ANNUAL REPORT

OF THE

New Jersey
Department of Conservation
Division of Fish and Game

For the Fiscal Year
Commencing July 1, 1947
and Ending June 30, 1948

STATE OF NEW JERSEY

DEPARTMENT OF CONSERVATION

DIVISION OF FISH AND GAME

TRENTON

To His Excellency, 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, 1947, to June 30, 1948.

Very respectfully,

ARTHUR F. FORAN, *Chairman,*
FRANK J. VALGENTI, JR.,
HIRAM B. D. BLAUVELT,
MARVIN A. SPAULDING,
HAROLD W. LAAUWE,
W. STEELMAN MATHIS,
HAROLD E. LONGSDORF,
HARRISON COOK,
JOSEPH AYERS,
Council Members.

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

June 30, 1948

ARTHUR F. FORAN, *Chairman*.....Flemington
HIRAM B. D. BLAUVELT.....Oradell
FRANK J. VALGENTI, JR.....Madison
HAROLD W. LAAUWE.....Preakness
W. STEELMAN MATHIS.....Toms River
HAROLD E. LONGSDORF.....Mount Holly
JOSEPH AYERS.....Andover
MARVIN A. SPAULDING.....Trenton
HARRISON COOK.....Margate

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

MALCOLM DUNN, *Superintendent of Game Farm,* Forked River
ROBERT BUNTAIN, *Superintendent of Game Farm,* Hackettstown
CHARLES O. HAYFORD, *Superintendent of Fish Hatchery,* Hackettstown
EDWARD H. ROTH, *Superintendent of Quail Farm,* R. D. No. 3, Lakewood
L. G. MACNAMARA, *Superintendent of Game Management,* Pittstown
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. Brocker ..... Montville
Frank T. Clark ..... Columbia
Oscar S. Clark ..... Vineland
William P. Coffin ..... Somerville
Clifford Cudney ..... Jamesburg
Matthew W. Engels ..... Woodstown
J. Howard Ferry ..... Jersey City
Wesley Gibbs ..... Vincentown
John W. Graham ..... Swedesboro
George E. Groves ..... Bridgeton
Richard K. Hall ..... Audubon
H. Howard Harrison ..... Yardville
J. Lester Hyde ..... Newton
William R. Hutchison ..... Berlin
William J. Jeschke ..... Toms River
Alfred S. Jones ..... Salem
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
Lee F. Shurr ..... Glen Gardner
Thomas L. Spencer ..... Hackensack
Garret Westerveld ..... Paterson
Roy H. Williams ..... Pompton Lakes

FOREWORD

BY

COLONEL ARTHUR F. FORAN, *Chairman*

In an earnest endeavor to try to solve the problem of providing fairly adequate upland game shooting for the sportsmen of New Jersey, the Fish and Game Council made an Herculean effort in 1947 by releasing 73,424 pheasants, 14,925 quail and 33,695 rabbits. And for the fishermen, it stocked about one million fish.

During this period, the fiscal year 1947-48, the Council has acquired 11,543 acres to add to the public hunting and fishing ground areas for the sportsmen of the State. Included in this acreage is the famous Egg Island Tract in upper Delaware Bay, Cumberland County, embracing 4,500 acres of the finest waterfowl nesting and hunting area on the Atlantic Coast. The Council was enabled to procure this valuable addition to the public shooting and fishing grounds through Pittman-Robertson Funds from the Federal Government so that only one quarter of the entire cost of this acquisition was charged against the sportsmen's funds.

By favorable negotiations with the Honorable Stanley Switlik, 30,000 acres in the vicinity of Mr. Switlik's home at Prospertown, New Jersey, have been opened to public shooting without one dollar cost, in return for the Council's declaring a game refuge of 500 acres immediately surrounding Mr. Switlik's home.

The Tuckahoe Project, representing 13,000 acres, has been greatly improved; thousands of waterfowl bred in the nesting area this year, tremendously increasing the population of all waterfowl on this tract.

The chain of 11 lakes at Colliers Mills has been improved and already hundreds of New Jersey citizens are taking advantage of this great recreational center for both hunting and fishing.

At old Lake Success in Jackson Township, Ocean County, a large dam is being restored with Pittman-Robertson Funds. On completion, the lake will furnish a large area of water suitable for bathing, fishing and hunting

It is important to note that favorable progress has been made in habitat improvement on privately owned farmlands of Northern New Jersey. This has been accomplished in co-operation with the Soil Conservation Service, County Agricultural Agents, and farmers. In addition, the bulk of this improved acreage has been opened to hunters' utilization by a plan of registered hunting, without cost to the sportsmen. This co-operation between the Fish and Game Division, farmer, sportsman, and other agencies, not only has improved public relations, but is the best method by which wildlife can be increased.

The brief summation above presents a most comprehensive picture of accomplishment by the Council during the year 1947-48, of which the Council and the sportsmen of New Jersey may feel justly proud. Future generations of sportsmen may look back on the results of this year with a feeling of great gratitude and satisfaction for the foresight of those responsible for the achievements during this period.

SUMMARY OF ACTIVITIES 1947-1948

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, 1947, and ending June 30, 1948.

FISH AND GAME LIBERATION

Pheasants—73,424, of which number 20,916 were propagated and distributed from State-owned farms; 44,012 purchased from licensed dealers; 8,496 raised to adult stage by 4-H Clubs and others from day-old chicks hatched at State farms.

Quail—14,925, all raised at the State Quail Farm.

Rabbits—33,695, all purchased from the west.

Fish—909,130 propagated and distributed from the State-owned hatcheries, comprised of the following species; trout over legal size, 444,273; bluegill sunfish, 184,855; large-mouth bass, 224,760; small-mouth bass, 45,242; tadpoles, 10,000.

In addition, 160,436 fish, as listed, were netted from various reservoirs and other closed waters and redistributed; large-mouth bass adults, 7,334; large-mouth bass fingerlings, 115; small-mouth bass adults, 3; calico bass, 8,196; crappie, 6; bluegill sunfish, 675; sunfish, 17,990; yellow perch, 16,450; white perch, 4,426; catfish, 18,900; pickerel, 6,127; pike, 60; shiners, 6,625; miscellaneous, 73,529.

The market value of all fish and game liberated was $645,761.66.

The receipts from resident and nonresident hunters' and anglers' licenses were $647,104.55.

LAW ENFORCEMENT

Prosecutions were brought in 1,454 cases, which is an all-time record number of arrests in this State. Penalties totaling $49,780.25 were collected from the offenders.

LICENSES ISSUED

1946	*1947*
244,431	238,381

1947 DEER KILL

A record legal deer take was made during the new five-day open season with 3,938 being reported killed. This was also the first year for the special bow and arrow deer hunting season, which lasted four days and netted a kill of 6 deer.

LATEST REPORT OF FISH AND GAME TAKEN

The 1946 tabulation of fish and game reported taken indicates a big increase in take during that year since the percentage of licensees reporting their bags remained the same, 30 per cent, although the reported kill was much greater, as can be seen by the following figures:

	1945	*1946*
Deer	2,704	3,043
Pheasants	158,982	211,460
Quail	21,599	26,004
Rabbits	588,083	794,136
Gray Squirrels	200,857	152,624
Grouse	4,446	9,188
Woodcock	3,007	5,856
Ducks	84,482	96,451
Geese	1,944	965
Trout	293,926	607,640
Bass	161,494	246,401
Pickerel	77,796	208,724
Mink	316	420
Muskrat	157,604	204,081

PREDATORY VERMIN CONTROL

The following tabulation shows the predatory animals taken by the sportsmen during 1946, as compared with the previous year:

	1945	*1946*
Cats	6,425	14,866
Weasels	2,484	5,236
Foxes	2,248	2,686

During the fiscal year 63,047 predatory birds and animals were taken by the wardens, wildlife managers, trappers, and holders of special vermin permits.

GAME MANAGEMENT

The restoration of wildlife habitat was extended during the past year to include a program of farm game habitat restoration. The program makes it possible to improve food and cover on the farmlands of the State in co-operation with the farmers, soil conservation districts, county agents and sportsmen. Habitat restoration now consists of three phases, farm game habitat restoration, waterfowl habitat restoration, and habitat restoration in pineland regions of the State.

Research work under Federal Aid-to-Wildlife was extended to include investigational projects in regard to deer, woodcock and rail. Waterfowl investigations under this act were maintained.

A technique for the trapping and moving of deer was developed and 64 animals were trapped and moved to new locations. Similarly, squirrel, rabbit and raccoon were trapped from areas of a high population and reliberated in areas where they can be utilized by the sportsmen.

During the year, three additional areas were secured for public hunting and fishing purposes. They were: Greenwood Forest, Egg Island Marsh and the Gorge Tract.

Development work on State-owned areas showed excellent progress, including dike construction, spillways, planting of aquatic plants for duck foods, planting of lespedeza bicolor, lespedeza cyrtobotrya, and food patch mixtures for upland game, clearing food areas and firebreaks, construction of bridges, co-operative construction of deer fences to protect farm crops, and the testing of repellents to reduce deer damage to farm crops.

LEGISLATION

Chapter 11—Approved April 5, 1948. Provides that whenever by reason of drought the forests of the State are in danger of fires, the Governor shall have the authority to forbid any person to enter said forests, woodlands or open lands, and may suspend or curtail any open season for taking fish, birds or animals therein.

Chapter 35—Approved April 16, 1948. Prohibits absolutely the taking of striped bass with nets of any kind and provides that no person shall take in any one day more than ten striped bass. Striped bass may be taken with hook and line from April 1 to November 30, both dates inclusive.

Chapter 39—Approved April 29, 1948. Authorizes the Fish and Game Council, subject to the approval of the Commissioner of Conservation, in any case in which the lands of the State are closed by the Governor's proclamation in times of drought, to set up a new open season or extend an open season which has been suspended or curtailed thereby.

Chapter 113—Approved June 8, 1948. Provides for the issuance of licenses for commercial pheasant shooting preserves at a fee of $100. Liberation of pheasants prior to May first is required and a minimum subsequent liberation of 500 pheasants must be made during the season provided from September 1 to March 15.

Chapter 123—Approved June 12, 1948. Provides for the revocation of any fishing license or any hunting license upon second conviction for violation of the fish and game laws.

Chapter 144—Approved June 12, 1948. For violation of the law respecting the taking of food fish by otter or beam trawl there is provided a penalty of $200 for the first offense and $500 for the second offense, together with forfeiture of the catch of fish unlawfully caught.

Chapter 154—Approved June 12, 1948. Prohibits the taking or having in possession any female crab with eggs or spawn attached or from which the egg pouch or bunion has been removed, and prohibits the taking or having in possession of any hard blue crab measuring less than 5 inches across the shell from tip to tip of spike, or any peeler or shedder crab measuring less than 3 inches across the back from tip to tip of spike, or soft crab measuring less than 3½ inches across the back from tip to tip of spike, under a penalty of $20.00 for each crab so taken unlawfully.

Chapter 174—Approved June 12, 1948. Prohibits any person operating a fish pound net to retain striped bass regardless of size.

Chapter 175—Approved June 12, 1948. Prohibits persons licensed under the general net law from taking striped bass.

Chapter 200—Approved July 2, 1948. This law eliminates the seizure of a fishing vessel that is apprehended in violation of the law.

Chapter 201—Approved July 2, 1948. Permits employees of the Fish and Game Council to collect bounties for foxes killed by them.

Chapter 209—Approved June 16, 1948. Fixes the trapping season for mink, muskrat and otter from 6:00 P. M. on November 30 to March 15 and permits the actual setting of traps at 3:00 P. M. on the opening day.

Chapter 226—Approved July 16, 1948. Provides that all females above the age of fourteen years must take out a license to fish; also provides that all hunters and trappers in addition to procuring a proper license must wear on their outer clothing a button showing the number of the license issued to them; also provides a special license for hunting with a bow and arrow, resident fee $3.15, nonresident fee $15.50.

Chapter 229—Approved July 16, 1948. Provides penalty of not less than $25.00 nor more than $50.00 and costs for trespassing for the purpose of hunting, fishing or trapping on posted land. The law further provides that any person who, while on posted property, deliberately causes injury to or destroys crops, orchards, fences, signs, sign boards, trespass signs, buildings, live stock or poultry shall be punished by a fine not exceeding $500.00 or imprisonment for six months. Any person violating the provisions of this law shall forfeit his license for a period of two years and upon conviction for a second violation shall permanently forfeit his license.

Chapter 38—Approved April 29, 1948. An act relating to the protection of forests, woodlands and open lands from fire and amending Section 13:9-26 of the Revised Statutes.

Chapter 151—Approved June 12, 1948. An act authorizing the Division of Fish and Game to hold original reports and spoiled license blanks under their control until such time as the State Auditor shall have made an audit of same.

Chapter 263—Approved July 27, 1948. An act authorizing the conveyance of certain lands now the property of the State Department of Conservation, Division of Fish and Game, situate in the Township of Jackson, County of Ocean, and State of New Jersey, in exchange for other lands for the use of the State Department of Conservation, Division of Fish and Game. (Switlik land.)

Chapter 472—Approved October 29, 1948. An act increasing the license fees for net fishing in the inland salt waters of the State and providing uniform regulations on net fishing.

Chapter 448—Approved October 25, 1948. An act relating to the reorganization of the Executive and Administrative Offices, under which act the Division of Fish and Game becomes a Division of a department to be known as "Department of Conservation and Economic Development."

GENERAL

ELECTION OF CHAIRMAN

Colonel Arthur F. Foran, of Flemington, was selected to serve as Chairman during this fiscal year. There was no change in the Council membership, the nine original members continuing to hold office.

WARDENS' SERVICE

There was a considerable turnover in the Wardens' force during this period due to the replacement of two temporaries, Stanley Cook and Arthur Drysdale; one resignation, Herbert Cottrell, and the death of former Warden James L. Kilpatrick on March 20, 1948. Five new appointments were made to the service from the Civil Service eligible list: William Hutchison, William Jeschke, Karl Kristiansen, Thomas Mulvey, and Walter Robinson. A Congressional Medal of Honor holder, Frank E. Sigler, also served as Warden for a few months and then resigned.

PROSECUTIONS

During the fiscal year ending June 30, 1948, prosecutions for violations of the fish and game laws reached an all-time high of 1,454, compared with a low in 1944 of 524. Penalties accruing to the Division from prosecutions totaled $49,780.25, also a record sum. This increase in prosecutions was accomplished without any addition to the number of Wardens and is attributable to the better equipment and heightened morale of the Warden force.

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

	Arrests	*Warnings*
Newman	107	34
Williams	94	16
Graham	86	9
A. Jones	67	34
Groves	66	1
Coffin	64	61
Brocker	58	43
Hutchison	39	4
Spencer	39	15
Engels	38	55
Nolan	33	27
Gibbs	33	2
Mulvey	31	10
Robinson	31	24
Hyde	31	13
Westerveld	31	25
Morrison	30	42
Bakley	29	19
Kilpatrick	29	4
Saxton	28	10
Shurr	28	50
R. Hall	25	2
F. Clark	24	5
Jeschke	24	14
Shraw	24	5
Kristiansen	24	9
Ferry	23	15
O. Clark	22	19
Cudney	21	34
Cottrell	19	23
O'Dowd	16	5
Kraeuter	13	25
Sigler	13	9
O'Neill	11	11
F. Jones	11	17
Mathis	9	
Hugg	9	
Woodlin	3	
Cook	2	
Craig	2	
Treloar	1	
Deputy Wardens	119	
State Troopers	19	
Other complainants	28	
	1,454	691

Sentence was suspended in 47 cases, 24 defendants were committed to jail, and 13 placed on probation to make payment; 31 cases were appealed, 3 guns confiscated and 60 licenses revoked.

Offenses for which prosecutions were brought are as follows:

LICENSE VIOLATIONS: Fishing without, 309; hunting without, 76; trapping without, 8; false information, 38; procuring wrong, 36; loaning, 7; refusing to show, 2; altering, 1; woodcock without special license, 1; no breeder's license, 1.

FISHING VIOLATIONS: Fishing closed season, 53; undersized fish, 14; illegal netting, 4; excess bag limit, 11; spearing, 1; before hour, 12; illegal fishing, 8; after hour, 1; trout streams, 13; set lines, 2.

HUNTING VIOLATIONS: Closed season, 71; with lights, 23; on Sunday, 51; after sunset, 4; protected birds, 4; hen pheasant, 8; before 9:00 a.m., 11; illegal removal game, 13; mutilation, 6; ducks after hours, 45; ducks before hours, 11; within 300 feet, 5; excess bag, 1; intoxicated, 1; from power boat, 2; in squirrel's nest, 1.

DEER VIOLATIONS: Closed season, 43; doe deer, 28; illegal possession deer, 31; at night, 22; failure to report, 2; with dogs, 1; sale, 1.

FIREARMS VIOLATIONS: Loaded in vehicle, 122; illegal firearm, 162; Closed season, 10; illegal missile, 79; across highway, 2; alien, 1.

TRAPPING VIOLATIONS: Closed season, 21; game illegally 7; stealing traps, 2; disturbing muskrat lodge, 1.

MISCELLANEOUS VIOLATIONS: Dog at large, 18; interference with officer, 9; dogs at night, 4; pollution, 4; trespass game preserve or hatchery, 10; live fox, 2; short lobsters, 4; illegal posting, 5; impersonating warden, 2; selling game, 2; killing livestock, 3; terrapin, 1.

Prosecutions according to districts were as follows:

First District:	
Sussex, Warren, Passaic, and Hunterdon Counties....	293
Second District:	
Bergen, Essex, Hudson, Middlesex, Somerset, Union and Morris Counties	499
Third District:	
Mercer, Monmouth, Ocean, and Burlington Counties..	275
Fourth District:	
Cape May, Camden, Cumberland, Gloucester, Salem, and Atlantic Counties	387
	1,454

PREDATOR CONTROL

The six expert trappers employed by the Division took the following predators during the fiscal year:

Foxes	1,079
Skunks	830
Woods Cats	452
Opossum	649
Hawks	503
Weasels	380
Crows	1,483
Snapping turtles	631
Water Snakes	159
Red Squirrels	66
Great horned owls	68
	6,300

This project has met with widespread approval from the farmers and sportsmen as is shown by the greatly increased number of requests for the services of the trappers in special instances of predation.

GAME

GAME FARM REPORTS

Forked River Farm

The pheasant record at this farm for the calendar year of 1947 was as follows:

Breeding birds on hand January 1, 1947		1,356
Young birds on hand January 1, 1947		4,678
Eggs laid	41,215	
Eggs purchased	2,000	
Eggs set	33,500	
Birds hatched		23,197
		29,231
Spring distribution		3,695
Fall distribution		10,275
Day-old chicks distributed		9,863
Birds died or escaped		2,817
Breeding birds on hand December 31, 1947		1,169
Birds held for spring distribution		1,412
		29,231

Rockport Farm

The pheasant record at this farm for the calendar year of 1947 was as follows:

Breeding birds on hand January 1, 1947		1,296
Young birds on hand January 1, 1947		1,280
Eggs laid	29,400	
Eggs purchased	2,374	
Eggs set	29,474	
Birds hatched		20,917
		23,493
Spring distribution		1,175
Fall distribution		10,134
Day-old chicks distributed		9,224
Birds died and escaped		1,371
Breeding birds on hand December 31, 1947		1,387
Birds held for spring distribution		202
		23,493

Quail Farm

The quail record for the calendar year of 1947 was as follows:

Breeding birds on hand January 1, 1947		291
Young birds on hand January 1, 1947		7,777
Eggs laid	29,367	
Eggs distributed	200	
Eggs set	27,501	
Birds hatched		19,695
		27,763
Spring distribution		6,231
Fall distribution		10,458
Birds died and escaped		5,564
Breeding birds on hand December 31, 1947		85
Birds held for spring distribution		5,425
		27,763

WILDLIFE MANAGEMENT ACTIVITIES

Restoration of wildlife habitat activities was extended during the past year to include a program of farm game habitat restoration. A total of 116 landowners who own or control 10,199 acres of land are participating in the program to improve food and cover facilities for farm wildlife. In co-operation with the Division of Fish and Game, Soil Conservation Service, County Agents and interested sportsmen, the total planting of food and cover plants was as follows:

Food and cover shrubs	1,462
Norway spruce	5,000
Red spruce	1,000
Mugho pine	100
Japanese barberry	1,000
Rosa multiflora	800
Lespedeza japonica	50
Lespedeza bicolor seed	12 lbs.
Food patches	36
Red pine	3,000

In addition, a large number of the areas were mapped and cover typed, two fences were built to prevent woodland from being grazed, and 700 feet of hedgerow was improved for increased cover facilities.

Habitat restoration now consists of three phases, farm game habitat restoration, waterfowl habitat restoration, and habitat restoration of the pineland regions of the State. The farm game habitat and waterfowl restoration projects have been made possible by the use of Federal Aid-to-Wildlife funds. The following progress was made during the past year:

3,985 ft. of dike, having dimensions of 42 ft. x 4 ft. x 12 ft., completed
5,565 ft. of circulating ditch completed
1,906 ft. of sod retaining wall constructed
953 yds. of gravel hauled and spread
50 wood duck nest boxes built and installed
2 spillways constructed
1 bridge constructed
12.45 miles of boundary line surveyed

6.52 miles of firebreak constructed (50 ft. wide)
2.65 miles of old firelane cleared (50 ft. wide)
3.2 miles of woodland roads widened
2,500 ft. of irrigation pipe dismantled
948 cedar posts cut
3 miles of dike brushed
1,800 lineal ft. of ditch cleaned
3 buildings painted
5 catch basins for wildlife water supply constructed
4,000 ft. of road constructed
188 brush piles for rabbits constructed
1,200 ft. of hedgerow pollarded
27.75 acres of land cleared and prepared for food production

Food patch installations included the use of New Jersey Food Patch Mixture No. 1, New Jersey Food Patch Mixture No. 2, German millet, soybeans, yellow corn, wheat, rye, Lespedeza cyrtobotrya, Lespedeza bicolor, Lespedeza sericea, Orange sorghum. Experimental plantings of Crotalaria, Dwarf milo, weeping lovegrass, Salix hastata, Lespedeza Japonica intermedia, Lespedeza natob, Lespedeza maximowiczi, Colutea, Cornus circinata, Cotoneaster microphylla, Eleagnus, commutata, Lespedeza formosa, Malus bacata, Lespedeza capitata var. vulgaris, Lespedeza daurica and Lespedeza tomentosa were made.

On the Flat Brook, Roy, Walpack and Hainesville Public Shooting and Fishing Grounds a total of seven corn fields and 42 food patches was planted. Seven food patches were planted on Berkshire Valley, 40 were planted on Clinton, 33 on Colliers Mills, 21 on Manahawkin, 12 on Port Republic, 18 on Tuckahoe, 54 on Glassboro, and 122 on the Haleyville-Millville Public Shooting and Fishing Grounds. In addition, co-operative planting projects with sportsmen's clubs were as follows:

	Number of Food Patches
Gloucester County Fish and Game Association....	10
Williamstown Fish and Game Association	20
Ten Prong Deer Club	1 (6.5 acres)
6666 Deer Club	1 (5.2 acres)
Metuchen Rod and Gun Club	11
Bloomfield Anglers and Hunters	7
Warren County Rod and Gun Club No. 1	1
Warren County Rod and Gun Club No. 6	5

The food patches planted totaled 405 acres, and in addition a total of 81 acres of corn was produced for game farm feed and winter feeding.

Investigational work in regard to that important game animal, the white-tailed deer, was continued. During the year, 99 complaints of deer damage to crops were received and carefully investigated. A total of 59 permits to kill deer doing damage was issued and three permits were subsequently revoked. Fifty-five rechecks of electric fence performance and deer damage were made. Eight electric fences were constructed and seven electric fences repaired. Four applications for electric fence construction are on hand. In addition, a total of 99 deer were trapped and moved to new locations. Fifty deer killed during the open season in Atlantic, Burlington and Ocean Counties

were weighed, measured and the data recorded. Approximately 50 lower jaw bones of deer have been collected and prepared for use in age classification work.

In a highly populated area such as New Jersey, it is to be expected that wildlife will, in many instances, interfere with the comfort and occupations of the citizens. In every instance brought to attention an endeavor is made to salvage the animal or bird and move it to a new location so that it will serve a useful purpose and not be out of place. As a result of this effort, a total of 2,558 squirrels, 73 raccoon, 5 muskrats and 51 rabbits was trapped alive in the metropolitan areas of the State and moved to new locations in the rural districts. The raccoons thus trapped were turned over to the several raccoon hunting clubs now active in the State. Also, 23 beaver were moved from locations in which they were noxious and placed in areas where their presence was desired. In addition to the work heretofore outlined, the Wildlife Managers removed 407 predaceous birds and animals from State-owned lands consisting of 126 harmful hawks, 23 weasels, 39 great-horned owls, 28 cats, 35 skunk, 12 foxes, 57 opossum, 94 crows and 7 brown rats.

Along with their regular game management activities, the Wildlife Managers made 18 arrests for violations of the fish and game laws on which convictions were received. Three arrests were made for molesting and damaging State property, 18 warnings were given to individuals in regard to infractions of the fish and game laws, and 23 warnings were issued for molestation and damage to State property.

During the year the duty of liberating game was assigned to the Wildlife Managers. This greatly increased the amount of annual travel by automotive vehicles.

Miscellaneous activities included the planting of six experimental beds of eel grass (Zostera marina) in the vicinity of Reeds Bay. Observations have indicated that this valuable plant is making a good recovery in many of the tidal waters of the State. Similarly, a plan of water management for artificially constructed fresh water impoundments was put into effect with seemingly excellent results.

A woodcock singing ground census was inaugurated, followed by a Clapper rail study. It is interesting to note that in regard to Clapper rail, 63 nests were observed during the course of the study. Some of the significant observations were that 45, or 74.5 per cent of the nests, were located within 12 feet of a tidal ditch; the mean number of eggs per nest was $9.97 \pm .21$ based on 104 observations; the incubation period based on six nests was 20 days, with extremes of 18 to 22 days; 25 of 50 nests hatched between June 16 and June 21, and 50 out of 56 nests, or 89.3 per cent hatched successfully.

A muskrat house census is being maintained and a census of wintering waterfowl was a regular activity. In addition, the waterfowl kill is receiving attention. One hundred five hunters checked in the field during the 1947 season had in possession 83 waterfowl, or an average daily bag of .79 ducks per hunter. Of this number 81.8 per cent were black ducks (Anas rubripes tristis), 20.8 per cent were white bills (Folica americana americana), 9.6 per cent were hooded mergansers (Lophodytes cucullatus), with green-winged teal (Nettion carolinense), mallards (Anas platyrhynchos), ruddy ducks (Eris-

matura jamaicensis rubida), red-breasted mergansers (Mergus serrator), and American mergansers (Mergus merganser americanus) making up the balance of the kill.

A report on the 1946 banding effort was completed and returns are being received from the 1947 effort. Waterfowl banding was stressed during the year.

There have been in operation under Federal Aid-to-Wildlife two research projects and two development projects, and the acquisition of Greenwood Forest and Egg Island as Public Shooting and Fishing Grounds tracts was made possible with Federal Aid funds.

PUBLIC SHOOTING AND FISHING GROUNDS

Three valuable additions to the Public Shooting and Fishing Grounds Tracts were acquired during the year. The property known as the Egg Island Marsh, comprising 4,436 acres located in Downe Township, Cumberland County, was purchased by the Division. The area has a frontage of 3.26 miles along Delaware Bay and 3.10 miles along the Maurice River Cove. The remainder of the boundary consists mainly of Dividing Creek on the east and Fishing Creek and Oranokan Creek on the north. The tract abounds with a large number of ponds, making it a natural waterfowl breeding and nesting area, as well as a resting place during spring and fall migrations.

Another area taken over is known as Greenwood Forest, located in Ocean County, three miles north of Whitings, and contains 7,000 acres. It extends from the Roosevelt-Pasadena Road to Cedar Bridge on Route 40, and contains a portion of Webbs Mills and Webbs Branch, the water of which is clear and unpolluted.

The third tract purchased is located in Lebanon Township, Hunterdon County, and comprises 106 acres, referred to as the Gorge Tract due to its location in a canyon with steep and heavily wooded mountainsides. The South Branch of the Raritan River, which traverses the area, is studded with boulders and provides excellent trout fishing.

These acquisitions bring the total of State-owned lands under the Public Shooting and Fishing Grounds Fund to 53,572 acres located throughout the State.

DEER

The number of deer legally taken during the open season has been increasing annually for some years but has never been as great as during the 1947 season when a total of 3,938 deer was reported.

This year also inaugurated the special season provided for hunting these animals by means of bow and arrow exclusively, which season preceded the firearm season. Enthusiasts of this sport produced a kill of only six deer.

The following shows the number of deer taken in each county during the five-day firearm season and the four-day bow and arrow season:

County	Firearm Season		Bow and Arrow Season
	Legal	Illegal	
Atlantic	301	1	..
Bergen	69	..	1
Burlington	702	30	..
Camden	80	7	2
Cape May	63	..	..
Cumberland	181	3	..
Essex	54	..	..
Gloucester	25	..	..
Hunterdon	179	17	..
Mercer	88	7	..
Middlesex	3	..	..
Monmouth	79	2	..
Morris	492	24	..
Ocean	510	..	1
Passaic	217	4	2
Salem	1	..	..
Somerset	217	13	..
Sussex	459	10	..
Union	12	..	..
Warren	206	17	..
	3,938	135	6

Throughout the balance of the year there were 686 deer killed by automobiles, trains, under permits, and in various other ways.

HUNTING ACCIDENTS

There were only nine hunting accidents reported during the year, none of which was fatal. Two of the accidents were self-inflicted. No injuries were reported during the deer season.

FISH

REPORT OF HATCHERY OPERATIONS

	Inches	*Raised July 1, 1947 to June 30, 1948*	*Disposed of*	*Estimated Number on Hand*
Brook trout	3–4	200,000	.....	200,000
" "	4–5	100,000	.....	100,000
" "	7–9	61,975	26,975	35,000
" "	9–10	63,070	63,070	.....
" "	10–12	67,585	62,585	5,000
" "	12–14	10,300	10,300	.....
" "	14–18	1,315	1,315	.....
Brown trout	3–4	350,000	.....	350,000
" "	6–8	50,000	.....	50,000
" "	7–9	25,000	.....	25,000
" "	8–11	92,255	92,255	.....
" "	9–10	6,000	6,000	.....
" "	10–12	96,075	91,075	5,000
" "	12	2,000	2,000	.....
" "	12–14	12,770	12,770	.....
" "	14–18	2,596	2,596	.....
Rainbow trout	2–3	200,000	.....	200,000
" "	3–4	100,000	.....	100,000
" "	6–7	35,000	.....	35,000
" "	8–9	46,055	6,055	40,000
" "	9–10	23,820	23,820	.....
" "	10–12	42,100	37,100	5,000
" "	12	2,000	2,000	.....
" "	12–14	3,000	3,000	.....
" "	14–20	1,357	1,357	.....
Large mouth bass	1–2	250,000	.....	250,000
" " "	2–3	103,600	98,600	5,000
" " "	3	42,600	42,600	.....
" " "	3–4	43,470	42,470	1,000
" " "	4	6,500	6,500	.....
" " "	4–5	16,038	16,038	.....
" " "	5	4,250	4,250	.....
" " "	5–6	6,984	6,984	.....
" " "	6–7	5,820	5,820	.....
" " "	7–8	1,758	1,258	500
" " "	12–18	240	240	.....

	Inches	*Raised July 1, 1947 to June 30, 1948*	*Disposed of*	*Estimated Number on Hand*
Small mouth bass	1–2	50,000	.....	50,000
" " "	2–3	7,330	7,330	.....
" " "	3	3,000	3,000	.....
" " "	3–4	19,623	17,623	2,000
" " "	4–5	15,975	15,975	.....
" " "	5–6	1,000	1,000	.....
" " "	12–14	131	131	.....
" " "	16–18	183	183	.....
Bluegill sunfish	1–2	40,000	.....	40,000
" "	2–3	140,300	130,300	10,000
" "	3	49,930	49,930	.....
" "	3–4	1,000	1,000	.....
" "	4–5	2,000	2,000	.....
" "	6–9	1,225	1,225	.....
" "	9	400	400	.....
Tadpoles	...	10,000	10,000	.....
		2,417,630	909,130	1,508,500

The past year's output of fish averaged the largest in size and weight in the history of the hatchery. Many favorable comments were received on the vigor and flavor of these trout. What started out to be the best trout year in number as well as size of fish, was a disappointment due to lack of funds for production and upkeep. In addition, due to the State's low wage scale, the hatchery personnel was reduced to 50 per cent as of March 1, and it was only due to a good start and large stock on hand at the beginning of the year that this year's record was possible. It will now require at least two years to bring our hatchery stock up to the point it was on July 1, 1947.

While some criticism was directed at the hatchery operations, it was unavoidable due to the labor shortage and curtailment of funds. Failure to get work started by March 1 results in difficulties and heavy losses as ponds cannot be successfully cleaned, fish moved and water-flows changed during the hot summer months. Fortunately, the heavy rains this year were a great help in keeping a larger water supply than normally during the hot weather.

Badly needed repairs were made to some of the hatchery buildings. Trenches were dug and 300 feet of cast iron pipe laid for better water controls. There are 900 feet of pipe on hand to be laid to replace wooden pipe and flumes that are no longer safe for service, and many other improvements to ponds and roads remain to be done.

There was no new work undertaken during the last seven months of the fiscal year. All plans and detailed drawings for the expansion of twenty large ponds and canal on the newly acquired 46¼ acres, known as the Swenson and Burd Tracts, are completed.

Plans and specifications have been drawn for bids for remodeling cold storage facilities in order to carry 15 tons of frozen fish food at a time.

There has been a very substantial increase in fish food prices and labor costs which will necessitate a rearrangement of plans. Experiments on new canned fish foods have thus far proved very successful and their use may be possible.

Pondfish Propagation. The past year was the most successful New Jersey has ever had for large mouth bass in size, number and value. The average production is 250,000 bass per year, a figure we are trying to maintain while at the same time increasing the size of the fish. The proposed new ponds will make it possible to carry over large numbers of bass for one and two years, at which time they should be from eight to twelve inches long.

Diseases have been kept at a minimum through constant microscopic examination of the fish for parasites and bacterial infections, and immediate treatment with various chemicals when the fish were found to be infected.

Many requests were received during the year to examine lakes and prescribe methods to eliminate aquatic plants and algae. The fact that most lakes are used for swimming and fishing makes it difficult to control the larger aquatic plants without interfering with the swimming. Algae can be controlled with copper sulphate without damaging either the fish or swimming, but most chemicals that will kill the aquatic plants will also kill fish and aquatic insects. We are still looking for a chemical that will control the plants and be less toxic to fish and natural food in a lake. At present we are cooperating in an experiment that is being conducted by Dr. Weber of Silverton Laboratories, Toms River. It is hoped that good results will be obtained.

NETTING OPERATIONS

Fish reclamation work resulted in the netting from reservoirs and other private sources of the following fish, which were redistributed in open waters:

Large mouth bass	7,449
Small mouth bass	3
Calico bass	8,196
Crappie	6
Bluegill sunfish	675
Sunfish	17,990
Yellow perch	16,450
White perch	4,426
Catfish	18,900
Pickerel	6,127
Pike	60
Shiners	6,625
Miscellaneous	73,529
	160,436

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 1947:

Rainbow trout	2,448
Brook trout	1,325
Brown trout	2,050
Crappie	98
Large mouth bass	7,434
Small mouth bass	900
Bluegill sunfish	11,400
	25,655

POUND FISHERIES' SUMMARY

The following is a summary of the pound fisheries' reports for the calendar year ending December, 1947:

Approximate value of all pounds		$1,171,963.77
Proceeds derived from sale of fish		1,176,170.09
Number of pounds of fish caught and disposed of		31,187,398
Licenses issued:		
Atlantic Ocean	136	
Sandy Hook and Raritan Bay	42	
		178
Number of pounds operated		160
Number of men employed		363

MENHADEN AND FOOD FISH LICENSES

There were 57 vessels licensed to take menhaden with purse or shirred nets within the three-mile limit during the calendar year of 1947, and 84 vessels licensed to take food fish in the area between the two- and three-mile limit.

STRIPED BASS LICENSES

During the fiscal year, there were 299 licenses issued to 74 persons for the netting of striped bass. Gill netting licenses numbered 271 and haul seines 28.

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	56
Hauling seine	36
Flounder fyke	59
Miniature fyke	1,088
Fyke	99
Shad	278
Staked gill	201
Bait seine	27

DELAWARE RIVER SHAD INDUSTRY

County	Boats 1947	Boats 1948	Nets 1947	Nets 1948	Men Engaged 1947	Men Engaged 1948	Number Shad Caught 1947	Number Shad Caught 1948	Pounds Shad Caught 1947	Pounds Shad Caught 1948	Value Shad Caught 1947	Value Shad Caught 1948	Value Boats and Nets 1947	Value Boats and Nets 1948
Burlington ...	3	3	4	3	8	8	190	6	785	25	$340.00	7.00	$435	$575
Cumberland ..	30	26	23	20	38	29	21,350	5,650	81,491	19,753	16,943.30	5,049.20	9,750	4,850
Gloucester ...	1	1	1	1	2	1	200	2	1,000	2	200.00	12.00	5	500
Hunterdon ...	5	4	4	3	13	8	1,238	43	4,338	200	1,178.00	50.00	860	600
Mercer	3	3	4	3	8	9	83	14	382	58	121.00	15.00	1,025	800
Salem	5	7	5	7	10	14	436	171	1,744	684	438.50	273.60	2,550	4,350
	47	44	41	37	79	69	23,497	5,886	89,740	20,722	$19,220.80	$5,406.80	$14,625	$11,675

HUDSON RIVER SHAD INDUSTRY

Boats 1947	Boats 1948	Licenses 1947	Licenses 1948	Men Engaged 1947	Men Engaged 1948	Pounds Caught 1947	Pounds Caught 1948	Number Shad Caught 1947	Number Shad Caught 1948	Value Shad Caught 1947	Value Shad Caught 1948	Value Boats and Nets 1947	Value Boats and Nets 1948
203	197	59	58	232	200	1,024,392	1,231,800	282,121	339,013	$161,447.21	$185,866.27	$183,485	$176,080

GENERAL FUND

SUPPLEMENT OF 1946-47 REPORT

Income

Balance as per last printed report	$116,097.32

Expenditures

Chapter 111, Laws of 1946	$43,240.01
To balance	72,857.31
	$116,097.32

REPORT FOR 1947-48

Income

Balance, July 1, 1947			$72,857.31	
Hunters' and anglers' licenses:				
Revised Statutes, Title 23, Chapter 3:				
Sec. 11-12 (regular)	$536,899.85			
Sec. 3 (juvenile)	1,228.00			
Sec. 25 (woodcock)	2,364.00			
Agents' fees	596.55			
Duplicate licenses	219.50			
Delinquencies	988.45			
		$542,296.35		
Revised Statutes, Title 53, Chapter 18, Section 21:				
Menhaden licenses	$45,560.00			
Food fish licenses	5,850.00			
Breeders' licenses	1,648.00			
Pound licenses	7,600.00			
Shad license	1,450.00			
Striped bass licenses	557.00			
Net licenses	1,772.50			
Rent	699.00			
Carp permits	400.00			
Sales and sundries	4,956.05			
Map and book sales	20.30			
Recoveries	960.96			
		71,473.81		
Fines, Revised Statutes, Title 23, Chapter 10, Sec. 19		49,389.75		
Trespass, Revised Statutes, Title 23, Chapter 7, Sec. 5		390.50		
Refunds (duplicate payments and salaries)		740.72		
Damage claim to auto		665.99		
Transfer of funds from Public Shooting and Fishing Grounds Fund		52,987.59		
			717,944.71	
				$790,802.02

Expenditures

Chapter 67, Laws of 1947, expenditures	*$712,020.65
Cash balance, July 1, 1948	$78,781.37
Requisitions outstanding against this balance	21,051.04
Account balance, July 1, 1948	$57,730.33

*Analysis of Expenditures

	Actually Paid	*Bills Outstanding*	*Total*
Transfer to Conservation Department	$375.00	.....	$375.00
Personal administration	1,084.28	$118.60	1,202.88
Carpenter and helper	4,749.57	115.78	4,865.35
Office:			
Wages	26,619.73	.....	26,619.73
Other expenses	1,000.56	54.76	1,055.32
Rent	5,000.00	.....	5,000.00
Public relations:			
Wages	4,491.00	.....	4,491.00
Other expenses	1,302.69	296.31	1,599.00
Publicity—wages	1,020.00	.....	1,020.00
War adjustment	122.00	.....	122.00
Printing, stationery, etc.	7,948.96	398.91	8,347.87
Coastal patrol:			
Wages	11,325.84	18.00	11,343.84
Maintenance	4,815.44	46.17	4,861.61
Gas and oil	1,637.54	907.05	2,544.59
Wardens' service:			
Salaries	98,701.28	.....	98,701.28
Expenses including uniforms, rents	9,370.28	956.74	10,327.02
Assistance in deer woods	1,012.00	.....	1,012.00
Tires and tubes	1,453.66	166.13	1,619.79
Gas and oil	9,569.37	1,362.52	10,931.89
Maintenance	7,683.83	451.85	8,135.68
Replacement of autos	9,696.08	.....	9,696.08
Replacement of boats and motors	215.00	.....	215.00
Predator control:			
Wages	11,946.67	.....	11,946.67
Other expenses	6,863.83	306.31	7,170.14
Fish distribution:			
Wages	14,280.00	15.00	14,295.00
Other expenses	3,926.63	233.41	4,160.04
Netting expenses	78.00	.....	78.00

	Actually Paid	*Bills Outstanding*	*Total*
Fish hatchery:			
Wages	51,281.19	1,140.41	52,421.60
War adjustment	120.00	786.44	906.44
Food	89,284.91	5,455.33	94,740.24
Other expenses	16,255.43	.....	16,255.43
Purchase of game from outside sources	196,917.10	.....	196,917.10
Forked River Farm:			
Wages	17,770.00	168.00	17,938.00
War adjustment	360.00	.....	360.00
Food	19,665.19	.....	19,665.19
Other expenses	7,344.97	269.65	7,614.62
Rockport Farm:			
Wages	11,695.50	360.00	12,055.50
War adjustment	24.00	.....	24.00
Food	15,396.79	.....	15,396.79
Other expenses	7,503.44	568.10	8,071.54
Quail Farm			
Wages	12,816.98	190.00	13,006.98
War adjustment	80.00	.....	80.00
Food	4,978.20	256.35	5,234.55
Other expenses	4,971.48	11.83	4,983.31
Postage, telephone, telegraph and insurance	3,365.57	5,614.39	8,979.96
Miscellaneous expenses (includes court costs, fair exhibits)	2,910.33	639.00	3,549.33
Medical expenses	1,150.46	144.00	1,294.46
Refunds on salaries	18.84	.....	18.84
Refunds of fines, license fees	633.35	.....	633.35
Compensation—Josephine Perkins	1,187.68	.....	1,187.68
	$712,020.65	$21,051.04	$733,071.69

PUBLIC SHOOTING AND FISHING GROUNDS FUND

SUPPLEMENT TO 1946-47 REPORT

Income

Balance as per last printed report		$142,888.30

Expenditures

Bills paid after June 30, 1947, for:		
Federal aid, 1946-47	$2,951.19	
Other bills, 1946-47	4,994.46	
		7,945.65
To Balance		134,942.65
		$142,888.30

REPORT FOR 1947-48

Income

Balance July 1, 1947		$134,942.65	
Receipts from U. S. for Federal Aid Acct. 1944-45	$128.63		
Receipts from U. S. for Federal Aid Acct. 1945-46	3,946.11		
Receipts from U. S. for Federal Aid Acct. 1946-47	6,293.93		
Receipts from U. S. for Federal Aid Acct. 1947-48	9,789.05		
Receipts from hunters' and anglers' licenses	109,011.60		
Miscellaneous	1,529.55		
Rent	2,223.00		
Refund in auto trade-in	706.80		
Refunds	22.37		
		133,651.04	
			$268,593.69

Expenditures

Expenditures	$163,923.15	
Transfer to General Fund	52,987.59	
		*216,910.74
Cash balance, July 1, 1948		$51,682.95
Requisitions outstanding against this balance		16,446.97
Account balance, July 1, 1948		$35,235.98

*Analysis of Expenditures

	Bills Paid	*Bills Outstanding*	*Total*
Salaries and wages	$46,130.00	.....	$46,130.00
Fuel, light and power	387.63	$5.00	392.63
Office supplies	88.78	.....	88.78
Motor vehicular supplies	5,110.64	964.12	6,074.76
Replacement of motor vehicles	4,045.03	2,392.00	6,437.03
Purchase of game	13,742.51	.....	13,742.51
Operating materials and supplies	3,409.92	47.27	3,457.19
Other materials and supplies	270.02	.....	270.02
Printing	158.88	.....	158.88
Traveling expenses	1,323.35	.....	1,323.35
Insurance	1,246.95	.....	1,246.95
Garage	80.00	30.00	110.00
Telephone and telegraph	772.94	39.26	812.20
Freight and express	108.24	.....	108.24
Miscellaneous expenses	148.85	.....	148.85
Current repairs	3,423.69	602.62	4,026.31
Purchase of land	58,911.14	11,488.86	70,400.00
New Equipment	739.59	205.00	944.59
Tax lieu	1,300.00	.....	1,300.00
Transfer to General Fund	52,987.59	.....	52,987.59

	Bills Paid	*Bills Outstanding*	*Total*
Expenses under Federal Aid-to-Wildlife Act:			
Salaries and wages	15,127.09	.....	15,127.09
Fuel, light and power	133.11	.....	133.11
Office supplies	14.52	.....	14.52
Motor vehicular supplies	665.19	57.88	723.07
Operating materials and supplies	1,389.25	78.71	1,467.96
Printing	50.10	.....	50.10
Traveling expenses	1,578.45	.....	1,578.45
Telephone and telegraph	54.99	1.90	56.89
Miscellaneous expenses	217.90	.....	217.90
Current repairs	1,117.19	474.35	1,591.54
New motor vehicles	2,177.20	.....	2,177.20
New office equipment	.....	60.00	60.00
	$216,910.74	$16,446.97	$233,357.71

STOCKING OF NEW JERSEY WATERS

By the New Jersey Division of Fish and Game for the Fiscal Year Ending June 30, 1948

Total Number of Fish Planted from all Sources, 1,069,566

KEY TO ABBREVIATIONS

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

Size

a	Adult
fg	Fingerling

ATLANTIC COUNTY

Bargaintown Lake—Bargaintown—2,500 Lmbfg.
Frazer Pond—Pleasantville—1,700 Lmbfg, 7,500 Bsfg.
Hammonton Lake—Hammonton—2,800 Rta, 8,400 Lmbfg, 2,000 Bsfg.
Lenape Lake—Mays Landing—500 Lmbfg, 1,000 Bsfg.
Mays Landing Clay Holes—Mays Landing—500 Lmbfg, 1,000 Bsfg.
Mizpah Clay Holes—Mizpah—500 Lmbfg, 2,000 Bsfg.
Northfield Clay Holes—Northfield—900 Lmbfg, 3,000 Bsfg.
Penny Pot Lake—Folsom—500 Lmbfg, 1,000 Bsfg.

BERGEN COUNTY

Babbits Brook—Wyckoff—1,250 Bta, 500 Brnta.
Bear Brook—Woodcliff Lake—1,400 Bta, 258 Brnta.
Bergenfield Park Lake—Bergenfield—1,500 Bsfg.
Boiling Spring Brook—Old Tappan—500 Bta.
Carlough Brook—Upper Saddle River—7,000 Btfg.
Dahnert's Pond—Garfield—5 Lmba, 700 Ypera, 500 Sa.
Hackensack River—Oradell—1,700 Bta, 2,800 Brnta.
Long Rack Brook—Waldwick—300 Bta.
Marlott Hollow Pond—Fairlawn—1,500 Bsfg.
Mehroff Lake—Little Ferry—500 Lmbfg, 1,500 Bsfg.
Morrow Lake—Englewood—1,500 Bsfg.
Musquasink Creek—Washington Twp.—200 Bta.
Norwood Brook—Norwood—300 Bta.
Pascack Creek—Westwood—1,650 Bta. 758 Brnta.
Pond Brook—Wyckoff—100 Bta, 200 Brnta.
Progressive Sand Pit—Fairlawn—350 Lmbfg, 1,500 Bsfg.
Ramapo River—Oakland—2,250 Bta, 3,750 Brnta, 60 Smba, 893 Smbfg.
Saddle River—Saddle River— 2,600 Bta, 3,420 Brnta.
Snyders Pond—Fairlawn—1,500 Bsfg.
Tamerack Boy Scout Pond—Oakland—400 Ypera, 400 Sa.
Tellers Brook—Montvale—150 Bta.
Tenekill Creek—Closter—1,250 Bta, 250 Brnta.
Valentine Brook—Allendale—2,250 Bta, 500 Brnta.
Waldwick Pond—Waldwick—350 Lmbfg, 1,000 Bsfg.
Willow Lake—Little Ferry—2,000 Rta.

BURLINGTON COUNTY

Absequami Lake—Bass River State Forest—1,500 Lmbfg, 1,000 Bsfg.
Atsion Lake—Atsion—1,500 Lmbfg, 2,000 Bsfg.
Browns Mills Lake—Browns Mills—40 Lmba, 5,200 Lmbfg, 2,000 Bsfg.
Harrisville Lake—Harrisville—1,500 Lmbfg, 1,000 Bsfg.
Oswego Lake—Harrisville—1,500 Lmbfg, 1,000 Bsfg.
Pakim Pond—Lebanon State Forest—750 Rta.
Sylvan Lake—Burlington—1,000 Rta, 1,000 Lmbfg, 1,000 Bsfg.
Vincentown Lake—Vincentown—250 Rta.

CAMDEN COUNTY

Atco Lake—Atco—1,100 Lmbfg.
Back Run—Berlin—125 Bta.
Big Lebanon Run—Turnersville—850 Bta, 900 Brnta.
Blackwood Lake—Blackwood—1,000 Lmbfg, 2,000 Bsfg.
Bottomleys Lake—Clementon—500 Lmbfg.
Clementon Lake—Clementon—500 Lmbfg, 2,000 Bsfg.
Columbia Pond—Maple Shade—650 Rta.
Cooper Park Lake—Cooper Lake—4,000 Lmbfg, 3,000 Bsfg.
Ellisburg Creek—Ellisburg—850 Bta, 600 Brnta.
Evans Lake—Haddonfield—500 Lmbfg, 2,000 Bsfg.
Gibbsboro Lake—Gibbsboro—500 Lmbfg.
Grenloch Lake—Grenloch—1,000 Lmbfg, 2,000 Bsfg.
Laurel Lake—Laurel Springs—500 Lmbfg, 2,000 Bsfg.
Munn's Lake—Haddonfield—400 Rta, 500 Lmbfg.
Pillings Lake—Clementon—500 Lmbfg, 2,000 Bsfg.
Rowands Pond—Clementon—50 Bta, 1,100 Rta.
Woodcrest Creek—Woodcrest—575 Bta, 300 Brnta.

CAPE MAY COUNTY

Alms House Pond—Cape May Court House—500 Lmbfg.
Davis Lake—Davis Mills—500 Lmbfg.
Dennisville Pond—Dennisville—1,000 Lmbfg.
East Creek Lake—Eldora—1,000 Lmbfg.
Lilly Lake—Cape May Point—500 Lmbfg.
Ludlams Pond—Dennisville—1,000 Lmbfg.
Nummy Lake—Belleplain State Forest—3,500 Lmbfg.
Pickle Pond—Eldora—1,000 Lmbfg.
Rio Grande Pond—Rio Grande—500 Lmbfg.
Tuckahoe Park Lake—Tuckahoe—500 Lmbfg.

CUMBERLAND COUNTY

Cedarville Lake—Cedarville—45 Lmba, 800 Ypera, 90 Ca, 1,750 Wpera, 1,500 Cba, 25 Pa, 1,200 R.
Clark Pond—Bridgeton—16 Lmba, 250 Ypera, 90 Ca, 700 Wpera, 850 Cba, 13 Pa, 500 R.
Grant Ave. Pond—Vineland—500 Bsfg.
Laurel Lake—Buckshutem—1,500 Lmbfg, 500 Bsfg.
Manantico Lake—Millville—2,000 Lmbfg, 500 Bsfg.
Manantico Stream—Near Millville—1,000 Bta.
Manaway Stream—Newfield—750 Bta.
Mary Elmer Lake—Bridgeton—145 Ca, 1,500 Wpera, 2,700 Cba, 2,000 Ra, 900 Misc, 19 Lmba, 150 Ypera, 12 Pa.
Muddy Run—Millville—250 Bta.
Tumbling Dam Lake—Bridgeton—275 Ca, 470 Wpera, 2,750 Cba, 2,400 Ra, 500 Misc, 7 Lmba, 100 Ypera, 10 Pa.
Union Lake—Millville—4,000 Lmbfg. 2,500 Bsfg.

ESSEX COUNTY

Branch Brook Park Lake—Newark—5,000 Lmbfg, 432 Lmba, 360 Pica, 4,000 Misc.
Clarks Pond—Bloomfield—1,000 Rta, 500 Lmbfg, 250 Ca.
Notch Brook—Bloomfield—500 Bta.
So. Mt. Reservation—South Orange—500 Bta, 1,900 Rta, 2,000 Lmbfg.
Verona Lake—Verona—1,900 Rta, 4,000 Lmbfg.
Weequahic Park Lake—Newark—2,500 Lmbfg, 450 Ypera. 450 Sa.

GLOUCESTER COUNTY

Almonesson Lake—Almonesson—500 Rta, 1,000 Lmbfg, 1,000 Bsfg.
Franklinville Lake—Franklinville—1,000 Lmbfg, 1,000 Bsfg.
Gilman Lake—Ewan—750 Rta, 1,500 Lmbfg, 1,000 Bsfg.
Iona Lake—Iona—750 Rta, 1,000 Lmbfg, 1,000 Bsfg.
Malaga Lake—Clayton—1,000 Lmbfg, 1,000 Bsfg.
Oberts Lake—Gibbsboro—1,000 Rta, 1,000 Lmbfg, 1,000 Bsfg.

HUDSON COUNTY

Hudson County Park Lake—North Bergen—2,000 Rta.

HUNTERDON COUNTY

Alexauken Creek—Mt. Airy—600 Bta, 600 Brnta.
Beatys Brook—Penwell—300 Bta.
Beaver Brook—Allerton—400 Bta, 200 Brnta.
Black Brook—Public Shooting Grounds—850 Bta, 250 Brnta.
Boulder Hill Brook—Boulder Hill—300 Bta.
Capoulin Creek—Pittstown—650 Bta, 250 Brnta.
Cold Brook—Whitehouse—200 Bta.
Cramers Brook—Allerton—250 Bta, 50 Brnta.
Everittstown Brook—Everittstown—250 Bta.
Frenchtown Brook—Frenchtown—500 Bta.
Guinea Hollow Brook—Mountainville—400 Bta.
Jutland Brook—Grandin—350 Bta, 150 Brnta.
Little York Brook—Little York—875 Bta, 475 Brnta.
Locatong Creek—Milltown—600 Bta, 1,300 Brnta.
Milford Brook—Milford—250 Bta.
Mt. Pleasant Brook—Mt. Pleasant—350 Bta, 150 Brnta.
Mulhockaway Creek—Clinton Tract—1,150 Bta, 1,350 Brnta.
Musconetcong River—Penwell to Bloomsbury—2,800 Bta, 7,260 Brnta, 1,350 Rta.
Neshanic Brook—Reaville—400 Bta.
Norton Brook—Norton—250 Bta.
Prescott Brook—Round Valley—1,200 Bta, 200 Brnta.
Raritan River, So. Br.—Lower Valley to Hamden—5,000 Bta, 15,990 Brnta, 3,720 Rta, 108 Smba, 7,200 Smbfg.
Rockaway River, North Branch—Mountainville—2,550 Bta, 550 Brnta.
Rockaway River, South Branch—Lebanon—50 Bta, 250 Brnta.
Saw Mill Brook—Mountainville—300 Bta.
Spruce Run—Glen Gardner—2,650 Bta, 850 Brnta, 300 Rta.
Tetertown Brook—Tetertown—950 Bta, 250 Brnta.
Tunnels Brook—West Portal—150 Bta.
Wickecheoke Run—Prallsville—725 Bta, 725 Brnta.

MERCER COUNTY

Assunpink Creek—Lawrence Station—775 Bta, 1,875 Brnta.
Carnegie Lake—Princeton—4,000 Lmbfg, 2,000 Bsfg.
Doctor's Creek—Allentown—800 Bta, 1,050 Brnta.
Etra Pond—Etra—2,750 Lmbfg, 400 Bsfg.
Gropp's Lake—Hamilton Township—2,750 Lmbfg, 400 Bsfg.

Log Basin—Trenton—1 Lmba, 15 Lmbfg, 11 Ca, 150 Sa.
Peddie Lake—Hightstown—2,750 Lmbfg, 400 Bsfg.
Reed's Pond—Pennington—100 Lmbfg, 20 Ypera, 20 Ca, 2,300 Sa, 500 Ra, 6 Cba.
Sanhican Creek—Above Trenton—130 Lmba, 100 Sa.
Stoney Brook—Woodsville—825 Bta, 1,675 Brnta.
Whiteheads Pond—Hamilton Township—2,750 Lmbfg, 400 Bsfg.

MIDDLESEX COUNTY

Ambrose Brook—Middlesex Borough—450 Bta, 375 Brnta.
Bonhampton Pond—Bonhampton—200 Bta.
Brainerds Brook—Cranbury—450 Bta, 50 Brnta.
Carteret Park Lake—Carteret—3,000 Bsfg.
Devils Brook—Plainsboro—50 Bta, 450 Brnta.
Duhernal Lake—Old Bridge—2,610 Lmbfg, 5,000 Bsfg.
Farrington Lake—Near New Brunswick—3,000 Lmbfg, 117 Lmba, 159 Pica, 2,000 Misc.
Johnson's Park Lake—New Brunswick—6,000 Bsfg.
Lawrence Brook—Milltown—450 Bta, 425 Brnta.
Manalapan Lake—Jamesburg—1,000 Lmbfg, 375 Smbfg, 1,000 Bsfg.
Manalapan River—Jamesburg—850 Bta, 1,500 Brnta.
Matchponix Brook—Spotswood—850 Bta, 1,900 Brnta.
Milltown Pond—Milltown—500 Lmbfg.
Morgan Pond—Morgan—500 Lmbfg.
Nelson Lake—Piscataway Township—450 Lmbfg, 2,000 Bsfg.
Roosevelt Park Lake—Metuchen—1,800 Rta, 4,000 Bsfg.
Spotswood Lake—Spotswood—1,000 Lmbfg, 300 Smbfg, 1,000 Bsfg.
Spring Lake—South Plainfield—750 Lmbfg, 400 Bsa, 4,000 Bsfg.
Victor Crowell Lake—Middlesex Borough—4,000 Bsfg, 688 Ypera, 687 Sa.
Weston's Mill Pond—Near New Brunswick—1,000 Lmbfg, 10,000 Bsfg.

MONMOUTH COUNTY

Allentown Pond—Allentown—1,000 Lmbfg, 2,000 Bsfg.
Big Brook—Marlboro—200 Bta.
Como Lake—Como—1,000 Lmbfg, 2,000 Bsfg.
Foo Pond—Red Bank—1,000 Bsfg.
Franklin Park Lake—Long Branch—300 Rta, 1,000 Lmbfg, 3,000 Bsfg.
Garveys Pond—Navesink—900 Rta.
Hockhocksen Brook—Tinton Falls—250 Bta.
Hop Brook—Holmdel—500 Bta, 500 Brnta.
Imlaystown Lake—Imlaystown—1,000 Lmbfg, 2,000 Bsfg.
Manalapan River—Milhurst—200 Bta.
Manasquan River—Adelphia—1,100 Bta, 4,000 Brnta.
Matchponix Brook—Englishtown—200 Bta.
McGillards Brook—Englishtown—200 Bta.
Metedeconk River, North Branch—North of Lakewood—300 Bta, 200 Brnta.
Mine Brook—Colts Neck—150 Bta.
Mingamahone Brook—Farmingdale—200 Bta.
Nicholas Pond—Allaire—250 Rta.
Old Mill Pond—Villa Park—250 Rta, 1,000 Bsfg.
Osbornes Lake—Baileys Corner—500 Rta, 1,000 Lmbfg, 3,000 Bsfg.
Pine Brook—Tinton Falls—200 Bta.
Shadow Lake—Red Bank—1,100 Rta, 2,000 Lmbfg, 2,000 Bsfg.
Shark River—Hamilton—500 Bta.
Spring Lake—Spring Lake—1,200 Rta, 1,000 Lmbfg, 250 Bsa, 10 Ypera, 500 Sa, 25 Pica, 50 Cba.
State Child Training Center Pond—Allaire—1,500 Bsfg.
Sunrise Lake—Red Bank—2,000 Bsfg.
Takanassee Lake—Long Branch—2,000 Bsfg, 12 Pica, 300 Cba, 400 Sa, 6 Wpera, 2 Lmba, 400 Bsa. 15 Ypera, 24 Ca.

Tinton Manor Lake—Lincroft—2,000 Bsfg.
Topenemus Lake—Freehold—1,000 Rta, 2,000 Lmbfg, 4,500 Bsfg
Wanamassa Pond—Wanamassa—50 Sa, 4 Pica, 6 Cba.
Willow Brook—Holmdel—200 Bta.
Wreck Pond, North Branch—Hurley's Mills—300 Bta.
Yellow Brook—Colts Neck—600 Bta, 500 Brnta.

MORRIS COUNTY

Beaver Brook—Lincoln Park—300 Bta.
Beaver Brook—Rockaway—600 Bta, 250 Brnta.
Black River—Hacklebarney State Park—450 Bta, 2,400 Brnta, 1,070 Rta.
Budd Lake—Budd Lake—707 Lmba, 2,500 Lmbfg, 884 Pica, 5 Smba, 4,000 Bsfg, 4,029 Misc, 500 Ca.
Bungalow Brook—Schooleys Mt.—300 Bta.
Burnett Brook—Ralston—300 Bta.
Burnham Park Lake—Morristown—500 Rta.
Cooks Pond—Denville—1,000 Lmbfg, 115 Lmba, 344 Pica, 1,000 Misc.
Crooked Brook—Montville—300 Bta.
Crystal Lake—Chester—1,200 Rta.
Den Brook—Union Hill—500 Bta.
Electric Brook—Schooleys Mt.—150 Bta, 150 Rta.
Estling Lake—Denville—2,000 Lmbfg, 83 Lmba, 73 Pica, 1,000 Misc.
Fayson Lake—Taylortown—204 Lmba, 1,500 Ca, 57 Pica, 2,000 Misc, 378 Ypera, 377 Sa.
Flanders Brook—Flanders—300 Bta.
Green Pond—Newfoundland—2,000 Rta, 4,000 Lmbfg, 101 Lmba, 156 Pica, 3,000 Misc.
Hacklebarney Lake—Hacklebarney—1,000 Lmbfg, 15 Lmba, 1,625 Ca, 6 Pica.
Hibernia Pond—Hibernia—2,000 Lmbfg, 98 Lmba, 84 Pica.
Hibernia Brook—Hibernia—300 Bta.
Hillery's Pond—Boonton—600 Lmbfg, 104 Lmba, 52 Pica, 500 Misc.
Hiawatha Lake—Parsippany—150 Lmba, 175 Ypera, 1,500 Misc.
Hopatcong Lake—Lake Hopatcong—259 Lmba, 4,090 Lmbfg, 10 Smba, 19,130 Bsfg, 205 Pica, 4,000 Misc.
Hourigan Brook—Hurdtown—125 Bta, 125 Brnta.
Indian Brook—Mendham—600 Bta, 300 Brnta.
Indian Lake—Mendham—2,000 Lmbfg, 86 Lmba, 940 Ca, 56 Pica, 1,500 Misc.
Jockey Hollow Brook—Jockey Hollow—300 Bta.
Kenvil Sand Pit—Kenvil—54 Lmba, 75 Pica, 2,000 Misc.
Kikeout Brook—Butler—700 Bta, 750 Brnta.
Ledgewood Brook—Ledgewood—300 Bta.
Longwood Lake—Longwood—2,000 Bsfg, 162 Lmba, 32 Pica, 2,000 Misc.
Malapardis Brook—Malapardis—300 Bta.
Meriden Brook—Rockaway—300 Bta.
Mill Brook—Centre Grove—500 Bta.
Mt. Hope Pond—Mt. Hope—1,800 Rta, 600 Ca.
Mt. Tabor Brook—Mt. Tabor—100 Bta, 100 Brnta.
Musconetcong Lake—Netcong—2,500 Lmbfg, 4,000 Bsfg, 148 Lmba, 222 Pica, 2,000 Misc.
Musconetcong River—Guard Lock to Penwell—3,485 Bta, 7,400 Brnta, 650 Rta.
Primrose Brook—Morristown—500 Bta.
Raritan River, South Branch—Y. M. C. A. Camp to Middle Valley—1,550 Bta, 10,300 Brnta, 1,650 Rta.
Reservoir Brook—Brookside—300 Bta.
Rockaway Park Lake—Rockaway—2,000 Lmbfg, 3 Lmba, 31 Pica, 6,000 Misc.
Rockaway River—Powerville—8,300 Bta, 17,700 Brnta, 1,500 Rta, 600 Lmbfg, 149 Lmba, 411 Pica, 1,500 Misc.

Saw Mill Brook—Pequannock—500 Bta.
Speedwell Lake—Morristown—800 Rta, 1,000 Lmbfg, 10,000 Bsfg, 2,000 Ca.
Spring Brook—Pompton Plains—100 Bta.
Stirling Pond—Stirling—856 Rta, 200 Bsa.
Stoney Brook—Montville—300 Bta.
Sunrise Lake—Mendham—200 Bsa.
Sunset Lake—Boonton—1,100 Ca, 14 Pica, 500 Misc.
Towaco Brook—Towaco—300 Bta.
Troy Brook—Parsippany—300 Bta.
Turkey Brook—Mt. Olive—300 Bta.
Washington Pond—Wharton—2,000 Lmbfg.
Washington Valley Brook—Morristown—150 Bta, 150 Brnta.
Weown Lake—Hurdtown—2,000 Lmbfg.
Wharton Mill Pond—Wharton—97 Lmba, 22 Pica, 1,000 Misc.
Wills Brook—Netcong—300 Bta.

OCEAN COUNTY

Carasaljo Lake—Lakewood—825 Lmbfg, 2,000 Bsfg.
Colliers Mills Lake—Colliers Mills—825 Lmbfg, 2,000 Bsfg.
Horican Lake—Lakehurst—2,000 Bsfg.
Jackson Mills Lake—Jackson Mills—2,000 Bsfg.
Manahawkin Lake—Manahawkin—1,500 Lmbfg, 1,000 Bsfg.
Metedeconk River, North Branch—Lakewood—500 Bta.
Metedeconk River, South Branch—Above Lakewood—500 Bta.
Pohatcong Lake—Tuckerton—1,500 Lmbfg, 1,000 Bsfg.
Toms River, North Branch—Quail Farm—1,200 Bta, 800 Brnta.

PASSAIC COUNTY

Barbours Pond—Paterson—2,070 Lmbfg, 400 Bsa, 1,000 Bsfg, 63 Lmba, 385 Ypera, 250 Sa.
Butcher's Pond—West Paterson—23 Lmba, 200 Ypera, 200 Sa.
Cooleys Brook—Hewitt—150 Bta.
Goffle Brook—Hawthorne—500 Bta.
Greenwood Lake—Hewitt—4,000 Lmbfg, 280 Lmba, 64 Pica, 1,000 Misc.
Hirds Lake—Apashawa—100 Ypera, 100 Sa.
High Mt. Brook—Midvale—125 Bta, 75 Brnta.
Hughes Lake—Passaic—100 Ypera, 100 Sa.
Memorial Lake—Clifton—250 Ypera, 250 Sa.
Nosenzo Lake—Macopin—500 Rta, 2,000 Lmbfg.
Oldhams Pond—North Haledon—500 Rta, 12 Lmba, 750 Ypera, 750 Sa.
Passaic River—Mt. View—25 Lmba, 26 Pica, 500 Misc.
Pequannock River—Smith Mills—1,500 Bta, 1,300 Brnta.
Pines Lake—Wayne—45 Lmba, 378 Ypera, 377 Sa, 19 Pica.
Pompton Lakes—Pompton Lakes—573 Lmba, 156 Pica, 10,000 Misc, 110 Ypera.
Pompton River—Pompton Lakes to Pompton Plains—1,800 Bta, 4,200 Brnta, 400 Rta.
Ringwood River—Ringwood—500 Bta, 425 Brnta, 125 Rta.
Singac Brook—Mt. View—500 Bta.
Twin Lakes—Pompton—2,000 Lmbfg, 688 Ypera, 687 Sa.
Wanaque River—Pompton Lakes, Midvale and Hewitt—3,125 Bta, 3,800 Brnta, 975 Rta.

SALEM COUNTY

Avis Lake—Richmontown—500 Lmbfg.
Alloway Lake—Alloway—2,000 Lmbfg.
Ballingers Mill Lake—Aldine—500 Lmbfg.
Camp Edge Lake—Alloway—500 Lmbfg.
Camp Roosevelt Lake—Aldine—500 Lmbfg.

Cocked Hat Pond—Alloway—1,000 Rta.
Deepwater Canal—Deepwater—2,000 Lmbfg.
Parvin Lake—Elmer—2,000 Lmbfg.
Penns Grove Sand Wash Pond—Penns Grove—1,000 Rta.
Rainbow Lake—Near Norma—1,000 Lmbfg.
Willow Grove Lake—Willow Grove—500 Lmbfg.
Woodstown Lake—Woodstown—500 Lmbfg.

SOMERSET COUNTY

Green Brook—North Plainfield—300 Bta.
Harrison Brook—Liberty Corner—350 Bta.
Indian Graves Brook—Bernardsville—300 Bta.
Lamington River—Burnt Mills—600 Bta.
Biddle Brook—Springdale—600 Bta.
Passaic River—Basking Ridge—1,800 Bta, 1,000 Brnta.
Peapack Brook—Gladstone—350 Bta.
Peters Brook—Somerville—575 Ypera, 575 Sa.
Raritan River, North Branch—Far Hills—2,600 Bta, 2,600 Brnta.
Raritan River, South Branch—Neshanic Station—400 Bta, 200 Brnta, 11,330 Smbfg.
Rock Brook—Zion—600 Bta.
Stoney Brook—Watchung—300 Bta.

SUSSEX COUNTY

Alms House Brook—Myrtle Grove—300 Bta.
Andover Jc. Brook—Andover—550 Bta, 775 Brnta.
Bear Pond—Lake Hopatcong—5,430 Lmbfg.
Beaver Run Brook—Beaver Run—400 Bta.
Bierskill Brook—Hainesville—150 Bta.
Big Flat Brook, Upper—High Point Park—2,050 Bta, 3,350 Brnta, 820 Rta.
Big Flat Brook, Lower—Haney's Mills—2,600 Bta, 2,200 Rta, 19,760 Brnta.
Black Brook—Beaver Lake—500 Bta, 100 Brnta.
Camp Blue Heron Lake—Sparta—850 Ypera, 850 Sa.
Catfish Pond—Stillwater—500 Lmbfg.
Clove Lake—Sussex—800 Lmbfg, 253 Lmba, 224 Pica, 1,000 Misc.
Clove Brook—Sussex—1,300 Bta, 1,700 Brnta.
Cranberry Lake—Cranberry Lake—1,500 Lmbfg, 171 Lmba, 700 Ca, 342 Pica, 3,000 Misc, 400 Ypera, 400 Sa.
Culvers Lake Brook—Branchville—100 Bta, 100 Brnta.
Culvers Lake—Culvers Lake—2,000 Lmbfg, 227 Lmba, 153 Pica, 2,000 Misc.
Dark Moon Brook—Johnsonburg—500 Bta.
Deckers Pond—Branchville—1,000 Lmbfg, 4 Lmba, 3 Smba, 15 Ypera, 50 Sa, 3 Pica, 40 Cba.
Delaware River—Milford Bridge to Belvidere—5,000 Smbfg.
Dragon Brook—Cranberry Lake—300 Bta, 200 Brnta.
Fairview Lake—Near Hardwick—1,000 Lmbfg, 800 Smbfg.
Fox Trail Lake—Stokes State Forest—800 Lmbfg, 113 Lmba, 1,000 Ca, 188 Pica.
Gardners Pond—Andover—500 Lmbfg, 750 Smbfg.
Glen Brook—Stillwater—200 Bta.
Glenwood Brook—Glenwood—300 Bta.
Grinnell Lake—Monroe—600 Lmbfg, 229 Lmba, 114 Pica, 1,000 Misc, 1,225 Ypera, 1,225 Sa.
Hopatcong Lake—Lake Hopatcong—202 Lmba, 22 Pica.
Hunts Pond—Yellow Frame—1,000 Lmbfg.
Iliff Lake—Andover—500 Lmbfg, 750 Smbfg, 140 Lmba, 1,500 Ca, 203 Pica.
Kemah Lake—Halsey—1,000 Lmbfg, 83 Lmba, 60 Pica, 800 Misc.
Kittatiny Lake—Culvers Lake—1,000 Lmbfg.

Kuhn Pond—Bevans—100 Bsa.
Kymers Brook—Andover—175 Bta, 50 Brnta.
Lackawanna Lake—Andover—1,000 Lmbfg, 253 Lmba, 50 Ypera, 805 Ca, 50 Sa, 200 Pica, 3,000 Misc.
Lenape Lake—Andover—2,000 Lmbfg, 750 Smbfg.
Little Flat Brook—Layton—1,850 Bta, 2,150 Brnta.
Lubbers Run—Cranberry Lake—900 Bta, 600 Brnta.
Madeline Mulford Lake—Stokes State Forest—400 Rta.
Margerum Brook—Stockholm—150 Bta.
McMickles Pond—Andover—500 Rta, 900 Ypera, 900 Sa.
Mill Brook—Montague—200 Bta.
Morris Pond—Fredon—300 Rta.
Musconetcong River—Fountain to Forbes—1,310 Bta, 3,100 Brnta, 500 Rta.
Musconetcong Lake—Stanhope—291 Lmba, 271 Pica, 3,000 Misc.
Neldon Brook—Above Swartswood—200 Bta.
Ocquittunk Lake—Stokes State Forest—1,800 Rta.
Owassa Lake—Near Culvers—2,000 Lmbfg, 1,000 Smbfg.
Pacock Brook—Stockholm—50 Bta.
Panther Lake—Andover—1,000 Lmbfg, 1,300 Smbfg.
Papakating Creek—Sussex—800 Bta, 700 Brnta, 300 Rta.
Papakating Creek, West Branch—Sussex—600 Bta, 400 Brnta, 200 Rta.
Parker Brook—Stokes State Forest—250 Bta.
Paulinskill Lake—Swartswood—1,000 Lmbfg, 2,000 Ca.
Paulinskill River—Lafayette to Stillwater—3,934 Bta, 6,419 Brnta, 620 Rta.
Pequest River—Springdale to Huntsville—1,050 Bta, 2,100 Brnta.
Pond Brook—Middleville—100 Bta, 100 Brnta.
Quarry Brook—Quarryville—250 Bta, 50 Brnta.
Quicks Pond—North of Swartswood—700 Smbfg.
Roys Spring Brook—Stillwater—300 Bta.
Saw Mill Lake—High Point Park—650 Brnta, 2,350 Rta.
Saw Mill Brook—High Point Park—1,000 Bta.
Shay Lake—Stokes State Park—500 Lmbfg, 500 Smbfg.
Shimers Brook—Montague Township—200 Bta.
Skellingers Lake—Stokes State Forest—1,600 Rta.
Sparta Glen Brook—Sparta Glen—200 Bta, 200 Brnta.
Sparta Jc. Brook—Sparta Jc.—166 Bta, 166 Brnta.
Steeneykill Lake—High Point Park—800 Lmbfg.
Stickles Pond—Springdale—1,000 Lmbfg.
Stoney Brook—Tuttles Corner—200 Bta.
Swartswood Lake, Big—Swartswood—2,000 Lmbfg, 480 Lmba, 1,300 Smbfg, 165 Pica, 1,500 Misc, 1,475 Ypera, 1,475 Sa.
Swartswood Lake, Little—Swartswood—1,000 Lmbfg, 1,000 Smbfg.
Tar Hill Brook—Tar Hill—175 Bta, 125 Brnta.
Trout Brook—Hamburg—375 Bta.
Tuttles Corner Brook—Tuttles Corner—200 Bta.
Wallkill River—Sparta to Franklin—1,825 Bta, 2,100 Brnta, 800 Rta.
Waterloo Pond—Waterloo—500 Lmbfg.
Wawayanda Lake—Andover Jc.—500 Lmbfg, 750 Smbfg.
Welfare Home Pond—Near Branchville—200 Bsa.
Wills Pond—Stanhope—500 Lmbfg.

UNION COUNTY

American Felt Pond—Clark Township—500 Lmbfg.
Ash Brook—Clark Township—125 Brnta, 125 Rta.
Briants Pond—Summit—1,500 Lmbfg, 40 Lmba, 500 Ca, 22 Pica, 300 Misc, 1,400 Ypera, 1,400 Sa.
Echo Lake, Upper—Mountainside—1,000 Lmbfg, 750 Ypera 750 Sa.
Echo Lake, Lower—Mountainside—1,000 Lmbfg.
Green Brook—Scotch Plains—125 Brnta, 125 Rta.

Jackson Pond—Rahway—500 Lmbfg.
Kenilworth Lake—Kenilworth—250 Lmbfg.
Milton Lake—Rahway—250 Lmbfg.
Nomahegan Lake—Cranford—250 Lmbfg.
Rahway Park Lake—Rahway—250 Lmbfg.
Rahway River—Springfield—700 Bta, 3,650 Brnta, 2,150 Rta.
Seeleys Pond—New Providence—2,000 Lmbfg.
Surprise Lake—Mountainside—2,000 Lmbfg, 201 Lmba, 31 Pica, 1,000 Misc, 400 Ypera, 400 Sa.
Warinanco Lake—Roselle—500 Lmbfg.

WARREN COUNTY

Bass Lake—Hardwick Township—2,000 Smba, 1,000 Smbfg.
Bear Creek—Johnsonburg—500 Brnta.
Beaver Brook—Hope—850 Bta, 1,900 Brnta.
Blairs Creek—Blairstown—850 Bta, 500 Brnta.
Buckaloo Swamp Brook—Hope—300 Bta.
Cedar Lake—Blairstown—1,500 Rta, 1,500 Lmbfg.
Columbia Lake—Columbia—2,500 Lmbfg.
Delaware River—Belvidere to Milford Bridge—131 Smba, 7,500 Smbfg.
Delawanna Creek—Delaware—300 Bta.
Dark Moon Brook—Johnsonburg—600 Bta.
Ebenezer Brook—Ebenezer—150 Bta.
Furnace Brook—Oxford—1,100 Bta.
Gruendykes Mill Pond—Hackettstown—225 Ca.
Guard Lock—Saxton Falls—2,500 Lmbfg, 162 Lmba, 1,800 Ca, 285 Pica, 2,500 Misc, 25 Bsa, 50 Ypera, 50 Sa, 25 S.
Ingersoll Dam—Stewartsville—1,100 Smbfg.
Jacksonburg Brook—Jacksonburg—850 Bta, 1,600 Brnta.
Lomisons Glen Brook—Lomisons Glen—550 Bta.
Lopatcong Creek—Harmony—850 Bta.
Mt. Lake—Buttzville—5,000 Lmbfg, 211 Lmba, 838 Ypera, 837 Sa, 165 Pica, 2,000 Misc.
Musconetcong River—Guard Lock to Penwell—7,625 Bta, 17,530 Brnta, 1,206 Rta.
Paulinskill River—Stillwater to Paulina—4,900 Bta, 10,270 Brnta, 380 Rta.
Pequest River—Townsbury to Belvidere—6,050 Bta, 8,850 Brnta, 800 Rta.
Pohatcong Creek—Mt. Bethel—4,300 Bta, 2,400 Brnta, 300 Rta.
Silver Lake—Hope—2,000 Rta, 144 Lmba, 1,500 Lmbfg, 1,200 Ca, 130 Pica, 425 Ypera, 400 Sa, 125 Bsa.
Susquehanna Lake—Blairstown—2,000 Rta, 1,500 Lmbfg.
Trout Brook—Hope—450 Bta, 100 Brnta.
Van Campens Brook—Millbrook—1,000 Bta, 350 Brnta.
Wasigan Brook—Ebenezer—150 Bta.
White Lake—Stillwater—1,500 Rta, 1,500 Lmbfg.
Yards Creek—Hainesburg—800 Bta, 600 Brnta.