STATE OF NEW JERSEY

Administrative Report

of the

Commissioner of Conservation

for the period

July 1 to December 31, 1945

MORGAN F. LARSON, *Commissioner*

January 15, 1946

ADMINISTRATIVE REPORT

OF THE

COMMISSIONER OF CONSERVATION

FOR THE PERIOD

JULY 1 TO DECEMBER 31, 1945

January 15, 1946

Morgan F. Larson
Commissioner

To his Excellency Walter E. Edge, Governor
and Members of the Senate and General Assembly
of the State of New Jersey:

In accordance with law I have the honor to transmit herewith the administrative report of the Commissioner of Conservation for the six months from July 1 to December 31, 1945.

The State Department of Conservation was organized July 1 last, and as the Commissioner of Conservation must report to the Legislature on January 15, this present report covers only one half year. It is, however, my intention to issue a supplemental report upon completion of a survey, now being made, which will contain definite recommendations for the improved organization and efficiency of this Department.

The merger of eleven State agencies to form the new State Department of Conservation, which was commenced promptly on July 1 last, has proceeded with little difficulty and has now been completed. The cooperation of the Directors of the five principal divisions involved has been most cordial and effective. This response on the part of the Directors has made possible the consolidation without further expense to the taxpayers of New Jersey.

The period covered by this report may be regarded as preparation for the perfection of the plan to fully utilize the technical and administrative talents and facilities of the Department. As the consolidation becomes more cohesive, the Department will function still more smoothly and there will be considerable saving through the effective and intra-departmental use of these talents and facilities. Furthermore the scope of Department activities and the services offered to the citizens of New Jersey will be considerably enlarged.

The personnel in the new State Department of Conservation comprises 452 full-time employees and 99 part-time

employees as follows:

	Full time	Part time
Division of Water Policy and Supply	39	32
Division of Fish and Game	109	8
Division of Forestry, Geology, Parks and Historic Sites	210	57
Division of Shell Fisheries	35	
Division of Navigation	59	2

In addition to the employees enumerated above, there are 360 district Forest Fire Wardens who are paid a retainer of $50.00 a year and actual fire fighting time when extinguishing fires.

In the matter of employment, I have instructed the Divisional Directors that wherever possible, in accordance with the wishes of Governor Walter E. Edge, all new employees, both permanent and temporary, shall be veterans.

Through the cooperative efforts of Mr. Fred V. Ferber, Director of Purchase and Property, and Mr. Harry S. Walsh, Superintendent of State Buildings, it has been possible to locate the administrative units of four of the five divisions together in the State House Annex. From every standpoint the physical integration of the Department is vital for good administration. Space is inadequate in some instances but this doubtless can be relieved when new housing facilities become available.

As you are aware, each of the five divisions of the Department of Conservation operates under a nine-member policy making Council and I want to take this opportunity to pay tribute to these Council members who, at considerable inconvenience and personal sacrifice, devote their time and energy, without compensation, to the welfare of the State. My relationship with these Council members has been most harmonious during this period of readjustment.

For the first time in the history of New Jersey all of the most important conservation activities have been consolidated. The war has amply demonstrated the importance of natural resources and has given all of us a new conception of the word "conservation". I want to assure you that I shall

make every effort to further the best interests of the people of New Jersey through the constructive promotion of the conservation activities with which this Department is charged.

Respectfully submitted,

Morgan F. Larson

Morgan F. Larson
Commissioner of Conservation

DIVISION OF WATER POLICY AND SUPPLY

Council of the Division

Thurlow C. Nelson, Chairman	New Brunswick
George S. Burgess	Madison
William R. Conard	Burlington
Forster W. Freeman	Paterson
Kenneth H. Murray	Far Hills
John Roach, Jr.	Dover
Roswell M. Roper	East Orange
Herbert K. Salmon	Stanhope
Vacancy	

Howard T. Critchlow, Chief Engineer

DIVISION OF WATER POLICY AND SUPPLY

Chapter 22, P. L. 1945, establishing the Division of Water Policy and Supply within the Department of Conservation, transferred to and vested in the Division the powers, functions and duties of the State Water Policy Commission, of the Board and Department of Conservation and Development relating to the Delaware and Raritan Canal, and of the Passaic Valley Flood Control Commission.

The Water Policy and Supply Council, governing body of the Division, was duly appointed prior to the effective date of the act, July 1, 1945, and held its organization meeting in Trenton on July 2. The employes of the State Water Policy Commission and the canal staff of the Department of Conservation and Development were taken over, and the records and property received. The third agency consolidated into the Division - the Passaic Valley Flood Control Commission - had been inactive for a number of years; such records as were available were obtained.

The activities of the Division were coordinated under the supervision of the Chief Engineer, who had served the State Water Policy Commission in a similar capacity and who had acted as consultant on Delaware and Raritan Canal problems prior to the consolidation. The office of the State Water Policy Commission in Trenton was made the headquarters of the Division; a branch office at 19 Washington Street, East Orange, was continued on a temporary basis; and the State-owned building on the Delaware and Raritan Canal property at the foot of Academy Street, Trenton, was continued as the field office, repair shop and warehouse for the canal maintenance and rehabilitation activities.

Responsibilities - As successor to the State Water Policy Commission, the Division has general supervision over all sources of public and potable water supplies. It is charged with the formulation of policies for the conservation and prudent development of the State's water resources, as well as for the protection of the public against damage from flood waters. Certain regulatory powers are conferred upon it - the approval of the Division is specifically required for the diversion of water for public use, for the construction and repair of dams, and for the erection of structures along streams, such as bridges, culverts, walls, fills and other encroachments.

The transfer to it of the Delaware and Raritan Canal property, placed upon the Division the responsibility for rehabilitating and converting the canal into a source of industrial water supply and for park and recreational use. The management, maintenance, operation and control of the canal property rests with the Division.

Water Policy Activities

During the six-month period ending December 31, 1945, studies of the water resources of the State, the systematic gaging of stream flow, rainfall, ground water levels and conditions were continued. Eight applications for the diversion of water for public use were approved, after hearings; the diversion of 6,179,000 gallons of water daily, all from wells, was authorized. One water supply contract between municipalities was approved. Ten permits for the construction of dams and 43 permits for the construction of stream encroachments were issued. Thorough investigation was made of the damages resulting from the July floods in the North Jersey area; numerous conferences were held with county and municipal officials and the affected property owners on improvement plans for the control of flood waters.

Water Supply - Rainfall during 1945 was above normal, particularly over the North Jersey area. As a result, all the major water supply reservoirs were full, or practically so, at the end of the year, although consumption, as indicated by preliminary figures, slightly exceeded the prior peak year of 1944.

The most serious interruption in water service occurred in the central part of the district of the Hackensack Water Company, due to a transmission line break on October 14. Conferences between the engineers of the Division, the Public Utility Commission and the water company resulted in a program for the improvement of the facilities looking toward the prevention, so far as possible, of similar interruption in service.

Plans for additional water supplies from wells were submitted by seven municipalities and one water company. Public hearings were held thereon and in all instances approval was granted, with conditions for conserving the underground sources of water supply.

Cooperation with United States Geological Survey - The stream gaging and ground water investigations were continued under cooperative agreements with the United States Geological Survey, with the cost being shared equally. This scientific work is the basis of all water supply and flood control designs. The ground water studies have pointed out the danger of salt water intrusion in the important well fields of the Atlantic City and Sayreville areas, so that remedial steps could be taken; they also pointed out the danger to these under ground resources from the construction of the proposed ship canal.

Ship Canal - The Engineering Department has attended conferences and addressed meetings in different parts of the State, setting forth the dangers to the water resources of the State through the construction of the proposed New Jersey Ship Canal between Sayreville on the Raritan River and Bordentown on the Delaware River. This project would cut through the State at the waist line and seriously affect the valuable artesian well supplies in the southern part of New Jersey. The plans of the Army Engineers as originally proposed would preempt the water supplies of the entire Raritan River basin. There are many other objections to the proposed canal besides the objection on the ground of damage to water resources which is the most serious. The Division has conferred with the Army Engineers on this problem and is closely watching developments.

Flood Control - Flash floods during July, 1945 in northern New Jersey, particularly in the Paterson area, again focused public attention on the problem of flood control. As a result of the damage suffered, the Engineering Department has been overloaded in the endeavor to bring about the orderly improvement of the situation. Numerous dams, bridges, retaining walls, buildings, highways and railroads were affected. While a certain amount of this work was handled by issuing permits for the reconstruction and repair of these damaged structures, more comprehensive study of the improvement, particularly of small streams, is necessary to plan intelligently for the future. Preparation of so-called master plans for many streams is desperately needed. This is a State responsibility which can only be handled by enlarging the present engineering staff of the Division. The larger problem of flood control on the main Passaic River, it is understood, is being reviewed by the United States Army Engineer's Office, New York District. This study will be undertaken during the coming year. The Division of Water Policy and Supply has held conferences with the Army Engineers, looking toward the carrying out of this program and will continue to cooperate with them in every way possible.

Delaware and Raritan Canal

The Delaware and Raritan Canal Rehabilitation Program was begun by the Department of Conservation and Development under authority of Chapter 172, P. L. 1944, for the purpose of converting the canal property into a source of industrial water supply and for recreational and park use. This authority was transferred to the Division of Water Policy and Supply on July 1, 1945. The program provides for improvements and changes in the canal structures to make possible delivery of 75 million gallons of water daily to the vicinity of Bound Brook and New Brunswick.

At the close of the year, work was in progress on three of the four most urgent improvements, under contracts totaling $300,299.10. Description and status of this work is shown below:

Trenton Section of Feeder (excavating channel and constructing walls in portions where encroachments make this necessary)	Practically 100% complete
Carnegie Lake Aqueduct (flume carrying canal proper over the Millstone River at upper end of Carnegie Lake near Princeton)	85% complete
Raven Rock Intake (dredging of intake to canal feeder on Delaware River and constructing control gates at lock)	30% complete

Plans and specifications for the fourth urgent project - replacement of the Kingston Locks by control gates - are now being prepared for advertising.

There are other items of construction and maintenanc that must be carried out eventually if the canal is to be placed in reasonable shape for continuous use. For example, there are seven other control gates which will eventually have to be built - Prallsville, Lambertville, Griggstown, Weston, Bound Brook, Fieldville and New Brunswick.

Particular consideration has been given to a program of financial administration for the operation of the canal as an industrial water supply. A basic form of agreement for the

sale of water has been adopted and water rates established. While these rates are predicated upon a sufficient return to the State to make the project self-liquidating over a 25-year period, water is provided at a low cost to attract industrial development. Negotiations are now in progress on two agreements.

A program for the recreational use of the canal property is being developed in cooperation with the Division of Forestry, Geology, Parks and Historic Sites of the Department. Pending its completion, requests to purchase canal property are being held in abeyance.

The maintenance and operating work on the canal and feeder was continued. In addition to repairs to gate structures at New Brunswick, Lambertville, Griggstown and Trenton and of flood damage, the canal force was used to facilitate work on three improvement contracts. Special provisions were necessary to control the flow during contract operations while still maintaining a supply for water users.

Canal forces cooperated with the Mercer County Mosquito Control Commission in treating the canal from Princeton through Trenton. Special flow-control action was also taken at the request of the Trenton Health Department to meet complaints (not supported by the Health Department) that the drained condition of the canal was contributing to the "Polio" epidemic.

Administration

Personnel - The staff of the Division consists of 39 full-time employees, assigned as follows: water policy activities, 16; canal maintenance and operation, 15; canal rehabilitation, 6; combined administration, 2. There are in addition 32 part-time gage observers. During the past six months, one member of the staff returned from military leave; another accepted employment elsewhere and his position filled by a veteran. Two employees are still in the Armed Services and provision has been made for their reinstatement.

Finance - The water policy activities are financed entirely from excess diversion receipts, collected through the Division from the diverters of surface water. The 1945 revenue, based on 1944 diversions, was $105,896.76. A slight reduction is anticipated in 1946.

The Delaware and Raritan Canal revenues from rentals, permits and the limited sale of water now possible, totalled $5,988.72 during the past six months. Approximately the same amount is anticipated to June 30, 1946. Additional revenue from the sale of water to become available under the improvement program will not be reflected until after July 1, 1946.

The current appropriation provides $65,215.00 for water policy work; $31,715.00 for canal maintenance; $307,931.81 for canal rehabilitation, the latter including $107,931.81 carried over from the previous year.

The Division is closing its East Orange office within the next two months, and while this is primarily a move for increased efficiency, a saving of approximately $1500.00 a year will result.

DIVISION OF FISH AND GAME

Council of the Division

Frank J. Valgenti, Chairman	Madison
Hiram B. D. Blauvelt	Oradell
Col. Arthur F. Foran	Flemington
Joseph Ayers	Andover
Dr. Harold E. Longsdorf	Mount Holly
Marvin A. Spaulding	Trenton
W. Steelman Mathis	Toms River
Dr. Harold W. Laauwe	Paterson
Col. Harrison Cook	Absecon

Anne E. Sullivan, Secretary

DIVISION OF FISH AND GAME

The cash balance in the General Fund on July 1, 1945 was $154,001.59. The expenditures for these six months were as follows: for 1944-45 bills, $32,443.71; 1945-46 bills, $187,317.35; receipts, $172,753.29; leaving a cash balance in this fund on December 31, 1945 of $106,993.82.

In the Public Shooting and Fishing Grounds Fund the cash balance on July 1, 1945 was $126,526.94; expenditures for 1944-45 bills, $4,853.35; 1945-46 bills, $17,008.46; receipts $49,447.18; leaving a cash balance in this fund on December 31, 1945 of $154,112.31.

The Division has carried out the Governor's wishes in the matter of filling all positions that became vacant with veterans.

The Division has gone into full speed on the predator control campaign. Veteran hunters and woodsmen, although fully aware of the marked increase of vermin in recent years, are amazed at the numbers of predatory birds and animals taken by the State trappers in the month of November alone. There can be no question but that one of the main reasons for our shortage of small game is the abundance of vermin of all kinds. The object of this new Department, formed by the Fish and Game Council, is not the extermination of any species of wild life, but the control of those predators which prey on our valuable game birds and animals, and until this is accomplished and the balance of nature is again restored, all other means of improving our hunting will be futile.

The take of the seven expert trappers and hunters for this period was as follows: foxes, 253; hawks, 156; dogs, 4; snakes, 12; red squirrels, 57; cats, 139, skunks, 177; crows, 206; opossum, 166; owls, 16.

The Unit of Game Management reports that activities are fast approaching a pre-war status, with a long range program being activated with a design to creating increased wildlife populations throughout the State.

During the past season the problem of a severe disease was solved at one of the game farms, and steps have been taken to prevent a recurrence. The important factor of habitat improvement is being stressed and research is receiving emphasis.

The work of this unit involves the management of 33,729.74 acres of public hunting and fishing grounds, in addition to the game farms, the activities of which are shown below.

It also involves the allotment of reared and purchased game throughout the State, and the live trapping and redistribution of beaver, squirrels and other animals that have created a nuisance in certain sections.

Considerable effort has been extended to the solution of the deer depredation problem and there are indications that this trouble will be reduced in scope during this year.

Activities of Game Farms

Quail Farm

Breeders on hand July 1, 1945	911	
Young birds on hand July 1, 1945	7,148	8,059
Birds hatched		9,867
		17,926
Birds liberated	7,273	
Mortality	4,040	11,313
Birds on hand January 1, 1946		6,613

Rockport Farm

Breeders on hand July 1, 1945	1,142	
Young birds on hand July 1, 1945	8,299	9,441
Birds hatched		1,790
		11,231
Birds liberated:		
Day old chicks	1,790	
Adult birds	4,237	
Mortality	793	6,820
Birds on hand January 1, 1946		4,411

Forked River Farm

Breeders on hand July 1, 1945	1,034	
Young birds on hand July 1, 1945	9,555	10,589
Birds hatched		1,512
		12,101
Birds escaped	35	
Birds liberated	4,685	
Mortality	5,177	9,897
Birds on hand January 1, 1946		2,204

In addition there were purchased and liberated 8,206 pheasants and 281 quail.

Game Management activities also include the operation of Federal aid to wildlife projects which are made possible to the states through the Pitman-Robertson Act.

At the Fish Hatchery at Hackettstown, there were on hand on July 1, 1945 - 1,535,000 fish consisting of trout, bass and sunfish. There were distributed during this period 32,200 trout, 125,730 small mouth bass, 67,567 large mouth bass and 39,070 blue gill sunfish.

On December 31, 1945 the personnel of the Division consisted of the following:

38 wardens
7 predator trappers
14 hatchery helpers
13 farm helpers
4 superintendents
2 assistant superintendents
7 wildlife managers
1 public relations assistant
1 publicity clerk
6 truck drivers
10 office employees
2 boat captains
8 seasonal employees
4 Federal aid employees

The death of Captain Harry J. Burlington, who was connected with the Fish and Game Commission since 1921, is reported with deep regret.

DIVISION OF FORESTRY, GEOLOGY,

PARKS AND HISTORIC SITES

Council of the Division

Col. Henry L. Moeller, Chairman	Millburn
William C. Cope	Glen Ridge
George S. Curtis	Hawthorne
Harry L. Derby	Montclair
Edwin E. Dudley	Paterson
W. Stewart Hollingshead	Riverton
J. Howard Morris	Pitman
Jacob Tanis	Augusta
Owen Winston	Mendham

Charles P. Wilber, Director

DIVISION OF FORESTRY, GEOLOGY, PARKS AND HISTORIC SITES

Administration

The volume of work incident to reorganization has been extremely heavy in this Division because seven State agencies have been combined to make this Division from the former Department of Conservation and Development.

The Delaware and Raritan Canal was turned over to the Division of Water Policy and Supply and the State Museum, formerly a part of the Department of Conservation and Development, became an adjunct of the State Department of Education. Coincidentally with the transfer of the Delaware and Raritan Canal to the Division of Water Policy and Supply a comprehensive report on the recreational possibilities along the canal route was made available by the former Department of Conservation and Development.

Certain projects of outstanding merit were given a substantial amount of time. These included; cooperation with the State Highway Department and the Federal Garden Clubs in developing the Blue Star Drive near Mountainside; a project of the National Lumber Manufacturing Association known as the National Tree Farms movement; the possibility of the development of Island Beach as a National reservation and discharging the ex-officio responsibilities of membership on the Soil Conservation Committee.

The death of Dr. Henry B. Kummel, who retired in 1937 as Director of the Department of Conservation and Development, is recorded with sincere regret.

Geology and Topography

New Jersey still presents many unsolved geologic problems; as these are solved the further development of our natural resources will occur. Some progress is constantly being made although largely through the cooperation of other agencies mentioned in this report.

Conferences were held with members of the Rutgers Research Council, the Natural Resources Committee of the State Chamber of Commerce, and others, in connection with the organization and the formulation of a work program for the newly created Bureau of Mineral Research at Rutgers University. Other conferences were attended incident to the creation of the Institute of Groundwater Research.

Geologic work - The avowed purpose of the new Bureau of Mineral Research of Rutgers University is the further investigation of the mineral resources of the State, and the aiding of existing and proposed mineral industries based on these resources. In this connection the department has aided the Bureau by the collection of samples for the following investigations:

(1) A survey and laboratory investigation of the sand deposits of New Jersey with the object of determining additional sources of glass sand.

(2) Economic possibility of segregating the ilmenite which occurs in certain of our sands and which is used in the manufacture of paints, etc.

(3) Possibility of quarrying and beneficiating the nepheline syenite occurring in Sussex County in competition with the purer material of this type now imported from Canada.

(4) Possibility of obtaining a satisfactory grade of feldspar by selective flotation from granite pegmatite occurring in the northern part of the State.

A reported occurrence of molybdenite near Highland Lakes was investigated and found false, and a reported oil seepage was proven to be another occurrence of hydrated iron oxide precipitated from groundwater. Upon request, an investigation and report of the geology and the danger of contamination of existing groundwater supplies in the vicinity of Shimer Manor, Pohatcong Township, Warren County was made; also, 129 other requests for information and/or advice upon groundwater supply were answered. This involved the examination of many hundreds of new well samples and afforded new light upon the subsurface geology in many localities.

The geologic mapping of a small area north of Towaco was corrected, and field data obtained relative to an occurrence of native copper.

Topographic work - Inability of the map printer to complete on schedule the work given him on the State topographic maps has reduced the time required for work on map revision and has provided an opportunity for checking the records and computations of the New Jersey Geodetic Control Survey which were turned over to the department.

Attention is called here to the fact that the value of the monumented control system for survey work is dependent upon the maintenance of the existing monuments, and the extension of the network to areas not already covered. For that purpose, the topographic engineer must be given a competent survey party.

	Number of geologic, planimetric and topographic maps distributed			Receipts		
1945	Sold	Free[a]	Total	Maps	Reports	Total
Totals[b]	2,438	140	2,578	$1,280.66	$137.73	$1,418.39
Last half 1944	2,867	97	2,964	$1,388.03	$281.14	$1,669.17

a Free to other State agencies and to cooperating Federal agencies.
b Estimate based on sales to December 17.

Bureau of State Forests

The management policy of the State Forests is directed towards multiple land use.

Area - The total area of the eight State Forests is 56,175.19 acres, purchased at an average cost of $5.35 per acre.

This does not include an estimated 48,314 acres of tax delinquent lands (tax liens) accepted by the State for State Forests, in accordance with the provisions of the

Revised Statutes 54:5-119 to 54:5-122 inclusive.

Organization - The present staff of the State Forests consists of: nine foresters, ten rangers, ten helpers, one clerk-stenographer and four seasonal employees.

Income - The income from the State Forests was $9,374.24 from stumpage, cordwood, cedar products, saw mill products and mill by-products, recreation, leases and rents, sand and gravel and miscellaneous.

Visitors - For the five months from July through November, the attendance figures show that 43,055 persons visited the State Forests.

The number of visitors quoted includes only the general public. In addition the United States Army used the forests for official purposes with an approximate attendance of 1,218 for approximately 23,710 camp days.

Tax lieu - In accordance with the Revised Statutes 13:1-22 $5,617.52 was paid to the townships for the calendar year 1945, at the rate of 10 cents per acre for the State Forest lands located within the township.

High Point State Park - This area comprising 10,934.92 acres, formerly administered by the Commissioners of High Point Park, has been transferred to the Division of Forestry, Geology, Parks and Historic Sites. Between twenty-five and thirty employees are on the staff of this park. Total attendance was 81,401 and the income was $4,436.14.

General maintenance of the park, including upkeep and repair of buildings, water and electric lines, sanitary facilities, roads and paths, collection and disposal of refuse, operation of refreshment stands, bathing beach, patrolling of park property, repairs to plant and equipment, and operation of the pumping station.

Bureau of State Parks

There are thirteen State Parks in New Jersey that are administered by the Bureau of State Parks. The total

acreage is shown on the following table:

1945	Acres in land	Acres in water	Total Acreage
Total	6,066	1,111	7,177

Organization - There is a staff of from sixty-three to sixty-eight employed in the State Parks of New Jersey.

Attendance - In the six months covered by this report, nearly 338,000 visitors enjoyed the facilities offered in the State Parks.

Income - During this same six-month period an income of $13,480.19 was received from the use of facilities.

Acquisitions - An additional 150 acres were purchased at Allaire State Park. The tract gave the Division the old canal and water rights on the Mingamahone Brook. Development plans for Allaire Park call for the reconstruction of this old canal.

Arrangements have been made for the apportionment of the most recent gift of land from the heirs of Arthur Brisbane between the Department of Conservation and the Department of Institutions and Agencies.

Alienations - The entire 21 acres comprising Mount Laurel State Park was sold to The Western Union Telegraph Company. This tract, acquired in 1908, was too small and too isolated to be of any value either as an area for forestry demonstration purposes or for park purposes under State administration.

Improvements - Much of the work carried on at the State Parks was of a routine nature, although minor improvements were made at practically all the State Parks.

Bureau of Historic Sites

On July 1, 1945 the Historic Sites Commission was abolished and the work taken over by this Division. In addition, three independent commissions, the Trustees of Grover Cleveland Birthplace, Veterans of All Wars Memorial Association and the Edison Park Commission, were at the same time abolished and the properties which they administered

became a part of the Historic Sites Bureau. The Historic Sites, now partially or wholly supported by the State, under the administrative jurisdiction of the Division, are as follows:

Boudinot House, Elizabeth
Carranza Memorial, near Tabernacle
Edison Park, Menlo Park
Grover Cleveland Birthplace, Caldwell
Hancock House, Hancock's Bridge (Salem County)
Indian King Tavern, Haddonfield
Lawrence House, Burlington
Monocacy Battle Monument, Monocacy, Maryland
Monmouth Battle Monument, Freehold
Oxford Furnace, Oxford
Princeton Battle Monument, Princeton
Steuben House, North Hackensack
Somers Mansion, Somers Point
Trenton Battle Monument, Trenton
Veterans of All Wars Memorial, Lakehurst
Washington Rock State Park, Dunellen
Wallace House, Somerville
Washington's Headquarters, Rocky Hill
Walt Whitman House, Camden

During the six months that this Division has administered these properties, no outstanding changes have been made in operating policy or the physical structures, nor will there be, until the problems have been carefully studied. The properties have been kept available to the public and maintained and necessary repairs made.

Attendance - Attendance at many of the Historic Sites has improved substantially since rationing of gasoline ended. The number of visitors recorded from July 1 to November 30 was 18,005 people.

Bureau of Forest Fire Protection

The year 1945 was the lightest fire year on record. This was due to the excessive rainfall that fell throughout the year. Normally the period July 1 to December 31 each year is less severe than the period from January 1 to June 30. This was not only true this year, but it was probably the lightest six months' period in forty years of records. This heavy rainfall, while being of advantage this year, will increase next year's hazard due to the excessive abundant

growth of grasses and sedges throughout the wooded area. These will become winter killed and will increase the hazard next year.

Fire Statistics

	No. of Fires	Area Burned in Acres	Cost to Extin-guish	Average Size in Acres	Aver-age Cost
Annual Average 1938-1944	1,788	30,206	$29,660.	16.9	15.6
1945 Jan. 1 to Dec. 31	1,039	10,794	14,953.	10.4	14.4
1945 July 1 to Dec. 31	142	430	1,748	3.0	12.3

Law Enforcement - During the past six months there were 75 violations of the Forest Fire laws detected; 27 cases of violation of the permit law; and 8 cases where individuals were responsible for fires that caused the forest to burn, and 45 fires that started through railroad operations.

During this period 31 violation cases were satisfactorily settled, from which $978.94 was collected.

Equipment - The Fire Service radio system has been developed. In this system there are 60 two-way short wave communication sets; one in the airplane; one in each of the 21 lookout towers; one in the State Headquarters; one each in the 3 Division Headquarters; and one in each of the 32 mobile units in Fire Service trucks and key wardens' cars.

Fire fighting tools were purchased and supplied to the local fire-wardens and fire fighters until now there are:

2400 Indian knapsack tanks and sprayers
3200 water carrying buckets
1800 brooms
110 axes

Approximately 1400 other pieces of equipment, such as brush hooks, axes, backfiring torches and other necessary hand equipment; 60% of these are in the hands of the local fire-warden's crew; the other 40% is held for replacement and emergency reserve.

Large fire fighting truck apparatus have been developed. These trucks are constructed at the shop at the

airport now administered by the Division. These trucks are built and completely equipped at a great saving in cost over the purchase price of completely equipped units purchased from regular fire equipment companies. During the past six months, three more of these units were completed and one more has been started. The total number of forest fire trucks now commissioned and in service is 42.

An experimental demonstration of a great variety of equipment was held at the Lebanon State Forest on August 3, which was attended by representatives from the U. S. Forest Service and the forestry departments from many of the adjoining states, as well as the greater part of the State Fire Service personnel. Various types of power equipment and tractors were tested. From this demonstration it was found that a Clarke-Air Tractor, developed by the U. S. Army, coupled with a small double disc plow, proved very adaptable for cutting fire lines in the New Jersey forest area. Five of these tractors have been ordered.

Bureau of Research and Private Cooperation

The following table summarizes the work of this Bureau in the field of private forestry. These accomplishments represent the work of 2 State foresters, 4 Federal foresters and 2 private timber agents, all operating under the direction of the Bureau.

Summary of Forestry Work on Private Lands
July 1 to Dec. 31, 1945

State Activities		
Requests for assistance	number	122
New contacts made	number	134
Forest examinations	number ownerships	78
	acres of woodland	3,953
Timber inventory	number of ownerships	29
	acres of woodland	716
	volume, board feet	2,310,000
	volume, cords	1,100
Marking for cutting	number ownerships	43
	acres of woodland	566
	volume, board feet	1,050,000
	volume, cords	227

Private Owners
(Work done under approved Forest Management)

	Harvest Cuttings	Thinnings	Liberation Cuttings	Total
Number owners	19	1	1	21
Acres	200	1	10	211
Board feet	590,000	--	--	590,000
Cords	50	3	--	53

Bureau of Reforestation

Planting Activities - This year farmers and landowners planted a total of 371,000 seedlings and transplants on reforestation projects, in spite of a severe labor shortage which made planting operations very difficult. The following tabulation shows the number of trees planted by various classes of landowners. It will be noted that no planting was done on State Forest areas, there being no labor available for the purpose.

Class	Agency	Trees Planted
1	State Forests and State Parks	0
2	State institutions, towns and counties	23,200
3	Water companies	95,300
4	Industries	16,000
5	Schools and colleges	3,000
6	Organizations	5,000
7	Farmers	210,500
8	4-H Clubs	18,000

Tree Inventory - The annual stock inventory taken in September shows that the State Forest Nurseries now contain a total quantity of 3,632,000 seedlings and transplants.

Tree Enemies - The European pine sawfly continues to be a serious insect pest in red pine plantations in North Jersey. Some plantings in Morris County have been nearly destroyed by this insect or are in such poor condition that recovery is doubtful. Department foresters are no longer recommending red pine for general use in North Jersey and will not do so until the sawfly has been brought under control.

Federal Cooperation - A conference was held with representatives of the Soil Conservation Service in July to formulate a cooperative agreement through which the Department would grow all of the reforestation stock required by the Soil Conservation Service for planting within the State. The stock which this Federal agency desires will be raised in the State Nurseries by slight expansion of species already in use and by the growing of small quantities of other species as may be required.

National Tree Farms Program - New Jersey "Tree Farms", a project fostered by the National Lumber Manufacturers Association and sponsored by the Department, is in the preliminary stages of development. This project aims at setting up a system of "Tree Farms" in the State on forest properties on which the owner agrees to follow certain definite approved forestry practices.

Bureau of Planning and Engineering

Since 1935 work of this Bureau has been under the direction of Harold C. Black. It is with sincere regret that his death September 24, 1945 is recorded here.

General Planning - A report has been prepared showing the possibilities for development of cabin sites on presently owned State Forests and State Parks. Compiled from work reserve project proposals, the report shows available sites for 387 cabins, 90 of them dependent upon proposed lake developments. A number of specific projects were undertaken, some of which were of a routine nature and others of more importance. The highlights of certain plans are listed herewith.

Allaire Park - A plan and report on the ultimate proposed acquisition of lands for Allaire State Park was completed.

Office and field investigations were made and a tract of 150 acres added to the park.

Cheesequake Park - Plan, and profile sheets (24) for roads built during the first and second W.P.A. projects were checked and brought to date for use of the State Highway Department in the maintenance of these roads.

A report was completed on the present status of road and parking construction in the Hooks Creek area. A breakdown of work items was included, to be submitted to the

Highway Department for reference in the completion of this work.

Delaware and Raritan Canal - A report on recreational possibilities of the Delaware and Raritan Canal and its adjoining properties was completed. This report included a study of proposed acquisition, the general development of the several areas, and an estimate of cost with maps of the areas.

Farny Park - Office and field investigations were continued on this area. A preliminary report and property map have been completed on the proposed acquisition.

Air photographs were used to prepare a base map of this area to be used in planning its general recreational development.

Stephens Park - Cooperation was given in investigation and study to provide temporary housing for the Park Foreman and an estimate of cost on the approved plan for the Ranger Station made.

Swartswood Park - A survey was made of aquatic weed growth in Swartswood Lake, and a map completed showing these. A report was also prepared on control measures taken to limit weed growth in certain locations, noting conditions following treatment.

Some additional and revised locations have been staked in Emmans Grove to provide picnic facilities, following the new master plan for the park area.

Washington Crossing Park - A report on development work in this area during 1944 and 1945 on the conservation area of the Niederer farm section was completed with a map showing related conservation practices within the area, and a work program for 1946 prepared.

A survey of underground water lines in the arboretum and plaza areas was completed.

A plan was prepared for the renovation of the McKonkey Garden, inspections made and supervision given during replanting.

Bureau of Public Relations

The functions of the Bureau of Public Relations are two-fold: first, to promote interest in the conservation of those natural resources with which the Division of Forestry, Geology, Parks and Historic Sites is concerned; second, to acquaint the public with the services and facilities offered by this Division. All media which will help to effectuate these objectives are used. Most of the members of the technical staff assist in public relations work and two men assigned to this work devote the major portion of their time to it. Much of the public relations work cannot be recorded in a report nor can it be reduced to statistical terms. Those data, however, which can be recorded are listed in the following categories.

Radio - Script was prepared for three broadcasts on the program "This is New Jersey" sponsored by the State Department of Economic Development and broadcast from Station WAAT, Newark, which are rebroadcast by transcription on subsequent dates at Trenton, Atlantic City and Bridgeton. Department personnel presented the broadcasts. Two other radio broadcasts were presented by Department personnel over stations WTTM, Trenton, and WEAF, New York. The Department was also represented on the Rutgers Forum broadcast on Conservation.

News Releases - During the six-months' period five releases were written and sent to all newspapers in the State (also New York and Philadelphia papers.)

Feature Stories - Three feature stories for rotogravure sections were prepared. These included texts and photographs.

Photographs - Additions were made to the large and varied photographic file of the Division. A complete series of photographs of each of the Historic Sites, now under the direction of this Division, was commenced.

Magazine Articles - Illustrated articles prepared by personnel of the Bureau appeared in New Jersey Municipalities and American Forests. An article describing the organization and work of the entire Department of Conservation was prepared for the New Jersey Industrial Directory for 1945. Descriptions of the work of the Division were prepared for the New Jersey Legislative Manual and the Philadelphia Bulletin Almanac.

Printing - The Bureau is responsible for all printing for the Division. A number of important publications were edited and are currently being printed.

Publications and General Information - With the exception of geologic publications and maps, most requests for publications are serviced by this Bureau. Many requests for specific information which cannot be answered with a publication are answered by personal letter.

Lectures - Illustrated lectures are given to organized groups and the Division welcomes the opportunity to present its work and aims to the public through this medium. Eighteen Forestry and twelve Forest Fire lectures have been given in the six-months' period.

Morris Canal and Banking Company

Limitations in funds and in available personnel have made any development or major improvement work impossible during the period covered by this report. An extremely favorable contract has been consummated with the Hercules Company for occupancy and use of the South Street Pier at the Little Basin, Jersey City.

A badly needed property survey has been partly completed at Cranberry Lake and the maintenance and policing of the properties at Greenwood Lake, Lake Hopatcong, Lake Musconetcong, Cranberry Lake and Saxton Falls have been continued.

The income for the six-months' period has been as follows:

Rentals	$4,411.46
Parking permits	1,101.50
Sale of charcoal. . . .	71.25
Total	$5,584.21

DIVISION OF SHELL FISHERIES

Council of the Division

Mercer Wilson, Chairman	Linwood
William Dennis	Port Monmouth
William Gray	New Gretna
Frank Holman	West Creek
E. Finley Mixner	Goshen
Lemuel B. Newcomb	Vineland
E. Walter Parsons, Jr.	Tuckerton
Horatio Sockwell	Port Norris
Roy Yates	Port Norris

Joseph N. Fowler, Director

DIVISION OF SHELL FISHERIES

Department of the Maurice River Cove

Number of oyster bed leases granted	219
Number of acres of leased land	29,231
Number of vessels licensed (large)	105
Number of tongers licenses issued	149
Number of violators convicted	5
Number of bushels of oyster shells planted and seed oysters transplanted upon the State's natural oyster beds in the Delaware Bay from State's funds	30,000
Number of bushels of shells contributed by the Delaware Bay Oyster Planters Association and planted on the State's natural oyster beds in the Delaware Bay at the expense of the Oyster Planters Association	50,000
Number of bushels of spawning oysters contributed to the State by the Delaware Bay Oyster Planters Association and planted on the State's sanctuaries in the Delaware Bay at the expense of the oyster planters	1,900
Number of bushels of oysters and shells caught and taken from the natural oyster beds in the Delaware Bay and transplanted for the purpose of starting a new oyster bed and to create an oyster sanctuary at the expense of the oyster planters	30,000

Anticipated - By the terms of Chapter 39, P. L. 1945, which was sponsored jointly by the Council of Shell Fisheries and the Oyster Planters Association, it is estimated that 275,000 bushels of oyster shells will be returned to the State during the year 1946, and will be planted upon the State's natural oyster beds in the Delaware Bay at the expense of the oyster planters. It is heartening to report that the oyster planters are fully cooperating with the State in preserving and developing this vast natural resource. Heretofore it was a "hit and miss" system of cooperation from

a few oyster planters, but the terms of this act, agreed to by the Delaware Bay Oyster Planters Association, assure the State of New Jersey of the continued development of the oyster industry.

Department of the Atlantic Coast
Division #1

Number of oyster bed leases granted	287
Number of acres of leased land	3,417
Number of tongers licenses issued	234
Number of clammers licenses issued	2,215
Number of violators convicted	15
Number of bushels of shells planted on the State oyster beds in Mullica River from State's funds	5,000
Number of bushels of seed oysters transplanted from State oyster beds in the Mullica River (Chestnut Neck area) to the State's beds at the mouth of the Mullica River from State's funds	22,400

Division #2

Number of oyster bed leases granted	147
Number of acres of leased land	876
Number of linear feet of leased land averaging 100 feet in width	47,189
Number of tongers licenses issued	162
Number of clammers licenses issued	2,424
Number of violators convicted	3

The Mullica River area has been transformed from one of low productivity to one of the most prolific oyster beds on the Atlantic Coast. During the years of 1944 and 1945, over 100,000 bushels of oyster plants were removed from the lower beds at the mouth of the Mullica River in comparison with an average of 2,000 bushels per year since 1920. The increase in production for this area has been twenty-five fold. The methods used in obtaining such wonderful results

in the Mullica River area will be used in other oyster areas along the Atlantic seaboard.

The Division of Shell Fisheries has taken a keen interest in the important matter of pollution and, in conjunction with the State Department of Health, has taken part in several conferences with Federal engineers for the purpose of safeguarding the interests of the shell fish industry. The Council, with the approval of Commissioner Morgan F. Larson, is conducting an exhaustive survey with the view of developing surf clam fishing to the extent of establishing it as a new sea food industry in New Jersey.

DIVISION OF NAVIGATION

Council of the Division

J. Spencer Smith, Chairman	Tenafly
Edward Crabbe, Vice Chairman	Toms River
James J. Kelly	Elizabeth
Louis Schiavone	Jersey City
Francis V. Lowden	Roselle
Wayne D. McMurray	Asbury Park
Maurice Y. Cole	Atlantic City
Edward G. Kurtz	Ocean City
Rusolph S. Ayers	Haddonfield

Frank D. Holmes, Director

DIVISION OF NAVIGATION

The Division of Navigation of the Department of Conservation on July 1, 1945 succeeded to the powers and duties of the Board of Commerce and Navigation under the provisions of Chapter 22, Laws of 1945, approved February 21, 1945.

Riparian Division

Administration of States Riparian Lands

One of the most important functions of the Division of Navigation is to administer the riparian rights of the State of New Jersey.

The Attorney General has approximately 100 purprestures or illegal occupations of State lands and riparian cases in various stages of litigation or settlement. The purprestures are now being concluded by the owner acquiring riparian rights. These cases are generally for unpaid rentals or foreclosed leases. In a number of cases judgments have been rendered in favor of the State of New Jersey and discovery proceedings taken to ascertain the assets of the defendants so that the State may levy against them to satisfy the judgment.

The aggregate income from the Riparian Division for the period July 1, 1945 to December 31, 1945 was $66,492.64. In addition, there were issued five leases whose total rentals will, when paid in full, add to the School Fund $6,327.15.

Division of Permits and Licenses

During the last half of 1945 forty-five permits for structures, submarine cables and dredging were issued. The estimated cost to the applicants of this proposed work is $1,047,425.00. There is also pending at this time nine applications for permits representing $31,700.00 of construction, which will be issued when the applicants have acquired the necessary riparian rights.

Division of Power Vessels

Inspection and Licenses

This Division supervises the inspection and licensing of power vessels on the non-tidal waters of New Jersey. During the past year, due to wartime restrictions, the navigation lights were not installed but they will again be in place when the 1946 boating season opens.

There were approximately 2500 transactions; i. e. licenses, etc., which added $3,862.00 to State revenues. Of this amount $293.00 was paid in fees to the non-salaried inspectors for licenses sold.

The inspectors were called upon on 77 occasions to assist boats in distress. In one sailboat race 26 of the 30 starters upset and had to be towed ashore. The Division helped in the recovery of the bodies of three drowned persons and recovered four stolen outboard motors and six rowboats and canoes.

Division of Engineering

Coast Protection - The 1945 Coast Protection Act (Chapter 52, P. L. 1945), effective July 1, 1945, supplemented the program of State aid to oceanfront municipalities initiated under the 1944 Act (Chapter 93, P. L. 1944). These Acts provided the authority and funds for grants of aid to municipalities undertaking coast protection projects.

The Acts provide that municipal projects shall be reviewed by the Governor, the Commissioner of Conservation, and the Division of Navigation, and if approved, shall be eligible for allotment of State aid funds to one-half of the construction cost. The 1944 Act provided $1,250,000.00 State funds and the 1945 Act $1,250,000.00, making a total amount in the two-year period of $2,500,000.00. On an equal matching basis, the total fund provides $5,000,000.00 for coast protection structures.

Prior to July 1, 1945, eleven municipalities applied for aid in financing twelve projects. The estimated total construction cost was $3,472,000.00 and requested State aid totaled $1,736,000.00.

During the current period two additional projects were added to the program, making a total of fourteen projects in eleven municipalities. These additional projects increased the total construction cost to $3,987,000.00 and raised the State's contribution to $1,843,500.00.

In addition to the State-Municipal Program, two State maintenance projects were in operation during the period and contract is pending for one project for the construction of three jetties in front of the State Sea Girt Encampment.

The total cost of work completed during this six-months' period under the five State-Municipal Projects and the two State Maintenance Projects in operation was $826,218.65, or 42 per cent of the total contract amounting to $1,930,582.73.

Inland Waterway Dredging - Under the 1945 Inland Waterway Dredging Program, six projects totaling $133,581.00 in contract amounts were in force. Of these four were completed and one practically completed during the period. The sixth, at Atlantic City, has been set over for operation in 1946 to permit utilization of the dredged material as beach fill upon completion of the State-Municipal Project for five coast protection jetties.

Inland Waterway Channel Marking - During the war the marine beacons marking the inland waterway channels were discontinued, but with the advent of peace in Europe, the Navy Department, through the United States Coast Guard, permitted the installation of these beacons.

The New Jersey Inland Waterway System was legally constituted in 1908 with the creation of the Inland Waterway Commission, and since New Jersey was one of the pioneer states in developing a waterway intended primarily for pleasure boating, there were no precedents to guide them and they had to devise their own system of markings. The original plan, well conceived, was satisfactory for thirty-seven years, but it did not conform to the standard system of marking instituted by the United States Coast Guard in later years when other states followed the example of New Jersey. Last September in conjunction with the Coast Guard, a study was made of the New Jersey system of marking and it was found possible to modify these markers so as to conform to Federal standards without any additional cost to the State. This modification standardizes the channel markers from Manasquan Inlet to the State of Texas.

In addition to the foregoing, Division employees using Division equipment placed 2,883 tons of stone along the toe of the Bay Head-Manasquan Canal bulkhead and the engineer corps carried on numerous studies in anticipation of future work.

Public Yacht Basins

The Council maintains two public yacht basins, one at Forked River, a tributary of Barnegat Bay in Ocean County, the other on Fortescue Creek, a tributary of Delaware Bay in Cumberland County.

The Forked River Basin which, during the year ending June 30, 1945, earned $4,671.91, is complete with docks, water, electric and sewerage systems. All berths are rented; in fact there is a waiting list. Additional docking facilities must be constructed if the demand for berths is to be satisfied.

This basin is also the base of operations for the channel marking crew. Their facilities at Forked River include a repair shop.

The basin at Fortescue Creek provides only mooring facilities; that is, piles to which a boat may tie up. There are no docks or bulkheads as yet. The income from this basin for the year ending June 30, 1945 was $1,036.00.

In addition to the foregoing basins, the Council has started work on a future basin on Clam Creek, Atlantic City. This basin has been dredged to a depth of 15 feet at mean low water.

The Council has gone on record as advocating the construction of State-operated marinas. No definite sites were selected as it was felt interested municipalities should initiate the movement to have them constructed. It is felt that pleasure boating could and would support at least ten additional public yacht basins.

Newark Office

The lack of adequate office space in State buildings in Trenton has prevented the transfer of the Newark office of the Division of Navigation to Trenton.