

ANNUAL REPORT

New Jersey
Department of Conservation
and Economic Development

Division of Fish and Game



For the Fiscal Year
Commencing July 1, 1949
and Ending June 30, 1950

ANNUAL REPORT

New Jersey
Department of Conservation
and Economic Development

Division of Fish and Game

For the Fiscal Year
Commencing July 1, 1973
and Ending June 30, 1974

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, 1949, to June 30, 1950.

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, 1950

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

DR. A. HEATON UNDERHILL, *Director*
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
D. MACKENZIE DUNN, *Superintendent of Game Farm*, Forked River
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, *Assistant Protector* Trenton

HUDSON G. AMORY Plainfield
 ALFRED F. BAKLEY Washington
 DAVID W. BROCKER Montville
 EVERETT CARMELIA Mt. Holly
 FRANK T. CLARK Delaware
 OSCAR S. CLARK Vineland
 WILLIAM P. COFFIN Somerville
 CLIFFORD CUDNEY Bevans
 MATTHEW W. ENGELS Woodstown
 MATTHEW F. FERRIGNO Red Bank
 J. HOWARD FERRY Jersey City
 JOSEPH F. GALLO Mays Landing
 WESLEY GIBBS Vincentown
 JOHN W. GRAHAM Swedesboro
 GEORGE E. GROVES Bridgeton
 RICHARD K. HALL Audubon
 H. HOWARD HARRISON Waretown
 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 Trenton
 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 DR. A. HEATON UNDERHILL, *Director*

Sportsmen and all those interested in the fish and wild-life resources of New Jersey may well take heart in surveying this record of the first full year of fish and game administration under the council established by the re-organization of 1948. It represents an intelligent and fearless approach to the most complex situation facing any conservation group in the country today. New Jersey is the second most densely populated state in the union; only little Rhode Island has more people per square mile. Every year industry, home building, and intensive agriculture make further inroads on fish and game habitat, and every year more people seek sport and recreation in these steadily decreasing areas.

The Division, under the policies established by this council, is embarked on a long range program designed to give maximum returns and recreation to a maximum number of people while still assuring a supply for the future. With the support, confidence, and co-operation of sportsmen, landowners, and all those interested in conservation, reasonable hunting and fishing can be maintained. Without such support, confidence and co-operation, no administrative agency can succeed. The future still rests in your hands.

SUMMARY OF ACTIVITIES 1949-1950

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, 1949, and ending June 30, 1950.

FISH AND GAME LIBERATION

Pheasants—41,970, of which 19,086 were propagated and distributed from State-owned farms; 3,594 purchased from licensed dealers; 19,290 raised to adult stage by 4-H Clubs and others from day-old chicks hatched at State farms.

Quail—14,259, all raised at the State Quail Farm.

Rabbits—28,976 cottontails, all purchased from the west; and 307 Jack rabbits, also obtained from outside the State.

Fish—803,695, propagated and distributed from the State-owned hatcheries, comprised of the following species: trout over legal size, 467,200; large-mouth bass, 154,615; small-mouth bass, 6,000; bluegill sunfish, 115,680; shiners, 200; tadpoles, 60,000.

In addition, 468,862 fish, as listed, were netted from various reservoirs and other closed waters and redistributed: large-mouth bass, 1,749; pickerel, 1,413; sunfish, 206,855; yellow perch, 30,136; calico bass, 6,472; white perch, 113,300; shiners, 25,300; catfish, 32,782; suckers, 7,050; crappie, 7,000; bluegill sunfish, 5,000; rainbow trout, 2; pike, 26; roach, 21,900; miscellaneous, 9,877.

The market value of all fish and game liberated was \$610,673.81.

The receipts from resident and non-resident hunters' and anglers' licenses was \$782,446.25.

LAW ENFORCEMENT

A total of 1,404 cases were prosecuted during the fiscal year and penalties totaling \$40,028.95 collected.

LICENSES ISSUED

1948	1949
251,083	258,905

1949 DEER KILL

The legal deer kill during the six-day firearm season was 3,627, and during the special bow and arrow season, which also lasted six days but preceded the regular season, six deer were taken. A total of 936 special licenses had been issued for hunting with bow and arrow.

LATEST REPORT OF FISH AND GAME TAKEN

The 1948 tabulation of fish and game reported taken indicates a sizable decrease that year. Only 30% of the licensees reported their kill.

	1947	1948
Deer	3,938	3,249
Pheasants	292,303	47,919
Quail	38,535	14,883
Rabbits	1,092,169	327,422
Gray Squirrels	385,604	93,180
Grouse	14,800	6,634
Raccoon	14,740	1,662
Woodcock	12,804	2,505
Ducks	103,431	47,237
Geese	1,963	464
Trout	1,316,595	329,723
Bass	368,544	150,167
Pickrel	352,224	161,358
Mink	1,140	231
Muskrat	218,732	111,087

PREDATORY VERMIN CONTROL

During the fiscal year, 101,711 predatory birds and animals were reported taken by the wardens, wildlife managers, trappers and holders of special vermin control permits.

WILDLIFE MANAGEMENT

In general, the well-balanced development program of improvement of marshlands, wastelands and agricultural lands for wildlife was maintained. Great strides were made in work being done under Federal Aid-to-Wildlife Act. The waterfowl development project on the Tuckahoe-Corbin City area was brought to a conclusion, as was the project for the evaluation of the use of repellents in controlling deer damage to farm crops. A new project for the restoration of Success Lake was begun. Research activities were expanded with the addition of a new deer investigational project, a rabbit research project, and the increase in scope of the studies carried on in regard to rail, waterfowl and muskrats.

LEGISLATION

Chapter 49—Approved April 13, 1950. Provides for inclusion of tidal waters in the anti-pollution law.

Chapter 78—Approved April 25, 1950. Removes the misdemeanor clause in cases of residents procuring a wrong license.

Chapter 79—Approved April 25, 1950. Cancels need for special woodcock license during upland game season.

Chapter 80—Approved April 25, 1950. Requires identification tags to be displayed on fish nets.

Chapter 86—Approved April 28, 1950. Provides for closed season on railbird hunting in northern counties and opens season for woodchuck on May first.

Chapter 147—Approved May 26, 1950. Amends the Delaware River and Bay law.

Chapter 190—Approved June 7, 1950. Provides for certificate on the killing of foxes to be issued by notary public.

Chapter 273—Approved July 3, 1950. Amends the law requiring non-residents to have a license for fishing in certain tidal waters.

Chapter 275—Approved July 3, 1950. Concerns interstate co-operation through the Atlantic States Marine Fisheries Commission.

IN MEMORIAM

The Council at its meeting on October 11, 1949, adopted the following resolution presented by Chairman Valgenti:

WHEREAS, Warden J. Lester Hyde, died on September 25, 1949; and

WHEREAS, Warden Hyde has been employed in the service of State fish and game administration in the State of New Jersey for the past fifteen years and was, at the time of his death and for many years prior thereto, serving as a fish and game warden in the County of Sussex; and

WHEREAS, During the long period of association in fish and game work Warden Hyde had endeared himself not only to the various Commissions and Councils under which he served but also to all sportsmen in New Jersey and particularly in his own county by his genial and kindly personality, his great knowledge of fish and game, 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 Warden Hyde to the sportsmen of New Jersey and does also acknowledge the great loss occasioned by 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 Warden Hyde.

GENERAL

FISH AND GAME COUNCIL

According to the provisions of the reorganization act of 1948, the terms of two of the council members, Alvin W. String and James W. Hand, expired during the year. Both men were reappointed for new four-year terms, commencing May 15, 1950.

The Council, in accordance with the act, appointed a Director for the Division. Dr. A. H. Underhill, an outstanding fish and game conservationist, was selected to fill the post and assumed his duties April 1, 1950.

Dr. Underhill at the time of appointment was Field Secretary of the Massachusetts Fish and Game Association and had been engaged in the solution of technical problems in all phases of fish and game work throughout the East for fifteen years. He is the author of numerous popular and scientific articles in the field of fish and game conservation.

FISH AND GAME CODE

On August 16, 1949, the Council adopted the following hunting regulations as the game code for 1949:

1. Male Ring-neck or English pheasant, cottontail rabbit, Jack rabbit or hare, gray squirrel, ruffed grouse, partridge, bobwhite quail—November 11 to December 10, both dates inclusive.
2. No person shall be in the woods and fields with a firearm on November 11 before 9:00 a.m.
3. Raccoon—October 15 to January 15, both dates inclusive, between sunset and sunrise, except during the open season for taking deer with firearms.
4. Deer—December 12 to December 17, both dates inclusive, with firearms. Daily hunting hours will be from 7:00 a.m. to 5:00 p.m.
5. Deer—December 5 to December 10, both dates inclusive, with bow and arrow exclusively. Daily hunting hours will be from 7:00 a.m. to 5:00 p.m.

Bag Limits:

1. Male pheasant, daily limit, 1; seasonal limit, 10.
2. Cottontail rabbits, daily limit, 4.
3. Jack rabbit or hare, daily limit, 1.
4. Gray squirrel, daily limit, 6.
5. Ruffed grouse, partridge, daily limit, 3.
6. Quail, daily limit, 7.
7. Raccoon, no daily limit; seasonal limit, 25.

Trapping:

No cage trap, metal box trap, or diving trap shall be permitted on any of the State Public Shooting and Fishing Grounds, and no trap of any kind shall be set anywhere on any of the State Public Shooting

and Fishing Grounds unless it bears a metal tag containing the name and address of the owner of the trap. No trap of any kind shall be permitted to remain set on any property at the close of the trapping season.

The following fishing regulations were adopted on March 14 as the fish code for 1950:

The trout season for 1950 shall commence at 8:00 a.m. on Saturday, April 15 and extend uninterruptedly to and including September 30. Other than on opening day, fishing hours shall be from sunrise to 9:00 p.m. EST.

Legal length remains at seven inches.

Creel limit, 8 trout per day, of which number not more than four trout may be taken from fly-fishing water as hereinafter provided. Possession limit is one day's catch.

Fly-fishing Water:

From and after sunrise on May 13 the following two stretches of water are hereby designated as fly-fishing water:

1. Big Flat Brook, Sussex County—from the concrete bridge on Route 31 downstream to the end of Roy Tract, a distance of approximately four miles.
2. 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.

The following regulations shall apply to the above-designated fly-fishing water:

1. Fly-fishing only shall be permitted from sunrise May 13 uninterruptedly to and including September 30.
2. Daily fishing hours shall be from sunrise to 9:00 p.m. EST.
3. Not more than four trout may be killed daily. Trout in excess of this number may be caught provided such trout are immediately returned to the water unharmed.
4. 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.
5. Also expressly prohibited shall be any type of angling whereby the fly is cast directly from the reel.

Pond Fish:

The legal length for large-mouth (Oswego) bass shall be twelve inches.

Bait Fish:

It is prohibited to net, trap or attempt to net or trap any type or species of minnows or bait fish from that section of any stream that is stocked with trout.

RUTGERS UNIVERSITY WILDLIFE PROGRAM

In September the Council voted to co-operate in inaugurating a wildlife program at Rutgers University. Accordingly, an eight-member committee from among the University's research and teaching personnel was appointed to work with the Fish and Game Council's committee in establishing a program of training and research in wildlife conservation.

The first part of the curriculum as planned will follow closely to that of majors in zoology. In the junior and senior years the course will give particular attention to subjects bearing on wildlife conservation such as parasitology and field zoology. In future years it is hoped that some of the students will go on to graduate work and research. For the time being, however, very little research will be possible because of the limited funds, but in time it is hoped that further support will come from the United States Fish and Wildlife Service and the American Wildlife Institute.

The University's committee is composed of Dr. William H. Cole, director of the Rutgers Research Council; Dr. Thurlow C. Nelson, oyster research specialist; Dr. Frank G. Helyar, director of the College of Agriculture; Dr. Fred R. Beaudette, specialist in poultry pathology; Dr. Gilbert H. Ahlgren, specialist in farm crops; Dr. Murray F. Buell, associate professor of botany; Dr. Benjamin H. Davis, specialist in plant pathology; Dr. Leslie A. Stauber, associate professor of zoology; and Dr. Mason V. Gross, provost of the State University. The Council's committee consists of Councilmen Charles A. Campbell and Charles M. Cabbage and Superintendent of Wildlife Management, Lester G. MacNamara.

WARDEN SERVICE

There were two additions to the Warden force during the fiscal year. Matthew Ferrigno, of Red Bank, was appointed as Warden in Monmouth County and Hudson G. Amory, of Plainfield, was appointed as Warden in Middlesex County to replace Clifford Cudney. Warden Cudney was transferred to Sussex County to fill the vacancy caused by the death of Warden Lester G. Hyde.

LAW ENFORCEMENT

A total of 1,404 cases were prosecuted, which represents a drop of 91 from the preceding year. Penalties totaling \$40,028.95 were collected for these violations.

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

	Arrests	Warnings
Williams	91	59
Graham	82	35
Groves	65	11
Nolan	61	26
Brockner	55	44
Coffin	55	53
Spencer	54	36
Mulvey	53	13
Newman	49	33
Jeschke	49	19
A. Jones	46	67
Harrison	45	16
Morrison	32	31
Hutchison	31	1
Ferry	31	12
Gallo	28	14
Engels	25	93
Shurr	24	18
F. Clark	24	2
R. Hall	24	..
Mathis	22	..
Drysdale	21	35
Kraeuter	21	19
Westerveld	21	15
Robinson	20	30
Carmelia	18	8
Saxton	16	2
O. Clark	14	13
Gibbs	12	..
Shraw	12	5
Troisi	12	4
F. Jones	11	11
Cudney	11	17
Kristiansen	9	23
Amory	9	10
O'Neill	8	4
Ferrigno	5	21
Hyde	4	..
Bakley	3	..
O'Dowd	2	..
Treloar	2	..
Piercy	1	..
Hugg	1	..
G. Hall .....	..	9
Troopers	34	..
Other complainants	28	..
Deputy Wardens	163	..
	1,404	809

Appeals were taken in 40 cases, 50 defendants declared not guilty, 23 committed to jail, sentence suspended in 18 instances, and 26 persons placed on probation to make payment of penalties imposed. Three cases were appealed by the Division and 69 licenses were revoked.

Prosecutions according to districts were as follows:

First District:	
Sussex, Warren, Passaic and Hunterdon Counties	264
Second District:	
Bergen, Essex, Hudson, Middlesex, Somerset, Union and Morris Counties	382
Third District:	
Mercer, Monmouth, Ocean, Burlington Counties	383
Fourth District:	
Cape May, Camden, Cumberland, Gloucester, Salem and Atlantic Counties	375
	1,404

Offenses for which prosecutions were brought are as follows:

LICENSE VIOLATIONS: Fishing without, 152; hunting without, 101; trapping without, 13; false information, 30; procuring wrong, 36; loaning, 2; refusal to show, 2.

FISHING VIOLATIONS: Closed season, 36; illegal netting, 24; illegal fishing, 2; undersized fish, 31; illegal bait, 2; excess bag limit, 15; before hour, 11; after hour, 3.

HUNTING VIOLATIONS: Closed season, 91; after hours, 74; aid of lights, 35; from auto, 3; on Sunday, 37; illegal game removal, 2; before hours, 4; hen pheasant, 3; too close to dwelling, 6; mutilating game, 8; possession or killing protected bird, 8; from motor boat, 4; excess bag limit, 8; illegal possession raccoon, 3; baiting waterfowl, 3; failure to display tag, 154.

DEER VIOLATIONS: At night, 20; short-horned, 5; closed season, 19; doe, 6; illegal possession, 8; failure to report, 2.

FIREARMS VIOLATIONS: Loaded in vehicle, 98; closed season, 8; illegal firearm, 107; illegal missile, 61; discharging from highway, 6; alien, 1.

MISCELLANEOUS VIOLATIONS: Stealing traps, 2; trapping closed season, 7; dog at large or at night, 14; pollution, 2; trespass on preserve or hatchery, 17; short lobster, 6; drawing waters, 2; illegal posting, 1; crab with spawn, 1; short crab, 89; diamond back terrapin, 3; interference with officer, 9; possession fox, 1; destruction of property, 3; dredging eels, 1; possession untagged beaver pelts, 2.

CONSERVATION EDUCATION AND PUBLIC RELATIONS

Services offered by the Public Relations and Conservation Education Unit of the Division during the past fiscal year have been primarily for the youth of our State and for the adults who work with youth groups. It is felt that people must realize the need for wise use of our resources before they will be interested in taking proper care of them. With the overall purpose of developing a greater State-wide interest in the application of conservation and restoration practices and acquainting students with New Jersey's natural resources and the departmental efforts to serve them, this Unit has fully cooperated with school administrators, teachers, leaders of youth groups and clubs in teaching conservation to the boys and girls under their supervision.

An aggregate of 280,000 youths and adults attended lectures and viewed motion pictures. These educational programs were supplemented with tours and projects, and assistance was given in planning and developing conservation programs for communities and county organizations desiring to unite their efforts in the cause of conservation.

The Division prepared and distributed without charge a monthly wildlife publication, "The New Jersey Fish and Wildlife Bulletin." However, the demand became so great that the cost of distribution was prohibitive, and it was decided, as of July first, to charge an annual subscription fee of one dollar for the publication.

There were forty-one days of exhibits at the various fairs in the State and more than 235,000 people viewed these displays presented at the Sussex County Fair, Morris County Fair, Middlesex County Fair, Flemington Fair, Gloucester County Fair, Cumberland County Fair, and State Fair at Trenton.

The State Fair exhibit, as usual, was set up in the building exclusively reserved for the Division's use. One section displayed live red and grey foxes, raccoon, and skunk, as well as trout, bass and bluegills. Another section of the building carried a theme of hedgerows as wildlife highways, depicting a rustic rail fence, plantings of native vines, shrubs, trees, and corn shocks, offset by an appropriately painted backdrop. Here pheasants and quail were seen at close range, and the freedom of their actions could be observed while feeding on ears of corn from the shocks, dusting, preening and living in a spirit of community. There was also displayed a South Jersey woods scene with live deer. These natural settings told the story of our feed and cover program to the public. Various panels portrayed forest fire prevention, safety with firearms, and hunting and fishing regulations. Farmer-sportsmen co-operation was shown by photographs and paintings with appropriate captions pointing out the advantages to wildlife, the farmer, and the sportsman.

Other exhibits included the New Jersey Education Conference at Atlantic City and the New Brunswick Junior Sportsmen Show, which had an outstanding free admission show that annually attracts over 7,000 people. Co-operation was given to the Bloomfield Hunters' and Anglers' Association at their Annual Youth Program Sportsman Show, and to the Englewood Rod and Gun Club when they were

hosts to outstanding junior sportsmen from the seven northern counties at their cabin in Stokes Forest. Here instructions were given in flycasting, safety with firearms, hiking, fishing, bird walks, taxidermy, and forestry.

Many radio programs were broadcast regarding the various exhibits and newspapers commented favorably on the excellence of the exhibits in relation to conservation and restoration in New Jersey.

For the first time in the history of the State, pheasants were judged at the Warren County Fair. The birds were reared by 4-H members participating in the Division's chick program. Birds were shown at six, nine and twelve weeks of age and all showed good rearing management. Such judging will be started in other counties next year in order to further stimulate production of a better game bird for releasing. Recognition was given in the October issue of "Country Gentlemen" to the Division's 4-H game bird rearing program.

GAME

GAME FARM REPORTS

Worked River Farm:

The pheasant record at this farm for the calendar year of 1949 was as follows:

Breeding birds on hand January 1, 1949	1,456
Young birds on hand January 1, 1949	669
Eggs laid	48,086
Eggs set	40,300
Birds hatched	27,122
	<hr/>
	29,247
Spring distribution	207
Fall distribution	9,209
Day-old chicks distributed	15,122
Birds died or escaped	1,905
Breeding birds on hand December 31, 1949	2,500
Birds held for spring distribution	304
	<hr/>
	29,247

Lockport Farm:

The pheasant record at this farm for the calendar year of 1949 was as follows:

Breeding birds on hand January 1, 1949	1,277
Young birds on hand January 1, 1949	100
Eggs laid	43,707
Eggs set	42,200
Birds hatched	27,528
	<hr/>
	28,905
Spring distribution	56
Fall distribution	9,454
Day-old chicks distributed	16,170
Birds died or escaped	725
Breeding birds on hand December 31, 1949	2,500
	<hr/>
	28,905

Quail Farm:

The quail record for the calendar year of 1949 was as follows:

Breeding birds on hand January 1, 1949	0
Young birds on hand January 1, 1949	5,304
Eggs laid	28,001
Eggs set	27,052
Birds hatched	19,489
	<hr/>
	24,793

Spring distribution	4,192
Fall distribution	11,277
Birds died or escaped	4,986
Breeding birds on hand December 31, 1949	158
Young birds on hand December 31, 1949	4,180
	24,793

WILDLIFE MANAGEMENT REPORT

During this year the F.A.W. waterfowl development project on the Tuckahoe-Corbin City area was brought to a conclusion. The wildfowlers of New Jersey were quick to avail themselves of the additional opportunity to hunt waterfowl. A bag check of 121 hunters showed that they had spent a total of 551.5 hours on the marsh, killed 205 ducks and lost 68 cripples. This was an average of 4.55 hours per gunner per day and represented a kill of .37 ducks per hour or 1.68 ducks killed per hunter per day. The composition of the aggregate bag was as follows:

Species	Number	Per cent of Total
Black Duck	129	63.0%
Green-winged teal	31	15.1%
Mallard	15	7.3%
Pintail	14	6.8%
Wood Duck	2	.96%
Canada Geese	2	.96%
Hooded Merganser	2	.96%
American Merganser	2	.96%
Mallard-Black Duck Hybrid	1	.5%
White-bill	1	.5%
Bufflehead	1	.5%
Widgeon	1	.5%
Gadwall	1	.5%
Blue Goose	1	.5%

The restoration of Success Lake was started and was well under way at the close of the year. This project is by far the most difficult assignment that has been given to the Wildlife Management Unit to date.

In general, the well-balanced development program of improvement of marshlands, wastelands and agricultural lands for wildlife was maintained. Research activities were expanded with the addition of a new deer investigational project, a rabbit research project and the increase in scope of the studies carried on in regard to rail, waterfowl and muskrats.

Plantings Made on the Farmlands of the State Under Federal Aid-to-Wildlife Project 19-D

Under Federal Aid-to-Wildlife Project 19-D a total of 22,060 acres of farmland was brought under habitat improvement. Following adequate planning with landowners, sportsmen, Soil Conservation Service groups and County Agents, the following plantings were made:

Species	Number
Norway Spruce	20,000
White Pine	15,000
Jersey Pine	2,100
Yellow Pine	1,000
European Larch	3,000
Austrian Pine	2,000
Loblolly Pine	1,000
Red Oak	1,000
Rosa multiflora	45,000
Bittersweet	1,000
Lespedeza bicolor	11,000

A total of 13,500 feet of field border consisting of *Lespedeza bicolor* and *Lespedeza sericea* were planted and 200 feet of hedgerow were pollarded.

Excellent co-operation was received from landowners and sportsmen in food patch installation. These clubs and individuals that co-operated in this detail on a State-wide basis were:

Name of Co-operator	No. of Food Patches Installed
Coventry Rod & Gun Club	10
Walnut Brook Rod & Gun Club	7
G. W. Ganz	6
Mr. J. Cowperthwaite	7
Raritan Rod & Gun Club	13
Macopin Rod & Gun Club	15
Gloucester Federation of Sportsmen's Clubs	16
Oxford Rod & Gun Club	7
North Jersey Fish & Hunt Club	2
Brainards Rod & Gun Club	2
Alliance Craftsmen Rod & Gun Club	6
Polish Rod & Gun Club	3
Weekstown Rod & Gun Club	7
Belmar Rod & Gun Club	4
Roxbury Rod & Gun Club	2
Boy Scouts of America	7
Guinea Hollow Rod & Gun Club	12
Garden State Rod & Gun Club	7
Lambertville Rod & Gun Club	1
Reaville Gun Club	3
Mr. Young	3
Washington Rock Rod & Gun Club	7
South Jersey Sportsmen's League	5
Liberty Corner Rod & Gun Club	2
Warren County Rod & Gun Club	2
Central Jersey Beagle Club	7
Anglers & Hunters Association	7
Western Rod & Gun Club	7
Palmyra Sportsmen	3
Metuchen Rod & Gun Club	11
Cecil Rod & Gun Club	11
Wortendyke Field & Stream Association	1
Hercules Rod & Gun Club	2
Dumont Rod & Gun Club	1
Total	206

In addition, many of the above clubs sponsored planting projects of herbaceous and woody plants to improve cover facilities for the future.

Other development and maintenance procedures were accomplished by the wildlife managers and helpers. All game including pheasants, quail, and rabbits were distributed in co-operation with sportsmen and local wardens, deer trapping, live beaver trapping, live trapping of miscellaneous animals such as raccoon, squirrels or rabbits and the redistribution of these animals, diversionary deer food area construction, distribution of deer fencing, planting trees, shrubs, vines and herbaceous plants, boundary establishment, road construction, fire-break construction, patrol against fire and illegal practices, building removal, and distribution and inspection of the pheasant chick program were major duties throughout the year. The wildlife managers made 34 arrests for infractions of the Fish and Game laws and issued 27 warnings.

Research and Investigational Projects

The use of aircraft to secure a count of certain game species was innovated. The potential of this type of census is large and will receive further study.

Federal Aid-to-Wildlife—Project 21-R was completed. This study entailed an evaluation of the use of repellents for controlling deer damage to farm crops. This included the efficiency of commercial repellents, the method of application and the cost of applying the repellent material. The information secured by this project was a factor in the establishment of a broad deer management policy.

Federal Aid-to-Wildlife—Project 16-R dealing with the management of water levels for waterfowl and muskrats, ecological data in regard to the clapper rail and the evaluation of the Tuckahoe-Corbin City, Egg Island and Port Republic areas has been continued. Information received has been substantial and will be published as a separate report.

Federal Aid-to-Wildlife—Project 25-R relative to the status of the white-tailed deer in New Jersey was instituted. This project is designed to furnish data in regard to the age classification of the deer herd, potential rate of increase and the establishment of a population estimate of the deer present in the State.

Federal Aid-to-Wildlife—Project 22-R, a study of the cottontail rabbit in New Jersey was started with the intent that the importation of western rabbits into New Jersey receive careful evaluation, secure data in regard to the harvest of rabbits from areas that have been stocked and those that have not been stocked, establish the possible effects of intensive agriculture on rabbit population and to secure information that might indicate factors that contribute to the variations in cottontail populations.

In addition, an annual woodcock census and waterfowl estimate was made.

Deer Management

In order to curtail existent damage to farm crops a Jeep sprayer was purchased and placed in operation. In order to further reduce deer damage a total of 199 rolls of wire were distributed to farmers suffering severe damage. A total of 10 diversionary deer food plots were constructed and planted in Atlantic County. This work was done in accordance with the policy of the Fish and Game Council in an effort to reduce deer damage to agricultural crops.

During the year a total of 72 deer were live trapped and moved to new locations by the wildlife managers. All deer trapped and re-liberated were ear tagged.

In addition, a total of 2,547 squirrels, 137 raccoon, 3 ground hogs, 7 opossum, 9 skunks, 2 muskrats, 2 rabbits and 43 beaver were live trapped in areas where their presence constituted a nuisance. These animals were redistributed in areas where their presence was desired with the exception of the 137 raccoon which were distributed to the several raccoon hunting associations within the State. A total of 416 predatory birds and animals were removed from the public shooting and fishing grounds throughout the State consisting of 48 foxes, 133 hawks, 69 skunks, 15 cats, 28 stray dogs, 57 opossum, 11 crows, 32 owls and 23 weasels.

During the year 44 meetings were attended and the Northeastern Wildlife Conference and the National Wildlife Conference were attended.

DEER

The following shows the number of deer taken in each county during the 1949 firearm season:

County	Legal	Illegal
Atlantic	325	5
Bergen	57	5
Burlington	457	5
Camden	68	1
Cape May	63	..
Cumberland	160	..
Essex	52	7
Gloucester	16	..
Hunterdon	250	20
Mercer	94	5
Middlesex	16	..
Monmouth	58	10
Morris	557	30
Ocean	310	5
Passaic	161	3
Somerset	241	20
Sussex	485	21
Union	9	1
Warren	248	16
	3,627	154

The sport of hunting with bow and arrow is becoming increasingly popular. Nine fortunate bowmen bagged deer during the special season provided for this type of weapon, as compared to but one taken the previous year. The counties wherein this kill was reported are:

Burlington	1
Morris	3
Ocean	1
Somerset	1
Sussex	2
Warren	1
	9

Special licenses for hunting with bow and arrow were issued to 937 applicants.

In addition to the deer taken during the regular seasons, there were 731 animals accidentally killed by automobiles, trains, dogs, under permit when causing destruction, and various other means. Of this number 372 were processed by Division personnel and 13,375 pounds of prime venison made available. Allotments of this meat were made to 115 clubs in the northern counties to be used for venison dinners. The demand from qualified organizations exceeded the supply.

HUNTING ACCIDENTS

There were 32 hunting accidents reported during the small game season and nine during the deer season. Two fatalities resulted in each instance. Of the total number of accidents, eight were self-inflicted and 33 caused by other persons.

Six of the injured were under eighteen years of age. Of the persons causing the injuries, three were under eighteen, twenty-eight over eighteen, and in ten cases the persons were unidentified.

PREDATOR CONTROL

The special predator control men employed by the Division took the following predators during the fiscal year, many on direct complaint from farmers who were suffering losses from predation. This work has increased greatly in the past year since farmers are taking advantage of the service offered in larger numbers.

Foxes	1,187
Skunks	1,224
Hunting cats	378
Opossum	949
Hawks	250
Weasels	371
Crows	616
Water snakes	56
Red squirrels	3
Great-horned owls	57
Mink	5
Snapping turtles	115
Raccoons	63
	<hr/>
	5,274

FISH

REPORT OF HATCHERY OPERATIONS

	Inches	Raised July 1, 1949 to June 30, 1950	Disposed of	Estimated Number on Hand
Brook trout	3-4	300,000	.....	300,000
" "	4-5	100,000	.....	100,000
" "	6-8	40,000	.....	40,000
" "	7-9	44,990	44,990	.....
" "	8-10	20,450	15,450	5,000
" "	10-12	102,980	102,980	.....
" "	13-16	8,640	8,640	.....
Brown trout	3-4	500,000	.....	500,000
" "	6-8	70,000	.....	70,000
" "	7-9	4,000	4,000	.....
" "	8-10	66,334	66,334	.....
" "	10-12	84,636	84,636	.....
" "	12-14	9,000	9,000	.....
" "	13-16	6,305	6,305	.....
Rainbow trout	2-3	225,000	.....	225,000
" "	5-6	25,000	.....	25,000
" "	6-8	50,000	.....	50,000
" "	8-10	13,730	13,730	.....
" "	10-12	102,915	102,915	.....
" "	13-18	8,220	8,220	.....
Large mouth bass	1-2	200,000	.....	200,000
" " "	2-3	19,009	19,009	.....
" " "	3-4	83,377	83,377	.....
" " "	4-5	34,597	34,597	.....
" " "	5-6	8,966	8,966	.....
" " "	6-7	6,440	6,440	.....
" " "	7-8	2,226	2,226	.....
Small mouth bass	1-2	100,000	.....	100,000
" " "	3-4	2,000	2,000	.....
" " "	4-5	2,640	2,640	.....
" " "	5-6	1,360	1,360	.....
Bluegill sunfish	1-2	150,000	113,000	37,000
" "	2-3	102,600	2,600	100,000
" "	3	50,000	.....	50,000
" "	6-8	80	80	.....
Shiners	4	200	200	.....
Tadpoles	...	60,000	60,000	.....
		2,605,695	803,695	1,802,000

The fish raised during the past year were exceptionally good in size and condition. Due to prompt identification of the various bacterial and parasitic diseases and effective chemical treatment, loss from diseases were kept at a minimum. A new chemical, Pyridylmcuric Acetate, has proven very effective in treating gill bacteria. It is sprayed directly into the infected pond and eliminates the necessity of netting the fish and dipping them into a copper sulphate solution.

A new bull-dozer and hydraulic dump truck have been purchased and operations are under way for the construction of eight new ponds at the south end of the Main Hatchery. It is estimated that this will increase the output of eight- to ten-inch trout by 50,000 annually, plus a substantial increase of warm-water fish.

There was installed a new cold storage plant, permitting the carrying of 15 tons of supplies, resulting in a substantial saving through decrease in food costs.

Maintenance work during the past year included grading, repairing and trimming of five miles of banks and three miles of road; laying of two hundred feet of ten-inch cast iron pipe and one hundred feet of fourteen-inch pipe; repairing 282 ponds; repairing and painting 1,500 screens and constructing 100 new ones; repairing and painting 100 troughs and 17 buildings of various sizes and types.

Funds were budgeted for \$20,000.00 pond improvement work at the Main Hatchery and \$12,000.00 for a new pumphouse and pipeline at the East Hatchery.

The past year was the most successful ever experienced with largemouth bass. The bass averaged over four inches long, with about 60% of the total output being between four and eight inches.

Although it has not been definitely determined what size bass is best for stocking lakes, it will undoubtedly be found to vary. It is generally believed that the larger the bass, the better, since four- to eight-inch fish should have a higher rate of survival and the larger bass should help control an over-population of, for example, common sunfish. Experiments are now being conducted at the hatchery to determine which size is the most efficient in controlling sunfish populations. It is hoped to co-ordinate the size and number of the bass production at the hatchery so that it will meet as closely as possible the requirements of the various lakes as shown by the lake survey.

The lake survey is progressing very well. As each lake is completed, a proper fish management policy for that lake will be worked out. The survey procedure consists of accurately mapping the lake to determine the various depths; a complete chemical analysis is made and types of algae and aquatic plants classified; lengths and weights of fish are recorded and scales collected. Age determination will be made from the scales to decide whether or not the fish are making a satisfactory growth.

The fish shocker is very effective in checking the fish populations of the streams. It is impractical to use it when the streams are high and therefore it is planned to check many of the trout streams this fall and winter when waters are low.

A number of fish culturists and technicians visited the hatchery during the past year to discuss and compare methods, as well as a great number of interested individuals and groups.

FISH DISTRIBUTION AND RECLAMATION

There were 467,200 trout and 805,357 pondfish distributed throughout the State. Float stocking operations for adult trout were increased with the aid of specially designed boats and floats for this purpose.

Fish reclamation from reservoirs and private ponds carried out by the truck drivers, predator men and wardens resulted in the salvaging of the following fish, which were stocked in open waters:

Large mouth bass	1,749
Pickereel	1,413
Sunfish	206,855
Yellow perch	30,136
White perch	113,300
Calico bass	6,472
Shiners	25,300
Catfish	32,782
Suckers	7,050
Roach	21,900
Crappie	7,000
Bluegill sunfish	5,000
Rainbow trout	2
Pike	26
Miscellaneous	9,877
	468,862

FISH DISTRIBUTED BY FEDERAL GOVERNMENT

The United States Fish and Wildlife Service, Department of the Interior, reported the following fish distributed in the State of New Jersey during the calendar year 1949:

Large mouth black bass	11,424
Small mouth black bass	2,100
Bluegill sunfish	24,800
Rainbow trout	100
Brook trout	2,000
	40,424

POUND FISHERIES' SUMMARY

The following is a summary of the pound fisheries' reports for the calendar year ending December, 1949:

Approximate value of all pounds	\$1,233,768.45
Proceeds derived from the sale of fish	1,166,856.65
Number of pounds of fish caught and disposed of ..	40,009,996

Licenses issued:

Atlantic Ocean	133
Sandy Hook and Raritan Bay	53
	186

Number of pounds operated	163
Number of men employed	330

MENHADEN AND FOOD FISH LICENSES

Purse or shirred net licenses were issued to 54 vessels for the taking of menhaden within the three-mile limit during the calendar year of 1948.

There were 90 licenses granted for the netting of food fish between the two- and three-mile limit as 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	67
Hauling seine	26
Flounder fyke	57
Miniature fyke	2,190
Fyke	79
Shad	217
Staked gill	432
Bait seine	30

DELAWARE RIVER SHAD INDUSTRY

County	Boats		Nets		Men Engaged		Number Shad Caught		Pounds Shad Caught		Value Shad Caught		Value Boats and Nets	
	1949	1950	1949	1950	1949	1950	1949	1950	1949	1950	1949	1950	1949	1950
Burlington ...	2	..	2	..	6	..	47	..	187	..	\$75.50	.....	\$300	.....
Cumberland ..	26	22	17	36	23	33	3,875	15,450	15,170	40,717	4,181.45	\$6,476.77	9,650	\$12,205
Gloucester ...	1	1	1	1	2	2	3	..	15	..	2.50	.....	5	6
Hunterdon ...	7	5	4	4	14	9	3	9	8	25	.....	.....	1,475	500
Mercer	2	1	1	1	4	4	..	7	..	42	.....	10.00	205	225
Salem	9	7	9	7	18	14	312	974	1,544	3,896	849.20	1,558.40	4,950	4,450
	47	36	34	49	67	62	4,240	16,440	16,924	44,680	\$5,108.65	\$8,045.17	\$16,585	\$17,386

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HUDSON RIVER SHAD INDUSTRY

Boats		Licenses		Men Engaged		Number Shad Caught		Pounds Shad Caught		Value Shad Caught		Value Boats and Nets	
1949	1950	1949	1950	1949	1950	1949	1950	1949	1950	1949	1950	1949	1950
184	163	58	54	222	178	290,453	153,282	972,857	520,958	\$172,540.48	\$103,287.86	\$180,300	\$166,855

GENERAL FUND
SUPPLEMENT OF 1948-49 REPORT

Income

Balance as per last printed report \$207,328.40

Expenditures

Chapter 117, Laws of 1948 \$37,197.37
To balance 170,131.03

\$207,328.40

REPORT FOR 1949-50

Income

Balance, July 1, 1949 \$170,131.03

Hunters' and anglers' licenses:

Revised Statutes, Title 23, Chapter 3:

Sec. 11-12 (fishing)	\$328,890.25
Sec. 11-12 (hunting)	347,383.80
Sec. 3 (juvenile) ..	1,313.00
Sec. 25 (woodcock)	2,876.00
Sec. 11-12 (bow and arrow)	2,829.90
Agents' fees (fishing)	444.10
Agents' fees (hunting)	5.60
Duplicate licenses (fishing)	98.00
Duplicate licenses (hunting)	169.25

\$684,009.90

Revised Statutes, Title 52, Chapter 18, Section 31:

Menhaden licenses	\$38,030.00
Food fish licenses.	3,800.00
Breeders licenses..	2,712.00
Pound licenses ...	7,480.00
Shad licenses	1,350.00
Net licenses	3,122.25
Carp permits	300.00
Scientific permits..	2.00
Deputy fees	4.00
Map sales	7.50
Recoveries and sales	6,640.36
Rent	665.00
Wildlife Bulletin ..	918.00

65,031.11

Fines, Revised Statutes, Title 23, Chapter 10, Sec. 19	40,028.95
Trespass, Revised Statutes, Title 23, Chapter 7, Sec. 5	805.00
Refunds (salaries and duplicate payments)	1,828.98
Reimbursement for fish stocking from Public Shooting Fund	17,070.00

808,773.94

\$978,904.97

Expenditures

Chapter 43, Laws of 1949, expenditures	\$699,563.08
Cash balance, July 1, 1950	\$279,341.89
Requisitions outstanding against this balance 1948-49	1,151.00
Requisitions outstanding against this balance 1949-50	82,400.92
Account balance, July 1, 1950	\$195,789.97

ANALYSIS OF EXPENDITURES

	Actually Paid	Bills Outstanding	Total
Personal Administration:			
Director's salary	\$1,912.50	.....	\$1,912.50
Director's expenses and car	1,981.53	\$266.77	2,248.30
Councilmen's expenses	3,910.95	370.93	4,281.88
	\$7,804.98	\$637.70	\$8,442.68
Maintenance:			
Carpenter and helper wages	\$5,445.00	.....	\$5,445.00
Carpenter and helper expenses ..	802.79	\$41.12	843.91
	\$6,247.79	\$41.12	\$6,288.91
Office:			
Wages	\$29,607.55	.....	\$29,607.55
Rent	5,000.00	.....	5,000.00
	\$34,607.55	.....	\$34,607.55
Public Relations:			
Director's wages and secretary ..	\$5,040.00	.....	\$5,040.00
Director's maintenance of cars ...	517.18	\$9.20	526.38
Director's expenses	1,234.90	2,001.07	3,235.97
Publicity wages	1,140.00	.....	1,140.00
Fair exhibits	109.42	.....	109.42
Replacement of car	760.00	.....	760.00
Wildlife Bulletin	2,363.39	501.83	2,865.22
	\$11,164.89	\$2,512.10	\$13,676.99
Coastal Patrol:			
Wages	\$11,818.62	.....	\$11,818.62
Expenses	2,668.55	\$342.44	3,010.99
Maintenance of boats	3,844.40	534.94	4,379.34
Gas and oil	4,019.80	922.86	4,942.66
Replacement—boats and motor ..	1,419.82	.....	1,419.82
Replacement—car	955.00	.....	955.00
	\$24,726.19	\$1,800.24	\$26,526.43

	Actually Paid	Bills Outstanding	Total
Warden's Service:			
Salaries	\$122,557.00	.....	\$122,557.00
Expenses	1,298.34	\$92.09	1,390.43
Uniforms	208.25	1,604.75	1,813.00
Rents	1,153.73	1,054.50	2,208.23
Assistance in deer woods	1,576.50	.....	1,576.50
Tires and tubes	1,462.79	274.78	1,737.57
Gas and oil—vehicles	11,295.59	2,494.89	13,790.48
Gas and oil—boats	75.92	20.57	96.49
Maintenance of boats	445.57	110.34	555.91
Maintenance of vehicles	6,587.35	986.58	7,573.93
Replacement of autos	17,750.95	.....	17,750.95
Replacement of boats and motors .....	.....	.....	.....
Telephone	3,792.51	525.88	4,318.39
Medical expenses	935.95	174.25	1,110.20
Compensation	3,016.61	.....	3,016.61
	<u>\$172,157.06</u>	<u>\$7,338.63</u>	<u>\$179,495.69</u>
Predator Control:			
Wages	\$13,680.00	.....	\$13,680.00
Maintenance of cars	2,868.74	\$325.85	3,194.59
Other expenses	380.70	171.91	552.61
	<u>\$16,929.44</u>	<u>\$497.76</u>	<u>\$17,427.20</u>
Fish Distribution and Netting:			
Wages	\$15,946.00	\$63.00	\$16,009.00
Maintenance of trucks and cars..	2,172.09	399.88	2,571.97
Replacement of trucks and cars..	.....	.....	.....
Other expenses	1,752.79	232.82	1,985.61
Medical expenses	358.20	.....	358.20
New boats	248.00	.....	248.00
	<u>\$20,477.08</u>	<u>\$695.70</u>	<u>\$21,172.78</u>
Fish Hatchery:			
Wages	\$61,393.12	.....	\$61,393.12
Food	78,976.47	\$14,946.82	93,923.29
Medical expenses	69.00	4.00	73.00
Other expenses	25,185.28	8,794.07	33,979.35
Surveying .....	.....	1,151.00	1,151.00
Lake survey expenses	10,104.19	1,157.39	11,261.58
	<u>\$175,728.06</u>	<u>\$26,053.28</u>	<u>\$201,781.34</u>
Forked River Farm:			
Wages	\$18,543.00	\$150.00	\$18,693.00
Food	10,100.00	5,628.00	15,728.00
Medical expenses	41.00	.....	41.00
Other expenses	6,771.13	4,458.04	11,229.17
	<u>\$35,455.13</u>	<u>\$10,236.04</u>	<u>\$45,691.17</u>

	Actually Paid	Bills Outstanding	Total
Rockport Farm:			
Wages	\$15,430.47	\$130.00	\$15,560.47
Food	15,006.99	.....	15,006.99
Medical expenses	163.50	.....	163.50
Other expenses	4,791.79	662.91	5,454.70
Brooder house	10,529.50	9,470.50	20,000.00
	<u>\$45,922.25</u>	<u>\$10,263.41</u>	<u>\$56,185.66</u>
Quail Farm:			
Wages	\$14,918.36	\$75.00	\$14,993.36
Food	4,062.62	323.79	4,386.41
Medical expenses	29.00	.....	29.00
Other expenses	8,330.85	2,067.61	10,389.46
	<u>\$27,340.83</u>	<u>\$2,466.40</u>	<u>\$29,807.23</u>
General Administration:			
Printing, stationery, etc.	\$16,654.96	\$419.32	\$17,074.28
Postage	2,120.00	95.04	2,215.04
Telephone and telegraph	580.30	288.43	868.73
Insurance .....	.....	7,178.50	7,178.50
Court costs	228.00	.....	228.00
Miscellaneous expenses	1,364.56	54.75	1,419.31
Refunds on fines, license fees ...	2,437.45	.....	2,437.45
	<u>\$23,385.27</u>	<u>\$8,036.04</u>	<u>\$31,421.31</u>
Rutgers University program	\$10,000.00	.....	\$10,000.00
Deer damage	7,277.00	\$12,723.00	20,000.00
Purchase of game from outside sources	45,095.25	.....	45,095.25
Chick program	35,244.31	250.50	35,494.81
	<u>\$699,563.08</u>	<u>\$83,551.92</u>	<u>\$783,115.00</u>

FURTHER STATEMENT ON DISPOSITION OF RECEIPTS

GENERAL FUND—1949-50

FISHING ACCOUNT

Cash balance, July 1, 1949	\$80,630.34
Bills paid for 1948-49	19,070.68
	<u>\$61,559.66</u>
Receipts for 1949-50	346,502.35
	<u>\$408,062.01</u>
Expenditures:	
Fish hatchery	\$165,623.87
Distribution and netting	20,477.08
Lake survey	10,104.19
Warden's service (44%)	75,749.10
Rutgers program	10,000.00
	<u>281,954.24</u>
Cash balance, July 1, 1950	\$126,107.77
Bills outstanding	35,709.95
	<u>\$90,397.82</u>
Account balance	\$90,397.82

HUNTING ACCOUNT

Cash balance, July 1, 1949	\$125,087.64
Bills paid for 1948-49	17,144.24
	<hr/>
	\$107,943.40
Receipts for 1949-50	354,577.55
	<hr/>
	\$462,520.95
Expenditures:	
Forked River Farm	\$35,455.13
Rockport Farm	45,922.25
Quail Farm	27,340.83
Purchase of game	45,095.25
Chick program	35,244.31
Deer damage	7,277.00
Predator control	16,929.44
Warden's service (56%)	96,407.96
	<hr/>
	\$309,672.17
Cash balance	\$152,848.78
Bills outstanding	47,841.97
	<hr/>
Account balance	\$105,006.81

RECEIPTS FROM OTHER SOURCES

Cash balance, July 1, 1949	\$1,610.42
Bills paid for 1948-49	982.45
	<hr/>
	\$627.97
Receipts	107,694.04
	<hr/>
	\$108,322.01
Coastal patrol	\$24,726.19
Administration	83,210.48
	<hr/>
	\$107,936.67
Cash balance	385.34
Total balance	195,789.97

PUBLIC SHOOTING AND FISHING GROUNDS FUND

Supplement to 1948-49 Report

Income

Cash balance as per last printed report	\$99,783.44
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Expenditures

Bills paid after June 30, 1949, for:	
Federal aid, 1948-49	\$1,324.60
Other bills, 1948-49	4,687.28
	<hr/>
	6,011.88
To balance	93,771.56
	<hr/>
	\$99,783.44

REPORT FOR 1949-50

Income

Balance July 1, 1949	\$93,771.56	
Receipts from U. S. for Federal Aid, 1948-49	\$18,431.80	
Receipts from U. S. for Federal Aid, 1949-50	14,002.12	
Receipts from resident hunting licenses	81,697.20	
Receipts from resident fishing licenses	26,207.75	
Rents	2,481.00	
Recoveries	888.61	
Transfer for deer damage	7,277.00	
Insurance refund	100.00	
	151,085.48	
		\$244,857.04

Expenditures *

Expenditures		\$141,239.65
Cash balance, July 1, 1950		\$103,617.39
Requisitions outstanding, 1948-49	\$1,760.00	
Requisitions outstanding, 1949-50	23,524.83	
		25,284.83
Account balance, July 1, 1950		\$78,332.56

* Analysis of Expenditures

	Actually Paid	Bills Outstanding	Total
Purchase of game	\$5,069.85	.....	\$5,069.85
Reimbursement for fish	17,070.00	.....	17,070.00
Administrative:			
Salaries	3,500.00	.....	3,500.00
Office supplies	53.87	.....	53.87
Telephone	85.30	.....	85.30
Insurance	1,390.05	.....	1,390.05
Miscellaneous	19.58	.....	19.58
	\$5,048.80	.....	\$5,048.80
Game Management:			
Salaries	\$42,121.34	.....	\$42,121.34
Fuel, light and power	458.58	\$33.47	492.05
Office supplies	5.61	.....	5.61
Printing	223.40	.....	223.40
Gasoline and oil	4,358.42	1,770.24	6,128.66
Tires and tubes	1,017.19	82.90	1,100.09
Other vehicular maintenance	230.09	11.89	241.98
Replace motor vehicles	2,010.00	.....	2,010.00

	Actually Paid	Bills Outstanding	Total
Game Management (Con.):			
Other materials and supplies	328.24	135.00	463.24
Operating materials and supplies	975.85	3,186.23	4,162.08
Seeds, shrubs, etc.	1,768.15	1,584.00	3,352.15
Fertilizer, lime, etc.	911.85	.....	911.85
Replace other equipment	3,375.00	.....	3,375.00
Travel expense	1,274.32	2.70	1,277.02
Telephone	1,064.78	36.00	1,100.78
Garage rent	60.00	.....	60.00
Freight	33.30	.....	33.30
Miscellaneous expenses	107.33	.....	107.33
Repairs to buildings	3,234.80	574.09	3,808.89
Repairs to automobiles	2,247.86	137.71	2,385.57
Repairs to other equipment	911.96	304.52	1,216.48
New equipment	280.23	52.00	332.23
	<u>\$66,998.30</u>	<u>\$7,910.75</u>	<u>\$74,909.05</u>

Deer Management:			
Salaries	\$7,808.00	.....	\$7,808.00
Gasoline and oil	564.06	\$82.90	646.96
Tires and tubes	51.58	.....	51.58
Other vehicular maintenance	10.40	.....	10.40
Operating materials and supplies	3,257.12	367.31	3,624.43
Travel expense	57.30	.....	57.30
Telephone	10.75	.....	10.75
Repairs to automobiles	113.22	2.25	115.47
Repairs to other equipment	6.25	213.47	219.72
New motor vehicles	1,416.17	.....	1,416.17
	<u>\$13,294.85</u>	<u>\$665.93</u>	<u>\$13,960.78</u>

Expenses Under Federal Aid-to- Wildlife Act:			
Salaries	\$21,389.86	\$40.60	\$21,430.46
Heat, light and power	83.16	.....	83.16
Office supplies	26.32	49.43	75.75
Printing	271.13	5.00	276.13
Gasoline and oil	1,328.17	408.08	1,736.25
Tires and tubes	158.28	28.74	187.02
Replace motor vehicles . . . . .	.....	750.00	750.00
Other vehicular maintenance	431.64	23.78	455.42
Operating materials and supplies	2,555.87	11,727.45	14,283.32
Seeds, shrubs, etc.	1,139.95	.....	1,139.95
Fertilizer and lime	20.00	488.25	508.25
Travel expense	2,555.17	156.80	2,711.97
Telephone	60.29	.....	60.29
Miscellaneous expenses	208.58	.....	208.58
Repairs to automobiles	1,165.23	60.38	1,225.61
Repairs to other equipment	1,491.47	9.64	1,501.11
New office equipment	91.16	.....	91.16
New equipment	145.75	1,200.00	1,345.75
	<u>\$33,122.03</u>	<u>\$14,948.15</u>	<u>\$48,070.18</u>

Deer Management Under Federal Aid-to-Wildlife Act:	Actually Paid	Bills Outstanding	Total
Office supplies	\$1.40	.....	\$1.40
Operating materials and supplies	305.62	.....	305.62
Travel expense	246.65	.....	246.65
Telephone	77.75	.....	77.75
Repair equipment	4.40	.....	4.40
	<u>\$635.82</u>	<u>.....</u>	<u>\$635.82</u>
Total expenditures Public Shooting and Fishing Grounds	\$107,481.80	\$8,576.68	\$116,058.48
Total expenditures Federal Aid	33,757.85	14,948.15	48,706.00
	<u>\$141,239.65</u>	<u>\$23,524.83</u>	<u>\$164,764.48</u>

FURTHER STATEMENT ON DISPOSITION OF RECEIPTS

PUBLIC SHOOTING AND FISHING GROUNDS-1949-50

FISHING ACCOUNT

Cash balance, July 1, 1949	\$36,200.52
Bills paid for 1948-49	2,557.24
	<u>\$33,643.28</u>
Receipts from fishing licenses	26,207.75
	<u>\$59,851.03</u>
Expenditures:	
Purchase of fish	\$17,070.00
Administration (44%)	2,221.47
Game management (10%)	6,699.83
	<u>25,991.30</u>
Cash balance, July 1, 1950	\$33,859.73

HUNTING ACCOUNT

Cash balance, July 1, 1949	\$63,582.92
Bills paid for 1948-49	3,454.64
	<u>\$60,128.28</u>
Receipts from hunting licenses	\$81,697.20
Receipts from general for deer management ..	7,277.00
Receipts from Federal Aid	32,433.92
Receipts from other sources	3,469.61
	<u>124,877.73</u>
	<u>\$185,006.01</u>
Expenditures:	
Game management (90%)	\$60,298.47
Deer management	13,294.85
Federal Aid	33,757.85
Purchase of game	5,069.85
Administration (56%)	2,827.33
	<u>115,248.35</u>
Cash balance, July 1, 1950	\$69,757.66
Bills outstanding	25,284.83
	<u>\$44,472.83</u>
Account balance	\$44,472.83
Total balance	<u>78,332.56</u>

STOCKING OF NEW JERSEY WATERS

By the New Jersey Division of Fish and Game
For the Fiscal Year Ending June 30, 1950

Total Number of Fish Planted from All Sources, 1,272,557

KEY TO ABBREVIATIONS

Bt	Brook Trout	Yper	Yellow Perch
Brnt	Brown Trout	Wper	White Perch
Rt	Rainbow Trout	Pic	Pickereel
Lmb	Large Mouth Bass	S	Sunfish
Smb	Small Mouth Bass	C	Catfish
Bs	Bluegill Sunfish	Misc	Miscellaneous
Cb	Calico Bass	Su	Sucker
Sh	Shiner	T	Tadpole

Size

a	Adult
fg	Fingerling

ATLANTIC COUNTY

Bargaintown Lake—Bargaintown—2,500 Lmbfg.
Hammonton Lake—Hammonton—3,500 Lmbfg, 1,450Rta, 1,050 Brnta.

BERGEN COUNTY

Babbits Brook—Wyckoff—850 Bta.
Bear Brook—Woodcliff Lake—1,750 Bta, 250 Brnta, 500 Rta.
Boiling Spring Brook—Old Tappan—250 Bta, 250 Rta.
Calliary Pond—Camp Gow—100 Lmbfg, 1,500 Bsfg.
Cooper's Lake—Bergenfield—1,725 Sa, 1,725 Ypera.
McGees Pond—Haworth—2,500 Wpera.
Municipal Pond—Bergenfield—525 Ypera, 525 Sa.
Municipal Pond—Ridgefield Park—50 Lmbfg, 1,000 Bsfg.
Municipal Pond—Northvale—100 Lmbfg, 1,500 Bsfg.
Municipal Pond—Teaneck—750 Ypera, 750 Sa.
Musquasink Creek—Washington Township—250 Bta.
Norwood Brook—Norwood—125 Bta, 125 Rta.
Pascack Creek—Westwood—3,550 Bta, 750 Brnta, 500 Rta.
Pond Brook—Wyckoff—75 Bta, 75 Rta.
Ramapo River—Oakland—200 Lmbfg, 2,250 Bta, 2,650 Rta, 4,800 Brnta.
Saddle River—Saddle River—3,000 Bta, 500 Brnta, 500 Rta.
Silver Lake—Mahwah—100 Lmbfg, 1,500 Bsfg.
Tellers Brook—Montvale—250 Bta.
Tenekill Creek—Closter—1,000 Bta, 500 Rta.
Valentine Brook—Allendale—1,750 Bta.
Veteran's Pond—Ridgefield Park—50 Lmbfg, 1,000 Bsfg.
Waldwick Lake—Waldwick—4,400 Sa, 2 Cba, 5 Ca, 410 Pica, 1,075 Ypera,
200 Lmbfg, 2,000 Bsfg, 12,500 Wpera.
Willow Lake—Little Ferry—1,500 Rta, 250 Bta, 250 Brnta.
Winters Pond—Mahwah—1,500 Bsfg.

BURLINGTON COUNTY

Atsion Lake—Atsion—1,500 Lmbfg.
Browns Mills Lake—Browns Mills—1,500 Lmbfg.
Moorestown Lake—Moorestown—1,000 Lmbfg, 1,000 Rta.
Mt. Holly Lake—Mt. Holly—500 Lmbfg.
Rancocas Creek—Unionville—1,000 Lmbfg.
Sylvan Lake—Burlington—500 Lmbfg, 1,250 Rta, 250 Brnta.

CAMDEN COUNTY

Atco Lake—Atco—500 Lmbfg, 3,500 Bsf.
Back Run—Berlin—200 Bta.
Big Lebanon Run—Turnersville—1,595 Bta, 715 Brnta, 40 Rta.
Blackwood Lake—Blackwood—500 Lmbfg, 3,500 Bsf.
Bottomley's Lake—Clementon—500 Lmbfg.
Clementon Lake—Clementon—500 Lmbfg, 3,500 Bsf.
Columbia Lake—Maple Shade—600 Rta, 275 Brnta, 75 Bta.
Cooper Park Lake—Cooper Park—3,500 Lmbfg, 28,000 Bsf.
Ellisburg Creek—Ellisburg—1,090 Bta, 180 Brnta, 30 Rta.
Evans Lake—Haddonfield—500 Lmbfg, 3,500 Bsf.
Gibbsboro Lake—Gibbsboro—500 Lmbfg.
Grenloch Lake—Grenloch—500 Lmbfg, 3,500 Bsf.
Laurel Lake—Laurel Springs—500 Lmbfg, 3,500 Bsf.
Munn's Lake—Haddonfield—400 Rta, 200 Brnta.
New Brooklyn Lake—New Brooklyn—3,500 Bsf.
Pillings Lake—Clementon—500 Lmbfg, 3,500 Bsf.
Rowands Pond—Clementon—1,050 Rta, 575 Brnta, 125 Bta.
Silver Lake—Clementon—3,500 Bsf.
Square Circle Lake—Near Gibbsboro—3,500 Bsf, 50 Rta, 625 Bta, 575 Brnta.
Woodcrest Creek—Woodcrest—390 Bta, 180 Brnta, 30 Rta.

CAPE MAY COUNTY

Alms House Lake—Cape May Court House—1,000 Lmbfg.
Dennisville Lake—Dennisville—1,000 Lmbfg.
East Creek Lake—Eldora—2,000 Lmbfg.
Ludlam's Lake—Dennisville—1,000 Lmbfg.
Nummy Lake—Belleplain—2,000 Lmbfg.
Rio Grande Water Works Pond—Rio Grande—1,000 Lmbfg.

CUMBERLAND COUNTY

Cedarville Lake—Cedarville—1,000 Lmbfg.
Clark Pond—Bridgeton—500 Lmbfg.
East Creek Lake—Eldora—500 Lmbfg, 800 Lmba, 750 Bsa, 7,450 Sh.
Laurel Lake—Buckshutem—1,000 Lmbfg.
Manantico Stream—Near Millville—2,250 Bta.
Manaway Stream—Newfield—750 Bta.
Mary Elmer Lake—Bridgeton—500 Lmbfg, 925 Cba, 750 Bsa, 7,450 Sh,
631 Ypera, 750 Wpera, 26 Pica, 1 Lmba.
Shaws Mill Pond—Millville—500 Lmbfg.
Sunset Lake—Bridgeton—1,000 Lmbfg.
Union Lake—Millville—2,000 Lmbfg.

ESSEX COUNTY

Branch Brook Park Lake—Newark—3,000 Lmbfg, 20 Cba, 18 Pica, 2 Lmba, 2,000 Ypera, 2,000 Misc.
Clark's Pond—Bloomfield—1,000 Lmbfg, 1,025 Rta, 700 Brnta, 25 Bta, 475 Sa, 450 Ypera.
Crystal Lake—West Orange—1,000 Lmbfg, 450 Sa, 450 Ypera.
Diamond Mill Pond—So. Mt. Reservation—1,000 Lmbfg, 1 Pica, 250 Wpera, 1,525 Rta, 250 Misc, 900 Brnta, 25 Bta, 10 Cba, 7 Lmba.
Notch Brook—Bloomfield—250 Bta.
Verona Lake—Verona—1,000 Lmbfg, 1,050 Rta, 1,200 Brnta, 50 Bta.
Weequahic Park Lake—Newark—157 Cba, 15 Pica, 12 Lmba, 7,500 Wpera, 2,500 Misc, 3,000 Lmbfg.

GLOUCESTER COUNTY

Almonesson Lake—Almonesson—1,200 Lmbfg, 250 Bta, 1,000 Rta, 250 Brnta.
Iona Lake—Iona—1,100 Lmbfg, 1,000 Rta.
Oberst Lake—Glassboro—1,000 Lmbfg, 1,000 Rta, 250 Bta, 250 Brnta.
Swedesboro Lake—Swedesboro—1,500 Lmbfg.
Wilson Lake—Clayton—1,200 Lmbfg.

HUDSON COUNTY

Hudson County Park Lake—North Bergen—250 Bta, 250 Brnta, 1,500 Rta.

HUNTERDON COUNTY

Alexauken Creek—Mt. Airy—700 Bta.
Beaty's Brook—Penwell—200 Bta, 100 Rta.
Beaver Brook—Annandale—300 Bta, 200 Rta.
Black Brook—Public Shooting Grounds—475 Bta, 425 Rta.
Boulder Hill Brook—Boulder Hill—400 Bta.
Capoulin Creek—Pittstown—500 Bta, 400 Rta.
Cold Brook—Whitehouse—100 Bta, 100 Rta.
Cramers Brook—Allerton—50 Bta, 50 Rta.
Everittstown Brook—Everittstown—225 Bta.
Frenchtown Brook—Frenchtown—500 Bta.
Grandin Brook—Grandin—100 Bta.
Guinea Hollow Brook—Mountainville—500 Bta.
Jutland Brook—Grandin—250 Bta.
Little York Brook—Little York—550 Bta, 50 Brnta.
Locatong Creek—Milltown—1,000 Bta.
Milford Creek—Milford—250 Bta, 50 Brnta.
Mt. Pleasant Brook—Mt. Pleasant—325 Bta.
Mulhockaway Creek—Clinton Tract—1,450 Bta, 250 Brnta, 1,400 Rta
Musconetcong River—Penwell to Bloomsbury—2,500 Bta, 6,175 Brnta, 4,075 Rta.
Neshanic Brook—Reaville—300 Bta, 100 Rta.
Prescott Brook—Round Valley—800 Bta, 100 Brnta, 500 Rta.
Raritan River, South Branch—Lower Valley to Hamden—4,600 Bta, 15,450 Brnta, 7,900 Rta.
Rockaway River—North Branch—Mountainville—1,650 Bta, 100 Brnta.
Rockaway River, South Branch—Lebanon—450 Bta, 100 Brnta, 250 Rta.
Saw Mill Brook—Mountainville—400 Bta.
Spruce Run—Glen Gardner—2,800 Bta, 250 Brnta.
Tetertown Brook—Tetertown—400 Bta, 300 Rta.
Tunnel Brook—West Portal—75 Bta, 125 Rta.
Wickecheoke Run—Prallsville—900 Bta, 300 Rta.

MERCER COUNTY

Assunpink Creek—Lawrence Station—2,175 Bta, 1,975 Brnta, 250 Rta.
Carnegie Lake—Princeton—1,200 Lmbfg.
Doctor's Creek—Allentown—700 Bta.
Etra Pond—Etra—1,200 Lmbfg.
Gropp's Lake—Hamilton Township—1,200 Lmbfg.
Peddie Lake—Hightstown—1,200 Lmbfg.
Stoney Brook—Woodsville—2,925 Bta, 725 Brnta, 250 Rta.
Whitehead's Pond—Hamilton Township—1,200 Lmbfg.

MIDDLESEX COUNTY

Ambrose Brook—Middlesex Borough—575 Bta, 75 Brnta.
Brainerds Brook—Cranbury—250 Bta.
Duhernal Lake—Old Bridge—2,500 Lmbfg, 5,000 Wpera, 15 Lmba, 100 Cba.
Farrington Lake—Near New Brunswick—2,500 Lmbfg.
Furman's Pond—Sayreville—40 Cba, 380 Ca, 1 Pica, 75 Sa.
Johnson's Park Lake—Highland Park—900 Cba, 200 Wpera, 1,400 Sh,
400 Ypera.
Lawrence Brook—Milltown—250 Bta.
Manalapan Lake—Jamesburg—1,500 Lmbfg.
Manalapan River—Jamesburg—1,500 Bta, 300 Brnta, 100 Rta.
Matchponix Brook—Spotswood—2,800 Bta, 2,000 Brnta, 400 Rta.
Mill Pond—Milltown—400 Sa, 400 Ypera.
Nelson Lake—Piscataway Township—1,000 Lmbfg.
Roosevelt Park Lake—Metuchen—125 Brnta, 1,000 Rta, 375 Bta.
Spotswood Lake—Spotswood—1,500 Lmbfg.
Sucker Brook—Metuchen—250 Bta.
Weston's Mill Pond—Near New Brunswick—1,000 Lmbfg.

MONMOUTH COUNTY

Allentown Pond—Allentown—1,000 Lmbfg, 4,000 Bsfq.
Big Brook—Marlboro—150 Bta.
Buck Mills Pond—Freehold—300 Bta, 425 Rta.
Como Lake—Como—1,000 Lmbfg.
Foo Pond—Red Bank—500 Lmbfg.
Franklin Park Lake—Long Branch—1,000 Lmbfg, 4,000 Bsfq.
Garvey's Pond—Navesink—165 Brnta, 665 Rta.
Hockhocks Brook—Tinton Falls—125 Bta, 125 Rta.
Hop Brook—Holmdel—1,250 Bta.
Imlaystown Pond—Imlaystown—1,000 Lmbfg, 4,000 Bsfq.
Manalapan River—Milhurst—200 Bta.
Manasquan River—Adelphia—1,550 Bta, 1,500 Brnta, 3,250 Rta.
Matchponix Brook—Englishtown—200 Bta.
McGalliard's Brook—Englishtown—200 Bta.
Metedeconk River, North Branch—North of Lakewood—750 Bta, 250
Brnta.
Mingahone Brook—Farmingdale—200 Bta.
Old Mill Pond—Villa Park—125 Bta, 125 Rta.
Osbornes Lake—Bailey's Corner—250 Bta, 575 Rta.
Pine Brook—Tinton Falls—200 Bta.
Shadow Lake—Red Bank—1,000 Lmbfg, 4,000 Bsfq, 915 Rta, 165 Brnta.
Shark River—Hamilton—750 Bta, 250 Brnta.
Spring Lake—Spring Lake—500 Lmbfg, 670 Rta, 170 Brnta.
State Child's Training School Pond—Allaire—4,000 Bsfq.
Sunrise Lake—Cliffwood Beach—4,000 Bsfq.
Sunrise Lake—Red Bank—1,000 Lmbfg, 4,000 Bsfq.
Takanassee Lake—Long Branch—1,000 Lmbfg, 4,000 Bsfq.
Tinton Manor Lake—Lincroft—4,000 Bsfq.

Topenemus Lake—Freehold—900 Rta, 50 Bta, 4,000 Bsf.
Willow Brook—Holmdel—150 Bta.
Wreck Pond Brook, North Branch—Hurley's Mills—200 Bta.
Yellow Brook—Colts Neck—1,000 Bta.

MORRIS COUNTY

Beaver Brook—Lincoln Park—550 Bta.
Beaver Brook—Rockaway—400 Bta.
Black River—Hacklebarney—560 Bta, 900 Brnta, 1,090 Rta.
Brick Yard Pond—Whippany—500 Lmbfg.
Budd Lake—Budd Lake—196 Cba, 783 Lmba, 291 Pica, 7,500 Wpera,
1,500 Misc, 2,000 Lmbfg, 4,065 Ypera, 4,000 Sa.
Bungalow Brook—Schooleys Mt.—550 Bta.
Burnett Brook—Ralston—250 Bta.
Burnham Park Lake—Morristown—500 Rta.
Den Brook—Union Hill—1,000 Bta.
Electric Brook—Schooleys Mt.—300 Bta.
Estling Lake—Denville—1,000 Lmbfg.
Flanders Brook—Flanders—250 Bta.
Green Pond—Newfoundland—3,000 Smbfg, 1,100 Rta, 1,700 Brnta.
Hacklebarney Pond—Hacklebarney—500 Lmbfg.
Hibernia Pond—Hibernia—500 Lmbfg, 3,820 Ypera, 90 Lmba, 3,500 Sa,
71 Pica.
Hibernia Brook—Hibernia—300 Bta.
Hopatcong Lake—Lake Hopatcong—11,000 Wpera, 38 Lmba, 410 Cba.
Hourigan Brook—Hurdtown—300 Bta, 250 Brnta.
Indian Brook—Mendham—1,000 Bta.
Indian Lake—Mendham—1,000 Lmbfg.
Jockey Hollow Brook—Jockey Hollow—250 Bta.
Kikeout Brook—Butler—1,500 Bta, 1,500 Rta.
Ledgewood Brook—Ledgewood—250 Bta.
Longwood Lake—Longwood—6,000 Wpera, 50 Lmba, 230 Cba, 42 Pica,
2,680 Ypera, 2,500 Sa.
Malapardis Brook—Malapardis—250 Bta.
Meriden Brook—Rockaway—300 Bta.
Mill Brook—Centre Grove—1,000 Bta.
Mt. Hope Pond—Mt. Hope—1,000 Rta, 250 Bta, 250 Brnta.
Municipal Pond—Harding Township—57 Ca., 227 Misc.
Musconetcong Lake—Netcong—257 Cba, 4 Pica, 6,300 Wpera, 1,500 Misc,
2,000 Lmbfg, 251 Lmba, 239 Pica, 7,810 Ypera, 7,500 Sa, 200 Ca.
Musconetcong River—Guard Lock to Penwell—5,400 Bta, 9,300 Brnta,
5,250 Rta, 60,000 Tadpoles.
Pequannock River—Newfoundland—800 Rta.
Primrose Brook—Morristown—600 Bta.
Raritan River, South Branch—Y. M. C. A. Camp to Middle Valley—2,600
Bta, 7,500 Brnta, 4,250 Rta.
Reservoir Brook—Brookside—250 Bta.
Rockaway River—Powerville—7,200 Bta, 8,700 Rta, 50 Lmba, 10,050 Brnta,
1,200 Ypera, 1,000 Sa.
Rockaway Park Lake—Rockaway—1,000 Lmbfg.
Rolling Mill Pond—Dover—500 Lmbfg.
Saw Mill Brook—Pequannock—300 Bta, 200 Rta.
Speedwell Lake—Morristown—75 Lmba, 20 Pica, 200 Sa, 200 Ypera, 500
Lmbfg, 6,000 Wpera, 200 Cba, 1,250 Rta, 250 Bta, 250 Brnta.
Splitrock Reservoir—Rockaway Township—6,000 Lmbfg, 2,600 Bsf, 80
Bsa, 200 Sh.
Spring Brook—Malapardis—250 Bta.
Spring Brook—Pompton Plains—100 Bta.
Stickle Brook—Boonton Township—500 Bta.
Stirling Pond—Stirling—500 Rta.

Stoney Brook—Montville—650 Bta.
Tabor Brook—Mt. Tabor—150 Bta, 100 Rta.
Towaco Brook—Towaco—550 Bta.
Troy Brook, Parsippany—250 Bta.
Washington Mill Pond—Wharton—500 Lmbfg.
Washington Valley Brook—Morristown—250 Bta, 200 Brnta.
Wills Brook—Netcong—250 Bta.

OCEAN COUNTY

Barnegat Lake—Forked River—1,000 Lmbfg.
Carasaljo Lake—Lakewood—1,000 Lmbfg.
Deer Head Lake—Forked River—1,000 Lmbfg.
Horican Lake—Lakehurst—2,000 Lmbfg.
Manahawkin Lake—Manahawkin—2,000 Lmbfg.
Metedeconk River, North Branch—Lakewood—500 Bta.
Mill Pond—Forked River—1,000 Lmbfg.
Metedeconk River, South Branch—Above Lakewood—900 Brnta, 600 Bta.
Pine Lake—Toms River—1,000 Lmbfg.
Pohatcong Lake—Tuckerton—1,000 Lmbfg.
Toms River, North Branch—Quail Farm—1,000 Bta.

PASSAIC COUNTY

Barbours Pond—Paterson—1,000 Lmbfg, 4,000 Wpera, 5 Lmba, 75 Cba, 670 Sa, 670 Ypera.
Belchers Creek—West Milford—63 Bta, 62 Rta.
Cooleys Brook—Hewitt—62 Bta, 63 Rta.
Goffle Brook—Hawthorne—250 Bta, 250 Rta.
Greenwood Lake—Hewitt—5,000 Lmbfg, 6,000 Wpera, 25 Lmba, 75 Cba.
Gregory Lake—Clifton—862 Sa, 863 Ypera.
High Mt. Brook—Midvale—75 Bta, 75 Rta.
Hughes Lake—Passaic—300 Sa, 300 Ypera.
Lindy Lake—Macopin—500 Lmbfg, 103 Lmba, 28 Pica, 438 Sa, 437 Ypera.
Memorial Lake—Clifton—750 Sa, 750 Ypera.
Oldhams Pond—North Haledon—500 Rta, 585 Sa, 585 Ypera.
Pequannock River—Smith Mills—1,000 Brnta.
Pompton Lakes—Pompton Lakes—5,000 Lmbfg, 13,500 Wpera, 50 Lmba, 600 Cba.
Pompton River—Pompton Lakes to Pompton Plains—3,000 Bta, 3,100 Rta, 2,900 Brnta.
Ringwood Brook—Ringwood—675 Bta, 375 Rta, 300 Brnta.
Singac Brook—Mt. View—500 Bta.
Twin Lakes—Pompton—500 Lmbfg.
Wanaque River—Pompton Lakes—Midvale—Hewitt—3,300 Bta, 2,800 Rta, 3,550 Brnta.

SALEM COUNTY

Alloway Lake—Alloway—1,000 Cba, 300 Wpera, 300 Ca, 6 Lmba, 150 Sa, 1,000 Lmbfg.
Ballinger's Mill Lake—Aldine—500 Lmbfg.
Camp Karney Lake—Richmontown—500 Lmbfg.
Camp Edge Lake—Alloway—250 Lmbfg.
Camp Roosevelt Lake—Aldine—250 Lmbfg.
Cocked Hat Pond—Alloway—1,000 Rta.
Hancock's Sandwash Pond—Salem—4,000 Sh, 4,000 Cba, 2,000 Bsa, 1,000 Ca, 1,000 Wpera, 200 Ypera.
Memorial Lake—Woodstown—500 Lmbfg.
Parvin Lake—Elmer—1,000 Lmbfg.
Penns Grove Sandwash Pond—Penns Grove—500 Rta.

Rainbow Lake—Near Norma—500 Lmbfg.
Salem Canal—Deep Water Point—1,000 Lmbfg.
Schadler's Sandwash Pond—Penns Grove—3,000 Sh, 3,000 Cba, 1,500 Bsa,
1,000 Ca, 500 Wpera, 100 Ypera, 500 Rta.
Willow Grove Lake—Willow Grove—500 Lmbfg.

SOMERSET COUNTY

Harrison Brook—Liberty Corner—500 Bta.
Lamington River, North Branch—Burnt Mills—400 Rta.
Lindbury's Pond—Bernardsville—50 Su, 2 Rta, 62 Lmba, 325 Misc.
Middlebrook—Springdale—400 Bta.
Passaic River—Basking Ridge—2,250 Bta, 1,200 Brnta, 300 Rta.
Peapack Brook—Gladstone—500 Bta.
Raritan River, North Branch—Far Hills—2,300 Bta, 1,050 Rta, 3,900 Brnta.
Raritan River, South Branch—Neshanic Station—1,000 Rta, 500 Brnta.
Rock Brook—Zion—500 Bta, 500 Rta.

SUSSEX COUNTY

Alms House Brook—Myrtle Grove—125 Bta, 125 Rta.
Andover Jc. Brook—Andover Jc.—250 Bta, 250 Rta.
Bear Pond—Lake Hopatcong—1,000 Lmbfg.
Beaver Run Brook—Beaver Run—100 Bta, 100 Rta.
Big Flat Brook, Upper—High Point Park—3,500 Bta, 1,500 Rta, 2,000
Brnta.
Big Flat Brook, Lower—Haney's Mills—4,600 Rta, 22,150 Brnta, 6,950 Bta.
Black Brook—Beaver Lake—500 Bta, 500 Rta.
Catfish Pond—Stillwater—250 Ca, 5,000 Sa, 1,000 Su, 1 Pica.
Clove Lake—Sussex—500 Lmbfg, 10,000 Ca, 12,500 Sa, 12,500 Sh.
Clove Brook—Sussex—3,200 Bta, 800 Brnta.
Cranberry Lake—Cranberry Lake—20 Lmba, 100 Cba, 1 Pica, 1,000
Lmbfg, 7,000 Wpera.
Culvers Lake Brook—Branchville—325 Bta, 125 Rta, 50 Brnta.
Culvers Lake—Culvers Lake—2,000 Ca, 1,000 Lmbfg, 6,000 Wpera, 25
Lmba, 200 Cba.
Dark Moon Brook—Johnsonburg—125 Bta, 125 Rta.
Dragon Brook—Cranberry Lake—250 Bta, 250 Rta.
Fairview Lake—Near Hardwick—500 Lmbfg.
Frenche's Pond—Waterloo—500 Lmbfg, 5,000 Ca, 1,500 Sa, 1,500 Sh.
Gardner's Pond—Andover—500 Lmbfg.
Glen Brook—Stillwater—100 Bta, 100 Rta.
Glenwood Brook—Glenwood—125 Bta, 125 Rta.
Grinnell Lake—Monroe—500 Lmbfg.
Hopatcong Lake—Lake Hopatcong—3,000 Smbfg.
Hunts Lake—Yellow Frame—1,000 Lmbfg.
Hiff Lake—Andover—500 Lmbfg.
Kemah Lake—Halsey—2,000 Ca.
Kymers Brook—Andover—125 Bta, 125 Rta.
Lackawanna Lake—Andover—215 Pica, 69 Lmba, 1,575 Misc, 15 Ca.
Lenape Lake—Andover—500 Lmbfg.
Little Flat Brook—Layton—2,250 Bta, 750 Rta, 1,000 Brnta.
Lubbers Run—Cranberry Lake—500 Bta, 375 Rta, 125 Brnta.
Madeline Mulford Lake—Stokes State Forest—400 Rta.
McMickles Pond—Andover—250 Rta, 125 Bta, 125 Brnta.
McNeillies Pond—Branchville—28,000 Sa, 1,000 Ca, 1,000 Su.
Mill Brook—Montague—100 Bta, 200 Rta.
Morris Pond—Fredon—250 Rta.
Mud Pond—Near Ogdensburg—315 Lmbfg.
Musconetcong Lake—Stanhope—46 Pica, 75 Ca, 700 S, 50 Sa, 50 Ypera,
1,000 Lmbfg.

Musconetcong River—Fountain to Forbes—475 Bta, 1,725 Rta, 2,550 Brnta.
 Neldon Brook—Above Swartswood—125 Bta, 125 Rta.
 Oquittunk Lake—Stokes State Forest—1,600 Rta, 1,100 Brnta.
 Paddock Brook—Stockholm—50 Bta, 50 Rta.
 Panther Lake—Andover—500 Lmbfg.
 Papakating Creek—Sussex—950 Bta, 800 Brnta, 250 Rta.
 Papakating Creek, West Branch—Sussex—750 Bta, 250 Rta.
 Paulinskill Lake—Swartswood—1,000 Lmbfg.
 Paulinskill River—Lafayette to Stillwater—2,800 Bta, 5,200 Brnta, 1,750 Rta.
 Pequest River—Springdale to Huntsville—1,000 Bta, 500 Rta, 500 Brnta.
 Pond Brook—Middleville—150 Bta, 150 Rta.
 Quarry Brook—Quarryville—250 Bta, 250 Rta.
 Quicks Pond—North of Swartswood—500 Lmbfg.
 Roy's Spring Brook—Stillwater—100 Bta, 100 Rta.
 Saw Mill Brook—High Point Park—2,500 Bta, 500 Brnta.
 Saw Mill Lake—High Point Park—1,500 Rta, 1,500 Brnta.
 Shimers Brook—Montague Township—200 Bta, 50 Rta.
 Silver Lake—Hardystown Township—1,000 Lmbfg.
 Sparta Glen Brook—Sparta Glen—200 Bta, 200 Rta.
 Sparta Jc. Brook—Sparta Jc.—125 Bta, 125 Rta.
 Steenykill Lake—High Point Park—500 Lmbfg.
 Stoney Brook—Stokes State Forest—100 Bta, 50 Rta.
 Swartswood Lake, Big—Swartswood—2,000 Ca, 3,000 Lmbfg, 6,000 Wpera, 10 Lmba, 150 Cba.
 Swartswood Lake, Little—Swartswood—1,000 Lmbfg.
 Tar Hill Brook—Tar Hill—125 Bta, 125 Rta.
 Trout Brook—Hamburg—275 Bta, 275 Rta.
 Tuttle's Corner Brook—Tuttle's Corner—200 Bta, 100 Rta.
 Wallkill River—Sparta to Franklin—3,500 Bta, 1,500 Rta, 1,000 Brnta.
 Wapalanna Lake—Stokes State Forest—1,000 Rta, 900 Brnta.
 Wawayanda Lake—Andover Jc.—1,500 Lmbfg.

UNION COUNTY

American Felt Pond—Clark Township—500 Lmbfg.
 Ash Brook—Clark Township—250 Bta.
 Briant's Pond—Summit—500 Lmbfg.
 Cedar Brook Park Lake—Plainfield—250 Lmbfg.
 Echo Lakes—Mountainside—2,000 Lmbfg.
 Kenilworth Lake—Kenilworth—250 Lmbfg.
 Milton Lake—Rahway—250 Lmbfg.
 Nomehegan Lake—Cranford—250 Lmbfg.
 Rahway Park Lake—Rahway—250 Lmbfg.
 Rahway River—Springfield—2,150 Bta, 2,600 Brnta, 2,800 Rta.
 Seeley's Pond—New Providence—1,500 Lmbfg.
 Surprise Lake—Mountainside—1,500 Lmbfg.
 Tomaques Lake—Westfield—250 Lmbfg.
 Warinanco Lake—Roselle—500 Lmbfg.

WARREN COUNTY

Bass Lake—Blairstown—350 Ca, 5,000 Sa, 1,000 Su.
 Bear Creek—Johnsonburg—300 Bta, 150 Brnta, 150 Rta.
 Beaver Brook—Hope—825 Bta, 150 Rta, 1,125 Brnta.
 Blair's Creek—Blairstown—1,125 Bta, 375 Rta, 250 Brnta.
 Buckaloo Swamp Brook—Hope—275 Bta, 150 Rta, 125 Brnta.
 Cedar Lake—Blairstown—1,000 Lmbfg, 1,000 Rta, 300 Brnta.
 Columbia Lake—Columbia—2,000 Lmbfg, 38,000 Ca, 1,000 Su, 6 Pica.
 Dark Moon Brook—Johnsonburg—250 Bta, 150 Rta, 100 Brnta.
 Delawanna Creek—Delaware—600 Bta, 300 Brnta.

Furnace Brook—Oxford—850 Bta.
Guard Lock—Saxton Falls—6,500 Ca, 5,000 Sa, 5,000 Sh.
Ingersoll Dam—Lowe's Hollow—1,000 Lmbfg.
Jacksonburg Brook—Jacksonburg—1,000 Bta, 500 Rta, 250 Brnta.
Lopatcong Creek—Harmony—300 Bta.
Mt. Lake—Buttville—1,000 Lmbfg, 49,000 Ca, 1,250 Su, 4 Pica, 1,500
Wpera, 25 Cba, 700 Brnta, 1,200 Rta.
Musconetcong River—Guard Lock to Penwell—5,550 Bta, 5,550 Rta, 3,700
Brnta.
Paulinskill River—Stillwater to Paulina—2,925 Bta, 2,125 Rta, 12,450
Brnta.
Pequest River—Great Meadows to Belvidere—900 Ca, 35,500 Sa, 1,750 Su,
5,550 Bta, 9,200 Brnta, 1,000 Rta.
Pohatcong Creek—Mt. Bethel to Warren Glen—4,250 Bta, 1,500 Brnta.
Silver Lake—Hope—1,500 Lmbfg, 1,100 Rta, 400 Brnta.
Susquehanna Lake—Blairstown—1,000 Lmbfg, 1,100 Rta, 400 Brnta.
Van Campens Brook—Millbrook—1,425 Bta, 150 Rta, 675 Brnta.
White Lake—Squire's Corner—1,500 Lmbfg, 1,200 Rta, 600 Brnta.
Yards Creek—Hainesburg—875 Bta, 150 Rta, 175 Brnta.











