



NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
Annual Report July 1, 1980 to December 31, 1981

Let's protect our earth



NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

To the Honorable Thomas Kean,
Governor of the State of New Jersey
and Members of the New Jersey Legislature

This report summarizes the activities of the Department of Environmental Protection from July 1, 1980 to December 31, 1981. Major environmental advances have occurred during those eighteen months. Innovative programs, new legislation and public support for bond issues have provided tools for the State to use in addressing the pressing environmental issues of the eighties. I know you will make wise use of these tools as you face the challenges ahead.

Disposal, cleanup and regulation of hazardous and solid waste is one of New Jersey's most pervasive problems. A continuation of our efforts to develop a sophisticated waste management program is essential for both the environment and the economy. Our water supply can be thoroughly modernized if the program and funding now in place are implemented thoughtfully. Air and water pollution programs need to be continued to guarantee New Jersey residents the improved quality of life they deserve. Protection of our shoreline, open space and our wildlife must continue to be priorities in the years ahead. Research on toxic and carcinogenic materials cannot be a luxury in a state as highly industrialized as New Jersey.

The accomplishments outlined in this report are the results of the leadership of the Governor, the New Jersey Legislature and the New Jersey Congressional Delegation. The efforts of dedicated professionals within the Department were matched with those of equally dedicated private citizens. With your continued leadership in these areas, all will be inspired to continue New Jersey's record of environmental progress.

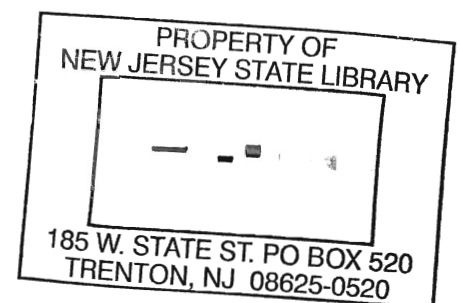
JERRY FITZGERALD ENGLISH
Commissioner

Front Cover
Fishing at Meadow Lake
Photo by Dave Bast

Back Cover
Lake Marcia, High Point State Park
Photo by Dave Bast

Environmental Highlights

- The Major Hazardous Waste Facilities Siting Act was enacted, creating a Hazardous Waste Facilities Siting Commission and providing a mechanism for the proper and expeditious siting of needed hazardous waste treatment facilities.
- A priority ranking system was developed to categorize over 350 potential hazardous waste sites in New Jersey for future action. Cleanup of the abandoned hazardous waste site at Chemical Control was completed along with twenty additional abandoned sites.
- Funding for the cleanup of hazardous sites was authorized when voters approved a \$100 million bond issue. Twelve New Jersey sites were placed on the National Contingency Plan list of toxic waste sites given priority for Federal Superfund monies.
- The State faced a drought crisis in 1980 and 1981. As a result, the Governor declared a state of emergency and appointed a special Citizens Task Force as well as a State Drought Coordinator to implement and administer such measures as water use restrictions, construction of emergency projects, and rationing throughout various areas of the State. An Office of Water Conservation has been developed to encourage and coordinate conservation activities. As a result of these measures, water curtailments were avoided and supplies were maintained.
- The water supply system in New Jersey will be modernized through enactment of the Water Supply Management Act, creation of an independent water supply authority, and the completion of a comprehensive water supply master plan. Passage of the \$350 million Water Supply Bond Act of 1981 provides funding for projects to assure adequate quality and quantity of water for New Jersey residents.
- A \$6 million federal grant was awarded to the department for the development of a state-wide wastewater toxics management program which will provide the underpinnings for a state-wide hazardous waste treatment facilities plan.
- The department received delegation from the federal government of management of the Sewerage Construction Grants Program. This delegation will serve to streamline the grant approval process for New Jersey municipalities for the planning, design and construction of wastewater treatment facilities to improve state-wide water quality.
- The "bubble" concept was applied in the Air Pollution Program and received EPA approval. The concept allows industries to control overall air emissions from a facility, rather than focusing on individual stacks. The application of this concept is expected to save industry millions while assuring effective compliance with pollution reduction requirements.
- The Pesticide and Toxic Substances Laboratory — the first in the nation to provide state of the art laboratory, administrative, certification and inspection facilities — was constructed.
- Important new legislation providing user taxes both for landfill closure and for recycling grants to counties and municipalities was enacted.
- A report entitled "Trends in Cancer Mortality in the New Jersey Region 1950-1975" was prepared and released. This report shows that the cancer rate gap between New Jersey and the rest of the nation has narrowed. This is due to a steady increase in the national cancer rate and a much slower increase in the region.
- The Office of Cancer and Toxic Research completed a study of toxics in New Jersey groundwater. The report showed that trace contamination was present in many samples with some excessive contamination problems requiring immediate attention.
- New Jersey's Shore Protection Master Plan was adopted. This plan provides, for the first time, a comprehensive management plan for the protection of New Jersey's beaches, bay, inlet and river shorelines.
- New Jersey received final approval of its Coastal Management Program by the National Oceanic and Atmospheric Administration. This approval allowed the state to receive federal funds in the amount of \$1.2 million.
- The Comprehensive Management Plan for the Pinelands National Reserve — this country's first National Reserve — was approved by the Department of the Interior. This plan represents a partnership of local, county, state, and federal efforts to balance desirable economic growth with the protection of the unique character of this 1.1 million acre forest region.
- Legislation enabling taxpayers to dedicate a part of their tax refund to the Endangered Species Program was enacted.
- Dedication ceremonies for the Pequest Trout Hatchery - Natural Resource Education Center were held in 1981. This \$8.5 million facility will start producing trout in the fall of 1982. In addition, it will serve as an environmental education center for the children of New Jersey and provide a stimulus to tourism in the scenic northwestern part of the state.



Environmental Management And Control

Solid And Hazardous Waste Management

The proper management of hazardous waste is a critical concern both for New Jersey and the nation. As a result, this is one of DEP's top priorities. Significant resources and staff have been dedicated to develop solutions. Facilitated by information from the hazardous waste manifest system, management activities involve close tracking of the generation, transportation and disposal of hazardous wastes. In addition, efforts are focused on the evaluation, reduction and elimination of dangers associated with abandoned disposal sites.

into law in September 1981. This major piece of legislation will enable the State to analyze its hazardous waste facility demands, develop siting criteria, select actual sites and ultimately license and regulate the necessary future State facilities. Extensive public participation is mandated throughout these phases.

Two portions of a comprehensive regulatory package dealing with hazardous waste were adopted in 1981. The State is now qualified to receive authorization to administer the federally mandated

waste facilities were adopted. Rules governing operational and design standards for hazardous waste disposal facility permits will be established by Spring of 1982.

A number of waste-oil recovery facilities were discovered to be illegally contaminating re-refined oil with hazardous substances as a means for disposal. These disclosures have led to prosecutions and subsequent closure of the facilities. Moreover, as an active member of the Interagency Hazardous Waste Strike Force established by Governor Byrne in 1979, DEP has continued its involvement in the investigation and prosecution of illegal hazardous waste disposers.

Continued emphasis was placed on resource recovery as an alternative to the landfilling of "garbage." Legislation to provide municipalities and counties with recycling grants and closure funds from landfill user taxes was also enacted. These important initiatives will enhance efforts to develop acceptable long-term waste disposal alternatives. Because of careful solid waste disposal site monitoring, more than 15 environmentally unacceptable landfills were closed in 1981.



An oil recycling operation found illegally mixing hazardous wastes into its product.
DEP Photo

Support functions include technological assistance, facility review and field inspections for hazardous waste treatment, disposal and recovery.

As part of New Jersey's innovative and forward-looking approach to the management of hazardous waste, Governor Brendan Byrne signed the Major Hazardous Waste Facilities Act

Resource Conservation and Recovery Act program, with regulations that meet or exceed all aspects of the federal requirements. In June regulations were adopted controlling the transportation and identification of hazardous waste. In September rules dealing with registration and operational requirements for hazardous

Hazard Management

The Division of Hazard Management handles such critical issues as: hazardous site cleanup, oil and chemical spill responses, emergency transportation and disposal of explosive chemicals and approval of major oil, hazardous and chemical facility Discharge Prevention Plans. In order to address the vast array of hazardous waste sites in the State, a ranking system was developed to set priorities for almost 400 hazardous waste sites, classifying them according to the need for immediate remedial action, enforcement action or further monitoring. Since July 1980, twenty abandoned site cleanups have been completed at a cost of nearly \$34.5 million.

Significant cleanup progress was demonstrated at two major disaster sites. In October 1981 the final phase of New Jersey's largest and costliest cleanup operations began at the Chemical Control Corporation site in Elizabeth with the removal of remaining contaminated soil and debris. It is estimated that 52,000 tons of waste have been removed from this site since the start of cleanup at a total cost of approximately \$28 million. In addition, seven different hazardous chemical dump sites spanning several miles in Plumsted Township contaminated the soil and the groundwater supply. Cleanup at two of the seven sites was completed. Conditions at the remaining sites have been investigated and defined, and federal support for cleanup of these sites is being sought through the recently enacted Superfund legislation.

The Comprehensive Environmental Response,



Abandoned drums of hazardous substances prior to cleanup at Chemical Control Corporation in Elizabeth.
Photo By James Staples

Compensation and Liability Act (Superfund) was enacted on December 11, 1980. When funds are eventually dispensed, New Jersey expects to receive substantial funding to cleanup the most serious toxic waste sites. Twelve sites were placed on the National Contingency Plan List of Superfund Sites, including two sites judged to be among the ten most critical sites in the country. As a result of applications to the U. S. Environmental Protection Agency, pre-Superfund monies were secured for studies to be performed at Bridgeport Rental and Oil Services, Lipari Landfill (Gloucester County), Burnt Fly Bog (Monmouth County) and Kin Buc (Middlesex County).

Superfund monies have also been made available on a limited basis at the Kin Buc and the Price Landfills (Atlantic County).

On November 3, 1981, the \$100 million Hazardous Waste Discharge Bond Act was approved by New Jersey's voters. These funds are targeted for the identification, cleanup and removal of hazardous discharges and will augment the revenue currently available from the Spill Compensation Fund. This fund is supported by taxes on the chemical industry. During the past eighteen months, the Spill Compensation Fund has been the principal source of monies for cleanup and has provided more than \$25 million for corrective actions.

Water Resources

Five years of study assessing New Jersey's water supply needs has culminated in a comprehensive Statewide Water Supply Master Plan covering both the technical as well as the management aspects of water supply. The Water Supply Bond Act was approved in 1981. This important act authorizes \$350 million in funds for critical water supply projects, feasibility studies and establishment of the Office of Conservation.

The need for expeditious implementation of the Master Plan's recommendations was magnified by a drought crisis in 1981. Because of abnormally low levels of precipitation, the State's already strained water supply system was unable to satisfy normal supply requirements. Governor Byrne declared a State of Emergency and appointed a special Drought Coordinator and a citizen's task force to aid in the State's drought management activities. Water use restrictions and rationing were imposed in the areas hardest hit by the drought. While no longer a serious crisis at 1981's end, the water supply situation remains subject to close monitoring and careful conservation.

Other legislative actions concerning water supply include the Water Supply Management Act. This Act is designed to give DEP the authority to implement a water supply permit program to ensure an adequate quantity and quality of water for present and future needs. Through the State Water Supply Authority Act, an independent authority was established which is empowered to finance, acquire, construct and operate State owned water systems and facilities which are recommended in the Master Plan.



Water Crisis Emergency Conference.

Dept. of Transportation Photo

Water quality is improving along the New Jersey shore, particularly in the back bays and estuaries, due to continued regionalization and upgrading of wastewater treatment facilities and subsequent removal of discharge. From 1980 through 1981 a total of 19,000 acres in the coastal and estuarine areas of New Jersey have been upgraded for increased shellfish harvesting. This trend of water quality improvements in the coastal area is expected to continue for the remainder of the 1980's as further improvements are made in the wastewater treatment facilities.

The most recent revision to the State's Water Quality Standards (1981) has enhanced the protection of water quality in the Pinelands. Stringent requirements have been

implemented which will continue to protect the valuable water resources of this area. The adopted Water Quality Standards also include a strong policy statement prohibiting the discharge of toxic substances.

The revised water quality standards have for the first time included groundwater standards. The standards created different categories for groundwater quality. Another preventive measure which will protect surface groundwaters and land is the New Jersey Pollutant Discharge Elimination System permit program (NJPDDES) which regulates pollutant discharge. In the future the Department will take over responsibility for this Federal program. Aggressive enforcement activities led to, in one case, a \$5.5 million court award for clean-up of

groundwater affecting Perth Amboy's well field.

EPA awarded DEP a \$6 million grant to develop the Statewide Pretreatment Management Program which will be closely linked to the development of the Statewide Hazardous Waste Facilities Plan. This funding will enable the State to survey and classify all non-domestic waste streams. Most importantly, it will lead to the identification of methods to control, treat and dispose of such materials in the most environmentally sound manner.

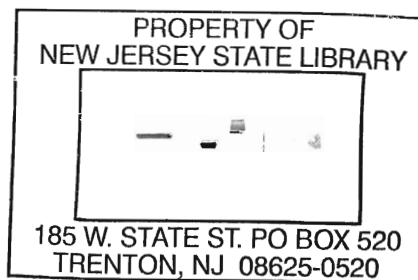
EPA has delegated to the Division of Water Resources responsibility for the management of the Wastewater Construction Grants program. This program will allow DEP to review proposed sewage and wastewater facility construction projects submitted for consideration. These projects total \$2.7 billion and are to be constructed over the next 10 years, pending availability of federal funds. Federal funds authorized over the next four years will only cover \$500 million of these costs. Successful program administration has served to expedite the grant approval process and has improved the capability to assist municipalities through the complex federal grant process.

On going programs include the Flood Control Grant Program under which approximately \$7.5 million has been committed for fifteen projects to control flooding in the State. The restoration of high hazard dams is also continuing through provisions of the Natural Resources Bond Act of 1980, which provides for a \$15 million program to protect the State's dams.

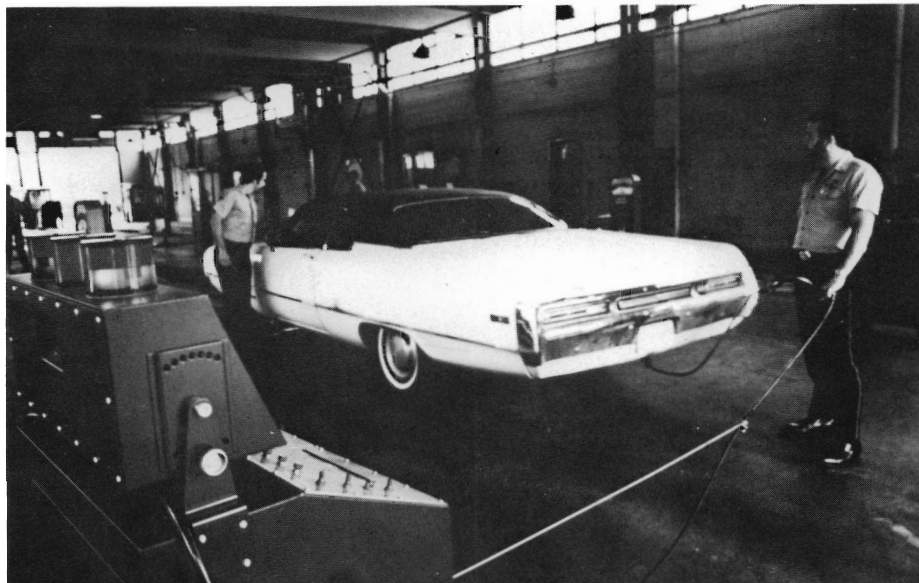


Severe drought conditions at Woodcliff Lake Reservoir.

Photo By Hackensack Water Company



Air Quality Management



A car undergoing a pollutant emissions test.

Photo By Public Communications Inc.

1981 was a banner year for improvement in the quality of New Jersey's air. Contributing to the improvement was substantial compliance by industry and the general public with the State's air pollution codes and the reduction of motor vehicle related pollutants. Good weather patterns, such as the lack of long term summertime inversions, also helped.

These improvements in air quality were achieved, in part, through field inspections of sources of air pollution, evaluation of permits and certificates, and response to citizen complaints. An innovation called the "bubble" pioneered by New Jersey makes it possible for some industries to achieve or exceed necessary reductions in emission of volatile organics at considerably lower cost than would be required for standard technology. The "bubble" concept, an EPA-approved regulation on volatile organic substances, allows industries to

control selected stacks or processes, if the entire facility remains in compliance with emission standards. In August 1981 the first hydrocarbon "bubble" was approved for duPont's Chemical Works thereby achieving a 90% hydrocarbon emission reduction. An additional bonus for duPont is the significant savings attained. Estimated conventional control costs of \$15 million were replaced by "bubble" concept controls costing only \$5 million.

Two other innovative advances were proposed in 1981. The first is application of the "bubble" concept to sulphur dioxide emissions to allow the burning of less expensive higher sulphur oil on the condition that increases in emissions are offset by the simultaneous use of cleaner burning natural gas. The second proposal is a "clean coal conversion incentive" to encourage conversion of oil and gas boilers to coal, with the environment being protected by

employing high efficiency control devices. This concept was applied to the Hercules Plant in Parlin. These innovations ensure room for industrial growth in New Jersey while protecting continued improvements in air quality.

Revisions of sulphur-in-coal regulations were adopted, aligning New Jersey's standards with federal requirements. In addition, a revision of the open burning regulations adopted in 1981 will serve to promote agriculture. This new measure authorizes the use of open burning to clear 25 acres or less if the property will be commercially farmed for at least five years after clearing.

Acid rain is emerging as an air pollution problem which will demand attention in the 1980's. Several watersheds in Northern New Jersey are critically near the point of turning acidic because of the low buffering capacity of their surface waters. The State has been rated as one of 15 states east of the Mississippi which is endangered by the hazards associated with acid rain.

Federal approval in April 1981 of New Jersey's State Implementation Plan for achieving and maintaining national air quality standards encouraged further development of transportation air quality improvements for ozone and carbon monoxide levels. These improvements will be included in the Plan at a later date.

Pursuant to air quality standards and regulations, 2,223 enforcement actions were taken for the Bureau of Air Pollution Control. These actions resulted in over \$1 million in penalties being assessed against various offenders.

Radiation Protection

Following the reactor incident at Three Mile Island, the radiation protection surveillance program was upgraded by increasing the number of environmental monitoring sites near nuclear generating facilities. A contractual agreement reached with the Nuclear Regulatory Commission now designates DEP as the quality assurance agent responsible for environmental monitoring. Telemetered radiation detectors designed to sample air every five seconds and transmit data to Trenton for analysis every fifteen minutes (every five minutes in the event of an emergency) will be installed during 1982. To improve protection of persons living in areas surrounding nuclear facilities, the New Jersey Emergency Response Plan was developed and subsequently tested in April 1981. The State passed the test with flying colors.

Federal and state remedial action programs continued at abandoned radioactive sites in Jersey City, the Town of Middlesex, New Brunswick, the City of Orange, Byram Township and the Borough of Maywood with excellent progress being made in the cleanups. In conjunction with these activities, a subcommittee of the Commission on Radiation Protection has been organized to investigate the need and feasibility of rules governing the decontamination and decommissioning of contaminated sites.

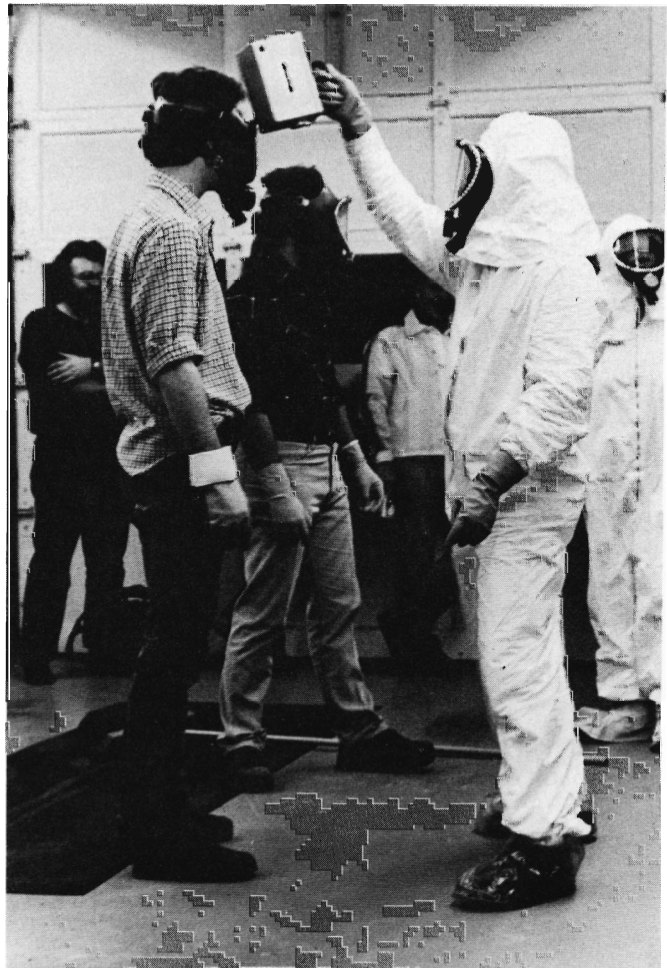
New Jersey produces 3,000 cubic meters of low level radioactive waste annually. The

feasibility of a compact between Northeastern states to establish a regional low level radioactive waste disposal site is being studied.

Concern about unnecessary exposure to radiation from x-rays and radiopharmaceuticals resulted in the addition of an enforcement element to investigate potential and reported x-ray abuses and prompted initiation of a statewide quality assurance program for nuclear medicine procedures.

Established registration and inspection programs and the surveillance and licensing of all shipments of radioactive materials continues.

In October Governor Byrne signed into law the "Radiologic Technologist Act." This new law amends the Department's procedure for licensing x-ray technicians and enables the Department to assess penalties to violators of the radiation protection codes.



Proper decontamination techniques taught to emergency volunteers.

Photo By Donald McCollum

Pesticide Control



The newly dedicated Pesticide/Toxic Substances Laboratory Complex.
The Leigh Photographic Group

Work was completed on the construction of the Pesticide/Toxic Substances Laboratory Complex, and Commissioner Jerry Fitzgerald English officiated at the ribbon cutting ceremony. The new laboratory will make it possible for DEP to cope with the burgeoning toxic sample analytical work load. Consolidation of laboratory functions will result in improved pesticide control.

Enforcement focused on solving complaints of pesticide misuse, improper disposal or storage, the use of unregistered pesticide products and improprieties by vendors or applicators. In 1980, 861 enforcement actions resulted in \$11,975 of assessed penalties.

Surveillance was maintained over producers of pesticides; products were sampled at the point of production and in the marketplace. To protect the public from unqualified exterminators, a major crackdown ensued on pesticide dealers who made restricted products available to uncertified applicators. This resulted in an increase in registration of exterminators in 1981.

Vital to proper pesticide control is a continuing registration and certification program of all dealers, applicators and products. Furthermore, in conjunction with mutual recognition of applicator certification, a full reciprocal agreement with six other states having comparable programs was instituted.

Noise Control

Noise control continued limited operations in face of reduced resources. October 1981 marked the closure of the federal regional noise abatement offices, with the central EPA office being scheduled for elimination in October 1982. However, New Jersey's program continued its cooperation with local governments in the fostering of noise control programs. This program resulted in 60 administrative actions being taken by the Bureau of Enforcement; \$27,000 in penalties were assessed in conjunction with these activities. Also, test methods for determining noise from stationary sources were proposed.

Separate public hearings were held by the Noise Control Council to address the need for state regulation of motor vehicle noises and alternative stationary signalling devices such as radio communications, telecommunications, sirens and airhorns.

Natural Resources

Coastal Resources

Final approval of New Jersey's coastal management program in September 1980 by the National Oceanic and Atmospheric Administration made the State eligible to receive approximately \$1.2 million per year in federal coastal management funds. Grants totalling \$302,000 were distributed to twenty local governments for projects to enhance waterfronts. Local Coastal Grant projects demonstrating progress include construction of a downtown park along the Cohansey River in Bridgeton and initiation of the Harbor Cleanup program in Jersey City which made possible the development of an urban plaza at Exchange Place along the Hudson River.

New Jersey's Shore Protection Master Plan was completed in December 1981. Heavy development and natural disasters have made shoreline protection important. The Plan provides guidance and direction in such areas as: financial

assistance, technical assistance, land use regulations, public awareness and proper management of shoreline processes.

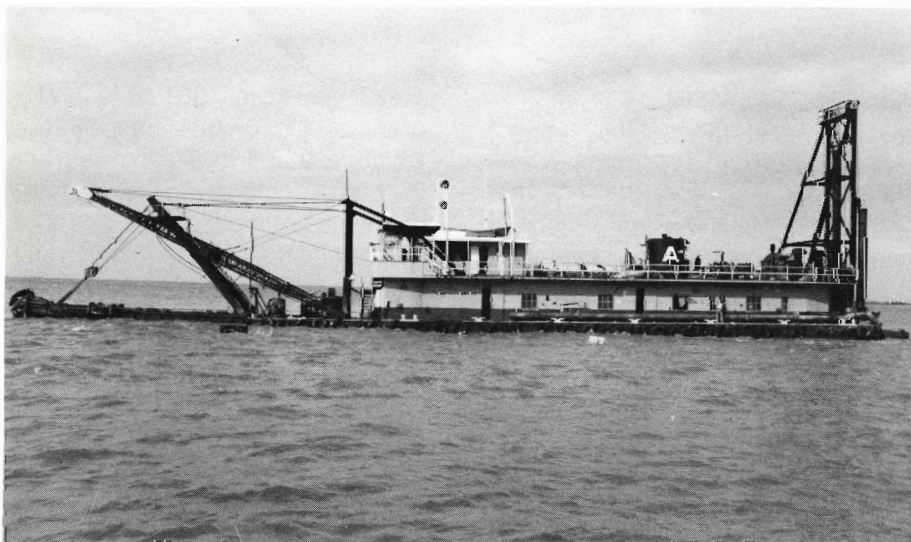
Sixteen shore protection projects, involving beach nourishment, dune stabilization, bulkhead and groin repair and construction were started. Dredging projects in Hereford Inlet, Shark River, Bidwells Creek, Otten's Canal, Leonardo State Marina and Spicers Creek were conducted at a cost of \$900,000.

Under the Coastal Area Facility Review Act, the Wetlands Act and the Waterfront Development Act, 1,364 permit applications were reviewed. Enforcement of these coastal permit laws resulted in 2,175 inspections; of these, approximately 1,150 were violation inspections and 330 violations were detected. Including violations from previous years, 360 violations were resolved this year.

New Jersey's Constitution

requires all monies received by the Bureau of Tidelands through the sale of grants, execution of leases, licenses and collection of rents and royalties to be contributed to the School Fund. Approximately \$1.4 million was contributed.

The Office of Environmental Analysis continued its program to determine what lands are or ever have been flowed by mean high tide. The lands consist chiefly of salt water swamps, meadows and marshes throughout the State. The Office determines and prepares maps of lands that are believed to have been flowed by high tide, thereby becoming State-owned. These maps are submitted to the Tidelands Resource Council for approval. A deadline for approval has been set by New Jersey voters requiring that any lands not claimed by November 3, 1982, can only be claimed if the land can be proven to have been tidelands in the past 40 years.



An inlet is deepened by dredging to ensure safer passage.
DEP Photo

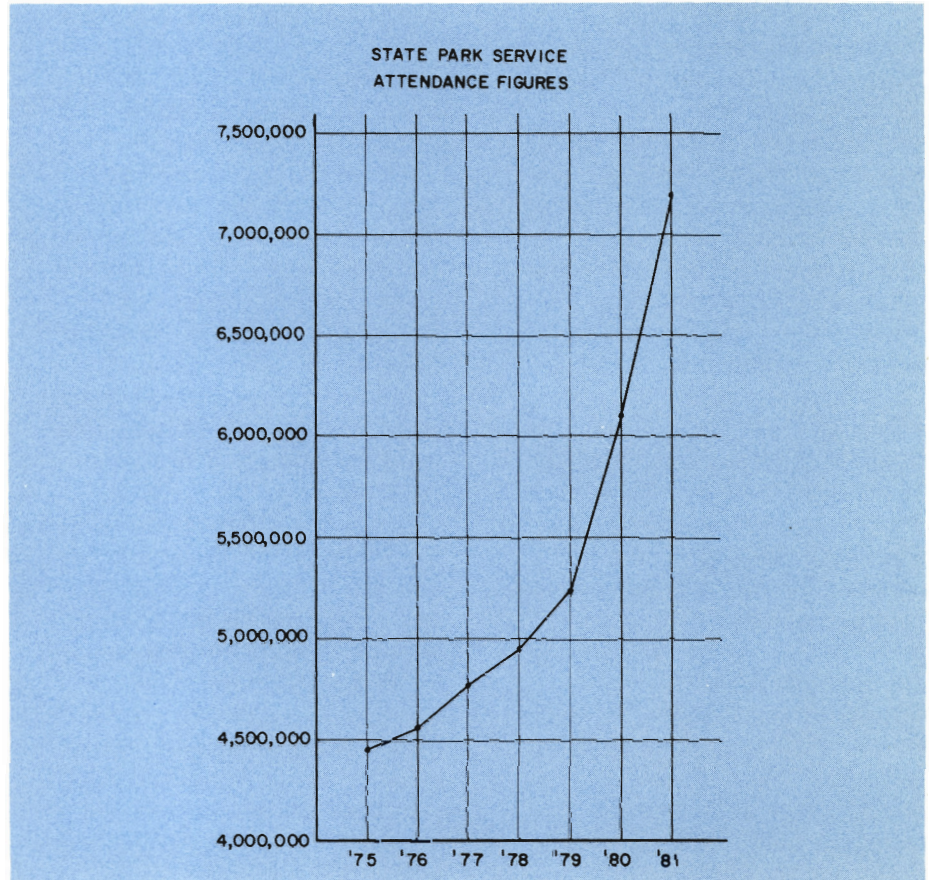
State Park Service

The State Park Service continued to provide the public with diversified recreational opportunities at parks and forests throughout the State while concurrently managing, protecting and preserving natural resources. State parks and forests in New Jersey operate on a 16 to 24 hour a day basis, 365 days a year in order to meet the increasing recreational needs of the public.

Attendance figures, which totaled 11,340,247 for the past eighteen months, are indicative of these demands. Parks and forest operational hours were expanded as a result of a 15% attendance increase in fiscal year 1981.

The Homeowners Firewood Program is one example of a specialized program which allows New Jersey residents to cut or collect dead firewood for their personal use from mid-September through March. This past year's program made available 4,600 cords of wood at a cost of \$10 a cord.

Various types of cultural and historical programs such as flea markets, craft shows and historical reenactments were held at state parks and forests and enjoyed by thousands of people throughout the year. For example, at Liberty State Park on September 12 and 13, 1981, the Ethnic Festival was held, with attendance for the two day event totalling approximately 12,000. The Second Annual Governor's Invitational Golf Tournament was held at Spring Meadow Golf Course in Farmingdale, New Jersey. All proceeds were donated in honor



A dramatic climb in attendance figures at state parks indicates the public's enthusiasm for recreational pursuits.

Photo By State Park Service

of the International Year of the Disabled Person.

Several youth programs were conducted including the Youth Recreational Opportunity Program, a grant program for youth serving agencies which provides bus trips to parks, forests and recreational areas. A total of \$475,000 in grants were allocated to 90 agencies. The Young Adult Conservation Corps (YACC), a year-round conservation program, employs persons between the ages of

16-23 years. In 1981 a federal grant of \$1,787,024 was awarded which enabled 175 enrollees and 25 staff members to participate in the maintenance and operation of parks and forests. The Youth Conservation Corps (YCC) Program, an environmental project-oriented program lasting eight weeks, enabled 513 youths ranging from 15 to 18 years in age to obtain summer employment. A \$914,273 grant was utilized for 18 non-residential camps in state

State Forestry Services

parcs and forests with nine camps sponsored through subgrants.

In keeping with the responsibility to provide quality recreational facilities to the public, new construction and improvement projects were completed during the past year at many parks including Wawayanda, Ringwood, Bull's Island, Batsto, Oxford Furnace and Round Valley Recreational Area.

Development of Liberty State Park, the State's most popular Park, continues. The year 1981 saw the opening of new boat launch facilities, operation of a summer day camp for disadvantaged youths, substantial improvements to the historic Train Terminal Complex and site improvements at the North Embankment of the Park.

Tour boat service from the Park to the Statue of Liberty and Ellis Island has increased and is especially popular with school groups from throughout New Jersey.

Design work is complete on the Environmental Center and Marine Walk with construction to begin in February 1982. After 5 years of intensive study and design, the first phase of construction of the protective seawall that will support Liberty Walk is scheduled to begin in March 1982.

The 1981 Spring forest fire season threatened to be one of the worst on record due to the drought conditions that persisted from May of 1980. Although rainfall in March and April helped minimize the problem, the Bureau of Forest Fire Management recorded 3,350 wildfires burning 16,335 acres during the past eighteen month period.

With the prospect of better growing conditions, increased seedling quality and more available space, the Bureau of Forest Management initiated the relocation of the State Forest Nursery from Washington Crossing State Park to Jackson Township. The new site in Ocean County will provide more than 800,000 seedlings this year for use in reforestation projects throughout the State. New tree seed orchards also will be established to provide superior seed for a wide variety of species not formerly available at the old site, thereby nurturing "super trees" for New Jersey's future forests. An information and education center with displays focusing on New Jersey's forest resources and

sound forest management practices will be developed in conjunction with the nursery.

Services were provided to 1,767 private forest landowners, an all-time high for this activity, which resulted in 48,271 acres of privately-owned lands being placed under forest management plans developed by the Bureau. Resulting forestry accomplishments on these lands included: 494 acres reforested, 1,794 acres prescribed for burning, and saw timber and pulpwood sold, producing an all-time high income of \$947,793 (23% more than last year).

The high demand for firewood prompted the first state-wide survey by the Bureau of Forest Management's Utilization and Marketing Unit which found 23% of New Jersey's households using wood fuel for heating during the 1980-81 season, burning a total of 1,001,769 cords.

The State Management Section initiated a program for computerizing forest inventory data from State forest lands. This will serve as a basis for improved forest management on 182,639 acres of State forest.



Photo By DEP

Combating a major forest fire.

Green Acres

The State Acquisition Program has preserved 7,303 acres of open space for recreation and conservation purposes at a cost of \$18,275,000. Notable acquisitions occurred in the Pinelands Preservation Zone, Troy Meadows Natural Area, Wawayanda State Park and Ramapo Mountain State Forest. The Hardyston-Ogdensburg Trail, a "rails to trails" project, also was completed during this period. New Jersey became the first of the 13 states, through which the Appalachian Trail extends, to have all the designated Trail lands within the State in public ownership.

During this period 138 local Green Acres grant projects were

approved totalling \$28,077,038, with 70% of the funds committed to municipal and county development projects ranging from neighborhood playgrounds to major urban waterfront developments and the balance to acquisition.

The Federal Land and Water Conservation Fund (LWCF) apportionment, which totalled \$5,026,801, was used in large part for locally sponsored development projects, including Exchange Place Plaza in Jersey City, the Bayonne Waterfront, Cedar Brook Park in Union County and development at Liberty State Park.

The Bureau of Recreation and Heritage assisted the New Jersey

Trails Council in fulfilling its legislative mandate to prepare a draft of a statewide trails master plan for public review. Proposed were trail acquisition and development policies and priorities, as well as basic statewide trail systems for hiking, bicycling, horseback riding, cross-country skiing, snowmobiling and off-road vehicle riding.

The Lower Atsion Segment of the Wild and Scenic Rivers System Designation was finalized and the preliminary study of 40 major rivers for potential wild and scenic river designation was completed. A draft river designation study priority list was prepared for public review.

Pinelands Acquisition

New Jersey has set another milestone in the history of environmental protection. On January 16, 1981, Secretary of Interior Cecil D. Andrus approved the plan for the Pinelands National Reserve — this country's first National Reserve. A proud achievement, the Pinelands Comprehensive Management Plan represents a partnership of local, county, state and federal effort to balance desirable economic growth with the protection of the unique character of this 1.1 million acre forest region. With state assistance, Pinelands municipalities are now revising master plans and zoning ordinances in order to conform to the regional land use plan.

DEP's Office of Pinelands Acquisition gained federal approval of the 11,000 acre acquisition plan for the preservation of Cedar Creek. This approval carries \$8.25 million in grant assistance toward the purchase of this area, noted for its dense stands of vegetation, abundance of wildlife, threatened and endangered plant and wildlife species and its pure water. To date, the Pineland Acquisitions program has purchased the 900 acre Batsto River Headwaters, the 2,200 acre Friendship Bog and the 9,000 acre West Plains Pygmy Pine Forest. Pinelands Acquisition has obligated over \$13.5 million in federal grants and \$12.25 million in state appropriations for these

and future Pinelands purchases under the 96,000 acre acquisition plan.



Headwaters of Cedar Creek. A site for endangered plant and animal species.
Photo By Robert A. Marshall

Fish, Game And Wildlife



Two osprey chicks successfully raised and banded through DEP'S careful wildlife management practices.

DEP Photo

The \$8.5 million Pequest Trout Hatchery - Natural Resource Education Center was dedicated on December 18, 1981. The Center assures the continuing ability of the Division of Fish, Game and Wildlife to produce and stock game fish for angling in public lakes and streams. The grounds will also be managed for various public uses such as bird watching, fishing, hunting and other compatible educational and recreational activities.

Legislation was enacted enabling taxpayers to contribute part of their state income tax refund to the Endangered Species Program. Effective in

fiscal year 1982, this "check-off" option will enlarge the program funding base. Public contributions can ensure that long-awaited research projects and habitat diversity studies are conducted. Continued participation in the ecosystem by vertebrate nongame wildlife should result. Careful wildlife management was evidenced through an increase in the osprey population from .97 young per nest in 1980 to 1.02 in 1981. Once extinct in New Jersey, wild peregrine falcons have successfully hatched and fledged. Ten bald eagles wintered in the State. One pair remained to nest, producing an

infertile egg. Through further management programs planned next year successful breeding may be possible.

The Bureau of Freshwater Fisheries stocked 586,560 trout in streams, rivers and lakes. Rough weather conditions and disease problems which reduced supplies from a federal hatchery were overcome and our quota for trout stocking was met.

Since its inception, the Marine Fisheries Administration has been involved in the development of management plans for striped bass, summer flounder and menhaden as well as for a number of shellfish species.

Protection of marine habitats continues through cooperation with other agencies of the DEP and by providing input to federal environmental impact statements and other environment reviews.

The hard clam relay program, involving the transfer of hard clams from polluted waters to clean beds, has been expanded by the Bureau of Shellfisheries to include new areas in Monmouth and Atlantic Counties. Yield from both sites represents over 20% of the 845,000 pounds harvested. Seed production at the oyster beds in the Delaware Bay resulted in an oyster harvest of nearly 458,000 bushels. More than 18,000 licenses for all types of shellfish were issued. 35,277 acres of shellfish growing areas were leased.

New Jersey hunters enjoyed more than 1.4 million days of recreation. They harvested an estimated 284,000 pheasants; 446,000 rabbits; 134,000 quail; 30,000 grouse; 179,000 squirrels;

74,000 woodcock; and 233,000 ducks. Approximately 1,300 wild turkeys have been reintroduced in New Jersey raising the population level sufficiently to allow the first turkey hunt in 100 years.

Deer harvest records were broken with 10,516 deer taken during the regular six-day firearm season; an additional record was set during the fall bow season when archers took 5,420 deer. The record harvests were attributed to good weather, better reporting of deer killed and the fact that hunters can now obtain a second deer tag when they report their first deer. A final yield of 22,000 deer is expected at the conclusion of the winter bow season on January 16, 1982.

Conservation officers came into contact with more than 110,000 persons who utilized state wildlife areas. Efforts were continued to educate the public to make proper use of wildlife areas. The Hunter Education Section certified more than 17,000 new hunters. Wildlife education information was disseminated through numerous publications. More than 200 teachers took advantage of several weekend retreats.



Trout stocking.

Photo By Harry Grosch



Science And Research

The Office of Science and Research is responsible for the long range planning and policy analysis on scientific and technological management methods for the DEP.

The largest section of Science and Research is the Office of Cancer and Toxic Substances Research (OCTSR). OCTSR completed a study of toxics in New Jersey groundwater that found, while over 95% of the samples were potable, persistent low level contamination was present. The study tested for 50 different metals, pesticides and volatile chlorinated organics. In areas of high contamination, wells were closed and cleanup operations are in progress. In South Brunswick the contaminated aquifers were being cleaned up as a result of funds provided by the polluter, IBM. In Rockaway Township, an area where contamination is less toxic, measures have been taken to filter the water supply with granular activated carbon, thereby reducing toxicity.

In a cooperative effort with the New Jersey Department of Health (DOH), OCTSR completed a study of groundwater in Cape May County showing no evidence of a link between water quality and the occurrence of birth defects.

In April 1981 OCTSR released a report entitled, "Trends in Cancer Mortality in the New Jersey Region 1950-1975." The new study shows that the cancer rate in New Jersey has stabilized while the rate in the rest of the nation has continued to rise. Although this region is still high in several of the most fatal

POTENTIAL FOR POPULATION EXPOSURE TO TOXIC SUBSTANCES

(INDEX OF POPULATION DENSITY
AND ABANDONED DUMP SITES)

NJ MUNICIPALITIES

POTENTIAL
FOR EXPOSURE



DEPARTMENT OF
ENVIRONMENTAL PROTECTION
OFFICE OF CANCER AND
TOXIC SUBSTANCES RESEARCH

forms of cancer (bladder, stomach, breast, large intestine, rectum and lung), the rate of incidence has not risen with the rapidity that it has in the rest of the nation.

OCTSR has received a grant from the National Cancer Institute to develop a technological computerized data base to map and interpret information efficiently and to pinpoint industrial sources of pollution. Once completed, this program will be available to all State agencies and be a model to other states.

OCTSR also received a \$97,251 grant from the New Jersey Department of Energy to assess the presence of benzo-a-pyrene in the environment and to explore the effects of toxic pollutants on the blue crab, which represents a multi-million dollar industry in this state. Benzo-a-pyrene, a highly toxic by-product of coal burning, is a proven carcinogen to humans. This study will help determine concentrations in the environment and thereby contribute to regulatory strategies.

OCTSR has been monitoring ambient air in New Jersey for selected toxic and/or carcinogenic pollutants. The current effort, is the most comprehensive study of airborne toxic contaminants ever initiated by a state or federal agency. OCTSR is also coordinating acid rain activities and is completing a study of the sensitivity of New

Jersey's natural resources to acid deposition.

OCTSR is conducting a comprehensive survey of New Jersey's industrial use, release and disposal of carcinogenic and toxic chemicals.

Several important new programs are being undertaken by the Office of Science and Research. The Enforcement Systems Development Program will develop an electronic detection system to monitor changes in environmental conditions and report to inspection personnel. The new unit on Hazardous Waste and Resource Recovery Research has joined a consortium with the New Jersey Institute of Technology to develop research programs on hazardous waste and spill cleanup technologies. The Technology Benefit-Cost Analysis Office will develop plans to carry out accurate and objective assessments of the costs and benefits as well as economic impacts of DEP projects, regulations and legislation that affect the environment.

Through the liaison efforts of the Office of Science and Research, the Science Advisory Committee (SAC) presented its first major study entitled "The Data Processing Report," to the Governor. This in-depth study commented on and made recommendations for major changes in the State's data processing systems.

Let's protect our earth



NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Administration

Office Of Cultural And Environmental Services

The Office of Cultural and Environmental Services combines several functions which transcend divisional lines of responsibility. For example, assistance was provided to applicants in the area of permit coordination particularly for major projects with multiple permit requirements. The Office also conducts coordinated reviews of environmental impact statements mandated at both the state and federal level. Examples of projects reviewed include an urban industrial park, a coal fired electric generating plant, park developments, senior citizen housing and transportation projects.

Administration of the State's historic preservation program continued in part through the Survey and Planning grant program. Twenty-four county and municipal surveys were

completed, adding over 10,000 historic properties to the New Jersey Historic Sites Inventory. A statewide survey and thematic National Register nomination of active railroad stations was undertaken: the first such project in this country. Fourteen Survey and Planning grants totalling \$183,000 were awarded for preservation plans for historic urban, industrial and agricultural areas, and for a statewide survey of glass factories.

Despite a one year national moratorium on listing private properties on the National Register of Historic Places, New Jersey's Register program remained active. Fifty-seven individual properties and twenty-one historic districts were officially recognized for their significance in American architecture, history, archeology and culture.

A major new program concerning the amendments to the Tax Act of 1976 and the federal Economic Recovery Tax Act of 1981 offers substantial tax benefits to developers undertaking rehabilitations of historic buildings for commercial purposes. Seventeen "Part I" determinations were made, qualifying individual properties to be certified historic structures. Twenty-eight "Part II" applications involving \$57,900,000 of restoration and rehabilitation work have been received. With the passage of the Federal Economic Recovery Tax Act earlier this year and its special benefits for certified rehabilitations, interest in the program has again increased dramatically. Requests for information have quadrupled. The scale of projects also has increased significantly.



Branch Brook Park, Newark, an original urban park of the nation's first county park system, was listed on the National Register in 1981. In the background is Sacred Heart Cathedral, also on the National Register.

Photo By Joseph T. Calamini

Office Of Public Participation

Public participation played a major role in DEP program development. The Statewide Water Supply Master Plan was adopted following a series of public meetings and hearings conducted throughout the State. Incorporated into the plan were citizen comments regarding watershed protection and water conservation. The same is true for the New Jersey Coastal Zone Management Program where public comments pointed out the need for recreational facilities on urban waterfronts and requested public hearings before Coastal Area Facilities Review Act (CAFRA) permit approval is

given.

New regulations governing various aspects of hazardous and solid waste management were the subject of intense debate, as interested people from the industrial and environmental communities reviewed the proposed regulations. The support and active lobbying of the New Jersey Committee for Water Resource Bonds helped secure passage of the 1981 Water and Hazardous Bond issues which appeared on the November ballot.

The Department has also

renewed emphasis on and interaction with the established boards, councils and commissions. In addition to the 35 active operating groups currently advising the Department, four new groups have been formed. They are the Hazardous Waste Commission, the Hazardous Waste Advisory Council, the Water Supply Advisory Council and the State Panel of Science Advisors. The advice provided by these dedicated citizens has aided the Department in the management of New Jersey's natural resources.

Office Of Enforcement

1981 was a year of significant achievements for enforcement programs.

The following cases are particularly noteworthy:

State, D. E. P. vs. Chemical and Pollution Sciences, Inc. et al

After four years of the most complicated litigation in the Department's 10 year history, the Superior Court for Middlesex County awarded the Department a 5.5 million dollar judgment against two polluting companies — CPS and Madison Industries — to pay for the cost of decontaminating the Farrington Sand Aquifer, the major potable water source for the residents of Perth Amboy. For over 15 years these two industrial plants dumped, spilled and stored wastes in the open soils thereby allowing toxics to flow directly

into the City's well field.

American Cyanamid Administrative Consent Order

In June of 1981, the Department's Division of Water Resources issued a comprehensive enforcement order to the American Cyanamid Company mandating complete remediation of all groundwater contamination at the firm's massive Bound Brook plant site. After months of intense negotiations, a precedent setting agreement was executed providing for the comprehensive remediation program to be undertaken over a 44 month period of time. The effectiveness of this program will be monitored by DEP. As part of this program, Cyanamid is required to meet federal and state permit

discharge limits for all of the pumped water.

Toms River Chemical Company

The Department executed a comprehensive Administrative Consent Order with the Toms River Chemical Company during 1981 which mandates that the company fully evaluate the groundwater impacts of over 12 years of unsecured disposal of wastes on its Toms River plant premises. Upon completion of this report, detailing the full extent of all groundwater contamination beneath this massive industrial facility, the company must submit to the Department a separate geohydrologic report recommending the most efficient method for full abatement of all such groundwater pollution.

Office Of Regulatory Affairs

The Office of Regulatory Affairs reviews and approves all of the Department's regulatory proposals. During 1981 rules and regulations for the State's pollution discharge elimination system permit program (NJPDES) and hazardous waste regulatory programs were adopted. In addition, revisions to the State's water quality standards were adopted early in 1981 in accordance with the requirements of the Federal Clean Water Act.

The Office was actively involved in the preparation of regulations required by newly enacted legislation in the water

supply area. These regulations included procedural rules for obtaining water supply allocation permits and for the repair and rehabilitation of dilapidated supply systems under the 1981 Water Supply Bond Act. In addition, the Office was involved in the adoption of the State's first designation under the State's Wild and Scenic Rivers Act, with the designation of the Lower Atsion segment of the Mullica River as a Wild and Scenic River.

The Office provided the necessary support services for the Drought Coordinator during

the year. This involved the adoption of various emergency rules for the procedures and substantive requirements under the Governor's Executive Order No. 104. These rules and regulations governed the nonessential uses of fresh water in the State as well as the various components of the water rationing plan imposed under the Governor's Executive Order.

The Office also coordinated contested case filings for the Department of Environmental Protection. In 1981, 168 cases were referred to the Office of Administrative Law for hearing.

Office Of Inter-Governmental Operations

The Office of Inter-Governmental Operations develops and initiates legislation for DEP and serves as the liaison to the State Legislature, the New Jersey Congressional delegation and to county and local officials. The objective is to maximize program benefits to protect the environmental health of the State and its citizens and to secure specific funding to carry out those programs.

Major legislation was enacted in 1981 including the: "Major Hazardous Waste Facilities Siting Act," "Hazardous Discharge Bond Act," "Recycling Act," "Sanitary Landfill Facility Closure and Contingency Fund Act," "Forest Fire Control and Prevention Act," the "Radiation Protection" package and the "Endangered Species" funding bill.

Twenty major bond appropriation acts were signed into law, appropriating \$300 million for Green Acres, sewerage construction, shore protection, water supply, harbor cleanup and flood control projects.

In addition, the Governor signed into law major water policy bills to prevent future water supply crises. The \$350 million "Water Supply Bond Act" will provide funding for new water supply projects. The "Water Supply Management Act" establishes new standards for diversions and the use of water. The "State Water Supply Authority Act" creates a new agency to construct and operate the State Water Facilities. In all, over eighty environmentally related bills were signed into law.

The major federal legislative concerns have been the reauthorization of the "Clean Air Act" and the "Wastewater Treatment Legislation." DEP has taken the lead for the Northeastern states in lobbying Congress to maintain compliance to the National Ambient Air Quality Standards, and to address the acid rain problem.

The Office has assessed the statewide environmental impact expected as a result of the proposed federal budget reductions and is attempting to mitigate the effects the budget cuts will have on programs administered by this Department.

Management And Budget

Department administration is managed by the Office of the Assistant Commissioner, Management and Budget and consists of the Division of Fiscal and Support Services, the Division of Personnel and Data Processing Services and the Office of the **New Jersey Outdoors** magazine.

Administrative responsibilities also encompass permit coordination, management of the capital improvement program, and general support services.

The Office of Permit Coordination has been working with industry groups in an on-going effort to improve permit administration and expand public participation in its permit programs. The 90 Day Law rules and regulations were amended to expedite over-the-counter processing for stream encroachment, sewer extension and waterfront development permit applications which meet certain criteria. Substantial progress has been made in simplifying permit forms, application requirements and permit procedures. A common permit application form was developed for all department construction permits. The DEP Bulletin was expanded to include permit application status for all 26 construction permit programs.

During 1981 the department



The Indian King Tavern - an historic restoration capital improvement project.
Herbert R. Leicht, Artist

administered a \$144 million construction program. Data processing capabilities were expanded with the department acquiring its first major computer. A new medical program was instituted to provide medical evaluations on employees who regularly come into contact with hazardous and toxic materials as a result of their assignments.

The department anticipates substantial reductions in fiscal

year 1983 state assistance grants such as Air Pollution Control, Water Pollution Control, and Hazardous Waste programs. Combined with the elimination in fiscal year 1982 of the Youth Adult Conservation Program, Youth Conservation Corps, and the Land and Water Conservation Fund, the department will experience substantial cutbacks in personnel, and planned program benefits.

DEPARTMENT OF ENVIRONMENTAL PROTECTION
 FISCAL YEAR 1981
 JULY 1, 1980-JUNE 30, 1981
 APPROPRIATIONS AND EXPENDITURES SUMMARY

APPROPRIATIONS

State Appropriation	\$ 95,936,244
Trust Fund	82,313,328
Federal Revenues	21,662,615
SUB-TOTAL	\$199,912,187

APPROPRIATED REVENUES*

Water Fees & Charges	\$ 2,959,640
Licenses & Fees	4,676,632
Other Sources	360,618
Publication & Sales	337,756
SUB-TOTAL	\$ 8,334,646

TOTAL REVENUES	\$208,246,833
----------------	---------------

EXPENDITURES

General State Operations	\$ 46,698,463
State Aid	3,800,051
Capital	490,350
Federal	21,662,615
Dedicated & Special	3,753,217
SUB-TOTAL	\$ 76,404,696

TRUST FUNDS

Natural Resources Bond Fund-1980	\$ 137,090
State Rec. & Conservation Land Acq. Fund-1971	2,769,072
State Rec. & Conservation Land Acq. Fund & Dev. Fund-1974	40,445,810
State Land Acquisition & Development Fund-1978	9,859,419
State Water Development Fund-1958	74,388
Water Conservation Fund-1969	8,601,232
Clean Waters Fund-1976	16,746,619
Emergency Flood Control Fund-1978	2,445,457
Beaches & Harbors Fund-1977	1,234,241
SUB-TOTAL	\$ 82,313,328

DEBT-SERVICE

Interest	\$ 24,583,809
Principal	24,945,000
SUB-TOTAL	\$ 49,528,809

TOTAL EXPENDITURES	208,246,833
--------------------	-------------

*Does not include revenues deposited in General Treasury in the amount of \$11,648,442

Editor: Dianna E. Rogers-Ross
 Assistants: Cindy Gordon
 Christine Okenica
 Dorothy Correnti Petito
 Ed Krupa
 Special Assistance:

