

ANNUAL REPORT
OF THE
NEW JERSEY BOARD OF FISH
AND
GAME COMMISSIONERS



FOR THE
*Fiscal Year Commencing July 1, 1932
And Ending June 30, 1933*

STATE OF NEW JERSEY

BOARD OF

FISH AND GAME COMMISSIONERS

TRENTON

To His Excellency, A. Harry Moore, 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 Board of Fish and Game Commissioners for the fiscal year covering the
period from July 1, 1932, to June 30, 1933.

Very respectfully,

GEORGE C. WARREN, JR., *President*,
ALEXANDER H. PHILLIPS,
HARRY M. ARMSTRONG,
CHARLES F. HUNTER,
LEWIS SPINKS,
JAMES R. HENSLER,
BENJAMIN W. COOPER,
GEORGE S. McCARTY,

Commissioners.

List of Fish and Game Commissioners Holding Office
at the Date of This Report
June 30, 1933

GEORGE C. WARREN, JR., *President*.....Summit
ALEXANDER H. PHILLIPS, *Vice-President*.....Princeton
HARRY M. ARMSTRONG, *Treasurer*.....Jersey City
CHARLES F. HUNTER.....Palisade
LEWIS SPINKS.....Nixon
JAMES R. HENSLER.....Toms River
BENJAMIN W. COOPER.....Moorestown
GEORGE S. McCARTY.....Newfield

H. J. BURLINGTON, *Executive Secretary*

ANNE E. SULLIVAN, *Assistant Secretary*

Office of the Board, State House, Trenton, N. J.

MALCOLM DUNN, *Superintendent of Game Farms, Forked River*

CHARLES O. HAYFORD, *Superintendent of Fish Hatchery, Hackettstown.*

**List of Fish and Game Wardens Holding Commissions
at the Date of This Report**

CUDNEY, HARRY E., *Assistant Protector*.....Hackettstown
 KELLEY, THOMAS, *Assistant Protector*.....Jersey City

BAKER, EDWIN.....Haleyville
 BAKLEY, ALFRED F.....Newton
 BERNIUS, HENRY F.....Oxford
 BROOKE, GEORGE B.....Blackwood
 CARSLAKE, WILLIAM C.....Columbus
 CARSON, ROY R.....Medford
 CROWLEY, HAROLD M.....Tuckerton
 DACKERMANN, FRED H.....Elizabeth
 EGGERT, JOSEPH S.....West Millington
 GRAHAM, JOHN W.....Swedesboro
 GROVES, GEORGE E.....Egg Harbor
 HALL, GERVAIS I.....Salem
 HILL, CHARLES C.....Somerville
 HUGG, JOHN R.....Livingston
 LARSON, LEWIS.....Clinton
 LYELL, M. HOWARD.....Freehold
 MIZELL, CHATHAM.....Elmer
 NOLAN, THOMAS F.....Trenton
 PAUL, GEORGE R.....Perth Amboy
 ROACH, ALBERT A.....Butler
 RUTH, ALBERT J.....Woodcliff Lake
 SAXTON, DANA J.....Absecon
 SMALL, WILLIAM H.....Lavallette
 STEEL, WILLIAM.....Capé May Court House
 TRELOR, JAMES H., JR.....Franklin
 WILLIAMS, ROY H.....Pompton Lakes

SYNOPSIS OF ACTIVITIES 1932-33

It is a matter of gratification to our Board that notwithstanding greatly reduced income we have been able to maintain all departments without any material impairment of efficiency.

The following sets forth briefly some of the activities of the Board of Fish and Game Commissioners for the past fiscal year and also shows the progress made during the last five years.

FISH AND GAME DISTRIBUTION 1932-33

During the fiscal year 1932-33 there were distributed: 27,885 pheasants, 16,171 of which were propagated and distributed from our own farms, 3,236 raised by the public from eggs sent from our farms, 6,823 purchased from dealers for liberation on open lands in the State, and 1,655 purchased from the Public Shooting and Fishing Grounds' Fund for liberation on State controlled areas which are open to the public for hunting.

2,099 quail, 200 of which were propagated and liberated from our own farms, 649 purchased from dealers and distributed on open lands, and 1,250 purchased from the Public Shooting and Fishing Grounds' Fund and distributed on State controlled lands open to the public.

510,180 trout over 6 inches, 164,800 trout under 6 inches, 217,050 bass, 67,000 catfish, 268,780 sunfish, and 87,000,000 yellow perch fry.

In addition to this there were distributed from the Hancocks Bridge Hatchery in Salem County 26,400,000 yellow perch fry, 1,200,000 white perch fry and 3,290,000 shad fry.

The market value of the above was \$247,063.05.

The receipts from hunters' and anglers' licenses for the year were \$222,796.85, showing that the Commission placed in the fields and streams approximately \$25,000.00 worth of fish and game, (in market value) more than the total receipts for licenses during this period.

FISH AND GAME DISTRIBUTION—5-YEAR PERIOD

The following tabulations show the distribution of fish and game during the past five years.

	GAME		
	Pheasants	Rabbits	Quail
1928-29	18,337	14,921	0
1929-30	22,709	14,900	120
1930-31	30,668	20,661	722
1931-32	23,695	21,435	2,958
1932-33	27,885	0**	2,099
	123,294	71,917	5,899

** Due to confliction of laws in some western States, rabbits could not be trapped. This and the lack of funds prevented the purchase of the usual number of rabbits. We have placed an order this year for 20,000 rabbits for distribution during January and February, 1934.

FISH

The following table shows the fish propagated and distributed from our Fish Hatchery at Hackettstown, and the Shad Hatchery located at Hancocks Bridge, New Jersey, over a five-year period.

	Trout over 6"	Trout under 6"	Bass	Yellow perch fry.	Shad	Sunfish
1928-29	423,505	310,600	285,300	104,800,000	2,688,000	376,475
1929-30	446,882	203,300	131,000	113,800,000	3,094,000	391,950
1930-31	467,390	90,400	102,025	112,000,000	763,000	141,700
1931-32	506,667	65,150	127,900	115,400,000	805,000	255,000
1932-33	510,180	164,800	217,050	113,400,000	3,290,000	268,780
	2,354,624	834,250	863,275	559,400,000	10,640,000	1,433,905

LAW ENFORCEMENT

During the fiscal year 1932-33, 1,115 persons were prosecuted for violation of the fish and game laws, showing that the wardens' service is operating efficiently.

LATEST REPORT OF FISH AND GAME TAKEN

During the years 1930 and 1931 the following fish and game were reported taken:

	1930	1931
Pheasants	79,451	95,811
Rabbits	447,359	510,555
Grey Squirrels	58,631	103,561
Grouse	3,566	9,331
Quail	59,161	71,922
Woodcock	11,872	20,352
Geese	3,163*	4,461**
Ducks	64,999*	50,566**
Trout	269,189	410,606
Bass	99,554	146,629
Pickereel	164,996	233,062
Deer	1,702	1,575

* Fourteen weeks season.

** Four weeks season.

The estimated value of the fish and game reported taken, including deer, is \$1,000,459.50. These figures do not include fish and game taken by the farmer or property owner who does not require a license, and only covers about 40% of the total number of licenses issued in the State. Notwithstanding there is a law on the statute books making it mandatory for everyone to report his kill before a license can be obtained, it appears that the clerks in issuing the licenses

did not obtain the information called for by law, and it can be safely estimated that at least twice the amount of game reported was actually taken.

The total number of deer taken during the four day open season of the calendar year 1932 was 1,575. Estimating the deer at 75 pounds each, and 50 cents per pound, shows a food value to the sportsmen of \$59,062.50.

PREDATORY VERMIN CONTROL

Our latest census shows, the sportsmen are taking a greater interest in the destruction of predatory animals, such as cats, weasels, red squirrels, and foxes, as the following tabulation shows quite an increase in 1931 over the previous year, 1930. This census does not include unprotected hawks, crows and vermin taken by our wardens, or by farmers who do not need a license to trap or shoot on their own land.

	1930	1931
Cats	9,906	13,508
Weasels	5,188	5,392
Red Squirrels	2,239	4,323
Foxes	866	1,002

LICENSES ISSUED

There were approximately 75,000 less hunters and fishermen in the woods and fields and on our waters during 1931 than in 1930 yet there was a great increase in the amount of game and fish reported taken and predatory animals destroyed.

FARMER-SPORTSMAN CO-OPERATIVE PLAN

Under the Farmer-Sportsman Co-operative Plan inaugurated during 1933, 25,000 acres of ground that had been posted for years have been opened to the public, and stocked by the Commission.

A complete survey of the State made by the wardens in each county shows that well over 90% of our streams and lakes were open for public fishing and that well over 50% of the hunting areas of the State were also open to public hunting.

MIGRATORY WATERFOWL

The Commission has requested the Bureau of Biological Survey to allow the sixty-day season for geese, brant and ducks to be spread over our regular duck season with rest days. In addition to saving ducks, this would give our wardens the right to make arrests for violation during the entire duck season, practically making them Federal as well as State Wardens for this particular purpose.

In addition to this, duck hunters in the northern part of the State along the Delaware River would have some duck shooting whereas, at present, they have none. A survey of the guides and duck hunters has disclosed the fact that over 90% of them are in favor of the sixty-day season allotted by the Government being spread over the regular fourteen-week season.

LEGISLATION

New Jersey has passed a law giving game breeders a longer season to shoot pheasants raised and owned by themselves with the proviso that 20% of the birds released go back to the sportsmen of the State. All birds shot under this law must be tagged and complete records kept by game breeders of the number of birds released under supervision of the Commission. Tags are only issued for 80% of the birds actually released thereby assuring the sportsmen that 20% of those released will go to the State.

A bill was also passed giving the Fish and Game Commission permission to distribute licenses direct from the office instead of through the county clerks, making an estimated saving of at least \$30,000 per year to the sportsmen. Licenses will be obtainable at all of the usual agencies.

PUBLIC HUNTING GROUNDS

Gradual progress has been made in the purchase of public hunting grounds for which a portion of each license sold is set aside under the law. Up to the present time, 5,671 acres of ideal public hunting grounds have been acquired in the counties of Cape May, Cumberland, Ocean and Sussex.

In addition to this, we have purchased and leased approximately three miles of Big Flat Brook which is considered one of the finest trout streams in the State.

PHEASANTS

During the last fiscal year due to intensive work and economy, our game farms raised pheasants at an average cost of \$1.30 each. This is a record.

QUAIL AND GROUSE

We have raised at our farms over 1,300 quail for liberation this fall at an average cost of \$1.50 each. We expect to increase our quail production during the coming year.

CAMPAIGN ON SNAPPING TURTLES

Each warden has been supplied with a special turtle net for the purpose of controlling the snapping turtle menace to our fish life throughout the State.

SALT WATER PATROL

The Commission has had fast power boats keeping a check on illegal net fishing along our coast from Sandy Hook to Cape May and also on the Delaware River. Under the law all vessels coming into our waters for menhaden within the three-mile limit must be possessed of a license, and all persons taking food fish with beam or otter trawl between the two and three-mile limit must be possessed of a license.

Our officers apprehended several vessels violating the law, and inasmuch as these were steamers from out of the State, extradition proceedings have been started against the captains of the boats.

SURVEYS

Complete surveys have been made during this period on waterfowl as it pertains to New Jersey, on the eel grass shortage, on the destruction of breeding and feeding grounds by the mosquito exterminating commissions and on the brant situation, the results of which will be shown further on in this report. We are also making surveys on crow roosts and bears had in captivity which will be seen in another report.

ORGANIZATION

At the organization meeting of the Board in December which was completed in January, George C. Warren, Jr., of Summit, New Jersey, was elected President; Alexander H. Phillips, of Princeton, Vice-president, and H. M. Armstrong, Jersey City, Treasurer. The former President, H. J. Burlington, whose term did not expire until 1935, resigned and was appointed Executive Secretary.

The resignation of the Chief Protector, James M. Stratton, and Secretary, Walter H. Fell, as of January 1, 1933, was accepted by the Board.

Mr. Stratton was connected with the Department for almost thirty-four years and he was the dean of game protectors in the United States. His work over the whole period was of the highest calibre and the enforcement of the game laws in New Jersey under his administration was brought to a high state of efficiency.

Mr. Fell was Secretary of the Department for twenty-five years and had a minute understanding of every detail of the Department. These men were always loyal both to the Commission and the sportsmen of the State in general.

DEATH OF ARTHUR DAVISON

We are sorry to report the death of Arthur Davison, one of our Assistant Protectors, who was connected with the Department for so many years and was known as one of the most efficient game wardens on the force.

THE WARREN FOUR POINT PROGRAM

The four point program inaugurated by our Commission last year has met with favor from many sections of the State. This is a comprehensive plan requiring the co-operation of the organized sportsmen of each county, and its successful operation depends entirely on the support and action of these organizations.

Its main objects are vermin control to protect the farmers' flocks, both wild and domestic, and his crops, better cover for game and insectivorous birds which are indispensable to the farmer and landowner, damming and snagging of streams which will greatly increase the fish holding capacity of same and more and better co-operation between sportsmen and landowner. To this end the Commission has issued three comprehensive pamphlets as follows: 1. Vermin Control, showing all angles of this important work. 2. Feed and Cover, showing complete list of seed, shrubs and plants required for the cover and

food of game birds and animals. 3. Damming and Snagging of Streams, and how to do it. These pamphlets may be had by writing the Fish and Game Commission.

"The State," says President George C. Warren, Jr., the originator of this plan, "can go just so far in improving hunting and fishing; after that limit is reached, further development depends entirely on the organized sportsmen in each county and better hunting and fishing are produced in direct ratio to the co-operation of local hunters and anglers with its Fish and Game Commission."

FARMER-SPORTSMAN CO-OPERATIVE PLAN

During the spring of 1933 the Commission inaugurated a new farmer-sportsman co-operative plan. The results of the first six months of this plan were astounding. Up to the beginning of the present hunting season approximately 60,000 acres of land and water have been opened up to the hunter and angler. This land was formerly posted against hunting and fishing. Nearly every landowner approached was willing to co-operate, providing he was given protection from the indiscriminate trespasser who has been a nuisance, not only to the landowner but to the great majority of the sportsmen.

The plan briefly is as follows: The landowner agrees to allow hunting or fishing by permission of the owner on approximately four-fifths of his property; the remaining fifth, generally around his house, outbuildings, barns, etc., is posted with a red sanctuary sign imposing a penalty of \$20.00 for trespassing thereon. This precludes the probability of any shooting being done in proximity to the house or outbuildings and the possible killing of live stock. These sanctuary signs may also be placed around cultivated fields on the remainder of the ground. Black and white signs are placed at intervals stating that hunting and fishing is allowed by permission, with the owner's name thereon, and in addition to these, intermediate warning signs are placed stating that the property is stocked by the Fish and Game Commission, that no fires or other depredations may take place under a penalty of \$500.00. All of these signs are furnished and put up by the Fish and Game Commission. The ground is stocked from a special fund. Vermin control and game management will be inaugurated.

It would seem from the response of the landowners to this plan that many posted their land merely to protect themselves from the few unfair and ungentlemanly hunters and anglers, and it is evident that in the years to come hundreds of thousands of additional acres will be thrown open under the plan.

The addition of these lands to the property already purchased outright by the Commission and the State-owned lands now open to the public for hunting, fishing and other recreation makes in all well over 100,000 acres available to the sportsmen. This is encouraging to the sportsmen and very gratifying to the Commission, particularly in view of the fact that these plans are in their infancy.

SHORTAGE OF EEL GRASS IN OUR BAYS

During 1930 the shortage of eel grass in our bays and rivers became noticeable, we immediately requested the Biological Survey to make a survey or analysis of the cause of this shortage; they sent a representative who gave his opinion that the shortage was probably due to too much salinity or in other words due to a long period of drought not enough fresh rain water had entered our bays. This condition prevailed until the summer of 1933 when small quantities were seen apparently indicating that nature was correcting the situation.

We made a survey during the duck season this year. Small patches have been seen here and there, but nothing in comparison with the former abundance of this important waterfowl food. The survey brought out several important opinions regarding the situation. A few of the old-timers in our bays maintain that they have seen the same condition prevail two or three times during their life, and they believe that eel grass dies off in cycles, and will come back stronger than ever in time. These opinions do not disagree necessarily with the opinion of the Biological Survey, as periods of drought may have caused this condition in previous periods. If, however, the eel grass does not come back to normal soon, arrangements will have to be made to replace it with other foods, such as wild rice, wild celery or other plant that will thrive in our bays and rivers, or we will be unable to hold our ducks, geese and brant in New Jersey waters.

Last year due to this shortage of eel grass geese, brant and ducks were feeding on bay cabbage, which after a period made them unedible.

MOSQUITO DITCHES VS. WATERFOWL

In the counties of New Jersey where mosquito ditching has been carried on to any great extent, large areas of former breeding and feeding ground of our waterfowl have been destroyed or eliminated as far as breeding and feeding ground is concerned. A complete survey has been made by the Fish and Game Commission after many complaints have come in regarding this situation.

These ditches have drained many ponds on our meadows where waterfowl found rest and food, this drainage has destroyed every trace of the different grasses, snails and other food for waterfowl. The ditches are about six to eight inches wide and two to three feet deep and much upland game, such as rabbits and pheasants, and young ducks fall into these ditches and cannot get out thereby starving to death or becoming the prey of ground vermin, such as weasels and mink. Some form of chemical or oil is put in many of these ditches to destroy mosquito larvae, but this also destroys the food and in addition pollutes the rivers and bays into which these ditches sometimes flow. No fish or shell fish can exist where this fluid is.

Of course, we realize that mosquito breeding places must be done away with for the health and comfort of the general public, but we believe that it can be done without destroying animal or bird life which is also a resource and recreation of the people, and to this end we are making efforts with the co-operation of the sportsmen in sections of the State where this condition exists to take

up this situation in co-operation with the County Mosquito Extermination Commissions to see if it is not possible to carry on this work without interfering too much with the habits and food of our wild life.

LEGISLATION

The outstanding legislation passed and signed by the Governor during 1933 affecting the Fish and Game Commission was the game breeders' bill and the bill giving the Commission authority to distribute hunting and fishing licenses direct instead of through the county clerks at an estimated saving of \$30,000 annually, the latter bill was a recommendation of the Princeton Survey.

The game breeders' bill, allowing a longer season for shooting pheasants raised in captivity or in the semi-wild, was the culmination of several years of agitation among the sportsmen of New Jersey, and in fact throughout the United States. It was generally recognized that if commercial breeders and private estates were to continue to raise pheasants in large quantities they must be encouraged instead of being hampered, as they were under the old breeders' license system. In former years there was a surplus of approximately 25,000 raised annually in New Jersey over and above the number the market could absorb alive. This surplus was sold into cold storage at less than the cost of raising. Under the new law these birds may be put out for shooting on the ground owned or leased by the breeder and a fee charged for shooting.

The law provides that only a certain percentage of the birds may be taken and special tags are provided for this number only, the remainder, 20% under each system cannot be taken in any manner. It is indicated from records on file covering a period of years that not over 75% of the birds put out are actually killed and that the shooting drives out the balance to surrounding territory. It was in this way that pheasants got their first real start in New Jersey. The longer shooting season allowed to the owners and breeders is in reciprocation for their giving to the State the prescribed percentage of pheasants distributed by them for shooting purposes. It is estimated that this plan will provide at least 10,000 additional pheasants annually for the benefit of the sportsmen of the State, instead of selling them into cold storage as formerly.

WATERFOWL SEASONS IN NEW JERSEY

We sent a questionnaire to the guides, baymen, wardens, and old timers in and around our duck ground, and over 90% of them agreed that from November 15th to January 15th was the best all round season. Of course, no matter what season was set, it would not be satisfactory to everyone.

What we hope for is that the Federal Government will allow us to spread the sixty-day season over our former season from October 16th to January 31st with rest days, which would provide duck shooting for all parts of the State, and automatically make our wardens Federal wardens so that the law could be enforced 100%, whereas under the present system our wardens cannot prosecute a Federal violation, they can now only report violations to the Federal Government. We believe this would save ducks and geese, and our reason for this

belief is the fact that our census of ducks, geese, and brant taken annually shows that nearly as many ducks and 1,000 more geese and brant were killed during the thirty-day season of 1931 (under proclamation by the President) as were killed during the one hundred-day season of previous years.

This was astounding particularly in view of the fact that the bag limit on ducks, geese, and brant combined was over 50% less than former years. This would show that a short season with a great concentration of gunners, did not save waterfowl, as our census showed that more people gunned during this thirty-day season than in any previous year since 1926. Over the longer season many blinds were unoccupied for days at a time, and the ducks and geese fed contentedly, whereas during the shorter season every waterfowl gunner in the State was in our bays and the ducks were kept on the move continuously.

RECEIPTS AND EXPENDITURES

An analysis of the receipts and expenditures during the fiscal year follows:

Receipts

Hunters' and Anglers' Licenses, County Clerks' Checks to State Treasurer, Chapter 152, Laws of 1914		\$218,908.85
Board's Checks to State Treasurer:		
Chapter 125, Laws of 1922 (Woodcock Licenses)	3,626.00	
Chapter 320, Laws of 1915 (Juvenile Licenses)	262.00	
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		\$222,796.85
Other Licenses:		
Menhaden	\$2,100.00	
Food fish	1,650.00	
Pounds	4,830.00	
Breeders	1,345.00	
Carp	75.00	
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		\$10,000.00
Fines and Penalties:		
Chapter 247, Laws of 1911	\$21,656.98	
Chapter 96, Laws of 1922 (trespass)	167.50	
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		21,824.48
Farms and hatchery sales	\$1,248.48	
Sundries	1,605.51	
Deputy badges	739.00	
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		3,592.99
Sale of car	150.00	
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		35,567.47
		<hr/>
		\$258,364.32

Expenditures

Personal administration	\$1,559.57
Wardens' salaries	59,650.00
Wardens' expenses	876.55
Stocking expenses	5,715.00
Office expenses	15,350.64
Publicity	900.00
Printing, stationery, etc. (office furniture)	1,542.85
Hunting and fishing licenses and buttons	6,298.74
Legal expenses (court costs and assistance in cases)	732.05
Gasoline and oil for autos, boats, farm and hatchery	8,704.77
Tires and Tubes for autos and trucks	868.19
Maintenance autos and boats	11,395.32
Purchase of autos	464.57
Postage, telephone, telegraph and insurance	4,004.92
Maintenance Forked River Farm, salaries, etc.	17,145.90
Equipment and improvements, Forked River Farm	254.33
Maintenance Rockport Farm, salaries, etc.	7,625.85
Equipment and improvements, Rockport Farm	40.09
Maintenance fish hatchery, salaries, etc.	55,729.68
Equipment and improvements, hatchery	635.75
Maintenance shad hatchery	669.12
Purchase of game and fish from outside sources	23,317.83
Miscellaneous expenses	6,098.83
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	\$229,580.55
Bills outstanding	11,791.67
The net market value of fish and game raised and distributed during this period was	\$247,063.05

PROSECUTIONS

During the fiscal year ending June 30th, there were 1,115 prosecutions for violations of the fish and game laws; 1,091 of the offenders were convicted and 24 acquitted. In 202 cases by reason of youth, old age, extreme poverty, or other extenuating circumstances, sentence was suspended upon the payment of costs, with the exception that in a few cases the costs were also suspended by the magistrate. There were 82 cases appealed to the Common Pleas Court. There were 201 defendants committed to the county jail for periods of 10 to 90 days, in default of the penalty imposed, although a number of the defendants paid their penalties after serving a short time and were released. There were 48 hunting or fishing licenses revoked after the offenders were convicted of violating the act, and 23 guns were confiscated from aliens.

The proportion of arrests made by each warden, deputy wardens, and other complainants during the fiscal year is as follows:

Williams	112
Carslake	81½
Nolan	68½
Roach	58⅞
Hugg	56¼
Graham	48
Paul	36½
Bernius	35⅞
Dackermann	33½
Bakley	33⅞
Carson	32½
Hill	30½
Treloar	29⅞
Saxton	27¼
Groves	27%
Ruth	25
Eggert	23%
Larson	23%
Mizell	20
Brooke	17%
Lyell	15
Small	14½
Baker	14½
Steel	13
G. I. Hall	8
Lawrence	7⅞
Crowley	7
Evernham	7
F. J. Hall	5
Davison	1½
Cudney	½
Special officers	19
Deputy wardens	182
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	1,115

The following shows the various offenses for which persons were arrested during the fiscal year:

Fishing without license	202
Hunting without license	156
Hunting after sunset	79
Possession of illegal missile	56
Procuring wrong license	48
Illegal deer hunting	45
Illegal possession of game	35
Hunting with automatic gun	33
Illegal net fishing	32
Illegal possession of fish	31
Sunday gunning	29
Alien firearms	29
Illegal possession of deer	27
Possession of protected birds	27
Firearms in woods	25
Possession of hen pheasant	21
Killing game illegally	21
Possession of short fish	20
Excess of bag limit	19
Hunting in close season	18
Hunting by aid of auto or auto lights	18
Loaning or altering buttons or licenses	15
Killing game illegally	13
Illegal trapping	12
Taking fish illegally	12
Dog running at large	10
Hunting in tracking snow	8
Refusing to show license	7
Giving false information to procure license	7
Hunting on game refuge	6
Illegal hunting	5
Setting box traps, snoods or snares	4
Possession of fish out of season	3
Possession of short lobster	3
Using set lines	3
Mutilating game	3
Hunting with ferret	3
Running deer with dog	2
Artificial bait	2
Taking crabs with more than 10 baits	2
Robbing bird's nest	2
Attempting to take game illegally	2
Taking game illegally	2
Impersonating a game warden	2
Selling game illegally	2

Stealing one muskrat	2
Polluting waters	2
Fishing with plug of more than three hooks	2
Selling short lobsters	1
Operating beam trawl without license	1
Possession of firearms in woods on Sunday	1
Liberating fox	1
Hunting with illegal firearms	1
Possession of mutilated game	1
Hunting muskrats other than by trap	1
Illegal possession of foxes	1

GAME

HUNTING CONDITIONS

A condensed report from the wardens in every section of the State as to the game bags shows that game was plentiful and many hunters had taken their limit, especially during the first ten days of the season.

The woodcock hunters had a fairly good year and the rabbit, pheasant and quail hunters found plenty of game, in that one of the largest distributions of pheasants, rabbits and quail ever made in the State was done during 1932. Our annual census shows that the kill of pheasants and rabbits particularly increases every year. Reports from the grouse sections of the State showed that grouse were on the increase, some hunters having flushed as many as twenty-five in a day's hunting. Reports from the duck section of the State, in the face of all that has been said about the precarious conditions in other parts of the United States and Canada, showed that we had a great concentration of ducks, geese, and brant in New Jersey, particularly black ducks and brant.

All in all, it was the consensus of opinion that this was one of the best hunting seasons that we have had in New Jersey, and the great majority of the sportsmen were not only pleased with the large liberation of game, but with the actual results in the field.

FORKED RIVER AND ROCKPORT GAME FARMS

The 21st annual report of the operation of Game Farms for the year ending June 30, 1933, is made by Malcolm Dunn, Superintendent.

I am glad to report that the past year has been one of the most successful since the farms were in operation. The output of game from the Forked River Farm was the largest we have ever had, and while we had some losses in the Rockport Farm through disease, the output from there compares favorably with any year since it was started.

There has been much discussion as to raising pheasants artificially with incubators and brooders, and we are doing some experimenting on the farm with this method this year. It is too early, yet, to make any recommendations as to what I would like to do in this work in the future.

Due to a reduced income, our work was curtailed very much at both farms the past year and we were two men short of our regular force at Forked River Farm after September first until June first and were six men short of our regular force at Rockport and, at the present time, we have six men instead of eight at Rockport as we had in former years. During the winter, we were further curtailed by working the men that were left part time for two months at both farms and were therefore unable to do most of the repair work that we usually do during the winter months.

Last year all our rearing of pheasants was done on the Fisher Farm and as soon as we had our birds liberated, all the wire fences were taken down, the wire loaded up and carted up to the main farm at Rockport and stored under cover during the winter months.

During the past year we have experimented in the rearing of rabbits and have been successful, and we will continue the experiment.

At the Forked River Farm we killed 40 owls, 80 hawks, 175 crows, 20 opossums, 11 skunks, 35 cats, 4 weasels, 2 mink, and about 3,000 rats.

At the Rockport Farm we killed 20 foxes, 30 owls, 40 hawks, 28 cats, 130 crows, 10 weasels, 14 skunks, and about 2,500 rats.

Exhibits of game from Forked River were made at the Trenton Fair, and at the Bergen County Deputy Wardens' Association from Rockport.

During the year the following number of pheasant eggs were set, hatched and distributed from both farms:

Eggs set at Forked River Farm ..	15,400	Young birds hatched ...	10,400
Eggs set at Rockport Farm	11,000	Young birds hatched	8,300
	26,400		18,700

Pheasant eggs distributed throughout the State:

From Forked River Farm	10,476
From Rockport Farm	14,292
	24,768

The pheasant record is as follows:

Forked River Farm:

Breeding birds on hand 6/30/32	1,160
Farm birds raised	7,888
Birds purchased	1,220
Estimate of birds on hand 6/30/33	9,000
	19,268

Rockport Farm:

Breeding birds on hand 6/30/32	1,171
Farm birds raised	7,473
Estimate of birds on hand 6/30/33	7,000
	15,644

Forked River Farm:

Farms birds liberated	7,888
Purchased birds liberated	855
Breeding birds on hand 6/30/33	1,162
Estimate of young birds on hand 6/30/33	9,000
Birds died and escaped	363
	19,268

Rockport Farm:

Farm birds liberated	7,473
Breeding birds on hand 6/30/33	1,150
Estimate of young birds on hand 6/30/33	7,000
Birds died and escaped	21
	15,644

HUNTING ACCIDENTS

We are pleased to state there were only four hunting accidents during the season for small game, only one proving fatal, and three accidents during the deer season, none being fatal. This is no doubt due to the number of warnings sent out during the hunting season and the fact that rifles are not allowed to be used in the hunting of deer. We are probably the only State where deer are hunted that has so few hunting accidents and seldom if ever a fatal one.

DEER

During the four days in which deer hunting was permitted in December, there were 1,575 bucks legally killed and reported and 89 does or fawns killed illegally by hunters. At other times during the year there were 208 deer killed by automobiles, railroad trains, and in various other ways.

Twenty-six persons were prosecuted for violation of the deer act and penalties of from \$50.00 to \$300.00 imposed.

The following are the counties in which deer were killed:

County	Bucks	Does or Fawns
Atlantic	144	9
Bergen	68	12
Burlington	338	27
Camden	20	..
Cape May	10	..
Cumberland	52	..
Essex	8	..
Gloucester	15	..
Hudson
Hunterdon	15	1
Mercer	9	..
Middlesex	3	..
Monmouth	57	2
Morris	152	5
Ocean	268	19
Passaic	85	5
Salem
Somerset	42	3
Sussex	210	4
Union	2	..
Warren	77	2
	1,575	89

FISH

FISHING CONDITIONS

The trout season of 1932 is one long to be remembered in that the distribution of adult trout was the largest ever made in the State in any single season, and the condensed accounts as reported by our wardens and others were that never so many people had been seen on our streams and few of them that did not get a full bag limit during some part of the season. Conditions during the season were, mostly favorable. Many complaints were received of certain so-called sportsmen following the hatchery truck and taking their limit when the distribution was made, but we are pleased to say that this condition is gradually being eliminated.

Many reports come from our bass lakes showing the result of the last five years stocking of three to four-inch bass from our hatcheries and large fish planted from reservoirs and private lakes. We netted one reservoir and in three days took approximately ten thousand bass ranging from two to four pounds each, which were planted in the open waters of the State.

We are satisfied that fishing conditions are gradually improving, and we are increasing the output every year. Our annual census shows that more game fish, such as trout and bass, are being caught every year.

POLLUTION

We investigated all cases where pollution was alleged and sent many abatement notices to plants that caused pollution in our waters. Every one of them either put in disposal plants or made other arrangements to stop the pollution. In only two cases was a successful prosecution brought and fines collected.

HATCHERY OPERATIONS

Charles O. Hayford, Superintendent of the Fish Hatchery at Hackettstown, in his twenty-first annual report for the fiscal year ending June 30, 1933, says:

The output of the Hackettstown Hatchery for the past fiscal year is shown by the following table:

	Inches	Raised	Disposed of	Estimated Number on Hand
		July 1, 1932, to June 30, 1933		
Brook Trout	3	28,000	28,000	
" "	3-4	350,000		350,000
" "	4-5	32,500	32,500	
" "	7-9	70,190	70,190	
" "	8-10	113,800	108,800	5,000
" "	8-12	3,700	3,700	
" "	10-12	42,795	42,795	
" "	12-14	8,160	8,160	
" "	14-16	1,455	1,455	

Rainbow Trout	2-3	250,000		250,000
"	4-6	91,500	1,500	90,000
"	6-7	1,500	1,500	
"	8-10	38,150	38,150	
"	10-12	62,922	62,922	
"	12-14	25,000	25,000	
"	14-16	753	753	
Brown Trout	2-3	350,000		350,000
"	3	79,600	79,600	
"	3-4	22,300	22,300	
"	4-6	30,900	900	30,000
"	6-8	1,900	1,900	
"	7-8	30,000	30,000	
"	8-10	62,945	62,945	
"	10-12	36,000	36,000	
"	12-14	14,000	14,000	
"	12-16	35	35	
"	14-16	235	235	
"	16-20	1,640	1,640	
Large Mouth Bass	1	250,000		250,000
"	2	82,075	32,075	50,000
"	3	84,050	84,050	
"	3-4	7,300	7,300	
"	4	37,125	37,125	
"	4-5	350	350	
"	5	900	900	
Small Mouth Bass	1	40,000		40,000
"	3	42,425	42,425	
"	3-4	2,200	2,200	
"	4	6,100	6,100	
"	4-5	4,525	4,525	
Catfish	2-3	51,000	51,000	
"	3-4	16,000	16,000	
Bluegill Sunfish	1-2	268,500	268,500	
"	8-10	280	280	
Yellow Perch	fry	87,000,000	87,000,000	
		89,642,810	88,227,810	1,415,000

Output from Hancock's Bridge Hatchery, Salem County—			
Yellow Perch	fry	26,400,000	26,400,000
White Perch	fry	1,200,000	1,200,000
Shad	fry	3,290,000	3,290,000
		30,890,000	30,890,000
Total from both Hatcheries		120,532,810	119,117,810
In addition to the above:			
Various fish netted in State Reservoirs			432,155
Total Distribution			119,549,965

The following tables show distribution of trout, bass, perch, bluegill sunfish and catfish, during the past five years:

<i>Trout over 6 inches</i>		<i>Trout under 6 inches</i>	
1928-29	423,505	1928-29	310,600
1929-30	446,882	1929-30	203,300
1930-31	467,390	1930-31	90,400
1931-32	506,667	1931-32	65,150
1932-33	510,180	1932-33	164,800
	2,354,624		834,250

<i>Bass Fingerlings</i>		<i>Yellow Perch Fry</i>	
1928-29	285,300	1928-29	104,800,000
1929-30	131,000	1929-30	113,800,000
1930-31	102,025	1930-31	112,000,000
1931-32	127,900	1931-32	115,000,000
1932-33	217,050	1932-33	113,000,000
	863,275		558,600,000

<i>Bluegill Sunfish Fingerlings</i>		<i>Catfish Fingerlings</i>	
1928-29	376,475	1928-29	55,900
1929-30	391,950	1929-30	24,500
1930-31	141,700	1930-31	74,600
1931-32	255,000	1931-32	7,000
1932-33	268,780	1932-33	67,000
	1,433,905		229,000

Shad Work—There was a marked increase in the output of shad fry from the Hancock's Bridge Hatchery. There were 3,290,000 fry distributed against 805,000 in 1931-32.

Bass Work—For many years we have been experimenting on how to produce the greatest number of bass per acre. The best method and most economical we have discovered up to the present time is the use of trout excrement, a product that for many years we have let go to waste.

In the spring we netted the trout from Pond No. 12, containing 1.27 acres, leaving all excrement and silt that had collected during the period of eight months.

After one week the pond was allowed to fill slowly until it reached normal level. All water was then shut off. Daphnia was introduced and allowed to reproduce for ten to twelve days, at which time the pond was a swarming mass of daphnia and other aquatic life.

On June 13, 1932, 31,200 large-mouth bass fry one-half of an inch long were placed in Pond No. 12, 24,566 per acre. On September 10th we netted from this pond 21,083 bass three inches long, 16,600 per acre, a loss of 10,117, or 32.4%, at a cost of approximately \$4.93 per thousand.

It cost approximately \$81.89 per acre for actual labor to produce these bass. On July 1, 1932, we introduced 20,000 large-mouth bass one inch long into Pond No. 8, an average of 26,666 per acre. From August 1st these bass were fed chopped sheep hearts twice daily.

On September 16 we netted 18,383 bass three to four inches long, an average of 24,510 per acre, a loss of 1,617, or 9.80%.

Cost of Operating Pond No. 8

Netting fry from reservoir	\$15.00
One-half ton horse manure	1.00
Labor spreading horse manure	1.50
Labor feeding bass	47.50
Cost of sheep hearts	23.50
Netting and shipping bass	27.00
	<hr/>
	\$115.50

An average of \$154.00 per acre, average cost of bass \$6.28 per thousand.

Trout—Had two consultations with Dr. George C. Embody, of Cornell University. As soon as funds permit, quarterly conferences should be continued as in the past.

During recent years Dr. Davis, Pathologist of the United States Bureau of Fisheries, has conducted some very valuable experiments in the use of dried meat meals in trout food. Last year we used this product, with the result that we were able to feed our trout on an average cost of .031 per pound.

Distribution of legal size trout, 1931-32—506,667 in 1,474 miles of stream—344 per mile.

Distribution of legal size trout, 1932-33—510,180 in 1,474 miles of stream—346 per mile.

Below will be found a tabulation showing the cost of producing a pound of trout during the past four years:

Year	No. lbs. food to make lb. trout	Average cost of food per lb.	Cost of food to make lb. trout	Saving in cost over 1929-30	Saving in amount of food required over 1929-30	Average saving in purchase price per lb. over 1929-30
1929-30	5.5	.048	.264			
1930-31	4.0	.047	.189	28.5%	27.3%	2.1%
1931-32	3.8	.040	.152	42.5%	31.0%	16.3%
1932-33	3.7	.031	.117	55.6%	32.7%	35.4%

Bass and Bluegills—The following tabulation shows an increase in distribution of bass and bluegills over 1930-31 and an increased yield per acre.

Year	No. fng. large & smallmouth bass 3 to 5 in. distributed	Increase in distribution over 1930-31	Average yield per acre	Increase yield per acre over 1930-31	No. acres water
1930-31	102,025		8,810		11.58
1931-32	127,900	25.3%	9,112	13.3%	12.80
1932-33	217,050	112.0%	13,978	58.0%	15.52
			Bluegills		
1930-31	141,700		27,893		5.08
1931-32	255,000	79.9%	50,196		5.08
1932-33	268,780	89.0%	52,909		5.08

POUND FISHERIES SUMMARY

Following is a summary of the pound fisheries' reports for the calendar year ending December 31, 1932:

Approximate value of all pounds	\$727,398.00
Proceeds derived from sale of fish	\$538,062.21
Number of pounds of fish caught and disposed of	20,359,853

Licenses issued:

Atlantic Ocean	118
Sandy Hook and Raritan Bay	18
	<hr/>
	136
Number of pounds operated	131
Number of men employed	435

REPORT OF SHAD CAUGHT IN DELAWARE RIVER AND BAY

County	Boats		Nets		Men Engaged		Number Shad Caught		Value Shad Caught		Value of Boats and Nets	
	1932	1933	1932	1933	1932	1933	1932	1933	1932	1933	1932	1933
Cumberland	116	61	161	77	166	111	40,700	23,474	\$31,075	\$10,526	\$17,430	\$16,404
Salem	32	26	32	26	64	52	2,396	2,358	1,892	1,790	12,800	3,900
Camden	..	6	..	7	..	14	..	630	..	170	..	1,300
Burlington	22	13	22	12	50	43	575	2,863	575	1,381	3,300	1,250
Mercer	9	12	7	8	28	48	801	6,257	1,100	3,969	1,550	1,440
Hunterdon	3	2	3	2	12	12	1,170	5,283	1,201	2,500	500	400
	182	120	225	132	320	280	45,642	40,865	\$35,843	\$20,336	\$35,580	\$24,694
Decrease	62		93		40		4,777		15,507		10,886	

SUPPLEMENT TO 1931-1932 REPORT

Income	
Balance as per last printed report	\$52,032.67
Expenditures	
Chapter 382, Laws of 1931, paid after June 31, 1932	4,048.22
To Balance	47,984.45
	\$52,032.67

REPORT FOR 1932-1933

Income	
Balance July 1, 1932	\$47,984.45
Hunters' and Anglers' Licenses:	
Chapter 152, Laws of 1914 (Regular)	
Chapter 320, Laws of 1915 (Juvenile)	
Chapter 125, Laws of 1922 (Woodcock)	\$222,796.85
Chapter 153, Laws of 1918:	
Menhaden Licenses	\$2,100.00
Food Fish Licenses	1,650.00
Pound Licenses	4,830.00
Breeders' Licenses	1,345.00
Deputy Fees	739.00
Carp Permits	75.00
Sales, Farms and Hatchery.	1,248.48
Sundries	1,605.51
Trespass cases	167.50
	13,760.49
Fines, Chapter 147, Laws of 1911	21,656.98
Sale of car	150.00
	\$258,364.32
	\$306,348.77
Expenditures	
Chapter 231, Laws of 1932	\$229,580.55
Cash Balance July 1, 1933	76,768.22
Requisitions outstanding against this balance	11,791.67
	\$64,976.55
PUBLIC SHOOTING AND FISHING GROUNDS FUND	
Balance as per last printed report	\$20,646.94
Receipts from July 1, 1932, to June 30, 1933	98,971.11
	\$119,618.05
Expenditures	50,981.47
Balance June 30, 1933	\$68,636.58

STOCKING OF NEW JERSEY WATERS

By the New Jersey Board of Fish and Game Commissioners
for the Fiscal Year Ending June 30, 1933

Total Number of Fish Planted from All Sources—119,549,810.

KEY TO ABBREVIATIONS

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

Size

fg. fingerlings
f. fry
a. adults

ATLANTIC COUNTY

(Great Egg Harbor System)

Bargaintown Lake—Bargaintown—750 Lmbfg, 800,000 Yperf, 1,000 Cfg.
Deep Run—Weymouth—400 Bta, 100 Brnta.
Egg Harbor River—Weymouth—400 Bta, 100 Brnta.
English Brook—Pleasantville—775 Bta, 625 Brnta.
Lenape Lake—Mays Landing—1,500 Lmbfg, 1,400 Yperf, 500 Cfg.

(Mullica River System)

Hammonton Lake—Hammonton—20 Smba, 1,750 Lmbfg, 600,000 Yperf, 3,750 Bsf, 2,450 Rta, 400 Cfg.
Indian Cabin Lake—Egg Harbor—600 Lmbfg, 600,000 Yperf, 1,500 Bsf, 150 Bta, 250 Brnta, 900 Cfg.

BERGEN COUNTY

(Hackensack River System)

Boiling Spring Brook—Old Tappan—500 Bta, 3,000 Brntfg.
Closter Brook—Closter—800 Bta, 200 Brnta, 150 Rta.
Cooper's Pond—Bergenfield—585 Lmbfg, 400,000 Yperf, 250 Brnta, 900 Bta.
Demarest Brook—Demarest—50 Rta.
Dyers Brook—Northvale—250 Bta, 4,500 Brntfg.
Hackensack River—Oradell—600 Bta, 3,470 Brnta, 450 Rta.
Holdrum's Pond—Rivervale—400,000 Yperf.

Morrow Lake—Englewood—600,000 Yperf, 600 Brnta, 775 Rta, 900 Bta.
Pascack Creek—Montvale—5,766 Bta, 4,400 Brnta, 2,550 Rta, 600 Brntfg.
West Pascack Creek—Northvale—318 Bta, 3,100 Brntfg.
Pearl River Brook—Montvale—1,500 Brntfg.
Roosevelt Common Lake—Tenafly—100 Brnta, 150 Rta, 200 Bta.
Tappan River—Old Tappan—2,000 Brntfg.
Teller's Brook—Rivervale—600 Bta, 2,500 Brntfg.
Tenekill Creek—Closter—600 Bta, 200 Rta.
Washington Spring Brook—Cherry Hill—125 Brnta.
Willow Lake—Little Ferry—1,700 Bta, 1,125 Brnta, 1,125 Rta.

(Pascack Creek System)

Bear Creek—Woodcliff Lake—600 Bta.
Electric Lake—Montvale—1,170 Lmbfg, 600,000 Yperf.
Montvale Brook—Montvale—216 Bta, 600 Brntfg.
Woodcliff Lake—Montvale—600,000 Yperf.

(Passaic River System)

Goffe Brook—Ridgewood—100 Rta.
Ramapo River—Oakland—1,575 Brnta, 2,700 Rta.
Saddle River—Saddle River—3,750 Btfg, 7,950 Bta, 5,000 Brnta, 4,300 Rta.
Saddle River Tributary—2,500 Brntfg.
Valentine Brook—Hawthorne—300 Bta, 600 Brnta, 300 Rta.
Van Emburgh's Pond—West Ridgewood—200,000 Yperf, 200 Rta, 500 Brnta, 400 Bta.

(Saddle River System)

Sprout Brook—Arcola—400 Bta.
Tallman Brook—Upper Saddle River—2,500 Brntfg.

BURLINGTON COUNTY

(Delaware River System)

Cookstown Lake—Cookstown—300 Lmbfg, 4,500 Bsf, 1,200 Ca.
Moorestown Lake—Moorestown—2,050 Lmbfg, 4,500 Bsf, 1,200 Ca, 750 Cfg.
Sylvan Lake—Burlington—2,200 Lmbfg, 400,000 Yperf, 300 Ypera, 500 Brntfg, 1,450 Brnta, 3,700 Rta, 2,000 Bta.
Wrightstown Pond—Wrightstown—300 Lmbfg, 4,500 Bsf, 1,200 Ca.

(Mullica River System)

Atsion Lake—Atsion—200 Lmbfg, 400,000 Yperf.

(Rancocas Creek System)

Browns Mills Lake—Browns Mills—800 Lmbfg, 2,250 Bsf, 800 Ca.
Lake Cotoxen—Kirby's Mills—200 Lmbfg.
Durands Lake—Mt. Holly—400 Lmbfg, 100 Bsf.
Hartford Lake—Hartford—200 Lmbfg.
Medford Lake—Medford—600 Lmbfg.
Medford Creek—Medford—150 Ypera, 400,000 Yperf.
Mt. Holly Creek—Mt. Holly—600 Lmbfg, 250 Ypera, 400,000 Yperf.

Mt. Run Creek—Near Medford—200 Lmbfg.
New Lisbon Lake—New Lisbon—200 Lmbfg.
New Lisbon Creek—New Lisbon—200 Lmbfg.
Pemberton Creek—Pemberton—300 Lmbfg.
Rancocas Lake—Rancocas—100 Bsf.
Rancocas Creek—Rancocas—6 Cba, 1,000 Ypera, 10 Smba.
Smithville Lake—Smithville—200 Lmbfg, 400,000 Yperf.
Vincentown Lake—Vincentown—400 Lmbfg.
Warwicks Lake—Hartford—400,000 Yperf, 50 Bsf.

CAMDEN COUNTY

(Cooper River System)

Ellisburg Creek—Ellisburg—325 Bta, 125 Brnta, 100 Rta.
Evans Lake—Haddonfield—552 Lmbfg, 600,000 Yperf.
Laurel Lake—Laurel Springs—376 Lmbfg, 400,000 Yperf, 400 Cfg.
Lindenwold Lake—Lindenwold—302 Lmbfg.
Lucas Lake—Gibbsboro—778 Lmbfg, 500 Cfg.
Roberts Park Lake—Collingswood—200 Lmbfg, 200 Bta.
Woods Pond—Borough of Gibbsboro—277 Lmbfg, 400,000 Yperf, 3,000 Bsf, 200 Sa, 250 Cfg.

(Delaware River System)

Haddon Lake—Mt. Ephraim—200 Lmbfg, 400,000 Yperf, 750 Bsf, 1,100 Cfg.
Kresson Lake—Kresson—400,000 Yperf.
Mountwell Stream—Haddonfield—325 Bta, 375 Brnta, 100 Rta.

(Mullica River System)

Atco Lake—Atco—1,502 Lmbfg, 400,000 Yperf, 750 Bsf.
Spring Garden Lake—Near Braddock—300 Lmbfg.

(Big Timber Creek System)

Blackwood Lake—Blackwood—258 Smba, 625 Lmbfg, 67 Ypera, 400,000 Yperf, 1,500 Bsf.
Bottomley's Lake—Clementon—525 Lmbfg, 400,000 Yperf.
Brown's Run—Turnersville—450 Btfg, 200 Brnta.
Clementon Lake—Clementon—776 Lmbfg, 400,000 Yperf, 1,500 Bsf, 500 Cfg.
Grenloch Lake—Grenloch—903 Lmbfg, 200 Sa, 500 Cfg.
Big Lebanon Run—Turnersville—1,225 Bta, 1,250 Brnta, 575 Rta.
Little Lebanon Run—Turnersville—25 Bta, 100 Rta.
Pillings Lake—Clementon—375 Lmbfg.
Wegmor Lake—Near Turnersville—475 Rta, 175 Brnta, 575 Bta.
Lakeland Lake—Lakeland—200 Smba, 200 Sa.

CAPE MAY COUNTY

Alms House Pond—Cape May Court House—750 Lmbfg, 800,000 Yperf.
Dennisville Pond—Dennisville—750 Lmbfg, 800,000 Yperf.
Lilly Lake—Cape May—600 Lmbfg.
Ludlam's Lake—Dennisville—800,000 Yperf.
Rio Grande Pond—Rio Grande—600 Lmbfg, 800,000 Yperf, 1,500 Bsf.

CUMBERLAND COUNTY

(Cohansey Creek System)

Cedar Lake—Cedarville—400 Lmbfg, 400,000 Yperf, 1,000 Cfg.
Clark's Pond—Bridgeton—300 Lmbfg, 400,000 Yperf.
Mary Elmer Lake—Bridgeton—450 Lmbfg, 400,000 Yperf.
Tumbling Dam Lake—Bridgeton—11 Smba, 750 Lmbfg, 70 Ypera, 400,000 Yperf, 34 Cba, 200 B, 52 Pa, 46 Wpera.

(Maurice River System)

Cumberland Lake—Near Millville—750 Lmbfg, 400,000 Yperf.
Laurel Lake—Near Millville—2,050 Lmbfg, 400,000 Yperf, 3,750 Bsf, 1,650 Cfg.
Leaming Lake—Near Millville—450 Lmbfg, 800,000 Yperf.
Little Mill Lake—Millville—300 Lmbfg.
Union Lake—Millville—1,550 Lmbfg, 400,000 Yperf, 3,750 Bsf, 400 Cfg.

ESSEX COUNTY

(Passaic River System)

Branch Brook Park Lake—Newark—1,338 Lmbfg, 800,000 Yperf, 175 Rta, 3,900 Ca, 400 Brnta.
Clarks Pond—Bloomfield—175 Rta.
Oakes Pond—Bloomfield—175 Rta.
Passaic River—Swinefield and Columbia Bridges—2,250 Lmbfg.
Troy Brook—Troy Hills—250 Rta.
Verona Lake—Verona—738 Lmbfg, 2,250 Bsf, 300 Rta, 3,500 Cfg, 850 Brnta.
Weequahic Park Lake—Newark—2,441 Lmbfg, 800,000 Yperf, 6,000 Ca.
Yanticaw or Notch Brook—Essex Park—175 Rta.

(Rahway River System)

Meadow Land Park Lake—So. Orange—300 Bta, 200 Brnta, 150 Rta.
So. Mt. Reservation—So. Orange—2,500 Bta, 2,750 Brnta, 2,800 Rta.

GLOUCESTER COUNTY

(Delaware River System)

Bell's Lake—Woodbury—428 Lmbfg.
DeHarts Lake—Thorofare—100 Lmbfg.
Woodbury Lake—Woodbury Heights—452 Lmbfg, 1,500 Bsf.

(Mantua Creek System)

Alcyon Lake—Pitman—700 Lmbfg, 400,000 Yperf, 300 Sa, 300 Cba, 500 Cfg.
Leslie's Lake—Mt. Royal—400,000 Yperf.
Mantua Creek—Pitman—500 Bta.
Wenonah Lake—Wenonah—504 Lmbfg, 400,000 Yperf, 500 Cfg.

(Maurice River System)

Iona Lake—Iona—475 Lmbfg, 400,000 Yperf.
Kandle Creek—Franklinville—100 Bta, 75 Brnta, 50 Rta.
Malaga Lake—Clayton—700 Lmbfg, 600,000 Yperf.
Wilson Lake—Clayton—525 Lmbfg, 400,000 Yperf.

(Raccoon Creek System)

Gilman Lake—Ewan—200 Lmbfg, 1,500 Rtfg, 550 Brnta, 2,450 Rta.
Mullica Hill Lake—Mullica Hill—625 Lmbfg, 400,000 Yperf, 300 Sa, 300 Cba,
250 Cfg.

(Timber Creek System)

Almonesson Lake—Almonesson—1,188 Lmbfg, 400,000 Yperf, 3,000 Bsf, 300
Sa, 300 Cba, 1,100 Cfg.
Big Lebanon Run—Turnersville—2,300 Btfg, 525 Bta, 25 Brnta, 175 Rta.
Little Lebanon Run—Turnersville—1,500 Btfg, 925 Bta, 625 Brnta, 375 Rta.
Turnersville Pond—Turnersville—250 Lmbfg.

HUDSON COUNTY

Hudson County Park Lake—North Bergen—1,400 Rta, 900 Brnta.

HUNTERDON COUNTY

(Delaware River System)

Alexauken Brook—Lambertville—150 Rta.
Everittstown Brook—Everittstown—200 Bta.
Lockatang Creek—Stockton—500 Bta.
Little York Brook—Little York—750 Bta, 2,100 Brntfg.
Mount Pleasant Brook—Mount Pleasant—170 Bta.
Musconetcong River—Penwell to Asbury—3,775 Bta, 3,775 Brnta, 2,300 Rta.
Nishisakawick Creek—Frenchtown—750 Bta.
Spring Mills Brook—Spring Mills—400 Bta, 2,100 Brntfg, 100 Rta.
Wichecheoke Run—Sergeantsville—500 Bta.

(Musconetcong River System)

Beaty's Brook—Penwell—1,500 Btfg, 875 Bta, 500 Brntfg, 400 Brnta, 100 Rta.

(Lamington River System)

Clark Brook—New Germantown—1,000 Brntfg.
Cold or Skillman Brook—New Germantown—5,000 Btfg, 200 Bta.
Rheinhardt's Pond—Oldwick—150 Rta.

(Raritan River System)

Beaver Brook—Clinton—500 Bta, 425 Btfg, 75 Brnta, 150 Rta.
Cakepoulin Creek—Pittstown—500 Btfg, 450 Bta, 600 Brnta.
Cole Brook—Three Bridges—4,500 Brntfg.
Cramers Brook—Califon—150 Bta, 3,600 Brntfg.

Dog Hollow Brook—Califon—150 Bta.
Grandin Brook—Clinton—2,100 Brntfg.
Norton Brook—Norton—375 Bta, 150 Brnta, 100 Rta.
Phillower Brook—Califon—2,500 Brntfg.
Prescott Brook—South of Lebanon—500 Btfg, 150 Rta.
So. Br. Raritan River—Middle Valley to High Bridge—10,025 Bta, 8,585
Brnta, 4,250 Rta, 3,375 Lmbfg.
Spruce Run—Clinton—1,800 Bta, 2,500 Brntfg, 800 Brnta, 1,225 Rta.
Solitude Lake—High Bridge—1,000 Lmbfg, 1,600,000 Yperf.
Tetertown Brook—Califon—200 Bta, 350 Brnta, 525 Rta.
Willowby Brook—High Bridge—500 Btfg.

(Rockaway River System)

Burrell Brook—Mountanville—400 Bta, 2,000 Brntfg, 1,150 Brnta.
Crystal Spring Brook—Lebanon—1,500 Brntfg.
Cushetunk Lake—White House—1,000 Lmbfg, 1,600,000 Yperf, 300 Ypera, 750
Bsf, 800 Ca, 250 Cfg, 400 Wpera.
Guinea Hollow Brook—Mountanville—1,000 Brntfg.
Henry Brook—Potterstown—1,500 Brntfg.
Hoover's Pond—Clinton—200 Bta, 150 Rta.
No. Br. Rockaway River—New Germantown to White House—1,850 Bta,
2,000 Brntfg, 850 Brnta, 600 Rta.
So. Br. Rockaway River—Lebanon to White House—2,675 Bta, 1,000 Brntfg,
625 Brnta, 400 Rta.

(Spruce Run System)

Bryant Brook—Woodglen—150 Bta.
Mulhockaway Creek—Van Syckles—500 Brnta, 100 Rta.

MERCER COUNTY

(Crosswicks Creek System)

Yardville Lake—Yardville—400,000 Yperf.

(Delaware River System)

Hills Lake—Ewingville—400,000 Yperf.
Hutchinson's Pond—Robbinsville—600 Lmbfg, 400,000 Yperf, 1,500 Bsf.

(Millstone River System)

Amos Bond Quarry—Hopewell—2,400 Btfg.
Carnegie Lake—Princeton—2,250 Lmbfg, 1,600,000 Yperf, 2,300 Ypera, 12,750
Bsf, 1,600 Ca, 600 Wpera.
Etra Lake—Etra—1,200 Lmbfg, 1,500 Bsf.
Peddie Lake—Hightstown—1,575 Lmbfg, 600,000 Yperf, 7,500 Bsf, 1,600 Ca.
Stoney Brook—Pennington—900 Bta, 900 Brnta, 2,000 Rta.

MIDDLESEX COUNTY

(Lawrence River System)

Milltown Brook—Milltown—150 Rta.
Oakley Brook—Franklin Park—88 Bta, 163 Brnta, 150 Rta.

(Manalapan River System)

Jamesburg Lake—Jamesburg—2,012 Lmbfg, 191 Lmba, 800,000 Yperf, 259 Misc.
Manalapan River—Jamesburg—280 Bta, 475 Brnta, 270 Rta.
Matchponix Brook—Old Bridge—305 Bta, 300 Brnta, 220 Rta.

(Rahway River System)

Ash Brook—Near Plainfield—125 Bta, 20 Rta.
Sage or Sucker Brook—Metuchen—250 Rta.

(Raritan River System)

Bonhampton Lake—Bonhampton—621 Lmbfg, 800,000 Yperf, 730 Bta, 700 Brnta, 1,570 Rta.
Farrington Lake—Near New Brunswick—151 Smba, 169 Smbfg, 3,512 Lmbfg, 1,494 Lmba, 600,000 Yperf, 2,250 Bsf, 163 Pica.
Lawrence Brook—New Brunswick—222 Bta, 262 Brnta, 270 Rta.
Mill Brook—Bonhampton—100 Brnta.
Millstone River—Griggstown—275 Rba, 1,500 Lmba, 9,800 Cba, 4,400 Ypera, 175 Smba, 65 Pica, 10,000 Sa.
Nixon Pond—Nixon—11 Smba, 1,000 Misc.
Perth Amboy Water Works Lake—Old Bridge—35 Smba, 100 Rba, 11,000 Misc.
Raritan River—Raritan—300 Ypera, 50 Smba, 50 Rba, 500 Cba, 250 Lmba.
Runyon Water Works Lake—Old Bridge—150 Smba, 25 Lmba, 350 Cba, 2,250 Misc.
So. Plainfield Lake—So. Plainfield—35 Smba, 492 Lmbfg, 471 Lmba, 800,000 Yperf, 500 Cba, 21,000 Misc.
Weston's Mill Lake—New Brunswick—124 Smba, 901 Lmbfg, 71 Lmba, 1,000 Misc.

MONMOUTH COUNTY

(Atlantic Ocean System)

Back Creek—Spring Lake—504 Lmbfg.
Como Lake—Como—1,572 Lmbfg.
Deal Lake—Allenhurst—1,326 Lmbfg.
Manasquan River—Ardena—350 Bta, 4,000 Brntfg, 1,450 Brnta, 200 Rta.
Mengamhone Brook—Hominy Hills—100 Bta.
Old Mill Pond—Villa Park—1,644 Lmbfg, 400,000 Yperf, 1,500 Bsf, 400 Rta, 400 Ca.
Osborne's Pond—Bailey's Corner—1,644 Lmbfg, 400,000 Yperf, 1,000 Ypera, 1,500 Bsf, 200 Rta, 400 Ca, 200 Wpera.
Shark River—Belmar—2,715 Bta.
Spring Lake—Spring Lake—1,770 Lmbfg, 1,000 Ypera, 1,500 Bsf, 400 Ca, 300 Wpera.
Takanassee Lake—Long Branch—1,401 Lmbfg, 1,500 Bsf, 400 Ca.
Woodman Brook—Lower Squankum—100 Bta.

(Delaware River System)

Allentown Lake—Allentown—690 Lmbfg, 350 Rta.
Doctor's Creek—Allentown—350 Bta, 300 Brnta.

(Doctor's Creek System)

Imlaystown Lake—Imlaystown—690 Lmbfg, 350 Rta.
Ivanhoe Brook—Prosperstown—350 Bta.

(Manalapan River System)

Black Mills Pond—Milhurst—1,485 Lmbfg, 1,500 Bsf, 250 Rta, 400 Ca.
Englishtown Lake—Englishtown—713 Lmbfg, 400,000 Yperf.
Orr's Brook—So. of Englishtown—330 Bta, 450 Brnta.
Lake Tepehemus—Freehold—1,577 Lmbfg, 400,000 Yperf, 1,500 Bsf, 600 Rta, 400 Ca.
Tepehemus Brook—Englishtown—780 Bta.
Wemrock Brook—Englishtown—540 Bta, 250 Brnta.

(Metedeconk River System)

No. Br. Metedeconk River—No. of Lakewood—500 Bta.

(Raritan River System)

Leffert's Lake—Manasquan—810 Lmbfg, 150 Rta.
Manalapan River—Milhurst—1,000 Brnta.
Pine Brook—Englishtown—1,840 Bta, 20 Rta.

(Shark River System)

Big Brook—Marlboro—600 Btfg, 380 Bta, 20 Rta.
Fitkin Memorial Hospital Lake—Neptune Twp.—400,000 Yperf.
Hurley's Pond—Glendola—1,872 Lmbfg, 600,000 Yperf, 600 Ypera, 800 Ca, 1,500 Bsf, 300 Rta, 600 Wpera.
Willow Brook—Holmdel—600 Btfg, 470 Bta, 30 Rta.

(Swimming River System)

Buck Mills Lake—Colts Neck—336 Lmbfg, 1,500 Bsf, 450 Rta, 400 Ca.
Hockhockson Brook—Tinton Falls—1,920 Bta, 30 Rta.
Mine Brook—Tinton Falls—600 Btfg, 300 Bta, 25 Rta.
Randolph Brook—E. Freehold—600 Btfg, 312 Bta, 13 Rta.
Snyders Brook—Colts Neck—313 Bta, 12 Rta.
Yellow or Lewis Brook—Tinton Falls—600 Btfg, 875 Bta, 50 Rta.

MORRIS COUNTY

(Delaware River System)

Harrigan Brook—Rockaway—350 Bta.
Musconetcong River—Stanhope—4,225 Bta, 4,025 Brnta, 3,345 Rta.
Weldon Brook—Hurdstown—550 Bta.

(Musconetcong River System)

Golf Course Brook—Near Hackettstown—1,050 Brntfg, 2,000 Btfg.
Gulick Brook—Schooley's Mt.—300 Bta.
Musconetcong Lake—Netcong—1,798 Smbfg, 4,861 Lmbfg, 3,200,000 Yperf,
200 Ypera, 4,500 Bsf, 4,500 Ca, 10,833 Cfg, 200 Wpera.
Schooley's Mt. Brook—Schooley's Mt.—1,200 Bta, 1,200 Brntfg, 310 Rta.
Stephensburg Brook—Stephensburg—1,500 Btfg.

(Passaic River System)

Asylum Brook—Morris Plains—200 Bta, 750 Brnta, 400 Rta.
Connett Brook—Brookside—700 Brntfg.
Den Brook—Shongum—200 Bta, 100 Rta.
Dismal Brook—Brookside—150 Bta, 350 Brntfg.
Hibernia Brook—Hibernia—600 Bta.
Kakeout Brook—Butler—1,775 Bta, 320 Brnta, 400 Rta.
Rockaway River—Rockaway—7,550 Bta, 7,700 Brnta, 4,850 Rta.
Troy Brook—Parsippany—600 Bta, 350 Rta.

(Raritan River System)

Black River—Milltown to Pottersville—4,375 Bta, 700 Brntfg, 2,338 Brnta,
3,500 Rta.
Budd Lake—Budd Lake—1,781 Smbfg, 3,488 Lmbfg, 3,000,000 Yperf, 600
Ypera, 4,500 Bsf, 4,700 Ca, 10,334 Cfg, 800 Wpera.
Burnett Brook—Ralston—1,250 Btfg, 1,700 Bta, 1,551 Brnta, 725 Rta.
Tributary Burnett Brook—2,450 Brntfg.
Drakes Brook—Flanders—800 Bta.
Electric Brook—Schooley's Mt.—125 Bta, 125 Brnta, 700 Rta.
Flanders Brook—Flanders—400 Bta, 700 Brntfg, 37 Brnta, 600 Rta.
Indian Brook—Ralston—1,250 Btfg, 575 Bta, 1,050 Brntfg, 1,041 Brnta, 600 Rta.
Tributary Indian Brook—700 Brntfg.
Kenvil Brook—Kenvil—250 Bta.
Ledgewood Brook—Ledgewood—250 Brnta, 400 Rta.
Peapack Brook—Chester to Gladstone—450 Bta, 1,050 Brntfg, 100 Rta.
Tributary Peapack Brook—700 Brntfg.
Pleasant Grove Brook—Pleasant Grove—100 Bta, 100 Brnta.
So. Br. Raritan River—Budd Lake to Naughtright—7,425 Bta, 400 Brntfg,
8,575 Brnta, 2,850 Rta, 1,050 Brntfg.
Stoney Brook—Bartley—810 Bta, 350 Brnta, 800 Rta.
Tanner Brook—Long Valley—700 Brntfg.

(Rockaway River System)

Beaver Brook—Rockaway—1,250 Bta.
Cozy Lake—Oakridge—2,000 Ca, 3,000 B.
Crooked Brook—Montville—450 Bta, 200 Rta.
Dalrymple's Ice Pond—Dover—200 Rta, 150 Bta, 200 Brnta.
Espanong Lake—Near Lake Hopatcong—550 Bta, 200 Rta.
Green Pond—Near Newfoundland—6,150 Smbfg, 10 Smba, 50 Pica, 1,000 Ca,
1,875 Cfg, 3,000,000 Yperf, 250 Ypera, 13,500 Bsf, 300 Bta.
Lake Hopatcong—Lake Hopatcong—3,000 Smbfg, 2,500 Lmbfg, 4,600,000
Yperf.
Hopewell Brook—Hopewell—250 Bta.
Longwood Lake—Longwood—1,375 Smbfg, 2,250 Lmbfg, 5,250 Bsf.
Mt. Hope Pond—Mt. Hope—600 Bta, 300 Rta.
Mill Brook—Dover—500 Bta.

Mine Ridge Brook—Taylortown—850 Bta, 350 Rta.
Stickles Brook—Powerville—1,600 Bta, 350 Rta.
Washington Valley Brook—Morristown to Mendham—800 Bta, 518 Brnta,
850 Rta, 2,800 Brntfg.
Whippany River—Morristown—950 Bta, 550 Brnta.

(Whippany River System)

Black Brook—Madison—200 Bta.
Pochantas Lake—Morristown—500 Bta.

OCEAN COUNTY

Barnegat Pine Lake—Forked River—600,000 Yperf.
Double Trouble—Toms River—1,000 Brnta.
Forge Pond—Laurelton—690 Lmbfg.
Jackson Mills Lake—Jackson Mills—261 Lmbfg.
Manahawkin Lake—Manahawkin—690 Lmbfg, 600,000 Yperf.
No. Br. Metedeconk River—Lakewood—1,000 Bta, 800 Brnta.
New Egypt Lake—New Egypt—261 Lmbfg.
Tuckerton Lake—Tuckerton—690 Lmbfg.
Wells Mills Lake—Wells Mills—400,000 Yperf.

PASSAIC COUNTY

(Greenwood Lake System)

Belcher's Creek—West Milford—900 Bta, 100 Brnta, 150 Rta.
Cooley Brook—Greenwood Lake—900 Bta, 50 Brnta, 400 Rta.

(Passaic River System)

Haledon Reservoir—Haledon—300 Bta, 150 Rta, 925 Brnta.
Oldham's Lake—Haledon—1,125 Lmbfg, 2,400,000 Yperf, 750 Bta, 350 Rta,
650 Brnta.
Pompton River—Pompton Plains—2,561 Lmbfg.
Wanaque River—Pompton Lakes—7,250 Bta, 1,200 Brnta, 2,400 Rta.

(Pompton River System)

Pequannock River—Charlottsburg—650 Bta, 150 Brnta, 200 Rta, 1,170 Lmbfg.
Twin Lakes—Above Pompton—1,189 Lmbfg.

(Ramapo River System)

Pompton Lakes—Pompton Lakes—5,900 Smbfg, 75 Smba, 3,100 Lmbfg, 2,400,-
000 Yperf, 900 Ypera, 15,750 Bsf, 200 Sa, 125 Pica, 4,800 Ca, 1,875 Cfg.

(Wanaque River System)

Greenwood Lake—Greenwood Lake—4,525 Smbfg, 1,875 Lmbfg, 2,000,000
Yperf, 400 Ypera, 8,250 Bsf, 5,200 Ca, 1,500 Cfg.
High Mt. Brook—Midvale—1,500 Bta, 50 Brnta.
Post Brook—Macopin—850 Bta, 125 Brnta, 300 Rta.

SALEM COUNTY

(Alloway Creek System)

Alloway Lake—Alloway—35 Smba, 1,202 Lmbfg, 35 Ypera, 600,000 Yperf, 3,000 Bsf, 1 Pa, 9 Ra, 264 Cba, 341 Wpera, 16 Sa, 400,000 Wperf.
Ballinger's Mill Lake—Aldine—652 Lmbfg, 600,000 Yperf.
Cobbs Lake—Alloway—500 Lmbfg, 400,000 Yperf, 3,000 Bsf.
Hazelhurst Stream—Alloway—250 Bta.
Camp Roosevelt Lake—Aldine—702 Lmbfg, 400,000 Yperf, 1,500 Bsf.
Sycamore Lake—Alloway—300 Lmbfg, 400,000 Yperf.

(Delaware River System)

Alloway Creek—Alloway—280,000 Shadf.

(Maurice River System)

Centreton Lake—Centreton—725 Lmbfg, 600,000 Yperf, 3,750 Bsf, 900 Cba.
Elmer Lake—Elmer—750 Lmbfg, 600,000 Yperf, 1,500 Bsf, 234 Sa, 148 Ra, 1,005 Cba, 5,210 Ca.
Kettle Run—Pittsgrove—250 Bta.
Maurice River—Yop Shore—3,010,000 Shadf.
Muddy Run—Elmer—600 Cba.
Parvin's Lake—Norma—600,000 Yperf.
Rainbow Lake—Near Norma—825 Lmbfg, 600,000 Yperf, 3,750 Bsf.
Union Grove Lake—Near Centreton—725 Lmbfg, 300 Sa, 100 Cba, 3,750 Bsf.
Willow Grove Lake—Willow Grove—850 Lmbfg, 600,000 Yperf, 4,500 Bsf.

(Salem Creek System)

Davis Lake—Salem—352 Lmbfg, 400,000 Yperf, 600 Cba, 400,000 Wperf.
Memorial Lake—Woodstown—27 Smba, 902 Lmbfg, 400,000 Yperf, 1,500 Bsf, 481 Sa, 9 Pa, 58 Ra, 822 Cba, 2,318 Ca, 400 Cfg, 318 Wpera.
Richmontown Lake—Richmontown—402 Lmbfg, 400,000 Yperf.
Woodstown Lake—Woodstown—400,000 Yperf.

SOMERSET COUNTY

(Millstone River System)

Back Brook—Bridgepoint—100 Bta.
No. Pike Brook—Bridgepoint—100 Bta, 375 Rta.
Roaring Brook—Belle Meade—50 Bta.
Rock Brook—Zion—125 Rta.

(Passaic River System)

Indian Graves Brook—Bernardsville—1,030 Bta, 110 Brnta, 395 Rta.
Nichols Brook—Bernardsville—200 Bta.
Passaic River—Berkely Heights—1,800 Smbfg.
Osborne's Pond—Bernardsville—600 Smbfg.
Shannon Lodge Pond—Basking Ridge—30 Bsa, 150 Cfg.
Somerset Inn Brook—Bernardsville—925 Bta, 175 Brnta, 850 Rta.

(Raritan River System)

Black River—Pottersville—200 Bta, 800 Brnta, 900 Rta, 600 Smbfg.
Lamington River—Pottersville—600 Smbfg.
Middle Brook—Boundbrook—150 Bta.
Mine Brook—Far Hills—250 Bta, 275 Rta.
Peapack Brook—Gladstone—100 Bta, 200 Brnta, 300 Rta.
No. Br. Raritan River—Far Hills—1,400 Bta, 700 Smba, 2,025 Brnta, 2,000 Cba, 1,725 Rta, 1,400 Smbfg, 125 Smba, 1,000 Ypera, 150 Rba.

SUSSEX COUNTY

(Delaware River System)

Little Flat Brook—Layton—5,750 Btfg, 3,475 Bta, 2,000 Brntfg, 1,400 Brnta, 625 Rta.
Big Flat Brook, Lower—Wallpack Center—8,700 Bta, 9,100 Brnta, 6,700 Rta.
Big Flat Brook, Upper—Tuttles Corner—7,750 Btfg, 3,975 Bta, 3,835 Brnta, 350 Rta.
Mill Brook—Montague Twp.—3,500 Btfg, 675 Bta, 50 Brnta.
Musconetcong River—Stanhope—550 Bta, 300 Rta.
Paulinskill River—Lafayette to Stillwater—5,755 Bta, 6,720 Brnta, 3,550 Rta, 4,000 Brntfg.
Pequest River—Brighton to Springdale—4,475 Bta, 200 Brnta, 1,900 Rta.
Shimers Brook—Millville—325 Bta, 1,500 Brntfg, 50 Brnta.

(Big Flat Brook System)

Stoney Brook—Tuttles Corner—750 Bta, 250 Brnta.
Stoney Lake—In the Reservation—450 Rta.
Snook Brook—Tuttles Corner—350 Bta.
Tuttles Corner Brook—Tuttles Corner—350 Bta, 300 Rta.

(Hudson River System)

Wallkill River—Sparta to Franklin—3,600 Bta, 1,100 Brnta, 1,400 Rta.

(Musconetcong River System)

Cranberry Lake—Cranberry Lake—2,435 Smbfg, 10 Smba, 3,616 Lmbfg, 2,400,000 Yperf, 500 Ypera, 5,000 B, 8,250 Bsf, 5,100 Ca, 10,083 Cfg, 1,000 Wpera.
Dragon Brook—Outlet of Cranberry Lake—550 Bta, 200 Brnta, 75 Rta.
Lubber's Run—Cranberry Lake—250 Bta, 125 Brnta, 115 Rta.

(Paulinskill River System)

Alms House Brook—Myrtle Grove—650 Bta, 450 Rta.
Culvers Lake Brook—Culvers Lake—225 Rta.
Culvers Lake—Culvers Lake—3,375 Smbfg, 1,500 Lmbfg, 4,000,000 Yperf, 3,000 Ypera, 13,500 Bsf, 5,100 Ca, 200 Wpera, 10,000 B.
Fairview Lake—Near Hardwick—1,800 Smbfg, 1,000 Lmbfg, 3,000,000 Yperf, 4,500 Bsf.
Fredon Brook—Fredon—500 Bta.
Margerum Brook—Stockholm—300 Bta, 200 Brnta.

Lake Owassa—Near Culvers—2,200 Smbfg, 2,625 Lmbfg, 4,000,000 Yperf, 2,000 Ypera, 6,000 Bsf, 100 Ca, 100 Wpera.
 Paulinskill Lake—Swartswood—2,000 Ypera, 200 Pica, 500 Ca, 1,000 B.
 Quicks Pond—No. of Swartswood—1,050 Smbfg, 800 Lmbfg, 2,000,000 Yperf, 3,000 Bsf.
 Ross Brook—Stockholm—400 Bta, 500 Brnta.
 Roy Brook—Stillwater—100 Bta.
 Big Swartswood Lake—Swartswood—2,625 Smbfg, 5,000 Lmbfg, 3,000,000 Yperf, 2,500 Ypera, 17,250 Bsf, 6,200 Ca, 7,500 Cfg, 200 Wpera, 8,000 B.
 Little Swartswood Lake—Swartswood—625 Lmbfg, 1,400,000 Yperf, 1,250 Ca.
 Trout Brook—Middleville—775 Bta.

(Pequest River System)

Andover Jc. Brook—Andover Jc.—1,625 Bta, 375 Rta.
 Hiff Lake—Near Andover—800,000 Yperf.
 Kymers Brook—Andover—2,500 Btfg, 400 Bta.
 Lenape Lake—Andover—800,000 Yperf.
 Muck Meadow Brook—Andover—250 Btfg.
 Skinner's Pond—Tranquility—75 Brnta, 250 Bta, 400 Rta.
 Tar Hill Brook—Tar Hill—2,500 Btfg, 550 Bta, 175 Brnta, 175 Rta.
 New Wawayanda Lake—Andover Jc.—1,200,000 Yperf.

(Rockaway River System)

Bear Pond—Lake Hopatcong—655 Smbfg, 375 Lmbfg, 1,200,000 Yperf, 5,250 Bsf, 2,000 Ca.
 Lake Hopatcong—Lake Hopatcong—1,331 Smbfg, 5,635 Lmbfg, 11,200,000 Yperf, 800 Ypera, 7,500 Bsf, 6,000 Ca, 800 Wpera.

(Walkill River System)

Beaver Run—Beaver Run—800 Bta, 300 Brnta, 300 Rta.
 Black Brook—Beaver Lake—700 Bta, 525 Brnta, 425 Rta.
 Black or Pochuck Creek—McAfee—2,200 Bta, 5,500 Brntfg.
 Clove Brook—Sussex—875 Bta, 3,500 Brntfg, 850 Brnta, 450 Rta.
 Grinnell Lake—Monroe—650 Smbfg, 2,200 Lmbfg, 1,200,000 Yperf, 6,750 Bsf, 2,000 Ca, 1,500 Cfg, 2,500 B.
 McMickles Pond—Sparta—2,000 Ca.
 Papakating Creek—Sussex—800 Bta, 2,000 Brntfg, 400 Brnta.
 Sparta Glen Brook—Sparta—575 Bta, 75 Brnta, 200 Rta.
 Sparta Jc. Brook—Sparta Jc.—600 Bta, 200 Brnta, 150 Rta.
 Warwick River—DeKays—200 Bta, 1,175 Brnta, 600 Rta.

UNION COUNTY

(Rahway River System)

Ash Brook—Ashbrook—800 Bta, 2,000 Brntfg, 626 Brnta, 519 Rta.
 Bryant Lake—Near Summit—369 Lmbfg.
 Echo Lake—Mountanside—669 Lmbfg.
 Nomehegan Park Lake—Cranford—300 Lmbfg, 200,000 Yperf, 500 Bta, 350 Rta, 250 Brnta.
 Normahaggin Brook—Cranford—750 Bta, 60 Brnta, 2,000 Brntfg, 225 Rta.
 Rahway River—Rahway—1,813 Bta, 2,507 Brnta, 1,136 Rta, 1,438 Lmbfg, 400,000 Yperf.

Rahway River Park Lake—Rahway—300 Lmbfg, 200,000 Yperf, 550 Bta, 150 Brnta, 100 Rta.
 Reformatory Lake—Rahway—150 Bta, 150 Brnta, 200 Rta.
 Surprise Lake—Summit—669 Lmbfg.

(Raritan River System)

Blue Brook—Summit—2,000 Brntfg.
 Cedar Brook Park Lake—Plainfield—669 Lmbfg, 400,000 Yperf, 606 Bta, 268 Rta, 373 Brnta.
 Green Brook—Scotch Plains—150 Bta, 326 Brnta, 734 Rta.
 Seely's Pond—Scotch Plains—669 Lmbfg, 400,000 Yperf, 956 Bta, 518 Rta, 1,083 Brnta.

WARREN COUNTY

(Delaware River System)

Columbia Lake—Columbia—1,500 Lmbfg, 1,200,000 Yperf, 6,000 Bsf.
 Buckhorn Creek—Roxburg—300 Bta.
 Delaware River—Belvidere—6,000 Smbfg, 5,375 Lmbfg.
 Dunnfield Creek—Dunnfield—325 Bta, 75 Brnta, 150 Rta.
 Lomison's Glen Brook—Summerfield—500 Bta.
 Lopatcong Creek—Above Phillipsburg—800 Bta, 100 Rta.
 Musconetcong River—Waterloo to Penwell—7,000 Bta, 10,670 Brnta, 5,860 Rta.
 Paulinskill River—Stillwater to Paulina—6,085 Bta, 9,273 Brnta, 4,400 Rta.
 Pequest River—Townsbury to Belvidere—9,875 Bta, 6,800 Rta.
 Pohatcong Creek—Mt. Bethel—2,800 Btfg, 1,450 Bta, 300 Brnta, 1,950 Rta.
 Pophandusing Brook—Belvidere—250 Bta.
 Triple Brook—Hope—450 Bta, 225 Brnta.
 VanCampens Brook—Millbrook—1,250 Bta, 300 Rta.

(Musconetcong River System)

Allen's Pond—Hackettstown—375 Lmbfg, 350 Rta, 150 Bta, 475 Brnta, 3,750 Cfg.
 Anderson Brook—Anderson—1,500 Btfg, 500 Brntfg.
 Gruendyke's Mill Pond—Hackettstown—103 Rta.
 Guard Lock—Hackettstown—1,000 Lmbfg, 2,000,000 Yperf, 11,250 Bsf.
 Hance Brook—Beatystown—500 Brntfg.
 Lance Brook—Beatystown—2,000 Btfg.
 Springtown Run—Port Colden—1,500 Btfg, 500 Brntfg.
 VanAtta Run—Penwell—500 Brntfg.

(Paulinskill River System)

Blairs Creek—Blairstown—2,100 Bta, 1,100 Brntfg, 800 Brnta, 935 Rta.
 Brands Brook—Delaware—300 Rta.
 Ceconi Pond—Marksboro—325 Bta.
 Cedar Lake—Blairstown—925 Lmbfg, 800,000 Yperf, 1,500 Bsf.
 Halsay Lake—Columbia—500 Lmbfg, 400,000 Yperf.
 Jacksonburg Brook—Jacksonburg—925 Bta, 1,200 Brntfg, 450 Brnta.
 Mingle's Pond—Paulina—1,475 Bta, 537 Brnta, 1,137 Rta.
 Susquehanna Lake—Blairstown—1,125 Lmbfg, 800,000 Yperf, 6,000 Bsf.
 White Lake—Marksboro—1,800 Smbfg, 625 Lmbfg, 1,200,000 Yperf, 3,750 Bsf.
 Yards Creek—Hainesburg—1,200 Brntfg.

(Pequest River System)

Bacon Run—Petersburg—2,800 Btfg, 600 Bta.
Barker Brook—Vienna—125 Bta.
Bear Creek—Long Bridge—2,250 Bta, 450 Rta.
Beaver Brook—Hope—3,000 Bta, 600 Brnta, 1,875 Rta.
Buckaloo Swamp Brook—Mt. Herman—775 Bta.
County House Pond—Townsbury—225 Rta, 600 Bta, 50 Brnta.
Furnace Brook—Oxford—250 Bta.
Hait's Pond—Great Meadows—125 Bta.
Mill Pond—Oxford—800,000 Yperf, 400 Bta.
Mt. Lake—Near Buttzville—900 Smbfg, 50 Smba, 2,250 Lmbfg, 1,000 Ypera,
1,600,000 Yperf, 7,500 Bsf, 500 Pica, 100 Ca, 100 B.
Silver Lake—Hope—900 Smbfg, 25 Smba, 1,750 Lmbfg, 1,600,000 Yperf, 500
Ypera, 100 Pica, 200 Ca, 500 B.

(Pohatcong Creek System)

Bryan's Pond—Washington—400 Bta, 300 Rta, 200 Brnta.
Lows Hollow Brook—Above Phillipsburg—600 Bta.
Mill Brook—Broadway—300 Bta, 100 Brnta.
Roaring Rock Brook—Brass Castle—750 Bta.