NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

ANNUAL REPORT

FOR FISCAL YEAR 1976

BRENDAN BYRNE
GOVERNOR

DAVID J. BARDIN
COMMISSIONER

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
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March 1, 1977

To the Honorable Brendan Byrne,
Governor of the State of New Jersey
and the Members of the Legislature

I respectfully submit the Department's report for fiscal year 1976.

Faithfully,

David J. Bardin
Commissioner

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Annual Report
Fiscal Year 1976

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INTRODUCTION

The Department of Environmental Protection combines State government operations for conservation, restoration and enhancement of the physical environment. The Department is responsible for protection of the State's water, air, land, forest, wildlife and shellfish resources and for providing outdoor recreation opportunities.

The Department has emerged as a principal regulatory agency in State government. DEP regulates supply and quality of drinking water. The Department controls development in the floodplain. DEP monitors air quality through a 22 station statewide network and regulates emissions to the air through review of construction plans for sources of air pollution prior to issuing operating certificates. DEP together with the Division of Motor Vehicles checks emission performance of automobiles. DEP regulates and inspects operations of over 300 landfills to minimize pollution of groundwater supplies and to reduce danger of fires.

The Department inspects and registers radiation devices, registers pesticides and licenses pesticide applicators. DEP administers the Coastal Area Facility Review Act which protects an 880,640 acre zone on New Jersey's coast. Through the Wetlands Act DEP protects 242,000 acres of coastal wetlands from degradation and permanent loss to the marine ecosystem. DEP administers State-owned riparian lands flowed by the tide. Leases are granted on 37,500 acres of State-owned riparian land for shellfishing by commercial fishermen.

DEP administers the Federal sewer construction grant program to finance planning and construction of municipal waste treatment facilities.

The Department also administers the Green Acres state and local acquisition and development program for expansion of open space and recreation in New Jersey.

The Department manages over 406,000 acres of State-owned lands for wildlife habitat, hunting and fishing, as well as recreation areas in parks, forests, historic sites, natural areas and marinas. DEP raises 1.5 million tree seedlings a year for sale to the public and issues approximately 1/2 million hunting and fishing licenses.

SPECIAL ENVIRONMENTAL ISSUES

During the fiscal year special issues required DEP planning, action and regulation:

The DEP report to Governor Byrne, Cancer and the Environment, focused attention on cancer and its connection to the environment. Current theories attribute a majority of cancer cases to environmental factors, including cigarette smoking and cancer causing substances that may be present as trace contaminants in air, water and food. The report recommends action to attack the issues raised. By Executive Order 40, Governor Byrne created the Cabinet Committee on Cancer Control on May 26, 1976. DEP initiated and expanded monitoring programs to include carcinogenic substances; a carcinogen use survey is planned in cooperation with the Department of Labor and Industry; regulatory programs will be developed in light of the facts.

Tocks Island. The critical decision against construction of the controversial Tocks Island dam was made on July 31, 1975 by the Delaware River Basin Commission, under Governor Byrne's leadership. A majority of the members voted not to seek federal funding to build the dam.

Offshore Drilling. New Jersey, acting with other mid-Atlantic states, vigorously criticized policies and practices of the U. S. Department of Interior's offshore oil and gas leasing program. New Jersey asked for increased competition, responsiveness to coastal State concerns, a more rapid exploration program and a regulatory pause between exploration and production as part of a program to assure greater environmental safeguards.

Oil Spill Liability. In view of the deficiencies in the federal program, DEP pressed for state legislation to set up an oil spill liability fund to protect the Jersey shore from adverse environmental and financial impacts of oil spills.

Coastal Energy Facilities Planning. DEP received a special federal grant ($337,000) from the U.S. Department of Commerce for coastal energy facility planning. The funds will be used to analyze and solve problems expected to result from offshore oil and gas exploration and production as well as from construction of any type of energy facility in the coastal area. DEP will share $180,000 of the grant with 12 coastal counties so they can participate in the effort.

Ocean and Beach Conditions. The Beach Access Study Commission was established by a joint resolution of the Legislature on March 3, 1976. In June 1976, DEP staff inspected the 120 miles of Jersey shore between Sandy Hook and Cape May, assessing beach access and beach and water conditions. Local officials called attention to erosion problems. Opinion was nearly unanimous that pollution of the water from any source including oil spills would cause inestimable financial and resource losses to the area.

An extraordinary growth of algae/plankton occurred off the New Jersey shore from the end of June through September of 1976. The mass generally remained several miles offshore. The bacterial decay of the algae as it fell to the ocean bottom deprived fish and shellfish of oxygen resulting in a series of fish kills that affected a 3,000 square mile offshore area from Sandy Hook to Cape May. Losses to commercial fishermen are estimated at $265 million.

DEP analysis concluded that no single circumstance could be identified as the cause of the massive algae growth and resulting fish kill. Instead, it was the result of a combination of man-induced activities and other phenomena including: particularly calm and sunny weather conditions, an ample nutrient (or fertilizer) supply from a combination of human and natural sources, and the presence of unusually large amounts of certain algal species in late winter and early spring.

Trenton Water Crisis. Between Sunday, August 31, 1975 and Monday, September 8, 1975, Trenton and the surrounding area suffered an unparalleled failure of water utility service. Despite valiant efforts, including those of thousands of firemen, the Trenton reservoir went dry. The drought lasted several days for many customers at the higher elevations of the Trenton area. Governor Byrne activated the full Civil Defense network in response to this crisis. He ordered the Commissioner of DEP to direct and coordinate emergency efforts, including the laying of emergency interconnection pipelines.

Governor Byrne later directed DEP to investigate the emergency to determine what actually happened. Commissioner Bardin appointed a four-member Board of Experts to investigate the crisis and an Advisory Panel to review the Board's findings. The final report on the Trenton Water Crisis, submitted to Governor Byrne in May 1976, concluded that the mishap was just waiting to happen as a result of accumulated neglect. The report reviews probable causes of the breakdown, cites emergency measures taken and recommends corrective actions.

Garbage and Waste Disposal. New Jersey law (N.J.S.A. 13:1I-1 et seq.) bans dumping of solid and liquid wastes from out-of-state sources at New Jersey sanitary landfill sites. The law, challenged by Yonkers, New York and Philadelphia, Pennsylvania in the New Jersey Supreme Court was upheld in a unanimous decision in November 1975. An appeal by the cities to the U.S. Supreme Court resulted in a stay of the New Jersey ruling, thereby permitting out-of-state dumping to continue until the federal court hears the case.

The department served Notice of Prosecution in May 1976 to Kin-Buc, Inc. a chemical waste landfill in Edison Township, Middlesex County, for noncompliance with regulations. The site was the scene of fires and chemical spills into the Raritan River. Chemical dumping into Kin-Buc terminated after the close of the fiscal year.

Nuclear Power Plants. DEP issued a conditional permit to Public Service Electric and Gas Company (PSE&G) for the first major energy facility authorized under the Coastal Area Facility Review Act (CAFRA). The permit for construction of a two-unit nuclear power plant on Artificial Island in Lower Alloways Creek Township, Salem County imposes 22 DEP requirements to be met by PSE&G. The station, to be known as the Hope Creek Generating Station, will eventually supply over two million kilowatts of power. It is the second two-unit nuclear plant on Artificial Island. The first installation, the Salem Station, was under construction before the CAFRA law went into effect in 1973. The other nuclear power plant in New Jersey, the Oyster Creek nuclear plant in Ocean County, was on line in 1969, four years before enactment of CAFRA.

In March 1976, DEP began an analysis to define the need for land use controls around the two nuclear power plant sites. The goal is to enforce a long-standing federal policy of having the population density near nuclear power plants sufficiently low so as to allow effective protection measures in the unlikely event of a major accident resulting in the release of radioactivity. This policy has never been implemented by the federal government, nor has the federal government even issued advice to local or state governments on how they should enforce this policy.

DEP actively participated in federal review of the proposed floating nuclear power plants in formal licensing proceedings before the U. S. Nuclear Regulatory Commission (NRC). DEP forcefully raised a major safety issue that had not been addressed in the federal review. NRC failed to analyze fully the risk to public health and safety that might result from a nuclear accident that could release radioactivity rapidly into the ocean and then the air (a so-called steam explosion in case of a core melt-down). This issue was raised roughly three years before in a DEP petition to the NRC's predecessor agency, the Atomic Energy Commission. As of the end of the fiscal year, no definitive response from the NRC on this accident potential had been forthcoming.

Pine Barrens. DEP, on June 22, 1976, announced acquisition through Green Acres funds of the 1,815 acre Greenwood Rancocas Reserve. Preparation of new water quality standards to protect the unique water resources of the Pine Barrens began.

Permit Processing. The 90 Day Law (N.J.S.A. 13:1D-29 through 34) became effective on December 22, 1975. The law requires that construction permit applications on stream encroachments, sewer extensions, coastal areas, wetlands and riparian lands be processed within 90 days of complete submission to the Department. Through 90 day processing of permit applications, DEP began making speedier regulatory decisions.

ENVIRONMENTAL INDEX

As an initial effort this annual report attempts to index the current status and trends in New Jersey's environment. The report provides qualitative and quantitative analyses of water, air, land, solid waste, radiation, noise, pesticides, wildlife and marine and freshwater resources.

WATER

Surface Water

New Jersey has approximately 850 lakes, 6,500 miles of rivers and streams and 120 miles of coastline.

Chemical, physical and biological data collected at over 100 sampling stations indicate that the overall quality of most New Jersey surface water ranges from excellent to fair. However, surface water quality is only poor to fair in the most densely populated parts of the state. (See Figure 1)

Categories of water quality shown in Figure 1 should be interpreted as follows:

Poor - Quality precludes fish propagation but would allow fish survival, except for certain times of year when fish kills may occur. Unsuitable for swimming.

Fair - Fish propagation could occur for pollution tolerant species. Provides for fish survival except for limited instances when fish kills may occur. Generally unsuitable for swimming.

Good - Fish propagation and maintenance of desirable species would occur. Suitable for swimming except for localized bacterial problems.

Excellent - Essential absence of significant pollution problems. Fish propagation and maintenance of indigenous species would occur. Suitable for swimming except for limited localized bacterial problems.

The above categories do not attempt to distinguish the relative quality of the surface waters from the standpoint of use for potable water.

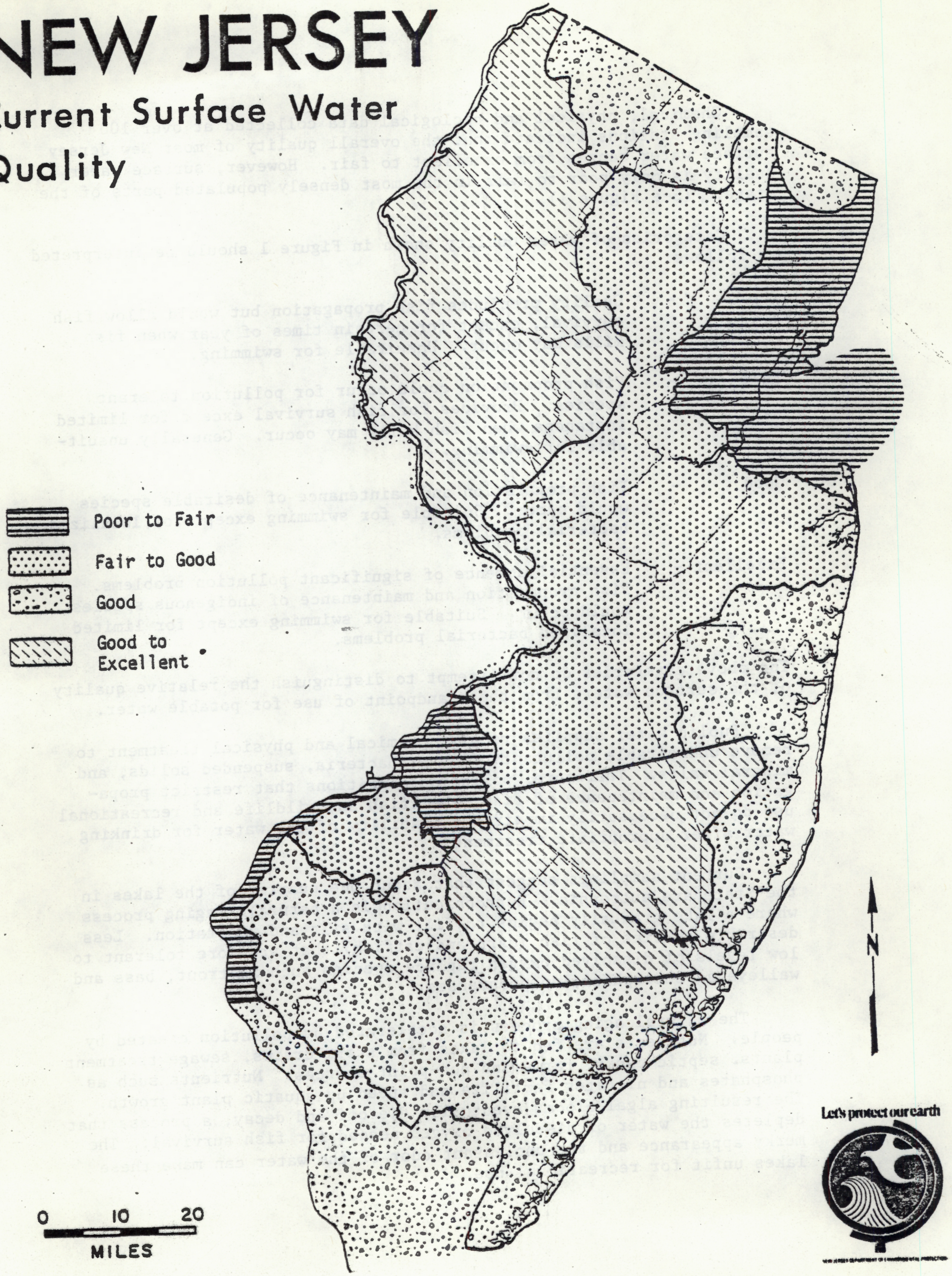
Public water supplies receive chemical and physical treatment to remove undesirable pollutants such as bacteria, suspended solids, and mineral salts. Therefore, pollution conditions that restrict propagation and maintenance of fish, shellfish and wildlife and recreational use do not necessarily impair the usability of the water for drinking water after appropriate treatment.

Current samplings suggest that about one quarter of the lakes in the State are eutrophic. Eutrophication is a naturally aging process where a lake gradually begins to fill with silt and vegetation. Less desirable species of fish (carp and catfish) that are more tolerant to low levels of dissolved oxygen replace species such as trout, bass and walleye as eutrophication progresses.

The natural aging process is accelerated by pollution created by people. Nutrients are fed to lakes from storm drains, sewage treatment plants, septic tanks, farms and non-point sources. Nutrients such as phosphates and nitrates fertilize and speed up aquatic plant growth. The resulting algal blooms eventually die off and decay, a process that depletes the water of dissolved oxygen needed for fish survival. The murky appearance and the unpleasant odor of the water can make these lakes unfit for recreational use.

NEW JERSEY

Current Surface Water Quality



The frequency and volume of oil and hazardous material spills has increased over the past 5 years. (See Table 1)

Table 1

OIL AND HAZARDOUS MATERIALS SPILL

Calendar Year	Number of Spills	Gallons	Number of Spills of Unknown Gallonage
1972	194	1,813,895	61
1973	514	2,124,185	171
1974	546	1,293,788	206
1975	676	21,360,699[a]	259
1976	826	7,264,012	383

[a]Includes two major spills, a pipeline spill of 1 million gallons and a tanker spill of 12 million gallons.

Fish kills are caused by lowered levels of dissolved oxygen in water (usually occurring in summer months), sudden temperature changes and by toxic discharges or spills. The major cause of fish kills is municipal sewerage system effluents, with power plant effluents and industrial petroleum the second and third most prevalent causes. The worst area for fish kills is the Raritan River Basin. The Passaic River Basin is second. The number of reported fish kills reached a high in FY74. (See Table 2)

Table 2

DOCUMENTED NEW JERSEY FISH KILLS

Fiscal Year	Fish Kills
1972	73
1973	69
1974	99
1975	93
1976	73

DEP classifies waters for harvesting clams, oysters and mussels to distinguish the degree and seasonal nature of pollution which affects shellfish and thus requires restriction on shellfish consumption by humans. Classifications, limited in the past to bay and estuarine waters, were extended to ocean waters in FY75.

Table 3 shows that safe shellfishing areas have decreased in bays and estuaries each calendar year since 1971 and in the ocean since 1975 when records were first kept.

The program of transplanting clams to safe waters is expected to increase clam harvest by allowing clams to purify themselves for thirty days in safe water. They are then tested before being released to market.

Table 3
CLASSIFICATION OF SHELLFISH GROWING AREAS
(Acres)
Bay and Estuarine Areas

Calendar Year	Approved	Fully Closed	Special Restrictions	Seasonal	Total
1971	295,513	68,478	23,478	5,209	392,852
1972	293,235	70,930	23,478	4,209	392,852
1973	289,053	73,464	25,723	4,612	392,852
1974	284,185	74,012	27,243	7,412	392,852
1975	281,852	74,230	27,243	9,527	392,852
1976	279,995	75,044	28,193	9,620	392,852

Ocean Waters

Calendar Year	Approved	Fully Closed	Total
1975	144,750	85,650	230,400
1976	139,600	90,800	230,400

On the basis of available data, New Jersey's overall surface water condition can be best described as stable or improving. However, local problems, spills and continued growth in acres of condemned shellfish water preclude undue optimism.

Reversal of past trends in surface water quality depends largely on construction and operation of new wastewater treatment plants. It will take some time for receiving waters to recover from decades of pollution; however local improvements are already being observed and significant improvement in water quality over large areas is expected to begin toward the end of the 1970's.

Wastewater

DEP approved public wastewater projects costing over $615 million in FY76. The Department approved 363 locally funded projects involving costs of $42 million. Industrial projects costing over $19 million were also approved.

Improvements in municipal wastewater treatment permitted lifting 13 sewer bans and easing 11 others.

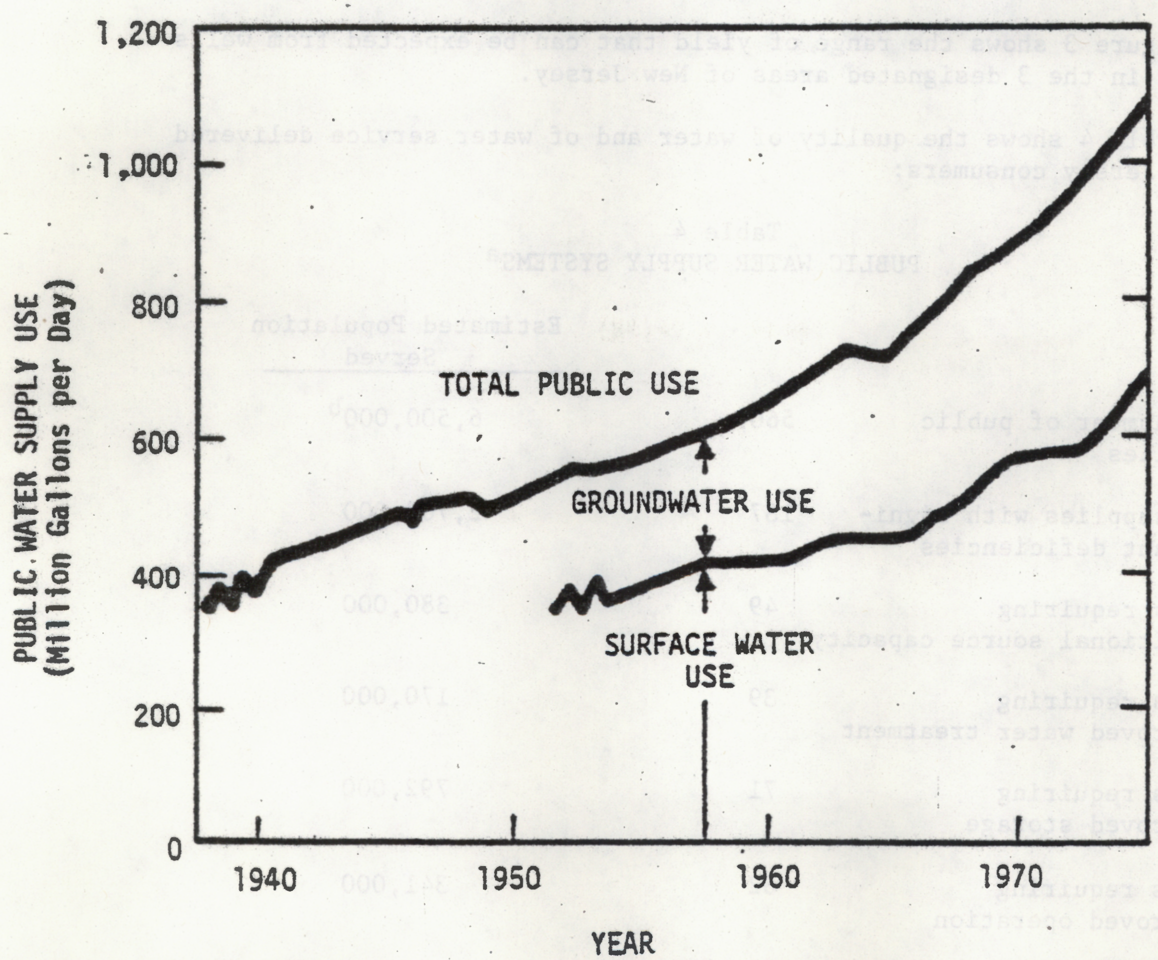
Water Supply

Average precipitation in New Jersey provides about 1 million gallons a day per square mile. In the northern part of the state, 90% of the stormwater enters surface waters and 10% reaches groundwater. In the south, virtually all precipitation enters the groundwater through the sand and gravel soil.

As demand increases, overall reliance on groundwater is also increasing. (See Figure 2)

Figure 2

PUBLIC WATER SUPPLY USE IN NEW JERSEY SINCE 1940



Source: N.J. Dept. of Environmental Protection

Water is supplied to 6 1/2 million of New Jersey's residents by:

192 investor-owned water systems
273 municipal systems
94 systems owned by federal, state, or county governments, highway facilities or public schools.

The other million residents draw water from individual wells and semipublic water supplies (supplies which serve fewer than twenty dwellings).

Over a billion gallons of water are delivered daily to customers throughout the state. Nearly 155 million gallons were supplied daily from the State owned Delaware and Raritan Canal and Spruce Run-Round Valley Reservoirs, meeting the water needs of approximately 1.5 million residents.

Wells sufficient for domestic purposes can be drilled almost anywhere in the state. However, wells that produce over 300 gallons a minute, sufficient for large public supplies or for industrial use, need to be carefully located.

Figure 3 shows the range of yield that can be expected from wells drilled in the 3 designated areas of New Jersey.

Table 4 shows the quality of water and of water service delivered to New Jersey consumers:

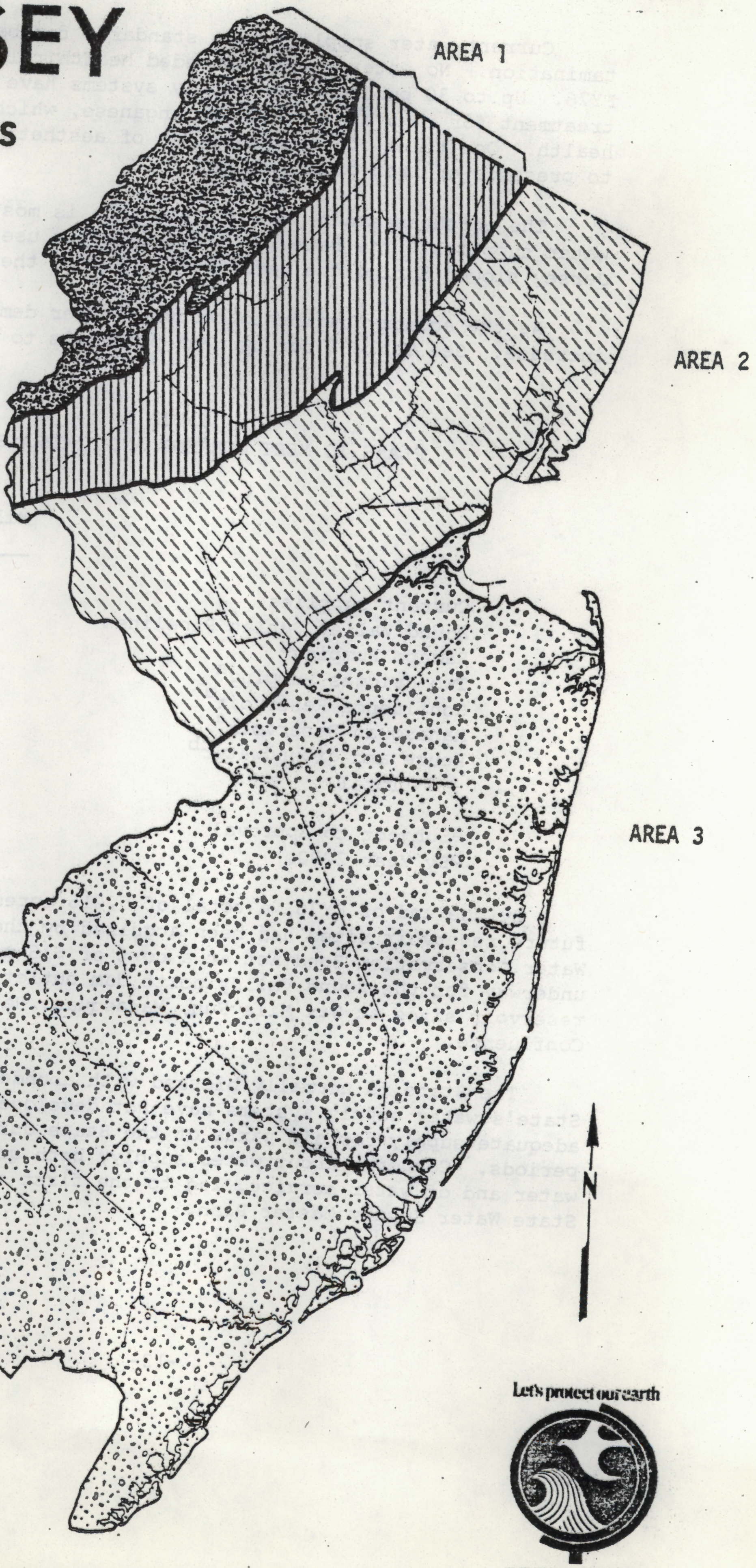
Table 4
PUBLIC WATER SUPPLY SYSTEMS[a]

		Estimated Population Served
Total number of public supplies	560	6,500,000[b]
Total supplies with significant deficiencies	187	2,700,000
Systems requiring additional source capacity	49	380,000
Systems requiring improved water treatment	39	170,000
Systems requiring improved storage	71	792,000
Systems requiring improved operation	62	341,000

[a]Some systems have more than one deficiency.
[b]Balance of population served by individual wells or systems serving fewer than 20 dwellings.

Figure 3

NEW JERSEY
Principal Aquifers



Predominant Water Yield
and Potential Quality

Area 1: 10-100 GPM*
Prone to groundwater
pollution from surface.

Area 2: 100-300 GPM
Vulnerable to groundwater
pollution from surface.

Area 3: over 500 GPM
Cohansey formation (2/3 of
area) is of excellent quality
except for local pollution.
Saltwater intrusion is a
growing problem in coastal areas.

*gallons per minute

Carbonate Rock
and Shale

Crystalline Rocks

Triassic Sandstone
and Shale

Unconsolidated Sand
and Gravel Deposits

0 10 20
MILES

Let's protect our earth

Current water supplies meet standards for bacteriological contamination. No water supply exceeded health related standards in FY76. Up to 30 public water supply systems have inadequate or no treatment for removal of iron or manganese, which are not harmful to health. One third of the violations of aesthetic standards were due to presence of iron or manganese.

The northeastern region of the state is mostly dependent on surface water supplies. The rate of increased water use in northeastern New Jersey slowed during the early 1970's due to the economic slump.

As the economy begins to recover, water demands can be expected to increase. See Table 5 for current proposals to meet the demand.

Table 5
PLANS TO MEET CURRENT AND INCREASED DEMAND

	Million Gallons Per Day
Current supplies	718
Round Valley Outlet Pipeline	80
Ramapo Pumping[a]	18
Two Bridges Pumping[a]	62
Confluence Reservoir[a]	50
Manasquan Reservoir[a]	35
Reuse and groundwater[b]	53
Total	1,016

[a]Subject to Approval
[b]By Year 2000.

By the end of FY76, a total of 5,216 acres of land for additional future reservoir sites had been acquired by the State from the 1969 Water Conservation Bond Act at a cost of $16 million. Acquisition is underway for the Round Valley north dam outlet, the South River dam, and reservoir sites at Six Mile Run, Manasquan, Hackettstown, and the Raritan Confluence.

The State is normally blessed with abundant rainfall. However, the State's water supply systems have not developed facilities to assure an adequate supply for all parts of the State during extended drought periods. Concerns about water supply, both quantity and quality of water and of water service, led to the first steps in developing the State Water Supply Master Plan.

AIR

New Jersey air quality is tested daily at 22 monitoring stations for carbon monoxide, sulfur dioxide, smoke, particulates and smoke shade and at 10 sites for ozone. Table 6 shows air quality ratings at 20 locations included in the State's index. (Camden and Elizabeth each have two stations).

Table 6
NEW JERSEY AIR QUALITY INDEX[a]
Number of Days FY76

Station	Good	Satisfactory	Unsatisfactory	Unhealthful	Not Available[b]
Ancora	22	216	28	63	37
Asbury Park	3	208	76	46	33
Atlantic City	1	211	75	46	33
Bayonne	6	212	44	53	51
Burlington	2	210	56	60	38
Camden (Lab)	1	226	43	64	32
Elizabeth (Lab)	0	125	130	77	34
Freehold	2	197	80	51	36
Hackensack	3	171	84	70	38
Jersey City	0	48	172	113	33
Morristown	0	129	154	51	32
Newark	0	115	105	83	63
Paterson	3	171	92	67	33
Paulsboro	0	204	62	64	36
Penns Grove	4	203	61	62	36
Perth Amboy	0	122	127	73	44
Phillipsburg	4	39	11	40	272[c]
Somerville	2	242	35	50	37
Toms River	2	208	76	46	34
Trenton	5	223	42	65	31

[a] Good - No known injurious effects to human or animal health or harm to plants or property.

Satisfactory - No known injurious effects to human or animal health. There is a possibility of effect with regard to aesthetic values, property or plant damage.

Unsatisfactory - No known injurious effects to human or animal health except that ozone levels in this range may impair athletic performances. Injuries to plants and property have been observed.

Unhealthful - Damage to human and animal health and injury to plants and property have been observed. How and to what extent health is affected depends upon the pollutant involved and its level, length of exposure and general health of the individual.

Although those with respiratory ailments may feel increased discomfort when pollution rises to this level, damage to the general public health may be expected only if pollutant levels were quite far into this range for a long period of time.

[b]Due to equipment failures.

[c]Relocation within city accounts for lengthy shutdown.

By the middle of FY76 air quality showed reductions in 5 out of 6 pollutant categories from the previous year.

Sulfur dioxide levels were brought within State and federal health and welfare requirements at all monitoring stations except the City of Camden. (See Table 7)

Table 7
AVERAGE AIR QUALITY LEVEL CHANGES
12/31/74 to 12/31/75
(composite for all 22 monitoring sites)

	Sulfur Dioxide	Particulates	Smoke Shade	Carbon Monoxide	Ozone	NO_2
% Change	-10%	-6%	-15%	-4%	+24%	-11%

Two hundred thirty-eight thousand tons of pollutants were prevented from entering the air through enforcement of permit requirements.

From FY75 to FY76 the number of stationary source smoke violations was cut in half. The reduction in violations is attributed to compliance with DEP enforcement efforts, conservation of fuel and increased awareness of regulations on the part of industry.

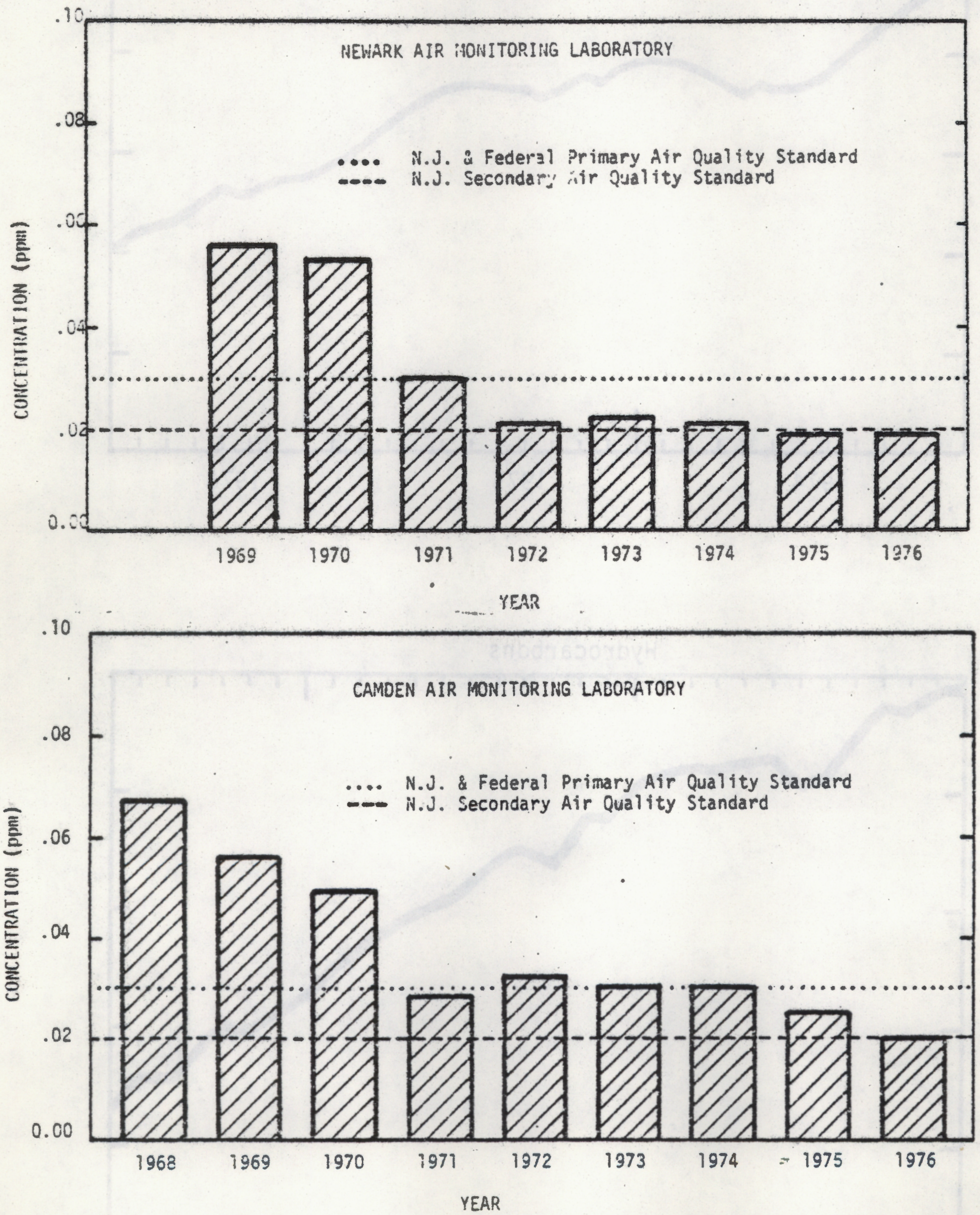
The dramatic downtrend of sulfur dioxide (SO_2) levels evidences the effective air pollution control effort in the State. Thus Figure 4 shows the downtrend in urban Newark and Camden. The downward pattern is repeated at other monitoring sites not shown in the graph.

The downtrends follow regulation of sulfur content of fuels which required staged reductions in the late 60's and 70's. Typically, percent reductions ranging from 55% to 73% have been realized in the SO_2 levels in urban areas.

Some local deterioration of air quality is anticipated because of modification of sulfur in fuel regulations in South Jersey and liberalization of open burning regulations for farmers. Resulting air quality levels are expected to remain within federal and state ambient standards. The degree of deterioration, as tested by federal standards, is expected to be insignificant.

Figure 4

SULFUR DIOXIDE
ANNUAL AVERAGES

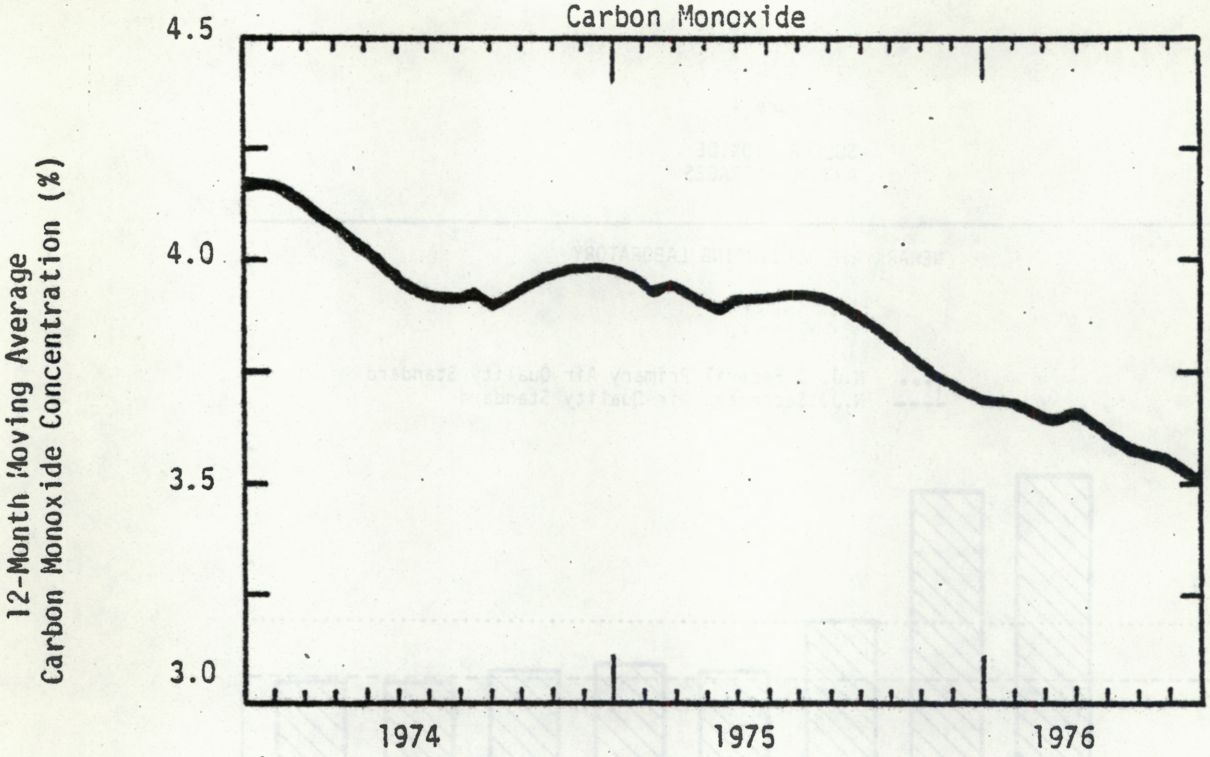


Source: N.J. Dept. of Environmental Protection

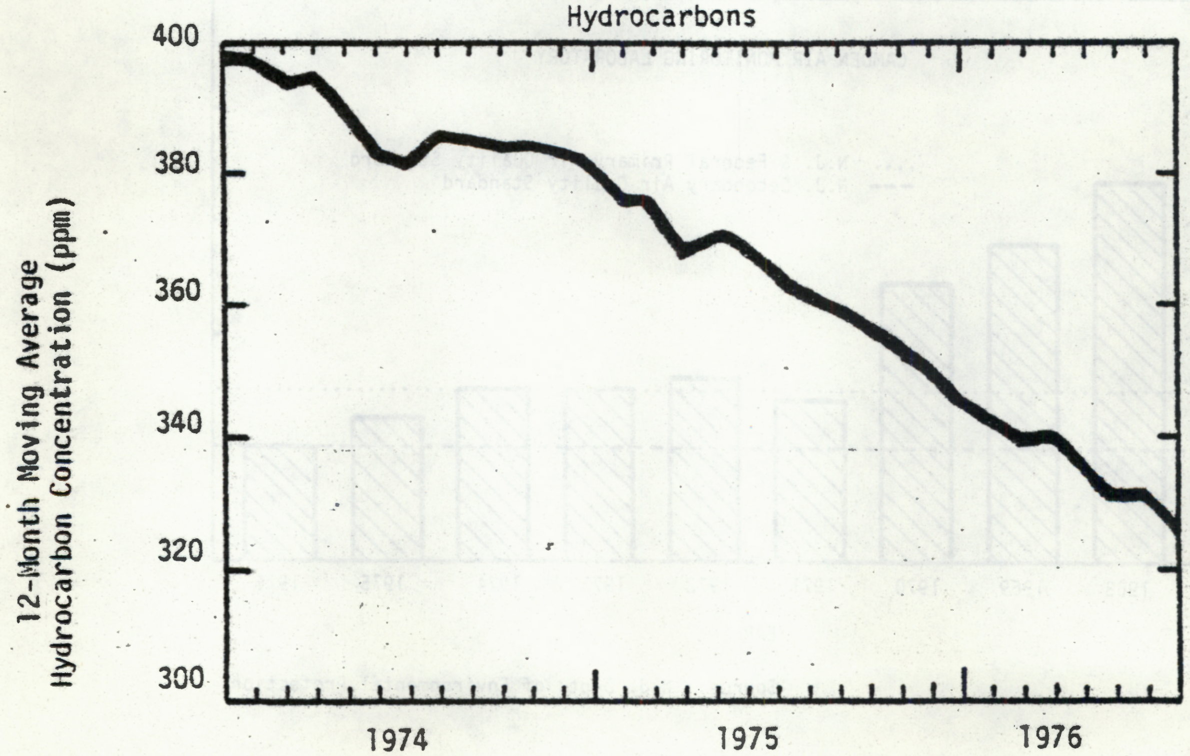
Figure 5

NEW JERSEY AUTOMOBILE EXHAUST
EMISSIONS TREND

Carbon Monoxide



Hydrocarbons



Source: N.J. Dept. of Environmental Protection

Figure 5 shows the average automobile emissions from a sample of over 1,000 cars per month entering state inspection lanes. The sampling shows an approximate 10% reduction in emission levels for both hydrocarbons and carbon monoxide from FY75 to FY76. The reduction is a result of both cleaner cars being produced each year and owners having proper maintenance performed on their cars in anticipation of the State's emission test.

During the fiscal year, approximately 27 million gallons of gasoline were saved by consumers as a result of tuneups required to comply with New Jersey's emissions inspection program.

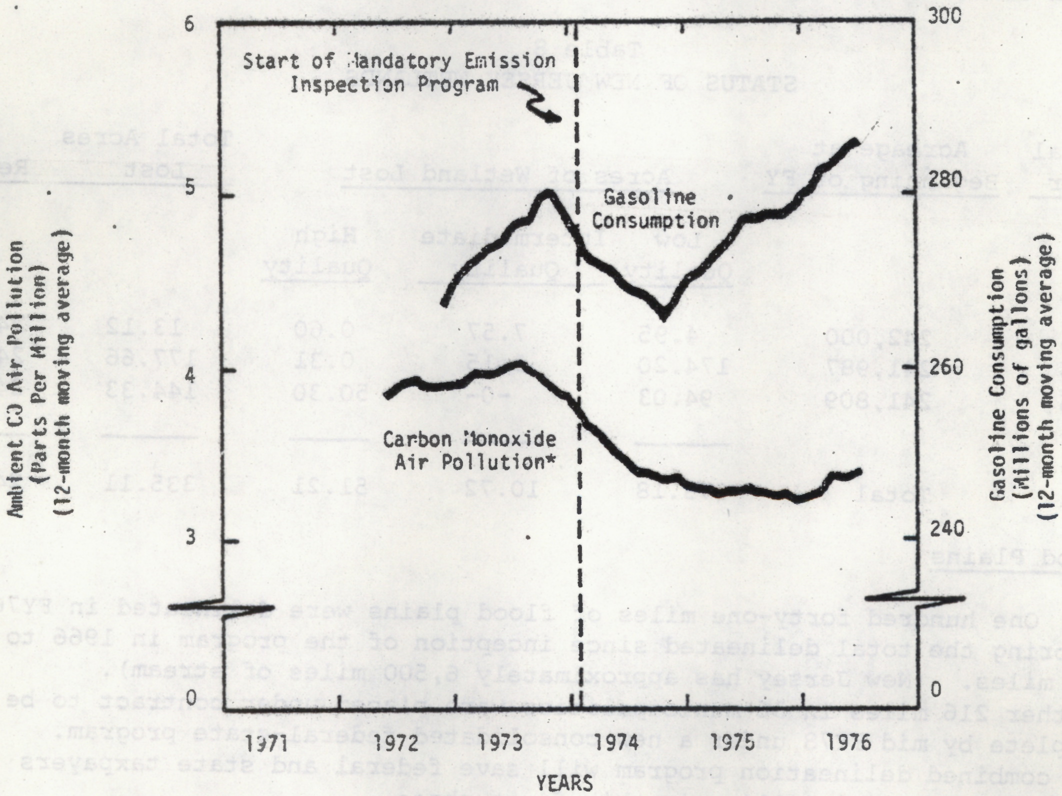
Total gasoline consumption is increasing however, through added cars and increased miles driven. As gasoline consumption rose sharply, improvements in ambient carbon monoxide levels began to reverse. (See Figure 6)

Figure 6

CARBON MONOXIDE AIR POLLUTION

and

GASOLINE CONSUMPTION



*Monthly moving averages for 18 monitoring sites

Source: N.J. Dept. of Environmental Protection

Since early 1970, DEP has conducted several diesel truck smoke surveys.

There has been a steady increase in the number of smoking diesels on New Jersey highways since 1973, when the court voided the State's diesel smoke regulations. Sixteen percent of the 17,300 diesel trucks monitored on New Jersey highways during the spring of 1976 emitted visible smoke, almost twice as many as three years ago. (See Figure 7)

LAND

Wetlands

There are 245,000 acres of wetlands mapped in 11 coastal counties of which 242,000 acres are under state regulatory control. Prior to regulation, over 1900 acres of wetlands were indiscriminately destroyed each year. Since regulation began in 1973, loss has been cut 95%, to a total of 335 acres over three years. (See Table 8)

Table 8
STATUS OF NEW JERSEY WETLANDS

Fiscal Year	Acreage at Beginning of FY	Acres of Wetland Lost			Total Acres Lost	Acres Remaining
		Low Quality	Intermediate Quality	High Quality		
74	242,000	4.95	7.57	0.60	13.12	241,987
75	241,987	174.20	3.15	0.31	177.66	241,809
76	241,809	94.03	-0-	50.30	144.33	241,665
	Total	273.18	10.72	51.21	335.11	241,665

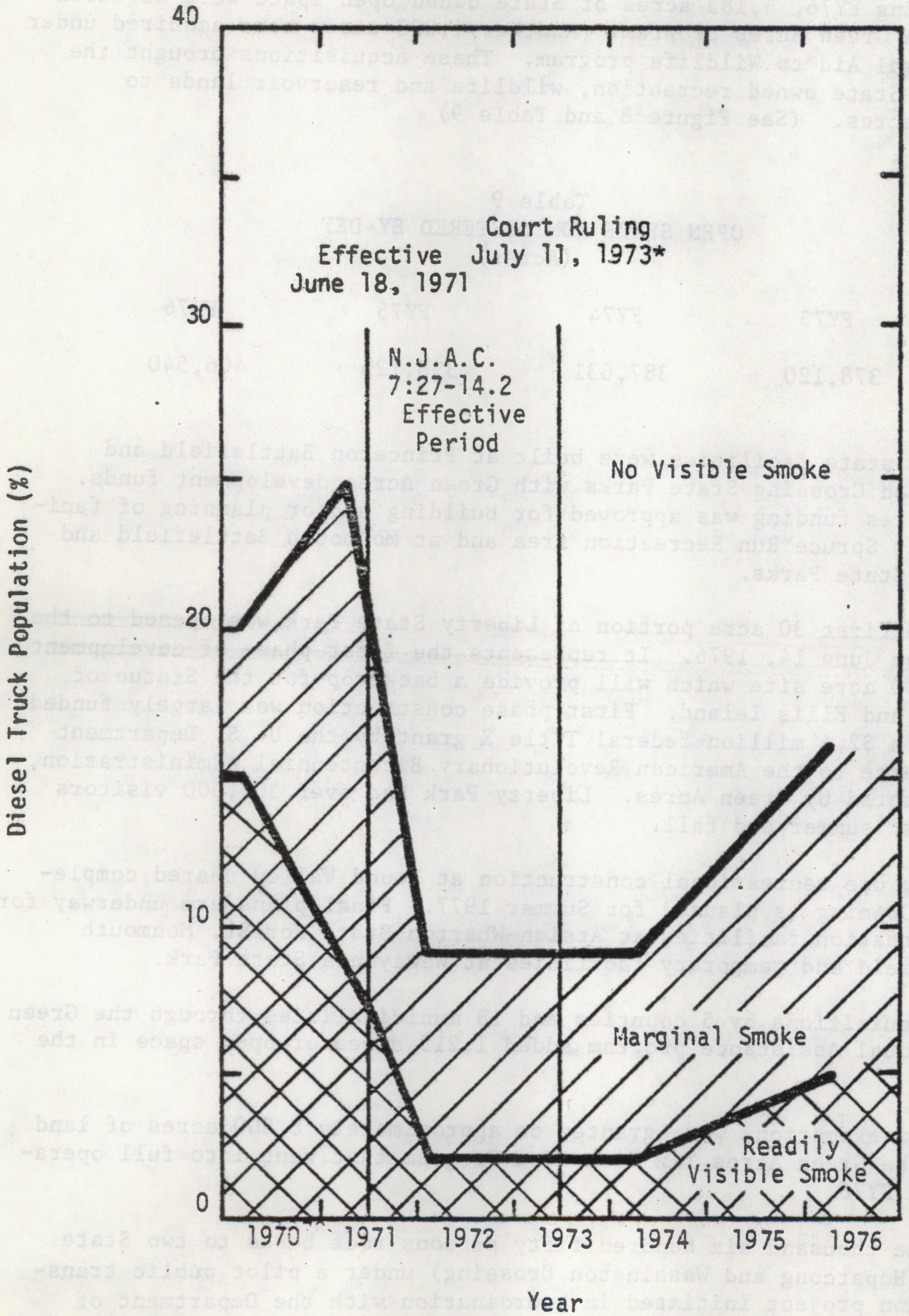
Flood Plains

One hundred forty-one miles of flood plains were delineated in FY76 to bring the total delineated since inception of the program in 1966 to 618 miles. (New Jersey has approximately 6,500 miles of stream). Another 216 miles in 36 municipalities were placed under contract to be complete by mid FY78 under a new consolidated federal-state program. The combined delineation program will save federal and state taxpayers approximately $1/2 million in this first phase.

Property owners and developers seeking to build in the flood plain or to alter a stream applied for stream encroachment permits in 533 instances.

Figure 7

NEW JERSEY DIESEL TRUCK
SMOKE SURVEILLANCE SURVEY



*Voided by the Appellate Division of New Jersey
State Superior Court on July 11, 1973

Source: N.J. Dept. of Environmental Protection

One hundred seven communities became eligible for flood insurance under the federal flood insurance program in FY76, to bring the State total in the program to 537.

Open Space, Parks and Historic Sites

During FY76, 6,183 acres of State owned open space were acquired under the Green Acres program. Another 1,233 acres were acquired under the Federal Aid to Wildlife program. These acquisitions brought the total of State owned recreation, wildlife and reservoir lands to 406,540 acres. (See Figure 8 and Table 9)

Table 9
OPEN SPACE ADMINISTERED BY DEP
(Acres)

FY73	FY74	FY75	FY76
378,120	387,631	398,125	406,540

New state facilities were built at Princeton Battlefield and Washington Crossing State Parks with Green Acres development funds. Green Acres funding was approved for building and/or planning of facilities at Spruce Run Recreation Area and at Monmouth Battlefield and Liberty State Parks.

The first 30 acre portion of Liberty State Park was opened to the public on June 14, 1976. It represents the first phase of development of an 800 acre site which will provide a backdrop for the Statue of Liberty and Ellis Island. First phase construction was largely funded through a $2.4 million federal Title X grant by the U. S. Department of Commerce to the American Revolutionary Bicentennial Administration, supplemented by Green Acres. Liberty Park had over 300,000 visitors its first summer and fall.

Day use recreational construction at Round Valley neared completion. Opening is planned for Summer 1977. Final plans are underway for new recreation facilities at Atsion-Wharton State Forest, Monmouth Battlefield and temporary facilities at Wawayanda State Park.

Acquisitions by 5 counties and 18 municipalities through the Green Acres Local Assistance program added 1,215 acres of open space in the State.

Tax exemptions were granted on approximately 8,800 acres of land under the Green Acres Tax Exemption Program that went into full operation in FY76.

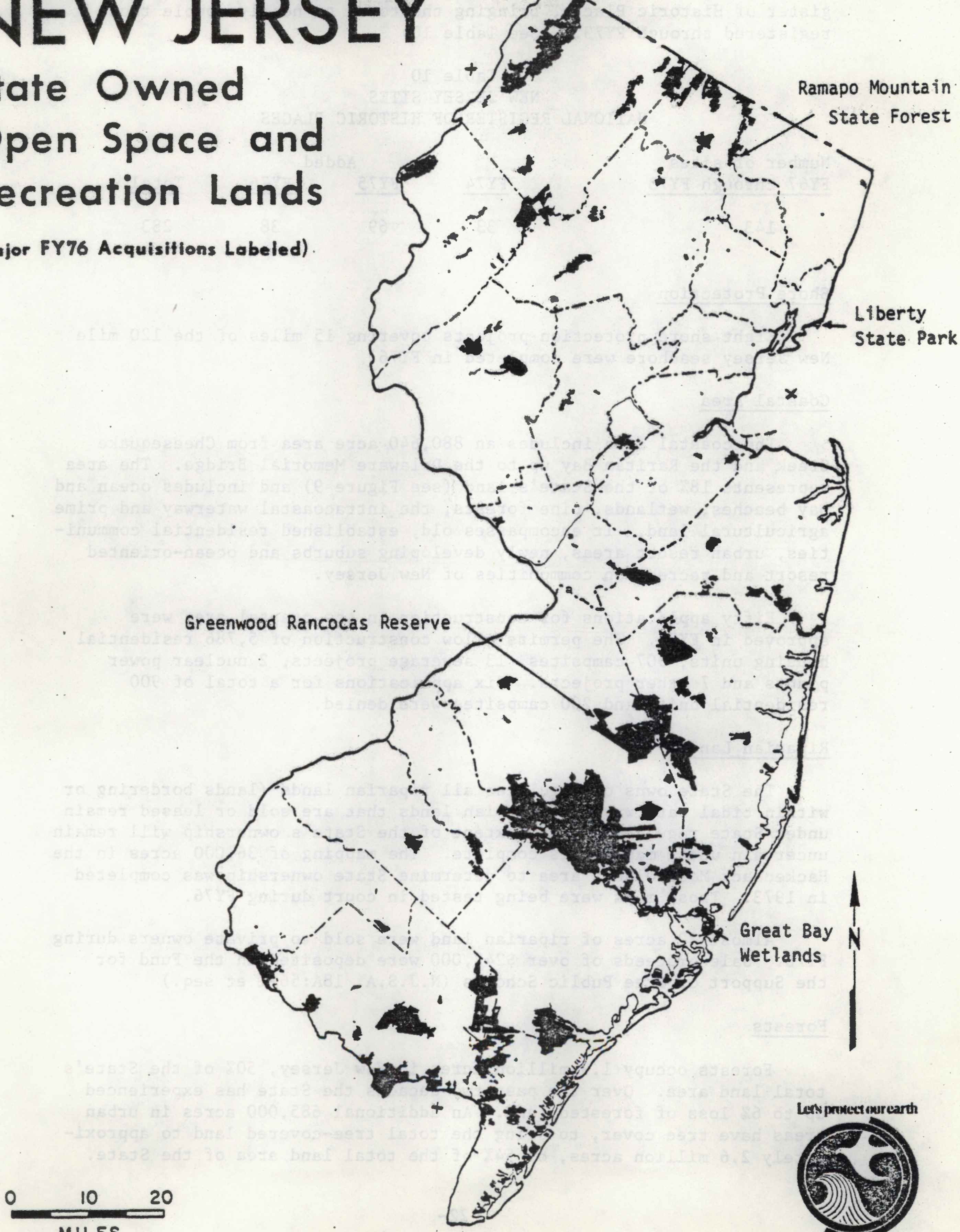
One thousand six hundred fifty persons rode buses to two State parks (Hopatcong and Washington Crossing) under a pilot public transportation project initiated in coordination with the Department of Transportation. Expansion of the service is planned for FY77.

Figure 8

NEW JERSEY

State Owned Open Space and Recreation Lands

(Major FY76 Acquisitions Labeled)



Let's protect our earth

During FY76, 38 New Jersey sites were added to the National Register of Historic Places, bringing the total to nearly double those registered through FY73. (See Table 10)

Table 10
NEW JERSEY SITES
NATIONAL REGISTER OF HISTORIC PLACES

Number of sites FY67 through FY73	Added FY74	FY75	FY76	Total
143	33	69	38	283

Shore Protection

Eight shore protection projects covering 15 miles of the 120 mile New Jersey seashore were completed in FY76.

Coastal Area

The coastal area includes an 880,640 acre area from Cheesequake Creek and the Raritan Bay up to the Delaware Memorial Bridge. The area represents 18% of the State's land (see Figure 9) and includes ocean and bay beaches, wetlands, pine forests, the intracoastal waterway and prime agricultural land. It encompasses old, established residential communities, urban resort areas, newly developing suburbs and ocean-oriented resort and recreation communities of New Jersey.

Fifty applications for construction in the coastal area were approved in FY76. The permits allow construction of 5,786 residential housing units, 907 campsites, 13 sewerage projects, 2 nuclear power plants and 7 other projects. Six applications for a total of 900 residential units and 200 campsites were denied.

Riparian Lands

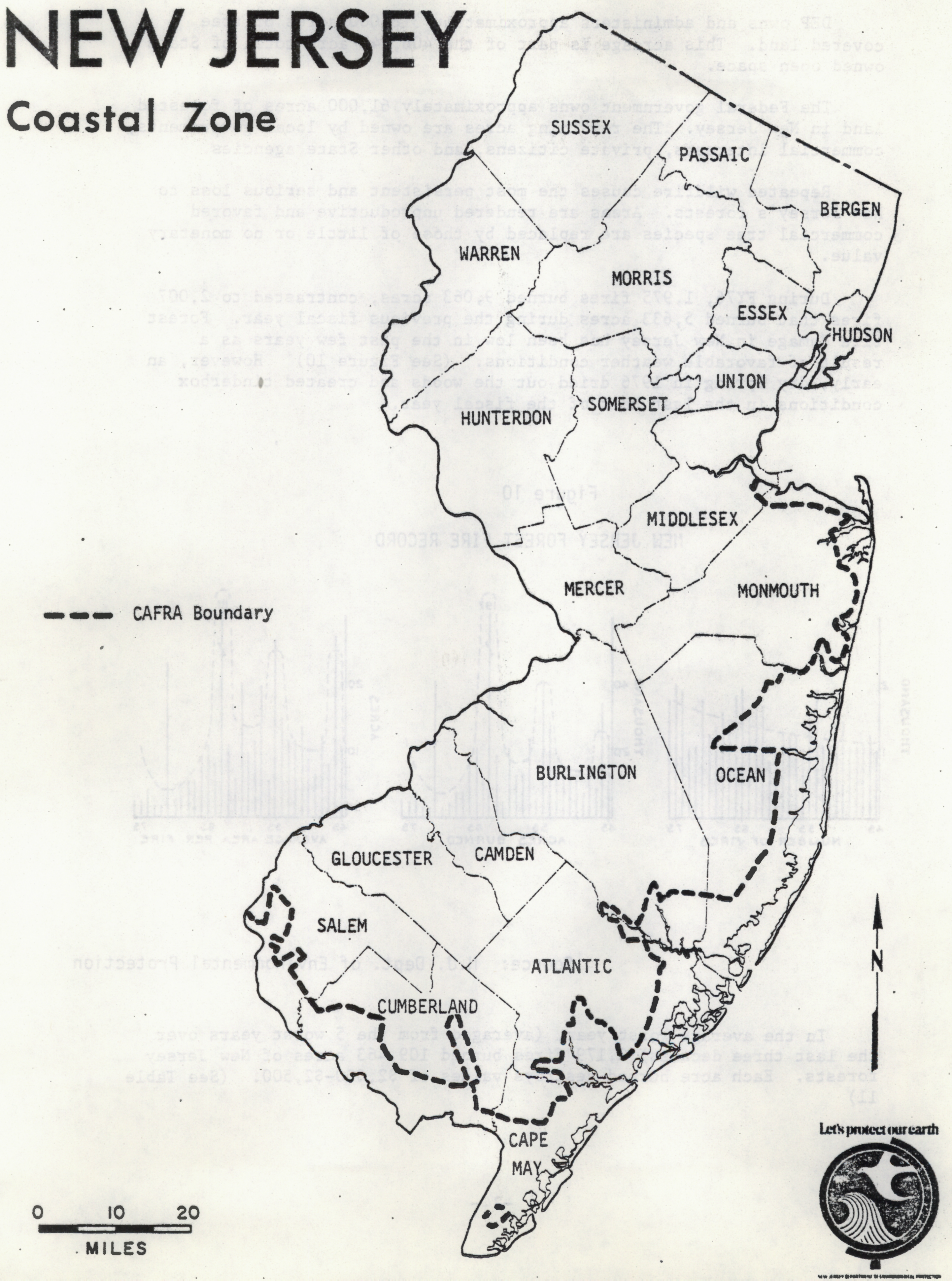
The State owns or regulates all riparian lands (lands bordering or within tidal waterways). Riparian lands that are sold or leased remain under State regulation. The extent of the State's ownership will remain uncertain until mapping is complete. The mapping of 36,000 acres in the Hackensack Meadowlands area to determine State ownership was completed in 1973. Those maps were being tested in court during FY76.

Almost 32 acres of riparian land were sold to private owners during FY76. Sale proceeds of over $242,000 were deposited in the Fund for the Support of Free Public Schools (N.J.S.A. 18A:56-1 et seq.)

Forests

Forests occupy 1.9 million acres in New Jersey, 50% of the State's total land area. Over the past two decades the State has experienced up to 6% loss of forested land. An additional 685,000 acres in urban areas have tree cover, to bring the total tree-covered land to approximately 2.6 million acres, or 54% of the total land area of the State.

Figure 9


NEW JERSEY
Coastal Zone
SUSSEX
PASSAIC
BERGEN
WARREN
MORRIS
ESSEX
HUDSON
UNION
SOMERSET
HUNTERDON
MIDDLESEX
MERCER
MONMOUTH
CAFRA Boundary
BURLINGTON
OCEAN
GLOUCESTER
CAMDEN
SALEM
ATLANTIC
CUMBERLAND
CAPE
MAY
N
0 10 20
MILES
Let's protect our earth

DEP owns and administers approximately 318,000 acres of tree covered land. This acreage is part of the 406,540 acre total of State owned open space.

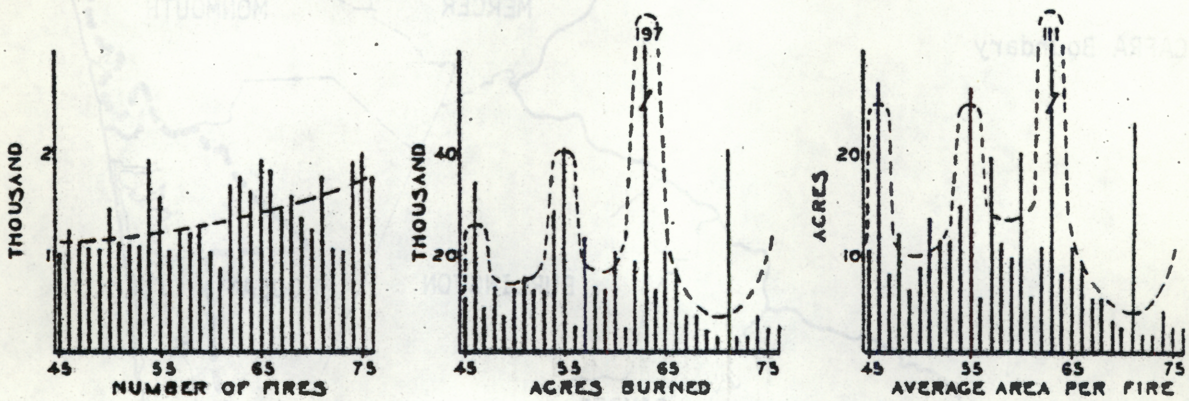
The Federal government owns approximately 61,000 acres of forested land in New Jersey. The remaining acres are owned by local governments, commercial interests, private citizens, and other State agencies.

Repeated wildfire causes the most persistent and serious loss to New Jersey's forests. Areas are rendered unproductive and favored commercial tree species are replaced by those of little or no monetary value.

During FY76, 1,975 fires burned 9,063 acres, contrasted to 2,007 fires that burned 5,633 acres during the previous fiscal year. Forest fire damage in New Jersey has been low in the past few years as a result of favorable weather conditions. (See Figure 10) However, an early, dry Spring in 1976 dried out the woods and created tinderbox conditions in the last half of the fiscal year.

Figure 10

NEW JERSEY FOREST FIRE RECORD



Source: N.J. Dept. of Environmental Protection

In the average worst year, (averaged from the 5 worst years over the last three decades) 2,179 fires burned 109,463 acres of New Jersey forests. Each acre burned destroys values of $2,000-$2,500. (See Table 11)

Table 11
FOREST FIRES
Frequency and Cost

Calendar Period	Average # Fires/Yr.	Average Acres Burned/Yr.	Average Value Destroyed/Yr.
1938-1949	1,595	23,940	$58,509,360
1950-1963	1,317	29,880	73,026,720
1964-1973	1,494	11,425	28,557,500
1974-1976	1,795	7,092	17,730,000

While forest fire losses are currently held to an average of 20,000 acres per year, the State's prevention and suppression goals are to cut that in half.

Low intensity fires are used under controlled conditions in the South Jersey pine forests to destroy the build up of branches, leaves and needles on the ground which, due to soil conditions, do not break up on their own. Destruction of this debris reduces fire intensity and damage from wildfire.

Farmland

Prime farmland covers about one million acres of the state, or 21% of the total land area.

During the fiscal year, DEP together with the Department of Agriculture launched a pilot project to halt development of New Jersey farmland. Five million dollars in Green Acres funds was set aside to acquire development rights in four Burlington County communities under the Agricultural Preserve Demonstration Program. Eligible land covers 41,500 acres, 4% of the State's total prime farmland.

SOLID WASTE

Solid waste deposited in New Jersey is made up of the residues of production and consumption, solid by-products of removing pollutants from air and water, litter discarded on the countryside and the unharvested or inedible remainder of agricultural and animal production activities. Waste volumes, including waste from other states, exceed 15 million tons of solids and 170 million gallons of liquid and sludges a year. Among the solids disposed in New Jersey each year are 600,000 tons of iron and steel, 30,000 tons of aluminum, almost 500,000 tons of glass and nearly 4 million tons of paper.

Combustibles from municipal waste have the energy potential of 9 million barrels of oil annually.

Three million tons of solids a year are brought in from New York and Pennsylvania (a ban on out-of-state dumping is stayed, pending review by the U. S. Supreme Court). One landfill alone, Kin-Buc in Edison Township, was receiving chemical and hazardous waste from at least 14 surrounding states until July 1976.

Landfilling is the predominant form of solid waste disposal in the State. New Jersey has 332 landfills; 153 are municipally owned, 168 are privately owned, and the remainder are owned by State or County agencies. There are 3,302 collector/haulers registered with DEP. Each landfill and collector/hauler is subject to state regulations to assure environmentally safe operation.

Landfills look and smell bad and they cause substantial air pollution problems when they catch fire. Even old, discontinued landfills are subject to accidental fires.

Vectors (e.g. rats, flies) can find food and harborage from improperly operated landfills. Accidental hazards exist at land disposal sites.

Disposal of solid wastes on land can cause contamination of ground and surface waters under certain hydrological and geological conditions. Contamination results from the leaching of substances from the solid waste by ground or surface waters that come in contact with the wastes. In many cases leachate travels to surface streams and groundwater aquifers where it causes pollution.

RADIATION

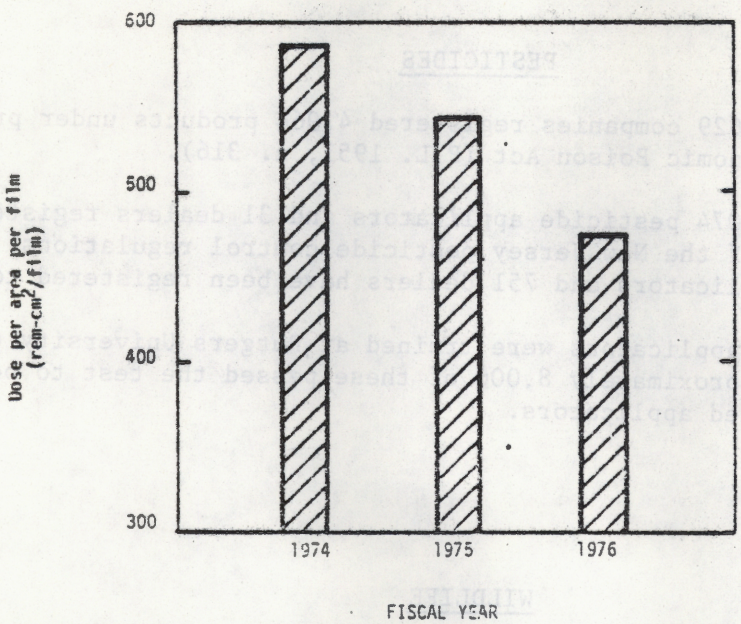
During FY76 there was 16% less individual exposure to x-rays in the abdominal area compared with FY72. Figures 11 and 12 show the reduction in x-ray exposure per x-ray procedure over the past three fiscal years. Reduction results from technical requirements enforced through inspection.

NOISE

Sound was reduced by 2 to 10 decibels near violating facilities in 48 noise abatement enforcement cases in FY76.

Figure 11

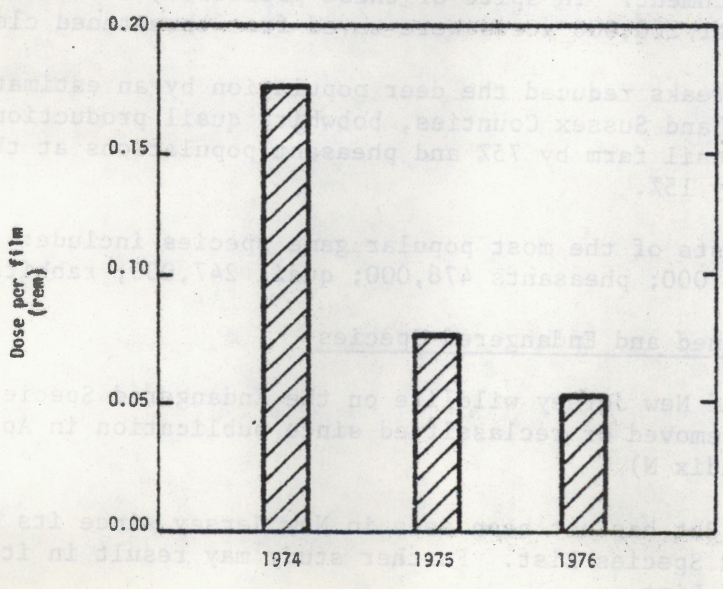
RADIATION SKIN DOSE
from Abdominal X-rays



Source: N.J. Dept. of Environmental Protection

Figure 12

SPILLOVER RADIATION TO GONADS[a]
from Abdominal X-rays



[a]Spillover -- unnecessary radiation outside the area of diagnostic interest.

Source: N.J. Dept. of Environmental Protection

Approximately 153 persons attended training courses for local enforcement personnel during FY76.

PESTICIDES

During FY76, 629 companies registered 4,964 products under provisions of the Economic Poison Act (P.L. 1951, c. 316).

There were 3,074 pesticide applicators and 31 dealers registered under provisions of the New Jersey pesticide control regulations. A total of 4,039 applicators and 751 dealers have been registered to date.

About 11,000 applicators were trained at Rutgers University under a DEP program. Approximately 8,000 of these passed the test to become New Jersey certified applicators.

WILDLIFE

Game Species

New Jersey provides over 3 million acres of huntable land, including state, county and municipal lands as well as privately owned lands. State-owned fish and wildlife management areas increased from 122,000 acres to 144,000 acres in FY76. DEP estimates that 45 square miles of natural habitat area are lost annually to development and population encroachment. In spite of these pressures, 17 huntable areas totaling over 200,000 acres were saved from threatened closure.

Disease outbreaks reduced the deer population by an estimated 1000 animals in Warren and Sussex Counties, bobwhite quail production at the State's Ed Roth quail farm by 75% and pheasant populations at the Forked River Game Farm by 15%.

Annual harvests of the most popular game species include: deer 12,688; ducks 215,000; pheasants 478,000; quail 247,000; rabbits 483,000.

Non-Game, Threatened and Endangered Species

No species of New Jersey wildlife on the Endangered Species List has been added, removed or reclassified since publication in April, 1975. (See Appendix N)

The Indiana Bat has not been seen in New Jersey since its inclusion on the Endangered Species List. Further study may result in its removal to the Extirpated List.

Sixty-two active osprey nests were counted in the fiscal year. Fifty-three young birds were fledged in the year. Eighteen ospreys were transplanted from Maryland to active but unproductive nests in the Barnegat Bay area.

No peregrine falcons live naturally in New Jersey. Ten were reintroduced in an effort to establish breeding pairs. Three were fledged artificially in 1975 and seven in 1976. One of the previous year's young returned to the release site at Barnegat Bay and a second to Brigantine National Wildlife refuge.

There is one nesting pair of bald eagles in New Jersey. One bald eagle was fledged in 1976. During the winter, 8 to 10 bald eagles can be found in the State, though they do not remain year round.

MARINE AND FRESHWATER RESOURCES

The annual New Jersey catch of clams, oysters, crabs, and lobsters ranged from 28-46 million pounds in the last 5 years. This compares with the 39 to 50 million pounds in the previous 5 years. Seventy-five per cent of the yearly landings consist of surf clams.

In recent years uncontrolled overfishing of surf clams posed a serious threat to the resource. In December 1975 DEP adopted regulations designed to preserve the resource for the future.

Over five million clams were transplanted from condemned to clean waters, 1.5 million more than the previous year.

While bay bottom leased for transplanting clams and oysters increased 22% from calendar 1975 to 1976, area fully open for shellfish harvesting has decreased 4 1/2% over the past five years. (See Table 3)

Populations of six species of shellfish have declined to a critically low level.

Fish

There are close to 250 species of fish in New Jersey fresh and tidal waters. Fish populations run in natural cycles of increase and decrease. Such fluctuations are primarily unrelated to environmental factors.

Five hundred thirty-seven thousand catchable trout were added to 200 fresh water lakes, ponds and streams.

Populations of 20 commercially valuable species of marine fish have declined so as to be categorized in "problem status". None is in danger of becoming extinct but landings are at an all time low. The following list shows the 20 species in "problem status":

- alewives
- ascup
- Atlantic mackerel
- butterfish
- cod
- croaker
- hard clam
- kingfish
- lobster
- menhaden
- oyster
- sea bass
- sea herring
- shad
- shrimp
- soft clam
- spot
- surf clam
- swellfish
- tautog

Appendix A

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
ORGANIZATIONAL CHART AS OF JANUARY 1, 1977

GOVERNOR
BRENDAN BYRNE

COMMISSIONER
DAVID J. BARDIN

FIRST DEPUTY COMMISSIONER
ROCCO D. RICCI

Deputy Commissioner
(Liaison with Elected Officials)
Joseph T. Barber

Assistant Commissioner
(Regional Projects Management)
Betty Wilson

Assistant Commissioner
(Science)
Dr. Glenn Paulson

- Cancer-Causing & Toxic Pollutants — Dr. Peter W. Preuss
- Environmental Review — Lawrence C. Schmidt
- Geology and Topography — Dr. Kemble Widmer
- Environmental Analysis — Roland S. Yunghans

Legislative Review
Steven Picco

Coastal Planning
David N. Kinsey

WATER RESOURCES
Rocco D. Ricci
Jeffrey Zelikson
- PLANNING & MANAGEMENT
- WATER SUPPLY & FLOOD PLAIN MANAGEMENT
- PUBLIC WASTEWATER FACILITIES
- POLLUTION CONTROL & ENFORCEMENT
- LEGAL SERVICES

MARINE SERVICES
Donald T. Graham
- MARINE POLICE
- SHORE PROTECTION
- COASTAL ZONE MANAGEMENT
- RIPARIAN LANDS
- WETLANDS

ENVIRONMENTAL QUALITY
Paul H. Arbesman
George Tyler
- AIR POLLUTION
- RADIATION
- PESTICIDES
- NOISE

SOLID WASTE ADMINISTRATION
Beatrice S. Tylutki
Henry Jatczak
- PLANNING & DESIGN
- TECHNICAL SERVICES
- CHEMICAL & HAZARDOUS WASTES

PARKS & FORESTRY
Alfred T. Guido
- STATE PARKS & FORESTS
- HISTORIC SITES
- MARINAS
- FORESTRY
- FOREST FIRE SERVICE
- FOREST MANAGEMENT

FISH, GAME & SHELL-FISHERIES
Russell A. Cookingham
Peter Mc Lain
- WILDLIFE MANAGEMENT
- FISHERIES
- SHELLFISHERIES
- ENDANGERED & NON-GAME SPECIES
- LAW ENFORCEMENT
- EDUCATIONAL SERVICES

GREEN ACRES & RECREATION
Curt J. Hubert
- LOCAL GRANTS
- LAND ACQUISITION
- TAX EXEMPTION PROGRAM
- LEGAL SERVICES
- LEASES
- RECREATION PLANNING

DEPARTMENT ADMINISTRATION
Sidney Ytkin
- PERSONNEL & MANPOWER
- FISCAL OPERATIONS
- PLANNING & AUTOMATED SYSTEMS
- N. J. OUTDOORS
- MATERIALS MANAGEMENT
- CAPITAL IMPROVEMENTS

APPENDIX B

DEPARTMENT OF ENVIRONMENTAL PROTECTION
REVENUES, EXPENDITURES, TRUST FUNDS

REVENUES	FY 75	FY 76
Water Fees & Charges	$ 2,392,807	$ 2,552,378
Licenses and Services	6,784,267	7,874,652
Publications	140,961	158,676
Federal Funds (Detail-Appendix C)	14,441,702	12,985,186
All Other Sources	2,694,148	3,303,168
Total	26,453,885	26,773,060
EXPENDITURES		
Regular Operating	26,844,658	28,595,916
Debt Service-Interest	10,212,919	12,244,719
South Jersey Port Commission	2,024,538	880,831
Sub-Total	39,082,115	41,721,466
State Aid	2,754,218	2,760,406
Capital	8,686,601	1,672,893
Dept Service-Redemption	7,225,000	10,225,000
Sub-Total	18,665,819	14,658,299
Bond Issues		
State Recreation & Conservation Land Acquisition Fund		
1961	103,925	66,190
1971	21,132,900	12,340,796
State Water Development Fund - 1958	309,615	91,297
State Water Conservation Fund - 1969		
-Reservoir Sites Acquisition and Energy	3,090,656	3,158,979
-Sewerage-Loans & Grants	28,597,513	38,213,455
-Round Valley Pipeline		3,999,992
State Recreation & Conservation Land Acquisition & Development Fund 1974:		
State-Acquisition		2,171,499
Local-Acquisition		6,142,020
State-Development		2,844,894
Local-Development		125,000
Sub-Total	53,234,609	69,154,122
Dedicated & Special	1,741,186	1,060,155
Federal	2,731,476	7,477,279
TOTAL EXPENDED	115,455,205	134,071,321

APPENDIX C

DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOURCES OF FEDERAL FUNDS

	1975 RECEIPTS	1976 RECEIPTS
EPA Program Grants		
Air Pollution	2,211,446	2,297,441
Water Pollution	1,275,108	1,317,653
Solid Waste Planning	39,177	112,713
Basin Planning (Water)	471,823	
Manpower Development		40,000
Pesticide Control		19,553
Sub-Total	3,997,554	3,787,360
Department of Interior		
Youth Conservation Camp	40,986	61,000
Bureau of Outdoor Recreation		
Capitol Grants	1,129,942	874,580
Local Program	974,803	2,216,308
State Program-Land acquisition	6,636,314	363,879
Title X - Island Beach		720,000
Historic Preservation	92,975	102,480
Fish & Game	434,428	589,270
Sub-Total	9,309,448	4,927,517
Department of Commerce		
Coastal Zone Management	140,000	284,508
Shellfisheries	12,096	4,681
Marine Services		6,038
American Revolution Bicentennial Administration		
Title X - Liberty Park		2,400,000
Department of HEW, Public Health Services	4,680	
Department of Transportation, Boating	153,893	
Department of Agriculture, Forestry	256,323	713,196
Office of the President, Water Supply	89,850	24,900
Department of the Army, Water Supply	50,509	54,825
Department of HUD		
Flood Insurance		742,397
Green Acres	274,064	21,636
Food & Drug Administration	3,264	2,934
Nuclear Regulatory Agency (Radiation)	1,325	15,194
Office of Emergency Planning, Flood Disaster	148,696	
Sub-Total	1,134,700	4,270,309
TOTAL FEDERAL FUNDS	14,441,702	12,985,186

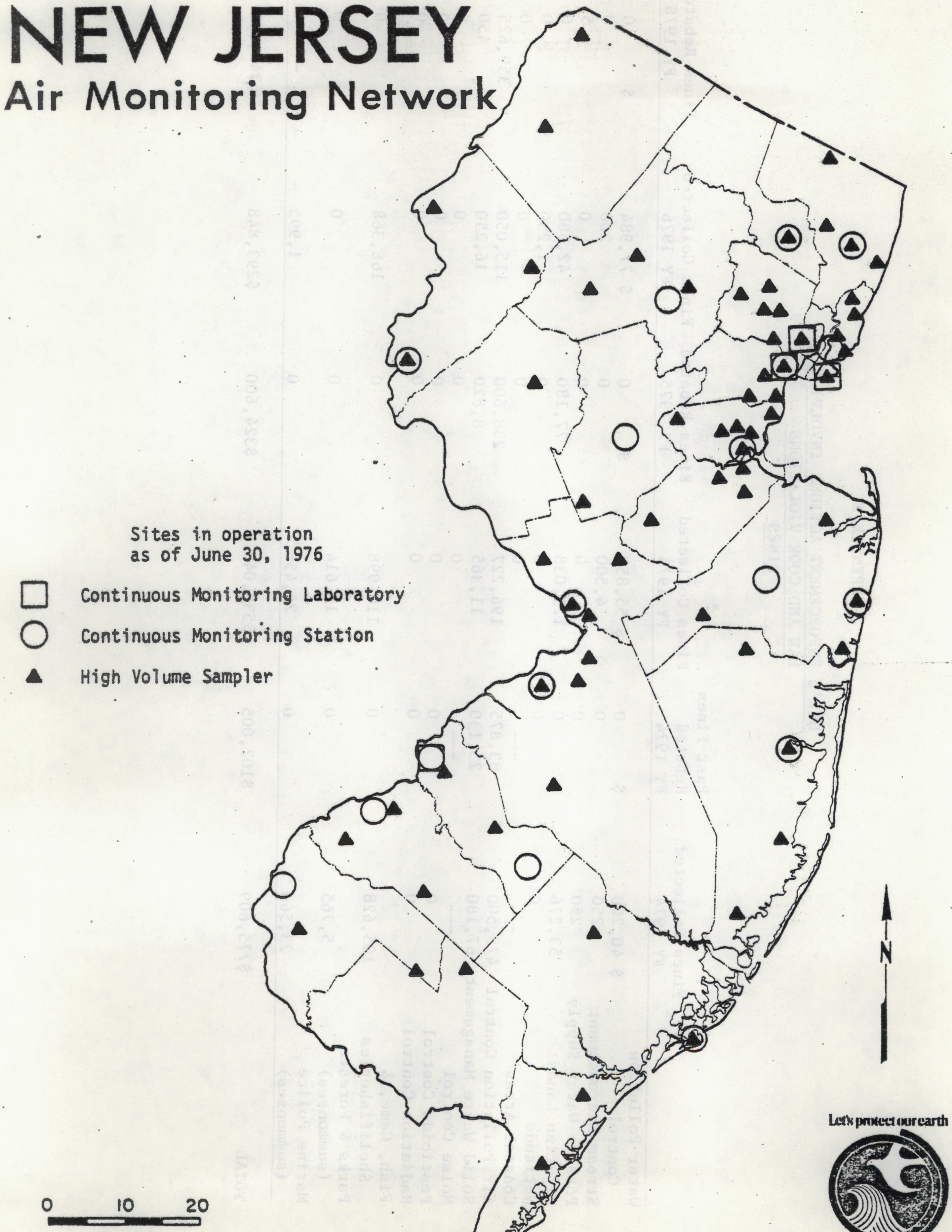
APPENDIX D

BUREAU OF AIR POLLUTION CONTROL AIR MONITORING NETWORK
(See Map on Opposite Page)

As of June 30, 1976, the regular Air Monitoring Network consisted of four continuous monitoring laboratories, eighteen continuous monitoring stations, and sixty-nine high volume samplers, as shown on the map. Additional monitoring sites, operated seasonally or primarily for special studies, are not shown.

The continuous monitoring laboratories and stations telemeter data directly to the air monitoring headquarters in Trenton, on a 24-hour around-the-clock basis. The laboratories continuously monitor nine or ten pollutants, the stations monitor three or four. The high volume samplers collect total suspended particulates over a 24-hour period and are operated every sixth day. Material collected by these samplers is manually brought to the air monitoring technical center near Trenton for weighing.

Air monitoring data is used to determine compliance with Federal and New Jersey air quality standards, pinpoint levels during air pollution episodes, assess significant deterioration in any Air Quality Control Region, determine long-term pollutant trends and provide the basis for the daily air quality index.


NEW JERSEY
Air Monitoring Network
Sites in operation
as of June 30, 1976
Continuous Monitoring Laboratory
Continuous Monitoring Station
High Volume Sampler
0 10 20
MILES
N
Let's protect our earth

APPENDIX E

DEP's ENFORCEMENT ACTIONS INVOLVING
LAW AND CODE VIOLATIONS
FINES

	Fines Collected FY 1974	Past Fines Rebated FY 1974	Fines Collected FY 1975	Fines Rebated FY 1975	Fines Collected FY 1976	Fines Rebated FY 1976
Water Pollution Control	$ 40,200	$ 0	$ 55,850	$ 0	$ 77,984	$ 0
Stream Encroachment	250	0	4,500	0	200	0
Potable Water Supply	250	0	0	0	0	5
Riparian Lands	53,276	0	123,038	77,180	42,580	0
Wetlands	0	0	0	0	1,250	0
Coastal Areas	---	---	0	0	0	0
Air Pollution Control	479,500	83,875	196,227	238,600	115,050	359,625
Solid Waste Management	67,180	23,130	11,365	8,820	16,250	450
Noise Control	---	---	0	0	0	0
Pesticide Control	0	0	0	0	0	0
Radiation Control	0	0	0	0	0	0
Fish, Game, & Shellfisheries	105,628	0	110,998	0	168,368	0
Parks & Forests (summonses)	5,765	0	11,614	0	0	0
Marine Police (summonses)	23,560	0	24,456	0	1,995	---
TOTAL	$775,609	$107,005	$538,048	$324,600	$293,848	$342,185

APPENDIX F

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEPARTMENT COUNCILS AND COMMISSIONS
FY 76

Name of Council or Commission	No. of Members	No. of Times Council Met In FY76
Advisory Council on Solid Waste Management (13:1E-7)	11	4
Boat Regulation Commission (12:7-34.49)	7	8
Clean Air Council (26:2C-3)	18	10
Clean Water Council (26:2E-9)	18	12
Board of Commissioners of Pilotage (12:8-1)	6	12
Commission on Radiation Protection (25:2D-1)	8	8
Fish and Game Council (13:1A-13)	11	12
Historic Sites Council (13:1B-15.108)	11	2
Historic Sites Trust (13:1B-15.108)	6	0
Natural Areas Council (13:1B-15.7)	7	4
Natural Lands Trust (13:1B-15.120)	11	5
Natural Resource Council (13:1B-10)	12	11
Noise Control Council (13:1F-6)	13	11
Pesticide Control Council (13:1F-6)	9	4
Sewage and Water Board of Examiners (58:11-18.10)	9	6
Shellfisheries Council (13:1B-44)	9	18
State Mosquito Control Commission (26:9-12.3)	7	4
Water Policy and Supply Council (13:1A-8)	11	12
Well Drillers Examination and Advisory Board (58:4A-7)	7	3
X-Ray Technician Board of Examiners (45:25-1)	12	2

APPENDIX G

DEPARTMENT OF ENVIRONMENTAL PROTECTION
COUNCILS AND BOARDS OF WHICH COMMISSIONER WAS A MEMBER
FY 76

Name	Commissioner's Designee
Agriculture Preserve Demonstration Program Steering Committee (P. L. 1976, c. 50)	Curt Hubert, Administrator Green Acres and Recreation Program
Beach Access Study Commission (J. R. 9, 1976)	David J. Bardin, Commissioner
Boat Regulation Commission (P. L. 1962, c. 73)	Captain B. Russell Henry, Chief Bureau of Marine Law Enforcement
Cabinet Committee on Cancer Control (Executive Order No. 40, 1976)	David J. Bardin, Commissioner (or Dr. Peter Preuss, Special Assistant to the Commissioner)
Cabinet Energy Committee (Executive Order No. 9, 1974)	David J. Bardin, Commissioner (or Dr. Glenn Paulson, Assistant Commissioner)
Clean Water Council (P. L. 1967, c. 109)	Jeffrey Zelikson, Deputy Director Division of Water Resources
Coastal Area Review Board (N.J.S.A. 13:19-1 et seq.)	David J. Bardin, Commissioner
Commission on Intergovernmental Relations (P. L. 1970, c. 10)	Joseph T. Barber, Deputy Commissioner
Commission on Radiation Protection (P. L. 1958, c. 116)	John Russo, Chief Bureau of Radiation Protection
Delaware River Basin Commission (P. L. 1961, c. 13)	David J. Bardin, Commissioner (Designee of Governor Brendan Byrne replaced by Rocco D. Ricci, Deputy Commissioner August 27, 1976)
Delaware and Raritan Canal Commission (N.J.S.A. 13:13A-1)	Betty Wilson, Assistant Commissioner
Health Planning Council (U.S. Public Health Law 89-749, as amended, 1966)	Linda Anselmini, Chief Bureau of Planning and Automated Systems
Interstate Sanitation Commission	Ernest Segesser, Assistant Director Water Resources Planning & Management replaced by Rocco D. Ricci, Deputy Commissioner April 1976
N.J. Area Redevelopment Authority (P. L. 1962, c. 204; P. L. 1971, c. 33)	Linda Anselmini, Chief Bureau of Planning & Automated Systems

COUNCILS AND BOARDS OF WHICH COMMISSIONER WAS A MEMBER
(continued)

Name	Commissioner or Designee
N.J. Bicentennial Celebration Commission (P. L. 1973, c. 48)	Joseph T. Barber, Deputy Commissioner
N.J. Economic Development Authority (P. L. 1974, c. 80)	Betty Wilson, Assistant Commissioner
N.J. Natural Lands Trust P. L. 1968, c. 425)	David J. Bardin, Commissioner
Pinelands Environmental Council P. L. 1971, c. 417)	Alfred T. Guido, Acting Director Division of Parks and Forestry
Soil Conservation Committee (P. L. 1937, c. 189; P. L. 1959, c. 129)	Gordon Bamford, State Forestor
U.S. Dept. of Interior Outer Continental Shelf Policy Advisory Board	David J. Bardin, Commissioner or Dr. Glenn Paulson, Assistant Commissioner (Designee of Governor Brendan Byrne)

APPENDIX H

DEPARTMENT OF ENVIRONMENTAL PROTECTION
SUMMARY OF ATTENDANCE AND INCOME
PARKS, FORESTS AND HISTORIC SITES

	ATTENDANCE		INCOME	
	FY '75	FY '76	FY '75	FY '76
Forests	899,381	1,070,838	$ 371,581.18	$ 417,193.98
Parks	2,899,122	2,838,920	986,408.73	1,144,989.84
Historic Sites	131,070	160,459	15,460.84	16,502.21
Parks-Historic Sites	158,094	184,741	47,230.05	54,698.85
Forests-Historic Sites	176,201	140,692	76,941.16	81,423.64
Natural Resource Areas	-	-	-	1.00
Morris Canal	184,023	106,402	47,243.00	55,109.75
TOTAL	4,447,881	4,502,052	$1,544,864.96	$1,769,919.27

STATE PARKS - Allaire, Allamuchy, Barnegat Lighthouse, Bull's Island, Cape May Point, Cheesequanke, Delaware & Raritan Canal, Fort Mott, Great Piece Meadows, Hacklebarney, High Point, Hopatcong, Island Beach, Liberty, Millstone, Monmouth, Ocean Crest, Parvin, Pigeon Swamp, Prospertown, Rancocas, Ringwood, Round Valley, Shepherd Lake, Skylands, Spruce Run, Stephens, Swartswood, Voorhees, Warren Grove, Washington Crossing, Washington Rock, Wawayanda.

STATE FORESTS- Bass River, Belleplain, Green Bank, Abram Hewitt, Inskip, Jenny Jump, Lebanon, Whites Bog, Norvin Green, Penn, Stokes, Wharton, Worthington.

HISTORIC SITES - Absecon Lighthouse, Boxwood Hall, Cleveland Birthplace, Edison, Hancock House, Indian King Tavern, Joyce Kilmer House, Lawrence House, McKonkey Ferry House, Old Dutch Parsonage, Princeton Battlefield, Ringwood Manor, Rockingham, Somers Mansion, Trenton Battle Monument, Twin Lights, Von Steuben House, Wallace House, Walt Whitman House, Waterloo.

APPENDIX I

DEPARTMENT OF ENVIRONMENTAL PROTECTION
ENVIRONMENTAL LEGISLATION

PUBLIC LAWS 1975	DATE SIGNED BY GOVERNOR	DESCRIPTION
c. 134	July 2, 1975	Permits the taking of oysters from leased beds in the Delaware Bay during the closed season.
c. 155	July 15, 1975	Designated the "Green Acres Land Acquisition and Recreation Opportunities Act"; appropriates $60,000,000 from the State Recreation and Conservation Land Acquisition and Development Fund.
c. 158	July 17, 1975	Appropriates $36,494,116 from the Water Conservation Fund for grants for local sewerage facilities, for the Round Valley Reservoir outlet release pipeline and the development of a comprehensive State water supply master planning report.
c. 164	July 23, 1975	Repeals the law which provides bounties for killing any fox or woodchuck.
c. 184	August 16, 1975	Places under the jurisdiction of the Board of Public Utility Commissioners all municipal water works which supply other municipalities with water.
c. 202	September 12, 1975	Designated the "Water Resources Bond Act," provides for a $110,000,000 bond issue for water resources. (Not approved by voters.)
c. 216	October 7, 1975	Prescribes the procedure whereby solid waste management authorities may dissolve; retroactive to 9/1/74.
c. 221	October 8, 1975	Requires all counties, municipalities and parking authorities created thereby to provide parking spaces for handicapped persons in parking facilities; effective 120 days following enactment.
c. 232	October 23, 1975	Requires the Department of Environmental Protection to promptly process and review applications of construction permits (90-Day Law).

PUBLIC LAWS 1975	DATE SIGNED BY GOVERNOR	DESCRIPTION
c. 251	October 23, 1975	Designated the "Soil Erosion and Sediment Control Act"; effective January 1, 1976.
c. 254	November 25, 1975	Includes as a cost of operation a sum equal to the loss of real estate tax revenues experienced by any municipality by reason of the location therein of a sewer plant serving other municipalities.
c. 288	January 12, 1976	Extends until December 31, 1977 the date for completion of all meadowlands title studies and surveys.
c. 291	January 14, 1976	Designated the "Municipal Land Use Law" provides for planning and regulation of land uses.
c. 320	February 20, 1976	Provides for credit by a sewerage authority in assessing certain connection charges.
c. 326	February 23, 1976	Revises the "Solid Waste Management Act," (P. L. 1970, c. 39); designates each county and the Hackensack Meadowlands District as a Solid Waste Management District; effective if and when funded.
c. 333	March 3, 1976	Permits authorities created by one or more counties or municipalities to enter into joint agreements or make purchases under contract on behalf of the State; validates certain past joint purchases.
c. 334	March 3, 1976	Permits the creation of environmental commissions jointly by 2 or more municipalities.
c. 354	March 3, 1976	Authorizes the State to lease riparian lands to municipalities in certain cases.
c. 363	March 3, 1976	Designated the "Natural Areas System Act", to establish and administer a Natural Areas System.
c. 369	March 3, 1976	Designated the "Abandoned Vessels Disposition Law"; directs the Department of Environmental Protection to award title to abandoned vessels in certain circumstances.

PUBLIC LAWS 1975	DATE SIGNED BY GOVERNOR	DESCRIPTION
c. 398	March 5, 1976	Regulates the taking of sea clams from State waters.
JR9	March 3, 1976	Creates a commission to study the feasibility and advisability of providing open access to those beaches bordering on the Atlantic Ocean.

PUBLIC LAWS 1976		
c. 29	June 3, 1976	Appropriates $25,000,000 from the State Recreation and Conservation Acquisition and Development Fund.

APPENDIX J

DEPARTMENT OF ENVIRONMENTAL PROTECTION
RULES ADOPTED

DATE ADOPTED	DESCRIPTION	REGISTER CITATION AND EFFECTIVE DATE
July 9, 1975	Revises water quality standards for Morses Creek in Linden, New Jersey.	7 N.J.R. 360 July 9, 1975
July 25, 1975	Extends Wetlands Order to portions of Atlantic County.	7 N.J.R. 413 July 28, 1975
September 14, 1975	Indefinitely suspends the effective date of certain rules of the Solid Waste Bureau. (Emergency)	7 N.J.R. 463 September 15, 1975
September 16, 1975	Revises Game Code.	7 N.J.R. 464 September 18, 1975
September 23, 1975	Revises rules concerning controlled hunting.	7 N.J.R. 464 September 24, 1975
September 30, 1975	Sets standards for use of conibear traps.	7 N.J.R. 499 October 1, 1975
September 30, 1975	Sets standards of conduct for field trial activities.	7 N.J.R. 499 October 1, 1975
September 30, 1975	Revises rules concerning use of land and water areas under the control of the Division of Fish, Game and Shellfisheries.	7 N.J.R. 499 October 1, 1975
September 9, 1975	Establishes 1976 Fish Code.	7 N.J.R. 499 January 1, 1976
October 16, 1975	Rules concerning sewer connection bans.	7 N.J.R. 499 October 16, 1975
October 29, 1975	Revises rules concerning open burning.	7 N.J.R. 547 December 29, 1975
November 13, 1975	Establishes procedures for appeal to the Coastal Area Review Board.	7 N.J.R. 551 November 18, 1975
November 14, 1975	Revises rules concerning condemnation of shellfish beds.	7 N.J.R. 547 November 14, 1975
November 18, 1975	Procedural rules to implement provisions of P. L. 1975, c. 232 (90-Day Law).	7 N.J.R 548 November 18, 1975

DATE ADOPTED	DESCRIPTION	REGISTER CITATION AND EFFECTIVE DATE
December 11, 1975	Sets date for scallop season. (Emergency)	8 N.J.R. 14 December 15, 1975
December 14, 1975	Revises rules concerning the taking of hard clams.	8 N.J.R. 14 December 15, 1975
December 18, 1975	Floodway delineation for main stem of Delaware.	8 N.J.R. 15 December 18, 1975
December 18, 1975	Control and prohibition of air pollution by volatile organic substances.	8 N.J.R. 15 December 18, 1975
December 30, 1975	Regulates taking of sea clams. (Emergency)	8 N.J.R. 63 January 1, 1976
October 16, 1975	Rules concerning sewer connection bans.	7 N.J.R. 499 October 16, 1975
October 29, 1975	Revises rules concerning open burning.	7 N.J.R. 547 December 29, 1975
January 6, 1976	Control and prohibition of air pollution from light duty gasoline fueled motor vehicles. (Emergency)	8 N.J.R. 62 January 14, 1976
January 31, 1976	Conforms State power boat regulations to Federal standards.	8 N.J.R. 107 March 30, 1976
February 8, 1976	Revises shellfish growing water classifications.	8 N.J.R. 109 February 18, 1976
February 20, 1976	Revises rules concerning appeal procedures to the Coastal Area Review Board.	8 N.J.R. 178 February 24, 1976
March 2, 1976	Revises rules for the taking of sea clams. (Emergency)	8 N.J.R. 179 March 2, 1976
March 10, 1976	Revises stream encroachment fees under P. L. 1975, c. 232 (90-Day Law).	8 N.J.R. 180 March 10, 1976
March 12, 1976	Grants variances to sulfur in fuel regulations to Salem County and Upper Township of Cape May County. (Emergency)	8 N.J.R. 181 March 12, 1976
March 29, 1976	Establishes a fee schedule for certain air pollution permits.	8 N.J.R. 221 May 26, 1976
March 31, 1976	Grants variances from sulfur in fuel regulations to Cumberland County. (Emergency)	8 N.J.R. 222 March 31, 1976

DATE ADOPTED	DESCRIPTION	REGISTER CITATION AND EFFECTIVE DATE
April 13, 1976	Rules concerning special permits at Island Beach State Park.	8 N.J.R. 222 April 15, 1976
April 21, 1976	Procedures for the visual determination of opacity.	8 N.J.R. 223 May 6, 1976
April 21, 1976	Sampling and anlytical procedures for determining particulate emissions.	8 N.J.R. 223 June 21, 1976
June 15, 1976	1976-77 Game Code	8 N.J.R. 328 August 1, 1976

APPENDIX K

DEPARTMENT OF ENVIRONMENTAL PROTECTION
PERMITS UNDER 90-DAY LAW
FY 76
(by quarter)

	Qtr.	Decisions	Decisions: Approvals	Decisions: Disapprovals	Decisions: Cancellations
RIPARIAN	1	146	131	2	13
	2	119	107	3	9
	3	165	161	2	2
	4	145	140	5	0
TOTAL		575	539	12	24
WETLANDS	1	15	4	0	11
	2	9	4	1	4
	3	10	6	1	3
	4	14	14	0	0
TOTAL		48	28	2	18
CAFRA	1	14	9	0	5
	2	28	21	4	3
	3	16	10	1	5
	4	10	9	1	0
TOTAL		68	49	6	13
STREAM ENCROACHMENT	1	202	124	33	45
	2	114	81	10	23
	3	118	90	23	5
	4	99	82	15	2
TOTAL		533	377	81	75
SEWER HOOKUPS	1	231	136		95
	2	74	71		3
	3	49	49		
	4	93	91		2
TOTAL		447	347		100

Total Applications Decided

	Total	Approved	Denied	Cancelled
FY75	1712	1465	69	178
FY76	1641	1340	101	230

APPLICATIONS PENDING

	Riparian	Stream Encroachment	CAFRA	Wetlands	Sewer Hookups	Total
1 July 1974	262	985	37	30	175	1,489
1 July 1975	129	784	43	29	182	1,167
1 July 1976	75	607	33	22	107	844

APPENDIX L

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Regulatory Decisions Not Covered by 90-Day Law
FY 76

	Total	Approved	Denied	Cancelled
Solid Waste				
Disposal Facility Registrations	34	34	0	0
New Collector/Hauler Registration	3286	3286	0	0
Air Pollution Control	3691	3113	0	0
Potable Water				
New Distribution Systems/Treatment Plants	6	4	1	1
Changes, Alterations, Modifications, Improvements to Existing Distribution/Treatment Plants	120	111	5	4
Wastewater (Public)				
Changes, Alterations, Modifications, Improvements to Existing Treatment Plants				
Funded	9	9	0	0
Non-Funded	33	20	0	13
New Treatment Plants				
Funded	0	0	0	0
Non-Funded	19	13	0	6
Industrial Wastewater Treatment Plants New and/or Modified	28	27	1	0

APPENDIX M

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Publications Issued
FY 76

Bureau of Air Pollution Control, New Jersey Motor Vehicle Emission Inspection Program Summary and Report, Phase I, June 1976.

Bureau of Air Pollution Control, New Jersey Ozone Calibrations - April to November 1975, March 25, 1976.

Bureau of Air Pollution Control, Operation of Oil Burning Equipment and Incinerators -- Air Pollution Control Workbook, (Reprint) December, 1975.

Bureau of Parks, State Forests, Parks and Recreation Areas Campgrounds, May, 1976.

Bureau of Radiation Protection, New Jersey Emergency Response Plan for Major Nuclear Reactors, April, 1976.

Bureau of Water Quality Planning and Management, Water Quality Inventory, Summary Report, May, 1976.

Bureau of Wildlife Management, New Jersey's White-Tailed Deer - Deer Report No. 2, September, 1975.

Cloakie, Hugh, Survey of the Transportation of Radioactive Materials in the State of New Jersey, June, 1976.

Commission on Radiation Protection, Radiation Protection Guide for Nuclear Medicine and Brachytherapy, 1975.

Division of Fish, Game and Shellfisheries, Annual Report - Division of Fish, Game and Shellfisheries, 1974-75, January, 1976.

Division of Fish, Game and Shellfisheries, Compendium of New Jersey Fish Laws, Including Regulations of 1976 Fish Code, September, 1975.

Division of Fish, GAme and Shellfisheries, Compendium of New Jersey Game Laws, Including Regulations of 1975 - 1976 Game Code, August, 1975.

Division of Water Resources, Water Pollution Control Program Plan, (FY76), July, 1975.

Fisher, Eugene, Nationwide Evaluation of X-ray Trends, March, 1976.

Hand, Louis, and Robert Waters, Batsto Nature Area Trail Guide, (Wharton State Forest), 1976.

APPENDIX M
(continued)

Ivey, Lee R., Condensation and Hazards of Explosive Materials, June, 1976.

Kantor, Richard, Office of Coastal Zone Management, The Values of Atlantic White Cedar in New Jersey, May, 1976.

Lamden, Robert and McCurdy, David, Environmental Radiation Surveillance of the Oyster Creek Nuclear Generating Station, June, 1976.

McCurdy, David, et al., Bureau of Radiation Protection, Environmental Radiation Surveillance in the Vicinity of Nuclear Generating Stations, 1976.

McCurdy, David, et al., Bureau of Radiation Protection, Offsite Levels of Iodine - 131 in the Environs of a Major Radiopharmaceutical Processor, April, 1976.

Office of Coastal Zone Management, Guiding the Coastal Area of New Jersey: Basis and Background for Interim Land Use and Density Guidelines, May, 1976.

Office of Coastal Zone Management, An Inventory of the New Jersey Coastal Area, September, 1975.

Report on the Trenton Water Crisis, May, 1976.

Wolff, G. T., P. J. Lioy, R. E. Meyers, R. T. Cederwall, G. D. Wight, R. E. Pasceri and R. S. Taylor, Anatomy of Two Ozone Transport Episodes in the Washington, D.C., to Boston, Massachusetts, Corridor, February, 1976.

Wolff, G. T., P. J. Lioy, R. S. Taylor, J. Marston, and S. Gaudinski, An Investigation of the Vertical and Diurnal Ozone Variations at Non-Urban Sites, March, 1976.

Wolff, G. T., P. J. Lioy, G. D. Wight and R. E. Pasceri, An Aerial Investigation of Photochemical Oxidants Over New Jersey, Southeastern Pennsylvania and Northeastern Maryland, January, 1976.

Wolff, G. T., P. J. Lioy, G. D. Wight and R. E. Pasceri, An Aerial Investigation of Photochemical Oxidants Over New Jersey, Southeastern New York and Long Island, Western Connecticut, Northern Delaware, Southeastern Pennsylvania and Northeastern Maryland, November, 1975.

Wolff, G. T., P. J. Lioy, G. D. Wight and R. E. Pasceri, Aerial Investigation of the Ozone Plume Phenomena, April, 1976,

APPENDIX N

ENDANGERED SPECIES IN NEW JERSEY

ENDANGERED - A species of native fish or wildlife shall be regarded as threatened with extinction whenever its existence in New Jersey is endangered because its habitat is threatened with destruction, drastic modification, or severe curtailment, or because of over-exploitation, disease, predation, or because of other factors, and that its survival requires assistance.

FISH
- Shortnose Sturgeon

AMPHIBIANS and REPTILES
- Blue-Spotted Salamander
- Eastern Tiger Salamander
- Bog Turtle

BIRDS
- Bald Eagle
- Peregrine Falcon
- Osprey
- Cooper's Hawk

MAMMALS
- Indiana Bat

MARINE MAMMALS
- Sperm Whale
- Blue Whale
- Finback Whale
- Sei Whale
- Humpback Whale
- Right Whale

MARINE REPTILES
- Atlantic Green Turtle
- Atlantic Hawksbill
- Atlantic Ridley
- Atlantic Leatherback