supply of food in better condition than in the past. Necessary repairs such as masonry, carpentry-work and painting, were made to the buildings, and 800 feet of cast iron pipe laid.

Much valuable information was gained by attendance at the American Fisheries Society Convention and the Fish and Wildlife Conference in Washington, D. C.

The Council approved an appropriation of $20,000 for a survey of the ponds, lakes and rivers of the State, to gather information to be used in arranging the most advantageous distribution of the pondfish raised at the hatchery, and for a re-survey and check of the trout streams. Due to the high cost of present day hatchery operation, much work is being done by the leading fisheries authorities on fish-management, and it has been learned, in many instances, the wrong species of fish was being stocked for the type of water or over-stocking was done. This survey should enable us to obtain the information that will be of benefit in stocking to best advantage over 500,000 pondfish, with a commercial value of over $100,000, which are released annually.

The purchase of a bulldozer shovel and scraper was approved. As soon as this equipment is received, re-lining and re-shaping of the ponds will be started. The cost of operating these ponds, which have been in use for thirty years, is much greater than it will be when they are repaired. When this work is completed, the construction of new ponds will begin on the 46¼ acres recently acquired.

The year's production of large-mouth bass was very good. The bass were the largest planted in the past ten years.

Production of small-mouth bass was very poor due to cold weather killing the eggs on the nests. Bass spawn when the water temperature reaches 65° F, and if the temperature during the spawning season drops below 50°, the bass eggs die.

FISH DISTRIBUTION AND RECLAMATION

There were 404,490 adult trout, 14,000 fingerling trout, and 636,423 pondfish distributed throughout the State by the fish distribution section of the department. Float stocking of trout was carried out on an unparalleled scale.

Fish reclamation work from reservoirs and private ponds, carried on by the truck drivers, predator control men and wardens, resulted in the stocking of the following fish in open waters at a very low cost to the department:

Large mouth bass	3,794
Pickerel	387
Sunfish	16,718
Yellow perch	55,296
Calico bass	4,200
Catfish	15,761
Bluegill sunfish	450
White perch	7,500
	104,106

A total of 126 rock dams and deflectors were built and repaired in open waters by the fish distribution employees, as well as many other miscellaneous projects, such as picking up and processing deer, winter feeding of game birds and animals, setting up and taking down fair exhibits, and repairing and painting boats and other equipment.

FISH DISTRIBUTED BY FEDERAL GOVERNMENT

The Fish and Wildlife Service, United States Department of the Interior, reports the following fish distributed in the State of New Jersey during the calendar year 1948:

Large-mouth black bass	11,475
Small-mouth black bass	150
Bluegill sunfish	12,200
Rainbow trout	2,368
Brook trout	1,456

POUND FISHERIES' SUMMARY

The following is a summary of the pound fisheries' report for the calendar year ending December, 1948:

Approximate value of all pounds		$1,281,695.44
Proceeds derived from sale of fish		$1,104,886.54
Number of pounds of fish caught and disposed of		40,152,528
Licenses issued:		
Atlantic Ocean	144	
Sandy Hook and Raritan Bay	50	
	194	
Number of pounds operated		175
Number of men employed		346

MENHADEN AND FOOD FISH LICENSES

Purse or shirred net licenses were issued to 55 vessels for the taking of menhaden within the three-mile limit during the calendar year of 1948.

There were 85 licenses granted for the netting of food fish between the two and three-mile limit designated by law.

SPECIAL NETTING LICENSES

Special licenses for the use of various specified nets in tidal waters were granted as follows during the fiscal year:

Drifting gill net	35
Hauling seine	22
Flounder fyke	77
Miniature fyke	1097
Fyke	81
Shad net	239
Staked gill net	285
Bait seine	25

HUDSON RIVER SHAD

The United States Fish and Wildlife Service has been conducting scientific studies for a number of years on the decline in the shad catch. An excerpt from the 1948 report of Miss Louella E. Cable, Aquatic Biologist, In Charge, Shad Investigations, states:

"The studies thus far have indicated to us that the present decline, from 5,000,000 pounds in 1944 to 1,700,000 pounds this year, has been due to failures in reproduction rather than to overfishing. Thus, the study of scales is very important to the management program and for pointing out the weak link in the life cycle of fish. We hope now to broaden the scope of investigation to include a study of environmental conditions on the spawning grounds that affect the survival of eggs to larvae of shad."

New Jersey through its Warden force has been cooperating in the collection of scales and other data for use in the investigations being conducted.

DELAWARE RIVER SHAD INDUSTRY

County	Boats 1948	Boats 1949	Nets 1948	Nets 1949	Men Engaged 1948	Men Engaged 1949	Number Shad Caught 1948	Number Shad Caught 1949	Pounds Shad Caught 1948	Pounds Shad Caught 1949	Value Shad Caught 1948	Value Shad Caught 1949	Value Boats and Nets 1948	Value Boats and Nets 1949
Burlington	3	2	3	2	8	6	6	47	25	187	$ 7.00	$ 75.50	$ 575.	$ 300.
Cumberland	26	26	20	17	29	23	5,650	3,875	19,753	15,170	5,049.20	4,181.45	4,850.	9,650.
Gluocester	1	1	1	1	1	2	2	3	2	15	12.00	2.50	500.	5.
Hunterdon	4	7	3	4	8	14	43	3	200	8	50.00	.....	600.	1,475.
Mercer	3	2	3	1	9	4	14	0	58	0	15.00	0	800.	205.
Salem	7	9	7	9	14	18	171	312	684	1,544	273.60	849.20	4,350.	4,950.
	44	47	37	34	69	67	5,886	4,240.	20,722	16,924	$5,406.80	$5,180.65	$11,675.	$16,585.

HUDSON RIVER SHAD INDUSTRY

Boats 1948	Boats 1949	Licenses 1948	Licenses 1949	Men Engaged 1948	Men Engaged 1949	Pounds Caught 1948	Pounds Caught 1949	Number Shad Caught 1948	Number Shad Caught 1949	Value Shad Caught 1948	Value Shad Caught 1949	Value Boats and Nets 1948	Value Boats and Nets 1949
97	184	58	58	200	222	1,231,800	972,857	339,013	290,453	$185,866.27	$172,540.48	$176,080	$180,300

GENERAL FUND

SUPPLEMENT OF 1947-48 REPORT

Income

Balance as per last printed report	$78,781.37

Expenditures

Chapter 67, Laws of 1947	20,623.09
To Balance	58,158.28
	$78,781.37

REPORT FOR 1948-49

Income

Balance, July 1, 1948			$ 58,158.28	
Hunter' and anglers' licenses:				
Revised Statutes Title 23, Chapter 3:				
Sec. 11-12 (Fishing)	$289,384.75			
Sec. 11-12 (Hunting)	360,328.80			
Sec. 3 (Juvenile)	1,245.00			
Sec. 25 (woodcock)	2,994.00			
Sec. 11-12 (bow & arrow)	2,456.55			
Agents Fees (Fishing)	353.35			
Agents Fees (Hunting)	8.00			
Duplicate Licenses (Fishing)	88.25			
Duplicate Licenses (Hunting)	65.25			
		$656,923.95		
Revised Statutes, Title 52, Chapter 18, Section 31:				
Menhaden Licenses	$17,550.00			
Food Fish Licenses	2,700.00			
Breeders Licenses	2,986.00			
Pound Licenses	7,240.00			
Shad Licenses	1,450.00			
Net Licenses	2,300.25			
Carp Permits	410.00			
Deputy Fees	4.00			
Map Sales	6.70			
Recoveries & Sales	5,222.99			
Rent	850.00			
		40,719.94		
Fines, Revised Statutes, Title 23, Chapter 10, Sec. 19		46,856.25		
Trespass, Revised Statutes, Title 23, Chapter 7, Sec. 5		340.00		
Refunds (salaries and duplicate payments)		2,223.82		
			747,063.96	
				$805,222.24

Expenditures

Chapter 117, Laws of 1948, expenditures	$597,893.84
Cash balance, July 1, 1949	207,328.40
Requisitions outstanding against this balance	40,077.22
Account balance, July 1, 1949	167,251.18

ANALYSIS OF EXPENDITURES

	Actually Paid	Bills Outstanding	Total
Personal Administration	$ 1,819.65	$ 128.42	$ 1,948.07
Carpenter & Helper Wages	5,160.00	.....	5,160.00
Carpenter & Helper Expenses	605.71	63.85	669.56
	$ 5,765.71	$ 63.85	$ 5,829.56
Office:			
Wages	$28,845.13	.....	$28,845.13
Rent	5,000.00	.....	5,000.00
	$33,845.13	.....	$33,845.13
Public Relations:			
Director's Wages & Secretary	$ 4,740.00	.....	$ 4,740.00
Director's Maintenance of cars	858.31	105.33	963.64
Director's Expenses	772.87	46.20	819.07
Publicity Wages	1,260.00	.....	1,260.00
Fair Exhibits	19.77	61.06	80.83
	$ 7,650.95	$ 212.59	$ 7,863.54
Coastal Patrol:			
Wages	$12,465.00	.....	$12,465.00
Expenses	1,683.68	.....	1,683.68
Maintenance of Boats	7,041.37	$ 564.86	7,606.23
Gas and Oil	4,708.87	917.14	5,626.01
	$25,898.92	$1,482.00	$27,380.92
Warden's Service:			
Salaries	$113,504.33	.....	$113,504.33
Expenses	1,838.36	24.15	1,862.51
Uniforms	1,436.40	84.10	1.520.50
Rents	1,862.38	555.00	2,417.38
Assistance in deer woods	1,281.80	10.00	1,291.80
Tires and Tubes	2,325.78	354.04	2,679.82
Gas and Oil	12,151.27	1,816.43	13,967.70
Maintenance of Vehicles	7,470.17	344.31	7,814.48
Replacement of Autos	9,585.33	.....	9,585.33
Replacement of Boats and Motors	2,420.00	448.60	2,868.60
Telephone	3,519.60	285.49	3,805.09
Medical Expenses	2,559.38	57.00	2,616.38
Compensation	2,908.29	687.50	3,595.79
	$162,863.09	$4,666.62	$167,529.71
Predator Control:			
Wages	$13,680.00	.....	$13,680.00
Maintenance of cars	2,984.27	306.75	3,291.02
Other Expenses	546.86	99.00	645.86
	$17,211.13	$ 405.75	$17,616.86

	Actually Paid	Bills Outstanding	Total
Fish Distribution and Netting:			
Wages	$15,412.00	.....	$15,412.00
Maintenance of Trucks & Cars	2,659.90	114.03	2,773.93
Replacement of " " "	.....	5,064.20	5,064.20
Other Expenses	1,534.57	80.82	1,615.39
Medical Expenses	107.00	.....	107.00
	$19,713.47	$5,259.05	$24,972.52
Fish Hatchery:			
Wages	$54,690.54	.....	$54,690.54
Food	94,573.13	9,004.96	103,578.09
Medical Expenses	91.00	.....	91.00
Other Expenses	23,288.35	959.74	24,248.09
Surveying	.....	1,151.00	1,151.00
	$172,643.02	$11,115.70	$183,758.72
Forked River Farm:			
Wages	$16,236.24	.....	$16,236.24
Food	10,586.14	4,609.60	15,195.74
Medical Expenses	4.00	.....	4.00
Other Expenses	6,953.90	1,717.03	8,670.93
	$33,780.28	$6,326.63	$40,106.91
Rockport Farm:			
Wages	$12,557.39	.....	$12,557.39
Food	16,002.63	.....	16,002.63
Medical Expenses	1,329.15	.....	1,329.15
Other Expenses	4,172.92	3,684.38	7,857.30
	$34,062.09	$3,684.38	$37,746.47
Quail Farm:			
Wages	$13,615.52	.....	$13,615.52
Food	4,127.96	244.93	4,372.89
Medical Expenses	27.25	.....	27.25
Other Expenses	5,247.24	445.86	5,693.10
	$23,017.97	$ 690.79	$23,708.76
Purchase of Game from Outside Sources	$34,522.80	$ 115.50	$34,638.30
General Administration:			
Printing, Stationery, etc.	$10,117.58	$4,775.78	$14,893.36
Postage	2,500.00	.....	2,500.00
Telephone & Telegraph	385.88	374.63	760.51
Insurance	5,529.62	64.11	5,593.73
Court Costs	1,192.22	.....	1,192.22
Miscellaneous Expenses	2,178.37	705.42	2,883.79
Convention Expenses	1,948.76	.....	1,948.76
Refunds on fines, license fees	1,247.20	6.00	1,253.20
	$25,099.63	$5,925.94	$31,025.57
Grand Total	$597,893.84	$40,077.22	$637,971.06

FURTHER STATEMENT ON DISPOSITION OF RECEIPTS
GENERAL — 1948-49

FISHING ACCOUNT

Balance, July 1, 1948		$ 58,158.28
Fishing License Receipts		289,826.35
		$347,984.63
Expenditures:		
Fish Hatchery	$183,758.72	
Distribution & Netting	24,972.52	
Wardens Service	51,889.59	
Administration	27,781.88	
	$288,402.71	
Balance in Fishing Account		$ 59,581.92

HUNTING ACCOUNT

Hunting License Receipts		$367,097.60
Expenditures:		
Forked River	$ 40,106.91	
Rockport	37,746.47	
Quail Farm	23,708.76	
Purchase of Game	34,638.30	
Predator Control	17,616.88	
Wardens Service	68,783.87	
Administration	36,827.15	
	$259,428.34	
Balance in Hunting Account		$107,669.26
Receipts from other sources		$ 90,140.01
Expenditures:		
Wardens Service	$ 46,856.25	
Coastal Patrol	27,380.92	
Administration	15,902.84	
	$ 90,140.01	
Balance		nil

EXPLANATION

At the present time, 43% of the total licenses issued are fishing licenses and 57% are hunting. Therefore, we have taken the entire receipts of the Council from all sources, other than those for regular hunting and fishing licenses, and applied same, as far as it would go, to the cost of Enforcement and Administration.

We, then, charged the Fishing Account with actual expenditures for the operation of the Hatchery and the cost of distribution, netting and stream snagging.

We, then, charged the Hunting Account with actual expenditures for operation of the three Game Farms, the purchase of game and Predator Control.

This left a further cost for Enforcement of	$120,673.46
and cost for Administration of	64,609.03
	$185,282.49

which had to be borne by the hunters' and fishermen's license account on a 43% to 57% basis.

PUBLIC SHOOTING AND FISHING GROUNDS FUND

Supplement to 1947-48 Report

Income

Balance as per last printed report		$ 51,682.95

Expenditures

Bills paid after June 30, 1948, for:		
Purchase of land, 1946-47	$7,786.45	
Federal aid, 1947-48	1,100.08	
Other bills, 1947-48	4,248.23	
		13,134.76
To Balance		38,548.19
		$ 51,682.95

REPORT FOR 1948-49

Income

Balance, July 1, 1948		$ 38,548.19	
Receipts from U.S. for Federal Aid Acct. 1947-48	$45,218.26		
Receipts from U. S. for Federal Aid Acct. 1948-49	13,135.05		
Receipts from resident hunting licenses	84,382.20		
Receipts from resident fishing licenses	23,132.25		
Rents	2,033.00		
Sales and recoveries	697.74		
Refunds	140.00		
		168,738.50	
			$207,286.89

Expenditures *

Expenditures	$107,503.25
Cash balance, July 1, 1949	99,783.44
Requisitions outstanding against this balance	7,814.09
Account balance, July 1, 1949	$ 91,969.35

* Analysis of Expenditures

	Actually Paid	Bills Outstanding	Total
Administrative:			
Salaries	$ 3,880.00	.....	$ 3,880.00
Office Supplies	9.89	.....	9.89
Insurance	1,676.35	2.71	1,679.06
Telephone	82.99	.....	82.99
Miscellaneous	19.58	.....	19.58
	$ 5,668.81	$ 2.71	$ 5,671.52
Purchase of Land	.....	$2,557.24	$ 2,557.24
			$ 2,557.24

Game Management:			
Salaries and wages	$47,034.69	.....	$47,034.69
Fuel, light and power	396.38	22.22	418.60
Office supplies	11.97	.....	11.97
Motor vehicular supplies	6,171.76	1,052.10	7,223.86
Replacement of motor vehicles	1,466.53	.....	1,466.53
Purchase of game	6,793.66	.....	6,793.66
Operating materials and supplies	3,202.28	1,010.69	4,212.97
Other materials and supplies	203.53	5.50	209.03
Printing	186.23	.....	186.23
Traveling expenses	699.70	22.05	721.75
Garage rent	60.00	.....	60.00
Telephone and telegraph	611.10	5.10	616.20
Freight, express and cartage	14.20	.....	14.20
Miscellaneous expenses	76.58	.....	76.58
Current repairs to equipment	988.97	1.72	990.69
" " " automobiles	1,806.28	.....	1,806.28
" " " bldgs. & grounds	748.06	49.25	797.31
New motor vehicles	1,025.00	.....	1,025.00
New equipment	118.11	410.00	528.11
	$71,615.03	$2,578.63	$74,193.66
Expenses under Federal Aid-to-Wildlife Act:			
Salaries and wages	$20,869.30	$1,435.00	$22,304.30
Heat, light & power	68.19	.....	68.19
Office supplies	1.87	.....	1.87
Photographing, blueprinting supplies	34.20	7.32	41.52
Motor vehicular supplies	1,157.86	238.64	1,396.50
Purchase of game	515.97	.....	515.97
Operating materials and supplies	1,730.39	799.42	2,529.81
Printing	66.89	.....	66.89
Traveling expenses	2,009.78	76.00	2,085.78
Telephone and telegraph	97.75	.....	97.75
Miscellaneous expenses	218.47	.....	218.47
Current repairs	1,661.00	76.33	1,737.33
New office equipment	50.00	.....	50.00
New equipment	1,737.74	42.80	1.780.54
	$30,219.41	$2,675.51	$32,894.92
	$107,503.25	$7,814.09	$115,317.34

FURTHER STATEMENT ON DISPOSITION OF RECEIPTS PUBLIC SHOOTING & FISHING GROUNDS 1948-49

FISHING ACCOUNT

Balance on July 1, 1948	$25,841.47	
Receipts from Fishing Licenses	23,132.25	
		$48,973.72
Expenditures:		
Purchase of Land	$ 7,773.20	
Purchase for Fish Hatchery	2,557.24	
6.8% of cost of Management and Administration	5,000.00	
		15,330.44
Balance in Fishing Account		$33,643.28

HUNTING ACCOUNT

Balance on July 1, 1948	$25,841.48	
Receipts from Hunting Licenses	84,382.20	
		$110,223.68
Expenditures:		
Purchase of land	513.25	
Purchase of Game	6,793.66	
93.2% cost of Game Management and Administration	68,949.01	
		76,255.92
Balance in Hunting Account		$ 33,967.76
From Federal Aid Account		$58,353.31
Expenditures		33,995.00
Balance in Federal Aid Account		$24,358.31
Receipts from Other Sources		$2,870.74
Expenditure toward Administration		2,870.71
Balance		nil
TOTAL BALANCE		$91,969.35

EXPLANATION

Federal Aid Receipts and Expenditures show plainly the disposition. Receipts from Other Sources were applied towards cost of administration. Receipts from Fishing Licenses were used for purchase of lands strictly for fishing purposes, and charged Fishing with 6.8% of remainder of cost of game management and administration.

Receipts from Hunting Licenses were used for stocking of game on tracts and charged with 93.2% of cost of management and administration.

STOCKING OF NEW JERSEY WATERS

BY THE NEW JERSEY DIVISION OF FISH AND GAME

FOR THE FISCAL YEAR ENDING JUNE 30, 1949

Total Number of Fish Planted from all Sources 1,159,019

KEY TO ABBREVIATIONS

Bt	Brook Trout	Yper	Yellow Perch
Brnt	Brown Trout	Wper	White Perch
Rt	Rainbow Trout	Pic	Pickerel
Lmb	Large Mouth Bass	S	Sunfish
Smb	Small Mouth Bass	C	Catfish
Bs	Bluegill Sunfish	P	Pike
Cb	Calico Bass	Misc	Miscellaneous
Sh	Shiner	M	Minnows

Size

a	Adult
fg	Fingerling

ATLANTIC COUNTY

Bargaintown Lake — Bargaintown — 1,500 Lmbfg, 5,000 Bsfg.
Brickyard Clay Holes — Mays Landing — 1,000 Bsfg, 200 Lmbfg.
Hammonton Lake — Hammonton — 2,000 Lmbfg, 1,500 Rta, 5,000 Bsfg.
Lenape Lake — Mays Landing — 5,000 Bsfg, 500 Lmbfg.
Mizpah Clay Holes — Mizpah — 2,000 Bsfg, 500 Lmbfg.
Northfield Clay Holes — Northfield — 5,000 Bsfg. 500 Lmbfg.
Smith Lake — Egg Harbor — 1,000 Bsfg, 300 Lmbfg.
Twin Lakes — Mays Landing — 1,000 Bsfg, 300 Lmbfg.
Upper Makepiece Reservoir — Mays Landing — 1,000 Bsfg, 200 Lmbfg.

BERGEN COUNTY

Babbits Brook — Wyckoff — 400 Bta, 225 Brnta, 125 Rta.
Bear Brook — Woodcliff Lake — 750 Bta, 300 Brnta.
Bergenfield Park Lake — Bergenfield 2,000 Bsfg.
Boiling Spring Brook — Old Tappan — 200 Bta, 250 Brnta.
Calliary Pond — Oakland — 2,000 Bsfg.
Hackensack River — Oradell — 1,400 Bta, 1,650 Brnta, 450 Rta.
Hudson Street Clay Pit — Hackensack — 2,000 Bsfg.
Morrow Lake — Englewood — 225 Sa, 225 Ypera.
Municipal Pond — Ridgefield Park — 4,400 Ypera, 400 Sa.
Musquasink Creek — Washington Township — 250 Bta.
Norwood Brook — Norwood — 300 Bta, 100 Brnta.
Pascack Creek — Westwood — 2,200 Bta, 1,050 Brnta, 550 Rta.
Passaic River — East Paterson — 2,000 Bsfg.
Pond Brook — Wyckoff — 100 Bta, 100 Brnta.
Ramapo River — Oakland — 50 Smba, 2,700 Ba, 3,200 Brnta, 1,100 Rta.
Roosevelt Commons Lake — Tenafly — 2,000 Bsfg.
Saddle River — Saddle River — 2,600 Bta, 2,150 Brnta, 250 Rta.
Tellers Brook — Montville — 100 Bta, 50 Brnta.
Tenekill Creek — Closter — 1,000 Bta.
Valentine Brook — Allendale — 1,400 Bta, 225 Brnta, 125 Rta.
Veteran's Pond — Ridgefield Park — 4,100 Ypera, 600 Sa.
Waldwick Lake — Waldwick — 2,000 Bsfg.
Willow Lake — Little Ferry — 1,800 Rta, 225 Sa, 225 Ypera.

Doctor's Creek — Allentown — 100 Bta, 400 Brnta.
Etra Pond — Etra — 2,000 Lmbfg, 2,000 Bsfg.
Gropp's Lake — Hamilton Township — 2,000 Lmbfg, 2,000 Bsfg.
Peddie Lake — Hightstown — 2,000 Lmbfg, 2,000 Bsfg.
Stoney Brook — Woodsville — 1,750 Bta, 2,550 Brnta, 700 Rta.
Whitehead's Pond — Hamilton Township — 2,000 Lmbfg, 2,000 Bsfg.

MIDDLESEX COUNTY

Ambrose Brook — Middlesex Borough — 400 Bta, 100 Brnta.
Bonhampton Pond — Bonhampton — 100 Bta.
Brainerds Brook — Cranbury — 300 Bta, 500 Brnta.
Brainerds Lake — Jamesburg — 2,000 Bsfg.
Devils Brook — Plainsboro — 500 Brnta.
Duhernal Lake — Old Bridge — 2,000 Lmbfg, 4,000 Bsfg.
Farrington Lake — Near New Brunswick — 5,000 Lmbfg, 10,000 Bsfg.
Johnson's Park Lake — New Brunswick — 6,000 Bsfg, 2,400 Ypera.
Lawrence Brook — Milltown — 550 Bta, 300 Brnta.
Manalapan Lake — Jamesburg — 2,000 Bsfg, 1,000 Lmbfg.
Manalapan River — Jamesburg — 1,550 Bta, 250 Brnta.
Matchponix Brook — Spostwood — 1,950 Bta, 1,050 Brnta, 100 Rta.
Roosevelt Park Lake — Metuchen — 1,250 Rta.
Spotswood Lake — Spotswood — 1,000 Lmbfg, 2,000 Bsfg.
Sucker Brook — Metuchen — 250 Bta.
Victor Crowell Lake — Middlesex Borough — 4,000 Bsfg, 2,000 Ypera.
Weston's Mill Pond — Near New Brunswick — 1,000 Lmbfg.

MONMOUTH COUNTY

Allentown Pond — Allentown — 1,000 Lmbfg.
Big Brook — Marlboro — 200 Bta.
Como Lake — Como — 750 Lmbfg.
Foo Pond — Red Bank — 500 Lmbfg.
Franklin Park Lake — Long Branch — 500 Lmbfg.
Garvey's Pond — Navesink — 900 Rta.
Hockhocksen Brook — Tinton Falls — 350 Bta, 75 Brnta, 75 Rta.
Hop Brook — Holmdel — 550 Bta, 250 Brnta, 50 Rta.
Manalapan River — Milhurst — 200 Bta.
Manasquan River — Adelphia — 1,400 Bta, 2,350 Brnta, 1,000 Rta.
Matchponix Brook — Englishtown — 200 Bta.
McGillard's Brook — Englishtown — 200 Bta.
Metedeconk River, North Branch — North of Lakewood — 500 Bta.
Mine Brook — Colts Neck — 150 Bta.
Mingamahone Brook — Farmingdale — 200 Bta.
Nicholas Pond — Allaire — 500 Lmbfg.
Old Mill Pond — Villa Park — 250 Rta.
Osbornes Lake — Baileys Corner — 1,000 Lmbfg, 900 Rta.
Pine Brook — Tinton Falls — 200 Bta.
Shadow Lake — Red Bank — 750 Lmbfg, 1,300 Rta.
Skark River — Hamilton — 500 Bta, 212 Brnta, 213 Rta.
Spring Lake — Spring Lake — 750 Lmbfg, 1,050 Rta.
Sunrise Lake — Red Bank 500 Lmbfg.
Tinton Manor Lake — Lincroft — 250 Lmbfg.
Topenemus Lake — Freehold — 500 Lmbfg, 1,000 Rta.
Willow Brook — Holmdel — 200 Bta.
Wreck Pond Brook — North Branch — Hurley's Mills — 300 Bta.
Yellow Brook — Colts Neck — 550 Bta, 213 Brnta, 262 Rta.

MORRIS COUNTY

Beaver Brook — Rockaway — 150 Bta, 150 Brnta.
Beaver Brook — Lincoln Park — 300 Brnta.

Black River — Hacklebarney — 600 Bta, 1,350 Brnta, 1,000 Rta.
Budd Lake — Budd Lake — 50 Smba, 477 Lmba, 18 Ypera, 3,100 Ca., 36 Pica, 5,000 Bsfg.
Bungalow Brook — Schooleys Mt. — 250 Bta.
Burnett Brook — Ralston — 200 Bta, 100 Rta.
Burnham Park Lake — Morristown — 500 Rta.
Cooks Pond — Denville — 50 Smba.
Crooked Brook — Montville — 200 Brnta.
Crystal Lake — Chester — 500 Rta.
Den Brook — Union Hill — 250 Bta, 500 Brnta.
Electric Brook — Schooleys Mt. — 250 Bta.
Estling Lake — Denville — 2,400 Ypera, 1,000 Lmbfg.
Flanders Brook — Flanders — 250 Bta.
Green Pond — Newfoundland — 50 Smba, 5,925 Smbfg, 2,350 Rta, 450 Brnta.
Hiawatha Lake — Parsippany — 50 Ca, 275 Sa, 15 Lmba, 1,500 Lmbfg.
Hibernia Brook — Hibernia — 300 Brnta.
Hillery's Pond — Boonton — 1,000 Lmbfg.
Hopatcong Lake — Lake Hopatcong — 81 Smba, 4,842 Lmbfg, 370 Lmba, 4 Pica.
Hourigan Brook, Hurdtown — 350 Brnta, 100 Bta.
Hurdtown Brook — Hurdtown — 5,000 Brntfg.
Indian Brook — Mendham — 700 Bta.
Indian Lake — Mendham — 1,500 Lmbfg, 5,000 Bsfg.
Jockey Hollow Brook — Jockey Hollow — 250 Bta.
Kenvil Sand Pit — Kenvil — 50 Smba.
Kikeout Brook — Butler — 1,100 Bta, 900 Brnta.
Ledgewood Brook — Ledgewood — 150 Bta, 100 Brnta.
Longwood Lake — Longwood — 5,000 Bsfg.
Malapardis Brook — Malapardis — 150 Bta, 150 Brnta.
Meriden Brook — Rockaway — 250 Bta, 5,500 Brnta.
Mill Brook — Centre Grove — 300 Bta, 500 Brnta.
Minnisink Brook — Berkshire — 4,000 Brntfg.
Mt. Hope Pond — Mt. Hope — 1,408 Rta.
Mt. Tabor Brook — Mt. Tabor — 250 Bta.
Musconetcong Lake — Netcong — 9,500 Bsfg, 1,150 Lmbfg, 72 Pica, 3,000 Ca, 213 Lmba, 150 Sa, 150 Ypera.
Musconetcong River — Guard Lock to Penwell — 3,200 Bta, 3,900 Brnta, 2,600 Rta.
Primrose Brook — Morristown — 250 Bta, 150 Brnta.
Raritan River, South Branch — Y.M.C.A. Camp to Middle Valley — 4,025 Bta, 5,600 Brnta, 1,925 Rta.
Reservoir Brook — Brookside — 250 Bta.
Rockaway Park Lake — Rockaway — 3,000 Ca, 74 Lmba, 6 Pica, 400 Sa, 400 Ypera.
Rockaway River — Powerville — 2,000 Lmbfg, 7,382 Bta, 10,350 Brnta, 3,000 Ca, 2,900 Rta.
Rolling Mill Pond — Dover — 425 Ypera, 425 Sa.
Saw Mill Brook — Pequannock — 500 Brnta.
Sohol Camp — Rockaway Township — 1,000 Lmbfg.
Speedwell Lake — Morristown — 5,000 Bsfg, 1,200 Rta, 1,950 Ypera, 750 Sa.
Spring Brook — Mallapardis — 150 Bta, 150 Brnta.
Spring Brook — Pompton Plains — 100 Brnta.
Stevens Brook — Wharton — 5,000 Brntfg.
Stirling Pond — Stirling — 500 Rta.
Stoney Brook — Montville — 100 Bta, 300 Brnta.
Surprise Lake — Towaco — 500 Ypera, 500 Sa.
Towaco Brook — Towaco — 300 Brnta.
Troy Brook — Parsippany — 150 Bta, 150 Brnta.
Washington Mill Pond — Wharton — 988 Sa, 987 Ypera.
Washington Valley Brook — Morristown — 125 Bta, 125 Brnta.

Whippany Brick Yard Pond — Whippany — 2,000 Lmbfg.
Wills Brook — Netcong — 250 Bta.

OCEAN COUNTY

Barnegat Pines Lake — Toms River — 5,000 Bsfg.
Jackson Mills Lake — Jackson Mills — 2,000 Lmbfg.
Manahawkin Lake — Manahawkin — 2,000 Lmbfg, 5,000 Bsfg.
Metedeconk River, North Branch-Lakewood — 500 Bta.
Metedeconk River, South Branch — Above Lakewood — 500 Bta.
Pine Lake — Toms River — 5,000 Bsfg.
Pohatcong Lake — Tuckerton — 2,000 Lmbfg, 5,000 Bsfg.
Toms River, North Branch — Quail Farm — 1,000 Bta.
Turn Mill Pond — Colliers Mills — 2,000 Lmbfg.

PASSAIC COUNTY

Barbours Pond — Paterson — 2,000 Bsfg, 2,400 Ypera, 70 Lmba, 19 Pica, 900 Sa.
Belchers Creek — West Milford — 40 Bta, 60 Brnta.
Cooley Brook — Hewitt — 40 Bta, 60 Brnta.
Goffle Brook — Hawthorne — 500 Bta.
Greenwood Lake — Hewitt — 100 Lmba, 5,000 Lmbfg.
Gregory Lake — Clifton — 2,000 Bsfg, 2,000 Ypera.
High Mt. Brook — Midvale — 90 Bta, 60 Brnta.
Hughes Lake — Passaic — 2,000 Bsfg, 2,250 Ypera, 750 Sa.
Lindy Lake — Macopin — 97 Lmba, 14 Pica, 650 Ypera, 650 Sa.
Memorial Lake — Clifton — 2,000 Bsfg, 2,750 Ypera, 750 Sa.
Nosenzo Lake — Macopin — 1,000 Lmbfg, 2,000 Bsfg, 500 Rta.
Oldhams Pond — North Haledon — 3,000 Bsfg, 500 Rta, 31 Ca, 600 Sa, 600 Ypera.
Pequannock River — Smith Mills — 1,250 Bta, 1,700 Brnta, 400 Rta.
Pines Lake — Wayne — 149 Lmba, 10 Pica, 600 Ypera, 600 Sa.
Pompton Lakes — Pompton Lakes — 4,350 Lmbfg, 14,250 Bsfg, 188 Lmba, 13 Pica.
Pompton River — Pompton Lakes to Pompton Plains — 2,290 Bta, 3,660 Brnta, 2,700 Rta.
Ringwood River — Ringwood — 600 Bta, 250 Brnta.
Singac Brook — Mt. View — 500 Bta.
Twin Lakes — Pompton — 1,000 Lmbfg.
Van Winkles Pond — Hawthorne — 400 Sa, 200 Cba.
Wagaraw Pond —— Hawthorne — 575 Ypera, 575 Sa.
Wanaque River — Pompton Lakes, Midvale and Hewitt — 3,340 Bta, 3,910 Brnta, 550 Rta.

SALEM COUNTY

Alloway Lake — Alloway — 1,000 Lmbfg, 3,556 Misc.
Ballingers Mill Lake— Aldine — 250 Lmbfg.
Camp Edge Lake — Alloway — 250 Lmbfg.
Cocked Hat Pond — Alloway — 900 Rta.
Deepwater Canal — Deepwater — 1,000 Lmbfg.
Parvin Lake — Elmer — 500 Lmbfg.
Penns Grove Sand Wash Pond — Penns Grove — 900 Rta.
Rainbow Lake — Near Norma — 500 Lmbfg.
Willow Grove Lake — Willow Grove — 500 Lmbfg.

SOMERSET COUNTY

Green Brook — North Plainfield — 250 Brnta.
Harrison Brook — Liberty Corner — 250 Bta, 250 Brnta.

Lamington River — Burnt Mills — 250 Bta, 250 Rta.
Lindbury's Pond — Bernardsville — 2,000 Ypera.
Middle Brook — Springdale — 250 Bta, 250 Brnta.
Passaic River — Basking Ridge — 1,250 Bta, 900 Brnta, 1,100 Rta.
Peapack Brook — Gladstone — 250 Bta, 250 Rta.
Peters Brook — Somerville — 2,200 Ypera.
Raritan River, South Branch — Neshanic Station — 675 Bta, 1,675 Brnta, 575 Rta, 50 Smba.
Raritan River, North Branch — Far Hills — 1,075 Bta, 1,275 Brnta, 1,225 Rta.
Rock Brook — Zion — 500 Bta, 500 Brnta.

SUSSEX COUNTY

Alms House Brook — Myrtle Grove — 225 Bta.
Andover Jc. Brook — Andover Jc. — 625 Bta, 225 Rta.
Bear Pond — Lake Hopatcong — 600 Lmbfg, 8,000 Bsfg, 25 Smba.
Beaver Run Brook — Beaver Run — 600 Brnta.
Bierskill Brook — Hainesville — 50 Bta.
Big Flat Brook, Upper — High Point Park — 3,650 Brnta, 2,700 Bta, 1,450 Rta.
Big Flat Brook, Lower — Haney's Mills — 4,200 Bta, 17,450 Brnta, 2,650 Rta.
Black Brook — Beaver Lake — 250 Bta, 300 Brnta.
Camp Blue Heron Lake — Sparta — 263 Sa, 262 Ypera.
Clove Brook — Sussex — 1,300 Bta, 1,700 Brnta.
Cranberry Lake — Cranberry Lake — 600 Lmbfg, 8,000 Bsfg.
Culvers Lake — Culvers Lake — 25 Smba, 6,000 Bsfg, 316 Lmba, 9 Pica, 36 Ypera.
Culvers Lake Brook — Branchville — 225 Bta.
Dark Moon Brook — Johnsonburg — 250 Bta.
Dragon Brook — Cranberry Lake — 500 Bta.
Fairview Lake — Near Hardwick — 6,000 Bsfg.
Fox Trail Lake — Stokes State Forest — 8,000 Bsfg.
Gardners Pond — Andover — 4,000 Bsfg.
Glen Brook — Stillwater — 200 Bta.
Glenwood Brook — Glenwood — 200 Brnta.
Grinnell Lake — Monroe — 5,000 Bsfg, 193 Lmba, 7 Pica, 675 Ypera, 675 Sa.
Hopatcong Lake — Lake Hopatcong — 43 Smba, 4,843 Lmbfg, 389 Lmba, 450 Bsa, 10 Pica.
Iliff Lake — Andover — 6,000 Bsfg.
Kemah Lake — Halsey — 6,000 Bsfg, 875 Sa, 146 Lmba, 25 Pica, 875 Ypera, 30 Ca.
Kymers Brook — Andover — 300 Bta, 50 Rta.
Lackawanna Lake — Andover — 600 Lmbfg, 5,000 Bsfg.
Lenape Lake — Andover — 600 Lmbfg, 8,000 Bsfg.
Little Flat Brook — Layton — 2,450 Bta, 1,050 Brnta.
Lubbers Run — Cranberry Lake — 400 Bta, 1,150 Brnta.
Madeline Mulford Lake — Stokes State Forest — 400 Rta.
McMickles Pond — Andover — 450 Rta.
McNeilies Pond — Branchville — 350 Ypera, 350 Sa.
Mill Brook — Montague — 300 Bta.
Morris Pond — Fredon — 250 Rta.
Musconetcong Lake — Stanhope — 157 Lmba, 12 Pica, 192 Sa, 193 Ypera, 5,000 Bsfg.
Musconetcong River — Fountain to Forbes — 1,850 Bta, 1,600 Brnta, 700 Rta.
Neldon Brook — Above Swartswood — 250 Bta.
Ocquittunk Lake — Stokes State Forest — 2,500 Rta.
Owassa Lake — Lake Owassa — 25 Smba, 6,000 Bsfg.
Pacock Brook — Stockholm — 50 Bta.

Papakating Creek — Sussex — 950 Brnta, 750 Bta, 300 Rta.
Papakating Creek, West Branch — Sussex — 450 Bta, 350 Brnta, 200 Rta.
Parker Brook — Stokes State Forest — 200 Brnta, 250 Rta.
Paulinskill River — Lafayette to Stillwater — 2,100 Bta, 6,200 Brnta, 2,550 Rta.
Pequest River — Springdale to Huntsville — 1,950 Bta, 800 Brnta, 250 Rta.
Pond Brook — Middleville — 300 Bta.
Quarry Brook — Quarryville — 200 Brnta.
Quicks Pond — North of Swartswood — 4,000 Bsfg.
Roys Spring Brook — Stillwater — 200 Bta.
Saw Mill Lake — High Point Park — 3,100 Rta.
Saw Mill Brook — High Point Park — 500 Bta, 500 Brnta, 250 Rta.
Shimers Brook — Montague Township — 250 Bta.
Skellingers Lake — Stokes State Forest — 600 Rta.
Slaters Brook — Andover — 250 Brnta.
Sparta Glen Brook — Sparta Glen — 200 Bta, 200 Brnta.
Sparta Jc. Brook — Sparta Jc. — 250 Bta.
Stoney Brook — Tuttles Corner — 100 Bta.
Swartswood Lake, Big — Swartswood — 10,000 Bsfg, 230 Lmba, 60 Pica, 500 Ca.
Swartswood Lake, Little — Swartswood — 5,000 Bsfg.
Tar Hill Brook — Tar Hill — 325 Bta, 75 Rta.
Trout Brook — Hamburg — 350 Bta, 200 Brnta.
Tuttles Corner Brook — Tuttles Corner — 300 Bta.
Wallkill River — Sparta to Franklin — 1,300 Bta, 1,700 Rta.
Wapalanna Lake — Stokes State Forest — 1,300 Rta.
Wawayanda Lake — Andover Jc. — 6,000 Bsfg.
Wills Pond — Stanhope — 416 Lmba, 19 Pica, 525 Sa, 525 Ypera.

UNION COUNTY

American Felt Pond — Clark Township — 300 Lmbfg, 2,000 Bsfg.
Ash Brook — Clark Township — 125 Bta, 125 Brnta.
Briant's Pond —Summit — 900 Lmbfg, 1,000 Bsfg, 1,500 Ypera.
Cedar Brook Lake — Plainfield — 400 Lmba.
Echo Lakes — Mountainside — 1,000 Lmbfg, 4,000 Bsfg.
Green Brook — Scotch Plains — 125 Bta, 125 Brnta.
Jackson's Pond — Rahway — 300 Lmbfg, 2,000 Bsfg.
Kenilworth Lake — Kenilworth — 200 Lmbfg, 2,000 Bsfg.
McGilvary's Pond — Linden — 2,000 Ypera.
Milton Lake — Rahway — 300 Lmbfg, 2,000 Bsfg.
Mindowaskin — Westfield — 200 Lmbfg.
Nomahegan Lake — Cranford — 200 Lmbfg, 2,000 Bsfg.
Rahway Park Lake — Rahway — 300 Lmbfg, 2,000 Bsfg, 300 Lmba.
Rahway River — Springfield — 2,050 Bta, 1,150 Brnta, 3,300 Rta.
Seeley's Pond — New Providence — 900 Lmbfg, 4,000 Bsfg.
Surprise Lake — Mountainside — 900 Lmbfg, 6,000 Bsfg.
Tomaques Lake — Westfield — 200 Lmbfg, 2,600 Ypera, 500 Sa.
Warinanco Lake — Roselle — 300 Lmbfg, 2,000 Bsfg.

WARREN COUNTY

Bear Creek — Johnsonburg — 700 Bta, 500 Rta.
Beaver Brook — Hope — 700 Bta, 1,550 Brnta, 250 Rta.
Beaty's Mill Pond — Hackettstown — 425 Sa, 425 Ypera.
Blair's Creek — Blairstown — 1,000 Bta, 500 Rta.
Buckaloo Swamp Brook — Hope — 150 Bta, 150 Brnta.
Cedar Lake — Blairstown — 25 Smba, 1,950 Rta, 450 Brnta.
Dark Moon Brook — Johnsonburg — 300 Bta.
Delaware River — Belvidere — 39 Smba.
Delawanna Creek — Delaware — 300 Bta, 300 Brnta.

Ebenezer Brook — Ebenezer — 125 Bta.
Furnace Brook — Oxford — 300 Bta, 300 Brnta.
Guard Lock — Saxton Falls — 40 Smba, 285 Bsa, 10,000 Bsfg, 1,150 Lmbfg.
Ingersoll Dam — Stewartsville — 1,000 Lmbfg.
Jacksonburg Brook — Jacksonburg — 500 Bta, 500 Brnta, 700 Rta.
Lomisons Glen Brook — Lomisons Glen — 150 Bta, 150 Brnta.
Lopatcong Creek — Harmony — 150 Bta, 150 Brnta.
Mt. Lake — Buttzville — 25 Smba, 2,500 Lmbfg, 200 Brnta, 500 Rta, 126 Lmba, 24 Pica.
Musconetcong River — Guard Lock to Penwell — 250 Bsa, 5,300 Bta, 9,300 Brnta, 7,700 Rta.
Paulinskill River — Stillwater to Paulina — 2,200 Bta, 8,800 Brnta, 1,500 Rta.
Pequest River — Townsbury to Belvidere — 4,500 Bta, 6,050 Brnta, 1,950 Rta.
Pohatcong Creek — Mt. Bethel to Warren Glen — 1,500 Bta, 1,500 Brnta, 1,000 Rta.
Silver Lake — Hope — 2,500 Lmbfg, 1,500 Rta, 3,000 Ca.
Susquehanna Lake — Blairstown — 1,500 Rta.
Van Campens Brook — Millbrook — 1,050 Bta, 300 Brnta.
Wasigan Brook — Ebenezer — 125 Bta.
White Lake — Squire's Corner — 2,000 Rta, 500 Brnta.
Yards Creek — Hainesburg — 450 Bta, 450 Brnta, 300 Rta.