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STATE OF NEW JERSEY

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# ANNUAL REPORT

*of the*

COMMISSIONER OF CONSERVATION  
AND ECONOMIC DEVELOPMENT

1955-56



**The Cover:**

*A view of Barnegat Inlet from the southern end of Island Beach.  
(Photograph by John K. Terres, National Audubon Society)*



STATE OF NEW JERSEY

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ANNUAL REPORT

o f t h e

COMMISSIONER OF CONSERVATION  
AND ECONOMIC DEVELOPMENT

1955 - 56



*Joseph E. McLean, Commissioner*

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Department of Conservation and Economic Development  
State House Annex  
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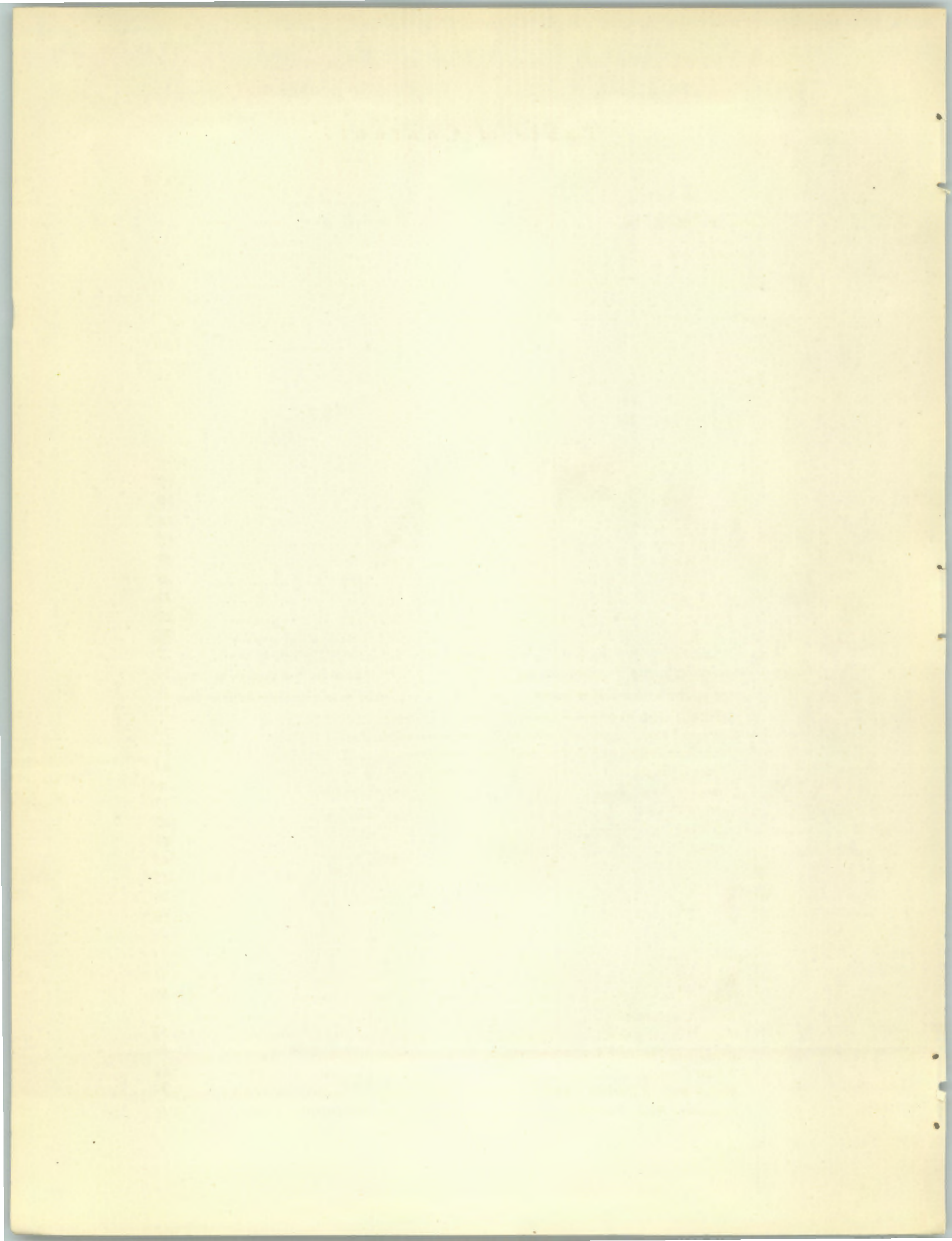






*Probably the most important job in conservation for the immediate future is to establish the fact in the minds of the general public that man is a part of a complex environment which must be studied, treated, and modified as a whole and not on the basis of isolated projects.—EUGENE ODUM*







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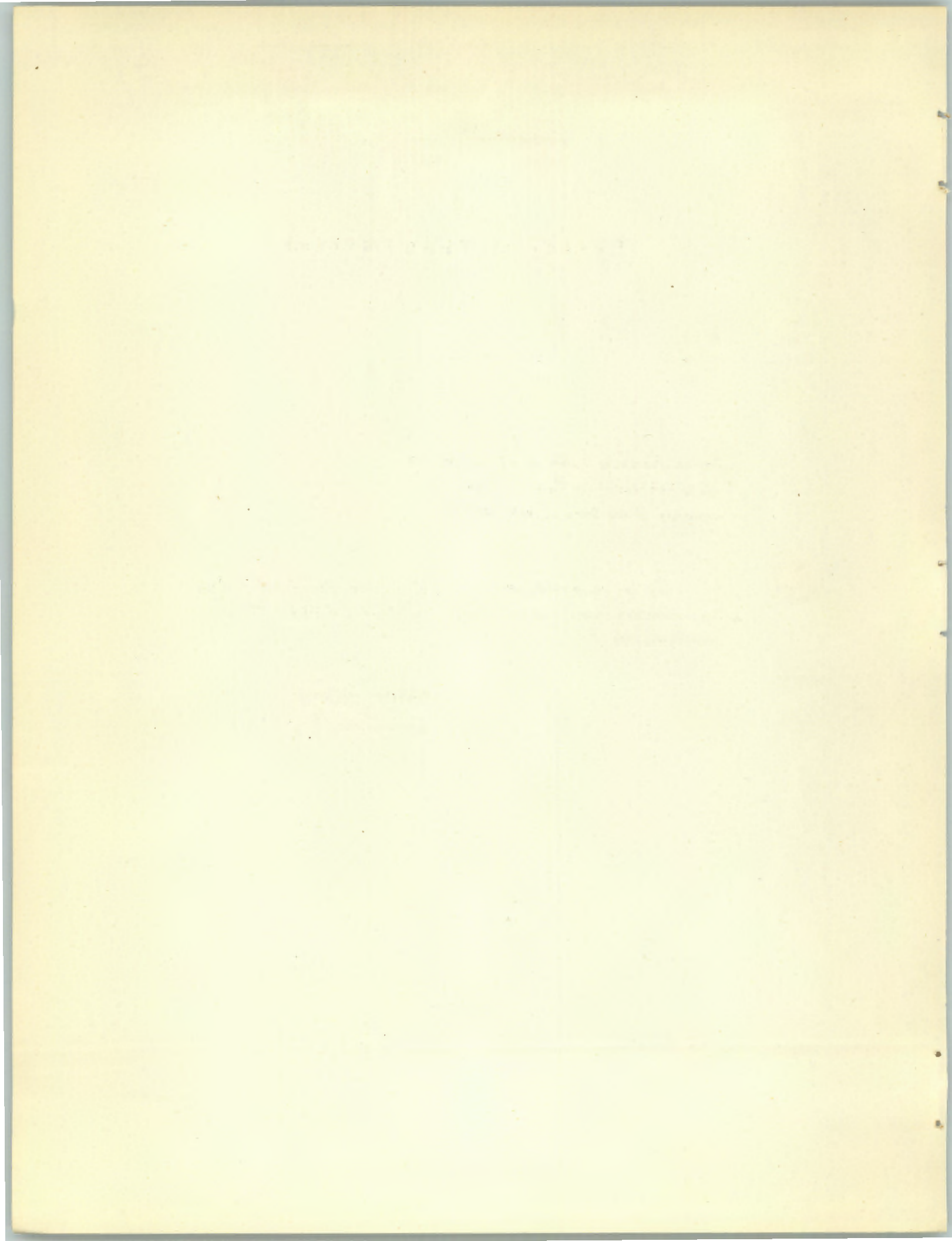
## **Letter of Transmittal**

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*To the Honorable Robert B. Meyner, Governor,  
and to Members of the Senate and General  
Assembly of the State of New Jersey:*

I have the honor to transmit this report concerning the activities of the Department of Conservation and Economic Development during the fiscal period 1955-56.

**JOSEPH E. MCLEAN**  
*Commissioner*





# DEPARTMENT OF CONSERVATION & ECONOMIC DEVELOPMENT

COMMISSIONER

COMMISSIONER'S  
OFFICE

OFFICE OF  
RENT CONTROL

DIVISION OF  
FISH & GAME

COUNCIL

DIVISION OF  
SHELL FISHERIES

COUNCIL  
ATLANTIC COAST

COUNCIL  
MAURICE RIVER COVE

DIVISION OF  
PLANNING  
&  
DEVELOPMENT

COUNCIL

DIVISION OF  
WATER POLICY  
AND SUPPLY

COUNCIL

DIVISION OF  
VETERANS SERVICES

COUNCIL

BUREAU OF  
FORESTRY  
PARKS AND  
HISTORIC SITES

BUREAU OF  
GEOLOGY

BUREAU OF  
AERONAUTICS

BUREAU OF  
COMMERCE  
STATE PROMOTION  
RESEARCH AND  
STATISTICS  
RECREATION

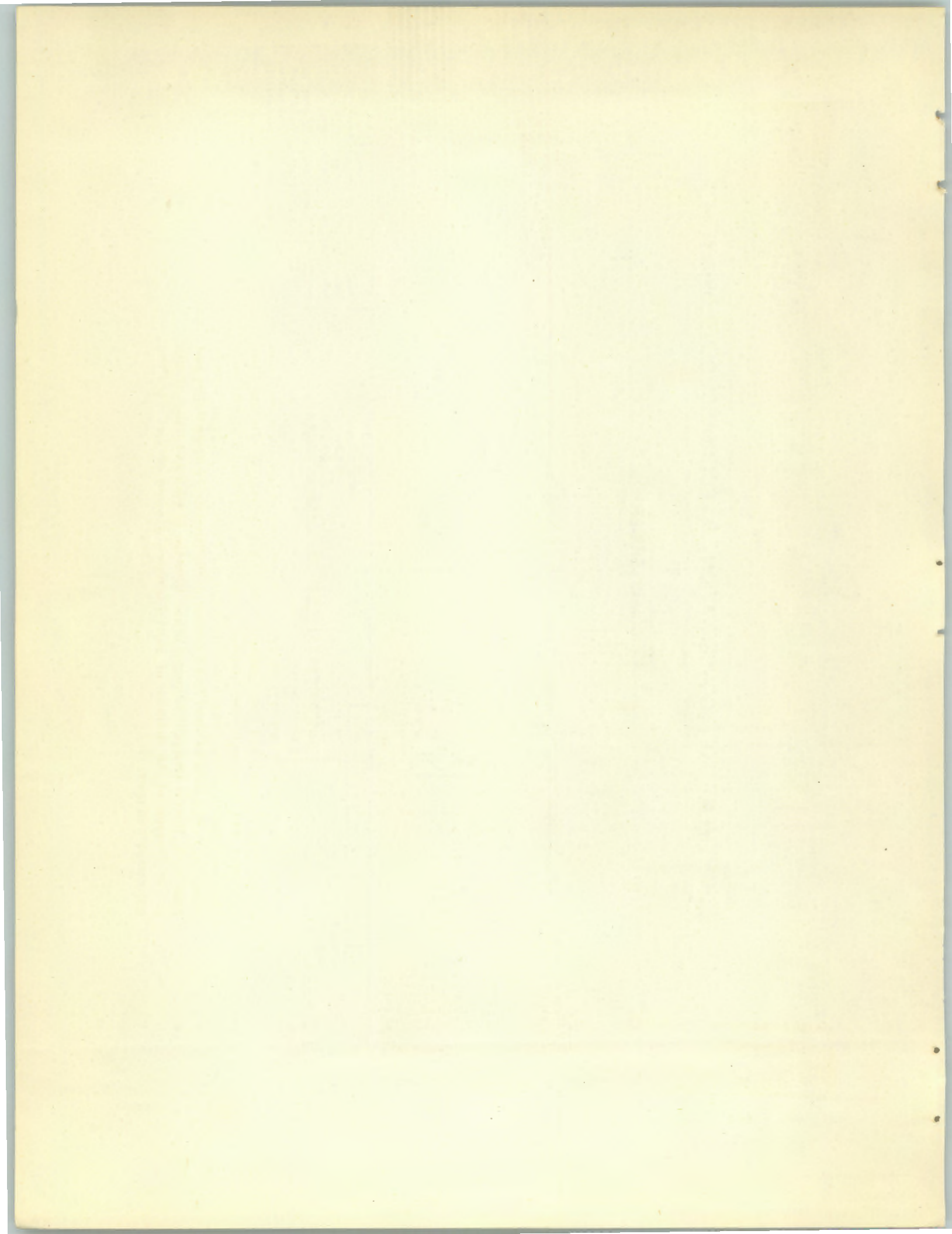
BUREAU OF  
STATE PLANNING

BUREAU OF  
NAVIGATION

BUREAU OF  
HOUSING

STATE HOUSING  
COUNCIL

SPECIAL  
AGENCIES  
MORRIS CANAL & BANKING CO.  
N.J. PILOTAGE COMMISSIONERS  
OLD BARRACKS ASSOCIATION  
SOIL CONSERVATION COMMITTEE







#### **SUPERVISORY STAFF OF DEPARTMENT**

**READING FROM LEFT TO RIGHT, Theodore J. Langan, Director of the Division of Planning and Development; Salvatore A. Bontempo, Deputy Commissioner and Director of the Division of Veterans' Services; Commissioner McLean; Kenneth H. Creveling, Executive Assistant to the Commissioner; George Shanklin, Acting Director and Chief Engineer of the Division of Water Policy and Supply; A. Heaton Underhill, Director of the Division of Fish and Game. (Chris Riley, Director of the Division of Shell Fisheries, was not present when the photograph was taken.)**

## Divisional Councils

### PLANNING AND DEVELOPMENT COUNCIL

HARRY L. DERBY, Montclair  
FREDERICK W. EHRLICH, Maplewood  
CHARLES W. ENGELHARD, Far Hills  
THOMAS ROY JONES, Westfield  
EUGENE L. LORA, Tenaflly  
WAYNE D. McMURRAY, Asbury Park  
EDWARD D. ROSE, Sea Girt  
BELFORD L. SEABROOK, Alloway  
GEORGE F. SMITH, Metuchen  
FRANK J. VALGENTI, Jr., Madison  
WILLIAM HAFFERT, Sea Isle City  
WILLIAM E. WATERS, Woodbury

### FISH AND GAME COUNCIL

LAWRENCE BOHM, Eldora  
HARRY FROME, Blairstown  
HENRY KELLY, Cranford  
WILLIAM LUNSFORD, Wildwood Crest  
EARL McCORMICK, Bridgeton  
GEORGE ONKST, Penns Grove  
RAYMOND T. RICHARDSON, Port Monmouth  
JAMES C. SALVATO, Paterson  
CLARENCE SHEPPARD, Pittstown  
FRANK J. VALGENTI, Madison  
HENRY W. JEFFERS, Plainsboro

### WATER POLICY AND SUPPLY COUNCIL

WILLIAM G. BANKS, Colts Neck  
MAX GROSSMAN, Atlantic City  
KENNETH H. MURRAY, Califon  
THURLOW C. NELSON, Highland Park  
AUGUST C. SCHULTES, Woodbury  
LILLIAN M. SCHWARTZ, Highland Park  
VINTON N. THOMPSON, Vincentown  
I. RALPH FOX, Millburn  
JAMES C. JAMIESON, Blairstown

### VETERANS' SERVICES COUNCIL

JOSEPH G. CARTY, Plainfield  
ARDELL EVERETT, Short Hills  
ALBERT J. GIFFORD, Gloucester  
CORNELIUS V. KELLY, Hoboken  
WILLIAM G. McKINLEY, Jersey City  
THOMAS F. MURRAY, New Brunswick  
JAMES P. ROGERS, Orange  
JAMES W. RYAN, Ridgefield  
FRANK BOGDAN, Trenton

### SHELL FISHERIES COUNCIL (Atlantic Coast Section)

LESLIE W. ALLEN, New Gretna  
WILLIAM DENNIS, Port Monmouth  
FRANK GARRISON, West Creek  
DORSEY LeCOMPTE, Pleasantville  
JOHN M. PANCOAST, Hancocks Bridge

### SHELL FISHERIES COUNCIL (Maurice Cove Section)

GEORGE P. BERRY, Port Norris  
E. FINLEY MIXNER, Goshen  
WILLIAM H. RIGGIN, Port Norris  
JOHN M. PANCOAST, Hancocks Bridge  
LEO ROBBINS, Port Norris



## Special Boards and Committees

### STATE HOUSING COUNCIL

FRANK DiBARTOLOMEO, Camden  
CHARLES A. DOERR, Westfield  
RICHARD P. DONOVAN, East Orange  
SARGENT DUMPER, Short Hills  
JOHN I. MEYERS, Bayonne

### COMMISSIONERS OF PILOTAGE

WILLIAM A. BURRILL, East Orange  
THOMAS L. BALL, Jersey City  
HAROLD CRAVEN, Allendale  
JAMES J. CROSSON, New Brunswick  
WILLIAM W. KUHNE, Sparta  
WALTER E. MALONEY, Madison

### STATE SOIL CONSERVATION COMMITTEE

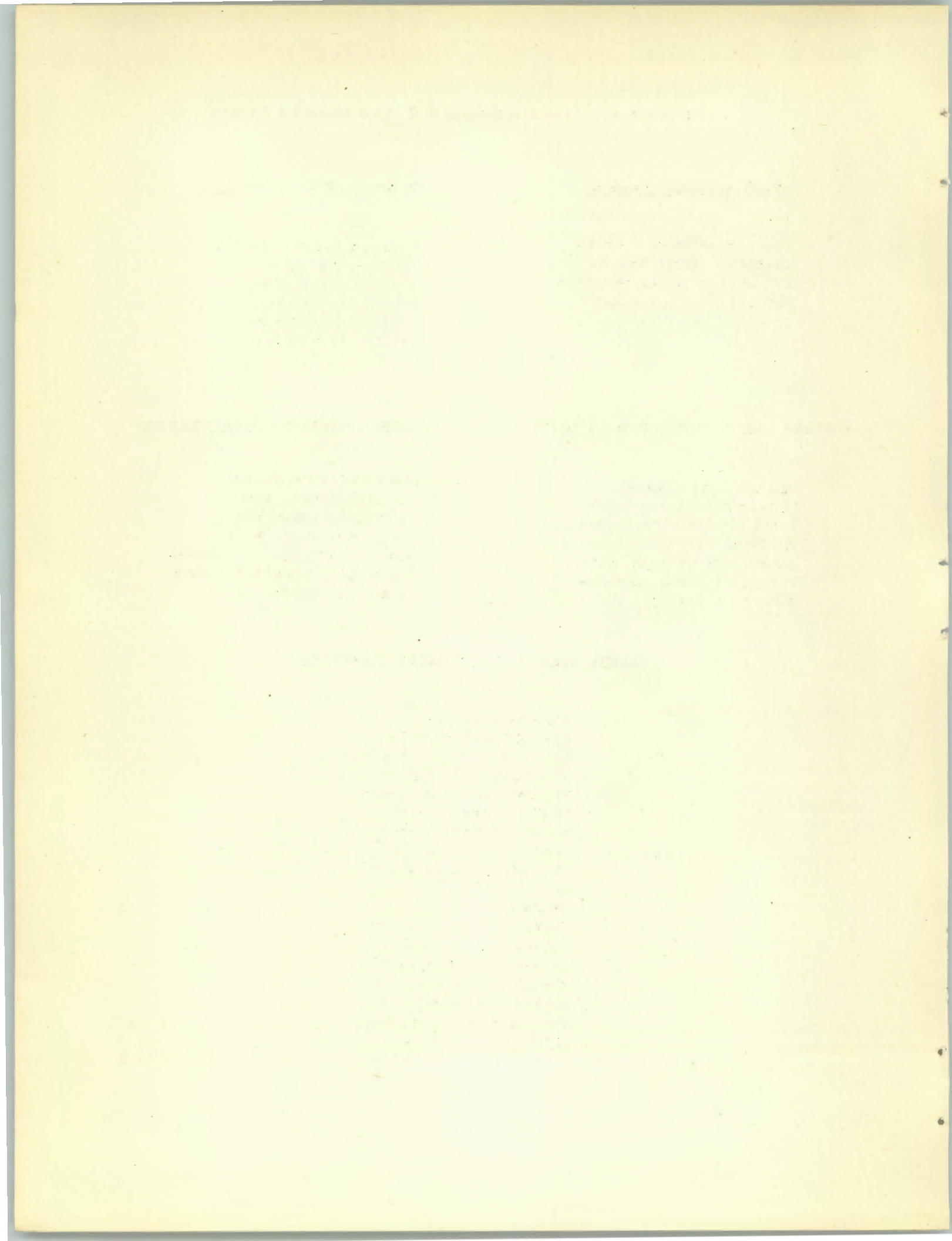
PHILLIP ALAMPI, Trenton  
LINDLEY G. COOK, New Brunswick  
FRANK C. EDMINISTER, New Brunswick  
WILLIAM H. MARTIN, New Brunswick  
GEORGE R. MOOREHEAD, Trenton  
FRANKLIN C. NIXON, Vincentown  
HERBERT W. VOORHEES, Trenton

### EXAMINING BOARD OF WELL DRILLERS

BENJAMIN FURMAN, Trenton  
MEREDITH JOHNSON, Trenton  
CHARLES MOLLITOR, Bridgeboro  
MARVIN PARKHURST, Verona  
AUGUST C. SCHULTES, Sr., Woodbury  
W. LUTHER STOTHOFF, Flemington  
KEMBLE WIDMER, Trenton

### STATE RECREATION ADVISORY COMMITTEE

JOHN AIELLO, Boonton  
CLAUDE WALCK, Somerville  
ROLLYN P. WINTERS, Scotch Plains  
HANS LORENTZEN, Upper Montclair  
WILLIAM G. GETTY, Runnemede  
FRANCIS TORPEY, Somerville  
WILLIAM GEISLER, Tenaflly  
HARRY L. DERBY, Montclair  
REV. MORGAN KELLY, Hopewell  
J. W. FAUST, East Orange  
PETER ROSSI, Trenton  
CHARLES L. JULIANA, Wildwood  
GEORGE T. CRON, Elizabeth  
THOMAS CAVANAUGH, Passaic  
MRS. KENNETH B. C. WALLACE, Newark  
ROBERT W. SINKLER, Princeton  
PROFESSOR GEORGE DOCHAT, New Brunswick  
MONTE WEED, Fair Lawn  
EDWIN H. GOODWIN, Plainfield





## Foreword

New Jersey, like most of the nation, is in a period of massive growth and massive change. Population is increasing at a substantial rate each year. Industry is expanding rapidly, and on an enormous scale, in all directions. Radical innovations in technology are reported daily, with momentous implications for the way we live and the way we work. The process of urbanization goes forward at an accelerated pace. Our cities are in a state of flux, with a steady stream of newcomers, on the one hand, and, on the other hand, a steady exodus of long-time residents, caught up in the flight to the suburbs. Available land is scarce and is becoming scarcer—the familiar story of “more and more people and fewer and fewer acres.”

Amidst all this there are demands for new public services. There are demands for major public improvements. There are demands for a thoroughgoing attack on the torrent of problems that have had their genesis in the events of recent years. And none would deny the legitimacy of these demands.

It was against this backdrop that the Department of Conservation and Economic Development operated during the fiscal period 1955-56. Obviously, the fast-moving developments of our era have not been confined in their impact to any special branch or level of government. All agencies—local, State, and federal—have been affected and left with the task of producing new devices for grappling with new problems. This Department has been particularly aware of the rush of events, however, if for no other reason but the diversity of its responsibilities. It is concerned with housing, veterans affairs, and recreation. It is concerned with water supply, forestry, mineral resources and fish and game. It is concerned with aviation and navigation, with land use and economic development, with planning and with social and economic research. Virtually all of these fields, in one way or another, are feeling the effects of the sweeping changes and the prodigious growth that we have come to accept as the order of the day.

Since 1954 the supervisory staff of the Department of Conservation and Economic Development has had two dominant objectives: To gear the Department for the part that it must play in this new era and to lay the foundation for a more fruitful approach to the complex and difficult issues that it presents. These objectives were pursued during the fiscal period 1954-55 and were pursued further during the year covered by this report. How they were pursued is explained in sections of the report that follow, and the details need not be recounted in this space. This is, rather, the place to comment briefly on some of the new points of emphasis characteristic of the effort to cast the Department in its new role and to attain a firmer grip on the principal problems with which it must contend.

**STRESS ON INTEGRATION.** After the Department of Conservation and Economic Development was established in 1949—as was noted in the preceding annual report—its constituent agencies remained somewhat like islands placed in a common sea, but nonetheless largely isolated from one another. There was an urgent need to establish stronger lines of communication. Thus an attempt to pull the various agencies of the Department closer together was launched three years ago and continued during the past year. Students of government readily bestow their blessings on measures designed to promote coordination of policy and operations. There is more involved here, however, than a mere penchant for administrative neatness. The movement to integrate these agencies has really been part of a larger effort to produce an integrated program of conservation for the State of New Jersey. We are much too prone to view conservation as an all-inclusive term for a group of separate activities. We think of the conservation of forests and of the conservation of water resources. We think of the conservation of fish and game and of the conservation of wildlands for hunting and fishing and general recreation. What must be understood is that all these forms



of conservation and others are interrelated and that we ignore the interrelationships only at our peril. Water supply facilities cannot be constructed in any area without some effect on the recreational potential of that area. The management of forests and rural lands inevitably figures in the preservation of fish and game. And so it goes, all along the line.

The most compelling argument for an integrated approach to conservation is that it facilitates more complete and efficient utilization of physical assets. The argument is especially important to New Jersey. This state, with its large and growing population but relatively meager land area, is under intense pressure to avoid waste and to derive the fullest possible value from all its natural resources.

In the interest of this objective, the leadership of the Department has created such mechanisms as the Land Use Committee. This is a group composed of representatives from all conservation agencies, who meet regularly to coordinate their approach to conservation problems. (For a more detailed account of the work of the committee, see the report of the Office of the Commissioner.)

It would be too much to expect that all the loose ends characterizing past operations could be suddenly woven together in the space of two or three years. What can be said is that there has been considerable progress and there is reason to believe that this will continue. It is urgent that it should. The vigor of our economy, the convenience of the public, and numerous other developments that all of us wish for the state and for the community depend upon the evolution of an integrated conservation program.

#### **TOWARD MORE EFFECTIVE PLANNING.**

The emphasis on improving conservation through more coherent policies and better coordinated operations has been accompanied by new stress on the planning process. Needless to say, the Department of Conservation and Economic Development feels no urge to chart the course of any individual or group. Wherever we turn today, however, we encounter evidence pointing up the need for a far-reaching and more extensive effort to plan the general development of the state and its component parts.

In the past the lag between planning and general development has been serious. No preachments of the professional planner are necessary to remind us of the high price that we are paying for our neglect. Congestion, poorly located highways, the spread of slum and blight, inadequate recreation facilities, and all the other forms of community imbalance are phenomena that loom large in our daily lives. Nor should it be overlooked that these conditions are the products of inadequate planning of yesterday, when the magnitude of growth, although considerable, was not nearly so great as the expansion that we are witnessing today and can expect tomorrow.

One of the principal aims of the Department thus has been to prepare itself to meet the rising demand for more effective planning. The stress on this objective is symbolized by the fact that the State planning agency, formerly a unit in the Bureau of Planning and Commerce, has itself been given the status of a Bureau and assigned a major share of responsibility for coordinating activities of the Department. It is evident, too, in the expansion of the planning staff. It is further underscored by the inauguration of State aid to municipalities in the field of planning. For the first time in 1955-56 the State, with the support of the federal government, provided technical assistance to a group of New Jersey communities that were unable to finance planning programs alone but were desperately in need of such programs. The Department hopes that this type of assistance not only can be continued but also expanded in order to serve a larger number of communities.

To have any meaning at all, planning must proceed within a broad framework. It must concern itself with problems of water supply, recreation, housing, transportation---to mention only a few. It must be able to show how, within the limits of available resources, these problems can be solved. This is what the Department has in mind when it seeks to upgrade State planning operations. Naturally, all the various elements of planning will not be administered by an official planning agency. It is essential, however, that this office assume a more dynamic role in coordinating plans with other governmental agencies lest in this period of rapid change conflicts in planning create more problems than are solved.



It is only proper to note that despite the gains of the past two or three years, the task of improving the quality of State planning is only beginning. Even when everything is done that should be done, moreover, the State neither can nor should shoulder the entire responsibility. If New Jersey is to advance along orderly lines, much depends upon the initiative of local and regional bodies. The accomplishments of such agencies as the Mayor's Economic Development Committee of Newark are heartening in every way, and many more organizations of this kind are needed.

**EXPANSION OF SERVICES.** Planning, of course, is less a form of action than a guide for action. Unless the State is prepared to embark upon new courses and to increase the scale of its activities in response to new conditions, many of the problems that have been emerging in the wake of contemporary social and economic developments can only become more disturbing. With this in mind, the Department has focused its attention during the past three years on a number of fields where the need for greater State action is indicated.

One of these is recreation. The Department has moved in several directions in its endeavor to create better recreational opportunities. Because of the need for spacious and adequately equipped outdoor areas, considerable emphasis has been placed on revitalization of the State system of forests and parks. Work on the projection of a long-range program of capital improvements began during the period 1954-55 and was continued during the past year. Although the planning required for park development cannot be completed overnight, the Department is hopeful that the public will begin to see the fruition of this effort in 1957 and that in the years to follow, the State's forests and parks will measure up increasingly to the needs of our population.

While responding to the demand for better park facilities, the Department also has given special attention to the crucial relationship between the management of forests and parks and the operation of the fish and game program. Representatives of the Division of Fish and Game have been brought more actively than ever

before into general planning for recreation. This, of course, is part of the movement to coordinate the activities of the Department and to realize greater value from State properties through application of the principle of multiple land use. There hardly can be any question but that many recreational areas, traditionally "off limits" to hunters, can be safely opened to hunting under proper conditions.

Paralleling these developments has been an expansion in the scope of State aid to municipalities for planning community recreation. The State Bureau of Recreation was established a number of years ago to advise and assist municipal leaders interested in organized recreation programs. Not until the past year, however, has the Bureau had the funds or personnel necessary to perform its functions on a reasonably adequate basis. The wisdom of the decision to strengthen the Bureau was amply demonstrated by the response to the broader range of services. Actually, many more communities took advantage of the expanded program than was expected during the first year of its operation.

If the Department has been concerned with recreation, it has been equally concerned with the continued shortage of satisfactory housing, notably for families with moderate incomes. During the past year a report was submitted by an advisory committee of private citizens asked by the Department to study this issue. The committee found the problem in every degree as serious as had been feared. It found that more than 200,000 new dwelling units should be built immediately in order that all families in New Jersey might enjoy an adequate standard of housing. It foresaw no solution to the problem without positive governmental action. The findings of the committee were not unique. They have been largely confirmed in the subsequent report of the Legislature's Special Study Commission on Middle Income Housing. Federal surveys have shown essentially the same conditions.

In one of his annual messages to the Legislature, Governor Meyner said of this problem: "The heart of the issue is selecting the best method of securing low-interest capital for lower



and middle income housing." After an exhaustive analysis, the Department concluded during the past year that the State should participate actively in seeking a solution to the problem and that its contribution should take the form of a no-cash subsidy program. Under such a program no new taxes would be required. The State's credit, instead, would be pledged to guarantee bonds issued by the Public Housing and Development Authority in the Department of Conservation and Economic Development. With the bonds issued on this basis, funds would be obtained at the lowest possible interest rate and could be made available to private groups interested in constructing middle income housing under conditions prescribed by the State.

If such a program should be authorized and carried out, it naturally would place the State in a new role. It is a role, however, that is becoming more imperative every day. The simple fact is that for all the discussion of this issue over the past four or five years, the citizen with a moderate income---through no fault of his own---is still the forgotten man in today's housing market. He is still priced out of that market and must maintain his family in crowded and often sub-standard quarters, perhaps lacking adequate heating and plumbing facilities. Such a situation---so paradoxical in this nation with its unprecedented material wealth---is a matter that no responsible State government can ignore.

Nor can the State ignore the accumulating dangers that accompany the continued shortage of water supply in certain areas of New Jersey. Here again we encounter a field with which State government traditionally has been unconcerned. Yet the existing deficiency and the measures required to overcome it are such that the failure of the State to use its powers to resolve the crisis would be the equivalent of abdication of responsibility. It is widely believed that the industrial future belongs to the states and to the regions most capable of satisfying the industrial demand for water. Certainly industry today is hardly less interested in having access to an ample and economical supply of water than in access to an ample and economical supply of coal or oil.

All of this, to be sure, has been said many times in many different ways. It bears repetition if only because the crisis is still with us and no final agreement has been reached on means for resolving it.

If the crisis persists, however, there are a number of encouraging developments which appeared during the year 1955-56. In spite of the rejection of a proposal to construct a water supply reservoir at Chimney Rock in Somerset County, public opinion seemed to be crystalizing in support of the principle of State action to deal with the problem. As the year ended, moreover, the Legislature cleared the way for the Department of Conservation and Economic Development to acquire Round Valley in Hunterdon County as a reservoir site. Meanwhile, the Department went forward with plans to establish a State Water Resources Advisory Committee, composed of representatives from such fields as agriculture, industry, labor and recreation. One mission of the committee is to help formulate a program for utilizing the waters of the Raritan River. The group is non-partisan in character, and its recommendations will warrant the most careful consideration of all citizens interested in the formulation of a long-range plan for the development of New Jersey's water resources.

In any attempt to solve major water supply problems, a certain measure of friction probably should be expected because some regions inevitably wonder whether their rights are being sufficiently protected. There may be genuine conflicts of interests. Or there may be conflicts of interests that are wholly imaginary. In any event, the challenge is to produce a water supply plan that reconciles the interests and safeguards the rights of all regions, while at the same time assuring to every section enough water to satisfy present and future needs. In some areas today there is a serious shortage of supply. In others the supply is more than ample. Ultimately, however, all regions will come face to face with the water problem, and all therefore have a vital stake in the development of a program at the State level that is concerned with the future requirements of New Jersey as a whole.



### **INTERGOVERNMENTAL COOPERATION.**

Perhaps, it would be desirable if public functions could be neatly apportioned among the different levels of government, and each could go about its business as a self-sufficient unit. Whether desirable or not, however, the idea falls short of anything realistic in the second half of the twentieth century. Certain problems are virtually beyond solution without a high degree of local, State, and federal cooperation. This is neither a political theory nor an article of faith. It is a condition arising out of the practical state of affairs. For this reason the Department has placed marked emphasis on the principle of intergovernmental cooperation—and has done so not with any fear that such emphasis might detract from the importance of the state but, rather, with the knowledge that we must cooperate in order to compete. In other words, if New Jersey is to hold its own in the competition among the states or to retain its high place in the ranks of economic leadership, it must obtain federal cooperation in the development of certain resources and in combating certain problems that call for action at all levels of government.

The Department has been particularly conscious of the need for applying the principle of cooperation to the task of harnessing the resources of the Delaware River basin, and, insofar as this is concerned, there is every reason to be gratified by the closer bonds forged between the States of the Delaware Valley and the federal government in recent months. The development of the Delaware may be long in coming, but at least the machinery for action is beginning to emerge. The impasse between the states and federal government that has marked previous efforts to plan and implement a program for the basin appears to be vanishing. Currently the U. S. Army Corps of Engineers is conducting a survey with a view to the formulation of a comprehensive water resources plan for the Delaware. Similarly, the Delaware River Basin Advisory Commission—consisting of representatives appointed by the Governors of the four states of the Delaware Valley and the Mayors of New York City and Philadelphia—has been established to promote greater State-federal cooperation in this matter, to help coordinate the activities of State govern-

ments involved, and to mobilize the technical resources of the States for assistance in the project. Along with the commission, an older body, the Interstate Commission on the Delaware, has been brought into this new framework of intergovernmental cooperation. The importance of all this is indicated by the fact that it is difficult to think of any single undertaking that would contribute more to the development of New Jersey than an integrated program for utilizing the resources of the Delaware.

There are numerous other areas where close cooperation between Trenton and Washington can bear fruit, such as in fighting slum and blight, in improving housing conditions and in creating a more effective warning system to reduce flood dangers. The program of planning assistance to smaller municipalities, discussed above, is a conspicuous example of what can be accomplished through joint action by federal, State, and local governments.

Meanwhile, the need for a closer working relationship between State, local, and federal authorities has become particularly insistent in the field of aviation, and this is now viewed as one of the paramount issues confronting the Department of Conservation and Economic Development.

The air lanes over New Jersey are probably more heavily traveled than any other in the world. Complaints about noise and other nuisances resulting from the operation of aircraft have been steadily rising. Anxiety over the danger to persons both in the air and on the ground is widespread. This is an issue for the Department because of its duty to promote air safety and the progress of aviation in New Jersey. It is a condition that deeply disturbs local officials in many parts of the New York-New Jersey metropolitan area. But neither the State nor the municipality has resources to solve the problem completely. Both are compelled to look to the federal government for technical advances, through more extensive research, that will place a curb on the nuisances and ease the threat to life and property.

This particular question can well be pondered



by every citizen because it is, no doubt, one of the most dramatic instances of the growing interdependence of the different levels of government, and it serves to underline the necessity for perfecting more satisfactory techniques of cooperation.

**ECONOMIC DEVELOPMENT.** The emphasis on achieving an integrated conservation program, the stress on better planning, the movement to expand or improve certain Departmental activities, the concern with the water crisis, and the interest in effective intergovernmental cooperation have all been motivated, in part, by a desire to promote the economic development of the state. And there have been other measures, some already taken and others planned as part of the Department's general effort to maintain the vitality of New Jersey's economy.

During 1955-56, for example, a Governor's Committee on Resort and Travel was established with the long-range objective of extending the regular tourist season in New Jersey and of exploiting the advantages offered by the Garden State Parkway. An Air Facilities Planning Committee was appointed by the Governor to insure that New Jersey will keep pace with the progress in aviation. The Department was making arrangements for a comprehensive survey of the state's economy to gain clearer insight into its strengths and weaknesses. Even more important, perhaps, insofar as the future is concerned, was the attention given to means of facilitating work on nu-

clear energy in New Jersey.

This state traditionally has enjoyed the blessings of economic strength. It is a strength based on a variety of assets, especially location, superior transportation facilities, highly skilled labor, and technological leadership. We still possess these assets, a fact that is reflected in the high level of recent economic activity in New Jersey.

It is the better part of wisdom, however, to recognize that in the past the state's economic advances came more or less automatically because of certain advantages. Today we are operating in a different setting. There is sharper competition from other states for new industry, and, indeed, other states have more to offer than they once did. This does not mean that New Jersey need have any fear for its economic future. It does mean, however, that a greater amount of time and effort must be invested in exploiting the state's advantages. More care must be taken in developing the state's resources. More thought must be given to the future requirements of industry and to the role of such radical new forces as nuclear energy in the economy of tomorrow. The Department of Conservation and Economic Development bears a heavy responsibility for all of this. But successful planning for economic development will demand the coordinated effort of many different agencies and organizations, public and private.

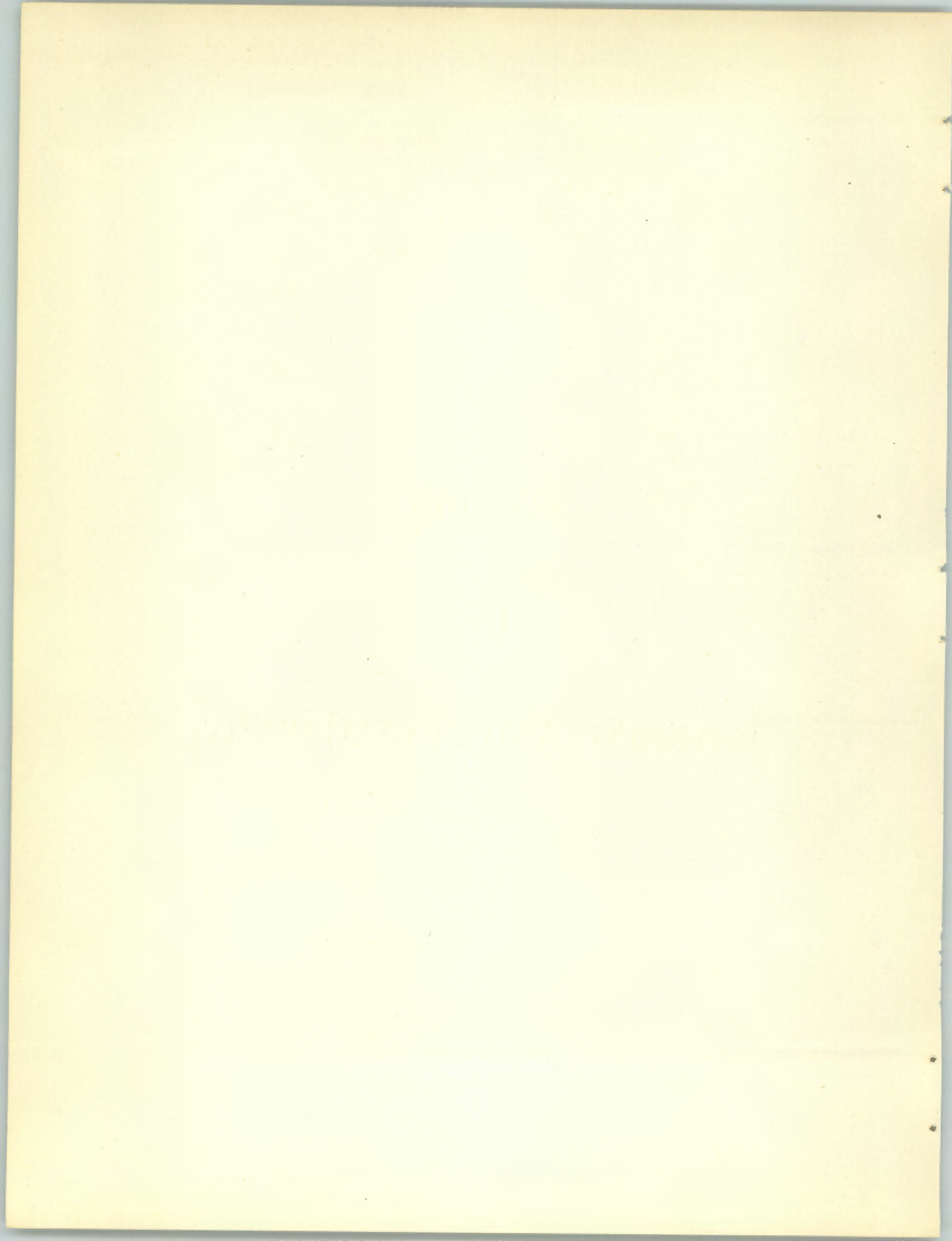
Joseph E. McLean  
Commissioner



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**Division    Reports**

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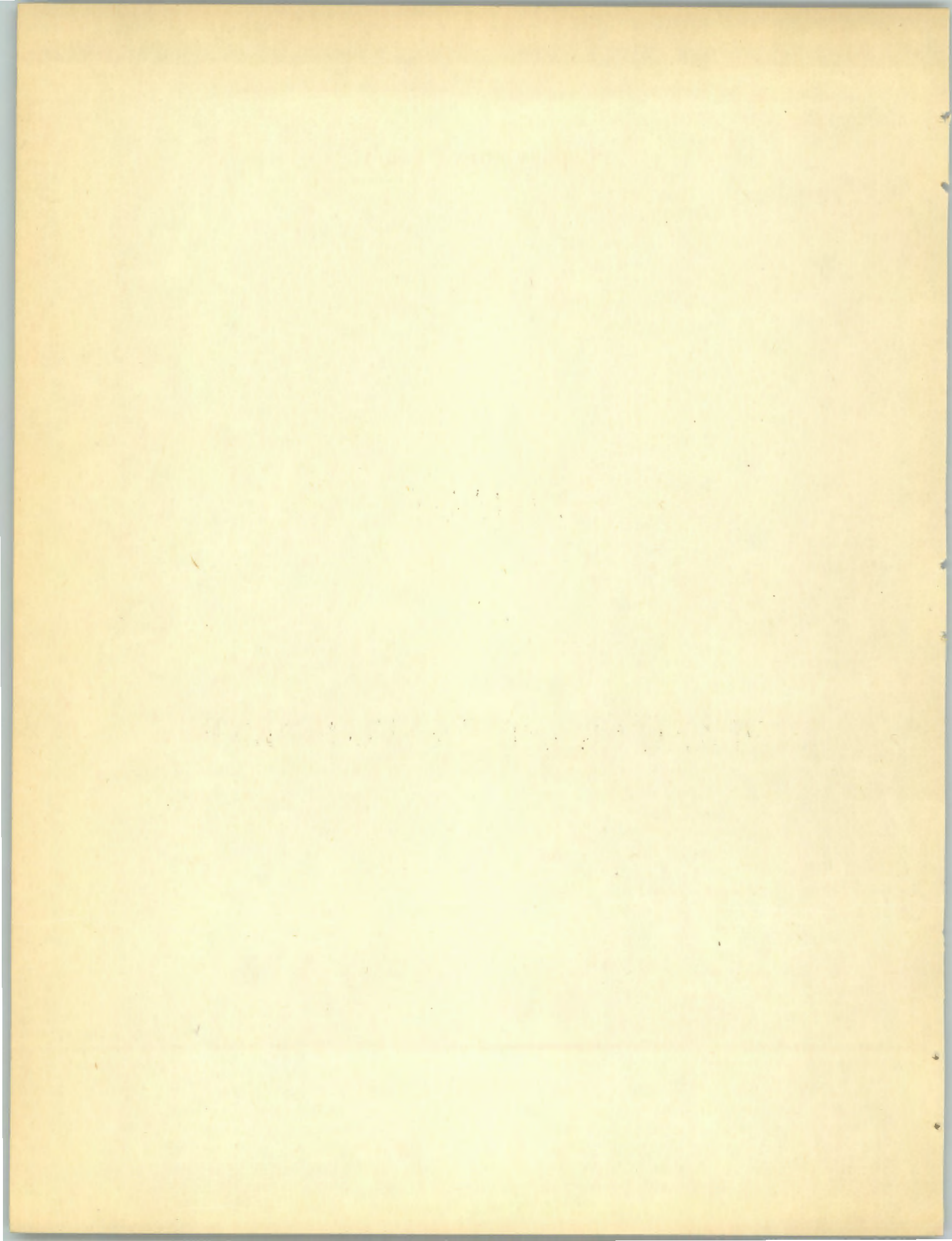




**DIVISION**

**OF**

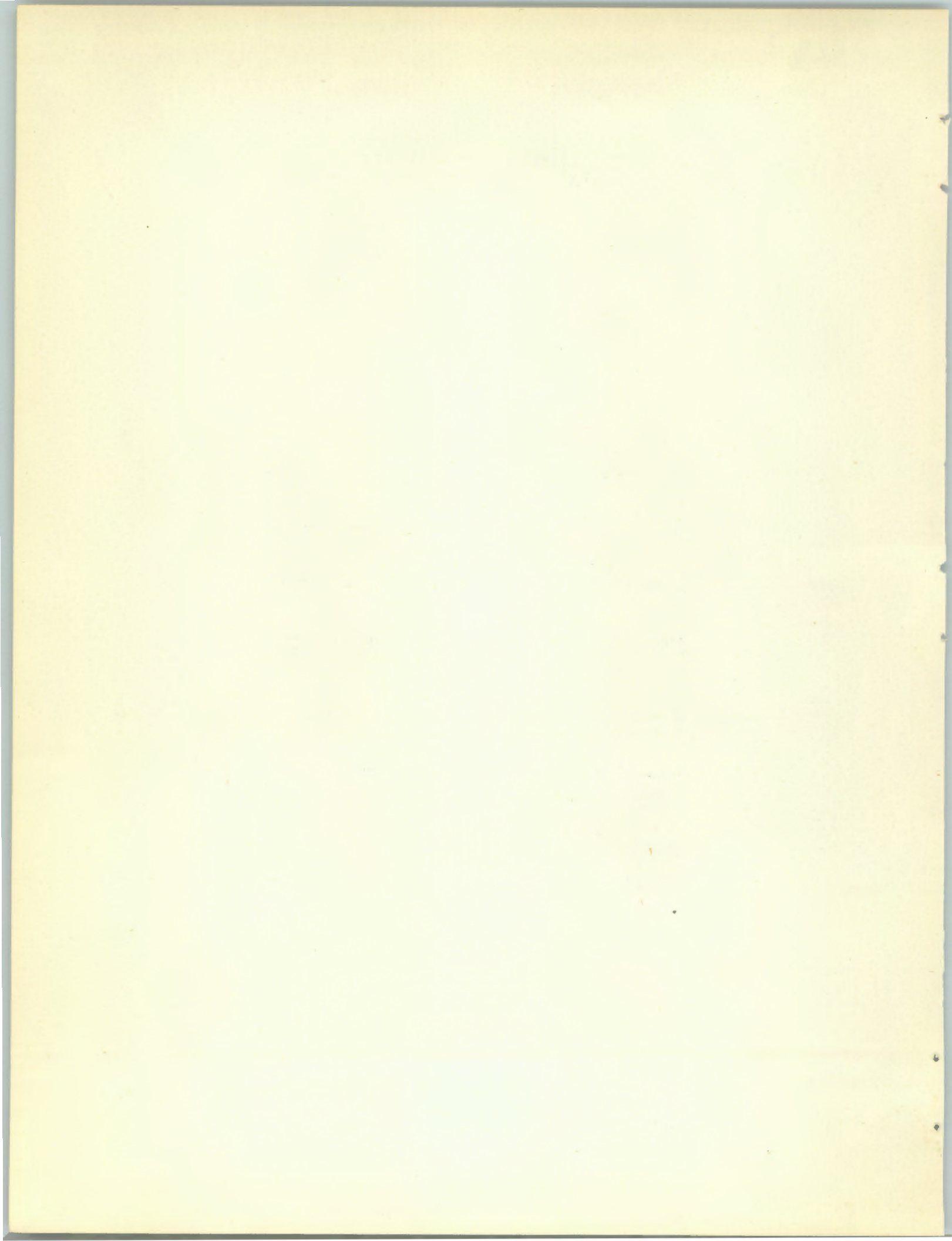
**PLANNING AND DEVELOPMENT**





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## Introduction

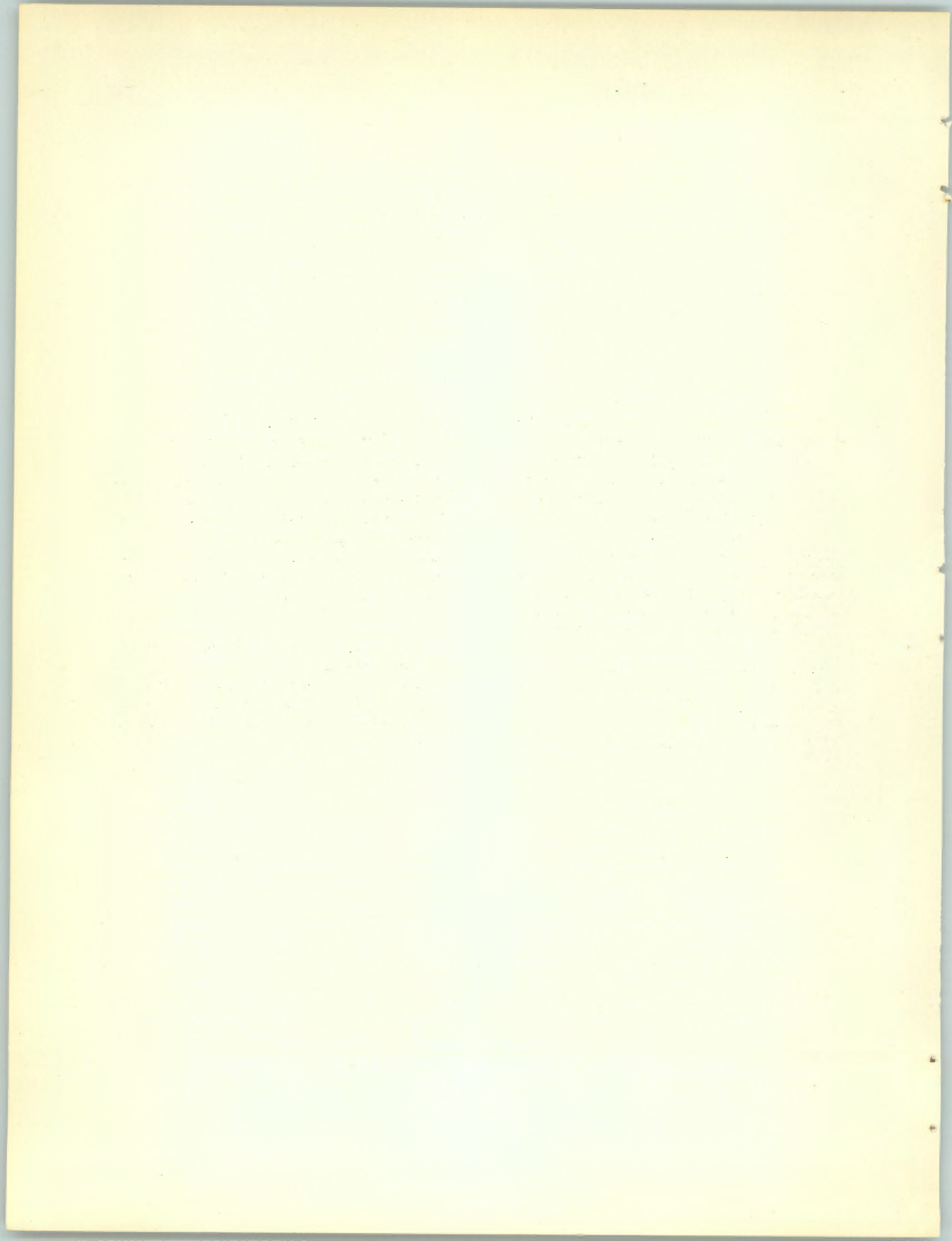
More than fifty per cent of the personnel of the Department of Conservation and Economic Development are employed in the Division of Planning and Development. It is thus the largest branch of the Department, and its activities are the most highly diversified. It is concerned with such matters as the control of beach erosion, planning for land use, air safety, recreation, promotion of the state's economic progress, development of more adequate forests and parks, housing, discovery of mineral resources, management of historic sites, and aid to navigation.

Some of the Bureaus now comprising the Division can trace their history as part of State government back for decades. They were brought together in a single unit in 1949 after adoption of the new Constitution and the subsequent

creation of the Department of Conservation and Economic Development by the Legislature.

During the past year, the Division consisted of the following principal agencies: The Bureau of Planning, the Bureau of Commerce, the Bureau of Forestry, Parks and Historic Sites, the Bureau of Navigation, the Bureau of Geology, the Bureau of Aeronautics, the Bureau of Housing, and the Bureau of Recreation. Separate reports from each of these appear on the pages that follow.

Working in conjunction with the Division is the State Planning and Development Council, created to advise and aid in the formulation of comprehensive policies for the conservation and development of natural and economic resources.





## BUREAU OF PLANNING

Orderly and efficient development of any area rarely proceeds from chance. It is only when a state or community determines in advance the most suitable uses for its physical assets and plans to utilize them accordingly that it can be certain to derive maximum value from these assets and to avoid the expensive and disturbing conflicts of a patternless growth. It is this principle of common sense that underlies planning at all levels of government. The principle was officially recognized by the State of New Jersey when it established a State planning agency in 1934 to perform three principal functions: Research, municipal planning assistance, and state-wide planning in the interest of proper state development.

Research is essential because the planning process is impossible without data on many subjects - - physical, social, and economic. Information is needed to clarify the objectives of the program, to determine its logical focus, and to understand paramount problems that must be taken into account in producing a comprehensive plan. In state-wide planning, the principal consideration is to insure that plans for improvements in such fields as highway construction, recreation and park development, air transportation, and water supply are properly related to one another as well as to the plans of other agencies of government. The proper development of the state as a whole depends also, of course, upon local planning. The extent and character of local programs are discretionary with municipal and county leaders. While exercising no authority in the projection of the programs, however, a State planning agency can contribute to their success by providing information and advice and furnishing technical assistance where it is needed.

The emphasis on State planning has been subject to marked variations. Since 1954 it has been stressed anew, and in 1955-56 the State planning agency was established as a separate bureau. Previously it had operated as a section in the Bureau of Planning and Commerce.

The upgrading of planning as a State function has involved, among other things, an expansion of the Bureau staff. Although the scope of state-

wide planning is not yet so broad as circumstances seem to demand, it has been increased even further. Similarly, the Bureau's activities in the field of municipal planning assistance have taken on new dimensions. In the past the staff always has worked closely with counties and municipalities, acting on their requests for advice and information. It also has been instrumental in the organization of local planning boards. Because of the limitations of personnel, however, it has not been possible to provide direct technical aid in the sense of assigning professional personnel to work on a full-time basis with municipalities in preparing master plans and zoning codes. This is now being undertaken for the first time on a limited basis with federal grants matched by the State and the communities receiving assistance. In 1955-56 the Bureau was engaged in setting the program in motion and making the basic studies necessary for comprehensive planning. The work was to continue at an accelerated pace during the fiscal year 1956-57.

**DEVELOPMENTS IN STATE-WIDE PLANNING.** In 1955-56 Governor Meyner directed the several departments of State government to submit to the Bureau outlines of their plans for the utilization of State-owned properties along with descriptions of existing uses. This was the first step in a move to improve coordination of planning for all State improvements. Certain data began reaching the Bureau before the end of the fiscal period, although considerable information remained to be gathered during the succeeding year.

With the data submitted in 1955-56, the Bureau was able to proceed with a revision of the existing State Development Plan, which was completed and presented to the Legislature in April, 1951. It is believed to have been the first blueprint of its kind prepared by any State. The plan was designed to serve as a frame of reference at the State level for the acquisition of public lands, the scheduling of such improvements as highway construction and park development, and the formulation of policies for the conservation of natural resources.



Numerous changes---often major in character---occurred in New Jersey between the time of the completion of the plan and the fiscal year 1955-56. New lands were acquired. New highways and hospitals and schools were built. New historic sites were established. New airports appeared, and existing airports were abandoned. It was essential that the changes be shown on the land use map contained in the development plan. Such a map retains its value for future planning only if it reflects current conditions.

In the revision of the document, the Bureau found that the blueprint of 1951 had been followed to a remarkable extent. Since its publication, the land owned by the State had almost doubled, and many recent acquisitions were in accord with recommendations of the plan. Such projects as the New Jersey Turnpike, the Garden State Parkway, and the Trenton Freeway also had been recommended. Although they did not follow the precise routes suggested, this hardly could have been expected. Highway construction usually is planned years in advance, but shifting traffic patterns, population movements, and the decisions of other states, must be carefully weighed in the final determination of the route.

The revision of the development plan was still under way at the end of the fiscal year, with the Bureau awaiting additional data from the various State departments.

**MUNICIPAL PLANNING AID.** In 1954 Congress wrote into the National Housing Act a provision for the purpose of enabling smaller municipalities to make inroads on their planning problems. Under this legislation (commonly known as the Title Seven Program) federal funds are made available to State planning agencies on a matching basis to help defray the cost of State assistance to communities lacking adequate financial resources for planning. Assistance is limited to those with populations under 25,000.

The Bureau took an interest in the program from its inception and recommended New Jersey's participation. At the request of the Department, the Legislature appropriated funds to match the federal grant for which the State had applied.

During 1955-56 New Jersey's application was approved by the (U.S.) Housing and Home Finance Agency, and \$141,200 became available for municipal planning assistance.

The federal program had been reviewed at a state-wide conference in Trenton in March, 1955. Afterwards questionnaires were mailed to all communities qualifying on the basis of population in order to ascertain which municipalities wished to participate and would be eligible from the viewpoint of financial need.

Actually the amount of funds provided for the program was small in relation to the over-all demand and it was not easy to determine how assistance should first be distributed. Federal officials had established two principal criteria: (1) That the municipality should need planning and (2) that it should lack the wherewithal to finance an adequate program. While this tended to reduce the number of those eligible, virtually every community had planning needs far in excess of its financial resources.

In response to the first set of questionnaires, 69 municipalities signified an interest in the program. In the opinion of the staff, all of these qualified on the ground of financial need. At the same time, however, there was little doubt that in order for the program to have genuine value, the communities given assistance should be provided with master plans and zoning codes instead of merely some form of partial guidance. The cost of comprehensive planning of this type ranges from \$5,000 to \$25,000 for municipalities with populations under 25,000. With the funds in hand, it was therefore possible to offer immediate aid to only eleven communities. The Bureau selected those whose need for planning was the most urgent in terms of such factors as the rate of development and demand for public improvements and whose resources were most limited in relation to this need. An attempt was made to achieve a fair geographical distribution of assistance rather than concentrating it in one or two counties, but this of course had to be balanced against the fact that few applications were forwarded from some counties and large numbers from others. The Bureau hopes that in the future, approximate-



ly \$200,000 will be available annually for municipal planning assistance as a result of federal, State, and local contributions. This would permit the State to help 15 to 20 municipalities each year.

The eleven communities singled out for immediate attention were Clinton Township, Delran Township, East Brunswick Township, Ringwood Borough, Emerson Borough, Glassboro Borough, Monroe Township, Parsippany-Troy Hills Township, City of Rahway, Oldmans Township and Lawnside Borough. The Bureau staff assumed the task of preparing master plans and zoning regulations for six of the municipalities while private consultants were retained for the others. The consultants are responsible under contract to the Bureau, performing their duties under its supervision.

In the municipalities where the work was assigned to the staff, the program began with careful studies of land use, economic conditions and population trends. In April, 1956, survey teams began making periodic field trips to gather basic data on land use characteristics, having previously prepared base maps of the various communities in question. By the end of the year two of these maps contained virtually all of the required data, and the other were in various stages of completion.

Along with these technical activities, staff members conferred with representatives of all municipal agencies affected by the program. The principal purposes and features of the undertaking were explained, and the problems of each agency were discussed. The conferences were intended to dispose of any possible misconceptions concerning the nature of planning and to establish closer liaison with municipal leaders. The discussions also served to bring the requirements of the communities into clearer focus and enabled the Bureau to assign priority to the surveys most seriously needed.

Planning operations in the communities receiving initial assistance were scheduled to continue during the year 1956-57. The expectation was that they would be largely completed by September, 1957.

**ZONING ANALYSIS.** In another aspect of its program of municipal planning assistance, the Bureau published during the year an analysis of all municipal zoning ordinances on file in Trenton. Preparation of the analysis required a study of 340 different codes and was believed to be the first work of its kind undertaken by a State planning agency. It promised to serve as a useful aid to municipalities in improving the general quality of their planning and zoning.

**EXTENSION OF PLANNING AND ZONING IN NEW JERSEY.** During the past decade the boundaries of the metropolitan regions in New Jersey have been shooting outward in all directions. Many formerly rural or semi-rural areas have felt the impact of this movement and have faced the problem of preventing the sort of runaway, haphazard growth that throws a community into confusion and imposes severe strains on the municipal treasury. It is this condition that has figured chiefly in the large recent increase of planning and zoning in New Jersey. Most municipalities finding themselves in the path of a rapidly expanding metropolitan region are quick to establish planning boards and to enact subdivision controls. Many will eventually adopt zoning ordinances, a procedure that requires time and certain careful investigations.

The spread of local planning and zoning may be seen in the following comparison of population covered on January 1, 1953 and June 30, 1956:

	January 1, 1953	June 30, 1956
Population covered by zoning	4,136,152	4,321,410
Population covered by planning boards	3,440,867	3,952,773

Meanwhile, the area (in square miles) covered by planning and zoning increased as follows:

	January 1, 1953	June 30, 1956
Area covered by zoning	2,506	3,663
Area covered by planning boards	2,125	5,221

As an ultimate goal, there should be 567 planning boards and 567 zoning ordinances for



# MUNICIPAL PLANNING CONTROLS



These maps show the extent of the growth in planning and zoning in New Jersey over a three-year period. The areas in black are municipalities that have planning boards and/or zoning ordinances.



the 567 municipalities of the state. Fewer subdivision controls are required because they are not necessary in densely settled urban areas with little or no vacant land. Here the principal need is for urban redevelopment.

While municipal planning and zoning have been spreading, the number of county planning boards also has grown. As of June 30, 1956, agencies had been established in twelve of the twenty-one counties, and although there were no additions in 1955-56, most existing boards showed distinct gains. Greater appreciation of their role was manifest in increased appropriations for county planning. The boards, in turn, were increasing assistance to municipalities, making progress in their efforts to encourage communities without planning and zoning to fill this gap in their organized activities, and achieving greater success in the coordination of municipal planning.

The weakest link in the chain continued to lie in the field of regional planning. As the state has grown, counties and municipalities have been drawn closer together. Many of the problems which they face transcend traditional political boundaries. These problems can be solved only if different seats of government work in conjunction with one another and coordinate their planning activities. This is the situation that sets the stage for regional planning. Unfortunately, although the Legislature long ago authorized the creation of regional planning agencies, no official boards had been established as of June 30, 1956. An unofficial association concerned with mutual problems of Bergen and Passaic Counties had been organized, and there was much discussion of the need for regional action in certain metropolitan areas, particularly Camden and Trenton, but official regional planning was still a matter for the future. The Bureau persisted in its effort to encourage the formation of regional boards, offering to assist in establishing such agencies and to provide technical aid and advice for their operations. Under the Title Seven Program (see above) a regional board would be entitled to a direct federal grant on a matching basis for its program.

Zoning for agriculture is another question confronting New Jersey as a result of urban growth. Among certain groups there is apprehension that too much rich agricultural land is being swallowed up by commercial and real estate developments attending the expansion of the metropolitan regions. As of 1955-56 the precise extent of this problem remained undetermined, but was under study by the Bureau. By using aerial photographs taken at ten-year intervals, the staff was attempting to pinpoint the scale of the intrusion on agriculture and its probable future directions. Whatever recommendations might be made on the basis of the staff's findings would be referred to the governing bodies of municipalities in rural areas. They alone would be empowered to take remedial action.

#### **RELATIONS WITH OTHER AGENCIES.**

In its relations with other agencies the Bureau cooperated with such regional organizations as the Regional Plan Association of New York, the Southern New Jersey Development Council, and the Delaware Valley Council on programs and surveys. Its file of aerial photographs were made available to other State agencies, representatives of the federal government, county and municipal officials and private groups. The staff assisted various engineers in the investigation of a number of different questions, particularly watershed development.

Among special projects, the Bureau helped the State Division of Motor Vehicles in its effort to locate a proper site on State-owned property for the erection of motor testing stations. This investigation led to consideration of a tract on U. S. Highway 1 a few miles north of Trenton. The State had received two private offers for the land, but the Bureau urged that it be retained for use as a heliport. A plan for the utilization of the site was prepared, showing ample space for both a heliport and the entire operations of the Division of Motor Vehicles. The construction of a testing station was under way at the end of the year.

Within the Department the staff worked with the Bureau of Aeronautics in drafting a master plan for aviation development in New Jersey.



While this was to be incorporated in the revised State Development Plan, it was regarded as an end in itself and was expected to promote safer flying conditions. (See report of Bureau of Aeronautics.)

The Bureau also cooperated with the Bureau of Forestry, Parks and Historic Sites on plans for the use and management of certain forest and parks lands, including the Wharton Tract in south Jersey. (See report of Bureau of Forestry, Parks, and Historic Sites.)

**PUBLICATIONS.** In addition to releasing the analysis of municipal zoning codes the Bureau continued to publish *Jersey Plans*. This is a quarterly, dealing with all aspects of planning in the state and is distributed to planning boards, State and local officials, libraries and educational institutions. Also issued during the year were revised editions of "Roadside Zoning along the Blue Star Memorial Highway" and "Effective Zoning".

## BUREAU OF COMMERCE

The most impressive measure of the vigor of New Jersey's economy is the fact that the state now ranks fourth in the United States in per capita income. The sources of its income are varied. The agricultural segment of the economy, although small, is unusually prosperous. The tourist trade has assumed the dimensions of a billion-dollar industry. The mainstay of New Jersey's economic strength, of course, is manufacturing. During the period since 1900 the number of wage earners in the United States as a whole has increased by 168 per cent. During the same period the number in New Jersey has risen by 190 per cent. New Jersey's industry, moreover, is highly diversified. The combined total of men and women employed in the two largest existing industries accounts for less than one-fourth of all manufacturing employment of the state.

The Department of Conservation and Economic Development is officially responsible for helping preserve the foundation of the state's economic vitality and for pressing the search for new sources of wealth. In a sense all of the diversified activities of the Department bear directly or indirectly on economic development. The agency most directly concerned, however, is the Bureau of Commerce.

The Bureau's functions include the implementation of programs designed to advertise New Jersey's advantages both as a vacation center and as a base for industrial operations. Its staff plays a part in direct negotiations to attract new industry. It provides technical services for existing business and industry and assists newcomers in solving whatever problems they may encounter. It bends every effort to widen the market for New Jersey's products, especially agricultural commodities. Meanwhile, the Bureau is a focal point for research in State government. It compiles data on many subjects of social and economic significance and has developed a business information service, published quarterly, to aid New Jersey concerns and attract firms operating in other states.

The activities of the Bureau in 1955-56 are recounted below in the reports of its three constituent units--the State Promotion Section, the State Research and Statistics Section, and the State Standard Building Code Adoption Section. The State planning unit, formerly a part of the agency, became a separate Bureau during the year.





The important relationship between new transportation facilities and economic progress is underscored in this illustration of the new Owens-Corning Fiberglas Company plant overlooking the New Jersey Turnpike in southern New Jersey.

### STATE PROMOTION SECTION

The State Promotion section was created by the Legislature in 1937 and formerly operated as the New Jersey Council. It has been concerned with the direct promotion and preservation of the wealth-producing resources of the state and also has encouraged civic and cultural activities. During the past year the agency conducted programs of promotion in the fields of industry, agriculture, recreation, real estate and education.

**INDUSTRIAL PROMOTION AND GENERAL DEVELOPMENT TRENDS.** As the staff of the agency joined with private groups to place material in national magazines and newspapers advertising New Jersey's attractions for business and industry, the following trends were noted in general state development:

The establishment of new plants and the expansion of existing plants tended to offset any losses of industry. Actually, the number of plants

closed during the year was moderate. On the whole, moreover, abandonment of operations resulted from the pressure of competition rather than any large number of decisions to relocate plants in other states. Woolen manufacturing suffered a setback with the shut-down of mills in Trenton, Camden, and Passaic. Other losses were diversified.

In many areas, development activities went forward on a considerable scale, and, in some instances, involved progress in the renewal of older cities. The Newark Economic Development Committee displayed substantial initiative and deserves credit for many of the gains evident in Newark and the surrounding area. In Newark itself, two insurance companies embarked upon major building programs, as did the Martland Medical Center. The combined outlay of capital involved in new construction was expected to approximate \$100,000,000. Meanwhile, in Newark, an urban redevelopment program was under way in the vicinity of Lackawanna railroad station. Here plans called for the construction of low-



income and middle-income housing as well as a group of commercial buildings on a 50-acre tract. (For information on other urban redevelopment projects, see the report of the Bureau of Housing).

While this was taking place, industrial growth continued in northeastern New Jersey, especially in the chemical field, and investment in plant and equipment was comparable to that of former years. The increasing scarcity of building materials, such as cement and structural steel products, tended, however to delay a number of proposed developments. Significantly, the extension of the New Jersey Turnpike from Newark to the Holland Tunnel revived interest to some degree in the Bayonne area, where a redevelopment program was set in motion by the Bayonne Economic Council and the Bayonne Industrial Commission. The extension served to open city-owned waterfront properties in both Jersey City and Bayonne for development. Meanwhile, a group of private investors acquired title to the properties once operated by Tidewater Associated Oil Company in Bayonne with plans to use the tankage as public warehouses, to scrap the refining equipment and to lease the buildings.

Elsewhere, discussions were in progress among business and civic leaders of Paterson to determine the best method of initiating a redevelopment program for that city.

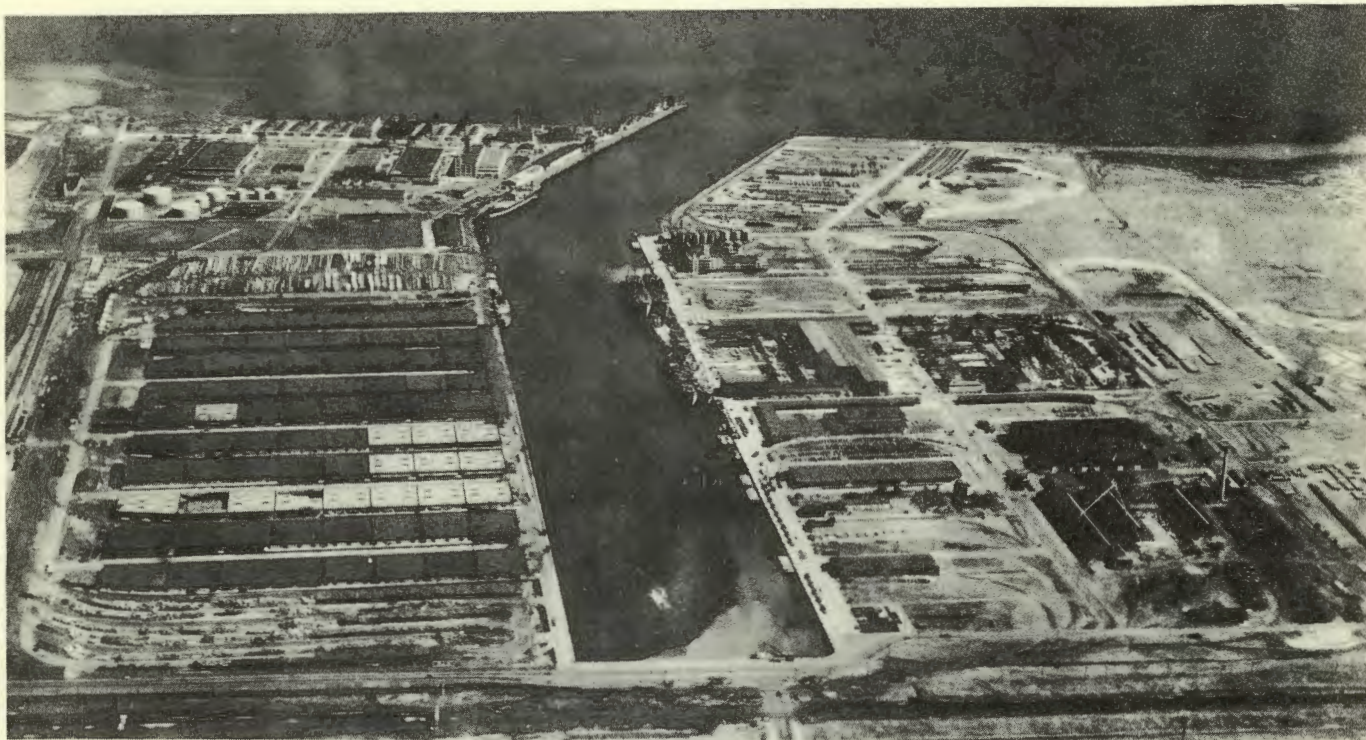
The momentum of growth in the Trenton and the Delaware Valley areas remained strong, and will be intensified as a result of the deepening of the Delaware River channel between Trenton and Philadelphia. The extent of the growth was reflected in the general financial position of Trenton and Mercer County, whose ratables had increased in the amount of \$54 million during the five years prior to 1956. In 1956 the Mercer County Tax Board expected an additional increase of some \$12 million. Expansion in this area was being pushed by the Mercer County Industrial Commission and the Greater Trenton Chamber of Commerce. In the meantime, the Trenton Housing Authority received formal approval from the federal government for an industrial redevelopment program that will provide additional industrial and warehouse sites.

In Camden there was also a general up-swing in industrial development and of building activity. Investments in major new housing projects, for example, were expected to total \$25 million. Among other developments was the construction of a large new department store and an office building with parking facilities for 1,000 cars, while plans called for the construction of two additional office buildings, including one on a 12-acre site acquired in Camden's old civic center.

In transportation, such projects as the interconnection between the New Jersey Turnpike and the Holland Tunnel, the construction of a third tube in the Lincoln Tunnel, the linking of the New Jersey Turnpike with the Pennsylvania Turnpike and the erection of the south Philadelphia-Gloucester Bridge all promised to quicken the pace of business and industrial development. Meanwhile, long-range plans were announced for the conversion of marshlands near Elizabeth to a terminal for deep-draft vessels, a project of the New York Port Authority. Eventually Port Elizabeth will facilitate the movement of some 2,000,000 tons of import-export cargo annually, and is especially important because the last available space at Port Newark is now to be placed in use by the Port Authority. During the year the Authority awarded a contract of \$9,300,000 for the construction of an additional four-berth dock at Port-Newark, an undertaking that should set the stage for a substantial influx of new commerce and industry depending on water transportation. Along with this, the Authority went forward during the year with plans for modernizing the piers at Hoboken.

At the same time the state added to its reputation as a center of research. (It is estimated that approximately ten per cent of all organized research in the United States is found in New Jersey.) A number of new firms were in the process of building laboratories, and six of the largest existing concerns acquired new and more extensive sites for research activities. In all of this, one of the outstanding events was a move toward atomic research. A private concern was seriously considering the construction of a nuclear research reactor in Middlesex County and received assistance from various state





This is Port Newark, on Newark Bay, now under the management of the New York Port Authority. Large modern marine terminals are already in operation, and further development of the port is under way. Large numbers of workers, with an annual payroll of some \$15 million, are employed to handle the millions of tons of general cargo passing through the terminals each year.

agencies, including the Department of Conservation and Economic Development, in making preliminary arrangements for the venture. If it materializes, past experience suggests that the operation would tend to attract various other firms interested in atomic development.

A survey of building activity in the state during the year disclosed an interesting shift in the pattern of locating new commercial structures. The migration of business from areas of congestion appeared to be slowing down, and many firms that once might have selected semi-rural areas for their operations preferred, instead, to build offices in densely populated suburban sections. This apparently has its origin in the demand for competent women to fill clerical positions. Such personnel frequently is difficult to recruit in the more remote areas. As to other trends in commercial construction, the number of shopping centers in

heavily populated regions continued to increase, and new centers were being planned, in many cases by nationally prominent firms.

**RESORT PROMOTION.** During the post-war years the volume of New Jersey's resort or tourist trade has increased at the average rate of five per cent annually. Surveys conducted during the past year showed that this advance was continuing.

During the same period the Promotion Section, working closely with the New Jersey Resort Association, the New Jersey State Hotel Association, chambers of commerce and related agencies persisted in its attempt to improve the effectiveness of resort literature and advertising, while expanding its services to meet the sharper competition coming from other resort states.

The staff, for example, began distribution of 100,000 copies of *New Jersey Vacation Guide*,



a thirty-two page comprehensive booklet on the state's resorts, with all illustrations in color. (It is estimated that 200,000 pieces of resort literature of all types were distributed during the year.) The Section also prepared kodachrome-lighted exhibits for promotional use and expanded its general publicity program. Along with concentrated radio advertising in the New York and Philadelphia metropolitan areas, advertisements were published in a group of metropolitan newspapers and national magazines having a combined circulation of 14,000,000. A motion picture film, *Vacation Varieties*, depicting the diversity of opportunities for recreation in New Jersey, continued to be carried by television stations in all parts of the nation and was shown 111 times in 1955-56.

Among other developments, Governor Meyner called a state conference on resorts to consider the possibility of extending New Jersey's summer tourist season. A committee was appointed to formulate a program of action, and at the end of the fiscal year steps were being taken to implement its recommendations. The Section moved to help coordinate the advertising activities of the various resorts wishing to participate in the effort to extend the 1956 season at least through the middle of September instead of closing it immediately after Labor Day.

**AGRICULTURAL PROMOTION.** Promotion of New Jersey agricultural products was conducted in cooperation with the State Department of Agriculture, which submitted recommendations with regard to programs for publicizing several classes of commodities. Participation in the program again was contingent at least upon each commodity group's matching the State's outlay for agricultural promotion. Farm groups contributed an average of \$6.12 for each dollar spent by the State.

The most extensive programs were those aimed at expanding markets for summer and winter apples, blueberries, sweet potatoes, eggs, certified seed and New Jersey produce auctions. Expenditures were made for radio promotion, publicity through special recipes, and photographs prepared for distribution among food editors. Advertising space was purchased in

wholesale food trade publications; tours of New Jersey farms and orchards were arranged and various activities were undertaken in conjunction with the advertising programs of widely known food processors.

Much of the radio and television time as well as newspaper space devoted to a discussion of New Jersey farm products each year entails no expense and thus the cost of promoting the commodities is comparatively low. This is an outgrowth of favorable relations developed over the years with food editors and others engaged in publicizing food, particularly in the New York and Philadelphia areas.

**RESIDENTIAL REAL ESTATE PROMOTION.** Increased population and the expansion of industry have intensified the need for adequate housing facilities in New Jersey. The Promotion Section for many years has cooperated with the New Jersey Association of Real Estate Boards and other groups concerned with residential property transactions. Copies of a factual booklet for persons interested in building or purchasing housing in New Jersey are available upon request and also are distributed through real estate boards and other agencies. In material concerned with industrial promotion, the Section has taken special note of housing conditions in the various areas of the state.

**EDUCATIONAL PROMOTION.** The educational promotion program originally was designed to encourage pride in New Jersey and New Jersey institutions, to stimulate cultural development in the state, and to give emphasis to the part played by New Jersey in the founding and growth of the nation. It has been expanded, however, in such fashion as to bolster efforts to promote the state in other respects.

In addition to answering thousands of inquiries on a broad range of topics, a service frequently necessitating considerable research, the Section provides assistance in the preparation of material for exhibits to be displayed both in New Jersey and elsewhere. It aids colleges and universities as well as other states in planning special programs, edits material for almanacs, and furnishes publishing companies



with data for inclusion in textbooks and encyclopedias. Finally, the staff helps other departments of State government, municipalities, chambers of commerce, and civic organizations in carrying out a variety of projects concerned with education and cultural development.

The Section has published a factual brochure, entitled *Know Your State*, and this is widely used for reference purposes.

## RESEARCH AND STATISTICS SECTION

The Research and Statistics Section reinforces the Department's efforts to promote the economic growth of New Jersey by compiling and coordinating statistical data and analyzing social and economic factors affecting commercial and industrial development. It also prepares articles for leading state and regional publications on general economic conditions and on a variety of specific topics. When the agency was established, the collection of facts and figures inevitably was the most important aspect of its work. With an ever growing backlog of statistical material, however, the Section has turned its attention increasingly to the interpretation of data in order to serve government and private institutions more effectively.

Its files contain information on such subjects as population, housing, income, employment and labor, manufacturing, marketing and retail sales, transportation facilities and taxation. Decisions with important implications for social, economic, and cultural development are based on analyses of these data. The services of the Section are utilized by businessmen, industrialists, city planners, state officials, and many individuals seeking material for use in interpreting various phases of the state's growth.

**PUBLICATIONS.** During the year the Section continued to publish the *Review of New Jersey Business* in cooperation with the School of Business Administration of Rutgers University. Each issue of this quarterly publication contains feature articles written by specialists in a variety of fields along with summaries of state and national business trends, data on business

conditions in selected New Jersey municipalities, and charts placing significant economic indicators in perspective. Members of the Research and Statistics staff prepared a number of articles for the *Review* themselves, dealing with phases of such subjects as non-agricultural employment, business failures, and general economic trends in New Jersey. The staff also provided articles on Passaic, Cumberland, and Mercer Counties for "Economic Profiles," a feature series appearing in *New Jersey County Government Magazine*. Among other editorial activities, the staff continued the publication of its monthly "Economic Newsletter," which contains descriptions and interpretations of the principal developments in New Jersey economic life. In the preparation of the "Newsletter," the Section combines statistical data and other information gathered by the various departments of State government, special agencies, and its own personnel. As in the past, the staff assembled information and prepared articles for *The World Scope Encyclopedia Yearbook*, *The American Peoples' Encyclopedia Yearbook* and *Information Please Almanac*.

**SUMMARY OF PRINCIPAL STUDIES AND SERVICES.** The most extensive statistical work undertaken by the Section during the year was a tabulation of information concerning the 11,020 manufacturing concerns and 846,051 factory workers in New Jersey covered by the unemployment security law. The tabulation was based on records of the State Division of Employment Security. It provided a breakdown of manufacturing according to types of industry, the number of persons employed in each and various other factors. Such a study is regarded as one of the most valuable available means of appraising a state's economy.

Also completed during the year was an analysis of personal income in New Jersey. This showed major income sources and income distribution in terms of dollar value and relative importance to the economy. In addition it provided current information on New Jersey's relative position among the ten largest states in per capita personal income.



Along with this study the various American industries were ranked according to states, the value added by manufacturing, total number of employees and wages of all employees. The purpose of the study was to determine New Jersey's relative standing in national production activities.

In a special housing survey, the staff analyzed the results of a state rental and vacancy inquiry conducted by the United States Bureau of the Census and at the same time made an appraisal of rental and vacancy conditions in Newark, Trenton, and Camden.

The Section carried forward its study of New Jersey population trends, computing estimates as of July 1, 1955, for municipalities, counties and the state as a whole. Plans call for the computation of population estimates on an annual basis to supplement data gathered in the decennial federal census. As part of this work, population trends of individual counties are under constant analysis, and estimates of population growth by areas and counties are periodically revised.

The staff also revised the existing edition of "Facts About New Jersey" for the State Promotion Section, tabulated defense contracts awarded to concerns in the state, compiled data on new residential construction, and brought up to date records concerning bank deposits in New Jersey.

Apart from this and its special analytical work the Section represented the Department at a large number of meetings and conferences, presenting reports on particular aspects of economic development in the state and on other questions, such as housing and water supply.

**RISE IN DEMAND FOR SERVICES.** The demand for research and statistical services has steadily increased over the years, and the role played by the Research and Statistics Section has expanded accordingly. This is evident in the rise in the number of requests for information. During the period 1954-55, for example, the Section received approximately 200 requests for information. In 1955-56 the number

rose to 340, an increase of 70 per cent. In order to answer most inquiries satisfactorily, detailed research is necessary, and frequently extensive tabulation of data from the Section's files is required.

Especially notable in all of this is the greater reliance on the agency's population estimates and projections. They are being utilized in the formulation and administration of many programs both in government and private industry.

To a growing extent, moreover, the Research and Statistics Section had been asked to participate in the activities of other departments of State government, especially when extensive factual data are needed to solve major problems or to plan departmental projects. In a number of instances, it also has been requested to assist federal agencies.

## STANDARD BUILDING CODE ADOPTION SECTION

**BACKGROUND.** In New Jersey, enforcement of standards for building construction is the duty of municipal government under powers delegated by the state. The State's role is to assist political subdivisions in this field by providing codes that may be used as a basis of effective control. The Department is required under law to prepare and distribute a "Standard Building Code of New Jersey" which any municipality may adopt by reference. (Its adoption, of course, is optional.) Work on the code began several years ago, and three parts were completed prior to the year 1954-55. The preparation of the remaining sections was under way during the past fiscal period.

The importance of this undertaking lies in the fact that sound community development depends to a large degree upon greater emphasis on municipal planning, and modern sanitary and construction codes are essential tools in the implementation of an effective planning program. They are designed to safeguard the public as a whole, an idea that contrasts with the older view that they were needed only to protect property.





A typical summer scene on the New Jersey shore, where a growing tourist trade has assumed the dimensions of a billion-dollar industry.

At present a large number of municipalities have no codes at all. Others are relying on regulations that are obsolete in a period of such far-reaching expansion, failing, for example, to make any provision for controlling the use of new building materials and construction methods. There is, moreover, a pronounced lack of uniformity in codes throughout the state.

The Department is expected not only to prepare a standard building code but also to make continuing revisions in order to keep it up to date. Among the advantages that would accrue from universal adoption of the code are the following: State-wide uniformity of building construction regulations, consistency of building administration and ready acceptance of the use of approved new materials and devices. In addition, individual municipalities can achieve substantial savings by adopting the code, since it is immediately available and no heavy outlay of local funds is necessary.

**PROGRESS OF THE PROGRAM.** The three sections of the building code distributed prior to the year 1954-55 were: Part A, containing general provisions and definitions; Part B, setting forth requirements for structural, fire

and general safety with a component manual; Part E, a plumbing code of New Jersey prepared by the State Department of Health.

These parts of the code were adopted by the State Department of Labor and Industry as they apply to requirements for construction and installation of equipment which that Department enforces. Meanwhile, although adoption of the regulations by municipalities is not mandatory, many communities displayed a serious interest in the code and took under advisement the question of accepting it.

During the past year, the Bureau of Commerce staff concentrated its efforts on clearing the way for formal State adoption of the remaining sections of the code. Proposed drafts were submitted to prominent engineers, architects, contractors and industrial organizations for review, a valuable procedure from the standpoint of both improving the effectiveness of the regulations and gaining broader support for the program. Three new parts were to be published in the fiscal year 1956-57. They were Part C, setting forth requirements for elevators, escalators, and conveyor equipment; Part D, setting forth requirements for air conditioning, mechanical



ventilation and refrigeration; and Part F, setting forth requirements for wiring and electrical equipment.

After distribution of all parts of the code, the Department is expected to draft whatever amendments are found necessary in order to bring it fully into line with modern developments in the construction field. In view of this the Commissioner of Conservation and Economic Development planned to appoint a State Board of Standards, composed of representatives from

various branches of the building industry. The code manual also was to be expanded to include regulations for one-family and two-family dwellings.

Prospects for ever-widening use of the code were seen in the fact that more than 1,600 copies had been purchased by engineers, contractors, architects, and industrial concerns as of June 30, 1956.

## BUREAU OF FORESTRY, PARKS AND HISTORIC SITES

The Bureau of Forestry, Parks, and Historic Sites is the largest unit in the Division of Planning and Development and one of the largest units in the Department, with broad responsibilities in the fields of recreation and the conservation of natural resources.

Its principal functions are:

(1) Operation of State forests and parks as areas of public recreation. (2) Management and preservation of historic sites. (3) Promotion of better timber production by means of research, reforestation, and advisory services to woodland owners. (4) Protection of forests from fire.

One of the predominant objectives of the Bureau today is the development of a system of forest and parks adequate to meet current needs and capable of being expanded to satisfy the future demands of a growing population. In the case of most State governments, park development was long relegated to a place of minor importance among State activities. Only within recent years, as more automobiles, better roads, and higher incomes have sent millions of Americans scurrying from cities on holidays and weekends in search of outdoor recreation has the necessity of more vigorous action to provide satisfactory park facilities received general recognition.

New Jersey's experience has been typical. Despite the acquisition of forest and park land as early as 1905, decades passed without any allocation of funds for general park development. Such improvements as were made came chiefly as a result of the work of the Civilian Conservation Corps in New Jersey during the late thirties. During the fiscal period 1954-55, however, the Department proposed that the State take a new look at this question and initiate a broad-scale program of improvements to bring facilities into closer balance with existing needs.

As a practical matter, park development must go forward on a continuing basis to keep pace with the growth in demand. It is impossible to erase in a single stroke the results of a long period of neglect. Improvements must be planned. Such plans, in turn, must be reviewed by the responsible State officials and properly related to other aspects of state development. During the year 1955-56 the Bureau spent much of its time writing the specifications for the initial series of projects scheduled under the program. By the end of the year, the planning process was largely complete. Contracts for these projects were being awarded during the early part of the new fiscal year, and, according to every indication, the improvements would be made before the summer season of 1957. (A more detailed



discussion of this program and related matters appears below in the report of the Forest and Parks Section.)

From the standpoint of advancing conservation in New Jersey, the most encouraging note was a tremendous increase in the size of the public domain. As recently as 1951, only 121,207 acres of State-owned land were devoted to forests, parks, and fish and game preserves. (The fish and game preserves, known as public shooting and fishing grounds, are properties acquired and administered by the Division of Fish and Game.) By the end of the past fiscal year, total holdings had risen to 252,355 acres or almost double the acreage devoted to these purposes only five years earlier.

There is no difficulty in discerning the importance of these acquisitions for a rapidly growing state, in which land values and competition for unused land are constantly on the rise. Full utilization of the properties, of course, will not take place for many years. The salient point is that the State has acted to preserve a substantial land area that surely would be needed in the future for recreation and other public purposes.

## FORESTS AND PARKS SECTION

The operation and management of forests and parks, the planning of park improvements and administration of historic sites are responsibilities of the Forests and Parks Section. (Both forests and parks are designed to provide varied opportunities for outdoor recreation. The management policy for forests is broader to the extent that they are open for hunting, and one of the management goals is better timber production.) The substantial increase in the amount of State land available for public recreation and the sharp upswing in the number of visitors to forests and parks inevitably have enlarged the scope of the Section's operations.

During the past year this unit was engaged chiefly in preparing plans for the initial projects scheduled under the park development

program discussed above. At the same time studies went forward on long-range plans for the management and development of such recently purchased properties as Island Beach and the Wharton Tract. Island Beach is a ten-mile barrier on the Jersey shore in Ocean County acquired by the State in 1953 because of its unusual plant and bird life and its potentialities as a seashore park. The Wharton Tract is a reservation of more than 90,000 acres—larger than the whole of Essex County—in south central Jersey purchased in successive stages in 1954 and 1955 at a cost of \$3 million. It contains valuable water reserves, offers splendid opportunities for recreation, and should be profitable as a source of forest products.

While the Section was concerned more than ever before with planning for the future of the State's forests and parks, the operation and maintenance of existing facilities demanded the time of the majority of personnel. The record of attendance at all forests, parks and historic sites during the year was 2,585,946, slightly higher than the total for the preceding fiscal period. (This does not include visitors to Palisades Interstate Park.) The breakdown of attendance was as follows:

Parks	1,967,259
Forests	589,746
Historic Sites	28,941
TOTAL	2,585,946

A listing of all State forests and parks with basic data about each appears on pages 29 and 30.

**PARKS DEVELOPMENT PROGRAM.** In the fiscal year 1955-56 the Legislature had appropriated \$550,000 to the Department of Conservation and Economic Development for park development. An additional \$359,000 for road construction and repairs in forests and parks had been approved, bringing, the total amount available for park improvements to \$900,000. In providing for these improvements, the Legislature specified areas where the funds should be used. Plans for the initial projects, as they took form during the year, and other accomplishments were as follows:



**ALLAIRE STATE PARK.** This property, although acquired years ago, still lacked facilities for public recreation. The development program called for the construction of 75 picnic table and fireplace units, sanitary and water supply facilities, and miscellaneous improvements.

**CHEESEQUAKE STATE PARK.** Plans provided for the construction of 50 picnic table and fireplace units, installation of a water supply and distribution system along with sanitary facilities. Extensive improvements in the Hooks Creek Lake area also were scheduled.

**RINGWOOD MANOR STATE PARK.** Projected improvements included repairs to the manor house, construction of 25 additional picnic table and fireplace units, and miscellaneous repairs.

**SWARTSWOOD STATE PARK.** Principal improvements scheduled were a bathhouse and 20 picnic table and fireplace units.

**HIGH POINT STATE PARK.** During the year the High Point Lodge was thoroughly repaired after being seriously damaged by fire during the previous fiscal period.

**STOKES STATE FOREST.** The installation of septic tanks and work on a leaching pit were completed at the State Conservation Camp, operated jointly by the Department of Conservation and Economic Development and the State Department of Education.

**BARNEGAT LIGHTHOUSE STATE PARK**  
A general development plan was prepared, including specifications for combined sanitary and bathhouse facilities. Construction was under way at the end of the year.

In addition to the plans and accomplishments listed above, major repairs to three historic sites were completed. These were the Von Steuben House, the Wallace House, and Grover Cleveland's Birthplace.

**ISLAND BEACH.** Island Beach is widely regarded as one of the most valuable properties

acquired by the State in recent years. An ocean barrier flanked on the east by the Atlantic and on the west by Barnegat Bay, it is the only stretch of shoreline on the north Atlantic coast of the United States that has been fully preserved in a natural condition, with picturesque dune lines, many varieties of bird life, and a rare concentration of beach vegetation.

It was obvious to State officials from the beginning that its potentialities for park development were excellent. It was equally obvious, however, that a complete and successful development program would require time, a considerable outlay of capital, and skillful planning.

The need for skillful planning stems from the goals that almost inevitably suggest themselves in trying to decide upon management policies. The botanical characteristics of the area are unique and should be carefully protected. Similarly, Island Beach should be preserved as a suitable environment for the more than 70 species of birds that nest there at various times during the year. Finally, with its ocean and bay front, it should be developed for a number of different forms of recreation, with facilities to accommodate many visitors.

The formulation of plans in which these various uses are properly balanced and harmonized thus has called for the most searching type of investigation and analysis. During the past year consideration of the various factors involved in the development of the area continued, leading to the clarification of numerous points. No effort was made to open the tract for general use because of the lack of adequate facilities, but, as in previous years, entry permits, mostly for surf fishing, were sold for \$18 each.

Although no final plans had been approved studies made during the past year and earlier pointed to certain lines of development that presumably will be followed to a major extent in implementing any long-range program. It appeared desirable, for example, to preserve approximately two-thirds of the barrier in a completely natural condition, with a botanical sanctuary at the northern end and a bird sanctuary at the southern end, with entry limited to small, authorized study groups. The central strip



seemed to be the most suitable area for recreational development, with a series of bathing units, each consisting of a parking area, bathhouse, sanitary and water supply facilities, and observation shelters. Virtually the entire ocean front would be open for surf fishing with the exception of the central recreation section during the bathing season.

Amid study of proposals for developing Island Beach, ownership of some 500 acres at the southern tip of the reservation remained in dispute, with the State challenging the claim of certain private citizens. During the year the Department thus took steps to have the State's claim validated. The land in question consists of five small islands in Barnegat Bay that not only were joined together but also were joined to Island Beach as a result of dredging operations undertaken several years ago by the United States Army Corps of Engineers. It became evident in 1955-56 that a careful inquiry into the background of this property would be prerequisite in establishing State ownership. This was undertaken by the Department and served only to strengthen the belief that the State's claim to the property is valid. The matter was referred to the office of the Attorney General, and he planned to press this claim through proceedings in State Superior Court in the year 1956-57.

The State's case calls into play certain interesting details of American history. Title to the islands in Barnegat Bay passed through several hands after being obtained in 1927 by a private citizen from the Board of Proprietors of the Eastern Division of the State of New Jersey. This is a group that traces its history back to the Colonial period. Prior to the Revolution it became owner of all ungranted land in the Eastern part of the State. In claiming the land at the southern end of Island Beach, the State contends that the Board of Proprietors was in no position to provide a proper title to the islands in 1927 or at any other time because the land was originally under water (riparian land), and ownership of all such property was vested in the State after the Revolution.

While seeking confirmation of the State's claim to all of Island Beach, the Department also

conferred frequently during the year with the State Highway Department on the question of building the necessary access roads to the park. The completion of the Garden State Parkway has placed the area within easy driving range for thousands of New Jersey residents. The existing links between the Parkway and Island Beach, however, are hardly satisfactory and could not accommodate the thousands of cars that might be expected if Island Beach were fully developed. Thus implementation of the development program must be closely coordinated with the road construction schedule. It is estimated that the access roads will cost more than \$19 million.

**WHARTON TRACT.** As early as 1914 the State manifested an interest in acquiring the estate of the late Joseph Wharton of Philadelphia. On September 29, 1955, all land in this reservation became State property. The tract is crisscrossed by many rivers and streams. It abounds in wildlife. It is of unusual historical importance because of such villages as Batsto and Atsion, the center of a flourishing bog-iron industry prior to the American Revolution. It is heavily forested and has the character of a vast wilderness, lying paradoxically near the center of the most "urbanized" state in the nation.

Ownership of the Wharton Tract entails a responsibility in the field of land management that is unprecedented in scope for both the State and the Department of Conservation and Economic Development. As the Department took steps to discharge this responsibility during the past year, work proceeded along three principal lines: Protection and administration of the area, surveying and mapping, and the determination of policies for use and development of the property.

Custodial responsibility was assigned to the Bureau of Forestry, Parks, and Historic Sites, and employees of the Bureau immediately took steps to safeguard the region from trespassing and fire. In the course of the year, there were three cases involving charges of timber theft and four involving charges of encroachment on water rights. In an effort to reduce the hazard of fire, 1,487 acres in Washington Township were subjected to "controlled burning," and general fire protection received a high priority because of the



acute danger existing under present conditions. The Bureau also began collecting rents and fees from private citizens using the tract and sold timber salvaged from land where forest fires had occurred prior to State ownership. Receipts from the sales were \$3,845.26 during the latter half of the fiscal year. The State Forestry Cooperation Section and the U. S. Forest Service entered into a joint effort to prepare a timber inventory of the tract and to study possibilities of increasing the timber yield. The survey was expected to disclose the value of the existing timber stand and to give the Department a clearer idea of the potential annual income from the forests that might be derived as a result of improved forest management techniques. This investigation was twenty-five per cent complete at the end of the fiscal year.

The task of surveying the Wharton Tract was launched in February, 1954, and was still under way at the end of 1955-56. It consists of the establishment of primary control linked with the New Jersey coordinate system, location and marking of boundaries, manufacture and setting of monuments, calculation of areas, and preparation of maps.

As of June 30, 1956, the accomplishments were as follows: 433 miles of survey lines had been run; 716 monuments had been set, and 2,085 deed descriptions had been located and plotted. Office calculations were 77 per cent complete, and the mapping of the region was 69 per cent complete. The expectation was that all surveying would be finished in the ensuing fiscal year.

Studies looking towards the formulation of long-range policies for the management of the reservation were assigned during the year to a committee consisting of representatives from all branches of the Department, thus insuring the broadest possible approach to the conservation issues that required consideration. A report setting forth the committee's findings and recommendations was submitted after many months of research and analysis. The principal recommendations were:

1) That the Wharton Tract be preserved as basically an area of wild lands and extensive forests.

2) That the principle of sound multiple use be followed at all times in its development.

3) That the land be utilized for such diverse purposes as recreation, water supply, fish and game management, forest management, and the safeguarding of historic values through the restoration of significant historic sites.

4) That the land be carefully preserved for public use and that no parcels be sold, leased, or exchanged except in instances where such action would be overwhelmingly in the public interest.

5) That an investigation of water resources on that tract be set in motion immediately to determine the quantity and quality of the water, the best means of tapping the supply, and the probable dates of watershed development.

6) That certain areas be fully preserved in their present natural state to retain examples of the native plant and animal life which remains free from human influences.

As the Department proceeded with the initial phases of the management program, action was taken to cancel privately held leases on buildings and land outside the villages of Batsto, Atsion, and Herman. This was designed not only to avoid special privilege for anyone but also to obtain the property for public use. In regard to the latter, the tract was opened to the public for boating, bathing, and picnicking without permit or fee, subject only to restrictions imposed in the interest of safety and health. At the same time camping in certain areas was approved with the permit and fee requirements that are typical in other State forests and parks.

There were also these other developments:

Food patches were planted on 25 acres of land as part of the wildlife management plan.

The Division of Water Policy and Supply and the U.S. Geological Survey agreed on plans for ground water investigations and intended to begin test borings early in the year 1956-57.

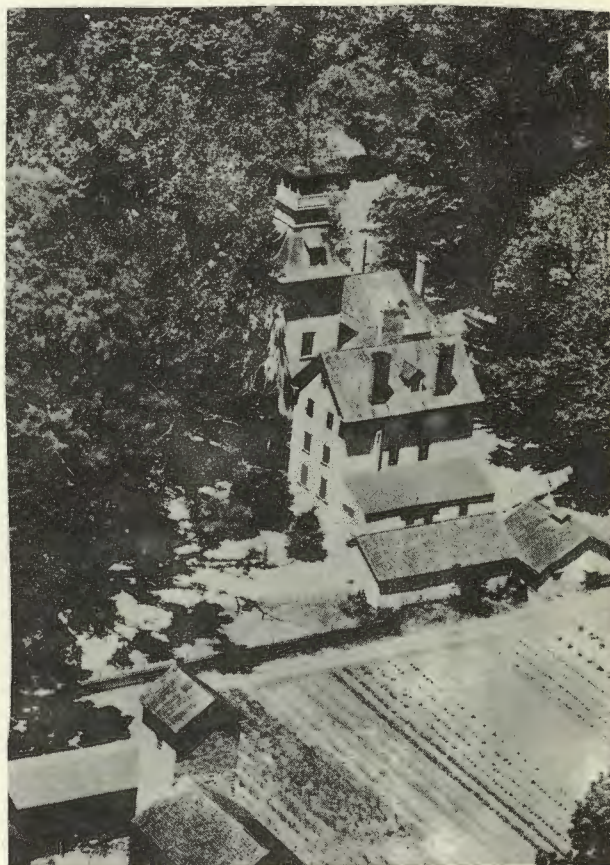
Work began on plans for the rehabilitation of the Batsto Dam and the establishment of Batsto village as an historic site.

Long-range plans were projected for the development of special use areas on land surrounding numerous bodies of water on the tract. The





These are some of the varied scenes encountered on the 100,000- acre Wharton Tract in south Jersey. Atsion Lake (upper photo) is one of several lakes on the reservation and typifies the natural charm of the area. The Batsto manor house (lower right), residence of the ironmasters during Batsto's heyday as a center of iron production, ranks among the most interesting historic sites in New Jersey. The heath-like sweep of land (lower left) is one of numerous cranberry bogs found on the property.





plans called for day-use facilities at Ancora, Atsion, Batsto, Harrisville, and on the banks of the Mullica River. Camp sites were proposed for Batsto, Harrisville, and stretches along the canoe routes, with cabins on the banks of the river at Batsto and at the Atsion Locks. The Deep Run and Sandy River bogs would be utilized as water fowl areas, and group camps would be developed at Goshen Mill Pond and Lower Forge. As visualized, the facilities eventually would be sufficient to accommodate 60,000 persons in the day-use area and 2,500 overnight visitors.

**WORTHINGTON TRACT.** The Worthington Tract is the third important area acquired by the State in recent years. It is a 6,000-acre reservation with scenic woodlands and a hilly terrain, stretching along the Kittatiny Range near the Delaware River. By obtaining a strip of land in the space intervening between this property and Stokes State Forest, the State would have a continuous recreation area extending from the Delaware Water Gap to the New York State line. During the year the Bureau of Forestry, Parks and Historic Sites worked with the Bureau of Planning on initial plans for Worthington. Several color maps were prepared, showing the land which should be acquired to round out the boundaries of the tract when funds to purchase additional acreage become available.

### FOREST FIRE SERVICE

The Forest Fire Service safeguards woodlands throughout the state except in areas of high population density and also is responsible for the protection of marshlands along the coast. (Forest fire laws are applicable to some 3 million acres, more than 50 per cent of the total land area of New Jersey.) Under the Clarke-McNary Act, federal grants are made available to States for forest fire control, and during the past 30 years, the State Forest Fire Service has worked in close cooperation with the United States Forest Service.

Woodlands in the northern part of New Jersey represent an average fire hazard. In the Pine Barrens of the south, however, the problem of fire control is different and considerably more

difficult. The area of the Pine Barrens is virtually continuous for a distance of 120 miles in longitude and 30 miles in latitude. Forest growth in this section is largely evergreen, and flames often advance in the tops of trees. The soil is unusually sandy, moreover, and thus is quickly dried out following rainfall by the high winds that sweep the flat terrain.

During the past year 1,206 fires occurred in the state, damaging 6,509 acres. This was an all-time low for losses from forest fires. During the previous fiscal year, for example, damage was reported on more than 40,000 acres. Ample rainfall at well-spaced intervals was a major factor in holding losses to a minimum.

Expansion of the highway system and the daily presence of more persons in forested areas have resulted over the years in an actual increase in the total number of fires. The effectiveness of the Forest Fire Service may be gauged by the fact that in spite of this, over-all damage caused by fires has been sharply and steadily reduced. For instance, during the period from 1914 to 1923 the number of fires averaged only 860 a year. The average size of these fires, however, was 101 acres. During the period from 1924 to 1944, with the number of fires rising, the average size was reduced to 36 acres and during the period from 1945 to 1955 it fell to 14 acres. Then came the period 1955-56, and the average size was held to a mere 5 acres despite 1,026 fires during the year.

Of the fires that occurred, the causes were broken down as follows: Smokers, 705; debris burners, 124; railroads, 39; campers, 8; incendiary, 79; lighting, 8; miscellaneous, 63.

As a part of its program of forest fire control, the Service brought cases against 426 persons for violations of State forest fire laws and \$6,861.64 was collected in fines. At the same time, local fire wardens issued 50,443 permits for legal burning. As a preventive measure, 1,071 miles of railroad and highway rights-of-way were burned during the winter months in areas where fires are frequent, thus eliminating such hazards as accumulated leaves.



**LIST OF HISTORIC SITES THAT ARE STATE-  
OWNED AND ADMINISTERED AS SUCH BY THE  
DEPARTMENT OF CONSERVATION AND  
ECONOMIC DEVELOPMENT**

Name	Location	County	Acreage
<b>HOUSES:</b>			
Boxwood Hall (also known as Boudinot Mansion)	1073 East Jersey Street Elizabeth, New Jersey	Union	City Lot
Grover Cleveland Birthplace	207 Bloomfield Avenue Caldwell, New Jersey	Essex	App. 2 acres
Hancock House	Hancock's Bridge, N. J.	Salem	App. 1 acre
Indian King Tavern	233 Kings Highway East Haddonfield, New Jersey	Camden	City Lot
Lawrence House	459 High Street Burlington, New Jersey	Burlington	City Lot
Old Dutch Parsonage	65 Washington Place Somerville, New Jersey	Somerset	City Lot
Rockingham (also known as the Berrien Mansion & Washington's Headquarters)	Rocky Hill, New Jersey	Somerset	App. 2 acres
Somer Mansion	Mays Landing Road Somers Point, New Jersey	Atlantic	City Lot
Van Steuben House	New Bridge Road North Hackensack, N. J.	Bergen	App. ¼ acre
Wallace House	38 Washington Place Somerset, New Jersey	Somerset	App. 1½ acres
Walt Whitman House	330 Mickle Street Camden, New Jersey	Camden	City Lot
<b>MONUMENTS:</b>			
Carranza Memorial	Tabernacle-Sandy Ridge Road near Tabernacle between Chatsworth and Atsion	Burlington	10+ acres
Monmouth Battle Monument	Freehold Driving Park Freehold, New Jersey	Monmouth	App. 3 acres
Monocacy Battle Monument	Monocacy, Maryland		App. ½ acre
Princeton Battle Monument	Bayard Lane & Nassau Street Princeton, New Jersey	Mercer	App. 1½ acres
Trenton Battle Monument	North Broad Street Trenton, New Jersey	Mercer	.05 of acre
Veterans of All Wars Memorial	Off Route 37 near Lakehurst, New Jersey	Ocean	App. ¼ acre
<b>UNDEVELOPED:</b>			
Oxford Furnace (ruins)	Oxford, New Jersey	Warren	App. ½ acre

**STATE FORESTS  
1955 - 56**

Location and Area	Initial Acquisition	County	Acres
Bass River	1905	Burlington	9,270
Belleplain	1928	Cape May & Cumberland	6,492
Green Bank	1930	Burlington & Atlantic	1,833
Abram S. Hewitt	1951	Passaic	1,890
Jackson	1915	Ocean	43
Jenny Jump	1931	Warren	967
Lebanon	1908	Burlington & Ocean	22,216
Norvin Green	1947	Passaic	2,260
Penn	1910	Burlington	2,958
Stokes	1907	Sussex	12,429
Wharton Tract	1954	Burlington, Atlantic, & Camden	91,564

# STATE PARKS

1955-56

30

Location and Area	Initial Acquisition	County	Acres In Land	Acres, In Water	Total Acres
*Allaire	1940	Monmouth	1,277		1,277
*Barnegat Lighthouse	1951	Ocean	32		32
Cheesequake	1938	Middlesex	960	15	975
*Cranberry Lake	1925	Sussex	70	129	199
-Edison	1947	Middlesex	30		30
*Famy	1944	Morris	803		803
Fort Mott	1947	Salem	104		104
Hacklebarney	1924	Morris	193		193
High Point	1923	Sussex	10,856	79	10,935
Hopatcong	1925	(Sussex	13	2	
		(Morris	78	14	107
*Island Beach	1953	Ocean	2,200		2,200
*Mount Laurel	1908	Burlington	20		20
Musconetcong Lake	1925	(Sussex	14	231	
		(Morris	14	84	343
Parvin	1931	Salem	918	107	1,025
Princeton	1946	Mercer	40		40
Ringwood Manor	1936	Passaic	569	10	579
Saxton Falls	1925	(Morris	5	4	9
		(Warren			
Stephens	1937	(Morris	89		
		(Warren	133		222
Swartswood	1914	Sussex	185	519	704
Voorhees	1929	Hunterdon	429		429
Washington Crossing	1912	Mercer	372		372
Washington Rock	1947	Somerset	27		27
*Worthington	1954	Warren	6,200		6,200
TOTAL			25,631	1,194	26,825

\*Not developed for public use.

-Edison Memorial Tower open to public. Remainder of area not developed.



## FORESTRY COOPERATION SECTION

The Forestry Cooperation Section was established to help increase timber production in New Jersey and maintain conditions in the woodlands favorable to forest growth. The Section serves, in short, as the forest management arm of the Bureau.

Its forest management activities fall into three principal categories: Woodlot improvement and marketing assistance, controlled burning, and reforestation. Upon request, members of the Forestry Cooperation staff will assist any private woodland owner in marketing his products and developing a management plan. They are assigned to mark trees that are ready to be sold, and the timber is disposed of through an agent representing the owner, who supervises the cutting of the trees and other details of the operation. Controlled burning is a technique developed after two decades of experimentation with these objectives in view: Reduction of of wild-fire damage and increased timber production. Light fires deliberately set during the winter consume leaves and other fuel on the forest floor, thus creating better seedbed conditions and lessening the danger of wild fires. The reforestation program involves the planting of small trees on abandoned agriculture lands of marginal productivity, which are, in effect, converted to forest plantations. The program is more than 30 years old, and the trees for reforestation are obtained from the State nursery at Washington Crossing.

During the past year 1,262,850 trees were distributed among various groups and organizations cooperating in the effort. The distribution was as follows:

AGENCY	TREES PLANTED
Cities, Counties and State	
Institutions	308,950
Watersheds	25,000
Industries	5,250
Schools and Colleges	7,500
Organizations	31,650
Farmers	868,000
4-H Clubs	16,500
TOTAL	1,262,850



Young hardwood woodlot in Northern New Jersey under forest management and following cutting. Future growth and periodic yields have been assured by retaining the healthy fast growing trees.



Young hardwood woodlot in Central New Jersey following unrestricted cutting. The stand of timber which existed on this site and future yields have been sacrificed. The woodlot will be out of production for 60-80 years.



More than 90 per cent of the forest lands in New Jersey are privately owned. Because of this and because of the fact that the federal government offers grants to aid in the development of private forest properties, members of the staff formerly spent most of their time in providing services to private owners. (For data on this assistance in 1955-56, see the table on below. The need for a more vigorous application of forest management techniques on public lands became increasingly evident, however, and during the past year this was a subject of major attention. With the employment of additional personnel, the Section began preparing new management plans for various State Forests, especially those in south Jersey.

## TREE EXPERT BUREAU

The Bureau of Tree Experts is charged with the administration of the law requiring the examination and certification of tree experts. The objective of the legislation is to enable the public to employ tree surgeons and arborists with the knowledge that they are competent and trustworthy. During the year the agency renewed the certificates of 69 arborists and issued three new certificates to tree experts who had passed the required examination. The fees collected for examinations and the issuance of certificates place the agency on a self-sustaining basis. Under law it may retain \$500 for operating expenses, paying into the State Treasury any revenue in excess of this amount.

## FOREST MANAGEMENT SERVICES TO PRIVATE WOODLAND OWNERS

1955-56

	No. of Owners Served	Acreage Involved
Requests for woodlot management assistance	447	-
Requests for reforestation assistance	114	-
Woodlots examined (Including Agricultural Conservation Program)	237	19,507
Planting sites examined (Including Agricultural Conservation Program)	113	715
Inventory: sawtimber (a)	8	312
pulpwood (a)	15	1,487
Marked for cutting: sawtimber (b)	63	1,457
pulpwood (b)	56	2,634
Young timber saved from destructive cut	11	247
Controlled burning plans made (new)	16	5,953
Planting plans made	121	192
Planting plans carried out	34	81
Work established		
Sawtimber cut under management plans (c)	70	2,010
Pulpwood cut under management plans (c)	58	2,861
Controlled burning carried out (d)	36	8,777



## BUREAU OF NAVIGATION

The Bureau of Navigation has jurisdiction over the navigable waters of New Jersey, with responsibility for a variety of functions. It administers the riparian lands of the state. It registers boats and issues licenses to boat operators using non-tidal waters. It regulates the operation of power vessels in the interest of safety. It maintains and carries out projects for the improvement of inland waterways, providing navigation aid on rivers and lakes of major importance. It operates the system of marinas owned by the State on the Atlantic coast. Finally, the Bureau bears the principal responsibility for measures designed to protect the Jersey shore from erosion.

Like other units of government, its activities have steadily expanded during the post-war years, with the trend continuing during the period 1955-56. The expansion has been caused, in part, by extensive industrial and real estate development, which has had its impact on the demand for riparian lands. It also stems from rising income levels and the increase of leisure, which have given new dimension to recreation and intensified interest in such pastimes as boating.

### ADMINISTRATION OF RIPARIAN LANDS

The administration of riparian lands involves (1) the execution of grants and leases, (2) issuance of permits for the erection and maintenance of structures on navigable waters, (3) issuance of permits for dredging in the waters of New Jersey, (4) collection of royalties on materials removed through dredging, (5) regulation of land reclamation projects, and (6) prevention of the unauthorized use of riparian lands.

**GRANTS AND LEASES.** Riparian lands are those areas flowed by mean high tide. This means the entire ocean front and all bays, inlets, and streams where the tide ebbs and flows. Although ownership is vested (or was originally vested) in the State, the lands may be sold (granted) or leased to private individuals and groups, and in keeping with a long-standing practice, all revenues derived from these trans-

actions are ear-marked for the support of public schools. As a rule riparian grounds are acquired by individuals for the purpose of erecting small piers or bulkheads to protect their property. They are usually obtained by business concerns to improve or to enlarge their dock facilities.

In 1955-56 the Bureau executed 78 grants, eight leases and one easement, while a five-year extension of an option on an outstanding lease was approved. This represented a slight decline in the volume of grants and leases. During the previous fiscal year the Bureau delivered 122 grants and 13 leases. Despite this decrease, no change was foreseen in the long-term rise in the demand for riparian properties, nor in their tendency to appreciate in value.

One of the areas where the appreciation in value has been especially evident in recent years is the section along the shore of the Delaware River between Paulsboro in Gloucester County and Florence in Burlington County. It is chiefly a result of the mounting concentration of industry in this region.

Another development tending to increase the value of riparian properties is lagoon construction along the New Jersey shore. For the professional builder, this is the answer to the demand for more houses overlooking the water with suitable facilities for boats. Lagoon construction is possible, however, only with a grant to certain riparian grounds, and the Bureau charges a substantial fee for the grant if it is instrumental in raising the value of shore property under development.

**OTHER RIPARIAN TRANSACTIONS.** Among other types of riparian conveyances besides the grant and lease, there is the license usually issued for a single fee to public utilities, private corporations, and municipal and county governments. This confers perpetual authority to use riparian lands for such purposes as cable and pipeline crossings. In 1955-56 the Bureau issued 20 licenses of this type.

Riparian grants and leases as well as single-fee licenses can be issued only up to a certain



point for the area offshore. For the maintenance of structures in waters beyond this point, an *annual* license is required, and seventy-six of these were processed during the year.

Another type of license issued by the Bureau confers the right to engage in commercial dredging in the waters of New Jersey. In return for the license the State collects a royalty on all materials obtained from dredging. In previous years this was only three cents per cubic yard. In 1955-56, however, upon the recommendation of the Planning and Development Council, the royalty was increased to five cents. Seven commercial dredging agreements were in effect during this period, and royalties totaled \$55,145.51. As for the future it appeared that the number of agreements might double during the fiscal year beginning June 30, 1956. Commercial dredging has steadily assumed new importance because of the heavy demand for fill material to be used in highway construction and real estate development. The amount of fill obtainable from land sources is becoming increasingly scarce, and if the demand is to be satisfied, the only alternative is to tap the beds of rivers and the floors of bays.

**PERMITS.** As most municipalities require authorization for the construction of houses and commercial buildings, so permits are required for the erection and maintenance of structures on riparian lands and for maintenance and commercial dredging in State waters. During the year the Bureau issued 238 permits for dredging, construction of bridges, and other steel and timber structures, and the laying of pipelines and submarine cables.

This represented an increase of 22 per cent in the number of permits by comparison with the period 1954-55. The estimated value of the improvements authorized during the year was \$17,381,379 or approximately \$3,500,000 more than the estimated value of improvements for which permits were issued during the previous fiscal year.

## LAW ENFORCEMENT

The post-war upsurge in boating, one of the most significant events in the field of outdoor

recreation, is of further moment because of the new weight that it has given to the Bureau's law enforcement responsibilities. The maintenance of conditions of safety on navigable waters has come to resemble in some respects the problem of traffic safety on major highways. The increased number of watercraft of all types and all sizes now operating in New Jersey would be sufficient in itself to make the threat of accidents more serious. But accompanying this increase in the number of boats has been a manifestation of carelessness and recklessness that serves only to aggravate the danger. The available personnel and facilities for coping with the situation are limited. Drawing as fully as possible on its existing resources, however, the Bureau has tried to strengthen its law enforcement program and to promote broader adherence to accepted safety practices.

It has organized patrols for the coastal region, and during the past year these were on duty each Saturday and Sunday during the boating season in the following areas: Shrewsbury; Point Pleasant-Bay Head; Forked River-Long Beach; and Atlantic City. No organized patrols were maintained south of Atlantic City, and because of personnel problems, it was again necessary to curtail to some extent the operations in the Atlantic City area. The only salaried or full-time employees serving with the patrols are the captains who operate the boats. All other members of the groups are volunteers.

On the inland or non-tidal waters of the state, including the popular lake region, responsibility for law enforcement is in the hands of power vessel inspectors. These are salaried employees of the Bureau and serve on a full-time basis during the boating season.

Because of personnel limitations and the part-time nature of the patrols, the Bureau is unable to keep records on the various facets of boating in the coastal area. On the other hand, relatively complete records are available for operations in inland waters, and these throw considerable light on boating in New Jersey today.

The growth of interest in boating, for example, is reflected in the rising number of boat operators



as well as in the steadily increasing revenue that the State derives from the sale of operators' licenses, the registration of boats, and fines for the violation of motor boat regulations. In 1955-56 power vessel inspectors issued licenses to 16,000 operators, which compares with a total of 14,075 licenses issued during the previous fiscal year. During the seven-year period beginning in 1949, moreover, total annual revenues increased as follows: 1949, \$23,981; 1950, \$25,850; 1951, \$32,443; 1952, \$34,674; 1953, \$37,489; 1954, \$41,738; 1955, \$56,304.

As to law enforcement on non-tidal waters in 1955-56, power vessel inspectors issued 112 summonses for a variety of offenses, with fines totaling \$1,022. Fourteen licenses were suspended, including five for a period of a year, and one offender drew a jail sentence. The breakdown of violations was as follows: Careless or reckless operation of motor boats, 40; illegal water skiing, 21; operation of a power vessel without license or proper registration, 12; illegal mufflers, seven; operating without proper equipment, 12; other violations, 11. The violations for which summonses were issued were only the most flagrant. Hundreds of warnings were given to persons guilty of minor infractions or first offenses as part of the Bureau's effort to encourage safe boating through persuasion.

The records also disclose the following additional data concerning activities in non-tidal waters during the past year:

(1) There were six major accidents, including one in which a swimmer using an aqua lung was struck by a boat while he was submerged. In three of the accidents the victims required hospitalization.

(2) Thirty-one persons were rescued at various points by power vessel inspectors after their boats had been swamped or capsized as a result of such factors as overloading. No drownings occurred as a result of boat accidents, however.

(3) Nineteen boats with inboard motors stolen during the year were recovered, including one found on Greenwood Lake in New York. Conversely, 12 outboard motors were stolen and

were still missing at the end of the year. This was not surprising, for when such motors are stolen, they are usually sold in the tidewater area, where no registration is required. (The tidewater area is under federal jurisdiction. Federal law requires that all craft, sixteen foot or larger with outboard motors, and all craft, regardless of size with inboard motors, be registered with the U. S. Coast Guard for certificates of Award. These certificates must be displayed on the boats subject to federal regulation.)

(4) Four boats burned to the water's edge as a result of fire caused by gasoline explosions.

Out of the law enforcement experience of recent years, two points warrant comment. First, legislation requiring lights for sailboats, rowboats and canoes is needed to eliminate a serious navigation hazard. Secondly, the problem of handling juvenile offenders deserves fresh attention. Under existing law anyone---regardless of age---may obtain a license for the operation of boats with outboard motors. Licenses for the operation of boats with inboard motors may be issued to anyone 16 years old or older. On the other hand, in New Jersey a person under the age of 18 is considered a juvenile, and therefore when he is charged with violating motor boat regulations, he is not tried in a magistrate's court. Instead the case must be referred to Juvenile Court, and with the calendars of Juvenile Courts often crowded, considerable time may elapse before a hearing can be conducted. In the meantime, the offender is free to pursue his activities without punishment and frequently displays contempt for regulations and for the officers responsible for their enforcement.

**NAVIGATION COURT.** In 1955 the Legislature established a Navigation Court to hear cases involving alleged violations of regulations for the operation of power vessels. One of its principal duties is to dispose of cases of uncertain or disputed jurisdiction, although it is not restricted to cases of this type. Part I of the court deals with the lake region and other inland waters and has its seat at Caldwell Township. Part II has jurisdiction over the tidewater area.



The chief of the Bureau of Navigation serves as magistrate for both Part I and Part II. During the past year clerks were on duty at 40 sessions to receive and process complaints, and fourteen cases were brought before the magistrate for trial.

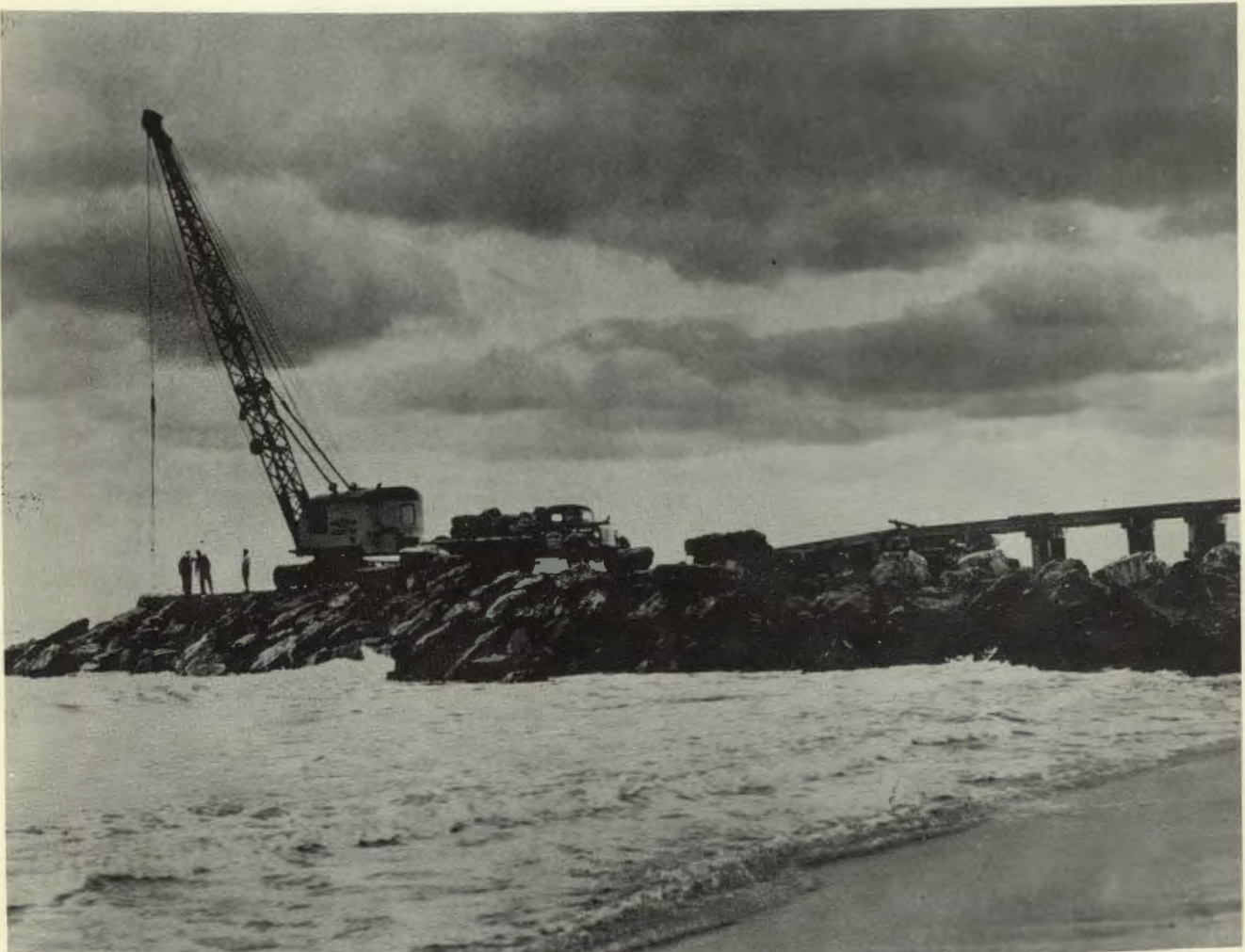
### ENGINEERING OPERATIONS

The Bureau's engineering operations consist of (1) dredging to improve the navigability of waterway channels, (2) the erection of structures to protect the shoreline from erosion, and (3) maintenance of navigation aids on principal inland waterways.

**DREDGING.** During the past year the Bureau undertook the following projects for the maintenance and improvement of inland waterways:

WATERWAY	COST	STATUS 6/30/55
Waretown Creek	\$ 6,000.00	Completed
West Creek	\$55,000.00	Completed
Shark River	\$74,900.00	Incomplete

In addition, bids were received for the dredging of the Navesink River at Red Bank and the Mullica River in Washington Township. The proposals were rejected, however, on the ground that they were too high. The Bureau also twice



Workers swing into action with a heavy-duty crane as construction of a new jetty to protect the Jersey shoreline goes forward.



advertised for bids for improvements in Oceanport Creek, Town Neck Creek and Little Silver Creek, all tributaries of the Shrewsbury River. All proposals in the first set of bids were rejected as being excessive. At the end of the year the low bid among the second set of proposals was being studied to determine whether more favorable costs could be obtained through negotiation.

The increased unit prices submitted in the bids reflect, in part, higher operating costs. A new factor present, however, is the difficulty experienced by contractors in obtaining conveniently located upland properties for use in disposing of the material pumped from the river channel. The type of land once available for this purpose is being taken over today for real estate and industrial development. The necessity of using more distant disposal areas and the problem of preventing the material from spilling over in sections now under development thus inevitably mean higher costs. Paradoxically, real estate development, while driving up the expense of channel improvements, also increases the demand for these improvements.

**COAST PROTECTION.** For years the New Jersey shore has contended with the problem of erosion. In 1920 the State recognized the seriousness of the threat and began making annual appropriations for the construction of bulkheads and jetties to check the steady encroachment of the ocean on the land. Funds allocated by the State for this purpose must be matched by the shore municipalities on an equal basis.

In 1955-56 the following projects were either completed or initiated by the Bureau:

TYPE AND LOCATION	STATE AID	STATUS 6/30/56
1. Seawall, Sea Bright and Monmouth Beach	\$200,000.00	Complete
2. Seawall, Long Branch	75,000.00	Complete
3. Jetty, Asbury Park	150,000.00	Incomplete
4. Jetty, Neptune Twp	50,000.00	Complete
5. Jetty, Bradley Beach	30,000.00	Incomplete
6. Jetties, Spring Lake	150,000.00	Complete

7. Bulkhead, Lavallette	17,500.00	Incomplete
8. Beachfill, Ship Bottom	40,000.00	Complete
9. Beachfill, Long Beach Township	25,000.00	Complete
10. Jetty, Atlantic City	175,000.00	Incomplete
11. Dunes, Cape May Point	500.00	Complete

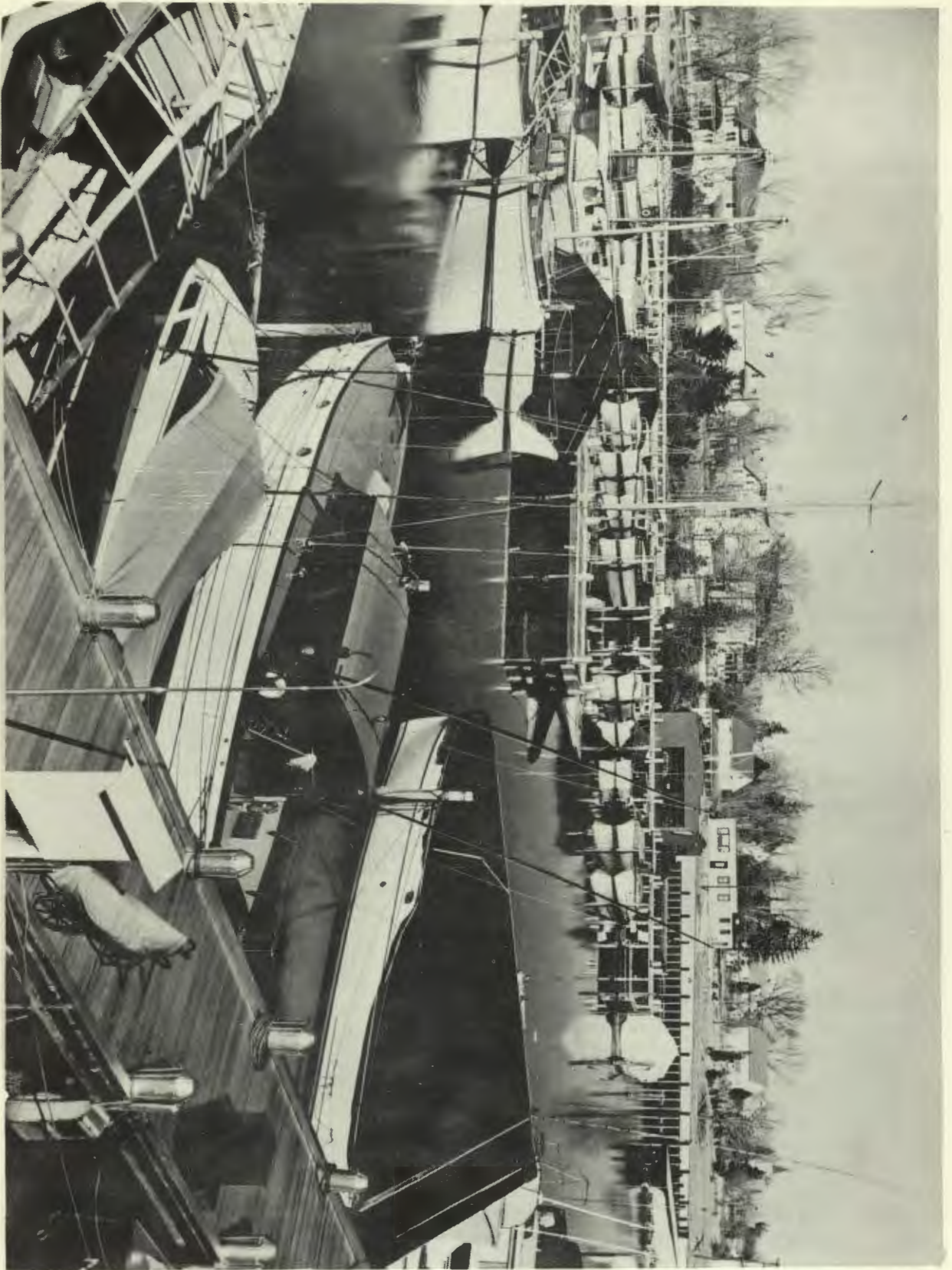
Apart from the foregoing, the State during the year offered assistance to eighteen municipalities and to Monmouth County in the total amount of \$1,005,000. Fourteen of the municipalities and Monmouth County accepted the grants on a matching basis. At the end of the fiscal period plans for 12 projects -- involving State aid of \$779,500 -- were in various stages of preparation for the awarding of contracts.

On June 22, 1956, a State-municipal conference was held to consider beach protection needs for the fiscal period 1956-57. At this meeting eighteen municipalities filed applications for State aid with their requests totaling \$1,393,000. Final action on the program was to be taken after the beginning of the new fiscal period.

Besides the efforts of the State to curb erosion along the shore, the problem has commanded the attention of the federal government since 1953 when the U.S. Corps of Army Engineers undertook its first survey in the area. The purpose of such surveys by the Corps is to ascertain the most effective method of erosion control. If the State is willing to accept the Army Engineers' recommendations--or mutually agreeable modifications of these recommendations--it may obtain federal grants in the amount of one-third of the cost of projects for the protection of publicly owned properties.

The Corps of Engineers finished its first study, a survey of the area between Sandy Hook and Barnegat Inlet two years ago. A study of the area between Barnegat Light and Cape May was in progress during the past fiscal year and was near completion on June 30. Two additional surveys--one of the Raritan and Sandy Hook Bay shorelines and the other of the Delaware Bay





No form of outdoor recreation has increased more in popularity during the post-war period than boating.





This marine beacon is one of many in New Jersey tidal waters maintained by the Bureau of Navigation as an aid to boatsmen.

shoreline--were scheduled for the fiscal period 1956-57.

The Bureau conducted two public hearings during the year on the federal surveys to obtain expressions of local opinion. The first at Asbury Park was concerned with the engineers' report on the area between Sandy Hook and Barnegat Light. The second at Atlantic City dealt with erosion in the area between Barnegat Inlet and Cape May, the section under study in 1955-56. Views of municipal leaders in communities along the Sandy Hook, Raritan, and Delaware Bay shorelines also were offered at these hearings.

In another series of hearings the Army Engineers took testimony from residents of all sections along the shore on the question of storm damage. These hearings were ordered by Congress as a result of the 1955 hurricanes.

**NAVIGATION AIDS.** In 1955-56 the Bureau installed and maintained day markers and marine beacons on 144 miles of inland waterway channels in Monmouth, Ocean, Atlantic and Cape May Counties. The navigation aids were maintained from spring until late fall. Thirty marine beacons were installed to create safer conditions of navigation for the increasing number of boats using inland channels.

## STATE MARINAS

The State owns and operates marinas at Point Pleasant, Leonardo, Atlantic City, and Forked River. The operation of these facilities during the fiscal period 1955-56 was highlighted by the following developments:

**POINT PLEASANT:** During the hurricane season the Point Pleasant marina was important as a harbor of refuge and was filled to capacity during periods of storm alerts. Recognition of the marina's protected position apparently led a number of boat owners to rent berths for the 1956 season.

**FORKED RIVER:** The demand for accommodations at Forked River remained as strong as ever, and the Bureau worked on plans for extensive replacement of mooring piles, many of which have been in use for 22 years. This marina has 102 berths, but unfortunately cannot be expanded because of the limitations of space.

**LEONARDO:** Accommodations for boats along the shores of Raritan Bay and Sandy Hook Bay are in short supply, and all 174 berths at Leonardo have been rented in recent years. During the spring of 1956 the Bureau made arrangements for accommodating 12 additional boats. Before the marina can be expanded to any greater extent, bulkheads and berths must be built on the east side of the basin. During the year the Bureau also awarded a contract for completion of the lighting system for the docks at a cost of \$4,054.



**ATLANTIC CITY:** It was evident that the Atlantic City marina differs from the others in that it is more popular as a haven for transient boats than as a permanent mooring. Atlantic City is a point of rendezvous for many boating parties and also attracts sportsmen on vacation who must stop overnight at a marina. Prior to the construction of the two new piers with 74 berths, no accommodations for transient boats were available in the Atlantic City Inlet.

In the long run the pattern may shift, and the number of permanent tenants may increase, especially as the conveniences of location become better known. The marina is only partially complete, moreover, and the construction of additional facilities should increase its attraction as a home port for many boat owners.

During the year the State Highway Department spent \$100,000 for improvements on Huron Avenue in Atlantic City, the road furnishing access to the marina. Plans for an administra-

tions and concessions building also were completed, and the State advertised for construction bids. At the end of the fiscal period action on the award of a contract was pending. The building was expected to cost approximately \$400,000.

Meanwhile, plans for a sewage pumping station and related sewage facilities had almost reached the stage where bids could be sought, and specifications were prepared for an electric power system to be installed on the piers when funds become available.

### FISCAL SUMMARY

Revenue collected by the Bureau from all sources during the year 1955-56 dipped below the total for the previous fiscal period by \$116,880.28. The factor playing the biggest role in the decline was a reduction in receipts from riparian grants. A comparison of receipts in all categories for the two fiscal periods is as follows:

	July 1, 1955 - June 30, 1956	July 1, 1954 - June 30, 1955
<b>SCHOOL FUND INCOME (PP-90)</b>		
Lease Rentals	\$ 24,988.67	\$ 25,023.98
Annual Licenses	12,134.88	8,824.14
Use and Occupancy	1,530.24	1,400.00
Interest	167.62	623.54
Royalties	55,145.57	48,152.47
<b>SCHOOL FUND INVESTMENT (PP-91)</b>		
Grants	280,776.06	455,911.99
Easements	1,000.00	50.00
One Fee Licenses	32,010.00	9,207.00
Guarantee Deposits (PP-90)	362.42	1,984.40
	\$408,115.46	\$551,177.52
<b>UNAPPROPRIATED REVENUE</b>		
Power Vessels	\$ 56,304.50	\$ 41,738.00
Forked River Concessions	2,462.56	2,420.60
Leonardo Concessions	1,229.71	984.75
Atlases & Maps	46.00	98.00
Preparation of Instruments	8,954.00	7,350.00
Rentals Leonardo Marina	20,885.30	16,220.95
Rentals Forked River Marina	11,811.07	10,657.90
Rentals Point Pleasant Marina	688.76	- -
Rentals Atlantic City Marina	(See Appro. Rev.)	815.42
Rentals Fortescue Marina	- -	2.00
Navigation Court Fines	464.00	55.00
Copies of Instruments	101.00	146.00
Miscellaneous-Sale of Upland Etc.	- -	650.00
	\$102,946.90	\$ 81,138.62
<b>APPROPRIATED REVENUES (N-20-05)</b>		
Rentals & Conc. Atlantic City Marina	\$ 4,373.50	(See Unappro. Rev.)
<b>TOTAL RECEIPTS</b> .....	<b>\$515,435.86</b>	<b>\$632,316.14</b>



## BUREAU OF GEOLOGY AND TOPOGRAPHY

The Bureau of Geology and Topography—more frequently known as the New Jersey Geological Survey—exists chiefly because of the need for detailed knowledge of the state's geology and mineral resources. Its principal functions are:

- (1) Assistance to the mineral industries of New Jersey.
- (2) Conduct of investigations to discover new sources of minerals.
- (3) Mapping the geology of the state.
- (4) Maintenance of the survey monuments erected by the New Jersey Geodetic Control Survey.
- (5) Preparation and distribution of geologic and topographic maps and reports.

The Bureau also plays an important part in handling groundwater and well-drilling problems, a function of considerable significance during a period when the demand for an ever larger supply of water is one of the leading issues confronting the state.

**MINERAL INVESTIGATIONS.** The search for uranium continued during the year, although week-end prospectors from the city apparently lost some enthusiasm for the venture. This, no doubt, stemmed from a growing awareness that few individuals can make the kind of strike that will bring them wealth overnight.

Nevertheless, the prospectors who remained in the field did discover a number of areas containing radioactive minerals and their findings were of considerable value to the Bureau. The staff, in turn, helped the prospectors evaluate their discoveries and advised them as to whether further investigation was warranted on the basis of initial evidence.

At the end of the year the Bureau was acquainted with several dozen areas where uranium minerals are present. Some of the prospects have been core-drilled without favorable results. Core-drilling was planned in the case of at least

two others, and there was reason to believe these might be worked profitably.

Meanwhile, bands of thorium-bearing monazite in hard rocks were mapped by the Bureau, and the results of a preliminary investigation of placer deposits in the Chester area containing the same mineral were favorable. The announcement of the latter prompted a further study of the deposits by three companies now obtaining monazite in Idaho, South Carolina, and abroad. They reportedly contemplate more extensive explorations if existing zoning regulations affecting the area where the deposits occur are changed to permit mining operations.

While this work was in progress the Bureau aided a prominent chemical company in its search for niobium. Small traces of the element were discovered at one point, but it was too negligible an amount to justify development.

Microscopic investigations of radioactive New Jersey rocks revealed the presence of many small crystals of radioactive zircon, thorite, and xenotime. Certain scientists believe that the time may come when these rocks will be mined for their zirconium, thorium, and yttrium.

Yttrium-bearing sphene with tiny imbedded grains of uraninite were found in a rock specimen taken from Randolph Township in Morris County. Another unknown mineral similar to doverite, submitted by a prospector, had a thorium content of almost twelve per cent.

A potential source of graphite was discovered in granitegneiss near Fairmount in Morris County. A reconnaissance survey also confirmed the presence of buff-burning clay at an isolated point on the Wharton Tract.

Among other activities in the field of mineral investigations, cores from the test drilling of trap rock and limestone deposits were carefully logged for data as to character and thickness. The Bureau aided a representative of a mining company in his study of the Pahaquarry copper deposit; and representatives of two other groups received advice and information concern-



ing certain unworked iron ore deposits in New Jersey. (Both groups subsequently took leases on the deposits.) The Bureau advised still others on sources of red shale suitable for use in the manufacture of brick as well as on sources of light-weight aggregate. Representatives of the

federal government received aid in their far-reaching study of the basalt composing the Third Watchung Mountain, and another federal geologist was assisted in his efforts to obtain large samples of greensand for an investigation of its ion-exchange capacity.



This driller is taking a solid core from a depth of forty-five feet while prospecting for monazite near Chester.



## TOPOGRAPHIC WORK

Virtually all engineering surveys should be based on mean sea level for vertical control and on true latitude or longitude (or a system of coordinates derived from true latitude and longitude) for horizontal control. For this reason a State-wide system of control monuments showing precise positions and elevations is essential. In New Jersey more than 8,000 monuments have been erected along State and county highways and along principal city streets.

The Bureau is required under law to maintain the system in good condition, and its topographic crew also must inspect the monuments on the northern boundary of the state every three years. Many of the monuments are damaged or destroyed when highways are improved, and one of the principal tasks of the crew is to repair or replace them.

In 1955-56 more than 650 monuments were inspected, and in addition to running accurate levels and surveys to the monuments that were replaced, Bureau personnel completed some 10 miles of precise traverse and some 33 miles of second-order levelling. The Bureau received more than 2,800 requests for prints giving the position and elevation of particular monuments, and they were made available at cost.

In addition to these activities, the Bureau cooperated with the federal government and other State agencies after the Delaware River flood of August, 1955, in determining the precise levels of the flood crest at various points. These were marked with 16 permanent bronze disks.

The Bureau is also responsible for the periodic revision of a series of topographic maps published by the State on the scale of one inch to the mile. During the past year, Atlas Sheet 32--covering parts of Burlington, Ocean, and Atlantic Counties--was wholly revised and released to the public. Since the original map included a large portion of the recently acquired Wharton Tract, along with Lebanon, Penn and Green Bank State Forests, the staff decided to show these and other federal and State properties by means of a light green, transparent over-

print. Sales of this particular map were unusually heavy after it was released in revised form.

A new edition of Atlas Sheet 36, covering the highly industrialized area extending from South Amboy to Paterson and Tenafly, was also published during the year; and copy for a new edition of Atlas Sheet 34, showing parts of Cumberland and Salem Counties, was placed in the hands of the printer. Copy for a new edition of the Bureau's County and Municipality Map was completed immediately prior to the end of the fiscal period.

Preparation of a series of county maps showing the correct names of all streams and lakes continued. In order to insure official accuracy of the names, the staff made special investigations whenever any question or dispute arose, and case briefs were presented to the New Jersey Geographic Board and the U.S. Board on Geographic Names. More than 300 stream and lake names in Bergen and Passaic Counties had been approved by the New Jersey board by June 30, 1956.

In its map work the Bureau also cooperates with federal agencies in the preparation of large-scale (one inch equal 2000 feet) topographic maps, furnishing the ground control data upon which maps made by photogrammetric means are dependent. It also provides accurate information on the position of county and municipal boundary lines and edits the proof sheets of new federal maps. During the past year 27 of these maps were edited by the staff.

In the sale of maps the Bureau had calls for 2,620 of the large scale maps issued by the Federal government and for 4,667 of the State's Atlas Sheets. The Bureau also sold copies of a small relief map of the state prepared during the year as well as various geologic and miscellaneous maps of general interest and many reports on topography, mineral resources, and water supply in New Jersey. The receipts from the sale of all publications totaled \$5,417.40 as compared with \$4,585.26 during the previous fiscal period.



**INVESTIGATION OF RELATIONSHIP BETWEEN GEOLOGY AND GROUND WATER SUPPLY.** As once remote and sparsely settled areas have been converted to new centers of industry and suburban growth, the development of additional sources of underground water supply has become a major preoccupation with citizens in all parts of the State. In almost every instance the quantity and quality of the water both are affected as much by the geological features of a region as by its precipitation. The problem of water supply therefore is today one of the principal concerns of the Bureau.

In 1955-56, as in previous years, the staff spent a large proportion of its time advising municipal officials, water companies, industries, farmers, well-drillers and home-owners on various aspects of this question. At the same time the Bureau made detailed studies of well samples to determine the character and thickness of formations in different sections of the state—data that are essential in predicting necessary well depths. Such work is difficult because of variations in the character of the formations. In view of the variations, the staff must note and record fossils (including microfaunas) occurring in the sedimentary rocks and must make microscopic studies of the variety and proportions of heavy minerals present in the various aquifers. On the basis of data so gathered, it is possible to identify key formations when new wells are drilled.

The need for new wells, coupled with the maintenance required for existing wells, is sufficient to demand the services of 400 licensed well-drillers. Two members of the Bureau staff hold seats on the examining board for well-drillers, and the Bureau processes the permits necessary for the drilling of wells. In 1955-56 the agency processed 4,727 permits and collected fees totaling \$14,181.

**MISCELLANEOUS ACTIVITIES.** The work of the Bureau in 1955-56 involved such public relations activities as lectures by members of the staff before service clubs and other interested groups. Bureau personnel also prepared two special exhibits and aided in the prepara-

tion of other exhibits sponsored by the State museum. At the same time, field trips were planned as a service to geologists who wished to see good exposures of New Jersey rocks, fossils and minerals.

In its relations with other agencies of government, the Bureau cooperated with the U.S. Bureau of Mines in the collection and compilation of mineral statistics and with the New Jersey Turnpike Authority in the investigation of complaints that certain wells had been damaged as a result of highway improvements. The State Department of Institutions and Agencies received assistance in solving problems of water supply, and the Department of Labor was aided in its inquiry into geological factors involved in accidents at quarries. The Bureau provided the U.S. Corps of Army Engineers with geological data on the Tocks Island dam site and furnished military and naval authorities with information concerning geological conditions and groundwater supply at various points in the state. Finally, the staff worked with representatives of the Soil Conservation Service and the New Jersey Agricultural Experiment Station on their program to help farmers interested in developing sources of water supply for the purpose of irrigation.

#### **NEEDS AND PLANS FOR FUTURE WORK.**

The growth of population in New Jersey and the resulting demand for more extensive knowledge of the State's mineral resources justify a fresh appraisal of the Bureau's needs as a geological survey unit. To all practical intents, nature makes no distinction among the sciences. A geological survey therefore may include not only geologists but also specialists in the fields of chemistry, physics and engineering. The Bureau today consists of a small nucleus of geologists and engineers. Full-scale exploration of the State's mineral potentialities undoubtedly will require some expansion and diversification of the staff.

Similarly, additional laboratory and research facilities and new equipment are necessary for a broader study of New Jersey's mineral assets. To an ever increasing extent, for example, X-Ray machines and the spectograph are being used for



the rapid determination of elements in rocks of unknown or only partially known composition. The harnessing of atomic energy and latter-day developments in the field of electronics have created a market for such rare and little used elements as hafnium, yttrium, niobium, zirconium, and germanium. It would be profitable to New Jersey to proceed without delay in determining the extent to which these elements are present in the state. At the same time the occurrence and grade of the state's uranium and thorium resources, which promise to become much more important as sources of fuel, should be determined as fully as possible.

In its 1954-55 report the Bureau set forth its program of future work. Two items in the program were completed during the past year. A relief map of the state was produced (although on a scale smaller than originally contemplated), and a new edition of the county and municipality map was prepared. Other items yet to be completed are as follows:

- 1) A series of reports dealing with each known and potential mineral resource.
- 2) A report describing utilized mineral resources and giving statistics of production.

- 3) A series of geologic guide-books for each of the major highways.

- 4) A revised edition of Bulletin 50, "The Geology of New Jersey."

- 5) A report on the stratigraphy and faunas of the Silurian and Devonian formations. (This has been started.)

- 6) Reports on the microfaunas of the coastal plain formation. (The Bureau is cooperating with Rutgers University on this work and progress is satisfactory.)

- 7) A thorough investigation of the occurrence of uranium in New Jersey.

- 8) A series of county or quadrangular maps showing the geology at a scale of not less than one mile to an inch.

- 9) A mineral resource map of the state.

- 10) A new report on the Triassic formations of New Jersey.

- 11) History and work of the New Jersey Geological Survey.

- 12) A new edition of Bulletin 46, "Work of the New Jersey Geodetic Control Survey."

- 13) Continuation of the series of county reports giving bench mark elevations.

- 14) A map showing drainage basins.

## BUREAU OF AERONAUTICS

The principal work of the Bureau of Aeronautics is two-fold. First, it is responsible for measures to foster the progress of aviation in New Jersey. Second, it is expected to promote conditions of air safety by regulation of various phases of aeronautical operations and other activities.

The basic programs conducted by the Bureau include:

- (1) Establishment of criteria for the design and use of airports and air-approaches to landing areas and the issuance of licenses for airport and fixed-base aircraft operations.

- (2) Enforcement of air safety regulations and conduct of investigation and analysis of air accidents.

- (3) The collection and dissemination of technical information among federal agencies, State agencies, county and municipal governments on all aspects of aviation. (This also entails the briefing of state and municipal police on practices and procedures and reasons for reporting or investigating violations of the aeronautical safety code and air-accidents.)

- (4) Establishment and maintenance of aids-to-flight through such devices as air markers and charts of airports with information as to location,



type, and facilities and use of each.

(5) Planning for the utilization of available airport and aircraft facilities in the event of an emergency, civil or military.

(6) Promotion of "air-age education" to the extent of the Bureau's resources.

(7) Administration of federal programs affecting airports in New Jersey.

The Bureau also cooperates in various ways with comparable agencies in other states and with the federal government. One of the objectives of this cooperation is the attainment of such uniformity in airport design, control, and use as will promote air safety and encourage progress. This liaison, of course, also facilitates the apprehension and prosecution of persons who threaten the safety of those in the air and of those on the ground.

#### **ACCIDENT RECORD AND EVALUATION:**

The record of air craft accidents in New Jersey during the fiscal year 1955-56 was as follows:

Time	Aircraft Accidents	No. of Persons Injured	Fatalities
1955			
July	10	14	2
August	10	13	2
September	7	9	0
October	9	13	0
November	6	8	0
December	5	5	0
1956			
January	0	0	0
February	5	0	0
March	4	0	0
April	6	0	0
May	5	2	0
June	5	2	0
TOTAL	72	66	4

The number of accidents was somewhat higher than that of the previous fiscal year. (The number of fatalities and injuries in 1954-55 was regarded as unusually low.) When weather conditions, terrain and the density of air traffic existing over New Jersey are taken into account, however, the accident rate for 1955-56 was not

exceptionally high. On the basis of the number of man-hours spent in flight over New Jersey during the past 12-month period, the rate was lower than the average rate for the nation as a whole.

The need of greater proficiency on the part of both pilots and ground crew was pointed up in the Bureau's analysis of the causes of accidents. Underlying this lack of proficiency were such conditions as inadequate training and insufficient flying experience and limited visibilities.

In order to hold the number of accidents to a minimum the Bureau engages in a variety of activities. One of its principal tasks is to license all airports, landing fields, and landing strips and to make periodic inspections of these facilities. Before a new airport may obtain a license, its layout must conform to standard specifications set for such features as runway length, width, and glide approaches. Under State law, too, landing areas for rotary-type aircraft (helicopters) also must be licensed, and the Bureau has established criteria for heliports.

Aeronautical regulations promulgated by the Bureau and the Department through the Office of the Secretary of State are based on the composite judgment of a professional staff as to the necessary conditions for air safety. (The Bureau exerts every effort to enlist the cooperation of state and local police in enforcing the regulations. Through a constant exchange of information with these authorities, an attempt is made to define as clearly as possible the lines of responsibility and to attain state-wide uniformity in enforcement procedures.)

**EDUCATIONAL PROGRAMS.** During the year the Bureau participated—with the cooperation of such agencies as the State Department of Education, the Civil Aeronautics Administration, and the New York Port Authority—in making arrangements for a series of Air-Age Education Institute workshops. These were conducted in Newark, Elizabeth, Kearny and Madison through the local boards of education, with teachers and school administrators participating. The basic concepts of aviation and its probable future impact on the nation, state, and community were



analyzed, while major airlines provided courtesy flights in order to bring geographical features of the state into clearer focus for the participants. More than 1,000 persons took part in the program.

Meanwhile, 453 groups of children, with a combined membership of approximately 70,000, were taken on tours of airports in the North Jersey-New York metropolitan region.

**FEDERAL GRANTS FOR AIRPORT CONSTRUCTION.** The Bureau has limited responsibility for administration of all programs involving federal grants-in-aid for airport construction in New Jersey. It must approve all "project applications" submitted by local governmental agencies as well as the New York Port Authority and must inspect construction as it progresses in order to assist the State Treasurer in determining whether the work is proceeding according to plan. Under this program in 1955-56, a federal grant of \$300,000 was awarded for improvements projected by the New York Port Authority. (Federal aid to aviation must be matched by State and local agencies on a dollar-for-dollar basis.) The Mercer County Airport was allocated \$206,000 for use in the expansion of its facilities. This was matched by an equal amount by Mercer County.

**PROBLEMS AND TRENDS.** Among outstanding problems, air space over New Jersey at present is more heavily traveled than over any other similar area in the world. In addition to vast numbers of commercial and military aircraft using this air space, approximately 1,250 privately owned planes operate in the state. Current traffic movements—a traffic movement is reckoned as one landing and one take-off—are averaging 7,000,000 a year in the North Jersey-New York area alone. The development of satisfactory techniques to handle the existing and prospective increase in density of air traffic obviously must be counted among the major problems facing the State of New Jersey and the federal government.

In addition to this, civil aircraft with jet engines, having double the capacity of aircraft now in operation with piston-type engines, soon will be placed in regular service. Currently,

none of the civil airports in New Jersey is capable of accommodating jet-propelled aircraft. Thus one of the principal activities of the Bureau during the past year was research on the characteristics of these new planes, undertaken with a view toward determining the precise kind of airport facilities that must be built in order for them to land in New Jersey.

The research concerned with this problem was conducted as part of the Bureau's over-all effort to assess the state's future needs with respect to air transport capacity. Studies indicated that existing facilities should be expanded at the rate of twenty per cent each year through 1960 in order to meet the rising demand.

In the face of this need, it is essential that blueprints for airport expansion be related to plans covering all phases of state development. The Bureau of Aeronautics therefore has closely coordinated its work with that of the Bureau of Planning in order to draft a master plan for airports that takes into full account the over-all needs of business and industry and the safety and convenience of the public.

It has become self-evident that the state—acting alone—cannot hope to deal with all outstanding problems and needs. The growing importance of aviation has given the federal government a commanding interest in this field if for no other reason but its responsibility to maintain a strong defense establishment. The pronounced expansion of commercial aviation also has brought federal authorities closer to the center of the aviation picture because of the inter-state character of air safety problems as well as the demand for public policies to deal with economic factors involved in air line operations. It therefore must be apparent that the principal issues can be resolved only through the concerted action of local, State and federal governments along with the aviation industry itself. They must cooperate as closely as possible on questions of planning, finance, and flight control.



## BUREAU OF HOUSING

The Bureau of Housing bears responsibility for administration of State housing laws enacted by the Legislature during the past two decades. It is directly involved, for example, in supervising the operation of limited dividend projects authorized by the State Housing Act and the Limited Dividend Corporation Act of 1949. (These are developments undertaken by private organizations with the understanding that moderate rentals will be charged in return for certain tax benefits.) The Bureau also is expected to maintain records of all slum clearance and urban redevelopment projects carried out by New Jersey municipalities. In addition, it represents the State in the disposition of the several thousand veterans emergency housing units built after World War II to relieve the housing shortage facing returning servicemen. Finally, the agency has the duty of analyzing New Jersey's current housing needs and of working with official and unofficial groups concerned with the problem in the interest of developing a feasible program to expand the supply of good housing.

**THE HOUSING PROBLEM TODAY.** During the past few years, consideration of the housing problem has been largely in terms of the shortage of decent housing for so-called middle income families. These are families who, though ineligible for low-rent public housing, nonetheless encounter serious difficulty in either renting or purchasing satisfactory accommodations in the private market. The problem is especially pronounced in such urban, industrialized states as New Jersey with large and growing populations. Since the late forties the issue has commanded the attention of community leaders and men in public life, and in New Jersey various statutes have been passed to encourage the construction of middle income housing. On the whole, however, these laws have borne little fruit.

In his first annual message to the Legislature Governor Meyner announced that the Department of Conservation and Economic Development had been asked to seek new approaches to the problem. Initial studies were launched during the fiscal period 1954-55. An informal advisory committee of private citizens with outstanding ex-

perience in this field was appointed to assist the Department and was requested to explore all aspects of the subject. Its findings and recommendations appeared in a report issued early in 1955-56. Although no administrative decisions were taken on measures proposed in the report, it was released in the belief that further public discussion is an essential element in producing a workable program.

The committee identified the major housing problems in New Jersey as follows: (1) Housing needs for families of moderate income. (2) Housing needs for families of low income. (3) Slum clearance and urban redevelopment. (4) Limited dividend housing projects. (5) Rehabilitation of existing housing. (6) Housing for minority groups, aged persons, single-person families and the chronically ill.

Although the committee investigated many aspects of the housing issue, it agreed that the overriding problem today is that of providing adequate and decent accommodations for middle-income families. The committee reported difficulty in determining the precise income range of these families because of variations in family size as well as in working and living conditions in different regions of the state. The consensus was that the problem is most likely to affect families with incomes of \$4,000 to \$7,000 a year. The group concluded that approximately 120,496 new dwelling units would have to be built to insure a decent standard of housing for all families with moderate incomes. The conclusion was based on an analysis of the U. S. Census of Housing, 1950, the annual records of building permits issued in New Jersey, and recent population trends.

The committee submitted two recommendations for coping with the need:

(1) A Constitutional amendment to remove certain restrictions on the action of the State and local governing bodies, which place limitations on the ability of government to furnish special incentives for middle income housing developments. This would apply particularly to



restrictions on the use of State credit and the loan and grant powers of municipalities.

(2) A referendum on a bond issue to raise funds that could be loaned on a conditional basis to private developers for the construction of middle income housing.

The committee regarded positive governmental action as a virtual prerequisite for any genuine progress in meeting the need. In considering specific ways of attacking the issue, a further report cited such measures as the following: (1) Low interest rates on loans for middle-income projects, (2) longer amortization periods, (3) partial tax abatements or exemptions, (4) limited dividends on investments, (5) the acquisition of land at cheaper prices in urban redevelopment centers, (6) limited construction profits, and (7) the use of modern building techniques and new material. Because of present construction costs, the committee took the view that only the use of some, if not all, of these measures in combination with one another offered an answer to the problem.

Meanwhile, the question of middle income housing was reviewed by the Legislature, and this led to the creation of a Special Study Commission. The commission consisted of three members of the Senate, three members of the Assembly, and three members appointed by the Governor. The Bureau was asked to assist the commission in its inquiry and made arrangements for public hearings in Trenton and Newark. As the year ended, it was hoped that a report containing the findings and recommendations of the panel would be ready for distribution early in the fiscal year 1956-57.

**SLUM CLEARANCE AND URBAN REDEVELOPMENT.** The principal efforts to clear slums and redevelop blighted sections of New Jersey cities are carried out today with federal assistance under the Urban Renewal Program. Redevelopment agencies have been established in four municipalities, and in sixteen others, local housing authorities have been designated as redevelopment agencies. All of these have received or will receive aid from the Urban Renewal Administration, a unit of the U. S. Housing and Home Finance Agency.

In two New Jersey municipalities, Jersey City and Perth Amboy, urban renewal had advanced during the past year to the point where areas suffering from extreme blight had been cleared, and redevelopment of the sites was under way.

On one of the sites cleared in Jersey City, plans called for the construction of four elevator-apartment buildings to house 1,024 families (the St. John's project). Ground was broken for the first of the units on June 14, 1956, and the work was scheduled to be completed within 18 months. Monthly rentals will average \$35 a room. Meanwhile, a site in downtown Jersey City had been cleared and also was to be utilized for housing designed to accommodate 800 families. Plans for this (the Gregory project), were under preparation at the end of the fiscal period, with construction expected to begin shortly.

In Perth Amboy, as in Jersey City, two areas were undergoing redevelopment. The Forbesdale project, when completed, will consist of 195 single-family dwellings to be sold at prices ranging from \$13,000 to \$16,800, with the choice of three distinct models. (Sale of the first units to be erected began in April, 1956). The development plan also provides for a seven-and-one-half-acre shopping center. The other project in Perth Amboy (Willocks) will include 260 elevator apartments, renting at approximately \$30 a room, and a shopping center of one-and-one-half-acres. The site has been cleared and construction bids were due in July, 1956.

In Newark, slum clearance operations progressed during the year, and it was hoped that the erection of new structures on the site selected for redevelopment could be launched in the near future.

How far urban renewal can be carried under the existing program is problematical. Federal legislation provides that a municipality must absorb one-third of the loss arising from the difference between the cost of acquiring and clearing a site and the price received for the land when it is sold for redevelopment purposes.



The other two-thirds of the loss is absorbed by the federal government. Many municipalities can undertake only a limited number of projects because, as a rule, they lack the financial resources to cover even one-third of the loss.

As to other aspects of the program, redevelopment frequently has been delayed because of the inadequacy of plans for financing the projects and the reluctance of private builders to participate. In some instances sites have remained vacant for several years after they have been cleared, with a resulting loss of tax ratables for the community.

**PREPARATION OF HOUSING CODE.** A municipality participating in the Urban Renewal Program is expected to establish minimum standards for housing in order to eliminate or to prevent substandard conditions in existing dwellings. The preparation of such a code is expensive and time-consuming and poses difficulties for many communities. In keeping with the recommendations of the advisory committee

appointed to study the state's housing problems, the Bureau entered into discussions of this question with representatives of the State Department of Health. The result was the creation of a group assigned to draft a standard housing code that any municipality may adopt by reference to meet federal requirements for urban renewal assistance.

**SALE OF VETERANS HOUSING.** Management of the veterans emergency housing program is primarily a function of the Division of Veterans' Services. Sale of the projects and liquidation of the program is the responsibility of the Bureau of Housing. Originally the duration of the program was set at five years, but as a result of subsequent Legislative action, it was extended to eight years in the case of the permanent units and to nine years in the case of temporary dwellings. The projects must be sold when contracts for their operation expire. (A more detailed account of the program appears under the Housing Section of the Division of Veterans' Services report.)

## BUREAU OF RECREATION

The average citizen today has more leisure time at his disposal than ever before. If he resides in a large urban area, his opportunities to spend this leisure engaging in meaningful recreation depend to an important degree upon community action. As a regular function of municipal government, public recreation may be comparatively new. It is a function, however, that assumes ever greater significance because of the ascending demand for adequately planned facilities and the systematic programming of activities to satisfy the interest of persons at all age levels.

**ROLE OF STATE.** The State's role in meeting this demand is comparable to the part that it plays in helping communities in such fields as planning, education, welfare and health. It is the responsibility of the municipality to inaugurate

and develop public recreation along lines consistent with local conditions. It is the responsibility of the State to aid any political subdivision, upon request, in establishing a suitable framework for the implementation of its program and to provide such technical services as may be useful in improving existing programs. This responsibility was recognized by the Legislature when it created the Bureau of Recreation. The Bureau's relationship with the municipality obviously is based on strict respect for the principle of "home rule". It attempts in no way to exercise control over local policies.

During the fiscal year 1954-55 a reappraisal of the State's contribution to community recreation led to the conclusion that its activities in this area was inadequate in view of current needs. This resulted in plans for revitalizing



the Bureau, and additional funds were appropriated to staff the agency with sufficient personnel to embark upon a substantially broader effort. Simultaneously, a State Recreation Advisory Committee was appointed by the Commissioner of Conservation and Economic Development to undertake studies and to make recommendations on questions of long-range policy. Still further, the Bureau maintained the closest possible cooperation with private organizations conducting state-wide programs, such as the Public Recreation Association of New Jersey and the New Jersey Parks and Recreation Association.

Since the basic responsibilities for municipal recreation rests with local leaders, the original belief was that few communities would avail themselves of State services in this field until they had been widely advertised. During the year, however, the response to the Bureau's new efforts disproved this idea, and the number of requests for these services appeared to offer more than ample justification for the decision to expand the staff. Municipalities applying for assistance displayed marked interest in obtaining the kind of advice that would enable them to achieve maximum value from their investments in recreation, and it was evident that the majority of New Jersey communities were coming to accept public recreation as a normal function of government.

One of the principal obligations of the Bureau, as mentioned above, is to assist in the organization of official recreation commissions and in planning facilities and activities. In 1955-56, eighteen new commissions began operation, most of which requested and received aid from the State in their formative stages. The Bureau also spent much time consulting with directors of local programs on a broad range of problems and

objectives such as the following: Scheduling of new summer activities, conversion of summer programs to programs for the entire year, organization of "Teen-age Clubs" and "Golden-age Clubs", planning the lay-out of facilities, budgeting and finance, personnel administration, establishment of community centers, and construction of swimming pools, skating rinks and playgrounds. Altogether, 68 communities were given assistance in connection with matters of this kind. As an additional service, the Bureau distributed throughout the state a large volume of literature. For example, *New Jersey Recreation Development*, a quarterly roundup on contemporary problems, ideas and new undertakings, was published for 1,500 subscribers. Similarly, the Bureau's "Recreation Kit", designed to stimulate interest in the recreation movement, was republished in response to increased demand and forwarded to 98 municipalities. Contents include a review of legislation pertaining to recreation, a useful bibliography and important guides for communities contemplating organized recreation.

**PLANS FOR FUTURE SERVICES.** During the year the Bureau made plans for the operation of clinics and workshops in sections of the state where industrial and housing developments were leading to increased recreation, with specialized clinics to deal with such subjects as swimming pool management and organized athletics. Exhibits for conferences, an enlarged film library, and special bulletins on technical subjects of widespread interest also were planned as part of an expanded public information program. In addition, the Bureau took steps to give its personnel the best possible background for their responsibilities. As the year ended, a series of in-service training programs was launched, and these were to be continued and increased in scope.



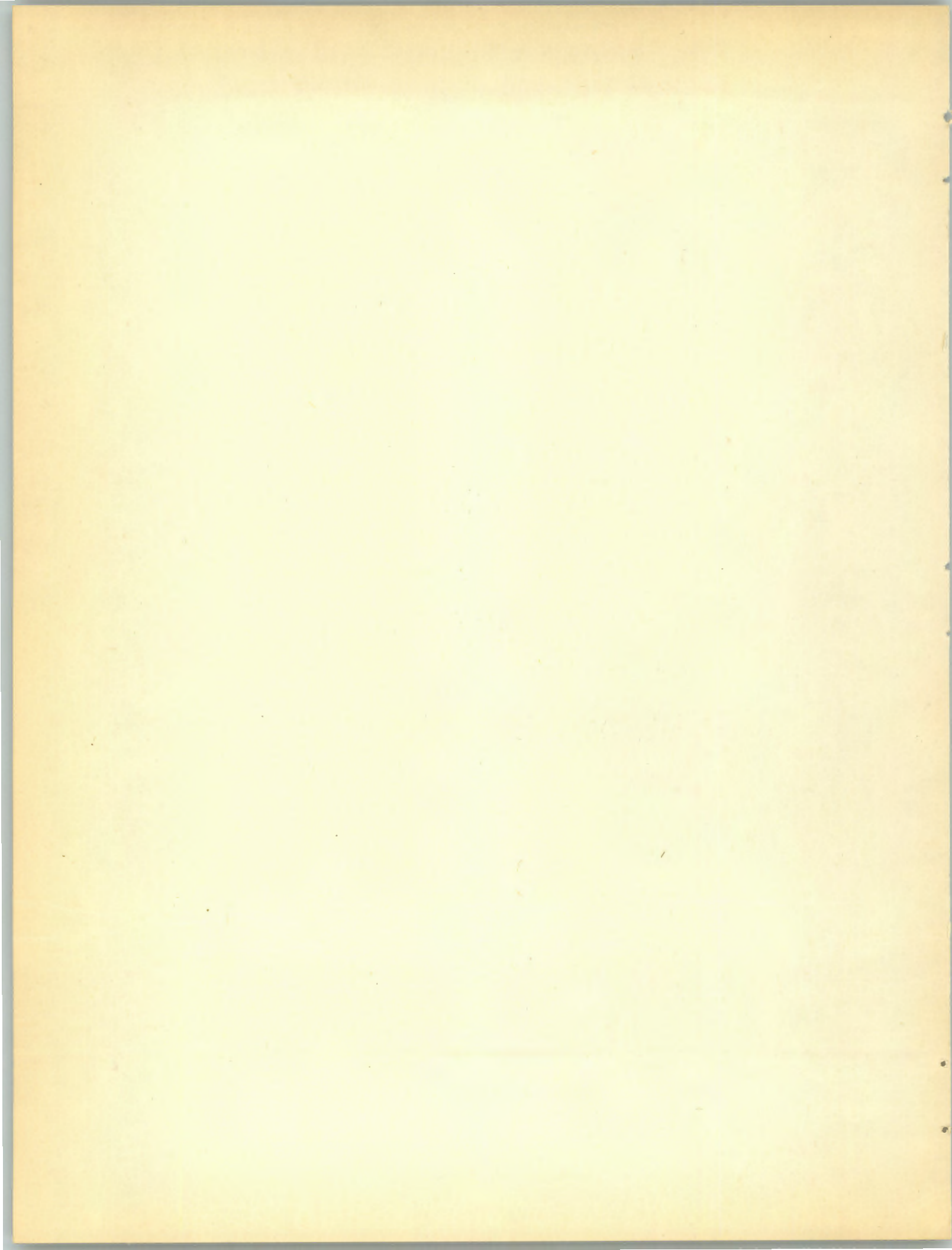




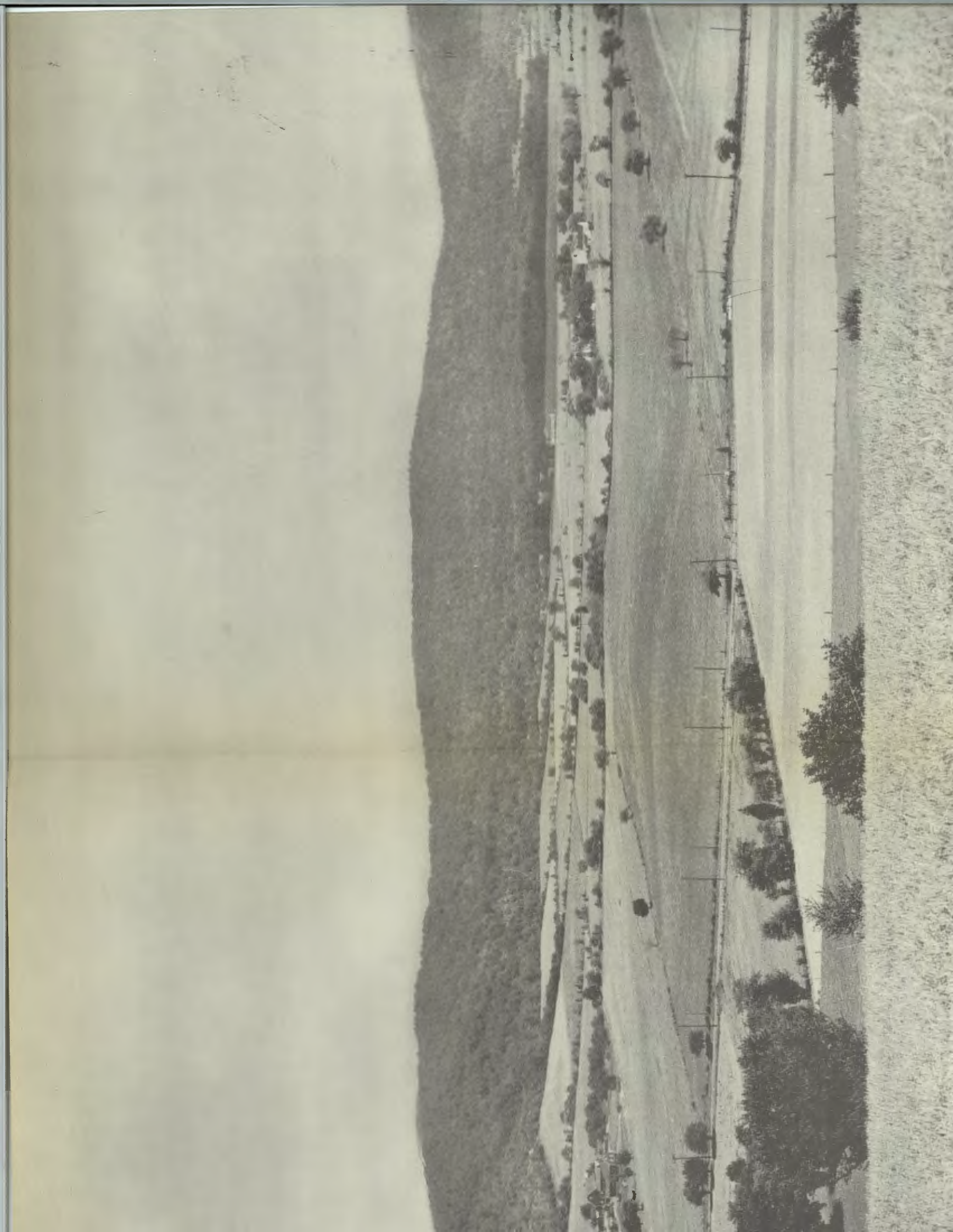
**DIVISION**  
**OF**  
**WATER POLICY AND SUPPLY**

**New Jersey State Library**



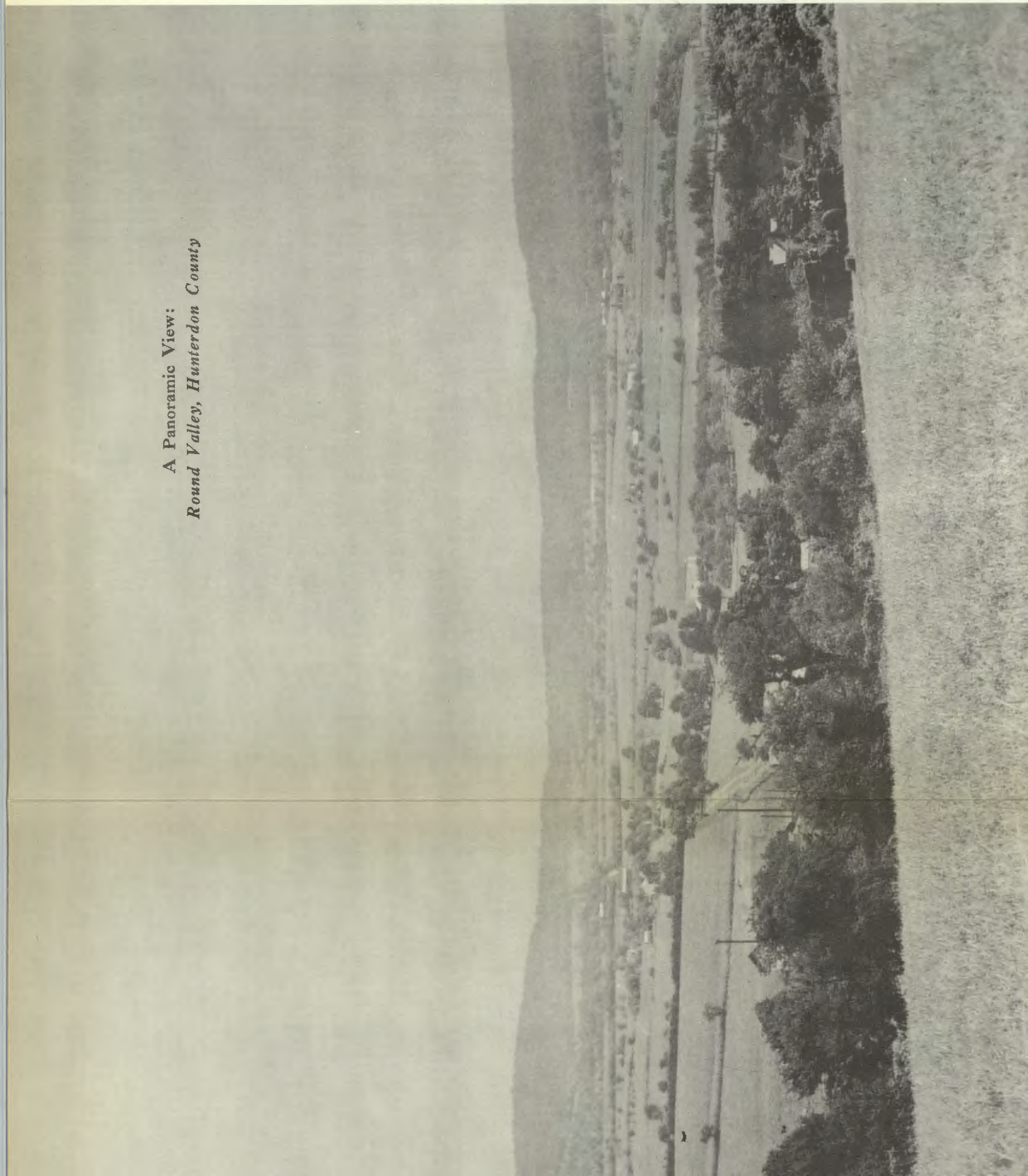








A Panoramic View:  
*Round Valley, Hunterdon County*

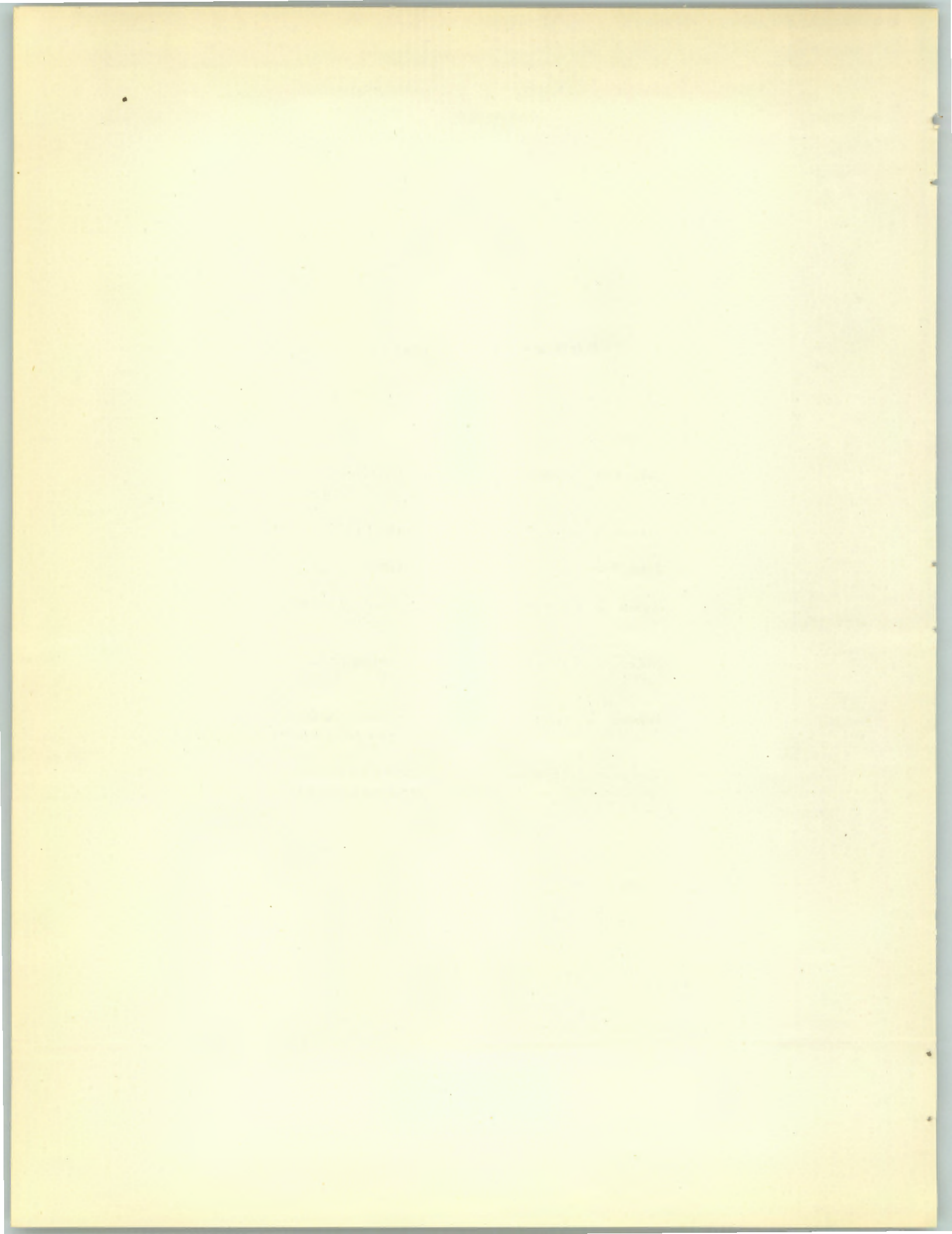




## Supervisory Staff

George R. Shanklin	Acting Director and Chief Engineer
Norman C. Wittwer	Assistant Chief Engineer
John Wyack	Secretary
Robert L. Hardman	Supervising Engineer, Water Supply
Robert E. Cyphers	Supervising Engineer, Flood Control
Howard W. Acken	Supervising Engineer, Delaware and Raritan Canal
Benjamin A. Furman	Supervising Engineer, Dams and Encroachments







## Introduction

The Division of Water Policy and Supply, under the direction of the Commissioner of Conservation and Economic Development, is official trustee of New Jersey's water resources, having been vested with authority over the use of both surface and sub-surface waters. Specifically, the Division is empowered to allocate sources of supply, to pass on water contracts executed by two or more municipalities, and to approve (or disapprove) the diversion of water for public potable use and, under certain conditions, still other uses. It may require the interchange of water between existing systems. In the interest of obtaining geological data for use in evaluating sub-surface water resources, the Division licenses well-drillers and issues permits for the drilling of wells.

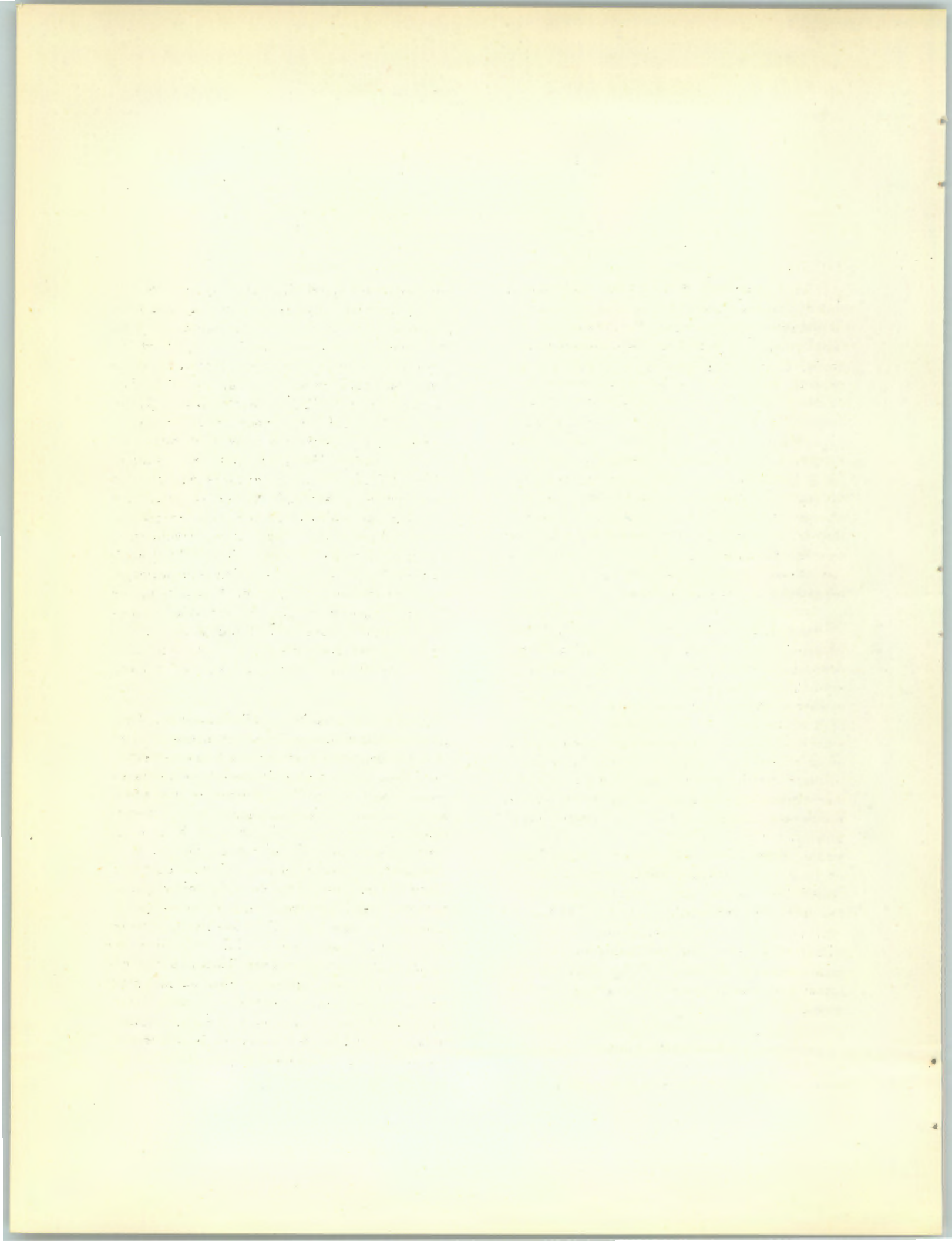
State law provides that water shall be allocated on a fair and equitable basis. As the demand for water has increased, the problem of equitable allocation has come to involve a large number of difficult and complex questions. Much of the Division's work therefore is concerned with applications for permission to develop new or additional water supplies. These are referred to the Water Policy and Supply Council, a nine-man citizens board whose members serve without compensation. The Council conducts quasi-judicial hearings on applications for the use of water before approving any diversions. These hearings are mandatory. Other hearings may be called because they are deemed desirable from the standpoint of the public interest. The Council also is authorized to consult with the Commissioner of Conservation and Economic Development on the operation of the Division. All Council actions are subject to the Commissioner's approval.

Despite the paramount importance of conserving water by controlling diversions from sources of supply, this is only one phase of the

Division's responsibility. The agency, for example, actually engages in supplying water for public and industrial use from the century-old Delaware and Raritan Canal. As part of its general effort to conserve water resources, moreover, the staff conducts many scientific investigations, including the systematic gaging of stream flow and sub-surface water levels. It also maintains continuous records of water consumption and yields in all parts of the state. Although funds and personnel for broader surveys have not been available in recent years, the Division has authority to undertake comprehensive studies of the conservation, development and use of water resources for public potable supply, flood control, irrigation and drainage, water power and navigation. In addition, the Division exercises general supervision over flood control measures and regulates the construction and maintenance of dams and other structures affecting the passage of flood waters.

One of the principal public issues that have arisen in New Jersey during the post-war years is the mounting pressure on existing water supply facilities. The problem is notably acute in the northeastern metropolitan region of the state, where natural water resources are virtually completely developed and water must be obtained from sources, outside of the region. The immediate development of an additional supply of 70 to 100 million gallons daily for this region is regarded as imperative. This water crisis, of course, has serious implications for the general health and welfare of the public as well as the future of the state's economy. Thus in addition to the long-standing functions enumerated above, the Division has become deeply involved in the exploration of means to relieve existing shortages and to lay a proper foundation for satisfying the long-term requirements of all regions of the state.







## WATER POLICY AND THE EVENTS OF 1955-56

**SUMMARY OF EVENTS.** The numerous, complex facets of the water policy and supply problem did not spring full-blown upon the state during the period 1955-56. They have existed for years. They have been studied in considerable detail. They have been discussed and debated at length by public officials and private citizens. Nevertheless, during the past year, the spotlight was focused on this problem more sharply than ever before. No previous 12-month period has witnessed such a variety of developments in connection with the question.

To summarize what happened, a Legislative Commission on Water Supply ordered a comprehensive survey of New Jersey's water resources plus recommendations for a plan to meet existing and future needs. The Legislature called a referendum on the question of a State water supply project with a storage reservoir at Chimney Rock in Somerset County, but voters rejected the proposed development. Interest in flood control was dramatically revived in the wake of the most devastating flood of record in the Delaware River basin. A new movement toward formulating plans for integrated, multiple-purpose development of the Delaware basin was launched, with the federal government participating. After the defeat of the proposed development at Chimney Rock the Legislature approved acquisition of another reservoir site, Round Valley in Hunterdon County, with the stipulation that it might be used only for the storage of water diverted from the Delaware basin.

All of these events were related in one way or another. All, moreover, appeared to contain elements of the highest long-range importance for the people of New Jersey.

**INTRA-STATE DEVELOPMENTS.** In his annual message to the Legislature, Governor Meyner underscored again early in 1955 the urgency of the water supply problem, pointing to the need for an orderly and equitable long-term plan to develop water resources within the state. Soon thereafter the Legislative Commission on Water Supply of New Jersey was established.

The Commission immediately retained the engineering firm of Tippetts-Abbett-McCarthy-Stratton to conduct a comprehensive study of water resources and to submit recommendations for action. The consulting engineers filed a preliminary report in July.

Acting on the basis of this report, the Legislature in September passed an enabling bill, under which the Department of Conservation and Economic Development was authorized to proceed at State expense—upon approval of the public in a state-wide referendum—with the first step of a water supply project to develop the waters of the Raritan River basin with a reservoir at Chimney Rock. This initial project was designed to develop an additional water supply of 70,000,000 gallons daily for wholesale delivery to the northeastern metropolitan area. The referendum was conducted in November. As it turned out, the proposal was defeated by a substantial margin.

In spite of the outcome of the matter, it appeared to direct attention anew to the need for State action in developing adequate water supplies for all purposes and for all regions. The enabling legislation also directed attention to the need and value of substantial stream flow regulation on intra-state streams. One section of the bill required that, if the Chimney Rock reservoir were built, the project should also provide for supplementing storage to maintain a minimum flow of 130 million gallons daily at Bound Brook in the lower Raritan River.

The water supply problem received further consideration in the Legislature during the early months of 1956. The result was the adoption of legislation on June 1, 1956, providing for State acquisition of Round Valley, a natural reservoir site in Hunterdon County lying off the channel of the Raritan River. The legislation limited the use of the site to storage of water drawn from the Delaware River. The Commissioner of Conservation and Economic Development was authorized to acquire such properties in the area as might be needed. Machinery for purchasing the large



number of separately owned parcels comprising Round Valley was set in motion as the fiscal year ended.

One of the collateral effects of the Legislature's action was to bring to an end a series of hearings on the application of the North Jersey District Water Supply Commission for permission to build a reservoir itself at Round Valley and to use it for storage of water from the South Branch of the Raritan River. (For a more detailed account of this application, see the discussion of water conservation below.) The Legislature's stipulation that Round Valley might be used only for the storage of water from the Delaware River, an inter-state waterway, removed the application from the jurisdiction of the State Water Policy and Supply Council. The application of the Commission involved only the use of waters of the Raritan River.

In the meantime, the consulting engineers to the Legislative Commission on Water Supply completed their studies and submitted a report entitled "Survey of New Jersey Water Resources Development" early in the spring of 1956. In comprehensive fashion the report analyzes present and future demands for potable and non-potable water for all regions of the state. It also evaluates the surface water resources that can be suitably developed for storage, projecting the costs of such developments and estimating their respective yields. The consulting engineers, in addition, have submitted data on the availability of reservoir sites, particularly in the Raritan River basin. The report contains highly valuable data and is certain to be used extensively in all future efforts to deal with the water problem.

The document is concerned primarily with the question of surface water resources, and the engineers recommend, among other things, a broader study of the state's sub-surface water resources. In order to implement this recommendation, the Division included in its proposed budget for 1956-57 a request for an initial appropriation of \$50,000 to expand ground-water investigations. The request was submitted with the intention of evaluating the availability and delivery capacity of aquifers on the Wharton Tract and the coastal plain as well as in other regions of the state.

Examining the events of the year from the broadest viewpoint, the conclusion standing out above all others is that a long-range, authorizing plan is needed for water resource development in the state. Such a blueprint will be prepared for the inter-state Delaware basin by the U. S. Army Corps of Engineers. (See below.) Ultimately the growth of the state will undoubtedly necessitate both the diversion of water from the Delaware and full utilization of sources lying entirely within New Jersey. A long-range intra-state plan thus is no less essential than a plan for the Delaware. The program should provide for: (1) Maximum conservation and orderly development of New Jersey's water resources for the delivery of adequate supplies to the metropolitan regions as they may be required. (2) Ample water reserves to satisfy the present and future demands of areas from which surplus water resources would be diverted to meet the needs of areas of deficiency.

**THE DELAWARE RIVER BASIN.** The Delaware River, rising in the Catskills of New York and flowing 280 miles before reaching its mouth at the head of the Delaware Bay, is located amidst one of the most heavily industrialized and highly populated regions of the United States. Despite its importance from the standpoint of location, however, the Delaware basin remains largely undeveloped. How long the region or the states of the Delaware Valley can afford such a condition is a serious question. Indeed, with the post-war expansion of the area, the demand for action on a program of development has become increasingly urgent. It also is recognized, to an ever growing extent, that, on the basis of the practical requirements of the region, the process of development should be multiple-purpose in scope. The type of program which is needed would provide for many things, such as improved navigation, utilization of the basin as a source of water supply, stream flow regulation, safeguards against floods, pollution control, protection of fisheries and development of the Delaware's recreation potential.

For many years the efforts to formulate a program for the basin were marked by a determination to proceed entirely within the framework of inter-state action. In view, however, of



the limited success of this approach and the magnitude of the project itself, New Jersey officials, along with other State officials in the Delaware Valley, more recently have called for a new era of federal-State cooperation in coming to terms with the problems involved in harnessing the resources of the Delaware.

At the beginning of the fiscal year 1955-56, interest in the development of the basin on an integrated, multiple-purpose basis was increasing and was only intensified by the devastating flood of August, 1955. Much attention, for example, was directed to a proposal that Pennsylvania and New Jersey act jointly in building a dam and reservoir at Wallpack Bend on the main stem of the Delaware north of the Delaware Water Gap for purposes of water supply and stream flow regulation, and the necessary measures of authorization were passed by the legislative bodies of each state.

Meanwhile, the late-summer flood had a significant impact on the thinking of federal officials and opened the way for a reappraisal of certain aspects of national water resources policy. As a consequence the U. S. Army Corps of Engineers was directed by the Public Works Committee of the Senate to review previous reports on the question of flood control for the Delaware, and, more important, to conduct a comprehensive survey of the basin in order to formulate a general water resources development plan. The survey probably will be completed by January 1, 1959. Close cooperation among State, local, and federal agencies will be maintained throughout the survey, with the States compiling and furnishing the Engineers with relevant data at their disposal. The study will cover all aspects of resource development in the Delaware basin. The aim is to project a plan for the conservation, control, and utilization of the waters of the basin over the next century. The thinking of New Jersey officials is dominated by the hope that the Corps of Engineers will submit a report authorizing federal participation in implementing the plan.

The manifestation of new federal interest in the Delaware was preceded by the establishment of the Delaware River Basin Advisory Commission--an agency composed of six citizens appointed by the Governors of each of the four states in the Delaware Valley and the Mayors of New York City and Philadelphia. The commission was created because of the need for an economic base survey to determine the water and land resources of the basin and the existing and future water needs of the region and also because of the need for a comprehensive development plan. After the official federal survey was ordered, the committee arranged to coordinate its activities closely with the Corps of Engineers, to work for a higher degree of federal-State cooperation on a development program, and to help mobilize the technical resources of the State governments in older agency, the Interstate Commission on the Delaware River Basin, was brought into this new framework of intergovernmental cooperation.

## WATER CONSERVATION

The emergence of water conservation as a major public issue in New Jersey is a comparatively recent development. The rainfall of the state is abundant, averaging forty-five inches a year. Until a few decades ago, the available water was more than equal to the needs of virtually all communities, and in most instances could be obtained from local sources.

The luxury of a water surplus began to vanish, however, with the population growth and multitudinous technological advances of the twentieth century. That population growth would intensify the pressure on water resources is self-evident. But along with it has come a substantial increase in per capita consumption of water. This increase, of course, is a product of the widespread use of air conditioning units and other appliances that inevitably raise the consumption of water in the average household. By the same token new machinery and new methods of production have radically augmented industry's water demand. In addition to all this, irrigation is being practiced among New Jersey farmers on an ever-widening scale.



In the light of these conditions, equitable distribution of water in New Jersey depends upon close and thoughtful control of diversions from sources of supply. In its broadest meaning, the concept of water conservation involves more than mere regulation of the use of surface and sub-surface water resources. But, on a day-to-day basis, it is in this sense that the concept receives its widest application.

The Division and the Water Policy and Supply Council must weigh many factors in acting on requests for permission to divert water from any particular source. If, for example, a municipality wishes to increase its supply by tapping a river or stream, it is not enough merely to examine this from the standpoint of obtaining the maximum volume of water at the most favorable cost. In addition, the future needs of residents both within and adjacent to the drainage area must be taken into account, and the effect of the diversion on recreation in the region must be studied. Consideration also must be given to maintaining a satisfactory stream flow during periods of dry weather through compensation releases of stored water. Similarly, in the development of sub-surface water resources it is necessary to consider the impact of diversions on underground water levels and adjacent wells. In the coastal area, it is essential to examine the danger of salt water contamination of well fields. In the past, unregulated pumpage of wells has led to the depletion of sub-surface water resources in some areas of the state and has ruined them in others.

Permits must be approved by the Council for all diversions of surface and sub-surface waters for public potable use. Permits also are required for the diversion of sub-surface waters for private or industrial use if volume exceeds 100,000 gallons daily and if the sources being tapped lie in areas designated by statute as being in danger of overdrafts or salt-water intrusion.

In 1955-56 the Water Policy and Supply Council acted on seventy applications for water supply, and authorized the diversion of a total of 68 million gallons daily from both surface and sub-surface sources. Of this, slightly more than 49 million gallons daily was for public water

supply; 17.4 million gallons daily for industrial use; .560 million gallons daily for irrigation, and .825 million gallons daily for air conditioning. Fifteen of the seventy applications were filed by recently established water companies serving new housing developments. Although the number of applications filed during the fiscal period dropped slightly below the total for the previous 12 months, the time and effort devoted to applications for water supply in 1954-55 and 1955-56 was the greatest in the history of the Division. The seventy applications filed during the past year compare with three filed in 1919, thirty-eight in 1927, six in 1934, eight in 1943 and fourteen in 1951.

The application that received the most prolonged consideration was filed by the North Jersey District Water Supply Commission. The commission completed the Wanaque Reservoir Project in 1930 and is authorized to conduct and operate water supply projects as agent of, and by contract with, interested municipalities in the district. The commission sought permission to divert 200 million gallons of flood waters daily from the South Branch of the Raritan River to be stored in a reservoir that the agency proposed at Round Valley in Hunterdon County. From this the commission expected to develop an additional water supply of 50 to 70 million gallons daily for Newark, Elizabeth, Bayonne, Hillside, Bloomfield, Kearny, Orange, and Cedar Grove. The review of the application by the Water Supply and Council began in 1954-55, and thirteen additional hearings were conducted in 1955-56. Most of these hearings were taken up with presentation of plans for the project and cross-examination of witnesses for the commission by interests opposing the application. The proceedings were finally terminated when the Legislature authorized State acquisition of Round Valley and limited its use to the storage of water diverted from the Delaware River basin. The Commission's application was dismissed without prejudice on June 28 because the legislative action removed the matter from jurisdiction of the Council. Despite this, the hearings themselves proved to be of substantial value to the extent that they helped clarify many of the problems involved in the development of major new water supplies and provided an opportunity for



many individuals and groups with divergent views to place their opinions on record.

Among other important applications received during the year were two filed by the Monmouth Consolidated Water Company. In the first the company asked for permission to divert 25 million gallons daily from the Swimming River by enlarging its existing reservoir. In the second the company asked for permission to divert 17 million gallons daily from the low flows of the presently undeveloped Manasquan River. Hearings on these applications were recessed to permit the Monmouth County Planning Board to complete a survey of the county's water resources and needs.

The two largest water diversion grants approved during the year arose from (1) the application of the City of Newark for authorization to develop an additional supply of 9.5 million gallons daily from the Pequannock River and (2) from the application of the Willingboro Water Company for authorization to develop a new supply of 7 million gallons daily by drilling wells to tap the Raritan strata in Burlington County. Newark's plans call for the construction of the Charlotteburg dam and reservoir, recommended by the consulting engineers to the Legislative Commission on Water Supply as a means of attaining maximum utilization of the existing sources of supply in the Passaic River basin. The wells planned by the Willingboro Water Company will be used to serve the new Levittown Housing Project in Willingboro Township.

The most unusual application handled during the year was filed by the New York Ship Building Corporation of Camden, and the concern received permission to divert water from the Upper Raritan strata in a volume not to exceed 15 million gallons daily. The company requested permission for the diversion in order to remove water from soil on its property, to the depth of approximately sixty feet, for the construction and operation of a new drydock. The structure was needed because none of the firm's existing facilities was adequate to build a new aircraft carrier for the U. S. Government. In authorizing the diversion, the Water Policy and Supply

Council required the use of recharge and observation wells to insure the maintenance of ground water at safe levels on all adjacent properties. Subsequently the applicant decided in favor of an alternative method, which called for the construction and operation of the drydock without permanently dewatering the site and required only such pumpage as might be necessary to compensate for leakage through the sides of the drydock. This procedure is expected to call for considerably less diversion than the 15 million gallons daily, originally contemplated.

**OTHER ACTIVITIES.** Apart from its work on applications for water supply during the year, the Division was concerned with water conservation in its analysis of the proposed Chimney Rock reservoir, in its preliminary investigation of the water resources on the State-owned Wharton Tract in south Jersey, and in its study of the increasing use of surface waters for irrigation.

The work on the Chimney Rock proposal consisted of both an independent review of the plans and detailed checking of computations made by the consulting engineers to the Legislative Commission on Water Supply. It was these computations that served as a basis for the recommendation that a reservoir should be built at Chimney Rock as an immediate solution to the water crisis of the northeastern area. In the course of its study, the Division staff prepared a thorough analysis of comparable features of two other proposed projects, the reservoir at Round Valley and the dam at Wallpack Bend on the Delaware River.

As to the Wharton Tract, the Division was represented on a subcommittee of the Department's Land Use Committee, appointed to project plans for multiple use of this property consistent with the long-standing intention of ultimately utilizing its extensive water resources. At the same time, in cooperation with the U. S. Geological Survey, the Division made arrangements to explore the underground formations along the largest streams on the tract to depths of approximately 100 feet. The survey is designed to produce enough information to permit pumping tests that will disclose the transmissibility and recharge characteristics of water-bearing sands.



The Division was also represented on a subcommittee of the Land Use Committee that began a study of the impact of irrigation on water supply. The increasing use of surface water for irrigation poses an indeterminate threat to both public and industrial water supplies. The practice also runs counter to a strict interpretation of the doctrine of riparian rights under common law. This doctrine holds that if the owner of land adjoining a river or stream uses water flowing by his property, he must return it to the stream undiminished in quantity and unchanged in quality. The Land Use Committee deemed it advisable to investigate the possibility of imposing some form of control, perhaps through legislative action if necessary, in order to maintain an adequate check on the use of surface waters for irrigation and other consumptive uses. Such control would have the further value of forestalling litigation that may arise out of conflicts of interest.

#### REGULAR AND SPECIAL STUDIES

During the year the Division continued to cooperate with the U. S. Geological Survey in the systematic gaging of stream flow and observation of ground-water levels. (This program has been conducted in cooperation with the Geological Survey for many years, and the cost is shared by the State and federal governments on an equal basis. As a result of the program the Division has accumulated data indispensable both for evaluating the water resources of the state and designing water supply facilities, flood control works, dams, bridges and similar structures.)

**SURFACE WATER STUDIES.** In 1955-56 eighty gaging stations were maintained by the Geological Survey for the continuous measurement of stream flow on the state's principal rivers and streams. These stations were equipped with automatic recorders and permanent controls that reduce the cost of maintenance and increase the accuracy of the data. In 1955-56 the stations were especially valuable as sources of information on flood levels, which at many points equalled or exceeded previous maximum records.

At present the system of gaging stations maintained in New Jersey provides broader coverage than the system of any other state. Additional stream flow measurements on the tributaries of the lower Delaware are needed, however, to evaluate the rapidly increasing consumption of water for irrigation and its effect on salinity concentration in the river and in Delaware Bay. The state also needs a program for placing daily stream flow records in more useful form so as to facilitate the appraisal and development of local water resources by industries, counties and other public and private institutions.

**GROUND-WATER STUDIES.** The ground-water study program conducted by the U. S. Geological Survey in New Jersey consists of both continuous measurement of ground-water levels and the publication of inventory and interpretive reports. This program, limited to critical areas where pumping is heavy, provides information required to insure the safe operation of public and industrial well fields and aids the state in making intelligent decisions as to the allocation and development of sub-surface water resources. Despite its great value, however, the program has not kept pace with the mounting use of ground water for public and industrial purposes, and there is a growing demand for more reliable data as to the availability of ground-water resources. It is for this reason, coupled with the mounting danger of salt-water intrusion in certain areas, that the Division asked for an initial appropriation of \$50,000 in its 1956-57 budget requests to expand ground-water investigations. Its plans call for (1) a state-wide network of observation wells in both developed and undeveloped areas, (2) outpost wells to ascertain the precise danger of salt-water intrusion, and (3) pumping test to determine the safe delivery capacity of the more productive ground-water aquifers.

As for the ground-water studies conducted in 1955-56, more than 300 observation stations were maintained at selected points to determine the effects of pumping on water levels. Eighty-eight of these stations were equipped with automatic instruments to record daily fluctuations. In addition, samples taken from 175 wells in



areas where salt-water intrusion has become a hazard were analyzed on a semi-annual basis to determine any changes in the quality of the water. With respect to publications, the staff's efforts were devoted chiefly to preparation of inventory reports on conditions in Gloucester and Salem Counties.

**SPECIAL STUDIES.** Apart from the regular program of stream gaging and observation of ground-water levels, the Division continued its participation in two special projects.

The first consisted of investigations of sub-surface water resources in the lower Delaware Valley. The investigation extends from Mercer through Salem County in New Jersey and covers a similar area in Pennsylvania as well as one county in the State of Delaware. The study was undertaken several years ago on the basis of a cooperative agreement among the Geological Survey, the Interstate Commission of the Delaware River Basin (Incodel), and the State governments of New Jersey, Pennsylvania and Delaware. As the fiscal period ended, a progress report, then in the process of final revision, was scheduled to be published during the fall of 1956. The report will present data on the Raritan formation and other water-bearing strata in the lower Valley, upon which the metropolitan region of southern New Jersey depends for industrial and public water supplies. The report also will be of value to the U. S. Army Corps of Engineers in its comprehensive survey of the water resources of the Delaware basin. The study was to continue during the fiscal period 1956-57.

The other special project was a study of the effects of controlled burning on water supply and the conservation of forest resources in Lebanon State Forest, Burlington County. This was undertaken in cooperation with the Geological Survey and Rutgers University. It also was to continue in 1956-57.

Two additional ground-water investigations were conducted by the Geological Survey entirely at federal expense. One was a study of the ground-water recharge capacity of the Cohansey Sands in Cumberland County. The other was an analysis of the natural radio-activity of ground

water not affected by artificial factors as indicated by well samples gathered from Warren County to Atlantic City. The former is a continuing study of the Geological Survey.

## WATER CONSUMPTION

The following table shows the comparative consumption of water supplied by public systems during the calendar years 1951 through 1955.

	Consumption - Million Gallons Daily				
	1951	1952	1953	1954	1955
Northern Metropolitan Dist.	393.37	405.47	420.01	413.37	431.28
Southern Metropolitan Dist.	75.06	76.99	78.41	80.03	85.25
Seashore Area	43.58	45.51	47.24	48.02	49.50
Rest of State	45.93	46.03	47.50	50.33	52.15
Total	557.94	574.00	593.16	591.75	618.18

The public water supply consumed in New Jersey each year is developed and distributed by 156 municipal systems, ninety-three private water companies, one major regional association (The North Jersey District Water Supply Commission) and by the State of New Jersey in operating the Delaware and Raritan Canal as a source of water supply. More than fifty per cent of the public supply is used by industry, which also obtains three billion gallons of non-potable water daily for consumptive and non-consumptive purposes. As noted above, an unknown but increasing amount of water is being used for irrigation, which farmers regard as essential to their financial success.

## DAMS AND STREAM ENCROACHMENTS

Since 1912 the Division has regulated the erection, alteration and rehabilitation of dams on New Jersey rivers and streams to protect these structures from failures that would release impounded waters or interfere with the safe passage of floods. Any individual or group contemplating construction or rehabilitation of dams must apply for a permit and submit plans and specifications to the Division. Permits are granted when projects conform to the Division's engineering requirements. Subsequently the staff inspects the



construction work as it progresses and issues letters of acceptance to the owner of the structure upon satisfactory completion.

The regulation of dam construction is only one aspect of an effort to safeguard the public from improper development of rivers and streams. In recent years there has been cause for apprehension in the steady encroachment on flood channels. A stream, of course, is nature's device for conveying upland drainage to major rivers and eventually to the sea. If, however, as population density rises, persons settle along the banks of streams, and obstructions are built in ever larger numbers within flood waterways, serious interference with the primary natural function of streams is inevitable. This problem is probably of more concern in New Jersey than in any other state because of the high average density of its population, which becomes especially great in the metropolitan regions adjacent to New York City and Philadelphia. At present, stream encroachments are most critical in the northeastern area of the state, but measures to prevent the misuse of flood channels are needed in all sections.

The Division has been given a certain degree of authority to deal with this problem. In 1929 the Legislature enacted a bill requiring State permits for the reconstruction or repair of any such device or structure as a bridge, retaining wall, stream enclosure, channel improvement, pipe line, or conduit within the ordinary high water mark of a stream. All such permits are issued by the Division.

This form of regulation alone obviously is not sufficient to insure protection of flood channels. It must be supplemented by local action. Municipal planning boards are becoming more flood-conscious today than ever before, and many have acted to preserve streams as "highways for the passage of flood waters" by establishing stream encroachment lines. The Division participates in the process by determining and approving locations for encroachment lines and keeping records of such actions. These encroachment lines, or channel lines as they are sometimes called, serve two purposes: (1) They reserve for the stream a sufficient channel area for the safe passage of flood waters and (2) they designate

for the riparian owners that portion of his lands which can be used without aggravating flood problems on his neighbor's property. The lines do not prevent lowlands from being flooded, however, nor do they stand as a barrier to the development of such areas so long as sufficient channel width is maintained to meet the requirements of flood discharge. They therefore cannot be regarded as a substitute for flood plain zoning.

**STATISTICAL SUMMARY.** During the past year the Division issued eight permits for the construction or reconstruction of dams and made fifty-two inspections of new or existing facilities of this type, including two dams in Sussex County that failed in the course of Hurricane Diane in the summer of 1955. One-hundred-and-sixty-seven permits were granted for various forms of stream encroachments, among which were permits for sixty-six bridges, nineteen channel improvements, three fills, thirteen stream encroachment lines, fifteen stream crossings by public and private utilities, and nine miscellaneous projects. The engineering staff made fifty-three inspections in connection with stream encroachments, and two public hearings were conducted to consider encroachment complaints.

## FLOOD CONTROL

The year 1955 was the most devastating flood period in the recorded history of New Jersey and focused attention more than ever before on the need for new and extensive flood control measures.

**FLOOD CHRONOLOGY.** The floods came on the heels of a long period of drought, which had assumed dangerous proportions by July, 1955. The first instance of flooding occurred as a result of a series of thunderstorms culminating in a cloudburst of maximum intensity on August 7 that snapped the protracted dry spell. The thunderstorms caused serious flood conditions on many small streams as well as in metropolitan sewer systems over an area extending from Trenton to Elizabeth. During the cloudburst precipitation totaled 2.16 inches at Trenton



during a single twenty-five minute interval to establish a new record for intensity of rainfall at this point.

Major flooding occurred again on August 13 as a consequence of rains accompanying Hurricane Connie. Flood stages were high throughout the central and northern regions of the state, especially on the North Branch of the Raritan River and on the Elizabeth River in Union County, where water rose to levels approaching or equaling the maximum of record.

Appearing in the wake of Hurricane Connie was the erratic Hurricane Diane, which hesitated off the Atlantic Coast for a time and finally moved inland in the vicinity of Wilmington, North Carolina on August 16. By the afternoon of August 18 it had been officially written off as a hurricane. Although heavy precipitation was still forecast for some areas, there was no indication that during the next two days remnants of the storm would set in motion the most disastrous flood in the history of New Jersey.

Rains borne by the dying hurricane sent the waters of the Delaware River rushing over their banks, and the river—along with two tributaries, Flat Brook and Paulins Kill—reached levels considerably in excess of the heights attained during the previous maximum flood of record of October, 1903. Flood stages on the Raritan River and its North and South Branches approached the record levels of 1896 and 1938, and there was dangerous flooding elsewhere in northern and central parts of the state. Flood waters in the Passaic River basin were high, particularly on the Pompton River and its tributaries, but, fortunately, conditions did not approach the seriousness of those experienced during the floods of 1936, 1945 and 1951.

Industrial and residential properties were damaged extensively in the Delaware Valley over a area stretching from Burlington below Trenton to the New York State line. Stockton, Lambertville, Ewing Township, and the low-lying sections of Trenton, for example, were heavily inundated. Meanwhile, the failure of two dams on Paulins Kill resulted in the destruction of a large portion of Branchville and caused severe damage

throughout Sussex County, which apparently was hit harder than any other county in the state.

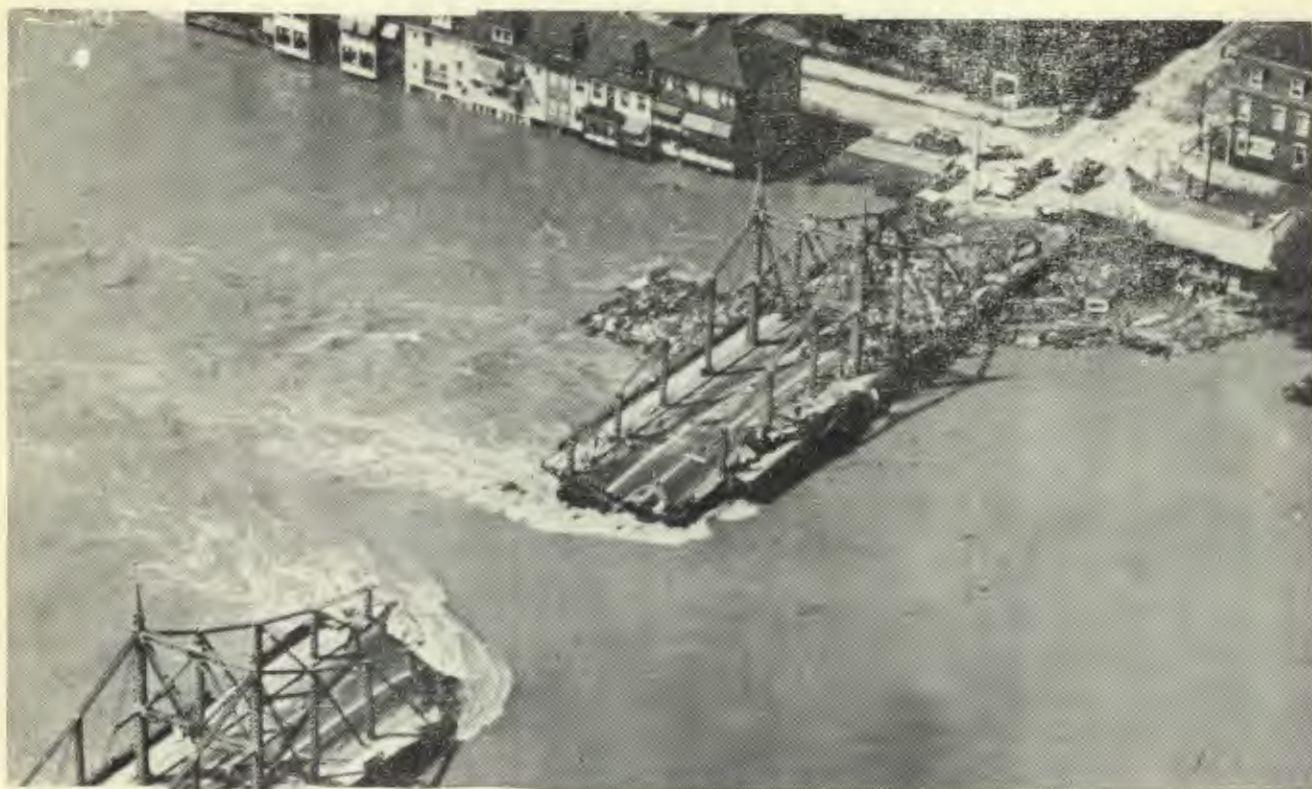
Flood waters also played havoc with roads and bridges at many points. The Delaware River bridges at Yardley, Phillipsburg and Point Pleasant, along with the old covered bridge at Portland, were destroyed, and spans at Lambertville and Washington Crossing were undermined to the extent that they could not be used again prior to major repairs. Many important highways in the northwestern region of the state were closed because of landslides, wash-outs or bridge failures. In Sussex County alone forty-seven bridges were covered by water, and sixteen of these were heavily damaged or destroyed.

On the basis of reports issued by the State Flood Disaster Coordinating Committee, the flood of August 19-20 claimed six lives and caused direct physical damage of approximately \$30 million to property in New Jersey. This damage estimate, of course, takes no account of the great unmeasurable indirect costs of the flood—the price paid in the form of lost wages and interruptions of business, the devaluation of real estate, the disruption of traffic, and expenditures for disaster relief. As to personal hardship, American Red Cross reports showed that the flood displaced 7,864 persons and that 2,161 families suffered property losses. Altogether, ninety-three residences were destroyed, and 1,500 were damaged.

Serious though it was, the flood damage in New Jersey was not as great as the devastation in several other northeastern states. If, moreover, Hurricane Diane had been centered closer to the urban areas of northeastern New Jersey—particularly over the Passaic River Valley, where the ground already was saturated with the heavy rains of the previous week—the state would have faced a disaster many times worse than what occurred.

The events of late August did not mark the end of the flood season of 1955. Another major inundation occurred in October. On this occasion, heaviest flooding was in the Passaic River basin, especially in the Ramapo Valley,





**In the great flood disaster of August 19-20, 1955, the "free" bridge on the Delaware at Easton was severed (upper photo) and the center portion of the span was carried downstream by the raging waters. In the meantime, the flood struck a blow at Trenton (lower photo), and the entire area in the vicinity of the State House was inundated. (Illustrations courtesy of Hunterdon County Democrat)**







The devastating character of the flood is further indicated by these two scenes. In the upper photograph a house washed from its foundations and forced into the swirling mainstream of the Delaware is about to collide with a bridge at Milford. The lower photograph shows how one of the principal thoroughfares in Lambertville looked on the second day of the flood. (Illustrations courtesy of Hunterdon County Democrat)





where river stages were higher than they had been for fifty-two years. The Wanaque Reservoir spilled over for the first time since 1953 and many families had to be evacuated from their homes in the Pompton and Upper Passaic Valleys. Flooding up to a height of two feet was reported in one section of Paterson. Many streams in Bergen County as well as the Raritan River attained flood levels approaching those recorded in late August. The Delaware River again overflowed at some points, but damage was comparatively negligible.

**SIGNIFICANCE OF FLOODS.** The most obvious lesson of August and October, 1955, is that the great floods of the past can be equalled or exceeded. There has even been speculation that the northeastern states may have entered a prolonged era of great floods. Some meteorologists believe that a shift in the path of the little-understood jet streams of the upper stratosphere served to deflect the hurricanes of 1955 and to direct them toward the northeastern states. If any such shift did occur and should prove to be of long duration, experts agree that the northeast would face a serious flood menace. Present knowledge of the behavior of the jet streams and the effect of its behavior on tropical storms is too limited for any conclusive opinion on this point. The developments of recent years do tend, however, to justify the doubt of some hydrologists about commonly accepted estimates as to normal flood frequency in this region. Historical records of floods on the Delaware, for example, go back to 1687. While sketchy and incomplete, they indicate that, on a long-term basis, floods have been greater in magnitude and far more frequent than the experience of the past fifty years would suggest.

In any event, the disasters of 1955 underscored the need for a revaluation of the water problems of New Jersey and other northeastern states, and, as reported above, prompted the Public Works Committee of the U. S. Senate to order a comprehensive study of the water resources of the River basin by the Army Corps of Engineers. New Jersey awaits with particular interest an interim report due January 30, 1957, on the relative merits of two alternative proposals for dam and reservoir construction on the Delaware. One calls for the erection of a major

dam at Wallpack Bend, a project originally recommended by the Interstate Commission on the Delaware River Basin. The other calls for a development, downstream, at Tocks Island, with a larger reservoir that would provide substantial flood control as well as the water supply benefits and stream flow regulation offered by a dam at Wallpack Bend.

Within the state itself, the Passaic River basin has long posed the principal flood control problem. Since the major flood of 1903, numerous plans have been proposed to effect a solution. In a survey report prepared in 1948, the Corps of Engineers recommended a comprehensive plan designed to provide flood control works along with secondary water supply benefits. The project, which would have cost approximately \$96 million at that time, entailed the construction of a large multiple-purpose reservoir in the rapidly developing Upper Valley and channel improvements along the already highly developed lower river. As in the past, however, the divergence of interests of the Upper and Lower Valleys stood in the way of agreement on the plan.

This particular problem becomes more serious every year because the northeastern metropolitan area continues to expand, reaching into the Passaic Valley flood plains. The floods of 1955 served as a reminder that a disaster involving heavy loss of life and great property damage remains a constant threat in the absence of effective flood control measures. Because of this, a special Governor's Passaic Valley Flood Control Committee was established in 1953 at the request of Morris, Passaic, and Essex Counties and the Passaic Valley Flood Control Association, representing municipalities in the Lower Valley. Assisted by the Division of Water Policy and Supply and seeking the cooperation of interests throughout the region, the committee investigated the question in its entirety, with particular attention directed toward outstanding political and social issues. It bent every effort to reconcile the view of parties previously divided on the question and to formulate a feasible and equitable program. While complete agreement on methods was still to be reached at the end of the fiscal year 1955-56, Passaic Valley residents, with few exceptions,



displayed a consciousness of the urgent demand for flood control works, and the Corps of Engineers was asked to study the Passaic basin anew, with a view to drafting a flood control plan that could be justified economically and would conform, insofar as possible, with the wishes of all sections of the valley.

#### **FLOOD CONTROL WARNING SERVICE.**

In view of the grave character of the 1955 floods and the need for a more effective warning service, the U. S. Weather Bureau began during the year to lay the groundwork for eventually forecasting flood conditions throughout New Jersey. (In previous years forecasts were made only for the Delaware River basin.) As an initial step toward state-wide coverage the Bureau planned to establish a forecasting center at Trenton. In cooperation with the Division, the federal agency also was arranging to set up a rainfall and run-off grid that would provide the hydrological data necessary for an extension of flood forecasting to the Passaic and Raritan Rivers.

The importance of an effective warning system to permit the evacuation of persons from their homes and the removal of as much property as possible is obvious. In the past the Division has had no official responsibilities for action in the event of flood emergencies. Division engineers are generally familiar with the flood problems of the state, however, and under recently instituted procedures, the Division is to assist in the future by interpreting flood forecasts issued by the Weather Bureau and by advising the Director of Civil Defense on significant developments. In assuming this responsibility, the staff needs additional resources for completion of a survey of areas menaced by floods in order to obtain the basic data necessary for improving the warning system.

#### **DELAWARE AND RARITAN CANAL**

The Delaware and Raritan Canal flows across the central region of New Jersey for a distance of approximately sixty miles, linking New Brunswick on the Raritan River with Trenton on the Delaware. It was completed in 1834 during the heyday of the canal era. Ap-

proximately 100 years later it had to be abandoned as a transportation artery because of the continuing loss of traffic. In 1944 the State decided to operate the canal as a source of water supply, and immediately undertook a long-range program of rehabilitation of canal structures, consisting of the reconstruction of dilapidated locks, control devices and aqueducts and the dredging and walling of the canal to insure continuous delivery of water over its entire length. Responsibility for these improvements and the operation of the Delaware and Raritan as a source of water supply were assigned to the Division of Water Policy and Supply.

In 1955-56 the canal was the victim of the unusual and extreme variations in weather conditions that brought major drought and a devastating series of floods to the state within an interval of four months. When the drought was broken in August by a record cloudburst, the canal overflowed its banks in Trenton, inundating the properties of a private concern. The cloudburst was followed by the record flood of August 19-20, which caused considerable structural damage to the waterway along the Delaware River, particularly in the area of intake, and along the Raritan River above New Brunswick. In addition, the flood left heavy deposits of silt at the mouth of the canal and at all incoming streams. This, coupled with the accumulation of debris, threatened to interfere with the maintenance of flow. Measures were taken immediately to deal with the emergency, and the most urgent repairs were virtually complete by October 15 when another major flood struck the northern and central regions of the state. Fortunately, on this occasion, the canal was spared further structural damage, but new silt bars were deposited and the material only recently removed from the mouth of the feeder was washed back into the channel. At the same time a small bank-break on the Raritan River caused by earlier flooding assumed major proportions. Thus the repair work was resumed, and all emergency repairs had been completed by December, 1955, at a cost of \$53,970. (The State received \$35,220 from the federal treasury to help defray the cost under Public Law 875, which provides for federal aid in the event of major disaster.) Other repairs of a non-emergency



character remained to be made. It was estimated that these would cost \$120,000. The Division planned to fit them into the schedule of long-term canal improvements in order to avoid any disruption of service to water-users.

In the meantime, the rehabilitation program inaugurated after the war was carried forward, with the modernization of flood gates at Kingston (completed in time for use during the August flood) and at Washington Crossing. Plans for other improvements were on the drawing board as the year ended.

The use of the canal as a source of water has exceeded all expectations since it was taken over for this purpose. In 1955-56 an agreement was signed with the Lambertville Water Company for the delivery of 200,000 gallons daily, and the existing agreement with Johnson and Johnson was amended to permit the company to draw water from the canal at points other than New Brunswick. As the fiscal period ended, hearings were still in progress on the application of the Elizabethtown Water Company Consolidated for an additional supply of 20 million gallons daily. Hearings also had been opened on the application of the Curtiss-Wright Corporation for 1.25 million gallons daily and on the application of the *Newark News* for six million gallons daily. Action was pending on applications of North Brunswick Township, East Brunswick Township and the City of New Brunswick for a total supply of 28 million gallons daily.

As of June 30, 1956 the Division had contracted for the total delivery of 38.6 million gallons daily. If all pending applications were approved, the amount of water supplied from the Delaware and Raritan would exceed its designed delivery capacity.

Receipts from the sale of water continued to rise, with income for 1955-56 totaling \$107,606. Income during the previous fiscal period was only \$83,193.

## DELAWARE RIVER MASTER

Under the amended order of the U. S. Supreme Court, (June 7, 1954), permitting New York City to divert an additional 360 million gallons of water daily from the Delaware River basin, the chief hydraulic engineer of the U. S. Geological Survey was appointed River Master to administer certain terms of the decree. He is expected to hold periodic meetings with the officials of the four states of the Delaware Valley, and New Jersey is represented at these conferences by the Division of Water Policy and Supply.

On July 1, 1955, the River Master began weekly distribution of summaries of data on conditions in the basin. On September 1, after notification from New York City that construction of the Pepacton and Neversink Reservoirs had virtually been completed, he placed in effect the provision of the court decree pertaining to this stage of the city's water development program. This was the stage where New York would be increasing its diversion from the basin from an equivalent of 440 million gallons daily to an equivalent of 490 million gallons daily and would have to make certain specified compensation releases from the new reservoirs in order to maintain a minimum rate of flow of 1,525 cubic feet per second in the Delaware at the Montague, New Jersey, gaging station.

At times during the past fiscal year New York voluntarily released water from the Neversink Reservoir in excess of the amount required, particularly during the period of drought ending in the summer of 1955. Increased runoffs accompanying the subsequent storms of 1955 ended drought conditions in the basin, and releases from the reservoir were reduced to a conservation flow. Periodic rains during the balance of the period covered by this report resulted in a rate of flow considerably in excess of the minimum required, and no compensation releases were necessary.

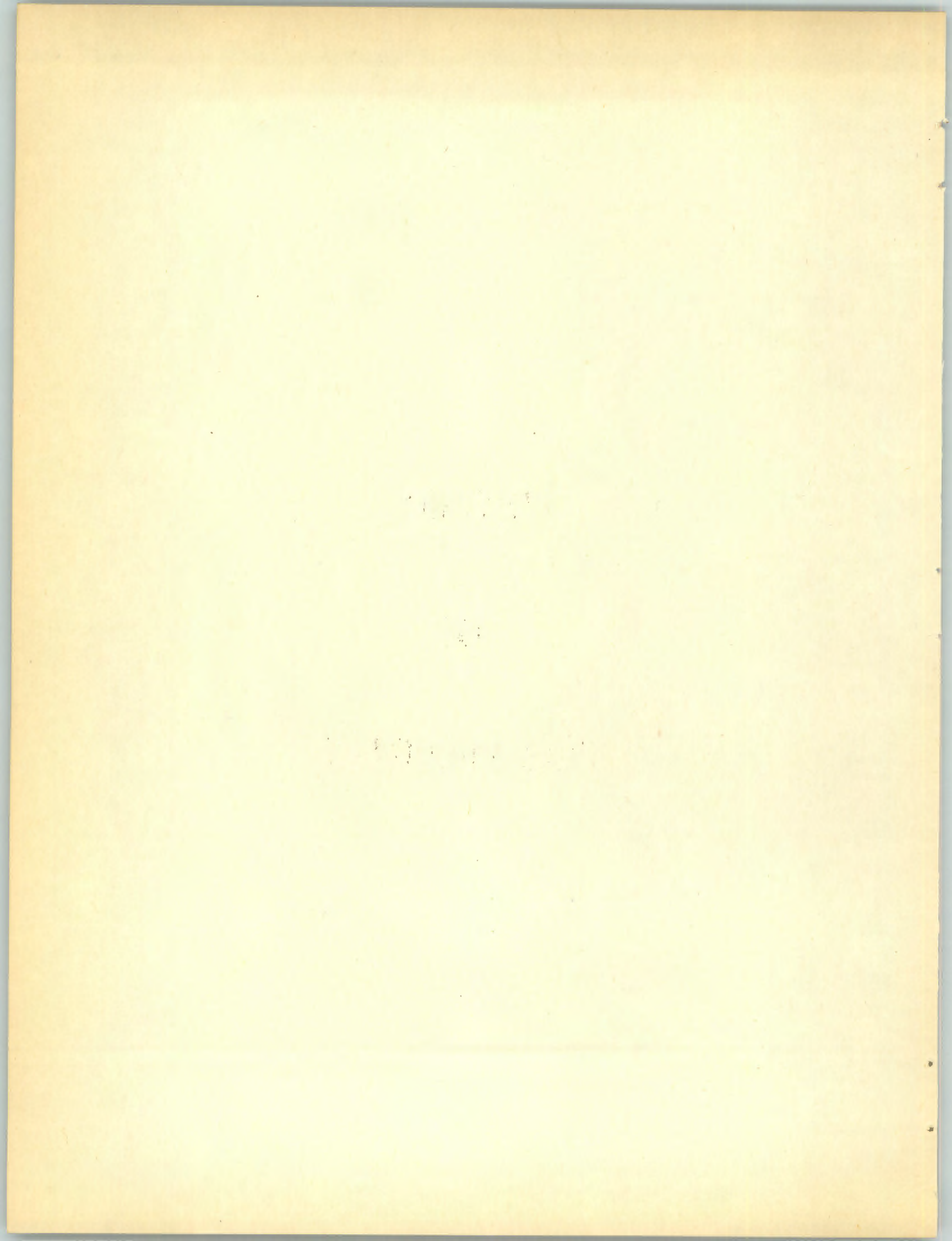


**DIVISION**

**OF**

**FISH AND GAME**







## **Supervisory Staff**

**A. Heaton Underhill**

**Director**

**L. G. MacNamara**

**Superintendent  
of Wildlife Management**

**William P. Coffin**

**Protector**

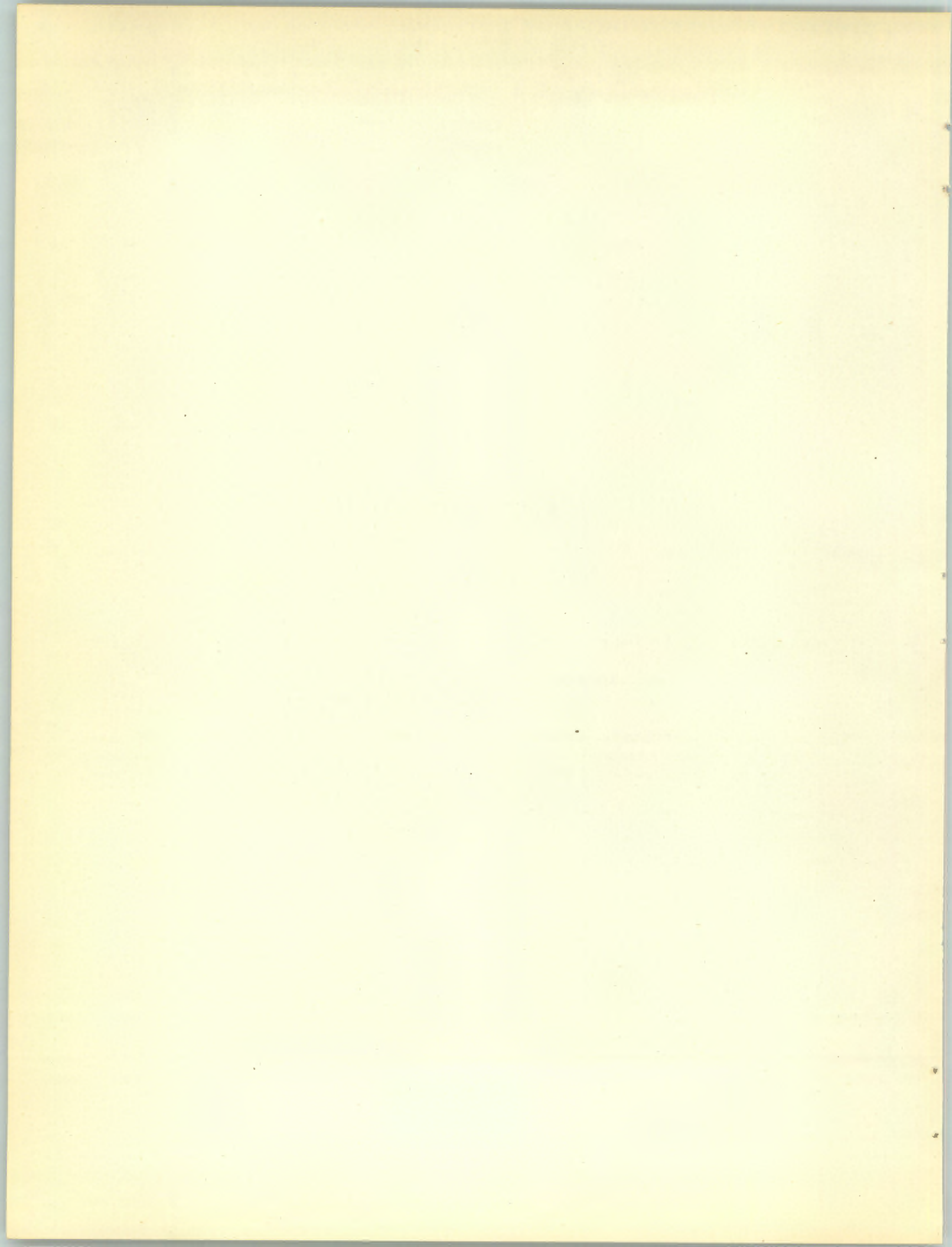
**Robert A. Heyford**

**Principal Fisheries Biologist**

**Jules W. Marron, Sr.**

**Supervisor  
of Public Relations**







## Introduction

The State Division of Fish and Game was created to maintain an adequate supply of fish and wildlife and to expand opportunities for hunting and fishing through scientific management of available resources. The cost of this operation is defrayed entirely with receipts from the sale of hunting, fishing and miscellaneous licenses and federal grants-in-aid for fisheries and wildlife management. The work of the Division is divided into four parts: (1) Enforcement of State laws to conserve fish and wildlife resources and protection of persons and property in hunting areas. (2) Conservation education. (3) Wildlife management. (4) Fisheries management.

Associated with the Division is the State Fish and Game Council, a non-salaried board with eleven members appointed by the Governor. The Council is empowered to draw up the regulations that comprise the State Fish and Game Code and also aids in the formulation of policies for the conservation of fish and game. The Council is further authorized to consult with the Commissioner of Conservation and Economic Development regarding the work of the Division.

The basic problem with which the Division grappled during 1955-56 was the same encountered for the past several years. New Jersey has always had a considerable natural potential for fish and wildlife production. This potential inevitably is being reduced, however, by changing social and economic conditions and uninterrupted expansion in various parts of the state. New Jersey, in a sense, is a buffer between two of the world's largest metropolitan regions. Already more than five and one-half million

persons live in the state--on some 7,000 square miles. Metropolitan areas are steadily encroaching on woods, fields, and marshes that in the past have produced wildlife in abundance. The trend in agriculture toward "clean" farming and the heavier use of chemicals are further reducing the wildlife yield. Increased consumption of water for industry, irrigation, and household purposes, moreover, has diminished the number of areas available for the breeding of fish, and pollution has compounded the problem.

One of the unavoidable consequences of these various developments is that the cost of maintaining the supply of fish and game at a level adequate to meet the requirements of a growing population is moving upward. At the same time the need for intelligent, long-range planning has greatly increased in urgency. The irony of it is that as the on-going process of urbanization poses its threat to fish and game resources, the demand for satisfactory opportunities for hunting and fishing is assuming ever larger proportions. There is widespread agreement that such forms of outdoor recreation are vitally needed to help many persons adjust to the tensions and complexities of modern urban life. Despite the nature of the problem it has been possible thus far to maintain a relatively abundant supply of fish and wildlife resources, and the fish and game of all types harvested in New Jersey each year run into the millions. The future of the supply depends upon general public recognition that it is being placed in jeopardy by the course of modern development and can be preserved only through well-conceived plans for the utilization of land and more vigorous application of other conservation measures.



## LAW ENFORCEMENT

The State fish and game laws and code are enforced by two units of the Division, the Warden Service and the Coastal Patrol. The former has jurisdiction over the entire land area of the state as well as inland streams and lakes. The latter operates in the waters along the Atlantic Coast from the New York State line to the southern tip of Cape May County and from the entrance of Delaware Bay to Trenton Falls in the Delaware River.

In recent years various steps have been taken to improve the effectiveness of the law-enforcement program. In 1954-55 the principal move was to reorganize the Warden Service. During the past fiscal year mobile radio units were installed in all patrol cars. The reorganization and revitalization of the Deputy Warden Service, a volunteer force of 160 men, also was undertaken. Members of the group were given liability coverage that will provide compensation in the event of injury and were instructed in the policies of the Division and in standard procedures for law enforcement in New Jersey. The nature of this instruction was the same as that which had been arranged for regular Wardens, who took a refresher course conducted by the supervisory staff of the Division in co-operation with the State Policy Academy. Ninety per cent of the deputy force took advantage of these briefings.

The Warden Service continued to operate its metropolitan field office at 517 Livingston Avenue in Livingston (Essex County) to furnish the public with information concerning hunting and fishing and to perform various other services. Originally, the office was open twelve hours each day, seven days a week. Subsequently, like other State agencies, the office adopted a schedule of 9 a.m. to 5 p.m., Monday through Friday, because almost 100 per cent of the requests for information came during these hours.

**STATISTICAL SUMMARY.** During the year members of the Warden Service were on duty for a total of more than 112,000 man-hours,

patrolling some 1,250,000 miles by car alone. They spot-checked 74,637 license-holders, and made 1,071 cases against persons for alleged violations of the fish and game laws or code. The case-load was down by 165 from the previous fiscal period, but the number of warnings for minor first offenses showed an increase. The alleged violations were broken down as follows:

License Violations.....	249
Fishing Violations.....	123
Hunting Violations.....	377
Deer Violations.....	61
Firearm Violations.....	225
Miscellaneous Violations.....	36
Total.....	1,071

In the disposition of the cases, twenty-two appeals were taken; thirty-seven defendants were found not guilty; and five persons were committed to jail. Eight defendants received suspended sentences, and nine were placed on probation, conditional upon the payment of fines. The revocation of twenty-two licenses was ordered. Collections from fines imposed during the year totaled \$33,259.

The number of hunting and fishing licenses sold during the calendar year 1955 was 395,400 as compared with 404,689 in 1954. Breakdowns of license sales during the two 12-month periods compared as follows:

	1954	1955
Resident Fishing	141,293	140,029
Resident Hunting	154,734	145,282
Non-Resident Fishing	10,021	9,778
Non-Resident Hunting	1,742	1,607
Resident Trout Stamps	78,382	79,546
Non-Resident Trout Stamps	2,838	2,711
Resident Bow and Arrow	15,145	15,753
Non-Resident Bow and Arrow	71	101
Special One-day Non-Resident Hunting	463	593
Total	404,689	395,400

**HUNTER SAFETY PROGRAM.** All applicants for hunting licenses between the ages of fourteen and twenty-one are required by law to com-



plete a four-hour hunter safety course. This was inaugurated during the year 1954-55. In the past year emphasis was placed on the development of a broader safety program, which, among other things, would lay greater stress on methods for the use of the shotgun and bow and arrow. In the interest of this objective, 394 volunteer safety instructors certified by the National Rifle Association met in district conferences to work out arrangements for the program.

During the year 2,987 persons under the age of twenty-one completed the initial training required to qualify for hunting licenses, and 3,362 persons of all ages received instructions in hunter safety. In another phase of this effort 3,000 posters explaining the hunter safety law were distributed for use in schools along with other literature on the topic of safety.

**HUNTING ACCIDENTS.** Fifty-two hunting accidents were reported in 1955-56, twelve occurring during the deer season (including one during the bow and arrow season) and forty during the waterfowl and upland game season. One of these was fatal, involving a hunter who died of an accidentally self-inflicted wound during the upland game season. Fifteen were caused by persons under the age of twenty-one. The most common reason for the accidents was that the victims had moved into "the line of fire."

## CONSERVATION EDUCATION

The Public Relations and Conservation Education Unit of the Division was established on the premise that the conservation of fish, wildlife, and other natural resources depends chiefly upon public understanding of the problems involved. The unit has sought to develop, through a variety of media, a more realistic appreciation of the necessity for measures to protect soil, watersheds, forests and the supply of fish and game.

During the year members of the staff met with approximately 1,085,855 youths and adults, and through lectures, exhibits, and other visual aids attempted to explain and cultivate greater

interest in New Jersey's general conservation program. The following items indicate the extent of this effort:

1. Twenty-six exhibits were displayed for a period of eighty-one days.

2. The Conservation Caravan made stops at twenty-four Boy Scout Camps and was on the road for fifty-five days, visiting encampments with a combined attendance of approximately 10,000.

3. One-hundred-and-twenty-seven conferences were conducted and 287 lectures were given, with approximately 58,540 persons in attendance.

4. Sixty-one field trips were arranged for various groups. (This type of activity is receiving increased emphasis for the obvious reason that the average youth gains a clearer understanding of conservation needs from time spent in the field than from classroom lectures and exhibits.)

5. Nine seminars were conducted for groups of elementary and high school teachers.

6. Twenty-two radio programs and eleven television shows dealing with conservation and fish and wildlife were produced.

In addition, the education unit prepared and distributed a new brochure entitled "Facts You Should Know", with information concerning the over-all activities of the Division of Fish and Game, a breakdown of income and expenditures, and a listing of current and long-range problems. At the same time, members of the staff assisted the Governor's Committee on Young Outdoor Americans with arrangements for its conference and attended several meetings called to formulate plans for a National Boy Scout Jamboree, scheduled for Valley Forge in 1957. The unit also continued the publication of *New Jersey Outdoors*, the Division's monthly periodical, whose circulation had climbed to more than 17,000 by the end of the fiscal year. This compared with a circulation of 11,640 at the end of the previous fiscal year. One of the unit's most notable undertakings was of an Explorer Scouts Conservation Camp in South Jersey, conducted by personnel representing various units in the Division of Fish and Game.





Young sportsmen receive instruction in shooting and the handling of guns as part of the Division's hunter safety program.

### WILDLIFE MANAGEMENT

The operations of the Division's wildlife management unit consist of research on wildlife conservation problems, maintenance of public shooting and fishing grounds, efforts to restore the habitats of wildlife, the production and liberation of game to supplement the natural supply and the trapping of animals constituting a nuisance or posing a threat to life and property.

**GAME SUPPLY AND HARVEST.** Despite the drought and floods of 1955, the wildlife supply remained at a level sufficiently high to offer reasonably good opportunities for hunting. The harvest, according to Division surveys, varied in several respects from that of 1954-55. In the case of rabbits, squirrels and ducks, it was

smaller, and high tide and storms seriously curtailed the supply of clapper rail. Hunters also killed fewer foxes, and the harvest of woodcock and grouse appeared to decline. On the other hand, the harvest of pheasants rose sharply; a slight increase in the number of quail taken by hunters was noted; and the legal "deer-kill" proved to be the highest on record. In addition, more liberal hunting regulations led to a considerable rise in the number of raccoons killed during the year.

The following table compares the harvests of the major species of wildlife during the years 1954-55 and 1955-56:



Species	Estimated Total Amount of Game Killed	
	1955-56	1954-55
Rabbit	480,123	559,756
Squirrel	198,653	208,102
Duck	128,555	137,083
Pheasant	118,051	90,111
Quail	66,091	65,347

Species	Change From 1954-55 Total		Percentage of Change
	Increases	Decreases	
Rabbit		79,633	-14.23
Squirrel		9,449	- 4.54
Duck		8,528	- 6.22
Pheasant	27,940		31.06
Quail	744		1.14

It is possible that the reduction of the harvest of certain species stemmed from lower "hunting pressure". The number of persons engaged in hunting as a form of recreation declined at least temporarily during the year, although this was not reflected in the use of the public shooting grounds. Changes in hunting pressure for each of several species were reckoned by the Division as follows:

Species	Estimated Number of Hunters		Percentage of Change
	1955-56	1954-55	
Rabbit	105,654	119,988	-11.95
Pheasant	67,776	69,745	- 2.82
Squirrel	52,742	58,617	-10.02
Quail	30,412	31,613	- 3.80
Duck	24,967	27,398	- 8.87

With the advent of spring, 1956, there was a good potential stock of all resident species of wildlife. As the fiscal period ended, the clapper rail had hatched satisfactorily, with all signs pointing to a increased supply for the regular season. There also was evidence that pheasants and rabbits had reproduced satisfactorily, but it was too early to make any predictions as to rates of survival.

**WILDLIFE MANAGEMENT STUDIES.** The Division each year conducts a series of scientific studies in the field of wildlife management, some of which are undertaken in cooperation with the U. S. Fish and Wildlife Service under the Pittman-Robertson Act. This measure, enacted by Congress a number of years ago, provides for federal grants-in-aid to help defray the cost of research and experimentation. The amount of aid granted each state depends upon the area and the number of hunting licenses sold. Generally, the studies are designed to obtain data that will contribute to improvements in management techniques.

Important items in the program during the past fiscal period were as follows:

1. One of the most unusual developments of recent years was the high deer mortality in parts of Morris, Somerset and Essex Counties during the late summer of 1955, and an experimental program was set in motion, under the direction of R. E. Shope of the Rockefeller Institute of Medical Research, to determine the cause. The deaths eventually were traced to a filterable virus. Experimental work on this problem continued throughout the year, and it was reliably established that the disease was not transmissible to domestic stock or other animals. The study was to be pursued further in the hope of discovering the method of transmission and of ascertaining the source of infection. The phenomenon was given the diagnostic label of "epizootic hemorrhagic disease of deer."

2. The Division also cooperated with the Rockefeller Institute in its research on a skin tumor occasionally found in deer.

3. Field inquiries were conducted in the cases of all wild animals found dead throughout the state.

4. An evaluation of water-level control continued to determine the proper techniques for greatest waterfowl and muskrat production.

5. Live-trapping and banding of waterfowl continued for the purpose of determining migration routes, utilization of existing supplies, and sources of New Jersey's ducks.





**State trappers demonstrate methods of apprehending predatory animals in a session with poultry farmers.**

6. A census of flights of waterfowl from Morgan on Raritan Bay, south to Cape May, thence along the shore of Delaware Bay and on the Delaware River to Paulsboro was taken on a bi-weekly basis during the fall to furnish New Jersey's portion of an Atlantic flyway picture of seasonal waterfowl movements.

7. A study of the "ecological aspect of tidal marshes" was completed, and the findings were being prepared for publications.

8. Information gathered in a survey of the effectiveness of impoundments as a means of

mosquito control also was being assembled for publication. This survey was a cooperative effort of the Department of Entomology of the New Jersey Agricultural College, the Bureau of Entomology of the U. S. Department of Agriculture, the U. S. Fish and Wildlife Service and the Division of Fish and Game.

9. The Division conducted a study of woodcock and dove in cooperation with Pennsylvania State University and the U. S. Fish and Wildlife Service to ascertain the status of breeding populations in this section of the country.



### **PUBLIC SHOOTING AND FISHING GROUNDS.**

The public shooting and fishing grounds owned by the State have been acquired over the years with funds derived from the sale of hunting and fishing licenses. They help satisfy the growing demand for adequate hunting and fishing opportunities and serve as excellent "laboratories" for wildlife and fisheries management.

During the past year 11,012 acres were added to the fish and wildlife reserves, increasing the acreage in public shooting and fishing grounds to more than 80,032 as of June 30, 1956. New land acquired included the Cadwalader Tract near Heislerville in Cumberland County, consisting of 2,208 acres; the Peaslee Tract near Bennetts Mill in Cumberland County, consisting of 8,800 acres; and the East Point Light Station Tract in Cumberland County, consisting of four acres. The Green and Ehrlich properties on the Pequest River in Warren County were acquired for fishing, with more than two miles of streams involved. Several other areas were being studied for possible future acquisition as the year ended.

Development of the shooting and fishing grounds progressed during the year, with improvements completed at the following tracts: Flatbrook, Clinton, Berkshire Valley, Lockwood Gorge, Colliers Mills, Lakehurst, Manahawken, Tuckahoe, Millville-Haleyville, Glassboro, Cadwalader and East Point Light Station. The over-all program for the year included the management of 7,370 feet of hedgerow, the planting of 261 food patches, the maintenance and improvement of forty-one miles of roadway, the planting of 4,900 trees and shrubs, the maintenance of twenty-two miles of "firebreak," the clearing of 104 acres and the sowing of twenty-seven acres with corn, fifty-four acres with *Lespedeza sericea*, and 361 acres with rye.

The utilization of shooting and fishing grounds is indicated by the number of persons visiting the Clinton and Colliers Mills Tract during the year. The total at Clinton was 13,589, of whom 6,744 were hunters, 2,800 were sports fishermen, and 3,420 were spectators at field trials. The remainder were picnickers, equestrians, Boy Scouts and other campers. The total number of visitors at Colliers Mills was 133,980,

of whom 6,720 were archers and 23,495 were persons interested in fishing, swimming, picnicking, boating, hiking and photography.

The shooting and fishing grounds also were used for eighteen field trials. Seven of these were conducted at Flatbrook, five at Clinton, and six at Colliers Mills.

**STATE GAME FARMS.** In order to supplement the natural reproduction of game and to insure ample breeding stock for the spring, the State Game Farms produced 120,345 pheasants and 37,150 quail during the year. Of the total the farms distributed 41,308 day-old pheasant chicks and 7,052 day-old quail to be raised by boys and girls participating in the Youth Cooperative Program sponsored by the Division. Also during the year 104,875 pheasants and 28,559 quail were liberated in various parts of the state. Of these, 71,620 pheasants and 21,578 quail came directly from the game farms; while 33,255 pheasants and 6,981 quail were raised by participants in the Youth Cooperative Program.

In the spring of 1956, extensive repairs were undertaken at the Rockport Game Farm as a consequence of damage caused by the severe snowstorm of April 7, 1956. The loss was estimated at \$50,000 and included a considerable amount of breeding stock. In addition many covered pens at the farm were flattened. Through the cooperation of the Department of Institutions and Agencies, a group of boys from the New Jersey Reformatory at Annandale aided the Division in rehabilitating the facilities.

### **RESTORATION OF WILDLIFE HABITAT.**

Under a cooperative state-federal venture, 497,975 trees, shrubs, and vine seedlings were distributed among owners of rural land to be planted in accordance with plans for improving the habitats or environment for wildlife. More than half of these went to persons enlisted in the U.S. Soil Conservation Service program. In another phase of the effort to restore game habitats, the Division planted 554 food patches. In addition, twenty-four areas, consisting of more than forty-five acres, were planted in soybeans, oats, buckwheat, and *Sanguisorba Minor*; and another forty-five areas, consisting of more





A group of youths are engaged in improving the habitat for wildlife. This particular operation is a phase of hedgerow management.

than 102 acres, were seeded with wheat, rye, vetch, hay mixture, Lespedeza bicolor, Lespedeza sericea, Sanguisorba Minor and bird's-foot trefoil. Along with this, a considerable quantity of seed was made available to individuals and sportsmen clubs interested in the habitat improvement program.

**DEER MANAGEMENT.** The deer population of the state continued to rise, demanding intensified efforts to prevent deer damage to crops and other property and to safeguard persons using public highways. This is now regarded as the Division's principal wildlife management problem. In a move to control movements of the herd---now reckoned at 40,000 to 50,000---and to

restrict it as much as possible to certain areas, diversionary deer food plots were developed on sixty-six acres during the past year. The staff also made a large number of investigations of crop damage in connection with applications for fencing, which the State makes available without charge to land-owners whose property is threatened by depredations. Altogether, 1,562 rolls of mesh wire and 296 spools of barbed wire were distributed in 1955-56, and seventy-six fences erected in previous years were inspected to determine whether repairs were necessary. In addition, the Division distributed 443 gallons of spray that has proved repellent to deer, and in some cases provided actual spraying service.



Investigations arising from complaints over deer damage led to interviews or conferences with 330 individual and groups.

The "deer-kill" in New Jersey, by counties, during the calendar year 1955 was as follows:

County	Firearm Season	Bow and Arrow Season	Illegal
Atlantic	418	12	3
Bergen	77	5	5
Burlington	720	11	15
Camden	89	-	6
Cape May	129	2	-
Cumberland	291	11	9
Essex	48	9	1
Gloucester	27	1	5
Hudson	-	-	-
Hunterdon	749	32	28
Mercer	214	47	19
Middlesex	44	2	1
Monmouth	137	15	4
Morris	714	101	4
Ocean	380	10	9
Passaic	237	14	13
Salem	5	-	-
Somerset	543	59	68
Sussex	751	24	43
Union	4	2	-
Warren	568	12	3
Total	6,145	368	236

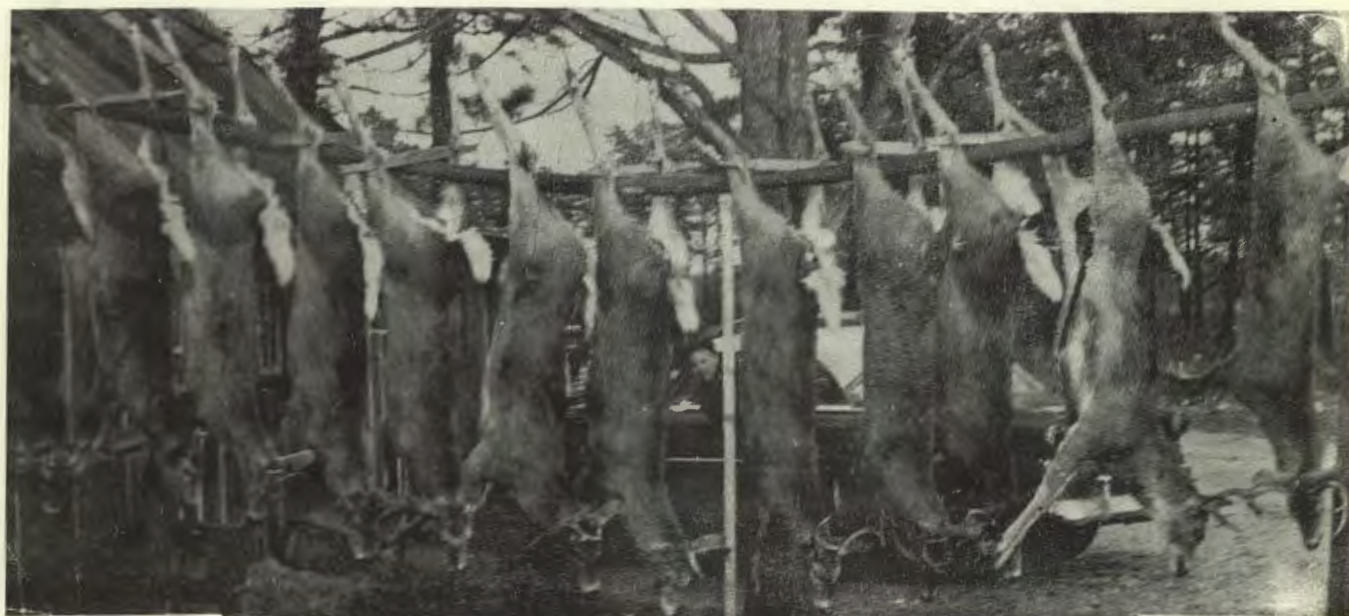
(Apart from the statistics above, 1,775 deer were killed by automobiles, trains, or persons engaged in illegal hunting. In accordance with long-standing practice, the Division sold to 121 sportsmen clubs, for annual banquets, 17,683

pounds of venison obtained from deer either illegally shot or killed in accidents. The income derived from this, together with the sale of hides, totaled \$7,581.70.)

**TRAPPING OF WILD ANIMALS.** In discharging its responsibilities for protection of the public, the Division maintains facilities and full-time personnel for trapping birds and animals that become a nuisance or threat to property.

The principal efforts of the trapping unit in 1955-56 was directed toward the removal of predatory birds and animals from farms and from certain other lands where the trappers worked in cooperation with organized sportsmen. In order to serve farmers more effectively, preventive trapping and predator removal were undertaken in areas where attacks on poultry had been common in the past.

During the year predatory animals and birds removed by this unit totaled 4,448. This was in addition to the live-trapping of 109 deer and sixteen beavers, which were transported to other areas where their presence posed no threat to property or public safety. At the same time 21,500 squirrels, 264 raccoons, 91 opossum, 102 skunks and 13 foxes were trapped in metropolitan areas.



This scene shows the results of three days of hunting from a deer camp in the Pine Barrens of south Jersey.



## FISHERIES MANAGEMENT

The fisheries management program of the Division consists of the stocking of rivers and streams with trout and other fish to supplement the natural supply, research and experimentation, and the implementation of programs to conserve fisheries resources. The fisheries management unit is composed of two sections, the State Hatchery at Hackettstown, opened in 1912, and the Fisheries Field Operation, established within the past decade. As in the case of wildlife management, federal grants are available to help defray the cost of conservation measures.

**HATCHERY OPERATIONS.** Adverse conditions at the hatchery in 1955-56 failed to stand in the way of the production of a record number of 606,278 trout, varying in length from seven to twenty-two inches, with an average length of ten inches. (Without a program of this scale, there would be little if any trout fishing in New

Jersey.) Seven thousand of the trout were stocked in lakes and streams in September, 1955, and the remainder during the regular trout season of 1956. In addition, 430,407 trout, less than seven inches in length, were stocked on an experimental basis, bringing the total number placed in the inland waters of the state during the 12-month period to 1,036,685. The commercial value of the trout was reckoned at \$487,874, calculated on the basis of average lengths and weights. The hatchery crew continued to follow the policy of stocking small streams with smaller trout and the major lakes and streams with the larger varieties.

Along with trout production, the hatchery raised and stocked 11,064 bass, 500 blue gills and 202 shiners. These had an estimated commercial value of more than \$40,000.

The following table gives a statistical view of fish production and distribution in 1955-56.

Species of Fish	Size in Inches	Produced July 1, 1955	Released	Estimated Number on Hand
		to June 30, 1956		June 30, 1956
Rainbow Trout	1-8	482,799	3,199	479,600
Rainbow Trout	8-12	191,509	136,809	54,700
Rainbow Trout	12-18	35,574	31,156	4,418
Rainbow Trout	18-21	277	277	-
Brook Trout	2-8	676,713	183,513	493,200
Brook Trout	8-12	189,969	172,169	17,800
Brook Trout	12-18	14,018	11,655	2,363
Brown Trout	1-8	877,929	282,379	615,550
Brown Trout	8-12	236,575	214,325	22,250
Brown Trout	12-18	25,407	20,938	4,469
Brown Trout	18-22	265	265	-
Largemouthed Bass	1-10	130,851	104,251	126,600
Smallmouthed Bass	1-4	16,813	6,813	10,000
Bluegill Sunfish	4-10	10,500	500	10,000
Landlocked Salmon	1-2	20,000	-	20,000
Shiners	12-16	202	202	-
		3,009,401	1,148,451	1,860,950



For the second successive year high temperatures and low-water conditions created difficulties in hatchery operations. It was necessary, for example, to reduce the feeding of trout by approximately fifty per cent for a brief period, and this retarded the growth of the fish, but, fortunately, it was possible to bring them up to normal size before they were released. High water temperature gave rise to other problems, such as the incidence of microscopic algae. This could have caused heavy losses as a result of the super-saturation of dissolved oxygen if previous experiments had not proved the efficacy of a black dye known as Nigrosine in controlling the spread of algae.

Simultaneously, the hatchery crew had to deal with the usual diseases that accompany low water and high temperatures, and the year was marked by the outbreak of a new disease known as acute catarrhal enteritis. This occurred in April with the late hatching of brook trout. The U. S. Fish and Wildlife Service was consulted, and the agency discovered infections in the late hatches of brook trout at a number of other points. In the future, brook trout eggs will be taken

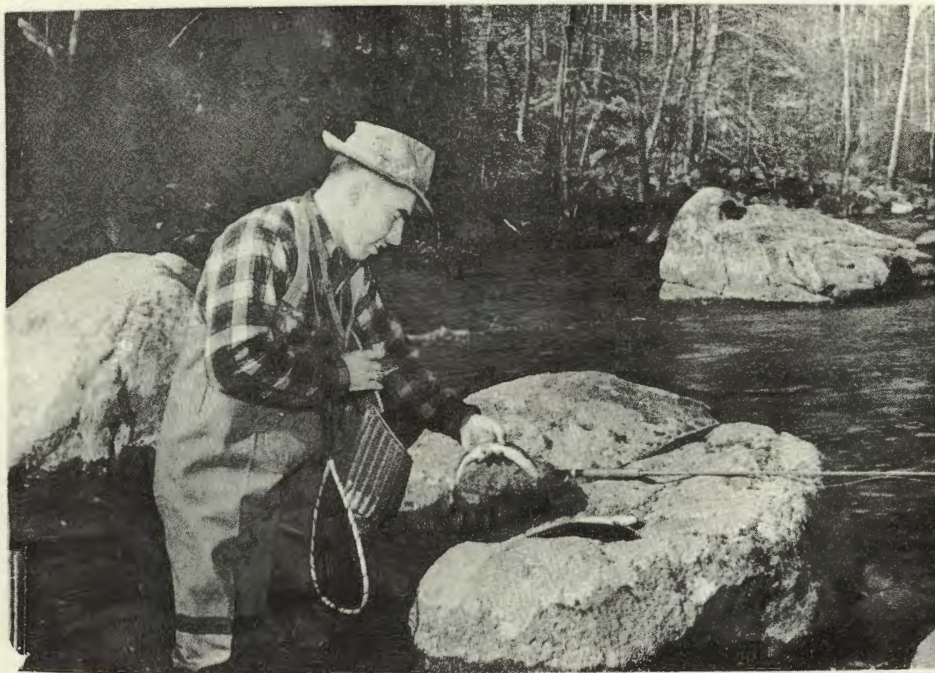
earlier to prevent a recurrence of the disease. All other diseases were kept under satisfactory control.

In the meantime, salmon eggs were hatched, and the young salmon were slow to start feeding, with some consequent losses. There was no evidence of disease, however, and these fingerlings are being raised to furnish a source of State-owned breeders as well as to develop a small animal stocking of several New Jersey lakes found suitable for this game fish. Aside from fish production, the time of the hatchery crew was taken up with work on a program of improvements to the grounds, buildings, roads, and ponds started during the previous fiscal year.

#### **RESEARCH AND EXPERIMENTATION.**

The Division's program of experimentation and research in the field of fisheries management was continued and expanded in certain areas during the fiscal year. The major projects were as follows:

**LAKE SURVEYS.** Four additional lakes were surveyed, increasing to 120 the number studied



A fisherman pauses to examine the results of a good day's catch on the South Branch of the Raritan River.



since this series of investigations was inaugurated in 1950. The most recent were Sunfish Pond, Sussex County; Atsion Lake, Burlington County; Bargaintown Lake, Atlantic County; and Iona Lake, Gloucester County. The Division also conducted thirteen park pond surveys. The purpose of the studies is to obtain chemical, physical and biological data that will be useful in formulating a sound fisheries management program for each of the lakes. Maps are prepared showing depth contours, physical characteristics of the basin, and the extent to which a particular lake has been developed.

**SALMON STOCKING OF LAKES.** (1) In 1952, the Division stocked Mountain Lake in Warren County with 450 salmon. As precisely as can be determined, more than half of these were caught between that time and June 30, 1956. Others are reported to have been caught, but they were not actually identified, and some might have been brown trout. The salmon known to have been caught ranged in weight from two and one-half to four and one-half pounds.

(2) The first phase of the stocking of Lake Hopatcong with trout, an experimental program undertaken in cooperation with the Knee Deep Hunting and Fishing Club, was completed. This three-year study was designed to ascertain the feasibility of stocking Hopatcong with trout on a continuing basis. Approximately fifty per cent of the fish were caught the first year that they were released. Some 200 "holdovers" were caught in 1955 and generally were of excellent size and weighed up to five pounds. Since these trout feed almost exclusively on herring, a study was initiated to gauge the possible effects on the herring population of the lake and other important species of fish present.

(3) Low water during recent years has necessitated a curtailment of the stocking of certain streams with trout in late spring and during the summer, and for this reason a survey has been conducted to find a larger number of suitable lakes that can support trout during the summer months. One that has shown promise and is open to the public is Iliff Lake in Sussex County. Two years of experimental stocking in this lake disclosed that seventy-five per cent of the trout are caught during the same year that they are released.

**ALKALIZATION OF ACID WATERS.** Data gathered on three lakes investigated by the staff indicated that the supply of fish had increased ten-fold as a result of fertilization and alkalization. There is thus every reason to believe that lakes presently too acid to support bass and blue gills can offer good fishing opportunities with proper treatment.

**LAKE RECLAMATION.** Lakes reclaimed prior to the past fiscal year were checked to determine the results:

(1) Branch Brook Park Lake in Essex County was reclaimed in the fall of 1951, to be managed for bass and bluegill, and various measures were taken to reduce the number of pumpkinseed present in the lake. For the first three seasons, largemouthed bass failed to spawn successfully. Limited spawning occurred in the spring of 1955, however, and raised hope of more substantial improvement in the future. In order to compensate for the lack of adequate spawning, fingerling bass produced at the State hatchery were released each year. In 1955 the results of bass fishing in the lake were 300 per cent higher than the annual average for the fourteen-year period prior to the reclamation program.

(2) Rahway Park Lake in Union County was reclaimed in 1954, but was reinfested not long thereafter with pumpkinseed, catfish, and goldfish. In addition, the hurricanes of 1955 turned the lake into a raging stream, and it is possible that the bass stocked immediately prior to the storms were swept away. Plans called for restocking the lake.

(3) Steenkill Lake in Sussex County was reclaimed after being used to analyze the survival prospects of largemouthed fingerling bass produced at the State hatchery. Smallmouthed bass also were placed in the lake on an experimental basis. Seine checks showed that the rate of survival was favorable, and all fish introduced into the lake were reproducing satisfactorily. Herring and crayfish also were stocked in Steenkill experimentally.

(4) Weis Pond in Sussex County was stocked with fingerling smallmouthed bass during the period 1953-55 and with mature fish in 1954. As of June 30, 1956, reproduction had been taking





**This is the stretch of the Pequest River in Warren County that the Division acquired in 1955-56 for public fishing.**

place since 1954, with the fish maintaining a normal rate of growth. This pointed to the likelihood of a good supply of legal size fish during the regular season. Herring also were released in the lake and began reproducing in 1955, with all signs that they had become safely established there.

**CREEL CENSUS.** A creel census covering twenty-five New Jersey lakes was begun to obtain data with regard to fish landings, species of fish caught, the degree of utilization of the waters for fishing, etc. One spot-check (sample) showed that 7,310 fish were caught during 10,394 hours of fishing by 2,189 persons, using 1.22 lines per person.

**POLLUTION INVESTIGATIONS.** Thirty-nine minor pollution complaints were investigated during the year. In late September, 1955, a

serious "fish-kill" at Alcyon Lake in Gloucester County was traced to a private concern's dumping of cyanide into the town sewer from whence it flowed into the lake. Although warnings were issued, no action was taken in view of the fact that, given the peculiar set of legal circumstances surrounding the case, only the municipality might have been prosecuted. March, 1956, was marked by a serious loss of trout in Square Circle Pond in Camden County, but despite exhaustive tests, there was too little evidence against any party to warrant the filing of a case. Again in March, 1956, a serious "fish-kill" occurred at Warren Glen on the Musconetcong River, and this matter was scheduled for presentation in court during the fiscal year 1956-57. In the meantime, several conferences were held with State and local authorities concerning chronic pollution in Milltown Pond. The upshot of these discussions was an agree-



ment by the Borough of Milltown to attempt to excavate one of the pipes believed to be the source of pollution.

**STUDY OF STREAM ACIDITY.** A study of acid conditions in the Batsto River on the Wharton Tract was launched, and the Division planned further investigations of all aspects of stream acidity insofar as it affects trout production. The presence of excess acidity in any body of water poses a threat to the survival of fish stocked by the hatchery crew.

**FEDERALLY SUPPORTED STUDIES.** Work continued during the year on a series of miscellaneous studies partially financed by the federal government. Included among these were an appraisal of certain techniques of fisheries management employed in New Jersey, an evaluation of various aspects of the program for stocking fish in warm water, an analysis of the fifteen-inch size limit on pickerel, and a preliminary investigation of certain problems in marine biology of special interest to New Jersey. A report containing the results of a three-year marine inventory--designed, among other things, to determine the extent of salt-water fishing in New Jersey--was printed and is available upon request. This inventory served, in part, as a basis for the preliminary study of problems in marine biology initiated during the year.

**FEDERAL DISTRIBUTION OF FISH.** The U. S. Fish and Wildlife Service for many years has distributed fish to be used in stocking private farm ponds. The distribution in 1955-56 in New Jersey was as follows:

Largemouthed Bass	10,404
Brook Trout	1,800
Bluegill Sunfish	89,240
Total	101,444

**COMMERCIAL FISHING.** State licenses are required for commercial as well as fresh-water sports fishing. During the past year, pound licenses were issued as follows:

Atlantic Ocean	37
Sandy Hook and Raritan Bay	67
Total	104

The Division also licensed fifty-two boats for menhaden fishing within the three-mile limit and granted eighty-three licenses for the netting of food fish between the two-mile and three-mile limit.

Additional special licenses for the use of various nets in tidal waters were issued as follows:

Drifting gill	21
Hauling seine	25
Flounder fyke	17
Miniature fyke	754
Fyke	39
Shad	76
Bait Seine	37

Information concerning commercial fishing is compiled by the U. S. Fish and Wildlife Service in cooperation with the Division, and the statistics are presented on a calendar-year basis.

Total landings of all fish and shellfish at New Jersey ports in 1955 amounted to 412.2 million pounds. Menhaden (365.8 million pounds) topped the list, accounting for eighty-nine per cent of the total catch. Surf clams led all other food species with 7.5 million pounds, followed by scup or porgy, with 6.9 million pounds; fluke with nearly 5 million pounds; and oysters, with 4.3 million pounds.

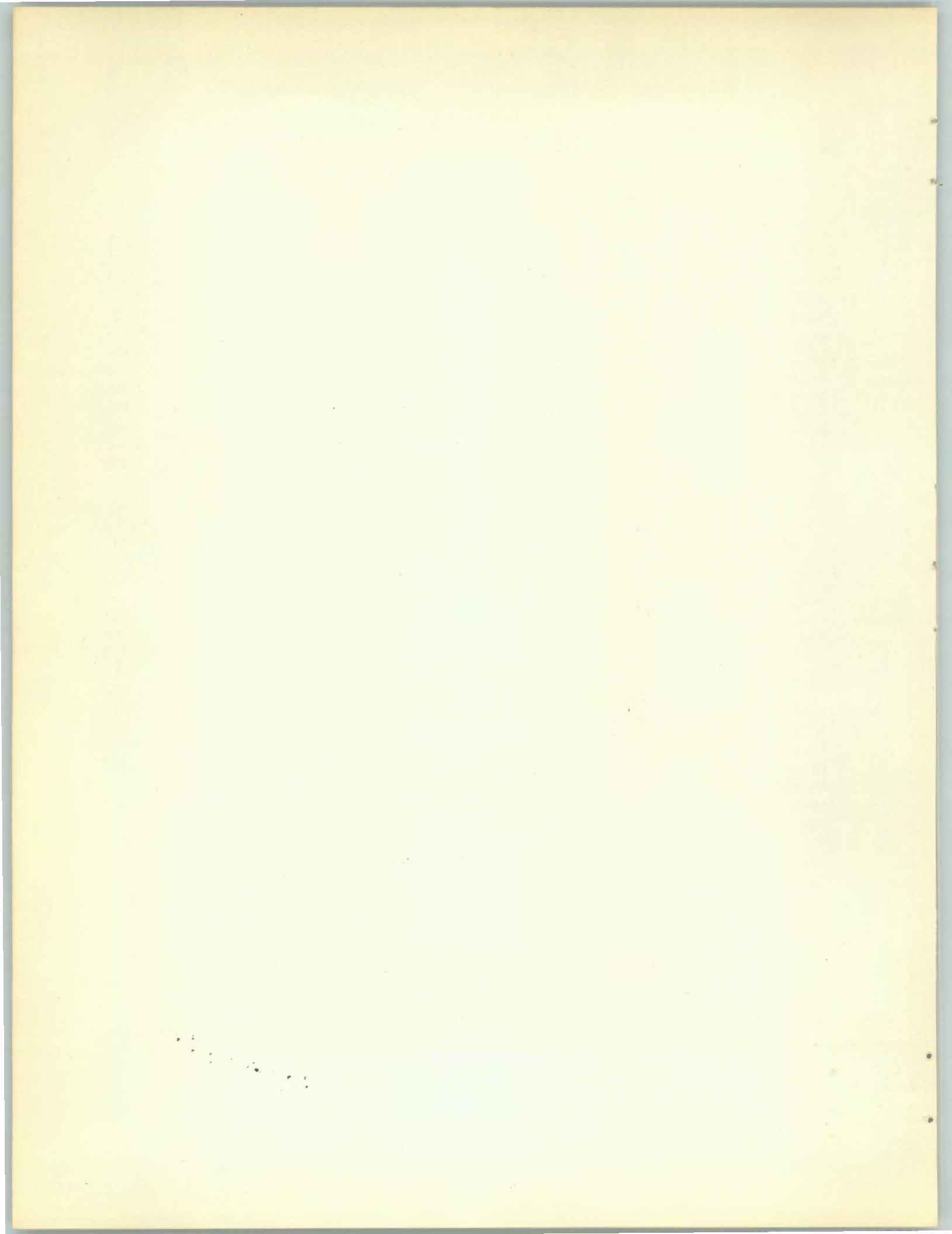
July was the peak month, with landings totaling almost 92.2 million pounds. September was the second, with 82.4 million pounds, and June third, with 78 million pounds.



**NEW JERSEY LANDINGS FOR THE  
CALENDAR YEAR 1955**

Species	Number Pounds		
Amberjack.....	1,225	Sea Trout or Weakfish.....	1,601,255
Anglerfish.....	1,199	Shad.....	929,211
Bluefish.....	784,867	Sharks.....	7,864
Butterfish.....	1,257,438	Skates.....	837
Carp.....	304,164	Spot (Lafayette or Goddies).....	40,781
Catfish and Bullheads.....	4,119	Striped Bass.....	29,774
Cod.....	818,163	Sturgeons.....	5,330
Croaker.....	698,201	Suckers.....	144
Drum, Black.....	2,114	Swellfish (Puffers).....	3,958
Eels:		Tautog (Blackfish).....	18,413
Common.....	34,352	Thimble-Eyed Mackerel.....	825
Conger.....	11,279	Tilefish.....	103,307
Flounders:		Trash Fish.....	1,552,473
Gray Sole.....	18,516	Tuna and Tunalike Fishes:	
Yellowtail.....	8,145	Bluefin.....	4,510
Blackback.....	27,876	Bonito.....	30,611
Dab.....	30	Little (Albacore).....	69,047
Fluke.....	4,988,086	White Perch.....	15,643
Grun t.....	969	Whiting.....	3,654,993
Haddock.....	121	Yellow Perch.....	70
Hake:		Unclassified.....	29,204
Red (Ling).....	287,603	Crabs:	
White.....	436,535	Hard.....	524,367
Herring, Sea.....	791,859	Soft or Peelers.....	680
Hickory Shad.....	897	Horseshoe Crab.....	265,500
King Mackerel.....	7,126	Lobsters.....	835,774
King Whiting.....	37,097	Clams:	
Mackerel.....	229,369	Hard.....	1,647,749
Menhaden.....	365,760,825	Soft.....	5,384
Mullet.....	10,678	Surf.....	7,547,615
Pollock.....	1,536	Conchs.....	249,824
Scup or Porgy.....	6,893,457	Oysters (Meats).....	4,317,782
Sea Bass.....	3,848,408	Scallops.....	763,559
Sea Robin.....	398	Squid.....	654,811
		Turtles.....	215
		Total.....	412,178,162



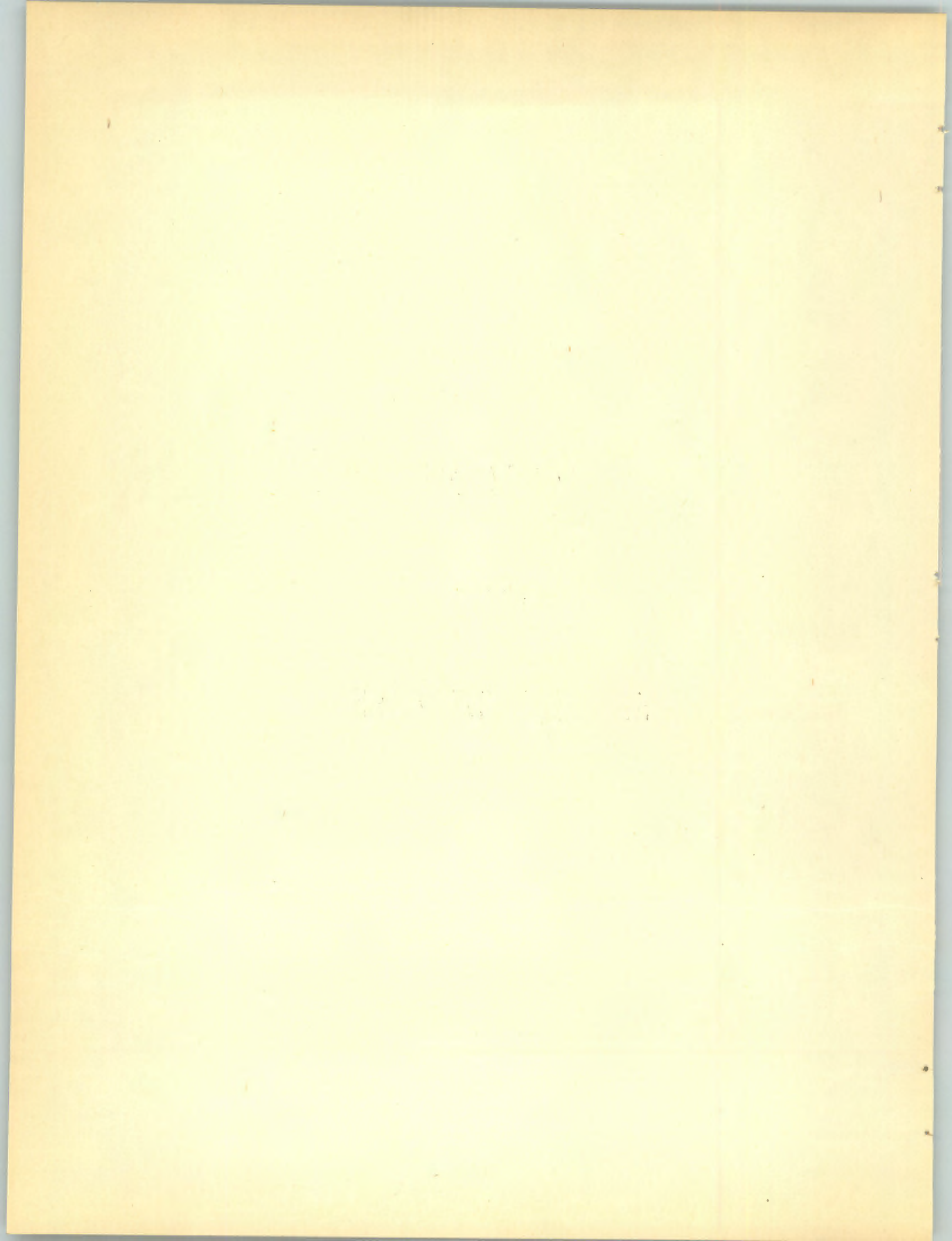




**DIVISION  
OF  
SHELL FISHERIES**

**New Jersey State Library**



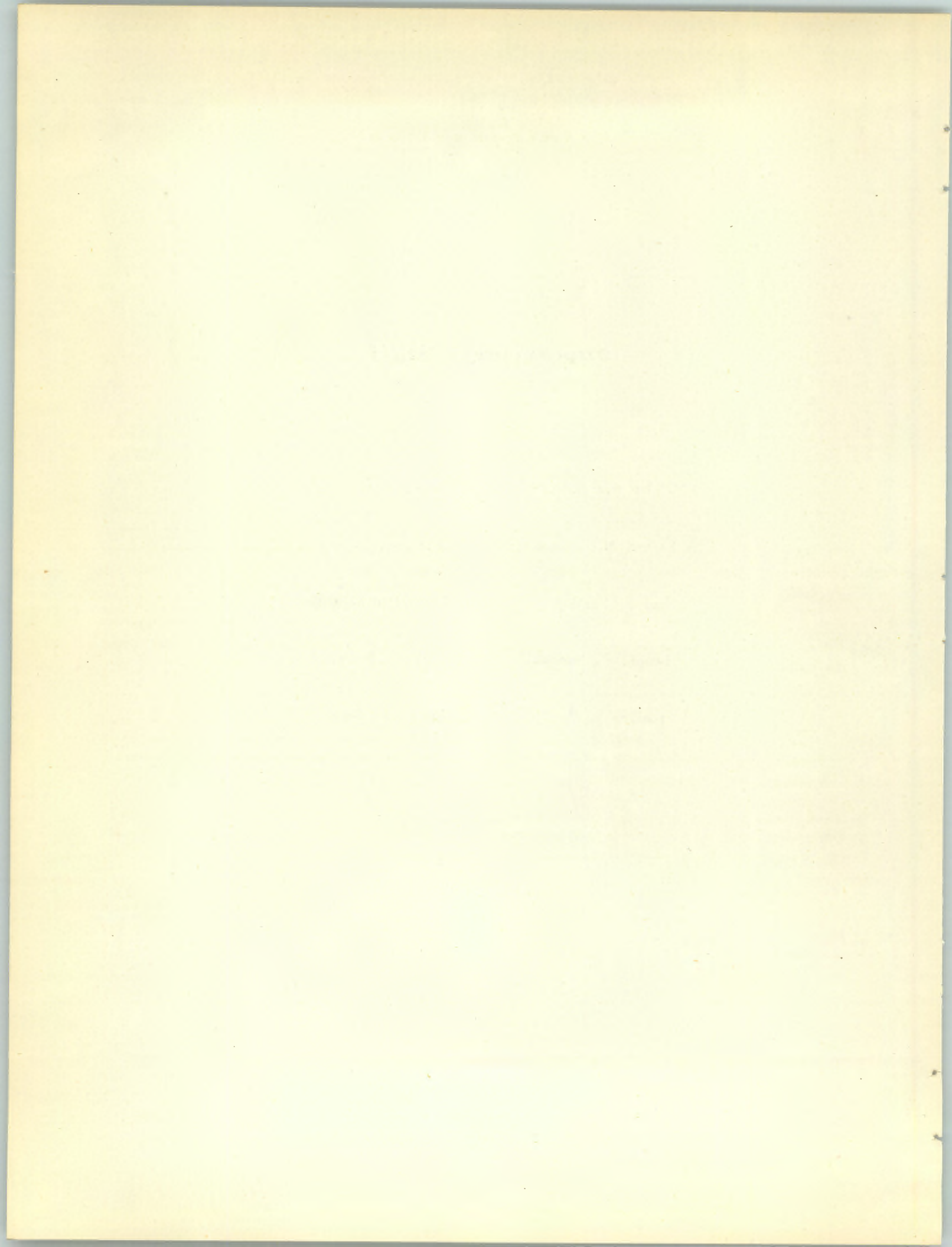




## **Supervisory Staff**

Christopher H. Riley	Director
Forrest M. Hickman	Chief, Bivalve
Fred S. Huntley	Chief, Port Republic
Richard P. Marshall	Chief, Parkertown
Franklin A. Gray	Chief, New Gretna







## Introduction

For the first time in 1915 an agency was created to protect the 75,000 acres of shellfish grounds lying beneath the waters of New Jersey. That agency operates today as the Division of Shell Fisheries. The grounds that it protects are distributed over an area extending from Raritan Bay on the north, down the Atlantic Coast, to the head of Delaware Bay on the south. They serve as the basis for an industry, capitalized at more than \$50 million, which, under normal circumstances, has an annual volume of business running into several million dollars.

The shellfish grounds fall into two categories. First, there are the natural clam and oyster beds. In addition, there are some 45,000 acres of oyster planting grounds. The latter are important because they are covered by water with a higher salinity concentration, and oysters originating in the natural beds grow more rapidly when transplanted there, attaining marketable size within two or three years.

Both the natural beds and the planting grounds are owned outright by the State. Under law any citizen of New Jersey—who is properly licensed—may remove shellfish from the natural beds during the open season. Similarly, any citizen may obtain, through a lease agreement, the right to use the planting grounds. All such leases and licenses are granted through the citizens councils associated with the Division. (See below.) Revenue derived from the leasing of oyster planting grounds, the sale of licenses, and other sources are almost sufficient to defray the expense of protecting the natural beds from

unauthorized exploitation and to pay for measures aimed at improving their productivity.

The Division maintains patrols to prevent unlawful removal of shellfish and conducts a continuing program of surveying and mapping the planting grounds. It works closely with the Oyster Research Laboratory of Rutgers University in an effort to improve the condition of the beds.

The Division operates through two administrative units, the Maurice River Cove Section and the Atlantic Coast Section. The Maurice River Cove Section has jurisdiction over an area that includes most of Delaware Bay and its tributaries. It runs from the entrance on the Atlantic to Hope Creek in Salem County near the head of the bay. The jurisdiction of the Atlantic Coast section extends over the coastal waters of New Jersey—from Raritan Bay to the southern tip of Cape May County.

Attached to each Section is a citizens council, whose members are appointed by the Governor and must be confirmed by the Senate. In addition to their role in granting licenses and leases, the councils are expected to aid in the projection of policies for the conservation of shellfish resources and also are empowered to submit advisory opinions on the work of the Division and to report their findings and conclusions to the Governor and the Legislature. Actions of the Councils are subject to the approval of the Commissioner of Conservation and Economic Development.



## MAURICE RIVER COVE SECTION

The Maurice River Cove area, essentially Delaware Bay and its tributaries, has been widely known for years as a center of oyster production. For some time, the decline in the vigor of the natural oyster seed beds in this region has been a source of apprehension.

One of the first conservation measures taken in this region was the enactment of legislation a number of years ago requiring oyster dealers to save a certain percentage of oyster shells for replanting. The shells are returned to the natural beds, where oyster larvae may cling to them during the spawning season and mature. The replanting program, which continued during the past year, is a cooperative venture of the Division and the private oyster dealers. The Division pays for the loading and storage of the shells. The oystermen provide funds for planting them. During 1955-56, 248,741 bushels of shells were returned to the natural beds at a cost of \$9,949 to the State. The views of three groups, the Oyster Research Laboratory, the small oystermen (tongers) and the larger dealers (represented by the New Jersey Oyster Growers and Dealers Association) were considered in selecting the areas where shells would be placed.

Despite this program, the decline in the vigor of the beds reached the stage in 1955 where, in the opinion of both the Oyster Research Laboratory and the Council of the Maurice River Cove Section, Delaware Bay and its tributaries should be closed indefinitely insofar as the removal of seed oysters was concerned. Their recommendation was accepted by the Commissioner of Conservation and Economic Development for two reasons. First, there was more than a remote danger that unless such action was taken, the beds might be unable to recover through the natural reproduction of seed. Second, the results of the two-year experimental closing of a single depleted bed for purposes of rehabilitation had been highly encouraging.

Under normal circumstances, the natural seed beds are open to oystermen each year from the beginning of May through the end of June. In the spring of 1956 it was decided to reopen the

beds as usual on May 1. No prior decision was reached as to how long they should remain open. This was to be determined on a week-to-week basis by a special committee appointed by the Commissioner of Conservation and Economic Development and composed of representatives of the industry and the Oyster Research Laboratory. As a result of this approach, all beds were open from May 1 to May 25. After May 25 the entire area above "Bennies Bed," a point in the upper part of the bay immediately above the leased planting grounds, was closed because it would have been unsafe from the standpoint of conservation to permit further dredging.

Approximately 450,000 bushels of oysters were removed from the bay during this season, ninety per cent of which came from beds in the upper waters. Although the season was regarded as moderately successful from the standpoint of the catch, there was little room for doubt that the problems long besetting the oyster industry in Delaware Bay were as serious as ever at the end of the year.

**TRANSPLANTING OF OYSTERS.** In June, 1955, the Division planted approximately 165,000 bushels of oyster shells below the point known as the "clam line" in the lower part of the bay. This was done because of indications in 1953-54 of the development of a good set of seed oysters in this area, which has been closed to oystermen since the 1930's. At the time it was hoped that legislation would be enacted permitting oystermen to undertake dredging operations in these waters to catch the oysters that might attach themselves to the shells.

The development of the sets was favorable, as had been expected, but the desired legislation was not forthcoming. The salinity concentration in the water below the "clam line" is extremely heavy, a condition under which the various forms of marine life that prey on the oyster tend to flourish. For this reason the Commissioner of Conservation and Economic Development authorized the transplanting of 30,000 bushels of these oysters in the upper part of the bay—22,000 at the mouth of the Cohansey River and 8,000 on the "Beadon's





Oystermen prepare to return to port after a day of gathering oysters from beds in Delaware Bay.



Club House" sanctuary. Plans called for leaving them at these points, with the hope that they would become prolific spawners and thereby help restore the vitality of the natural beds. Many of the parent oysters in this section have vanished, and it is therefore imperative that the spawning stock be augmented. Further transplanting was planned during the year 1956-57 and was to be carried out over a broader area.

## ATLANTIC COAST SECTION

In the past the focus of interest in the area under the jurisdiction of the Atlantic Coast Section has been on clamming, and during the past fiscal period the Division issued 7,086 clammers' licenses.

In recent years, however, considerable emphasis has been placed on a program to build up the oyster industry along the coast. As a part of this effort during 1955-56, 18,000 bushels of seed oysters were transplanted from the natural beds in the upper Mullica River to a point in the lower reaches of this waterway, where their growth potential would be higher. The oysters were expected to reach marketable size within a period of two years, and, if so, the waters in which they were planted were to be opened to tongers. Meanwhile 15,000 bushels of shell stripped of seed were planted at the same point in the upper Mullica from which the seed oysters had been removed for transplanting to serve as points of attachment for young oysters as they mature. Over the years the productions of seed oysters in the upper Mullica has been consistently good and the lower part of the river has always been highly conducive to further growth.

The marketing season along the coast during the past year, although brief, was regarded as successful. During May, for example, 12,500 bushels of marketable oysters were removed from a single bed in the Mullica River. All evidence confirms the view that if more shells were planted, oyster production in this region could be substantially increased. In 1954-55 the Council

of the Atlantic Coast Section began exploring the desirability of imposing a "shell tax", similar to that adopted years ago in the area under the jurisdiction of the Maurice River Cove Section, but no action had been taken on this matter as of June 30, 1956.

The Division was making a comprehensive survey of all shellfish activities along the coast, and this study was expected to point up more clearly the best means of conserving existing shellfish resources and expanding the output of both oysters and soft shell clams.

## STATISTICAL SUMMARY 1955-56

### *Maurice River Cove Section*

Number of leases issued	174
Number of acres under lease	36,049
Number of lessees	168
Number of documented boats licensed (average tonnage - 36)	134
Number of un-documented boats licensed	18
Total tonnage (gross)	4,157
Number of tongers licensed	179
Number of convictions for law violations	3

### *Atlantic Coast Section*

Number of leases issued	394
Number of acres of leased land	3,826
Number of lineal feet leased	(ft.) 63,700
Number of clammers' licenses (resident) issued	7,086
Number of clammers' licenses (non-resident) issued	241
Number of sea clam boat licenses (commercial) issued	15
Number of sea clam boat licenses (non-commercial) issued	5
Number of tongers' licenses issued	385
Number of persons convicted of shell fisheries law violations	53

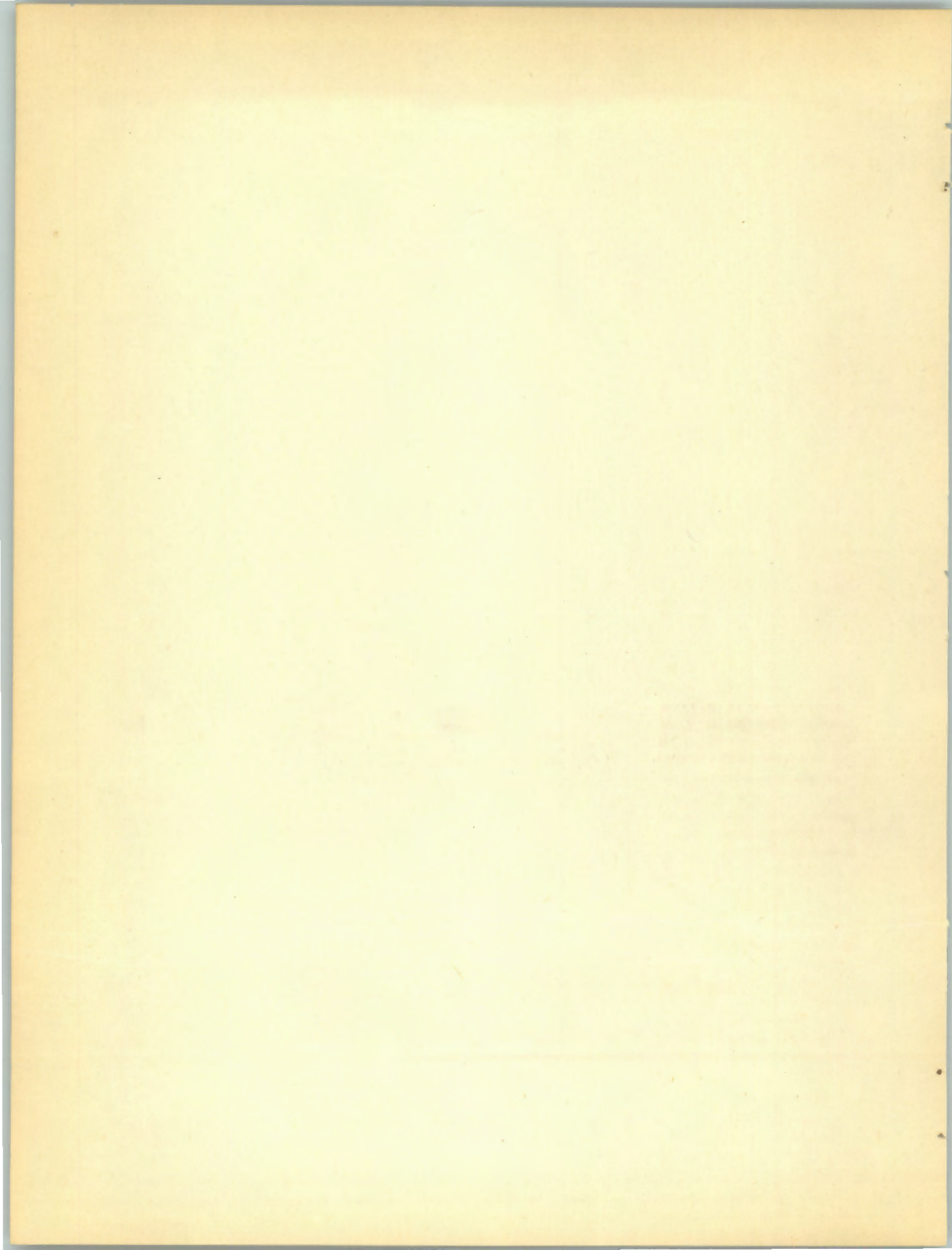


**DIVISION**

**OF**

**VETERANS' SERVICES**



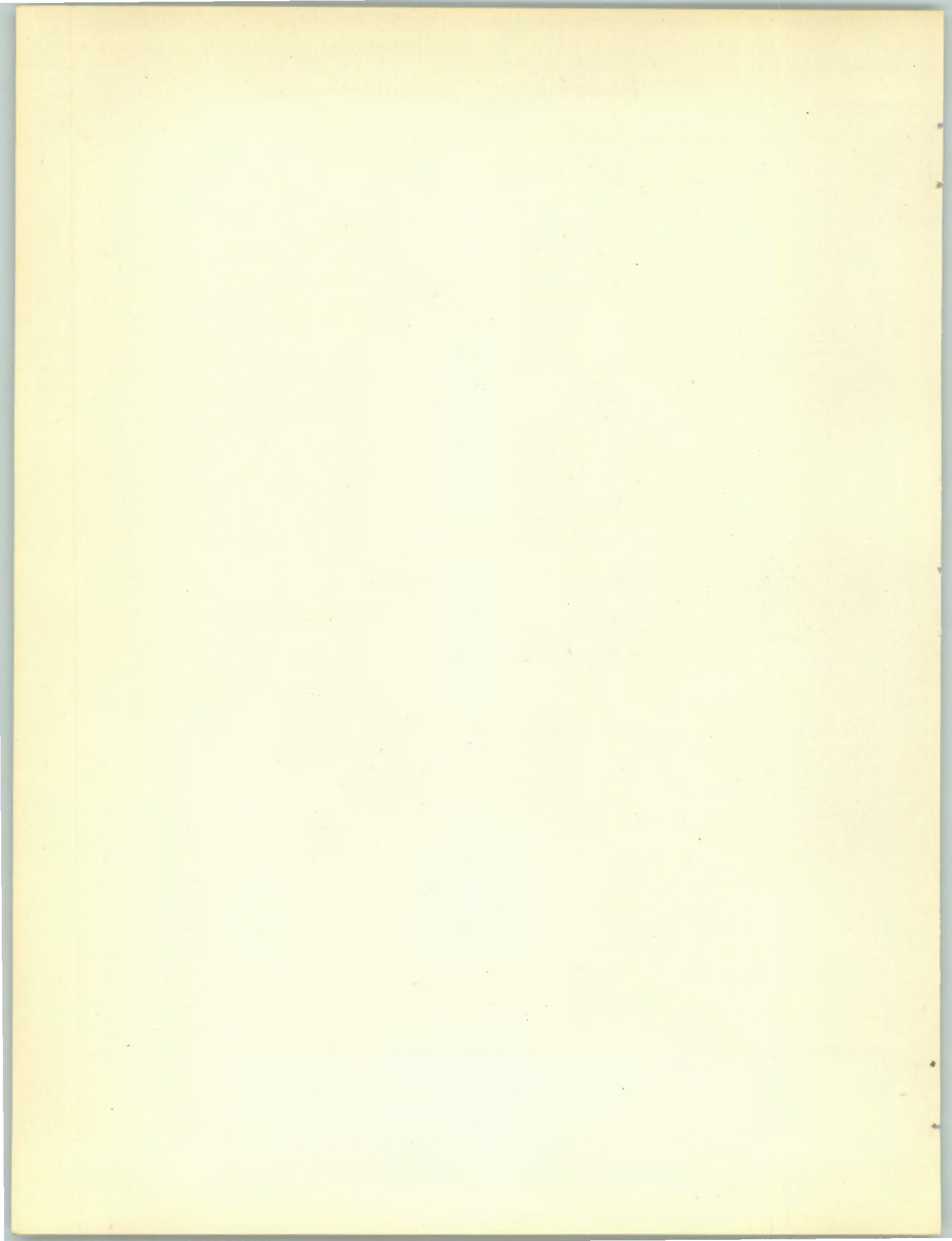




## **Supervisory Staff**

Salvatore A. Bontempo	Director
Edwin C. B. Clark	Assistant to the Director
Paul N. Colby	Chief, Information and General Services Section
David R. Evans	Chief, Veterans Emergency Housing Section
Alex J. D'Arcy	Chief, Veterans Guaranteed Loan Authority







## Introduction

Approximately 802,000 residents of New Jersey are veterans of one or more of the wars in which the United States has engaged. In addition there are at least one million persons, such as wives and children of veterans and dependent parents, who are now or may be at some later date eligible for federal or State benefits. The Division of Veterans' Services, created in 1944, took over and expanded the work carried on by the Adjutant General's Office since 1928. It was directed to assist veterans and/or their dependents and servicemen in obtaining all benefits, federal or state, to which they may be entitled. The Division also was charged with the administration of a series of special veterans benefits offered by the State and, further, was directed to compile and publish significant information on veterans affairs. The principal operations of the Division are conducted through the Information and General Services Section, the Veterans Guaranteed Loan Section, and the Veterans Emergency Housing Section.

New Jersey is one of forty-one States which have created special bodies to deal with the

problems of veterans, and the activities of the Division supplement rather than duplicate the work of the United States Veterans Administration. Apart from the need of an agency to administer State benefits, the Legislature considered it essential that New Jersey veterans be given assistance, at home, in preparing and presenting claims for benefits authorized by Congress. Trained personnel of the Division serve as counsel to veterans applying for federal benefits, and, whenever necessary, represent them before the U. S. Administration Appeal Boards.

Associated with the Division is the Veterans Services Council, a citizens board whose members are appointed by the Governor. Subject to the approval of the Commissioner of Conservation and Economic Development, the Council is authorized to formulate comprehensive policies for the coordination of all services designed to aid veterans and their dependents. The Council also consults with the Commissioner in regard to the work of the Division. It is further expected to report its findings and conclusions to the Governor and to the Legislature.



## INFORMATION AND GENERAL SERVICES SECTION

Most of the duties assigned to the Division of Veterans' Services are performed in the Information and General Services Section. Its principal functions are: (1) Administration of the special benefits enacted by the Legislature for New Jersey veterans. (2) Assistance to veterans in applying for all benefits to which they may be entitled, State or federal, and (3) operation of an information program. One of the most significant trends in the activities of this unit during the year 1955-56 was a decline in the number of claims filed. On the other hand, the claims that were presented were generally more complex and required greater time and effort for processing and settlement.

### SPECIAL STATE AWARDS FOR VETERANS.

With the conclusion of World War II the Legislature voted to award special financial benefits to New Jersey veterans who had received any of the following disabilities while on duty in the armed forces: Multiple sclerosis (with loss of use of both feet or both legs), double amputations and blindness. Benefits also are available

for victims of paraplegia, a paralysis of the lower half of the body; hemiplegia, a paralysis of either side of the body, and osteochondritis, a disease of the bone and cartilage. (In the case of osteochondritis, the award is made only if the veteran had lost permanent use of both legs.) A veteran with any one of these disabilities is entitled to an annual award of \$500.

The State, in addition, contributes a maximum of \$500 a year for a period of four years to the education of any child whose parent was killed while on active duty.

During 1955-56, thirty-eight new claims were filed for State awards; twenty-eight were approved; eleven were rejected; twelve were discontinued and three were reinstated. (The Division acted on three claims pending at the end of the previous fiscal year while two of the claims filed in 1955-56 were still pending as of June 30.)

The statistical record of claims for State benefits (and the action taken thereon) from the beginning of the program through June 30, 1956, is shown in the following table:

	Paraplegia Award	Hemiplegia Award	Amputee Award	Osteochondritis Award	Multiple Sclerosis	Blind Award	War Orphan Education
Filed	195	46	61	10	15	65	74
Pending	1	0	0	0	0	0	1
Disallowed	46	16	17	6	5	17	14
Approved	148	30	44	4	10	48	59
Discontinued	17	1	4	0	0	3	42
Eligible	131	29	40	4	10	45	17

During the past year, payments to claimants of State awards totaled \$135,303, and were broken down as follows: \$100,892.19 to victims of paraplegia, hemiplegia, amputations, multiple sclerosis and osteochondritis; \$25,183.47 to victims of blindness, and \$9,228.25 to war orphans.

The record of payments from the beginning of the program through June 30, 1956, was as follows:

Victims of Paraplegia, Hemiplegia, Amputations, Multiple Sclerosis and Osteochondritis.....	\$614,658.86
Victims of Blindness.....	233,407.38
War Orphans.....	26,290.37
Total.....	\$864,356.31

**ASSISTANCE WITH CLAIMS.** More than ninety-five per cent of the benefits received by New Jersey veterans during the period since



the beginning of World War II have come from the federal government. In addition to maintaining offices in Newark and Philadelphia for liaison with the U. S. Veterans Administration, the Division operates field offices in all sections of the state to assist veterans in preparing and presenting applications for any benefits to which they may be entitled. These offices work to expedite action on the applications and to minimize complications for the individual veteran in pressing his claims. From the time of the establishment of the Division in 1944 through the end of the past fiscal year, the agency had given active assistance to veterans in recovering monetary benefits totaling \$38,673,163, which included \$1,232,631 for the period 1955-56. The field offices advise veterans on such matters as loans, educational and training benefits, pensions, insurance, death benefits, medical and hospitalization privileges, armed services claims, out-of-state bonus awards, and reemployment rights.

#### **VETERANS GUARANTEED LOAN SECTION**

The veterans loan program had its origin in the establishment of the Veterans Loan Authority as a part of the Division of Veterans' Services in 1944 and in the creation of a Veterans Loan Guaranty Fund capitalized at \$5 million. This step was taken to enable former servicemen to borrow up to \$3,000 for business purposes. The maximum term of any note guaranteed by the Authority was set at six years, with interest limited to charges of four per cent on the unpaid balance. The Legislature made no provisions for the State to engage in actual lending operations; it was to serve only as a guarantor of loans made to veterans by private institutions.

The legislation was amended in 1946 to increase the capitalization of the fund to \$11 million and to permit the Authority to guarantee notes up to \$1,000 for the purchase of household furnishings. Such notes were to be repaid within two years, again with interest charges limited to four per cent on the unpaid balance.

(The capitalization of the fund remained unchanged until reduced during the past year when

the Legislature authorized the appropriation of \$3 million from this source for State acquisition of Round Valley, water reservoir site in Hunterdon County.)

The need for State action in guaranteeing veterans loans has steadily diminished in recent years. Although the program was still in operation during 1955-56, it was considerably contracted in scope, and few banks were participating. World War II veterans ceased to be eligible for loan benefits after April 10, 1951. All notes guaranteed since that time have been for veterans of the Korean emergency. Legislation adopted in 1951 provides that Korean veterans shall be eligible for State-guaranteed business and household furnishings loans for a period of two years from the time of their discharge from service. No date has been set for the expiration of the program. The legislation of 1951 appears to be in conflict with a measure adopted in 1955 stipulating that the duties and powers as well as the records of the Veterans Loan Authority shall be transferred on June 30, 1958, to the Attorney General, who will bear responsibility for liquidation of the operation.

During 1955-56 the Division guaranteed 226 loans for the purchase of household furnishings, with a total value of \$178,200, and sixteen business loans, with a total value of \$44,900. This compares with 484 household furnishings loans, valued at \$525,730, and twenty-six business loans, valued at \$68,200, approved during the fiscal period 1954-55. Two banks in the state were making loans for the purchase of household goods under this program, and some fifteen institutions were still making business loans.

As of June 30, the State had guaranteed a total of eighty-seven business loans, valued at \$231,800, and 1,397 household furnishings loans, valued at \$1,089,450 since veterans of the Korean emergency became eligible.

**OUTSTANDING NOTES AND LOANS IN DEFAULT.** The total value of veterans notes outstanding at the bank level on June 30, 1956, was \$1,370,055, with an unpaid balance of \$426,996.68. This compared with an unpaid balance of \$662,667 on June 30, 1955. Although



many of the outstanding notes had matured and could be considered in default, lending institutions were cooperating with veterans by permitting them to make small monthly payments to retire the debt. This has had the approval of the Division, for after a bank has asked the loan authority to take over a note, in keeping with its obligation as guarantor, the credit standing of the veteran involved is seriously impaired.

From the beginning of the program through the end of 1955-56 the authority had been called upon by banks in the state to make payment for 3,758 notes declared in default. The cost was \$3,648,949.78 in the case of business loans and \$459,097.97 in the case of household furnishings loans, with a total cost of \$4,108,047.75 charged to the Veterans Loan Guaranty Fund.

After the State relieves a bank of a veteran's note, the matter remains at first in the hands of the authority. Through its staff of collectors, the agency attempts to work out an acceptable arrangement with the veteran for discharging his debt. If this method fails, the claim is referred to the office of the Attorney General for appropriate action.

As of June 30, 1956, the authority had recovered \$1,344,655.77 or slightly more than one-fourth of the money disbursed to cover notes in default. The previously unpaid balance on 442 of the notes had been retired in full, raising the total to almost 100 more than at the same time in 1954-55.

Over the past two fiscal periods, collections from veterans with unpaid balances averaged approximately \$16,000 a month. Every effort is made to have the veteran pay at least ten per cent of his monthly income until he discharges his obligation. In some instances settlements have been approved but only after careful determination that the financial status of the borrower was such that installment payments would make only a negligible contribution to reducing the amount due and could not be expected to cover the full debt within any reasonable period of time.

On the whole the State's decision to guar-

antee veterans notes has had very satisfactory results, and defaults have been fewer than were once anticipated. The 3,758 notes which the loan authority had been forced to take over as of June 30 represented only thirteen per cent of all notes guaranteed and carried a value representing only nine per cent of the value of all notes executed since the start of the program.

## VETERANS EMERGENCY HOUSING SECTION

The liquidation of the Veterans Emergency Housing program continued during the past fiscal year. At the end of this period, slightly more than forty per cent of the units had been sold in accordance with statutory requirements.

The program was undertaken by the State and a group of New Jersey municipalities after World War II to relieve the shortage of housing that confronted returning servicemen. What was most urgently needed in the beginning was housing, available at moderate rates, that the veterans could occupy while readjusting to civilian life. This need was met by erecting housing of a temporary character and rehabilitating many existing dwelling units. Subsequently a large number of permanent units were built under the program, which was extended in 1950 to veterans of the Korean emergency.

The number of dwellings of each type constructed was as follows: Temporary, 4,104; permanent 2,724; municipal conversions, 535, and private conversions 370. (Conversions refer to privately-owned or municipally-owned dwellings that were rehabilitated or converted in order to provide veterans with standard housing.)

To finance construction of the units, the Legislature appropriated \$6 million from the Post-War Reserve Account of the General Fund and authorized the floating of a \$35 million State bond issue. Funds provided by the State were combined with approximately \$14,500,000 invested by municipalities in the form of site improvements, installation of utilities, and payments for any construction exceeding the limit of \$5,600 per unit set by the State. The total investment was more than \$52 million.



The net rent from veterans housing is divided between the State and the municipality, and their respective shares are based on the percentage each has invested in individual projects. At the end of 1955-56 the State has received \$7,223,175.04, including \$550,327.44 from the private conversions.

#### **DISPOSITION OF VETERANS HOUSING.**

The veterans housing program was regarded from the beginning as an emergency operation and was designed to provide veterans with accommodations for a period of five years. After that time the units were to be sold either to the occupants or to the public. With the persistence of the housing shortage and the return of a new group of veterans from the Korean war, however, the Legislature voted to extend the program to a maximum of eight years in the case of permanent housing and nine years in the case of temporary housing. Extensions had to be requested by the governing bodies of the municipalities concerned; otherwise the units were to be sold, as contemplated in the beginning, upon the expiration of the original contracts between the State and the municipalities for the operation of the projects. (The dates of expiration of the contracts varied because construction of the projects was completed at different times in the municipalities involved.)

Disposition of the housing began in 1952 when the first set of original five-year contracts expired, and certain municipalities failed to request extensions. At the same time 370 privately owned units that had been converted or rehabilitated and leased by the State for five years were returned to their owners.

From the beginning temporary units were sold with the understanding that the buildings would be removed, and the sites restored to their original condition by the purchaser, unless the projects were bought by municipalities with the intention of continuing to operate them because of the persistence of local housing shortages. Up until the end of 1955-56 most of the temporary housing had been purchased by private individ-

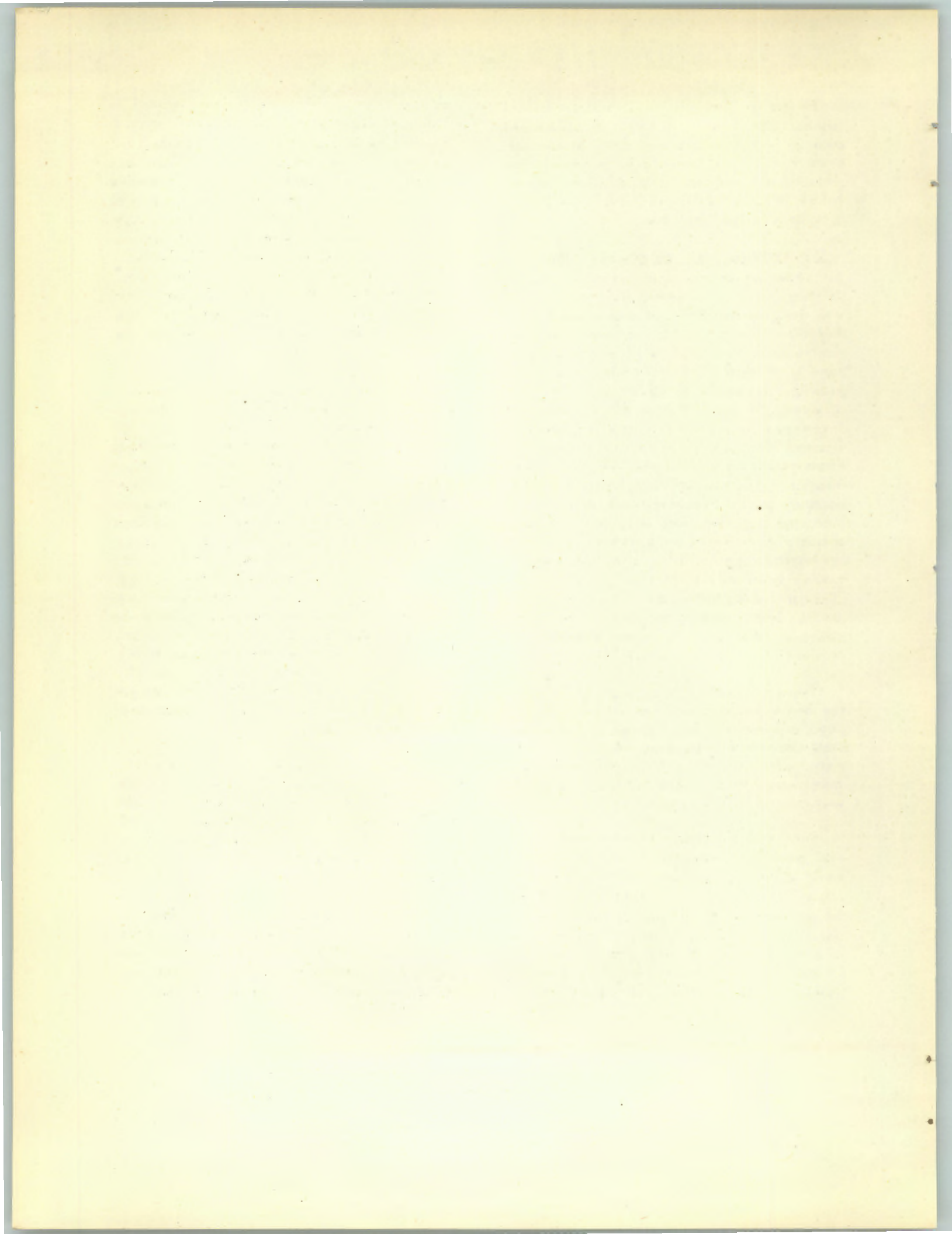
uals or groups. Temporary projects located in Vineland, Buena, and Linden were acquired, however, by the municipal governing bodies, and as the year drew to a close, several other municipalities were negotiating for the purchase of temporary projects in view of the continuation of a housing emergency. By June, the largest single temporary project in Weequahic Park, Newark, (once the place of residence for 578 families) was completely vacant. The land had been leased from the Essex County Park Commission and was to be used again for recreation as soon as the buildings could be removed and the grounds improved.

Temporary housing is sold at auction or through sealed bids without prior appraisal. The permanent units, on the other hand, are appraised, and a fair economic rent is determined, before they are placed on sale. Veteran occupants receive the first opportunity to purchase the property at the appraised value, and many veterans in one-family or two-family buildings have taken advantage of this opportunity. In the case of multi-family buildings, the tenants may organize a cooperative to purchase the project if sixty-five per cent agree to participate. None of the larger projects had been sold on this basis as of June 30, 1956, although the tenants of one fourteen-family building were attempting to form a cooperative. Permanent units not acquired by the occupants within a specified time are advertised and sold to the public at auction or through sealed bids.

At the end of 1955-56, 3,255 dwelling units had been sold, leaving 4,478 still in the hands of the State. The actual sales were conducted for the Division by the Bureau of Housing, a unit of the Division of Planning and Development. Gross receipts from the 3,255 units sold totaled \$4,824,659.47.

The program should be fully liquidated by the end of 1959. It is presently estimated that during the life of this undertaking 75,000 veterans and members of this families will have occupied veterans housing at one time or another.

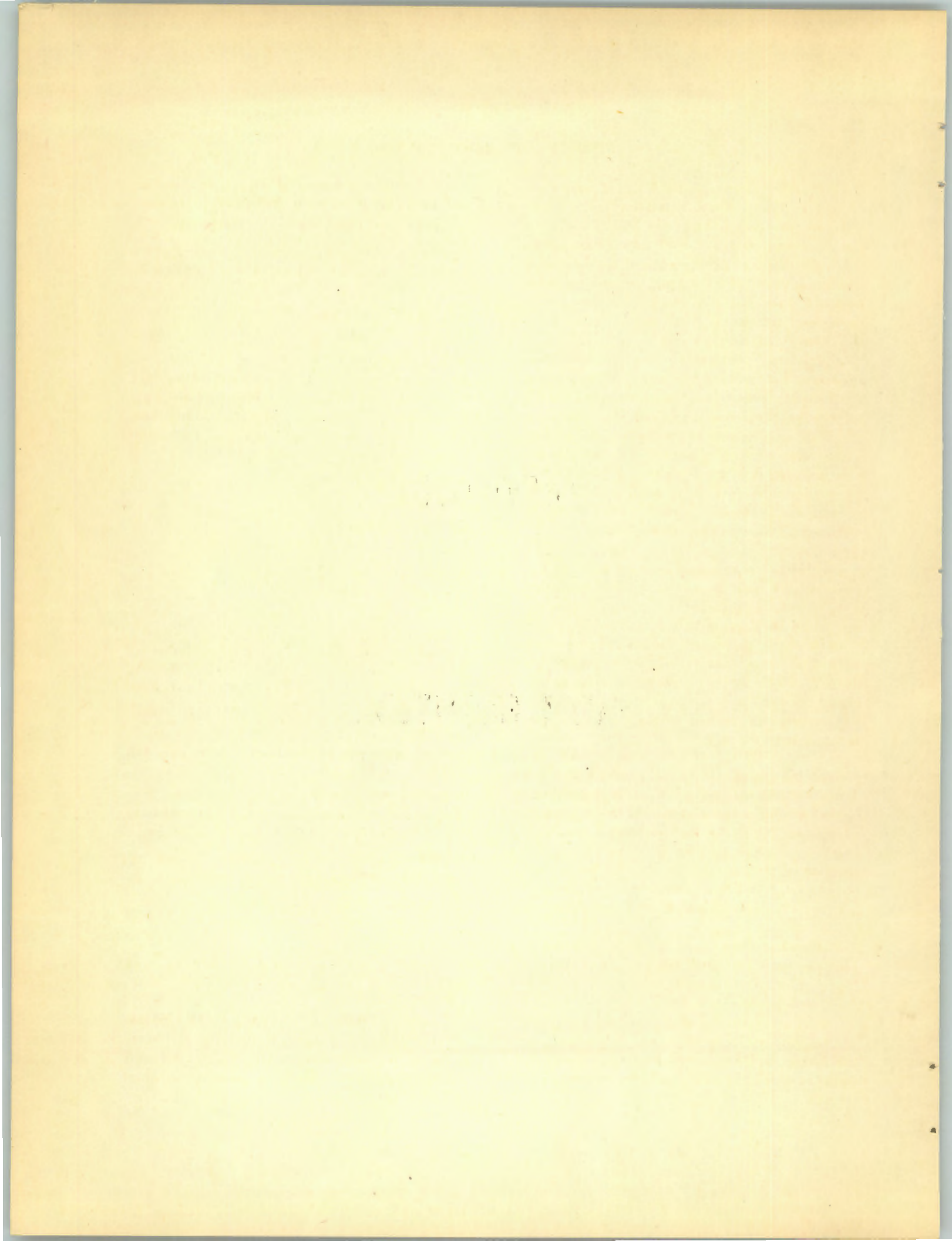






**DIVISION**  
**OF**  
**RENT CONTROL**







## DIVISION OF RENT CONTROL

The State entered the field of rent control on August 1, 1953, after all existing federal controls were abolished. Under the State legislation the governing body of each municipality was given the power to decide whether local housing conditions were of such a nature as to require controls. The 1953 rent control act was due to expire on December 31, 1954, but at the urging of the State Administration and municipal leaders, the Legislature authorized an eighteen-month extension and at the same time amended the original law in several respects. The amendments served to vest the director of the Division of Rent Control with broader authority to revise regulations and to remove controls, and the Division was empowered to review the decisions of local boards on applications concerning such matters as increases and decreases in rental prices, eviction of tenants, and reduction of services.

As the new expiration date of the law approached, it was evident that the Legislature was overwhelmingly opposed to any further extension of the law, and the State Administration therefore made no request for such action. State control of rents thus ended, as scheduled, on June 30, 1956. Since a shortage of housing persisted in some areas, a movement immediately was launched to continue controls on a municipal basis in certain cities.

Rental properties in fifty-four of the 567 New Jersey municipalities were still under State control when the law expired. At the time of its enactment in 1953, the governing bodies of eighty-one municipalities had voted for imposition of the regulations. Most of the twenty-seven municipalities that rescinded controls between 1953 and 1956 were small in population.

The cities where state controls remained in effect up until June 30, 1956, contained forty-six per cent of New Jersey's population, and controls were applicable to sixty-eight per cent of all available rental units. The extent of rent control coverage thus decreased only slightly in the history of the law. On January 1, 1954, the cities in which controls were being enforced con-

tained fifty-five per cent of the total population, and the regulations were applicable to seventy-seven per cent of all available rental units.

When the State regulations expired, controls were still in effect in the following municipalities:

### **ATLANTIC COUNTY:**

Atlantic City and Margate City.

### **BERGEN COUNTY:**

Bergenfield, Cliffside Park, East Rutherford, Edgewater, Fair Lawn, Fairview, Fort Lee, Hackensack, Leonia and Little Ferry, Lodi, New Milford, North Arlington, Palisades Park, Paramus, Ridgefield Park and Ridgefield.

### **BURLINGTON COUNTY:**

Burlington.

### **CAMDEN COUNTY:**

Camden, Oaklyn and Somerdale.

### **ESSEX COUNTY:**

Caldwell Township, Caldwell, Newark and Nutley.

### **HUDSON COUNTY:**

Bayonne, East Newark, Guttenberg, Harrison, Hoboken, Jersey City, Kearny, North Bergen, Secaucus, Union City, Weehawken and West New York.

### **MERCER COUNTY:**

Ewing Township, Hamilton Township and Trenton.

### **MIDDLESEX COUNTY:**

Highland Park, East Brunswick, New Brunswick, Perth Amboy, South Plainfield and Woodbridge.

### **MORRIS COUNTY:**

East Hanover Township and Lincoln Park.

### **PASSAIC COUNTY:**

Passaic and Paterson.

### **UNION COUNTY:**

Elizabeth, Hillside, Linden, Rahway and Roselle.

### **ADMINISTRATION OF THE LAW IN 1955-56.**

Accelerating the process of decontrol and stepping up its work in reviewing the decisions of local boards, the Division handled a large



volume of business during the final year of its operation.

At the same time, administration of the program was marked by a series of difficulties, the sources of which were varied. In the first place, it was evident from the beginning of the year that rent control was a dying operation, and under such circumstances administrative problems usually tend to multiply. In addition the program was cast in a controversial mold from the beginning and never enjoyed unanimous public support. When state controls were originally proposed in 1953, there were strong objections from many owners of rental properties, and their dissatisfaction mounted as administration of the law continued. This opposition met with the countervailing influence of organized tenant groups and their supporters, who argued against any weakening of controls so long as a shortage of housing existed. A third factor entering into the public's reaction was the fact that the shortage of housing was far from uniform in the state as a whole. In areas where the housing supply was adequate, reasonable rental prices could be expected from the operation of the law of supply and demand, and residents of these areas thus took little, if any, interest in the question of controls.

Another source of difficulty was the peculiar

status of the Division of Rent Control. The agency was vaguely in, but not of, the Department of Conservation and Economic Development. In imposing controls, the Legislature had appointed the Director of the program and had denied the Governor any authority to replace him. The validity of such action under the State Constitution of 1947 was questionable, and the State Administration for this reason decided to have the issue resolved at the judicial level. This was not done because of any narrow interest in replacing a particular administrator. The move was regarded as a necessary step to protect the appointive powers of the Executive from invasion by another branch of government. The Attorney General filed a suit early in the year challenging the constitutionality of the Legislature's action, and his arguments were upheld in the eventual decision of the court. The outcome of the case had no real effect on the rent control program, however, because the decision was not returned until shortly before the rent control law was due to expire.

With the expiration of the law, the Division was given an additional six months to dispose of any pending matters and to arrange for the storage at Trenton of the records of municipalities where rent controls had been abandoned. These records must be maintained for at least one year subsequent to July 30, 1956, and be made available to all interested parties.



**OFFICE  
OF THE  
COMMISSIONER**



1919

1920

1921



## OFFICE OF THE COMMISSIONER

The functions of the Office of the Commissioner are three-fold. It must resolve -- subject to the approval of the Governor -- issues of policy arising in the field of conservation and economic development. It is charged with the administration of the more than twenty-five divisions, bureaus and sections comprising the Department. It represents the Department in its relations with the public and with other agencies of government, whether at the State, local and federal levels.

**SCOPE OF RELATIONS WITH OFFICIAL AND PRIVATE GROUPS.** The last of these responsibilities is common to all executive offices. What makes it especially significant in the case of the Department of Conservation and Economic Development is the diversified and far-flung interests of the agency. Each month representatives of the Office of the Commissioner meet with at least a score of official, quasi-official, and private groups to discuss the broadest range of problems. Because of their importance to the successful conduct of conservation and economic development programs, these conferences and negotiations are treated as one of the paramount duties of the Commissioner and his staff, deserving and requiring as much time as any other function.

It is impossible to record here all the organizations and delegations with which representatives of the office met during the past year. The following list, however, gives an indication of the scope of the Department's relations with the public and with other agencies of government during this period:

The U. S. Corps of Army Engineers, the Interstate Commission on the Development of the Delaware River Basin, the Governor's Committee on Morven, numerous private organizations engaged in industrial and resort promotion, groups interested in measures to protect the New Jersey shore from erosion, groups interested in policies for the conservation of shell fish resources, groups interested in the development of Island Beach and other State parks and forests,

the League of Women Voters, the New Jersey Welfare Council, the State Water Resources Advisory Committee, organizations concerned with policies for hunting and fishing, organizations concerned with New Jersey's housing needs, private firms with an interest in economic development policies, various educational institutions, and municipalities with special problems.

**REORGANIZATION OF THE OFFICE AND OTHER MEASURES.** The foreword of this report draws attention to efforts to strengthen the general administrative and policy-making framework of the Department. One of the measures taken during the past year in the interest of this objective was a reorganization of the Office of the Commissioner. The action was designed, in part, to open the way for establishment of the Office of Deputy Commissioner. It was contemplated that the person holding this office would act for the Commissioner in supervising personnel, budgeting, accounting, purchasing and other central staff functions. It was further contemplated that he would deal with matters of substance and thus play a key role in the policy-making process. The reorganization was related, moreover, to the new concern with expanding recreational opportunities in the state. The official charged for a number of years with Departmental administration had been serving in a dual capacity in that he held, at the same time, the Office of State Forester, thus heading the Bureau of Forestry, Parks and Historic Sites. In 1954 the Department embarked upon the first genuine program of park development to be undertaken at the State level and the responsibilities of this Bureau were correspondingly increased. For this reason it was considered imperative that the chief of the Bureau be placed in a position where he could devote his entire time to its activities.

The reorganization of the office and the restoration of the position of State Forester to the status of a full-time assignment were among a number of moves intended to breathe new life into the Department and to fulfill the spirit as well



as the letter of the Reorganization Act of 1948. Encouragement was given to the achievement of greater technical cooperation across division and bureau lines. Regular staff meetings of bureau and division leaders were arranged to insure a systematic approach to the broad problems of conservation and economic development. The reshaping of the Department at the bureau level in an effort to prepare the agency more adequately to meet new demands upon State government was undertaken with the elevation of the Planning Section and the Housing Section to bureau status. In 1954-55 the Department published an annual report for the first time since its establishment and this --- along with the present report --- represented another phase of the attempt to improve internal coordination and to give the public increased insight into Departmental operations.

Meanwhile, an agency assuming ever increasing importance was the Land Use Committee, an intra-Departmental group created by the Office of the Commissioner to engage in joint planning for the management of properties under the jurisdiction of the Department. The members of the committee consist of Directors of the Divisions of Planning and Development, Fish and Game, Water Policy and Supply, the Chief of the Bureau of Planning, the State Forester, the State Geologist and a representative of the Commissioner's Office. All questions pertaining to land use are referred to the committee before any action is taken. The committee makes a thorough investigation of the various interests involved and afterwards submits specific recommendations to the Commissioner. As a result of the work of the committee, the Department has succeeded in instituting standard procedures for land management and has achieved substantial coordination in its approach to such questions as the solution of existing and anticipated water supply problems and the multiple use of water resources. Two special sub-committees, composed of representatives of various divisions and bureaus, were appointed during the past year. One is serving in an advisory capacity, formulating recommendations for the management of the Wharton Tract, and during the period covered by this report, it projected a long-range management program for the

reservation, based on the principle of multiple use. The other sub-committee was appointed to study problems arising from the unregulated uses of surface waters. The sub-committee was directed to prepare recommendation for legislation, which, when combined with existing regulations for the utilization of sub-surface waters, should provide New Jersey with one of the nation's most effective sets of laws for the conservation of water resources.

**SPECIAL PROGRAMS.** In addition to its other activities, the Office of the Commissioner assumes responsibility for a number of special programs, which are of such a nature that they should remain under central direction. Some of the more significant of these are as follows:

**ACQUISITION OF ROUND VALLEY.** One of the first steps in the development of a long-range water supply program for New Jersey is the acquisition of Round Valley in Hunterdon County, authorized by the Legislature shortly before the end of the fiscal year 1955-56. Immediately after the Legislature took action, the Office of the Commissioner began to organize a task force to go into the area to determine which parcels would be needed in the development of a water supply reservoir. The staff then initiated negotiations with some eighty-five owners of the property in question for the purchase of their holdings. Approximately one hundred individual pieces of property must be acquired. Contrary to what might be expected, the acquisition process is an operation entailing many facets, and, altogether, these require considerable time and attention. As the year drew to a close, however, the preliminary steps had been taken, and purchase of Round Valley had been given the highest priority.

**ORGANIZATION OF STATE WATER RESOURCES ADVISORY COMMITTEE.** With the acquisition of Round Valley in prospect and with evidence of an over-all improvement in the outlook for effective action on water supply problems, the need for machinery to produce a long-range program became imperative. One of the first steps in dealing with this need was the establishment of the State Water Resources Advisory Committee, a citizens group whose per-



sonnel is drawn from a variety of fields. The immediate task of the committee is the drafting of recommendations for harnessing the water resources of the Raritan River basin. The group intends to retain the service of professional engineers for technical assistance and will meet regularly to study all aspects of the water supply issue insofar as the Raritan basin is concerned. The Office of the Commissioner took the leading role in the formation of the committee and will work closely with the membership throughout its deliberations.

**SMALL WATERSHED PROGRAM.** The office also continued during the year to administer the small watershed program enacted by Congress in 1954. Under the act, full responsibility for initiating small watershed projects is vested with citizens acting through local groups. The projects must involve measures of improvement for flood prevention and for the agricultural phases of conservation, development, use, and disposal of water. In its action Congress had as a principal goal to supplement existing State and federal soil and water conservation programs which fail to make provision for small watersheds. The original proposals for watershed improvements are advanced by local groups and are submitted to the Department of Conservation and Economic Development. The Department must approve the plans before any federal action will be taken. Once this endorsement is given, the plans are forwarded to the U. S. Department of Agriculture, and if it also approves them, the federal government will make funds available to defray the costs of planning and technical assistance. During the fiscal period 1955-56, applications for aid had been submitted by four New Jersey groups interested in small watershed development, and work on the projects outlined in these applications was expected to begin in 1956-57. Meanwhile, a number of additional groups were considering similar programs and indicated that they would make application for federal aid within a short time.

**PREPARATION OF MORVEN FOR USE AS AN EXECUTIVE RESIDENCE.** During the year the Office of the Commissioner represented the State in the planning and preparation of Morven, historic Princeton residence, for use as the of-

ficial home of New Jersey's Governors. The house, constructed in 1701 and celebrated for its association with certain dramatic events in American history, was purchased in 1945 by Governor Walter E. Edge and was formally presented to the State as a gift in 1954 to be used as a museum, executive residence, or historic site. In 1955 Governor Meyner appointed a committee of private citizens, chaired by Mrs. A. Harry Moore, to determine the most desirable use of the property and to recommend the measures necessary to prepare the property for this function. After several months of study, the committee issued a unanimous report favoring the designation of the house as the residence of the Governor and setting forth a series of proposals designed to place Morven in the best possible condition for its role as an official establishment. The committee's report was accepted by Governor Meyner and the Legislature, and funds were appropriated to finance the recommended improvements, which were carried out under the supervision of the Commissioner of Conservation and Economic Development.

**PUBLIC INFORMATION.** The public information section of the Department is attached to the Office of the Commissioner. During the past year television, radio, tape recordings, press releases, feature articles, exhibits, and illustrated lectures were among the media used to present the story of conservation and economic development in New Jersey. More than forty television programs were arranged and produced, and personnel from the different divisions participated in telecasts carried on both Newark and Philadelphia channels. The weekly radio series, "Jersey Review", started in 1954-55, was continued and was broadcast by fifteen radio stations as a public service. This series is designed to familiarize the public with all phases of the work of the Department and may be heard in virtually any area of the state. The public information section also furnished individuals and groups with some six-hundred photographs depicting various scenes in the state and various phases of the Department's operations. A lecture bureau was maintained, and every effort was made to comply with the requests for speakers that came from schools,



civic clubs, service groups, and other organizations.

**FISCAL REPORTS.** In the pages that follow,

an attempt has been made to present as simply as possible a statement of the appropriations, expenditures, and receipts of the Department as a whole and its constituent agencies.



**Fiscal Report**

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**Department of Conservation**

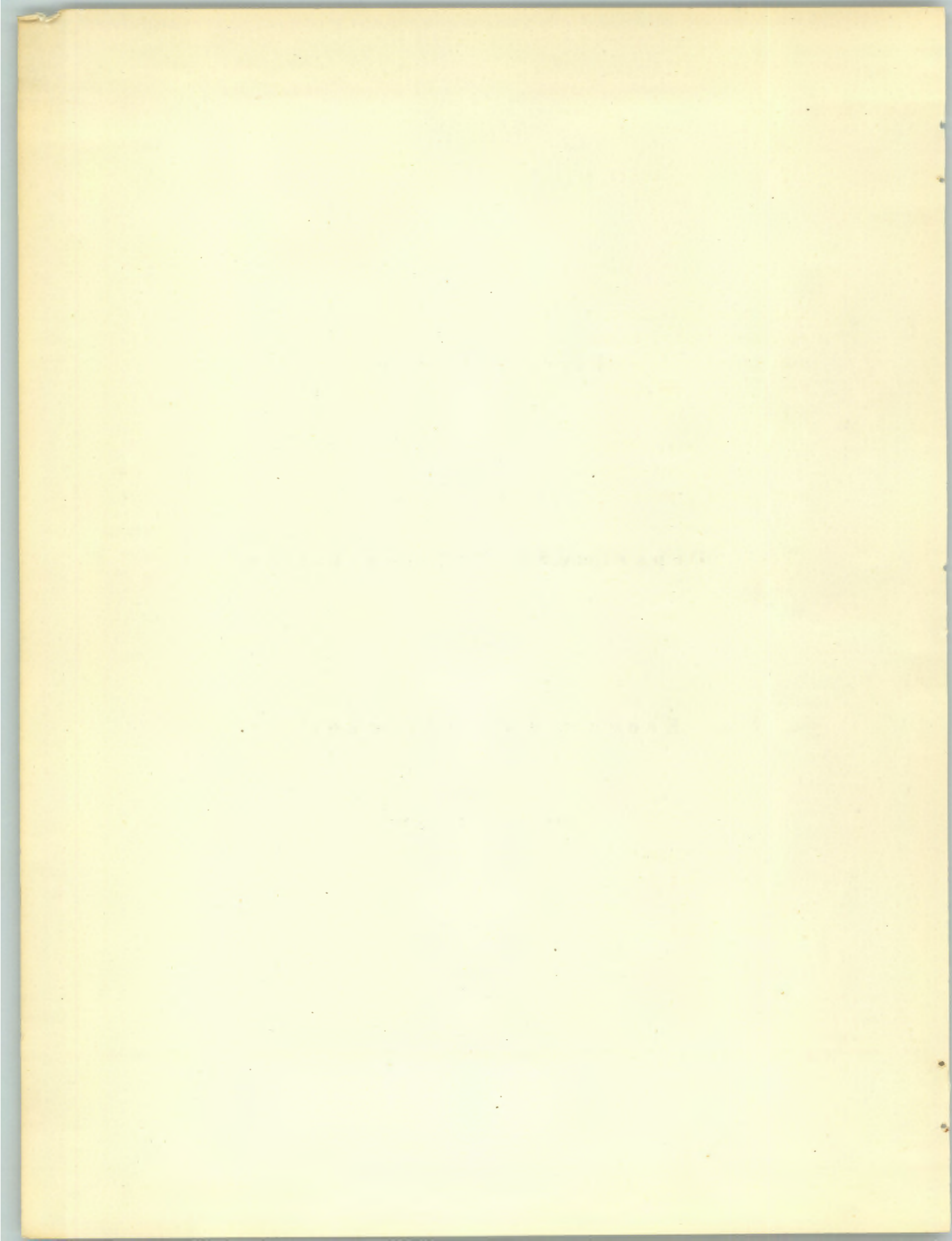
**and**

**Economic Development**

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**1955 - 56**







# S U M M A R Y

## STATE APPROPRIATIONS, APPROPRIATED RECEIPTS, SPECIAL FUNDS, FEDERAL FUNDS

	Available for Expenditure	Expended	Returned to State Treasury	Reappropriated or in Funds
Office of the Commissioner	\$ 202,870.50	\$ 201,791.17	\$ 1,079.33	\$
State Governor's Conference	89,000.00	89,000.00		
Acquisition of Round Valley	3,000,000.00			3,000,000.00
Division of Planning and Development	8,187,740.01	5,653,201.80	101,060.75	2,433,477.46
Morris Canal and Banking Company	64,971.08	32,817.68		32,153.40
Division of Water Policy and Supply	630,735.57	343,701.16	2,246.34	284,788.07
Division of Shell Fisheries	215,898.90	210,957.46	4,941.44	
Division of Fish and Game	2,078,663.49	1,899,180.53		179,482.96
Division of Veterans Services	617,755.26	547,284.94	2,495.84	67,974.48
State Rent Control Office	134,218.00	125,313.84		8,904.16
Total State Appropriations, Appropriated Receipts, Special Funds, Federal Funds	<u>\$15,221,852.81</u>	<u>\$9,103,248.58</u>	<u>\$111,823.70</u>	<u>\$6,006,780.53</u>

## UNAPPROPRIATED RECEIPTS

	Paid to School Fund	Paid to State Treasury
Division of Planning and Development	\$408,115.46	\$ 357,491.86
Division of Water Policy and Supply		320,065.55
Division of Shell Fisheries		108,021.75
Division of Veterans Services		1,799,480.83
	<u>\$408,115.46</u>	<u>\$2,585,059.99</u>



DIVISION OF PLANNING AND DEVELOPMENT  
APPROPRIATIONS

GENERAL OPERATIONS	Available for Expenditure	Expended	Returned to State Treasury	Reappro- priated
Bureau of Forestry, Parks and Historic Sites - Forests, Parks and Historic Sites Section (Including \$5,464.88 Wharton Tract receipts)		\$ 882,525.09		\$20,622.98
Forestry Cooperation Section		82,288.83		
Forest Fire Section		298,784.29		
Sub-total	\$1,346,510.05	1,263,598.21	\$ 62,288.86	
Bureau of Commerce	171,079.84	169,958.81	1,121.03	
Bureau of Navigation (Including \$3078.18 from Atlantic City Marina Receipts)	328,002.19	319,924.59	8,077.60	
Bureau of Planning	109,926.09	109,712.30	213.79	
Bureau of Geology and Topography	56,885.48	56,261.39	624.09	
Bureau of Aeronautics	53,254.27	51,845.59	1,408.68	
Bureau of Housing	23,872.90	23,750.93	121.97	
Bureau of Recreation	25,200.00	21,932.96	3,267.04	
Soil Conservation Committee	2,845.75	2,637.75	208.00	
Director's Office and Administration	127,239.17	105,956.84	21,282.33	
Board of New Jersey Pilot Commissioners (Receipts from pilots' fees)	15,557.88	15,557.88	00	
	\$2,260,373.62	\$2,141,137.25	\$ 98,613.39	\$20,622.98

STATE AID EXPENDITURES				
Bureau of Navigation				
Beach Protection (Including \$721,440.67 from municipalities)	2,874,138.00	1,389,824.15		1,484,313.85
Inland Waterways	423,493.64	196,477.32		227,016.32
Atlantic City Marina	462,008.95	33,852.23		428,156.72
	\$3,759,640.59	\$1,620,153.70		\$2,139,486.89

CAPITAL EXPENDITURES				
Bureau of Forestry, Parks and Historic Sites Recreational Area Development Program	1,646,039.75	1,403,730.89	227.12	242,081.74
FEDERAL FUNDS				
Bureau of Forestry, Parks and Historic Sites				
Federal Forest Fire Fund	106,622.20	90,047.23		16,574.97
Federal Forest Nursery Fund	10,800.88	9,899.40		901.48
Federal Farm Forestry Fund	28,426.81	14,617.41		13,809.40
Federal Reimbursement for Expenditures on Behalf of the Pequest Watershed Project	5,236.16	3,911.48	1,324.68	
Bureau of Navigation				
Federal Aid for Maintenance and Operation of Aids to Navigation in the Intracoastal Waterway	15,550.00	14,654.44	895.56	
Bureau of Aeronautics				
Federal Airport Grant Fund	355,050.00	355,050.00		
Total Appropriations - Division of Planning and Development	\$8,187,740.01	\$5,653,201.80	\$101,060.75	\$2,433,477.46

UNAPPROPRIATED RECEIPTS		
	Paid to School Fund	Paid to State Treasury
Bureau of Forestry, Parks and Historic Sites - Forests, Parks and Historic Sites Section		
Permits, rents, fees, sales of commodities and services		\$220,500.63
Wharton Tract Receipts (timber)		4,045.26
Forestry Cooperation Section		
Sale of tree seedlings		10,498.85
Tree Expert Bureau funds in excess of \$500.00		257.04
Forest Fire Section		
Fines		7,123.56
Right of Way Agreement with American and Telegraph Company		2,200.00
		\$244,625.34
Bureau of Navigation		
Marina Rentals -		
Leonardo		20,885.30
Forked River		11,811.07
Point Pleasant		688.76
Marina Concessions -		
Forked River		2,462.56
Leonardo		1,229.71
Preparation of instruments		8,954.00
Atlases and maps		46.00
Navigation Court Fines		464.00
Power vessel licenses		56,304.50
Miscellaneous		101.00
		\$102,946.90
Riparian Rights -		
School Fund Income Account (Lease rentals, license fees)	\$ 93,966.98	
School Fund Investment Account (Grants, easements, one-fee licenses)	313,786.06	
Guarantee Deposits (To be refunded when terms of lease have been met)	362.42	
Bureau of Geology		
Sale of Geologic maps and reports		6,087.23
Bureau of Aeronautics		
Sale of licenses		525.00
Bureau of Commerce		
Sale of Bulletins, Pamphlets, etc.		3,076.29
Bureau of Planning		
Sale of bulletins, pamphlets, etc.		231.10
Total Unappropriated Receipts - Division of Planning and Development	\$408,115.46	\$357,491.86



# DIVISION OF WATER POLICY AND SUPPLY

## APPROPRIATIONS

	Available for Expenditure	Expended	Returned to State Treasury	Reappropriated
General Operations	\$257,313.36	\$255,067.02	\$2,246.34	\$
Repair, Rehabilitation and Improvement of the Delaware and Raritan Canal	311,490.49	84,682.40		226,808.09
Flood Control in the Passaic - Morris Area	43,681.72	701.74		42,979.98
Flood Control - Bergen County	15,000.00			15,000.00
Sedimentation Study - Stony Brook Watershed	3,250.00	3,250.00		
Total Appropriations - Division of Water Policy and Supply	<hr/> \$630,735.57	<hr/> \$343,701.16	<hr/> \$2,246.34	<hr/> \$284,788.07

## UNAPPROPRIATED RECEIPTS

	Paid to State Treasury
Well Drillers' License Fees	\$ 3,735.00
Well Drilling Permit Fees	15,670.00
Penalties for Illegal Well Drilling	55.00
Delaware and Raritan Canal - Rentals of Dwellings and Land	14,462.90
Delaware and Raritan Canal - Sale of Water	107,606.01
Excess Diversion of Water	143,316.17
Federal Reimbursement to State - Flood Damage to Delaware and Raritan Canal	35,220.47
Total Unappropriated Receipts - Division of Water Policy and Supply	<hr/> \$320,065.55



# DIVISION OF FISH AND GAME

(The Fish and Game Division is supported entirely from receipts and Federal Funds. Although moneys are appropriated in the regular manner unexpended funds do not lapse but carry over.)

	Balance 7/1/55	Receipts 7/1/55-6/30/56	Total	Expended	Balance 7/1/56
General Fund				\$1,400,289.56	
Federal Aid to Fisheries (Reimbursable by 75% from Federal Government)				82,336.53	
Total General Fund and Federal Aid to Fisheries	\$268,850.19	\$1,331,407.13	\$1,600,257.32	\$1,482,626.09	\$117,631.23
Public Shooting and Fishing Grounds Fund				367,456.03	
Federal Aid to Wildlife				49,098.41	
Total Public Shooting and Fishing Grounds Fund and Federal Aid to Wildlife	\$155,255.27	\$ 323,150.90	\$ 478,406.17	\$ 416,554.44	\$ 61,851.73
TOTAL DIVISION OF FISH AND GAME FUNDS	\$424,105.46	\$1,654,558.03	\$2,078,663.49	\$1,899,180.53	\$179,482.96

## ANALYSIS OF RECEIPTS

### GENERAL FUND AND FEDERAL AID TO FISHERIES

Hunters' and Anglers' Licenses	\$1,160,904.95
fines	33,259.68
Other Receipts	67,666.28
Federal Aid to Fisheries	69,576.22
	\$1,331,407.13

### PUBLIC SHOOTING AND FISHING GROUNDS FUND AND FEDERAL AID TO WILDLIFE

Hunters' and Anglers' Licenses	132,704.40
recoveries, Sales, Rental of Equipment, Rents	9,120.14
Transfer from General Fund for Deer Management 1954-55	3,071.55
Transfer from General Fund for Game Management on Open Lands	60,000.00
Transfer from General Fund for Purchase of Land	80,000.00
Federal Aid to Wildlife	38,254.81
	\$ 323,150.90

### TOTAL DIVISION OF FISH AND GAME RECEIPTS

\$1,654,558.03



# DIVISION OF SHELL FISHERIES

## APPROPRIATIONS

	Available for Expenditure	Expended	Returned to State Treasury
General Operations	\$215,898.90	\$210,957.46	\$4,941.44

## UNAPPROPRIATED RECEIPTS

	Paid to State Treasury
Atlantic Coast Section -	
Clamming Licenses	\$21,258.00
Non-resident Clamming Licenses	1,084.50
Commercial Sea Clam Licenses (Boat)	750.00
Non-commercial Sea Clam Licenses (Boat)	50.00
Tonging Licenses	2,887.50
Leases (Oyster Beds)	8,347.65
Leases Transfer Fees	161.00
Survey Fees	360.00
Fines	1,007.50
Sale of Maps	18.00
	<hr/> \$35,924.15
Maurice River Cove Section -	
Oyster Boat Licenses	\$ 12,471.00
Tonging Licenses	1,342.50
Leases (Oyster Beds)	54,073.50
Lease Transfer Fees	416.00
Survey Fees	1,109.75
Fines	150.00
Shell Tax	2,501.35
Sale of Maps	33.50
	<hr/> \$ 72,097.60
Total Unappropriated Receipts - Division of Shell Fisheries	<hr/> \$108,021.75



# DIVISION OF VETERANS SERVICES

## APPROPRIATIONS

	Available for Expenditure	Expended	Returned to State Treasury	Reappropriated
General Operations	\$205,649.66	\$204,075.42	\$1,574.24	
Veterans Aid -				
Payments to Blind Veterans	25,671.50	25,100.15	571.35	
Payments to Paraplegic, Hemiplegic, Amputee, Osteochondritic and Quadriplegic Veterans	100,808.87	100,808.87		
Veterans Orphan Fund	9,578.50	9,228.25	350.25	
	<u>\$136,058.87</u>	<u>\$135,137.27</u>	<u>\$ 921.60</u>	
Guaranteed Loan Fund Income Account	76,461.89	63,688.20		12,773.69
Veterans Emergency Housing Fund Operating Account	199,584.84	144,384.05		55,200.79
Total Appropriations - Division of Veterans Services	<u>\$617,755.26</u>	<u>\$547,284.94</u>	<u>\$2,495.84</u>	<u>\$67,974.48</u>

## UNAPPROPRIATED RECEIPTS

	Paid to State Treasury
Sales of Temporary Housing Units	\$227,925.45
Sales of Permanent Housing Units	911,669.07*
Rentals of Temporary Housing Units	413,513.85
Rentals of Permanent Housing Units	246,372.46
Total Unappropriated Receipts - Division of Veterans Services	<u>\$1,799,480.83</u>

## VETERANS EMERGENCY HOUSING FUND

	Cash	Bond	Total
Capital Improvements	\$4,461,019.96	\$33,289,504.26	\$37,750,524.22
Administrative Expenses	231,734.29	671,746.48	903,480.77
Insurance	19,019.96	34,895.30	53,915.26
Debt Service	1,233,025.00		1,233,025.00
Unissued Bonds		1,000,000.00	1,000,000.00
Balance for Operating Expenses	55,200.79	3,853.96	59,054.75
	<u>\$6,000,000.00</u>	<u>\$35,000,000.00</u>	<u>\$41,000,000.00</u>

## VETERANS EMERGENCY HOUSING CONTINGENCY TRUST FUND

June 30, 1956, balance held in escrow by State Treasurer -  
Investment plus cash balance on hand \$496,219.62

\*Paid to State Treasury subject to withdrawals per original  
Veterans Emergency Housing contracts between the State  
and municipalities participating in the program.



# OFFICE OF THE COMMISSIONER

## APPROPRIATIONS

	Available for Expenditure	Expended	Returned to State Treasury
General Operations	\$202,870.50	\$201,791.17	\$ 1,079.33

## STATE RENT CONTROL OFFICE

### APPROPRIATIONS

	Available for Expenditure	Expended	Reappropriated
General Operations	\$134,218.00	\$125,313.84	\$8,904.16

## MORRIS CANAL AND BANKING COMPANY

### APPROPRIATIONS (Payable from Morris Canal Fund)

	Available for Expenditure	Expended	Returned to Fund
General Operations	\$64,971.08	\$32,817.68	\$32,153.40

### RECEIPTS

	Deposit in Morris Canal Fund
Rentals from Canal Property	\$ 7,138.80
Recreational uses (Parking, Boats, Food, Charcoal)	34,060.50
Concessions	4,509.15
From cottage owners for watchman's services	520.00
Total Receipts - Morris Canal and Banking Company	\$46,228.45



