

16th
Biennial Report
of the
North Carolina
Department of

CONSERVATION & DEVELOPMENT



To His Excellency
The Honorable Luther H. Hodges
Governor of North Carolina

In compliance with the Statutes of North Carolina, I am transmitting herewith the report of the Department of Conservation and Development for the biennium ending June 30, 1956.

Respectfully,

WILLIAM P. SAUNDERS,
Director

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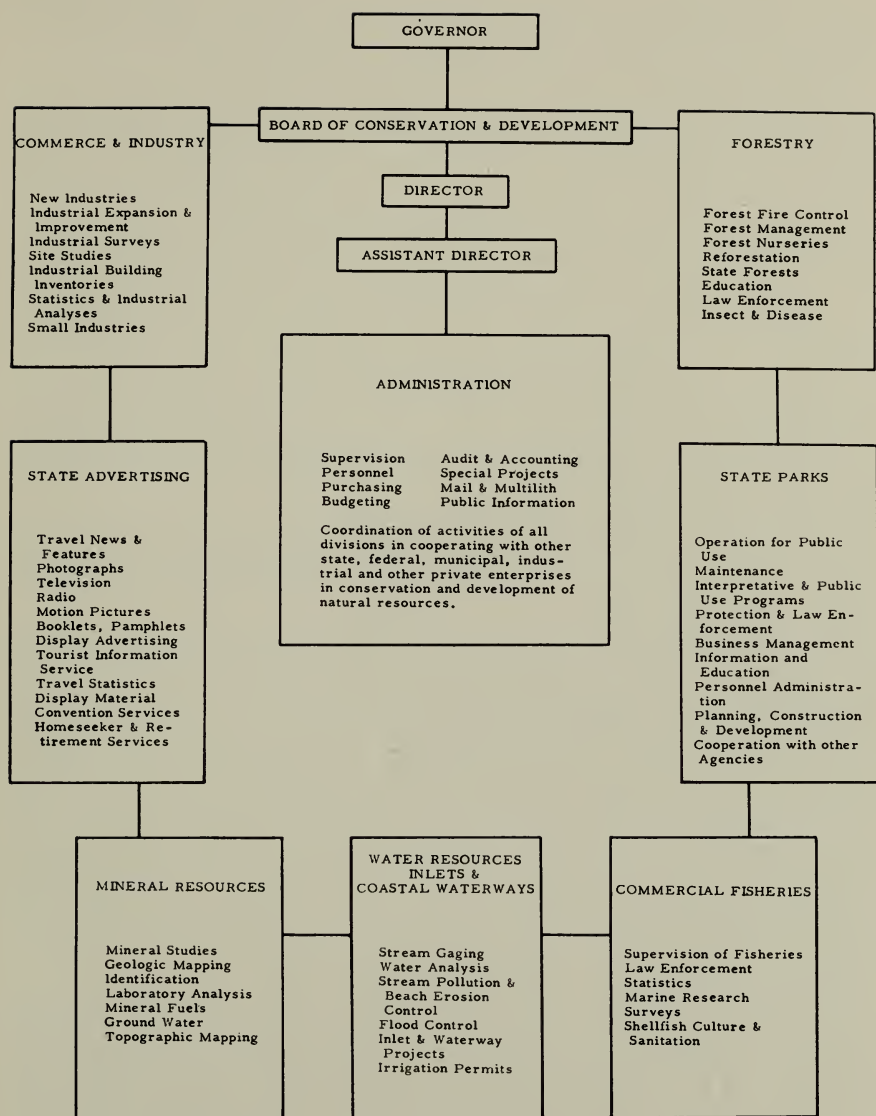
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Foreword

The mission of the Department of Conservation and Development is to conserve and develop the natural resources of North Carolina for the common good of all her people.

This report is an account of the department's stewardship for the biennium ending June 30, 1956.

In the interest of readability, much detail has been omitted. Those persons wishing more information about specific phases of the department's program, need only to contact the Department or the Division directly concerned.



Advertising

New approaches to presenting North Carolina to the world as a fine and progressive place to live, work and play were developed during the biennium by the State Advertising Division.

As competition from other states and abroad grew more intense, costs of everything in advertising and informational services increased, North Carolina's own rapid growth and multiplying attractions cut out a constantly more complex and expensive pattern of publicizing the State. Procedures were revised accordingly.

A major change was the transfer on July 1, 1955, of the Tourist Bureau, including home-seeker and retirement information services, from the Division of Commerce & Industry to the Advertising Division.

Another significant change included concentration of photographic operations in a separate section with responsibility for production of all types of pictures—motion and still, color and black & white, TV and graphic displays. Progress was also made in utilization of photographic services of regional organizations and private photographers.

New patterns were devised for travel promotion to maintain North Carolina's leadership in that field.

A new look was developed for publications.

The display advertising approach was overhauled drastically, and a beginning made toward heavier impact advertising through use of color and larger space.

The five bulletins produced by the Division increased their stature as bulwarks of tourist promotion and development. The "State Advertising Bulletin", going not only to editors but to chambers of commerce and tourist facilities of all kinds, is the only publication touching upon all aspects of State promotion on a state-wide basis. "North Carolina Travel Notes" is the only comprehensive guide to current tourist attractions for editors, travel counselors, and tourists in the U. S. and abroad. The two "Coming Events" bulletins, one comprehensive, the other a digest, are the only listings of crowd-gathering events compiled on a state-wide basis. The "Property Wanted" bulletin is indispensable to supporting advertising depicting North Carolina as a place to live—actively and in retirement.

During the biennium 1,354,619 copies of promotional and informational bulletins were produced. Photographic files were increased to over 55,000 negatives. More than 2,000 showings of North Carolina movies were made. Dozens of staff writers, photographers and travel counselors were escorted over the State. Nearly 3,000 informational outlets throughout the world were opened to North Carolina promotional literature.

Fitting these improved procedures into an efficient, closely-knit organization carrying out the functions assigned by G.S. 113-15, as

amended in 1953, involved organization of the Advertising Division into four coordinated sections. These are: Advertising & Publications Section, Tourist Inquiry Section, Photographic Section, and the Travel News Section.

Requirements of State promotion other than display advertising increased sharply during the biennium. This was reflected strikingly in publications and special project enterprises. Experience indicated that provision should be made in future advertising contracts for broader participation by the contractor and use of funds appropriated for direct advertising over a much wider promotional front than for display advertising alone.

Details of operations of the four sections of the Advertising Division are always available in permanent files.

Commerce and Industry

The accelerated industrial development program for North Carolina was begun a little over three years ago. It is probable that a similar period of time will have elapsed before positive evaluation of all phases of the program and measurements of their general effectiveness can be made.

The statistical data on new plants, capital invested, added industrial workers and wages will represent only a part of the advances to date under this stepped-up effort. Additional time will be required before appreciable results in terms of economic gains can be realized from such new development aids as the Business Development Corporation of North Carolina, the Governor's Small Industries Plan, The Research Triangle, and the contemplated improvement of the State's Vocational Trade and Technical Education program.

The following tabulations show developments during the past two years and comparisons with the previous Biennial Report.

INDUSTRIAL DEVELOPMENT

	New	Capital Invested	New Employees	New Payroll
1954-56	280	\$106,277,000	18,553	\$50,756,600
1952-54	340	\$101,000,000	26,000	\$66,000,000
Expansions				
1954-56	380	\$133,107,500	15,982	\$41,055,900
1952-54	173	\$ 68,000,000	9,000	\$23,000,000
New and Expansions				
1954-56	660	\$239,384,500	34,535	\$91,812,500
1952-54	513	\$169,000,000	35,000	\$89,000,000

The 280 new plants for 1954-56 were dispersed in some 130 cities and communities throughout the State. The Piedmont Region obtained 60% of the total new plants, the Coastal Plain counties 30%, and the Mountain Area 10%.

Some of the outstanding firms represented in new industries gained, included two General Electric Company units and new facilities by International Paper, Ronson, Douglas Aircraft, Kearfott, and Borden Company.

The number of plant expansions and total capital invested in these additions for the Biennium represent the highest recorded since the Division started compiling general total industrial development figures for the State.

Of special significance is the fact that while textile operations led all others in the number of new plants (67), the manufacture of electrical machinery and equipment led in the amount of capital

invested, new employees, and in added payroll. The two industrial classifications for the Biennium may be compared as follows:

	Textiles	Electrical Machinery and Equipment
Number New Plants	67	8
Capital Invested	\$15,807,000	\$44,828,000
New Employees	3,817	4,133
New Payroll	\$ 9,600,200	\$14,000,000

The above breakdown does not include apparel manufacture under textiles. To include apparel would boost textiles by 27 plants, 3,956 new employees, \$3,859,000 capital investment, and \$8,606,000 new payroll.

Noteworthy gains were also made in the following: 27 new operations in furniture and fixtures, representing an investment of \$3,647,000; 16 chemical and allied product plants, with an investment of \$5,138,000; 18 factories making fabricated metal products, with an investment of \$2,320,000; 17 machinery plants, with an investment of \$3,000,000; and 24 food and kindred operations, with an investment of \$3,769,000.

In addition to the above new industries and expansions, utility companies, including power, gas and telephone, invested over \$205 million in North Carolina expansions during this Biennium.

FIELD ACTIVITIES

Early in the Biennium two moves were initiated to increase the effectiveness of field work. Specific territories, both inside and outside the State, were assigned the Field Engineers. As applied this has not restricted personnel, whenever demands require their services, from working in all territories. It has, however, helped to expedite field work generally because assigned representatives have become familiar through visits from time to time with company officials in out-of-state territories, with Chamber of Commerce personnel and industrial development committees at the local level in North Carolina.

During this period the Division, through the above arrangement, made its first consistent solicitation of prospects in the North Central and upper Mid-Western states—Chicago, Cleveland, Detroit, Minneapolis, St. Paul, Cincinnati, Erie, Syracuse, Buffalo and other cities were placed on regular call for the first time. Results of these solicitations have been satisfactory and it is contemplated that additional visits will be made to these cities.

After heavy mail circularization and directed national advertising, a number of special promotional projects were undertaken by the Field Force during the Biennium. These included emphasis on electronics and electrical machinery and equipment, woolen and worsted

manufacture, textile dyeing and finishing, machinery and metal parts manufacture, paper and paper products, and chemicals.

RESEARCH AND STATISTICS

Near the close of the Biennium an effort was begun to improve and enlarge the services of this activity in the Division. While current needs for data, surveys, reports, etc., still constitute the major work, some beginnings have already been made towards an improved system of collecting, cataloguing, and presenting resource data and statistics for use by the Field Force. Added emphasis is being placed on usable plant sites and potential industrial areas throughout the State.

Under the direction of Paul Kelly, now on leave of absence, an outstanding study was prepared on the Cotton Textile Tariff, especially as new revisions of the Tariff Act relate to a possible influx of cheap Japanese cotton goods. This study has been widely distributed in this and other states.

A second study has just been completed and copies given to the Industrial Committee of the Board. This report covers various forms of inducements offered new industries in some 20 odd states, including several of our chief competitors for industry.

The Division has experienced an unusually heavy demand in the past several years for comparatively large amounts of process water—both ground and surface—and for locations to accommodate disposal of industrial wastes. The pulp and paper industry is presently in a period of large-scale expansion.

The problem of obtaining sufficient water supplies for "wet" industries is serious in some areas of the State. However, waste disposal has become critical in virtually all sections, not only for the pulp and paper industry, but also for textile dyeing and finishing, certain chemical industry processes, and for metalworking where plating is required.

COMMUNITY ACTIVITIES

During the Biennium an additional number of communities organized local development groups to promote industries for their areas. This was particularly noticeable in the Eastern counties, as business leaders there sought new income sources to bolster feared losses from diminished agricultural operations.

The Division was called upon for advice and assistance in connection with these new organizations, in addition to attending numerous meetings with established groups. Just prior to the close of 1955, the Division called for a general meeting in Raleigh of all persons interested in industrial promotion from all parts of the State. Some 300 persons attended this meeting at which the full work of the Division was explained. The general feeling after this meeting was that other similar conferences should be held, at which time specific

problems and procedures might be discussed with members of the Division.

The trend toward obtaining trained personnel to direct local development programs continued in the larger cities and towns as Greensboro, Monroe, Wilmington, Goldsboro, Kinston, Farmville, Lumberton, and others began such programs during the past several years.

SMALL INDUSTRIES

At the time the last biennial report was issued, the Home Industries Section was without any personnel and there was some question as to its future. Up to that time most of its efforts had been spent in promoting what was known as "Rural Industries."

While the disposition of the Section was under consideration, G. F. Albright, a Development Engineer in the Commerce and Industry Division, approached the Chief Development Engineer as the champion of Home Industries—industries organized and established by local communities with local capital and local management. He took the position that a Home Industry Section, efficiently and aggressively operated, had a tremendous potential to provide the following advantages:

1. Increased industrial payrolls.
2. Additional use of the State's raw materials and natural resources.
3. Local uses for investment capital.
4. Retention of industry profits within the State.
5. Development of native management and technical skills.
6. Recapture of native management and technical skills now lost to other states.
7. Stabilization of future economy of the State.

After several conferences between the Chief Development Engineer and the Director, Mr. Albright was put in charge of the Home Industries Section, effective September 1, 1954.

His first efforts were exerted in searching out the potential market in North Carolina to determine what products were most needed by the industries that already operate in the State. He sent letters to a thousand manufacturers in the State asking them to advise the Section what raw materials, supplemental parts, and operating supplies they purchased from outside the State which they believed could be economically produced in the State. Their general comments on our program were invited. As replies came in the results were tabulated. These replies listed several hundred products.

A little later a letter was sent to all Chamber of Commerce executives in North Carolina telling them something of the Section's program and to which was attached a form for listing the manufacturing facilities in their respective communities.

The Public Information Officer was kept informed of the activities and purposes of the Section and every possible effort was made to let the people know of the services available in the Home Industries Section.

The Head of the Section accepted invitations from all sections of the State to speak to civic clubs and industrial development groups about the work of the Section. Soon inquiries were pouring in from communities wanting to know how they could start a Home Industry.

Early in 1955 the name of the Section was changed to Small Industries Section and a little later the Governor's Small Industries Plan was started in operation. From that point the work of the Section and of the Governor's Small Industries Plan have complemented and supplemented each other. The publicity which attended the launching of the Governor's Small Industries Plan stimulated interest in the promotion of community industries to the extent that so many inquiries came from so many communities that it was physically impossible to personally appear in all of them to explain the procedure for establishing a Small Industry.

In July 1955, the Section prepared a multilithed "Guide for Community Development of Small Industries" which set forth the same things that had been told to industrial development groups in personal appearances. The Guide proved its worth when several communities using it, organized and started small industries without personal guidance from the Section.

Early in 1956 the Governor's Small Industries Plan published "An Approach to Community Development of Small Industries" which set forth more elaborately and in more detail about the same information that the Guide contained. The Section collaborated in preparation of the "Approach."

The variety of inquiries received by the Section and the variety of services rendered by it are so large that no list can be submitted that would include all of them. The inquiries range from those from persons with strange and unusual patents who have for years been searching for an "angel" to finance the making and marketing of their product to those from communities with nothing but a desire for an industry.

The Section receives many inquiries from outside the State from persons and firms who have a product and a market and want to be put in touch with a firm in North Carolina who can manufacture the product for them. The Section has been able to do this in numerous cases thereby adding to North Carolina production and employment.

The Section also assists and advises as to methods and sources of financing for new, small industries or for the expansion of existing operations. The Section frequently acts as a liaison between the new industry and its lending agency.

The Small Industries Section constantly adds to its library of information on building and equipment prices, market surveys, cost data, investment and personnel requirements, etc. to be used by prospective new small industries in the State.

The Section has in several cases been instrumental in putting new industry in touch with needed management and technical personnel to run their business. The Section is being contacted more and more by ambitious young men who are looking to improve their position and who want managerial and executive positions.

Reactivation of the Small Industries Section has been amply justified by concrete results. Since its reactivation September 1, 1954, there have been 41 new small industries started in operation in the State either through the personal guidance of Section personnel or through use of the Guide published by the Section. It is interesting to note that the first plants established required that the personnel of the Section lead the promoters through each step until the plant was operating. After the Guide was issued, several of the small industries were organized and started operation with almost no personal guidance from the Section.

These 41 industries that have been started in the past 22 months cover a wide variety of diversified products such as molded plastic items, wall plaster, processed and canned foods, tobacco curers, aluminum and zinc die castings, portable decorative fountains, auto parts, garage equipment, industrial gears, machine parts, childrens' apparel, toys, radiant heating pads, men's leather work shoes, charcoal, steel doors and frames, chemicals, plastic bags, plastic clothes pins, aluminum windows and screens, cotton fabrics, wood preserving, kitchen cabinets, plywood, telephone cross arm pins, window cleaner, paper products and dehydrated alfalfa meal.

These plants are dispersed from the Atlantic coast to as far west as Bakersville and Asheville in the western North Carolina mountains. Ten of them are in the Eastern part of the State.

The Section at present has about fifty prospects in various phases of development. Some of them may never reach the operational stage and some of them may establish plants in the very near future.

Commercial Fisheries

Commercial fishing has for the first time come in for its share of attention from the session of Congress just recently closed. For the past two years import duties on seafood products up to three million dollars have turned over to the Fish and Wildlife Service for Fisheries Research and seafood market development.

The Payne Fisheries Education bill has been given favorable consideration. This bill is a long range program to educate young people desiring to make a career of the fishing industry. Also, the Magnuson-McCormack bill intended to elevate commercial fisheries within the Department of the Interior. The Fish and Wildlife Act of 1956 authorized the making of loans at three per cent interest to mature in not more than ten years for "financing and refinancing of operations, maintenance, replacement, repairs, and equipment of fishing gear and vessels and for research into the basic problem of fisheries." The fishing people owe to our able Congressman, Herbert Bonner, a vote of thanks for his great interest in our fisheries, both on a national and a local level.

The interest in coastal North Carolina of Governor Luther Hodges and the Board of Conservation and Development, directed by William P. Saunders, has done much to focus State and National attention on our problems.

One of the major concerns of this Division is the increasing number of pleasure boats using our commercial fishing waters with no supervision except where we have limited Coast Guard service.

INCREASE IN BOATS

Due to the change in our tax law and strict enforcement, sport fishermen using commercial fishing equipment have registered with our Department by proper license on their boats. This has increased our licensed boats to approximately 4,000 during 1956. This is an increase of 1,200 over 1955. Also, many new shrimp trawlers have been added to our fleet.

The Fisheries Commissioner believes there is cause to be optimistic. Under the 1956 budget set-up, we have the personnel and the physical equipment in the way of boats, etc., to render the State and public a real service. A more complete patrol of our waters can be maintained and better supervision over our public oyster grounds can be made. This biennium our boats planted hundreds of thousands of bushels of oysters and shells, all of which, it is true, was financed by the Shellfish Division except for \$9,863 but the supervision of the work was done by the Division of Commercial Fisheries and the actual planting was done by its personnel and boats. We are hopeful

that the 1957 Legislature will enable us to do much more of this kind of work to build up the oyster industry of the State than we have been able to do in the past. Except for a barge, we have all the physical equipment necessary to expand this work very greatly.

FISHERIES' RESEARCH

It would not be fair to close this report without mentioning the valuable service of the University of North Carolina, Institute of Fisheries Research, directed by Dr. A. F. Chestnut. He has recommended a program for rehabilitating our natural oyster grounds which should revolutionize the oyster industry in our State. This program in North Carolina is well behind those of our neighboring states. The Institute, working in close harmony with the Department, is rendering a needed service to the fisheries of North Carolina.

Attached is a table of statistics which give the production of finfish and shellfish by species during this period. Except for oysters, the statistics reflect a healthy condition. Also, attached is a sanitation report on shellfish sanitation.

SHELLFISH SANITATION REPORT

Mr. C. G. Holland
Fisheries Commissioner
North Carolina Department of
Conservation and Development
Morehead City, North Carolina

Dear Mr. Holland:

I have the pleasure of submitting a brief report of the activities and observations of the office of Shellfish Sanitation of the North Carolina State Board of Health during the biennium ending June 30, 1956.

This was a biennium for destructive hurricanes along the North Carolina coast. Great damage was done to the shellfish industry. Fourteen plants were destroyed and thirty-four were damaged with losses estimated at \$120,000.00. However, technical assistance has been given to eleven new plants built at an estimated cost of \$213,000.00. Our policy of assisting dealers toward full compliance with shellfish sanitation standards has minimized revocation of certificates.

The yearly average of certificates of inspection issued to approved shellfish dealers were: crustacea meat, 18; shucking plants, 52; and, shellstock dealers, 87. The two district sanitarians assigned to the

shellfish sanitation program made 1,775 inspections of these plants. Collected and examined in the shellfish bacteriological laboratory were 150 shellfish samples and 868 water samples. Plans were prepared and furnished gratis for new shellfish plants.

The oyster shucking plants have been unable to obtain a supply of legal size oysters sufficient to provide continuous operation. This was due to both a scarcity of oysters and a reduction of harvester effort. The inability of dealers to fill orders promptly and consistently has long retarded economic progress in the shellfish industry.

There has been a marked increase in the production of cooked crab meat in spite of the difficulty of full compliance with the questionable bacteriological standards of northern markets. Meetings have been held with the National Fisheries Institute, Inc. and with control agencies of producing and receiving states in attempts to unify crab meat standards. Most plants are well constructed and equipped but if this industry is to survive and prosper new techniques of production and marketing must be developed.

Sanitary and bacteriological surveys of four shellfish growing areas were completed during the biennium and findings reported to the Division of Commercial Fisheries. Further surveys are in progress. Each year dangerous pollution has reduced the acres of clean waters for shellfish harvesters and has made necessary the increased expense of posting and constant patrolling of closed areas.

In 1955 North Carolina's shellfish sanitation program was evaluated by the United States Public Health Service and received a rating of 96.1%. With few exceptions the co-operation of our plant operators has again been excellent.

In concluding this brief report, I wish to express my appreciation for the co-operation and assistance you and your staff have extended me and my co-workers in the performance of our duties.

Respectfully submitted,

N. McKeithen Caldwell
Shellfish Sanitarian
N. C. State Board of Health

KIND, QUANTITY AND VALUE OF FISH TAKEN IN WATERS OF NORTH CAROLINA

For the period July 1, 1954 to June 30, 1956

Kinds of Fish	Price per Pound	No. of Pounds	Value to Fishermen
Herring	1 cent	25,062,932	\$ 250,629
Blue Fish	12	753,271	90,393
Bow Fin	6	9,039	542
Butters	10	104,295	10,430
Carp	3	797,256	23,918
Catfish	8	2,056,331	164,506
Croakers	6	5,030,025	301,802
Black Drum	6	58,858	3,531
Red Drum	10	324,386	32,438
Eels (Common)	5	167,880	8,394
Flounders	12	2,268,755	272,251
Star Butters	8	1,055,800	84,464
Hickory Shad	6	508,912	30,535
King Mackerel	20	13,992	2,798
Sea Mullet	7	3,266,364	228,680
Mullet	10	3,654,571	365,457
Hog Fish	3	588,511	17,655
Pike	13	1,400	182
Pompano	30	7,693	2,308
Porgy or Bream	7	113,631	7,954
Sea Bass	11	101,230	11,135
Shad	25	1,404,964	351,241
Sheephead	8	22,212	1,777
Snapper (Red)	20	41,954	8,391
Spanish Mackerel	15	516,567	77,485
Spot	10	3,578,614	357,861
Striped Bass	15	1,516,717	227,508
Sturgeon	20	20,611	4,122
Suckers	7	825	58
Sunfish	3	2,500	75
Swell Fish	3	436,768	13,103
Trout (Gray)	10	3,539,124	353,912
Trout (Spotted)	30	869,424	260,827
White Perch	8	2,339,858	187,189
Yellow Perch	7	91,092	6,376
Total of Food Fin Fish		60,326,862	\$3,759,927
Menhaden (No. of Fish)		482,148,569	4,045,821
			\$7,805,748

Shellfish

Oysters	244,381	(Bu. tubs) 5 pk.	\$ 672,048
Clams	22,092	(bushels)	59,648
Soft Shell Crabs ..	20,062	(dozen)	30,093
Escallops	18,766	(gallons)	75,064
Hard Crabs	14,713,680	(pounds)	441,410
Shrimp	10,530,881	(pounds heads off) ...	4,212,352
Total Value of Shellfish			\$5,490,615
Value of Fin Fish			\$ 7,805,748
Value of Shellfish			5,490,615
Total Value of Water Products			\$13,296,363

Forestry

The Forestry Division, often called the State Forest Service is designated by State law to "have charge of the work of forest maintenance, forest fire prevention, reforestation, and the protection of lands and water supplies by the preservation of forests, etc." The State law also carries specific authorization "to arrange for and accept such aid and cooperation from the several United States Government Bureaus and other source as may assist in carrying out the objectives of the Department." This forestry program covers the following broad activities:

1. **Forest Fire Control**—Administered by the Forestry Division in financial cooperation with the several counties and the U. S. Forest Service. Currently, 88 of the 100 counties are thus under cooperative fire protection by the State. The Division conducts the work in the counties through its salaried full-time County Ranger or County Forester, who reports directly to one of 12 District Foresters. The Division owns and operates 129 forest fire lookout towers, two airplanes, its own radio communication net, and a considerable amount of forest fire fighting equipment, consisting of tractors, fire plows, specially equipped trucks, etc.

2. **Forest Management Advice and Service**—The Division has a currently authorized strength of 56 trained Foresters. Some are assigned largely to the fire control program, some to the forest nurseries-reforestation and some to forest management service. But all foresters of the Division are available for the vital work of advice and service, under certain conditions, to forest owners and operators in the management of forest land. All Forest Rangers of the Division are likewise available as sources of information on both forest management and reforestation.

3. **Forest Tree Nurseries and Reforestation**—The Division operates four State forest tree nurseries, one in Johnston County, one in Henderson County, one in Wayne County, and one in Burke County. The new Burke County nursery on the outskirts of the City of Morganton is under a long-time lease from the Duke Power Company. This nursery should be in production for certain species in 1957.

The forest tree distribution for the 1955-56 planting season was 36 million seedlings. These seedlings are sold for forest and wind-break planting at varying prices, \$4.00 per thousand f.o.b. destination for the several species of pine.

4. **Information and Education**—There is available considerable literature on forestry, most of which is free upon request to the In-

formation Office of the Department. This literature is particularly valuable to teachers, pupils, etc.

5. **Administration of State Forests**—Thus far, the State owns and operates only one State Forest, the 36,000 acre Bladen Lakes State Forest in Bladen County. It is administered by the Division and is an excellent example of the management of low value land under good forestry practices.

6. **Forest Tree Insect and Disease Control**—This branch of the Division is actively engaged in the control of forest tree insects and diseases. Outbreaks of southern pine beetle in western North Carolina and the oak wilt disease in North Carolina are being controlled by crews working under the supervision of the pest control forester of the Division.

GENERAL

In the spring of 1955 occurred one of the most disastrous fire seasons in the memory of living inhabitants in eastern North Carolina. A prolonged dry spell with high winds made the forest areas tinder dry. In many instances the swamps and bays were so dry that fires burned in the ground for long periods and were most difficult to control. The largest fire started near Lake Phelps in an inaccessible area and burned 175,000 acres before it was controlled. Considerable credit is due the splendid cooperation during this entire period by industry, Army, Navy, Coast Guard, Marines, and National Guard for use of men and equipment on several of the large fires.

As a result of the serious losses of forest resources by these fires a number of conferences were held with the Governor, representatives of timber land holdings, Federal agencies, and State agencies. From these conferences there was evolved by the Division a comprehensive and detailed Forest Fire Plan for the State and each of the 12 forestry districts.

The scope of this plan with the many agencies involved can be judged by noting that the State Plan alone contains 79 pages. Mutual Aid Agreements have been signed with the States of Tennessee, South Carolina and Georgia under the Southeastern Interstate Forest Fire Protection Compact Law which was passed by the 1955 North Carolina Legislature. These agreements should greatly facilitate forest fire control measures during hazardous periods.

The phenomenal growth of the demand for forest tree seedlings will be further greatly stimulated by the conservation reserve features of the Federal Soil Bank Act. This anticipated demand has necessitated plans for the expansion of existing nursery facilities and the establishment of a new nursery in Burke County near Morganton on property under long time lease from the Duke Power Co. This new

nursery should alleviate the continuing shortage of white pine seedlings for western North Carolina.

Vigorous and continuing action is being taken to control an epidemic of Southern pine beetles in the mountain region of the State and also the location and control of the Oak Wilt disease which is present in three western counties.

The personnel situation in regard to technically trained foresters to carry out the responsibilities of the Division is critical. There were twelve forester vacancies at the end of the biennium, almost entirely due to the much higher salaries offered by industry and other agencies.

FOREST MANAGEMENT

Expanding the forest management services to the timber landowners of the State with already existing budget and facilities is the chief aim of the Forest Management Division.

Management services are now available in 71 counties and limited management services in the remaining 29 counties.

The outstanding feature of this activity is that the private landowner is given in-the-woods advice and services on how best to manage and market his timber.

Ten Service Foresters are at present employed to give tree marking service, forest management advice, and forest planting assistance to landowners. Currently over 25 million board feet of timber are marked annually for cutting on individual landowners' tracts by these Service Foresters and other forestry personnel. This is about two per cent of the timber cut annually in North Carolina. However, the demand for this service of tree marking is expanding and each year will find more and more marked timber cut. Effective July 1, 1956 a nominal charge was imposed for the marking service.

PROGRESS IN FOREST MANAGEMENT SERVICE TO LANDOWNERS

	Prior to this Biennium	During Biennium 1954-56	Total To Date
No. of Examinations Made	6,511	2,260	8,771
Total Woodland			
Acres Examined	1,590,785	182,085	1,772,870
No. of Tracts Marked	2,673	1,087	3,760
Acreage Marked	74,740	22,590	97,330
Board Feet Marked	185,915,000	54,856,000	240,771,000
Cords Marked	61,373	24,857	86,230
Applications Not			
Acted Upon			331
Acres Given			
Planting Assistance	3,454	4,742	8,196

NURSERIES

With the establishment of the forest tree nursery in Burke County, the State will have in operation four forest tree nurseries, one in Johnston, one in Wayne County, one in Henderson and one in Burke County. The new Burke County nursery was established primarily to supply the demand for white pine and yellow poplar seedlings for the mountain area. Under the provisions of the Federal Soil Bank considerable Federal assistance is being obtained for the establishment of this new nursery. When in peak production, the 4 nurseries should have a maximum capacity of 100 million seedlings annually. The tree seedlings are sold for windbreaks, erosion control, and reforestation at varying prices, \$4.00 per thousand f.o.b. destination for the several species of pine. Over 50 million seedlings are available for planting season 1956-57.

DISTRIBUTION OF FOREST TREE SEEDLINGS BY SPECIES

Species	1952-53	1953-54	1954-55	1955-56
Black Locust	30,525	25,800	19,900	25,500
Black Walnut	7,850	10,627	6,600	4,175
Loblolly Pine	6,787,550	9,700,760	14,915,250	16,981,656
Longleaf Pine	418,850	789,487	768,712	863,906
Red Cedar	618,500	626,910	839,183	391,575
Shortleaf Pine	822,850	749,600	483,400	1,518,250
Slash Pine	1,189,000	2,625,750	3,298,300	13,193,206
Yellow Poplar	226,650	277,300	466,750	283,800
White Pine	1,272,400	1,924,800	3,491,475	1,749,900
Miscellaneous	28,530	45,150	113,075	897,110
Totals:	11,402,705	16,776,184	24,402,645	35,909,087

DISTRIBUTION OF FOREST TREE SEEDLINGS BY CLASS OF COOPERATORS

Class of Cooperators	Biennium 1954-56		Cumulative Grand Total	
	No. of Cooperators	No. of Trees	No. of Cooperators	No. of Trees
Farmers	7,270	20,868,186	26,134	64,730,110
Industries	120	31,535,700	437	63,354,649
Schools	121	346,275	655	2,589,559
State	15	853,000	198	4,173,786
Club & Organizations	54	138,650	2,656	698,053
Municipalities	14	3,409,950	64	3,856,074
Federal Agencies	23	2,181,137	90	10,332,367
Others	145	978,825	589	7,315,738
Totals:	7,762	60,311,723	30,823	157,050,336

FOREST INSECT & DISEASE CONTROL

This branch of the Forestry Division which was formed under the law passed by the 1953 General Assembly and has been very active during the biennium. An epidemic of the southern pine beetle in Cherokee County has been controlled by the crews of this branch. Crews are now operating on an outbreak of this pest in the Asheville Basin in Buncombe County. These are cooperative projects under the Federal Forest Pest Act.

A survey of the Oak Wilt infested trees in western North Carolina with the eradication of those trees found is continuing. This consists of air survey and ground checking for the disease which has caused serious damage in the mid-western states and has been found in Buncombe, Haywood and Madison Counties in western North Carolina.

PUBLICATIONS

In August, 1955, there was published "Buyers of Forest Products in North Carolina." This 93 page booklet contains the names of purchasers of forest products obtained by a county by county survey. It is extremely useful to farmers and other landowners in marketing products from their timberland.

FOREST FIRE CONTROL

The Federal Government, under the provision of Section 2 of the Clark McNary Law continues its financial cooperation with the State. The amount of funds made available to the State, under the provision of this law, is based largely upon the actual State appropriation for forest fire control and need.

Supervisory Personnel

A fairly heavy turn-over in all grades of supervisory personnel continued during the past two years.

Present Organization

As of June 30, 1954, there were 88 counties cooperating with the Division of Forestry in forest fire control.

County Cooperation

Work has been continued in financial cooperation with the 88 counties under forest fire control, with work being based on the county as a unit. This form of cooperation has met widespread support from the various counties. The Department cooperates with the various counties on the basis of their ability to pay as indicated by each county's taxable wealth. The counties pay from 25 to 40 per cent of the total cost of fire protection within the county.

As of June 30, 1954, there were 12 counties, representing 1,267,896 acres in the State still without any form of forest fire control.

Private Cooperation

Financial cooperation was continued with private forest owners who agree to pay an annual amount used to supplement other available funds to provide more intensified fire protection to their lands.

Detection System

The Division now operates 129 lookout towers. In addition to the State-operated towers, there are 42 Federally-owned towers which cooperate with the State in reporting fires. The operation of two State owned airplanes has supplemented the tower network and aided the ground crews materially.

Forestry Division Communication

The Division now owns and operates 468 two-way radios and in addition owns a considerable mileage of telephone lines.

Permanent Improvements

A new district warehouse, district office, oil and tire house and grease rack were constructed at New Bern. A new District office was constructed at Fayetteville. Four steel and one treated wood forest fire towers were purchased and erected during the two year period. An observation cab was constructed on the Jefferson Standard building in Greensboro making an excellent lookout point. (Building 17 stories high). Two equipment shelters for plowing units were constructed at Scotland Neck and Lower Grove. A total of seven small buildings were constructed at remote towers for storage of tools and supplies and overnight sleeping for tower operators.

Forest Fire Statistics

The forest fire statistics for the past four years are shown in the statistical chart. In evaluating these statistics, the following factors must be kept in mind:

1. Climatic conditions which are all important in the actual suppression of forest fires.
2. Funds available represented about one-half the amount needed for adequate protection.

Conclusion

The goal of State-wide forest fire protection has yet to be accomplished. The increased support of the general public, however, has indicated the very real progress made by forest fire prevention and control.

FOREST FIRE STATISTICS FOR STATE PROTECTED AREAS BY CALENDAR YEARS

	1952	1953	1954	1955
Area under Protection—Acres	15,553,146	15,566,788	15,615,501	15,696,980
Number of Fires	3,768	3,143	4,164	
Causes of Fires				
1. Campers and Hunters ..	339	433	330	259
2. Brush Burning	1,343	951	1,369	1,338
3. Incendiary	661	491	700	563
4. Lightning	96	47	105	61
5. Logging	125	137	157	129
6. Railroads	93	60	141	108
7. Smokers	831	723	866	806
8. Miscellaneous	280	301	496	425
Total	3,768	3,143	4,164	3,689
Area Burned:				
Forest Land	231,994	131,077	193,666	548,009
Open Land	66,050	22,459	14,334	32,094
Total	298,044	153,536	208,000	580,103
Damage:				
Forest Land	\$323,436	\$1,051,050	\$1,317,451	\$4,481,637
Other	426,581	193,704	53,189	22,815
Total	\$750,017	\$1,244,754	\$1,370,640	\$4,504,452
Law Enforcement:				
No. Fires Resulting in Law Enforcement Action	926	638	866	895
Finances—Fiscal years	1952-53	1953-54	1954-55	1955-56
Appropriation by Counties	\$221,709	\$263,976	\$253,135	\$267,828
Appropriation by Private Owners	25,203	29,874	33,101	36,465
Appropriation by State	528,184	572,243	649,929	665,193
Transfer from Preceding Year	0	0	0	0
Rentals from Employees	5,063	5,375	5,780	6,038
Appropriation, Federal Government	278,676	293,977	293,966	321,589
Presuppression Fire Lines	3,912	3,997	3,643	2,660
Total Appropriations	\$1,062,747	\$1,169,442	\$1,239,554	\$1,299,773
Available Funds:				
Per Acre Protected	6.8 cents	7.5 cents	7.9 cents	8.2 cents

BLADEN LAKES STATE FOREST

This 36,000 acre State Forest continues to be an outstanding example of forest management in the State.

This area which was leased from the Federal Government in 1939 was deeded to the State in October, 1954, and is now in complete control of the State with the exception of certain mineral rights.

A variety of activities are carried on in this area, as is noted from the table of receipts acquired this biennium. The most unique feature about this area is that it is self-supporting. In fact, excess receipts over expenditures are shown at the end of each year's operation. Money is paid in lieu of taxes to the County of Bladen each year from these excess receipts, and averages yearly about \$4,500.

SUMMARY OF RECEIPTS—BLADEN LAKES STATE FOREST **July 1, 1954—June 30, 1956**

3,663,546	Board Feet Rough Green Lumber	\$140,646.64
1,407	Board Feet Pine Stumpage	28.14
7,753.74	Cords Pulpwood	24,962.09
52.42	Cords Oak Wood	690.40
28:50	Cords Oak Wood Stumpage	26.25
54,357	Pounds Charcoal	1,730.14
54,777	Treated Pine Posts	23,667.57
14	Loads Cypress Poles	350.00
139,400	Tobacco Sticks	144.95
1,636	Treated Sign Posts for Fire Control	1,558.15
1,955	Board Feet Logs	52.89
180,650	Shingles	875.17
	Timber Trespass	540.71
	Custom Treating	1,279.65
	Deer Hunts	1,770.00
	House Rent	144.00
	Miscellaneous	236.60
		<hr/>
		\$198,703.35
	Appropriations	280.10
	Transferred from Previous Fiscal Years	17,630.00
	Rental from Employees	1,372.80
		<hr/>
	Total Receipts	217,986.25
	Total Expenditures	188,848.25
		<hr/>
	Balance Unexpended	\$ 29,138.00

Mineral Resources

The Division of Mineral Resources is the official representative of the Department of Conservation and Development in the fields of geology, mineral resources, mining, and treatment of minerals. It corresponds to the geological survey of most states. Its work is to collect, tabulate, and evaluate information concerning the mineral resources of the State and to make this information available to the public in useful form. Its objective is to improve the general welfare of North Carolina through a more thorough understanding and better use of its geology and mineral resources. The activities and services of the division may be summarized, as follows:

1. The division, through its own personnel and in cooperation with the United States Geological Survey and other agencies, carries out systematic surveys of the geology and mineral resources of specific areas which may be treated as units. Such work includes detailed topographic and geologic mapping, controlled sampling, petrographic study, and a general appraisal of the geology and mineral resources of each area surveyed.

2. The division carries out, in cooperation with various state and federal agencies and industrial concerns, a wide range of mineral investigations restricted to the study of a specific mineral or mineral resource. Individual deposits and prospects are studied, mapped, and sampled. Mineralogical and petrographic studies are carried out, and a general appraisal is made of each deposit and the resource as a whole.

3. There is being carried out, in cooperation with the United States Geological Survey, a detailed investigation of the ground-water resources of the State. This type of investigation includes geologic mapping as well as hydrologic studies and chemical analyses on ground (subsurface) waters to determine the type, quality, quantity, and availability of such waters in the State and how they may be used to the best advantage.

4. The division cooperates with landowners, prospectors, small miners, and other citizens of the State by identifying and reporting on specimens of rocks and minerals sent in for examination. Also, information is furnished on specific mineral deposits and mineral resources where it appears that the furnishing of such information will advance the general welfare of the State. The office of the Division of Mineral Resources serves as a clearing house for this information through the publication of reports designated as bulletins, economic papers, information circulars, and reports of investigation.

WORK OF DIVISION

During the biennium 1954-1956, there was more interest on the part of industry in the mineral resources of North Carolina than during any like period in the history of the State. In the summer of 1953, Ventures, Limited, a Canadian corporation, began core drilling at Ore Knob, Ashe County. This drilling was a success from the beginning, and during the biennium 1954-1956 more than a million tons of 3-per cent copper ore were blocked out. A shaft has been sunk to a depth of a thousand feet, and a plant has been built to concentrate the ore. The success of this venture has created new interest in copper, lead, and zinc prospects, and three or four major companies are now interested in developing these minerals in the State. As a result of this increased interest in copper, personnel of the division mapped and studied a 50-square-mile area in Chatham County in which two potential copper-producing prospects are located. A report, including a detailed geologic map of the area, has been completed and is on file in division offices.

Increased demands for lithium and the success of Foote Mineral Company in its mining operations at Kings Mountain have created new interest in the spodumene (lithium) deposits of the Kings Mountain district. Foote Mineral Company of Philadelphia began mining and concentrating spodumene for its lithium content at Kings Mountain in 1951. The success of this venture and the circulation of reports that the spodumene deposits of the Kings Mountain district contain approximately ninety per cent of the lithium reserves of the United States created intense interest in the area. In 1954, Lithium Corporation of America acquired property and began construction of a plant near Bessemer City, Gaston County. Production began early in 1955. At the same time, other potential producers began acquiring property and exploring for spodumene. While the construction of additional plants has not begun, five major companies are carrying out active exploration with considerable success. Due to the lack of detailed information on the deposits and the many requests received in this office, a study of the area was begun in the summer of 1955. A report, Information Circular 15, "Lithium Resources of North Carolina," has been prepared and published by the division. This report indicated that the major deposits which are favorable for mining contain 41,500,000 tons of ore to a depth of 300 feet, which averages 15 per cent to 20 per cent spodumene and should produce 55,030,00 units of lithium oxide. There is probably an equal amount in tonnage of ore below the depth of 300 feet and in deposits not now considered favorable for mining.

NEW METALS DEVELOPED

The use of titanium oxide as a pigment together with new uses for titanium metal in jet engines and for other high-temperature

requirements caused a renewed interest in the rutile and ilmenite deposits of the State. The rutile deposits of Clay County were re-studied, and two leases were granted by the Board of Conservation and Development for the prospecting of ilmenite sands in the sounds in the eastern part of North Carolina. Responsive to this renewed interest, the division made a detailed study of the terrace formations of Sampson County and prepared two reports, which are on file in the office of the division. One of these is entitled, "Petrography of the Sampson County, North Carolina, Pleistocene Formations." The other is entitled, "Geomorphology of Sampson County, North Carolina." Sampson County was selected for study because it is more than fifty miles long and lies across four of the Pleistocene terraces of the State. The terraces were mapped in detail, and some 84 selected samples of the Pleistocene sand were collected. Twenty-four of the samples which were most characteristic of the terraces were carefully concentrated, and heavy-fraction studies with a petrographic microscope were made to determine the amount of ilmenite present and its distribution through the county. Ilmenite was found in all the samples, but the study indicated that commercial deposits may be expected in the Coastal Plain only at points favorable for ilmenite concentration.

Tungsten Mining Corporation practically doubled the capacity of its plant at Townsville, Vance County, and active exploration for tungsten ore in Cabarrus County was started by Carolina Tungsten Company. There was increased interest in asbestos and kyanite, and the production of pyrophyllite, mica, kaolin, feldspar, stone and other minerals was stepped up by new developments and the expansion of existing plants. Several areas containing asbestos, kyanite, and other nonmetallic minerals were examined, and information of value was collected and made available to potential producers. The value of the mineral production of the State is increasing at the rate of approximately ten per cent each year.

STUDIES AND REPORTS

A study of miscellaneous rocks of value, such as quartzites, gneisses, unakite, and sandstone, was made, and a report, Information Circular 13, entitled, "Petrography and Economic Aspects of the Miscellaneous Commercial Rocks of North Carolina," was published. This report completed the studies began in 1942 on the commercial rocks (excluding limestone) in North Carolina. Previously published was Bulletin 67, "The Commercial Granites of North Carolina," and Information Circular 12, "Commercial Rocks of the Volcanic-Slate Series, North Carolina."

The discovery, in 1954, of uranium minerals in geologic formations other than pegmatite dikes created nuclear interest in the possibility of finding commercial deposits of uranium in the State. As a result,

several major groups are actively exploring for uranium in the upper Piedmont and Mountain Counties. In order to keep abreast of this interest in and prospecting for uranium minerals and furnish some of the information being requested, a general reconnaissance was made of the more important areas, and a report, Information Circular 14, "Radioactive Minerals of North Carolina," was prepared for distribution. This report contains descriptions of the more important radioactive minerals known to occur in the State, indicates the areas where these minerals occur, and outlines prospecting procedures.

Economic Paper 66, "The Mining Industry in North Carolina from 1946 through 1953," was prepared and published. In addition to a detailed summary and review of the mining industry in North Carolina for the years indicated, this report contains a brief review of the State's mining for the past fifty years and presents information of value on the geology and potential mineral resources of the State. The first report on the mining industry in North Carolina covered the year 1900 and was published in 1901. The present report, therefore, is a sort of golden anniversary volume. It furnishes information that was badly needed, and it has been well received by representatives of the mining industry and the public generally.

GEOLOGIC MAPPING

Geologic mapping was renewed during the biennium, and several counties in which such work had not been done previously were mapped. These included portions of Ashe and Caldwell and all of Alleghany, Alexander, Surry, Wilkes, Yadkin, and Granville. In addition, an area in the Slate Belt near Albemarle, Stanly County, was mapped, and a report, entitled, "The Carolina Slate Belt near Albemarle, North Carolina," was prepared. This report is on file in the office of the division.

In March 1956, Governor Luther H. Hodges authorized the preparation of a new geologic map of the State and made available \$25,000 to carry out the mapping in several counties necessary for the production of such a map. Three field parties began geologic mapping in June and two more in July. It is expected that the map will be completed and published during the calendar year 1957.

The United States Geological Survey continued to show an active interest in the geology and mineral resources of the State. An important report, Professional Paper 246, "The Geology of the Deep River Coal Field, North Carolina," was published by that organization. This report contains some 158 pages, 10 maps, and a complete description of the area, including the coal. In continuation of our program of cooperative work with the Survey and following completion of studies in the Spruce Pine district and in the Hamme Tungsten district of Vance County, mapping was begun in the Fairgrove and Lexington quadrangles of Davidson County. This area was selected

because it is in the Carolina Slate Belt, which is attracting considerable attention as a possible source of strategic minerals.

GROUND WATER STUDIES

Ground water in the Coastal Plain continued to be an item of major importance. Real progress has been made in our cooperative work with the United States Geological Survey in this field, as follows:

Fieldwork has been completed in the Southern Pines area, and a report, "Ground-Water Resources of the Southern Pines Area, North Carolina," is being reviewed and edited for publication. The counties covered by this report are: Harnett, Lee, Moore, Montgomery, Richmond, Hoke, Scotland, Robeson, and Cumberland. "Stratigraphic Revision Concerning the Trent Marl of North Carolina" is another report that has been prepared and is now being reviewed by the Geological Society of America, having in mind its publication in the journal of that society. "Well Logs of the Coastal Plain of North Carolina," which should be of real value to the well driller, prospective well owner, and persons interested in the geology of the Coastal Plain, has been prepared and will soon be ready for publication. A report, "Upper Cretaceous Ostracoda from North Carolina," has reached final stages in its preparation for publication and will be valuable to geologists and others interested in the geological formations and ground-water resources of the eastern part of our State. Considerable work has been done and reports should be completed in about a year in two other areas. One of these covers Lenoir, Craven, Carteret, Duplin, Jones, Pender, Onslow, and New Hanover Counties and bears the title, "Geology and Ground-Water Resources of the Wilmington-New Bern Area, North Carolina." The other study covers Hertford, Gates, Bertie, Martin, Beaufort, Chowan, Greene, and Pitt Counties and will be entitled "Geology and Ground-Water Resources of the Greenville Area, North Carolina." All of this ground-water work is of considerable importance to the industrial development of the Coastal Plain, since much of the water needed in that area will come from the ground.

Another report resulting from cooperative work with the Survey, "Ground-Water Resources in North Carolina," was published in February 1956 as our Bulletin 69. This report summarizes in nontechnical language the ground-water resources of the State and furnishes information which may be applied in a general way to all sections of the State.

COOPERATIVE SERVICES

During the biennium, at least a hundred well sites were located for towns, schools, State institutions, and industries. The division cooperated with landowners, prospectors, small miners, and people interested in the geology and mineral resources of the State by ren-

dering services not otherwise available. Information was furnished on asbestos, kyanite, pyrophyllite, uranium, and other minerals. Approximately 1,500 rock and mineral specimens were examined for citizens of the State and information furnished as to their identity and value. Hundreds of letters were written in reply to requests for general information on the mineral resources of the State and in response to requests for specific information with respect to the value or availability of different properties. In addition, many copies of the division's publications were sent to interested persons.

The following publications were issued by the Division of Mineral Resources during the biennium:

Bulletin No. 69, "Ground-Water Resources in North Carolina," by H. E. LeGrand.

Economic Paper No. 66, "The Mining Industry in North Carolina from 1946 through 1953," by Sam D. Broadhurst.

Information Circular No. 13, "Miscellaneous Commercial Rocks of North Carolina," by Richard J. Councill.

Information Circular No. 14, "An Introduction to Radioactive Minerals in North Carolina," by Richard J. Councill.

Information Circular No. 15, "Lithium Resources of North Carolina," by Sam D. Broadhurst.

State Parks

THE ROLE OF STATE PARKS IN CONSERVATION

Today, we depend on natural resources for far more than just our material and economic needs. We depend upon our natural resources to satisfy other needs as well. That we depend so much on our natural resources for the fulfillment of needs beyond material needs is one of the indicators of our present economic status and way of life. A part of our natural resources should, in fact must, be used without actually being consumed and for purposes other than direct dollars and cents gains.

The ability of the average person to satisfy his or her non-material needs has been increasing rapidly because of three relatively recent developments: (1) increased leisure time, (2) higher income, and (3) greater mobility. The present trend in each of these is upward. This is especially true of leisure time. It is now widely predicted that the forty hour week will be replaced by the thirty hour week.

CONSERVING HUMAN RESOURCES

These factors make it mandatory that our conservation program—our program for the wise use of natural resources—include adequate provision for the recreational use of natural resources so that we may meet both our material and our non-material needs. No conservation program—state, national or local—can possibly be successful unless it places the same emphasis on recreational use of natural resources as on forest management, wildlife protection, water conservation and intelligent practices in harvesting natural resources.

In this phase of wisely using natural resources, the state park system plays a very important part—a part that is doubly important since the state parks make possible the use of **natural** resources to conserve **human** resources. State parks provide a broad range of opportunities for wise and wholesome use of leisure time and thus provide lasting social benefits. State parks bring mental health, spiritual strength and the growth of aesthetic appreciation by bringing people into close contact with the beauties and the mysteries of the natural world. They promote physical fitness through providing for a wide range of physical activities from swimming to hiking. They help develop increased appreciation of man's place in nature through the opportunities they offer for the study of natural history. State parks help build the ability to work with others for the common good through such programs as youth camping and family camping.

The Division of State Parks has but one purpose: TO SERVE PEOPLE:

In the conservation work of striving to assure for the people of North Carolina adequate provision for recreational use of natural resources, the Division of State Parks serves people in three ways:

1. By preserving and protecting natural areas of unique or exceptional scenic value for the use, enjoyment and benefit of not only the present generation but of generations to come. This is **the** basic service of state parks; we must never lose sight of it.

2. By providing opportunities for recreational use of natural resources and for outdoor recreation and outdoor living in natural surroundings. Recreation that makes use of natural resources in the outdoors is a definite responsibility of any state park system. Opportunities for camping, fishing, boating, swimming, picnicking and similar types of recreation are a major concern of state park systems. State parks should provide facilities and opportunities primarily for recreational use of the great outdoors and should leave the more highly organized and intensive recreational pursuits to municipal and other agencies.

3. By portraying and explaining plant and animal life, geology and all other natural features included in the various areas in the state park system. In an age when we are faced with ever-dwindling natural resources, this service is very important, because an enlightened public is essential for intelligent use of natural resources.

The major phases of the work of the Division of State Parks are:

1. Operation for Public Use
2. Maintenance
3. Interpretive and Public Use Programs
4. Protection and Law Enforcement
5. Business Management
6. Information and Education
7. Personnel Administration
8. Planning, Development and Construction
9. Cooperation with and Services to Other Agencies

A summary of accomplishments in each of these phases of work follows:

1. OPERATION FOR PUBLIC USE

State Parks

All records in state park use were broken during this biennium. State park attendance of 3,042,331 was larger than the attendance during any previous biennium. It exceeded attendance for the biennium ending June 30, 1954 by 12.5 per cent; attendance for the biennium ending June 30, 1952 by 24.7 per cent; and attendance for the biennium ending June 30, 1950 by 85.5 per cent. State park

attendance of 1,548,897 for the fiscal year July 1, 1954-June 30, 1955 was the greatest for any single fiscal year since the first state park was established. State park attendance of 1,483,434 for the fiscal year July 1, 1955-June 30, 1956, although somewhat reduced by adverse weather conditions and hurricanes, was greater than for any single fiscal year in any previous biennium. These increases in state park use were spread throughout the state park system—every state park experienced an increase in public use.

Even more impressive than mere attendance figures, and actually more important, is the fact that an ever-increasing percentage of those who come to the state parks are park **users** instead of being merely park **visitors**. This is one of several clear indications of the constantly growing recreational use being made of natural resources and very vividly emphasizes the necessity for an adequate, well-rounded state park system.

The uses made of state parks were many and varied. Among the outdoor activities in which state park users engaged were picnicking, swimming, tent camping, trailer camping, wilderness camping, organized camping by youth groups, boating, fishing, hiking, nature study and vacationing in state park cabins. One striking feature of this use is that it is predominantly family use. By far the largest percentage of those using the state parks do so in family groups.

Two outstanding special events took place during this biennium. The first of these was the dedication to public use of the swimming facilities at Cliffs of the Neuse State Park on June 4, 1955 by Governor Hodges. The other special event was the dedication of the William B. Umstead State Park at 5:00 p.m. on August 28, 1955, at which time the name of the park was officially changed from Crabtree Creek State Park. The dedication program, at which Governor Hodges delivered the principal address, was attended by upwards of 4,000 people. Special guests included Mrs. William B. Umstead, who responded on behalf of the Umstead family, and Miss Merle Bradley Umstead, daughter of former Governor Umstead, who unveiled the entrance markers.

New facilities placed in operation during this biennium included the swimming facilities at Cliffs of the Neuse State Park consisting of bathhouse and lake, the new park road system and parking areas at William B. Umstead State Park, the restaurant and observation lounge at Mount Mitchell State Park, and boat rental facilities at Morrow Mountain and Pettigrew State Parks.

State Lakes

The Division of State Parks administers the seven State Lakes. Four of these lakes are within the boundaries of state parks and are administered as state park areas. These four lakes are Singletary Lake, which is a part of the Singletary Lake Group Camp area; Lake Phelps,

which is a part of Pettigrew State Park; and Jones and Salters Lakes, which are within the boundaries of Jones Lake State Park. As Black Lake is adjacent to Bladen Lakes State Forest, it is handled in a similar fashion.

Because the State owns no land around the remaining two lakes—Lake Waccamaw in Columbus County and White Lake in Bladen County—the administration of these two bodies of water presents many problems. These problems were complicated by the very low water level of White Lake and Lake Waccamaw, as well as of the other lakes in Bladen and Columbus Counties, during all of 1954 and the first eight months of 1955. Careful geological investigation revealed that the major cause of the extremely low water level was the prolonged drought. The rains brought by the hurricanes of August and September, 1955, raised the water of these lakes to practically normal full level and the lakes continued full or nearly full throughout the remainder of the biennium. To partially alleviate the handicap this low water level placed on the users of White Lake, the State Lakes Regulations were amended to permit lengthening of piers and docks. In addition to low water in 1955, White Lake suffered from a recurrence of the algae condition that occurred in 1950.

More dock, pier and boat permits were issued at both White Lake and Lake Waccamaw than in any previous biennium.

2. MAINTENANCE

Hurricane Hazel, which struck the State on October 15, 1954, caused severe damage at many state parks. Heavy damage to buildings and natural features occurred at Fort Macon State Park and heavy damage occurred to natural features at Cliffs of the Neuse, Jones Lake and William B. Umstead State Parks and at Singletary Lake Group Camp. The damage caused to natural features, involving as it did the blow-down of thousands of mature hardwoods, was irreparable. Damages to structures at Fort Macon State Park were repaired with a special \$25,000 fund made available for this purpose by Governor Hodges. Extensive building repairs, as well as repairs to parking areas and utilities, were required. In September, 1955, Hurricane Ione did considerable damage at Fort Macon State Park and relatively slight damage to other state parks. Damages at Fort Macon State Park were corrected by an allotment of approximately \$9,000 from the Contingency and Emergency Fund.

The severe drought conditions of 1954, and preceding years, affected several state parks. The two most adverse effects were the near failures of the water supply systems at Hanging Rock, William B. Umstead and Reedy Creek State Parks, and the serious effect the drought had on the vegetative covering of many state parks. Emergency measures had to be taken to avoid closing to public use those state parks having serious water supply problems.

The extra repair and maintenance work made necessary by the hurricanes and severe drought complicated the maintenance problem.

Personnel of the Division of State Parks are responsible for maintaining several million dollars worth of property. This property includes, in addition to land, a large number of buildings of various types and sizes, roads, parking areas, trails, water supply systems, sewer systems, telephone lines, power lines, a variety of public use areas, and operating and maintenance equipment. Despite the complications of emergency repair and maintenance work required because of the hurricanes and the drought, regular maintenance of the state parks was carried on during the biennium. Several major and scores of minor maintenance jobs were completed. In addition to repair of hurricane damages, major maintenance projects have included extensive repairs to the group camp lake dam at William B. Umstead State Park, major overhaul of the water supply system at Cliffs of the Neuse State Park, and extensive repairs to park road systems.

The increase made in appropriations for state park maintenance by the 1955 General Assembly made possible some maintenance gains. Nevertheless, state park maintenance is still not up to first-class standard and additional funds will be required to reach this standard. Ever-increasing public use of the state parks automatically brings with it increasing wear and tear on the facilities so that maintenance work increases in direct proportion to public use.

3. INTERPRETIVE AND PUBLIC USE PROGRAMS

Increasing emphasis was given to the program of assisting state park users to use and enjoy the natural features of state parks more fully and thus secure greater benefits from them. At five state parks—Cliffs of the Neuse, Hanging Rock, Morrow Mountain, Mount Mitchell and William B. Umstead State Parks—naturalists were employed during the summer months to carry on such activities as conducted nature hikes, nature lectures, laying out and maintaining self-guided nature trails and similar activities. Public demand for these services is almost as great in the fall and spring months as in the summer months and, to meet this demand, the naturalist at William B. Umstead State Park was employed on a part-time basis during the spring of 1956. The program included regularly scheduled nature hikes each Saturday and Sunday during the spring months and illustrated talks to groups. This experiment of extending naturalist services beyond the summer season was very successful and received much favorable comment.

Much more emphasis should be placed on interpretive programs. These programs include portraying and explaining such natural features as geology, plants, animals and natural processes and are both

recreational and educational. Such programs are among the most lasting and beneficial public services offered by the state parks.

Public use programs included teaching swimming and life saving classes in cooperation with the American Red Cross and assisting a large number of groups to plan and carry out day outings in the state parks.

4. PROTECTION AND LAW ENFORCEMENT

The park superintendents and park rangers continued to do a good job of maintaining law and order in the state parks; protecting the state parks from fire, vandalism and trespass; and protecting the animal and plant life in the state parks. This work has involved many different jobs, including patrol and fire prevention measures; boundary surveys and marking; educational contacts with park neighbors; and cooperation with other agencies. In cooperation with the Division of Forestry, written fire control plans for several state parks have been prepared.

Only three fires occurred within the state park system during the biennium despite the highly hazardous conditions brought on by long drought periods. One fire occurred at William B. Umstead State Park and burned only one-quarter acre. Two fires, one covering one acre and one covering two acres, occurred at Reedy Creek State Park. This excellent protection record was due entirely to the vigilance of the park superintendents and park rangers and the extra patrol duty they performed during severe drought periods.

Use of the state parks continued to be orderly because of the good protection and law enforcement carried on by the park superintendents and park rangers. The educational work carried on by the Division and the vigilance of field personnel have somewhat reduced vandalism in the state parks.

5. BUSINESS MANAGEMENT

Business management is a very important part of the varied and complex state park program. Accounting for expenditures and receipts; specifying and requisitioning a wide variety of supplies, materials and equipment; property inventorying and accounting; preparation of payrolls; keeping fiscal, equipment, operation and cost records are only a part of business management of the state parks. Upon the prompt and efficient execution of business management activities depends much of the success of the state park program. Among the activities carried on in this phase of state park work during this biennium were periodical physical inventories of non-expendable property at each state park, frequent merchandise inventories, and revision of parts of the Forms and Reports Manual.

Earned receipts from the operation of state park facilities during the biennium July 1, 1954-June 30, 1956 reached an all-time high

of \$220,128.44—an increase of 20.1 per cent over the previous biennium. These earned receipts amounted to 38.5 per cent of the total operating and maintenance expenditures.

6. INFORMATION AND EDUCATION

The volume of inquiries for information on state parks increased sharply during the biennium. This increase in volume of inquiries for state park information is another demonstration of the popularity of state parks. The brochure, NORTH CAROLINA STATE PARKS, continued to make possible a far better job of answering these thousands of inquiries. By use of this brochure, state park inquiries were fully answered. In addition, thousands of requests for information on state parks were handled verbally at the individual state parks.

Personnel of the Division made numerous talks to a variety of groups and organizations and also participated in radio and TV programs. News stories and feature articles on state parks appeared in newspapers throughout the state during the biennium. Features also appeared in a number of periodicals, particularly in the company publications of several large industrial firms.

Roadside directional signs were erected within a 25-mile radius of both Morrow Mountain and Hanging Rock State Parks. These signs, which give the distances and directions to these state parks, have been most useful to the public.

In addition to the interpretive programs, educational activities have included school camps for grammar school children during the school years, trips to state parks by various school groups for field study, and use of the state parks as laboratories by both public schools and colleges.

7. PERSONNEL ADMINISTRATION

The successful operation of the state park system and the quality and quantity of services the state parks render to the public depends entirely upon the number and quality of the state park employees. Planning, building, administering, operating and maintaining a system of state parks requires trained, efficient and experienced personnel.

Personnel training has, therefore, continued to be the most important phase of state park personnel administration throughout this biennium. Training to increase the knowledges and skills of state park workers continued to be emphasized through the semi-annual park superintendents' meetings, staff conferences, training sessions on specific phases of state park work, on-the-job training and home study. As a further step in increasing the efficiency and productiveness of state park employees, a study has been started to secure the data necessary to completely detail and organize the operating duties of each employee at each state park.

During this biennium, the effectiveness of the state park program has been hampered and personnel administration has been made difficult by a large number of resignations. Resignations occurred throughout the biennium but reached a peak during the first six months of 1955 when one-third of the permanent positions in the Division were vacated. This heavy turn-over in state park personnel appears to be caused by two factors: (1) the lure of higher salaries in other fields, and (2) the long work days and weeks required of state park personnel. In many state parks, park use has more than doubled in the last ten years but there has been no increase in employees. As a result, many state park employees are compelled to work six- and seven-day weeks as well as to work overtime each day through the summer months. This situation will, unfortunately, continue to exist so long as the present number of field employees is so disproportionately small in comparison with the volume of public use.

An important and time-consuming part of personnel administration work is the selection of over 60 temporary employees each summer.

8. PLANNING, DEVELOPMENT AND CONSTRUCTION

A. Permanent Improvements

The following permanent improvements projects were completed during this biennium:

Cliffs of the Neuse State Park: Swimming facilities, including concrete diving tower, grading and sanding of protected swimming area and grading of beach. A refreshment stand was built through the generosity of numerous business concerns in Wayne and adjoining counties who donated money and materials to this project.

Mount Mitchell State Park: Restaurant and Observation Lounge Building.

The State Highway and Public Works Commission, with a special allotment made by Governor Hodges, carried on extensive roadside improvement work both within Mount Mitchell State Park and on the road joining Mount Mitchell State Park with the Blue Ridge Parkway. Work done so far has very much improved the appearance of both the park and the connecting road.

In addition, a new sewage disposal system to serve developments near the summit of Mount Mitchell was completed.

Mount Jefferson Area: Construction of outdoor fireplaces, tables and benches and the erection of directional signs.

Pettigrew State Park: Reconstruction of the original Overseer's House. This building serves the dual purpose of being a restoration of one of the original plantation buildings and of providing quarters for the park ranger.

William B. Umstead State Park: A complete park road system and three parking areas. Governor Hodges made this project possible by making a special allotment of \$50,000. Completion of this project not only provides all weather access to all public use facilities but, of equal importance, it provides control of vehicular traffic into the park, thus making possible much better protection of the park.

In addition, the Division of State Parks cooperated in the following construction:

Tryon Palace: Restoration of the west wing of the Palace and the construction of a replica of the east wing of the Palace were practically completed during the biennium. The contracts for the restoration of the main building were awarded in March, 1955. All of this work is being financed from the bequest made by the late Mrs. Maude Moore Latham for the restoration of Tryon Palace.

Museum of North Carolina Minerals: The Division of State Parks cooperated with the National Park Service and other State agencies in the construction of the Museum of North Carolina Minerals which was dedicated to public use on June 17, 1955.

B. Acquisition of New Areas

Tryon Palace: Two tracts of land for the Tryon Palace project were purchased with state funds. Eleven tracts were purchased with funds from Mrs. Latham's bequest.

C. Planning

One of the most important achievements in state park planning was the adoption by the Board of Conservation and Development in January, 1955, of PRINCIPLES GOVERNING THE ESTABLISHMENT, EXTENSION AND DEVELOPMENT OF THE STATE PARK SYSTEM OF THE STATE OF NORTH CAROLINA. This basic planning tool was carefully studied by the Committee on State Parks before being presented to the Board for adoption. These principles set forth basic planning criteria essential to a sound state park program.

In addition to carrying out the preparation of plans and specifications for all state park permanent improvements projects completed during the biennium, the staff of the Division has planned and carried out a number of major repair jobs, planned and constructed information exhibits, worked on the preparation of detailed drawings of water systems, sewer systems and other utilities, continued work on the preparation of master plans and master plan reports, and completed a number of field surveys.

9. COOPERATION WITH AND SERVICES TO OTHER AGENCIES

The Division of State Parks cooperated in a variety of projects

with other agencies and rendered a number of consultation and other services to various public and private agencies during the biennium. At the request of the School of Education of North Carolina State College of Agriculture and Engineering, the Superintendent of State Parks worked with college authorities in planning a four-year curriculum in park administration. The Superintendent of State Parks also helped plan and carry out a two-week short course in park administration at the University of Mississippi and a two-day workshop at North Carolina State College. Cooperative services were rendered to the National Park Service in connection with the Cape Hatteras National Seashore Recreational Area and the Museum of North Carolina Minerals; to the Tryon Palace Commission in connection with the restoration of Tryon Palace; the Wildlife Resources Commission in connection with research projects; and to a number of other State, Federal and local agencies.

In turn, State and Federal agencies have given much assistance to the state park program. Appreciation is especially due to the State Highway and Public Works Commission which has given valuable assistance on a number of state park road and parking area projects and to the National Park Service which has rendered valuable advice and assistance on a number of state park problems and projects.

LEGISLATION

The only legislation, other than that connected with the budget, concerning the Division of State Parks was the enactment of the bill to rewrite and revise Chapter 121 of the General Statutes of North Carolina pertaining to the Department of Archives and History. This bill provides that the preservation of historic sites shall be the responsibility of the Department of Archives and History. Pursuant to this bill, the Directors of these two departments jointly submitted a report to the Governor recommending that the following historic sites be transferred immediately to the Department of Archives and History:

- (1) Town Creek Indian Mound, Montgomery County.
- (2) Battle of Alamance State Historical Park, Alamance County.
- (3) Old Brunswick Town, Brunswick County.
- (4) James Iredell House, Edenton, Chowan County.
- (5) Charles B. Aycock Birthplace, Wayne County (when its reconstruction has been completed by the Charles B. Aycock Birthplace Commission and when it is ready to be turned over by that Commission for administration by the State.)

Further study is being given to the question of transferring the historic portions of Fort Macon and Pettigrew State Parks and all of Rendezvous Mountain State Historical Park to the Department of Archives and History.

RECOMMENDATIONS FOR FURTHER PROGRESS

A. Provide the Increased State Park Budgets Needed to Improve Operations, Public Use Programs, and Maintenance at Existing State Parks.

State park budgets and state park personnel are now and have always been insufficient to adequately operate and maintain the existing state parks. Public use increases at a greater rate than budgets and personnel. Much more emphasis should be placed on programs to provide for public use of the natural features of the parks. Only by providing adequate funds and personnel can these improvements be brought about.

Of especial importance is the provision of additional park personnel to meet the greatly increased work load caused by very heavy increase in public use of state parks.

B. Provide Funds Necessary to Complete Developments and Land Purchase at Existing State Parks.

Additional facilities are needed at all state parks to meet public demand and to carry out the basic purposes and objectives of the state park program. Public use of many of the existing facilities is beyond the capacity of these facilities.

C. Provide Additional Technical Personnel for Comprehensive Advance Planning of the State Park System.

An adequate staff of competent technical personnel should be employed to prepare detailed plans for improvement of the state park system well in advance of actual construction. Such advance planning always saves time and money.

D. Continue to Raise State Park Personnel Standards.

In-service training should be increased and every advantage should be taken of short courses and other training courses to increase the knowledge and ability of state park personnel. Job descriptions and salary scales should be re-examined in the light of present day requirements.

E. Provide a Land Purchase Fund for Acquisition of New State Parks.

Prepare and finance a comprehensive plan for additions to the state park system.

The present number of areas in the state park system are too few to render reasonable service to the people of North Carolina. Additional areas are needed if the basic purposes and objectives of the state park program are to be achieved. These areas are necessary for three reasons: (1) to bring state park services to all sections of North

Carolina; (2) to preserve certain areas for their greatest public benefit; and (3) to prevent the overuse and consequent deterioration of existing state parks. There are many gaps in the state park system that must be filled.

F. Provide Funds for Building Public Use Facilities on New State Parks.

Once they are acquired, roads, parking areas, sanitary facilities and a number of public use facilities will be needed in new state parks.

All of these recommendations should be carried out in strict accordance with **Principles Governing the Establishment, Extension and Development of the State Park System of the State of North Carolina** and **Park, Parkway and Recreational Area Study of North Carolina**.

Water Resources, Inlets and Coastal Waterways

The functions of this division, in accordance with the provisions of Sections 113-3, 113-8, 113-8.1, 113-27, and 143-213, General Statutes of North Carolina, as amended, are as follows:

(a) To collect and classify the facts derived from investigations of surface waters and to make these facts known to the citizens of the State and to the public generally;

(b) To arrange and classify the facts derived from investigations of water supplies and water powers, cooperating with other departments and agencies of the State and providing a general source of information in regard to the water resources of the State;

(c) To prepare, for the signature of the Director of the Department of Conservation and Development, permits to use surface waters for irrigation;

(d) To investigate, and cause investigations to be made of, the coasts, ports and waterways of North Carolina, cooperating with agencies of the Federal and State Governments and other political subdivisions in making such investigations; and

(e) To cooperate in the pollution-abatement program of the State.

The activities of the Division during the 1954-56 Biennium, in accomplishing the functions indicated above, are set forth below.

INVESTIGATIONS OF SURFACE WATERS

The District Engineer, North Carolina District, Geological Survey, U. S. Department of the Interior, pursuant to a cooperative agreement between the Director of the Geological Survey and the Director of the Department of Conservation and Development, operates, and collects statistics from, stream-gaging stations throughout the state; makes miscellaneous stream-flow measurements at various places; determines the magnitude, duration, and frequency of selected low flows; and provides detailed analyses and presentations of stream-flow data. The statistics, measurements, and data are transmitted to the Division of Water Resources, Inlets and Coastal Waterways, which makes them, and other data derived therefrom, available to the Commerce and Industry Division, Department of Conservation and Development, in connection with attraction of new industries, and to

municipalities, industries, and individuals which may desire them. The Department published hydrologic data on North Carolina river basins as follows:

Names of basins and periods of data	Year of Publication
Cape Fear, 1820-1945	1947
Yadkin-Pee Dee, 1866-1945	1948
Catawba and Broad, 1872-1945	1949
Neuse, 1866-1945	1950
French Broad, 1857-1945	1950
Roanoke and Tar, 1871-1945	1952

Records of maximum mean weekly, minimum mean weekly, maximum daily, mean daily, and minimum daily discharges since 1945, both in million gallons per day and cubic feet per second, at gaging stations in the streams in the seven river basins indicated above, have been, and are being, prepared by personnel of the Division from data furnished by the Geological Survey and are maintained in the office of the Division. They are available to the persons indicated above and are frequently used. In inventories of the water resources of North Carolina river basins being prepared by the Division (see "Investigations of Water Supplies and Water Powers", below), references are being made to hydrologic data as previously published and records indicated in the first sentence of this paragraph are being incorporated.

The District Chemist, North Carolina District, U. S. Geological Survey, pursuant to a similar cooperative agreement, operates sampling stations and makes laboratory analyses of samples to evaluate the suitability of surface waters for domestic, industrial, and agricultural use; to plan the conservation and development of water supplies; to evaluate the potential utility of surface waters on the basis of materials in solution or suspension; to determine the extent of salt-water intrusion in streams in Eastern North Carolina; to determine the quantity and characteristics of sediments in streams; and to prepare an annual report entitled "Chemical and Physical Character of Surface Waters of North Carolina", to be published by the Department of Conservation and Development.

During the 1954-56 Biennium, the Department published Volumes 9 and 10, Bulletin 52, "Chemical and Physical Character of Surface Waters of North Carolina", 1952-53 and 1953-54, respectively. The chemical-analysis year extends from October 1 to September 30, inclusive. Volume 1 of Bulletin 52 covered the chemical-analysis year 1944-45. Volume 10 contains chemical analyses, average composition of dissolved solids, water temperatures, and relation of daily specific conductance to stream flow for 6 daily-sampling stations, chemical analyses for 7 monthly-sampling stations. chemical analyses

of miscellaneous streams in 10 major river basins, and sediment and size analyses for the daily station on the Yadkin River at Yadkin College.

The cooperative agreements, referred to above, include provisions for matching, by the Federal Government, of North Carolina funds. For example, the value of services provided by the U. S. Geological Survey, during the fiscal year ending June 30, 1956, amounted to approximately \$206,000, of which approximately \$100,000, \$97,000, and \$6,000, were contributed by the Federal Government, the State of North Carolina, and North Carolina industries, respectively.

Budget recommendations of the Department of Conservation and Development for the biennium ending June 30, 1959 includes increases in the amount of \$44,500 for cooperation with the Geological Survey, U. S. Department of the Interior, to supplement the stream-gaging program at fixed stations by operation of short-term movable stations, develop data on minimum dependable surface-water yields, establish long-term sampling stations to follow alterations in the chemical and physical characteristics of streams in the future as a result of increased utilization and to determine effects of additional waste waters normally resulting from an increase in density of population and industry, expand studies of the extent of salt-water intrusion to include at least two additional river basins in Eastern North Carolina, and provide information on quantity and characteristics of sediment in streams other than the Yadkin River. Information regarding sediment in the Yadkin River is contained in Volumes 8, 9, and 10 of Bulletin 52, Department of Conservation and Development.

INVESTIGATIONS OF WATER SUPPLIES AND WATER POWERS

The Council of State, on October 11, 1954, upon recommendations, approved by the Governor, of the Advisory Water Resources Committee established by the Governor in January 1954 pursuant to a resolution adopted by the Board of Conservation and Development, authorized an inventory of water resources of North Carolina and allocated \$25,000 therefor to the Department of Conservation and Development from the Contingencies and Emergency Fund.

The Department published "Water Resources of North Carolina", "Water Resources of North Carolina, Neuse River Basin", "Water Resources of North Carolina, Yadkin-Pee Dee River Basin, and "Water Resources of North Carolina, Chowan River Basin", in 1955, and "State and Federal Water Laws and Considerations Affecting Future Legislation" in January, 1956. Preparation of "Water Resources of North Carolina, Roanoke River Basin", "Water Resources of North Carolina, French Broad River Basin", and "Water Resources of North Carolina, Cape Fear River Basin" is substantially completed. It is expected that the first two inventories will be published by the

end of the calendar year 1956 and that the inventory of water resources of the Cape Fear River Basin will be published during the latter part of the calendar year 1957. Since June 30, 1955, when approximately one-fourth of the funds, provided by the Council of State, lapsed, preparation and publication of inventories of water resources of the State have been accomplished by funds in the budget of the Department of Conservation and Development for the biennium ending June 30, 1957.

In providing a general source of information in regard to the water resources of the State, the Division has obtained information from State departments and agencies including the Department of Labor, the Board of Health, the Recreation Commission, the Wildlife Resources Commission, the State Stream Sanitation Committee, the Highway and Public Works Commission, and the Divisions of State Parks and Mineral Resources, Department of Conservation and Development, and from Federal agencies including the Geological Survey, the Corps of Engineers, U. S. Army, the Soil Conservation Service, and the Farmers Home Administration.

PERMITS FOR IRRIGATION

The 1951 General Assembly enacted a law, incorporated as Section 113-8.1 in General Statutes of North Carolina, as amended, which provides that any person, before utilizing surface waters of North Carolina for irrigation in such an amount as to substantially reduce the volume or flow thereof, shall make application to the Director of the Department of Conservation and Development for a permit for such use. The Director was thereby authorized to investigate a proposed irrigation plan and survey, filed with the Department, as to safety and public interest and to approve plans and specifications and issue permits.

As of September 14, 1954, the Director had issued only four permits. At an irrigation conference in Raleigh on August 9, 1954, it was stated that the number of acres of tobacco irrigated in North Carolina increased from 500 acres in 1951 to 6,000 acres in 1954. This apparent lack of non-compliance with the law was probably caused by very little publicity having been given to its enactment and by the fact that it is not punitive. The Director issued Permit No. 783 on August 8, 1956.

In preparing these permits for signature by the Director, the Division of Water Resources, Inlets and Coastal Waterways, bearing in mind the words "safety and public interest", contained in the law and comprising the only criteria for investigating the proposed irrigation plan and survey, takes every possible precaution to insure that diversion of the flow specified in the permit will not infringe upon the riparian rights of persons downstream from the point of diversion. No complaint has been received by the Director regarding any permit

which has been issued. It appears, however, that at some future time the steadily increasing use of water for irrigation in North Carolina will require revision of the law to resolve inevitable conflicts in storage and water rights and to provide security of investments in water development and land.

INVESTIGATIONS OF COASTS, PORTS AND WATERWAYS

The Division operated a Disaster Relief Office in Wilmington from December 1, 1954 to June 30, 1955, inclusive, cooperating with the State Director of Civil Defense and assisting county governments and incorporated communities in preparing applications to the Federal Civil Defense Administration for funds under the provisions of Public Law 875, 81st Congress, to relieve damages caused by Hurricane Hazel and in preparing documentation required for Federal funds expended for such relief.

The Chief Engineer of the Division, acting in his capacity as member of the Board of Directors of the American Shore and Beach Preservation Association, represented the Department at annual meetings of the Association at Miami Beach and New Orleans in April 1955 and April 1956, respectively. The Association, organized approximately at the same time as the Department, was instrumental in establishment of the Beach Erosion Board, which performs, for the Chief of Engineers, Department of the Army, approximately the same functions in connection with prevention of beach erosion as are performed by the Board of Engineers for Rivers and Harbors in connection with navigation and flood control projects. The Association and the Beach Erosion Board have been helpful to the State and to incorporated communities thereof with regard to erosion of the coasts of North Carolina.

The Chief Engineer of the Division serves as Chairman of the Committee on Hurricane Rehabilitation, appointed by the Governor simultaneously with the Citizens Advisory Panel to provide advice regarding recommendations in the report entitled "North Carolina Hurricane Project". The Committee, at their meeting on May 1, 1956, unanimously passed a motion that the Governor be advised that the Committee favors the proposed method of procedure to effect the recommendations indicated in the preceding sentence and recommends its adoption.

The Division prepared a plan for work to reduce damages expected to be caused by future hurricanes and to relieve damages caused by Hurricanes Hazel, Connie, Dianne, and Ione, which was presented by the Governor to North Carolina Members of Congress on February 28, 1956. The Division has cooperated with the Director of Hurricane Rehabilitation, Office of the Governor, since assumption of his responsibilities on April 2, 1956. The Division assisted the Boards of County Commissioners of 15 counties in Eastern North Carolina in

preparing applications to the Federal Civil Defense Administration for funds to remove trees, debris, and other obstructions to streams for the purpose of draining agricultural lands and eliminating mosquitoes.

The Chief Engineer of the Division serves as Secretary to the North Carolina Delegation to Annual Conventions of the National Rivers and Harbors Congress, an organization which assists proponents of navigation and flood control projects in obtaining authorizations, by the Congress of the United States, of projects which have been investigated by the Corps of Engineers, U. S. Army, and in obtaining appropriations for projects which have been authorized for construction. He assisted the Director of the Department, a member of the delegation, in guiding their activities at the annual conventions in May 1955 and May 1956, and assisted members of the Delegation, who were proponents of projects, in preparing, and presenting to the Projects Committee of the National Rivers and Harbors Congress, applications for classifications of the projects which would advance their progress toward authorization. He also assisted the Regional Director, South Atlantic Region, National Rivers and Harbors Congress, in arranging for, and conducting, the First South Atlantic Region Conference, held in the Hall of the House of Representatives on February 10, 1956.

Appropriations for North Carolina navigation and flood control projects during the 1954-1956 Biennium have been made as follows:

Construction in Fiscal Year 1955-1956

Clearing and snagging in New River between Jacksonville and the Intracoastal Waterway	\$ 18,000
Enlarging channel from Back Sound to Lookout Bight	70,000
Enlarging width and depth of channel in Taylors Creek	83,000
Channel from Manteo-Oregon Inlet Channel in Roanoke Sound to wharves in Mill Creek near Wanchese, Roanoke Island	70,000
3.6 miles of dike and closure structures in Pasquotank River	120,000
2 rubble-mound breakwaters for Rollison Channel at Hatteras	138,000
Breakwater for channel in Smith Creek at Oriental, Pamlico County	82,000
Channel, 10 feet deep, in Smith Creek and basin same depth at Oriental	20,000
Provision of depth of 10 feet in Wallace Channel, Pamlico Sound	63,000
Increasing channel depth in Cape Fear River to 34 feet between inner end of Ocean Bar Channel and Castle Street at Wilmington	523,476

7 miles of dike on Eagle Island, Wilmington Harbor	75,000
Total	\$1,262,476

Construction in Fiscal Year 1956-1957

Increasing depth of channel from Pamlico Sound to about 200 feet below highway across Far Creek at Engelhard, Hyde County, and of basin thereat	\$ 179,000
14-ft. channel from the ocean over the bar and through Oregon Inlet and 12-ft. channel thence to that depth in Pamlico Sound	570,000
Completion of providing depth of ocean-bar channel, mouth of Cape Fear River, at 35 feet and of depth of river channel to Wilmington Harbor at 34 feet	1,443,000
Total	\$2,192,000

Pursuant to resolution of the Committee on Water Resources, Inlets and Coastal Waterways, adopted by the Board of Conservation and Development on July 3, 1956, the Division is arranging for presentations, to be made to the Chief of Engineers and the Federal Bureau of the Budget, of North Carolina navigation and flood control projects desired to be included in the budget of the President of the United States for the fiscal year ending June 30, 1958.

The Director of the Department, acting for the Governor, in accordance with provisions of Public Law 534, 78th Congress, and Public Law 732, 79th Congress, concurred in proposed reports of the Chief of Engineers, Department of the Army, recommending the deepening of channels and basin in the Morehead City Harbor Project from 30 to 35 feet and improvement of about 15.2 miles of stream channels and canals in Pantego Creek and Cucklers Creek for flood control and major drainage, and urged that these projects be constructed at the earliest practicable date. They were included in the Fiscal Year 1957 Public Works Authorizations Act, which was vetoed by the President. It is understood that this action was taken because, although most of the projects included in the act are worth-while and eligible for authorization, a considerable number of them were approved by the Public Works Committees of the Senate and House of Representatives toward the end of the session after inadequate consideration, some of which lack conomic justification. The presentations, indicated in the preceding paragraph, will express the regret of the State that the two North Carolina projects have not been authorized because of the veto and, consquently, cannot be included in the Fiscal Year 1958 Budget, and the hope that initiation of construction of them will not be delayed more than one year.

Several meetings of representatives of the State Stream Sanitation Committee, the Wildlife Resources Commission, the Department

of Conservation and Development, the U. S. Fish and Wildlife Service, and the Charleston District, Corps of Engineers were held during the first half of the calendar year 1956 to consider the design of the flood-control reservoir which has been authorized for construction at a site on the Yadkin River about 6 miles upstream from Wilkesboro. As a result of information furnished by State agencies, it is understood that the definite project report on this reservoir, forwarded to the Chief of Engineers, Department of the Army, about the middle of June 1956, provides for three pools as follows:

(a) A conservation pool, elevation—1,000 feet above mean sea level, surface area—about 880 acres, and capacity—11,000 acre-feet, with provision for draining this permanent pool when necessary in the interest of fish management.

(b) A flow-regulation pool in the interest of abatement of stream pollution, top elevation—1,020 feet, surface area—about 1,325 acres, and capacity—22,000 acre feet.

(c) A flood-control pool, top elevation—1,070 feet, surface area—about 3,700 acres, and capacity—112,000 acre feet.

It is further understood that care has been taken in the proposed design of the reservoir to insure that the top elevation of the flood-control pool will not back water up into Caldwell County.

It was stated, at a meeting of the Seven-Cities Water Committee in Winston-Salem on May 28, 1956, that the Committee is considering construction of a water-supply reservoir on the Yadkin River about 13 miles west of Winston-Salem, the height of which will be determined by the approved height of the Wilkesboro Reservoir.

The 1957 Fiscal Year Appropriation Act includes funds in the amount of \$25,000 to initiate the detailed design of the Wilkesboro Reservoir.

ABATEMENT OF STREAM POLLUTION

The Chief Engineer of the Division serves as an ex-officio member of the State Stream Sanitation Committee, which, during the 1954-56 Biennium, has taken the following actions:

(a) Effectuation of final adoption and assignment of classifications to the waters of the Yadkin, White Oak, and Chowan River Basins;

(b) Completion of field and laboratory studies for, and preparation of comprehensive reports on, the Roanoke and French Broad River Basins;

(c) Completion of field and laboratory studies for the Cape Fear River Basin;

(d) Substantial completion of field and laboratory studies for the Neuse River Basin; and

(e) Initiation of field and laboratory studies for the Catawba River Basin.

It is expected that the Committee will take the following actions during the fiscal year ending June 30, 1957:

(a) Effectuation of final adoption and assignment of classification to the waters of the Roanoke River Basin by the end of the calendar year 1956:

(b) Publication of the comprehensive report on the French Broad River Basin by the end of the calendar year 1956, and holding of public hearings thereon during the spring of the calendar year 1957;

(c) Publication of the comprehensive report on the Cape Fear River Basin by the end of the fiscal year ending June 30, 1957; and

(d) Completion of field and laboratory studies for the Neuse River Basin during the fall of the calendar year 1956.

The Chief Engineer of the Division serves as a member of the Steering Committee, Roanoke River Studies, organized on May 24, 1955 for the purpose of effecting a long-range solution of the problems involved in provision of adequate flows in the Roanoke River at Weldon to conserve the striped bass during their annual migration from Albemarle Sound to their spawning grounds and return, abatement of stream pollution in the Roanoke River below the Roanoke Rapids Reservoir, and provision of water supplies suitable for municipalities, industries, and agriculturists. Members of this committee include representatives of the State Stream Sanitation Committee, the Wildlife Resources Commission, the Department of Conservation and Development, the U. S. Public Health Service, the U. S. Fish and Wildlife Service, the Corps of Engineers, U. S. Army, the Southeastern Power Administration, Halifax Paper Company, Virginia Electric and Power Company, the general public, sport fishermen, and commercial fishermen.

The Chief Engineer of the Division also serves as a member of the Committee's Subcommittee for Operations and Special Committee on Water Economics and as Chairman of the Committee's Task Force III. The Executive Secretary, State Stream Sanitation Committee, and the Chief, Fish Division, Wildlife Resources Commission, serve as Chairman, Task Force I and Task Force II, respectively.

Task Force I is responsible for determination of the quantity, nature and pattern of discharges of pulp-mill wastes and municipal sewage, evaluation of the resultant effects of these discharges upon water quality in the river, determination of the influence of impoundment and flow releases upon the physical and chemical qualities of the water, and determination of the influence of impoundment and flow releases upon suitability of the water as a waste dilutant and vehicle.

Task Force II is responsible for conduct of bioassay studies on striped bass, determination of the survival of eggs and fry under experimental dilution of pulp-mill wastes, and evaluation of other species as indicator fish suitable for use at other seasons.

Task Force III is responsible for locating spawning areas, determining survival, following growth and migrations, making hydrographic and productivity studies, and assessing populations and the impact of fish harvest upon them.

It is expected that performance of the functions of the three task forces will lead to recommendations of flows required to prevent deterioration of water quality, the quality and quantity of water necessary to protect the striped bass, and fishing regulations and habitat improvements needed to conserve the fishery.

It is further expected that the Committee will complete their studies by the end of the calendar year 1958.

The Committee held meetings on July 7, 1955, November 29, 1955, and May 23, 1956. At the meeting on July 7, 1955, the Committee approved plans for operations of the three task forces and adopted a recommended schedule of minimum flow requirements in the Roanoke River at Weldon during the interim period between initiation of the studies of the Committee and action by the Congress of the United States on recommendations contained in the Committee's report on their studies.

At the meeting on November 29, 1955, the Committee approved the composition and responsibilities of their subcommittee for Operations, Field Representative, and Task Forces; received reports of progress of the task forces since the meeting on July 7, 1955; and approved the detailed plans, presented by the chairmen of the task forces, for future activities pertaining to Lower Roanoke River Studies.

The Subcommittee for Operations, at a meeting on November 30, 1955, approved, for recommendation to the Steering Committee, types of reports considered necessary to record the work of all participants in the studies. The Subcommittee for Operations, at meetings on January 10 and 11, 1956, reaffirmed the flow recommendations adopted by the Steering Committee on July 7, 1955 and adopted the following recommendations:

(a) That proper steps be taken to minimize deviation from the recommended schedule.

(b) That, during the interim period of the studies, temporary measures be taken in order to provide the flows recommended by the Steering Committee.

(c) That action be taken to accomplish the recommendations in the Joint Resolution of the 1955 Session of the General Assembly

of North Carolina pertaining to flows required to meet the needs of the striped bass and the necessity for maintaining acceptable water-quality standards.

At the meeting on May 24, 1956, the Committee received reports of activities of the task forces since the meeting on November 26, 1956; heard statements of flows provided during the 1956 striped-bass-spawning season; heard statements indicating that this season was generally successful; received and discussed a proposal from Virginia Electric and Power Company as a basis for licensing the Gaston Reservoir Project, presently under consideration by the Federal Power Commission; and organized a special committee to consider, and make recommendations to the Committee concerning, matters pertaining to the generation of hydroelectric power by use of water in the lower Roanoke River. This special committee consists of one representative each of the Norfolk District, Corps of Engineers (Chairman), Southeastern Power Administration, Virginia Electric and Power Company, Wildlife Resources Commission, State Stream Sanitation Committee, Department of Conservation and Development, U. S. Public Health Service, and Halifax Paper Company.

The Subcommittee for Operations, at a meeting on May 24, 1955, discussed in detail the proposal of Virginia Electric and Power Company, which was referred to the Special Committee on Water Economics for consideration and recommendations; and discussed matters pertaining to the activities of the task forces during the remainder of the calendar year 1956.

Department Personnel

ADMINISTRATION

Wm. P. Saunders	Director
J. Edgar Kirk	Assistant Director
Evelyn G. Yelverton	Administrative Assistant
Mrs. John C. Bagley	Accounting Clerk
W. Ray Bishop	Auditor and Personnel Officer
Willa M. Bolton	Accounting Clerk
Herman Hinton	Janitor Messenger
Betty B. Hodge	Stock Clerk
Eula Lincoln	Accounting Clerk
Wade H. Lucas	Public Information Officer
Harold McClain	Duplicating Machine Operator
Frances J. Parrish	Stenographer Clerk
Susan K. Robertson	Typist Clerk
Dorothy P. Starling	Accounting Clerk
Patricia J. Thaxton	Clerk
Stewart B. Tucker, Jr.	Duplicating Machine Operator

DIVISION OF STATE ADVERTISING

Charles J. Parker	State Advertising Director
Sylvia L. Alford	Typist Clerk
A. Evelyn Covington	Administrative Assistant
Helen B. Dowdy	Stenographer Clerk
Mildred D. Fowler	Typist Clerk
William E. Gulley	Public Information Officer
Norma B. Moore	Typist Clerk
Miriam G. Rabb	Public Information Officer
Jean C. Richardson	Stenographer Clerk
Mildred B. Turner	Typist Clerk

DIVISION OF COMMERCIAL FISHERIES

C. G. Holland	Fisheries Commissioner
T. A. Basnight	Patrol Boat Captain
Walter E. Cullipher	Patrol Boat Crewman
Tilton Davis	Patrol Boat Captain
Lyeurgus C. Dickinson	Patrol Boat Engineer
Charles C. Edwards	Patrol Boat Crewman
Nolie G. Fulcher	Inspector
Samuel A. Gerock	Inspector
Glen L. Harris	Inspector
Cage W. Hayman	Patrol Boat Captain
F. E. Hopkins	Law Enforcement Supervisor
Ralph L. Jones	Inspector
Arvin L. Lewis	Patrol Boat Crewman
Rosabell Longest	Stenographer Clerk
Wiley T. Mason	Patrol Boat Captain
Alton A. McLawhon	Inspector
Willis G. Mobley	Law Enforcement Supervisor
Cecil W. Phelps	Building Custodian
T. M. Poperville	Inspector

Daniel E. Sadler	Patrol Boat Engineer
Herbert Salter	Patrol Boat Captain
Roma G. Salter	Inspector
C. L. Sawyer	Patrol Boat Captain
Joseph L. Simmons, Jr.	Inspector
Silas V. Sneed	Inspector
Walter H. Stowe	Inspector
Frank Taylor	Inspector
Leon K. Thomas	Law Enforcement Supervisor
John W. Ward	Patrol Boat Crewman
Larry E. Warrington	Inspector
Norman R. Webb	Accounting Clerk
Carl P. White	Inspector
Ruth R. Walker	Stenographer Clerk
R. Clifton Wilson	Inspector
David O. Williams	Patrol Boat Crewman
William R. Willis	Patrol Boat Engineer
U. G. Wise	Inspector

DIVISION OF COMMERCE & INDUSTRY

Alfred H. Grant	Industrial Devel. Administrator
Gerald F. Albright	Industrial Devel. Representative
Alice E. Alderman	Stenographer Clerk
Patricia T. Allen	Stenographer Clerk
Cecil E. Bell	Industrial Devel. Representative
Bertrum L. Branson, Jr.	Research Analyst
Audrey E. Brown	Stenographer Clerk
William C. Guthrie	Industrial Devel. Representative
Walter W. Harper	Industrial Devel. Representative
Edward E. Huffman	Industrial Devel. Representative
Anne L. Johnson	Stenographer Clerk
C. D. Kirkpatrick	Industrial Devel. Representative
Gladys B. Merritt	Stenographer Clerk
Edna I. Mewborn	Stenographer Clerk
Elena G. Pope	Stenographer Clerk
Herbert N. Robertson	Industrial Devel. Representative
Lois C. Sandlin	Stenographer Clerk

DIVISION OF FORESTRY PERSONNEL

CENTRAL OFFICE:

F. H. Claridge	State Forester
P. W. Tillman	Assistant State Forester in Charge of Fire Control
P. A. Griffiths	Assistant State Forester in Charge of Nurseries & Management
Joyce Basden	Stenographer Clerk
M. M. Carstarphen	Forest Law Enforcement Officer
W. J. Clark	Forester
O. C. Goodwin	Forester
Keith L. Gordon	Radio Technician
H. J. Green	Forester
Lyell E. Hicks	Forester
James B. Hubbard	Forester
Joyce E. Johnson	Stenographer Clerk
William L. Johnson	Carpenter Foreman
Annie L. Jones	Stenographer Clerk

Grace W. Prevost	Accounting Clerk
Mildred G. Sadler	Accounting Clerk
Bernard E. Sanford	Radio Communication Engineer
Betsy H. Shearin	Accounting Clerk
H. L. Terry	Forester
Barbara J. Thomas	Stenographer Clerk
Nancy W. Tilley	Accounting Clerk
Carrie Lee Walters	Accounting Clerk
Ralph C. Winkworth	Forester
Mabel D. Young	Stenographer Clerk

FIELD PERSONNEL—COUNTIES:

Guy W. Alexander	Forest Ranger
Laster T. Baker	Forest Ranger
Harvey C. Barran	Forest Protection Towerman
B. Frank Batten	Forest Ranger
Thurman W. Bonner	Forest Ranger
Henry C. Bottoms	Forest Ranger
Frank H. Bryant	Forest Ranger
J. Fred Bryson	Forest Ranger
Edward R. Buckner	Forester
Jodie J. Burgess	Forest Protection Towerman
J. Ellis Byrd	Forest Ranger
R. E. Caldwell	Forest Ranger
Robert G. Carney	Forester
James M. Castelloe	Forest Fire Equipment Operator
James V. Casteen	Forest Fire Equipment Operator
Ray H. Chambers	Forest Ranger
James M. Chandler	Forest Ranger
Adolphus B. Clark	Forest Ranger
Joseph F. Clayton	Forester
Simon B. Conley	Forest Ranger
D. C. Critcher	Forest Ranger
R. E. Cromer	Forest Ranger
Robert B. Culbreth	Forest Protection Towerman
R. C. Daniel	Forest Ranger
S. F. Darden	Forest Ranger
R. L. Davenport	Forest Fire Equipment Operator
Wilbur F. Davis	Forest Ranger
Dover J. Dean	Forest Ranger
Raymond E. Denton	Forest Ranger
Donald D. Dewey	Forester
Lester L. Edwards	Forest Ranger
John C. English	Forest Ranger
Charles Evans	Forest Ranger
Archie C. Farrell	Forest Ranger
W. B. Flanner, Jr.	Forest Ranger
Edmund M. Foreman	Forest Ranger
Arlie R. Foster	Forest Ranger
Robert F. Freeman	Forest Ranger
Homer H. Greshman	Forester

Graham C. Harris	Forest Ranger
Harold E. Hatchett	Forest Ranger
Herbert E. Hathaway, Jr.	Forest Ranger
Granville L. Hawkins	Forest Ranger
Clifton Heath	Forest Fire Equipment Operator
Frank T. Hemilright	Forest Ranger
Robert B. Hendrix	Forest Fire Equipment Operator
W. E. Herring	Forest Ranger
J. C. Horton	Forest Ranger
T. E. House	Forest Fire Equipment Operator
Macon O. Howard	Forest Fire Equipment Operator
John L. Ives	Forest Ranger
O. D. Jenkins	Forest Ranger
Joe F. Johnson	Forest Ranger
Jordan W. Johnson	Forest Ranger
Kenneth D. Johnson	Forest Ranger
John R. Jordan	Forest Ranger
William H. King	Forest Ranger
Robert H. Kinsey	Forest Fire Equipment Operator
Jimmie E. Kirby	Forest Fire Equipment Operator
William G. Lackey	Forest Ranger
Marion B. Lane	Forest Ranger
Joseph E. Lanier	Forest Fire Equipment Operator
Harry L. Langston, Jr.	Forest Ranger
M. H. Leggett	Forest Ranger
Guy M. Long	Forest Fire Equipment Operator
Wesley H. Long	Forest Fire Equipment Operator
William T. Lowrimore	Forest Ranger
Monroe U. Marlowe	Forest Ranger
D. L. Mercer	Forest Ranger
James Milligan	Forest Protection Towerman
W. Calvin Morris	Forest Ranger
Kelly Morton	Forest Fire Equipment Operator
Charles G. Motteler	Forest Fire Equipment Operator
C. F. McBryde	Forest Ranger
V. E. McCrimmon	Forest Protection Towerman
W. G. McCrimmon	Forest Fire Equipment Operator
B. E. McDaniel	Forest Ranger
J. B. McDowell	Forest Fire Equipment Operator
Edwin H. McGee	Forester
John A. McKeldrey	Forest Ranger
S. J. McKoy	Forest Ranger
A. R. McMillan	Forest Ranger
Ray E. Norman	Forest Ranger
S. B. Norris	Forest Ranger
Julius R. Ollis	Forest Ranger
Marvin D. Ormand	Forest Ranger
Sidney B. Ormand	Forest Fire Equipment Operator
Henry B. Osborne	Forest Fire Equipment Operator
Braddie N. Pait	Forest Ranger

Carvos E. Parton	Forest Ranger
Charles E. Paxton	Forest Ranger
J. A. Pearce	Forest Ranger
A. C. Peek	Forest Ranger
Milford E. Pennington	Forest Ranger
E. H. Pinnell	Forest Ranger
Odell I. Raynor	Forest Protection Towerman
Woody L. Reeves	Forest Ranger
G. T. Reid	Forest Ranger
James E. Rhodes	Forest Ranger
Joseph B. Ritchie	Forest Ranger
Earl E. Robertson	Forest Ranger
Andy M. Royal	Forest Ranger
Edward N. Seltzer	Forester
Curtis W. Sessoms	Forest Fire Equipment Operator
Frank B. Sholar	Forest Ranger
Benjamin C. Simmons	Forest Ranger
Peter P. Smith	Forest Ranger
Zell C. Smith	Forest Ranger
John F. Spivey, Jr.	Forester
Alva O. Squires	Forest Ranger
Lewis H. Stallings	Forest Ranger
Lee G. Steele	Forest Ranger
John W. Stokes	Forester
J. Edward Swain	Forest Ranger
Stanley R. Swanson	Forester
Crayte P. Teague	Forest Ranger
George E. Tilley	Forest Ranger
N. S. Tyson	Forest Ranger
Vernon G. Watson	Forest Protection Towerman
Eugene C. Wells	Forest Ranger
J. T. Wharton	Forest Ranger
F. V. White	Forest Ranger
M. J. White	Forest Ranger
Herman J. Whitley	Forest Ranger
Travis A. Wicker	Forest Ranger
Joe R. Williams	Forest Fire Equipment Operator
Montelle B. Williams	Forest Ranger
Wm. A. Woolard	Forest Ranger

DISTRICT PERSONNEL:

District 1—Asheville

T. E. Begley	Forest Ranger
Thomas L. Byrd	Radio Technician
B. H. Corpening	Forester
Ruth M. Holt	Stenographer Clerk
Richard F. Penland	Forester
Henry S. Plotkin	Forester
M. N. Shaw, Jr.	Forester

District 2—Lenoir

Mary P. Clark	Stenographer Clerk
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F. H. Ledbetter	Forester
A. H. Maxwell	Forester
E. P. Simmons	Forest Ranger
A. D. Williams	Forest Ranger

District 3—Rockingham

Ernest W. Davis	Forest Ranger
Fred A. Moehler	Forester
James A. Pippin	Forester
Dorothy P. Sanford	Stenographer Clerk

District 4—New Bern

Arthur A. Belt	Patrol Pilot
Caroline H. Davis	Stenographer Clerk
Leslie W. Davis	Forest Ranger
Emmett C. Ferebee	Forest Ranger
Charles A. Fox	Forester
John W. Raines	Mechanic
Joseph T. Sullivan	Radio Technician
Donald R. Varner	Forester

District 5—Rocky Mount

Eber F. Corn	Forester
H. G. Harris	Forester
Frances A. Johnson	Stenographer Clerk
L. A. Pittman	Mechanic
Seba M. Wooten	Forest Ranger

District 6—Fayetteville

Anna M. Campbell	Stenographer Clerk
Halbert E. Campbell	Patrol Pilot
James I. Ledbetter	Forester
T. R. McMillan	Forester
Gerald R. Robinson	Forester
John T. Wright	Radio Technician

District 7—Elizabeth City

A. G. Berry	Forest Ranger
Silas A. Dowdell	Forester
William R. Gregory	Forest Ranger
Elizabeth W. Harrell	Stenographer Clerk
T. F. Lowry	Forest Ranger
Hersey Smithson	Mechanic
H. A. Tate	Forester

District 8—Whiteville

Floyd J. Arnold	Forester
John A. Byrd	Mechanic
George R. Melville	Forest Ranger
T. S. Rhyne, Jr.	Forester
L. H. Sheffield	Forest Ranger
Sara G. Wayne	Stenographer Clerk

District 9—Sylva

J. Mack Ashe	Forest Ranger
Ellen N. Corbin	Stenographer Clerk

C. B. Dalton	Forester
Charles C. Pettit, Jr.	Forester
District 10—Lexington	
Joe S. Hinshaw	Forester
Lois V. Tysinger	Stenographer Clerk
District 11—Chapel Hill	
William R. Kiser	Forester
Joy B. Wakefield	Stenographer Clerk
V. G. Watkins	Forester
Frank D. Whitmire	Forest Ranger
District 12—Belmont	
Frank N. Craven	Forester
Lola J. Rowell	Stenographer Clerk
Bladen Lakes State Forest—Elizabethtown	
Graham V. Chamblee	Forester
Doris L. McKenzie	Stenographer Clerk
Nash Tatum	Woods Foreman
Clayton State Forest Nursery—Clayton	
Harry Clemmons	Nursery Worker
Moody Clemmons	Nursery Foreman
Frank J. Miller	Forester
J. A. Holmes State Forest Nursery—Penrose	
D. L. Brenneman	Forester
Homer Orr	Nursery Foreman
Little River State Forest Nursery—Goldsboro	
W. A. Bland	Forester
J. Paul Holland	Nursery Foreman
R. L. Watkins	Nursery Worker
Division of Mineral Resources:	
Dr. J. L. Stucky	State Geologist
Sam D. Broadhurst, Jr.	Assistant State Geologist
Steven G. Conrad	Geologist
Rebecca Merritt	Stenographer Clerk

DIVISION OF STATE PARKS

Central Office:

Thomas W. Morse	Superintendent of State Parks
Thomas C. Ellis	Asst. Supt. of State Parks
George E. Wiles	Division Accountant
Walter K. DeBerry	Bldg. Maint. Supvr.
Wilbur C. Fuller	Civil Engineer
Mrs. Peggy C. Grady	Accounting Clerk
John R. Kibler	Landscape Architect
Mary E. Sanders	Stenographer Clerk
Mrs. Penny R. Stamatelos	Stenographer Clerk

Cliffs of the Neuse:

Bruce PricePark Superintendent
Leland L. SmithPark Ranger

Fort Macon:

Smith RayPark Superintendent
Philip L. GreyPark Ranger

Hanging Rock:

George H. SuttonPark Superintendent
Carl R. FlinchumPark Ranger
James R. SpeerPark Ranger

Jones and Singletery Lakes:

William H. DarttPark Superintendent
Dewitt PowellPark Ranger
Eddie S. RichPark Attendant

Morrow Mountain:

Cedric P. SquiresPark Superintendent
Charlie J. MillsPark Ranger
John C. Wyatt, Jr.Park Ranger

Mount Mitchell:

John R. WilsonPark Superintendent
Blaine RayPark Ranger

Pettigrew:

Thomas H. HamptonPark Ranger

Reedy Creek:

Wayland H. Horton, Jr.Park Superintendent
Richard L. RevisPark Ranger

William B. Umstead:

James F. EllisPark Superintendent
Haywood L. DillardPark Ranger
Billy L. MontaguePark Ranger

Division of Water Resources, Inlets and Coastal Waterways:

B. C. SnowChief Engineer
Littlebury H. ClarkeCivil Engineer
F. E. DayCivil Engineer
Enid H. KassStenographer Clerk
Charles B. PickeringChemist

THE BUDGETS

CONDENSED FINANCIAL STATEMENTS

For the Biennium Beginning July 1, 1954 and Ending June 30, 1956

W. Ray Bishop, Auditor

MAINTENANCE FUNDS

DEPARTMENT OF CONSERVATION AND DEVELOPMENT

STATEMENT OF RECEIPTS AND DISBURSEMENTS

OPERATING FUND

Biennium 1954-56

	1954-55	1955-56
I. ADMINISTRATION:		
Disbursements	\$ 90,888.96	\$ 86,047.53
Less: Receipts	10.00	5.00
Appropriation	\$ 90,878.96	\$ 86,042.53
II. COMMERCE AND INDUSTRY:		
Disbursements - Appropriation	\$ 145,199.24	\$ 134,906.02
III. ADVERTISING:		
Disbursements - Appropriation	\$ 272,811.50	\$ 284,164.28
IV. WATER RESOURCES, INLETS AND COASTAL WATERWAYS:		
Disbursements	\$ 118,609.00	\$ 102,006.32
Less: Receipts	9,150.00	8,830.00
Appropriation	\$ 109,459.00	\$ 93,176.32
V. MINERAL RESOURCES:		
Disbursements - Appropriation	\$ 53,637.59	\$ 48,008.98
VI. FORESTRY		
Disbursements	\$ 1,668,102.70	\$ 1,731,537.83
Less: Receipts	792,567.46	869,408.16
Appropriation	\$ 875,535.24	\$ 862,129.67
VII. PARKS:		
Disbursements	\$ 320,253.71	\$ 322,647.30
Less: Receipts	114,488.42	105,955.54
	\$ 205,765.29	\$ 216,691.76
VIII. SURVEY FOR UTILIZATION AND DEVELOPMENT OF INLAND PORTS AND WATERWAYS:		
Disbursements - Appropriation	\$ 1,782.62	
IX. SECTION BASE:		
Disbursements		
Less: Receipts	\$ 485	
Appropriation	\$ 485	
X. COOPERATION NATIONAL PARK SERVICE—MINERALS MUSEUM		
	\$ 75,000.00	
XI. DEFERRED OBLIGATIONS:		
Disbursements - Appropriation		
Transferred to Succeeding Year	\$ 15,054.16	
XII. LESS: RECEIPTS—Funds Transferred from Preceding Year		\$ 15,504.16
TOTAL DISBURSEMENTS	\$ 2,761,339.48	\$ 2,709,318.26
LESS: TOTAL RECEIPTS:	916,700.88	999,252.86
TOTAL DISBURSEMENTS FROM		
APPROPRIATION	\$ 1,844,638.60	\$ 1,710,065.40
SUMMARY OF DISBURSEMENTS—BY OBJECTS:		
Salaries and Wages	\$ 1,537,175.90	\$ 1,591,914.09
Supplies and Materials	73,711.23	92,325.61
Postage, Telephone and Telegraph	36,129.11	38,854.43
Travel Expense	72,551.80	72,180.31

	1954-55	1955-56
Printing and Binding	53,233.33	35,234.59
Motor Vehicle Operation	170,406.27	162,274.90
Lights, Power and Water	7,750.15	8,008.29
Repairs and Alterations	101,157.86	96,792.74
General Expense	64,814.97	50,624.18
Direct Advertising	177,497.66	189,885.62
Federal Cooperation - U. S. Geological Survey	71,523.21	82,540.00
Insurance and Bonding	698.51	2,085.18
Equipment	173,683.84	210,813.08
Additions and Betterments	54,772.83	36,634.98
Stores for Resale - Parks	42,780.03	36,764.88
Geologic Map Project		2,385.38
Survey for Utilization and Development		
of Inland Ports and Waterways	1,782.62	
Purchase of Land	2,000.00	
Cooperation National Park Service—		
Minerals Museum	75,000.00	
Transferred to State Parks—		
Permanent Improvement Fund of 1947	20,000.00	
Transferred to State College—		
Minerals Research	9,616.00	
Transferred to Succeeding Year—		
Deferred Obligations	15,054.16	
Totals	\$ 2,761,339.48	\$ 2,709,318.26

SUMMARY OF RECEIPTS:

Sale of Publications	\$ 10.00	\$ 5.00
Private Cooperation - Water Resources	5,250.00	6,080.00
Cooperation Board of Health—		
Water Investigation		2,750.00
State Cooperation—Salt Water		
Salinity Study	3,900.00	
Federal Cooperation—Forestry	332,580.54	360,033.92
County Cooperation—Forestry	253,135.75	267,828.36
Private Cooperation—Forestry	36,815.77	42,115.51
T. V. A. Cooperation—Forestry	4,320.00	4,464.00
Sale of Tree Seedlings—Forestry	62,806.73	90,273.33
Receipts Bladen Lakes State Forest	92,039.02	95,156.33
Sale of Forest Products	2,906.16	1,150.11
Permits, Park State Lakes	5,296.75	5,346.50
Park Concessions	104,132.06	95,570.47
State Sales Tax	67.07	248.45
Rentals from Employees	12,956.03	13,176.72
Funds Transferred from Preceding Year		15,054.16
Sale of Salvaged Property—Section Base	485.00	
Totals	\$ 916,700.88	\$ 999,252.86

DIVISION OF COMMERCIAL FISHERIES

Statement of Receipts and Disbursements

OYSTER PLANTING

BIENNUM 1954-56

	1954-55	1955-56
DISBURSEMENTS:		
I. ADMINISTRATION AND INSPECTION	\$ 85,008.05	\$ 89,932.29
II. OPERATION PATROL BOATS	76,061.23	74,853.20
III. SHELLFISH SANITATION	883.91	599.47
IV. SECTION BASE	17,676.53	9,591.69
V. OYSTER SHELL PLANTING		9,863.00
VI. TRANSFERRED TO SUCCEEDING YEAR—		
Deferred Obligations	9,863.00	
TOTAL DISBURSEMENTS	\$ 189,492.72	\$ 184,839.65
LESS: TOTAL RECEIPTS	84,571.86	103,802.99
TOTAL DISBURSEMENTS FROM		
APPROPRIATION	\$ 104,920.86	\$ 81,036.66

SUMMARY OF DISBURSEMENTS—BY OBJECTS:

Salaries and Wages	\$ 103,775.12	\$ 109,853.46
Supplies and Materials	19,378.46	14,552.24
Postage, Telephone and Telegraph	1,252.83	1,232.78
Travel Expense	2,181.20	2,740.02

	1954-55	1955-56
Printing and Binding	962.35	1,178.31
Motor Vehicle Operation	10,761.76	12,153.01
Lights, Power and Water	1,984.60	1,733.10
Repairs and Alterations	26,451.36	11,821.25
General Expense	8,324.71	8,989.84
Insurance and Bonding		600.00
Equipment	2,397.33	8,562.64
Workmen's Compensation	2,160.00	1,560.00
Oyster Planting		9,863.00
Transferred to Succeeding Year— Deferred Obligations	9,863.00	
Totals	\$ 189,492.72	\$ 184,839.65

SUMMARY OF RECEIPTS:

Food Fish Licenses and Taxes	\$ 14,244.04	\$ 12,991.60
Oyster Licenses and Taxes	8,980.86	10,497.65
Clam Licenses and Taxes	555.34	430.52
Crab Licenses and Taxes	4,712.20	6,529.78
Menhaden Licenses	14,129.00	17,600.50
Power Boat Licenses	32,613.45	41,839.45
Escallop Licenses and Taxes	215.30	518.50
Other Sources	9,121.67	3,531.99
Funds Transferred from Preceding Year		9,863.00
Totals	\$ 84,571.86	\$ 103,802.99

DIVISION OF COMMERCIAL FISHERIES

Statement of Receipts and Disbursements

SHELLFISH FUND

BIENNIUM 1954-56

REVENUE:

Appropriation	\$ 21,535.00	\$ 43,664.00
Funds Transferred from Preceding Year	16,993.00	6,582.14
Totals	\$ 38,528.00	\$ 50,246.14
Less: Total Disbursements	31,945.86	46,483.65
Balance Transferred to Succeeding Year	\$ 6,582.14	\$ 3,762.49

SUMMARY OF DISBURSEMENTS—BY OBJECTS:

Salaries and Wages	\$ 8,600.00	\$ 6,976.00
Supplies and Materials	1,030.09	207.22
Travel Expense	1,180.00	1,260.00
Gas and Oils	69.16	351.72
Repairs and Alterations	415.98	446.36
Contract Oyster and Shell Planting	20,124.71	37,016.40
Equipment	525.92	225.95
Totals	\$ 31,945.86	\$ 46,483.65

DIVISION OF COMMERCIAL FISHERIES

Statement of Receipts and Disbursements

SCIENTIFIC RESEARCH IN THE ECONOMICS OF THE FISHERIES INDUSTRY IN NORTH CAROLINA

BIENNIUM 1954-56

	1954-55	1955-56
DISBURSEMENTS - APPROPRIATION.....		
Paid the University of North Carolina to be Used for Scientific Research in the Economics of the Fisheries Industry in North Carolina.....	\$ 16,500.00	

ATLANTIC STATES MARINE FISHERIES COMMISSION

Statement of Receipts and Disbursements

BIENNIUM 1954-56

Appropriation - Contingency and Emergency Funds	\$ 800.00	\$ 800.00
Less: Total Disbursements	800.00	800.00
Unexpended Appropriation	None	None

	1954-55	1955-56
SUMMARY OF DISBURSEMENTS - BY OBJECTS:		
Payment to Commission on Expenses	\$ 800.00	\$ 800.00

COMMERCIAL FISHERIES ADVISORY BOARD

Statement of Receipts and Disbursements BIENNIUM 1954-56

Appropriation - Contingency and Emergency Funds		\$ 1,000.00
Less: Total Disbursements		220.78
Unexpended Appropriation		\$ 779.22

SUMMARY OF DISBURSEMENTS—BY OBJECTS:

Travel Expense - Commissioners		\$ 220.78
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CAPE HATTERAS SEASHORE COMMISSION

Statement of Receipts and Disbursements BIENNIUM 1954-56

REVENUE:

Funds Transferred from Preceding Year	\$ 524.00	\$ 382.78
Less: Total Disbursements	141.22	
Balance Transferred to Succeeding Year	\$ 382.78	\$ 382.78

SUMMARY OF DISBURSEMENTS—BY OBJECTS:

Travel Expense - Commission Members	\$ 141.22	
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TRYON PALACE PROJECT

Statement of Receipts and Disbursements

SPECIAL FUND

BIENNIUM 1954-56

REVENUE:

Rentals from Property	\$ 696.80	\$ 25.50
Sale of Salvaged Property	289.50	800.00
Funds Transferred from Preceding Year	5,389.41	5,346.90
Totals	\$ 6,375.71	\$ 6,172.40
Less: Total Disbursements	1,028.81	458.96
Balance Transferred to Succeeding Year	\$ 5,346.90	\$ 5,713.44

SUMMARY OF DISBURSEMENTS—BY OBJECTS:

Lights, Power and Water		\$ 23.42
General Expense	\$ 38.56	
Taxes—Land Acquisition		435.54
Transferred to Permanent Improvement Fund of 1947	990.25	
Totals	\$ 1,028.81	\$ 458.96

KERR RESERVOIR DEVELOPMENT COMMISSION

BIENNIUM 1954-56

SPECIAL FUND

Statement of Receipts and Disbursements

REVENUE:

Sale of Salvaged Property	\$ 48.00	
Rentals from Property	1,329.60	\$ 1,200.00
Funds transferred from Preceding Year	31,567.44	18,975.49
Totals	\$ 32,945.04	\$ 20,175.49
Less: Total Disbursements	13,969.55	3,032.83
Balance Transferred to Succeeding Year	\$ 18,975.49	\$ 17,142.66

SUMMARY OF DISBURSEMENTS—BY OBJECTS:

Salaries and Wages	\$ 5,783.91	
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	1954-55	1955-56
Supplies and Materials	253.22
Postage, Telephone and Telegraph	6.00
Travel Expense	465.43
Printing and Binding	26.65
Motor Vehicle Operation	359.80
General Expense	3,542.42
Equipment	155.00	\$ 3,032.83
Additions and Betterments	3,377.12
Totals	\$ 13,969.55	\$ 3,032.83

KERR RESERVOIR DEVELOPMENT COMMISSION

Statement of Receipts and Disbursements Code No. 651

BIENNIUM 1954-56

REVENUE:

Appropriation	\$ 24,920.00
Less: Total Disbursements	24,195.73
Unexpended Appropriation	\$ 724.27

SUMMARY OF DISBURSEMENTS—BY OBJECTS:

Salaries and Wages	\$ 8,315.04
Supplies and Materials	289.52
Postage, Telephone and Telegraph	40.90
Travel Expense	567.13
Printing and Binding	48.58
Motor Vehicle Operation	604.45
Lights, Power and Water	20.33
General Expense	365.96
Additions and Betterments	13,943.82
Totals	\$ 24,195.73

PERMANENT IMPROVEMENT FUNDS

STATE PARKS

Statement of Receipts and Disbursements PERMANENT IMPROVEMENT FUND OF 1947

REVENUE:

	To Date
Appropriation, Chapter 622, Public Laws of 1947	\$ 500,000.00
Funds Transferred from—	
Reserve Permanent Improvement Appropriation—	
Purchase of Tryon Palace Land	\$ 150,000.00
Conservation and Development, Code 3171	55,000.00
1949 Permanent Improvement Fund, Code 1649	10,000.00
Tryon Palace Project, Special Fund, Code 21	12,447.70
Total Funds for Purchase Tryon Palace Land	\$ 227,447.70
Total Revenue	\$ 727,447.70

Less: Disbursements

	To Date
I. CLIFFS OF NEUSE	\$ 56,887.69
II. CRABTREE CREEK	79,383.68
III. FORT MACON	29,993.65
IV. HANGING ROCK	87,489.40
V. JONES LAKE	25,417.86
VI. MORROW MOUNTAIN	92,434.55
VII. MOUNT MITCHELL	46,614.95
VIII. PETTIGREW	29,377.29
IX. SINGLETARY LAKES	16,966.63
X. TRYON PALACE LAND	227,447.70
Total	\$ 692,013.40
Unexpended Appropriation	\$ 35,434.30

STATE PARKS

Statement of Receipts and Disbursements PERMANENT IMPROVEMENT FUND OF 1949

REVENUE:

	To Date
Appropriation	\$ 1,074,144.00

	To Date
Funds Transferred from—1952-53, Code 3171	26,500.00
Cooperation State Highway and Public Works Commission—Umstead Park Paving	45,000.00
Total	\$ 1,145,644.00

Less: Disbursements

I. CLIFFS OF THE NEUSE	\$ 124,139.22
II. CRABTREE CREEK	248,340.50
III. FORT MACON	85,090.50
IV. HANGING ROCK	122,897.11
V. HIWASSEE LAKE— Transferred to Permanent Improvent Fund of 1947	10,000.00
VI. JONES LAKE	38,007.60
VII. MORROW MOUNTAIN	73,822.63
VIII. MOUNT MITCHELL	188,416.46
IX. PETTIGREW	26,967.97
X. TOWN CREEK INDIAN MOUND	25,251.71
XI. CAPE HATTERAS	50,000.00
XII. RENDEVOUS MOUNTAIN AREA	377.40
XIII. MOUNT JEFFERSON AREA	1,049.17
Total	\$ 994,360.27
Unexpended Appropriation	\$ 151,283.73

DIVISION OF COMMERCIAL FISHERIES

Statement of Receipts and Disbursements PERMANENT IMPROVEMENT FUND OF 1949

REVENUE:	To Date
Appropriation	\$ 50,000.00
Receipts—Sale of Boats and Equipment	36,216.00
Total	\$ 86,216.00
Less: Total Disbursements	78,934.08
Unexpended Balance	\$ 7,281.92

CAPE HATTERAS SEASHORE PROJECT

Statement of Receipts and Disbursements PERMANENT IMPROVEMENT FUND OF 1951

REVENUE:	To Date
Funds Transferred from— Cape Hatteras Seashore Commission, Code 612	\$ 568,232.55
Permanent Improvement Fund of 1949, Code 1649	10,000.00
Conservation and Development, Code 3171, 1952-53	40,000.00
Total	\$ 618,232.55
Less: Total Disbursements	\$ 163,856.65

TRYON PALACE COMMISSION

Statement of Receipts and Disbursements PERMANENT IMPROVEMENT FUND OF 1951

REVENUE:	To Date
Proceeds First Latham Trust	\$ 118,385.47
Proceeds Second Latham Trust	619,443.67
Proceeds Residue Latham Estate Funds	295,000.00
Total	\$ 1,032,829.14
Less: Disbursements	
ARCHITECTS' FEES AND FURNISHINGS	\$ 168,447.10
DOCUMENTARY RESEARCH	14,257.09
PHYSICAL RESEARCH AND OFFICE EXPENSES	158,393.29
NEW CONSTRUCTION	519,406.48
LAND ACQUISITION	167,690.05
Total Disbursements	1,028,194.01
Unexpended Funds	\$ 4,635.13

CHART 1 STATE PARKS PUBLIC USE RECORD

STATE PARK	TOTAL ATTENDANCE		PICNICKERS		Camper Days		
					TENT & TRAILER		
	July 1, 1954 June 30, 1955	July 1, 1955 June 30, 1956	July 1, 1954 June 30, 1955	July 1, 1955 June 30, 1956	July 1, 1954 June 30, 1955	July 1, 1955 June 30, 1956	
Cliffs of the Neuse	97,150	131,488	28,000	32,353	937	1,086	
Fort Macon	*392,188	**393,115	41,706	34,510			
Hanging Rock	192,212	201,714	63,686	65,991	3,873	4,579	
Jones Lake	34,906	29,450	24,328	23,891			
Morrow Mountain	219,621	237,114	95,898	108,182	2,155	2,679	
Mount Mitchell	412,070	334,180	68,273	53,292	2,342	2,524	
Pettigrew	12,818	12,506	1,817	1,690	176	139	
Reedy Creek	29,873	18,067	15,151	11,602			
Singletary Lake	10,190	8,363				26	
William B. Umstead	147,869	127,437	37,373	42,554	1,391	677	
TOTALS	1,548,897	1,493,434	376,232	374,065	10,874	11,710	

* Includes 198,733 visitors to Fort Macon

** Includes 267,963 visitors to Fort Macon

CHART 1 (CONTINUED) STATE PARKS PUBLIC USE RECORD

STATE PARK	Camper Days ORGANIZED		SWIMMERS		HIKERS	
	July 1, 1954 June 30, 1955	July 1, 1955 June 30, 1956	July 1, 1954 June 30, 1955	July 1, 1955 June 30, 1956	July 1, 1954 June 30, 1955	July 1, 1955 June 30, 1956
Cliffs of the Neuse			3,569	17,159	19,066	17,031
Fort Macon			107,764	45,551	8,098	3,660
Hanging Park.....			33,369	36,990	23,616	21,999
Jones Lake			9,973	9,622		
Morrow Mountain			17,961	18,230	5,237	9,886
Mount Mitchell					653	297
Pettigrew					360	
Reedy Creek	5,097	3,723			1,671	1,461
Singletary Lake	5,724	5,189				60
William B. Umstead	12,954	14,450			2,455	5,026
TOTALS	23,775	23,362	172,636	127,552	61,156	59,420

CHART 1 (CONTINUED)
STATE PARKS PUBLIC USE RECORD

<u>STATE PARK</u>	<u>CABINS</u>		<u>FISHING</u>		<u>BOATERS</u>	
	July 1, 1954 June 30, 1955	July 1, 1955 June 30, 1956	July 1, 1954 June 30, 1955	July 1, 1955 June 30, 1956	July 1, 1954 June 30, 1955	July 1, 1955 June 30, 1956
Cliffs of the Neuse			1,145	797		673
Fort Macon			22,881	14,698		
Hanging Rock	2,623	2,481	471	406	11,449	8,484
Jones Lake			193	249	920	575
Morrow Mountain	1,613	1,506	5,649	3,888	661	1,751
Mount Mitchell						
Pettigrew			1,868	2,945	577	242
Reedy Creek			172	54		
Singletary Lake			197	340		33
William B. Umstead			382	360		
TOTALS	4,236	3,987	32,958	23,737	13,607	11,758



**PLEASANT LIVING is an
industrial asset in North Carolina**