Clean Air

'98

Goal: The air throughout the state will be healthful to breathe, and air pollutants will not damage our forests, land and water bodies.

Actions

Reducing Ozone In the summer of 1988 New Jersey recorded 45 violations of the federal air quality standard for ground-level ozone. In 1998 there were four violations of that same one-hour standard. New Jersey has made progress in reducing ozone but much remains to be done to meet a new, tougher health-based standard. Measured by that new, eight-hour standard, New Jersey's air was unhealthy on 47 days in 1998. Much of the progress over the past decade was due to the state's efforts to control emissions of volatile organic compounds, one of the two pollutants that form ozone on hot summer days. The Department's focus on curbing nitrogen oxide emissions, the other major contributor to ozone formation, is the key to continual progress in reducing ozone.

The Department in June approved a rule requiring coal power plants and other large burners to reduce nitrogen oxide emissions by up to 90 percent, compared with 1990 emissions, by 2003. When fully implemented, New Jersey's nitrogen oxide emissions from major stationary sources will decrease to about 8,200 tons per summer ozone season – down from more than 45,000 tons in 1990. At the urging of New Jersey and other northeastern states that make up the Ozone Transport Commission, the U.S. Environmental Protection Agency in September directed that the entire 22-state eastern region drastically reduce nitrogen oxide emissions from large coal-burning power plants and other major industrial sources. With an estimated one-third of the state's ozone air pollution originating in other states, these regional reductions will substantially assist New Jersey in meeting the new federal health standard for ozone. New Jersey also is progressing with reducing nitrogen oxide emissions from mobile sources, which are projected to account for 35 percent of all nitrogen oxide emissions by 2007. Under the new enhanced inspection and maintenance program scheduled to take effect later in 1999, New Jersey vehicles for the first time will be required to meet emission standards for nitrogen oxides.

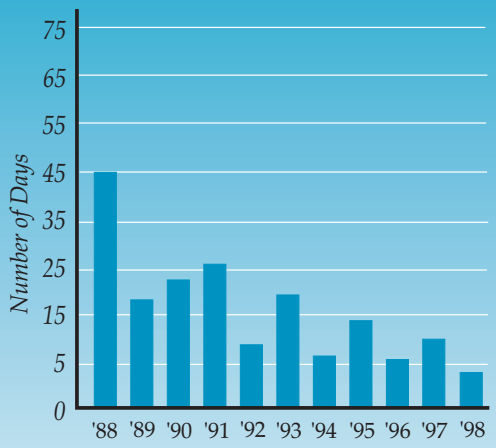
Curbing Diesel Emissions New Jersey stopped and checked diesel exhaust emissions on more than 60,000 trucks in the first six months of its roadside testing program, the first such program in the nation. Nearly 5,000 truck operators were cited and issued summonses because their vehicles were emitting excessive levels of pollutants. Both New Jersey-registered and out-of-state trucks are stopped and tested under the program, which began in April. In addition to random roadside testing, New Jersey in July began a new inspection program requiring annual diesel emissions testing of all heavy-duty trucks and buses based in New Jersey. The programs will reduce emissions of fine particulates that can cause or aggravate respiratory problems.

Addressing Climate Change With Commissioner Shinn's issuance of an administrative order in March, the Department began an ambitious program to address the challenge of global climate change and sea level rise through energy efficiency and technological innovation. The order calls for a 3.5 percent reduction in the state's emissions of greenhouse gases below 1990 levels by the year 2005; creating a comprehensive greenhouse gas inventory for New Jersey; creating a banking system to quantify and credit voluntary carbon dioxide emission reductions by New Jersey companies; supporting the development of clean fuel fleets – motor pools that use cleaner-burning fuels; and supporting the efforts of the state Board of Public Utilities to encourage energy efficiency measures. The Department also entered into an agreement with The Netherlands to collaborate on the design of a prototype greenhouse gas trade, the design of an emission trading system and to advance the development of new technologies to reduce greenhouse gases.

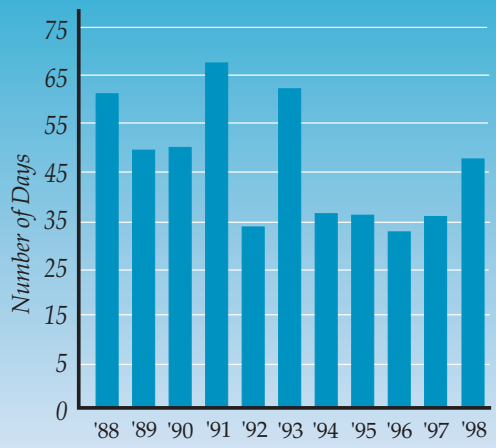
Air pollution control permits were issued for five landfill projects where methane gas is burned to generate electricity. Decomposition of organic materials in landfills produces methane, a principal greenhouse gas. These projects resulted in estimated annual emission reductions of 120,000 tons of methane gas from the landfill, and 432 tons of nitrogen oxides and 108 tons of volatile organic compounds that otherwise would have been generated by producing the same amount of electricity from fossil fuel generating plants.

Trends

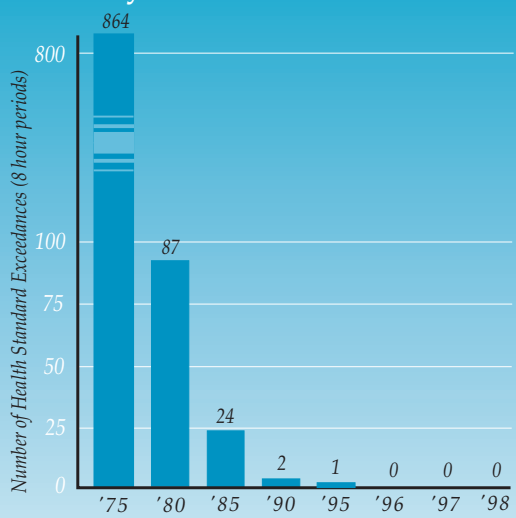
1-Hour Ozone Health Standard Exceedances



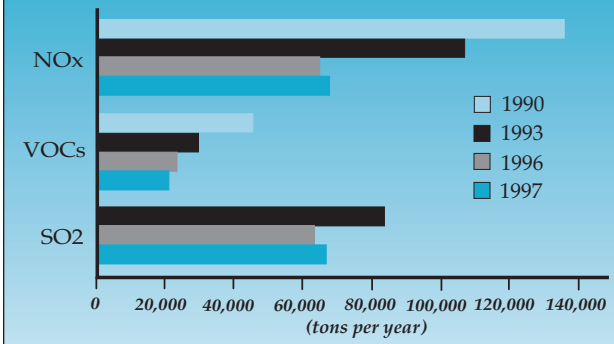
8-Hour Ozone Health Standard Exceedances



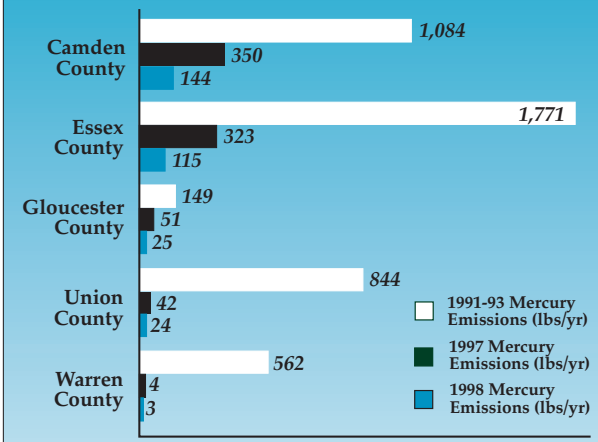
Unhealthy Levels of Carbon Monoxide



Emissions from Major Industrial Facilities

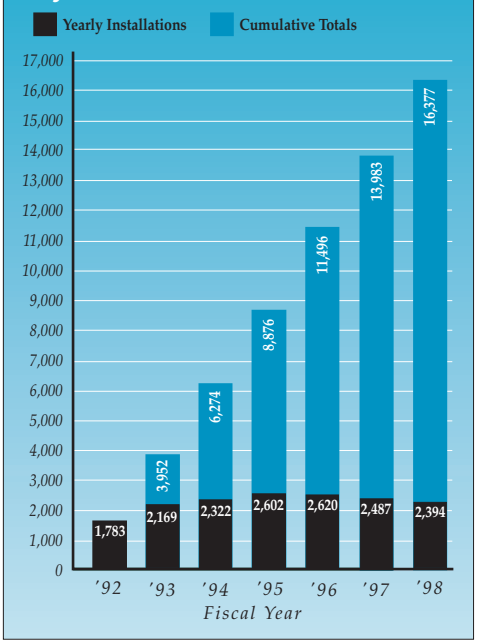


Mercury Emissions From Municipal Solid Waste Incinerators*



*Based on unit with highest average emissions at each facility

Radon Reduction Systems Installed



Clean and Plentiful Water

'98

Goal: New Jersey rivers, lakes and coastal waters will be fishable, swimmable and support healthy ecosystems. Ground water will be a clean source of water. Every person in New Jersey will have safe drinking water. Adequate quantities of surface and ground water will be available for all needed uses.

Actions

Expanding Shellfish Waters As the result of continuing improvement in coastal water quality, New Jersey for the 11th consecutive year expanded the total acreage of waters available for shellfish harvesting. A total of 2,222 additional acres of state waters were opened for shellfish harvesting beginning in January 1999. The water quality improvements are due to improved operation of sewage treatment plants, the connection of unsewered homes to a sewage collection system and improved efforts to control nonpoint pollution.

Targeting Nonpoint Pollution New Jersey's first sewage pumpout boat began operation in Barnegat Bay, servicing recreational boaters in the popular Tice's Shoal anchorage area off Island Beach State Park. The boat, maintained by Seaside Park Borough, operates on weekends throughout the summer. There are 76 operational land-based pumpout stations along the Jersey coast, and applications are pending for approximately 50 more. Studies have shown that the raw sewage discharged from one pleasure boat is equivalent to the treated discharge from a sewage treatment plant serving 10,000 people.

The Manasquan and Shark Rivers became New Jersey's first "No Discharge Zones," prohibiting the discharge of treated and untreated sewage from boats. The EPA designations will protect marine life in those rivers and improve ocean water quality since the two rivers enter the ocean near some of New Jersey's most popular beaches. New Jersey also has requested No Discharge Zone designations for the Navesink and Shrewsbury Rivers, and Barnegat Bay.

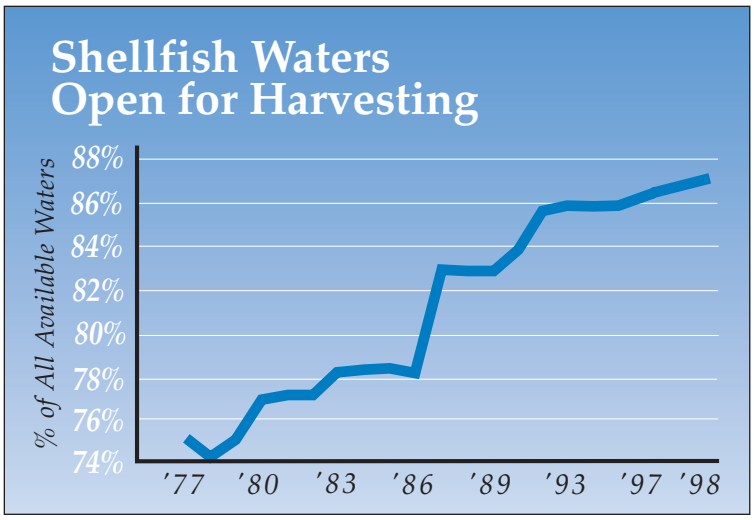
Implementing Watershed Management The Department continued to implement a watershed management approach to protect and enhance water resources. Efforts included water quality monitoring to identify sources of water pollution; scientific assessment and analysis to suggest the best means of protecting and improving water quality; public education and participation, including the development of a new watershed awareness exhibit that characterizes the Navesink and Manasquan watersheds through photographs taken by physically and emotionally challenged students through a partnership with the Special Eyes on the Environment Program (SEE); and stakeholder involvement in developing plans to manage the state's 20 watershed areas. The Department has initiated watershed management activities in 12 watershed areas and plans to expand those activities to the remaining watershed areas during 1999.

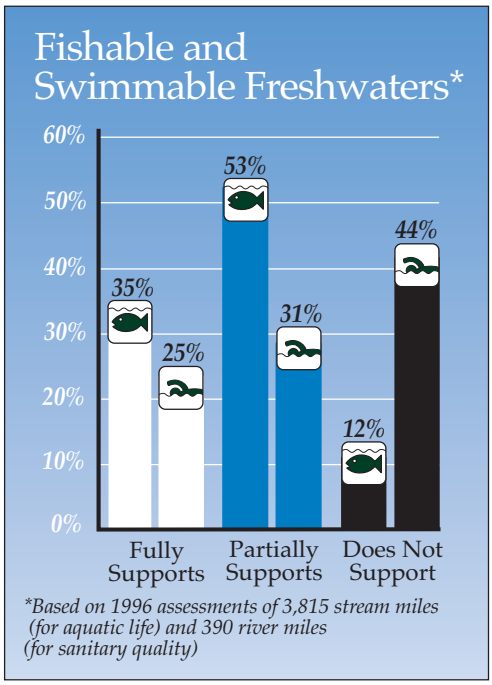
Keeping Beaches Clean Approximately 1,000 volunteers picked up more than 120,000 pieces of trash from New Jersey's ocean and bay beaches, the highest total since the Adopt A Beach program began in 1993. Seventy-two percent of the trash collected during the two beach cleanup days was plastics.

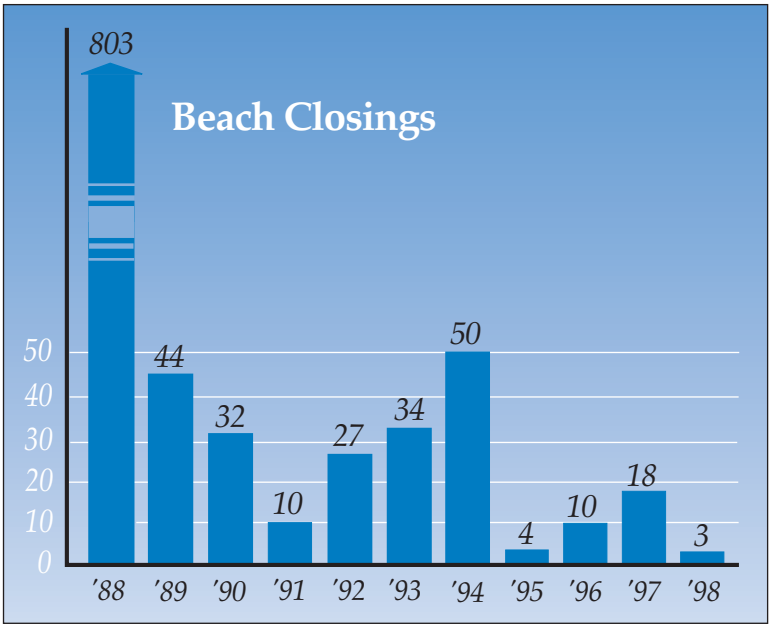
Effluent Trading Two industrial facilities discharging into the Passaic Valley Sewerage Commission system completed an "effluent trade," the first of its kind in the nation. Effluent trading allows dischargers that are able to achieve pollutant reductions greater than required to sell these extra reductions as "credits" to other dischargers for whom meeting the standard is prohibitive. As a requirement of the trade, 20 percent of the excess reduction is unavailable for trading (the credits are permanently retired), thus ensuring greater environmental benefit at less cost than if each company had independently met its regulatory standard.

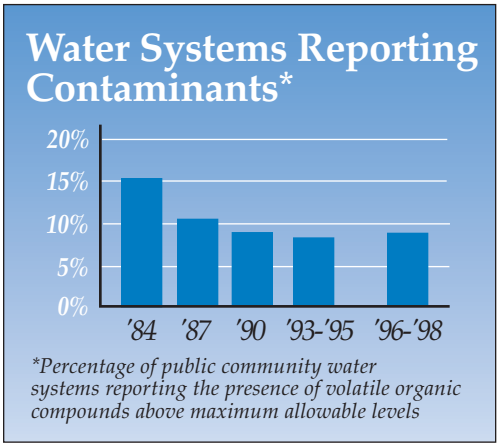
Addressing Radium Nine water suppliers were directed to take corrective action after new testing protocols discovered elevated levels of Radium 224, a naturally occurring isotope that went undetected by prior testing methods. While the contaminants do not pose an immediate health risk, chronic, long-term exposure is believed to increase the risk of certain types of cancers. The nine water suppliers with elevated radiological levels were directed to notify their customers and take corrective actions, which included closing contaminated wells, drilling replacement wells or using established treatment technologies. The testing protocol, developed by DEP staff, is expected to become the national protocol for Radium 224 testing.

Trends


Shellfish Waters Open for Harvesting
% of All Available Waters
88%
86%
84%
82%
80%
78%
76%
74%
'77
'80
'83
'86
'89
'93
'97
'98


Fishable and Swimmable Freshwaters*
60%
50%
40%
30%
20%
10%
0%
35%
25%
53%
31%
12%
44%
Fully Supports
Partially Supports
Does Not Support
*Based on 1996 assessments of 3,815 stream miles (for aquatic life) and 390 river miles (for sanitary quality)


Beach Closings
803
44
32
10
27
34
50
4
10
18
3
50
40
30
20
10
0
'88
'89
'90
'91
'92
'93
'94
'95
'96
'97
'98


Water Systems Reporting Contaminants*
20%
15%
10%
5%
0%
'84
'87
'90
'93-'95
'96-'98
*Percentage of public community water systems reporting the presence of volatile organic compounds above maximum allowable levels

Abundant Open Space

'98

Goal: Natural and scenic landscapes will be preserved and every person will have the opportunity to visit an abundance of well-maintained parks, forests, wildlife areas and historic sites. The public will learn about natural and cultural resources and have access to a wide variety of recreational experiences.

Actions

Million-Acre Goal In January 1998 Governor Whitman called on New Jerseyans to support an ambitious new goal of preserving an additional one million acres of open space, half the remaining undeveloped land in New Jersey. Voters overwhelmingly approved a constitutional amendment that allows New Jersey to set aside $98 million per year of existing sales tax revenues for 10 years. Combined with local open space initiatives, New Jerseyans have approved more than $2 billion for the preservation of farmland, open space and historic resources, and for the creation and maintenance of outdoor recreation facilities over the next decade.

Expanding State Acquisitions The Green Acres State Acquisition Program added 14,160 acres of open space at a cost of $2.1 million for state parks, forests and wildlife management areas, including a 4,000-acre conservation easement with public recreation access in the City of Newark's Pequannock Watershed in West Milford Township, Passaic County; the 951-acre former Jungle Habitat property in West Milford, Passaic County, as an addition to Norvin Green State Forest in the Highlands Region; and the 794-acre Atlantic Blueberry Company's Strawberry Fields Property in Hamilton Township, Atlantic County, which includes an airstrip that will be used by the State Forest Fire Service.

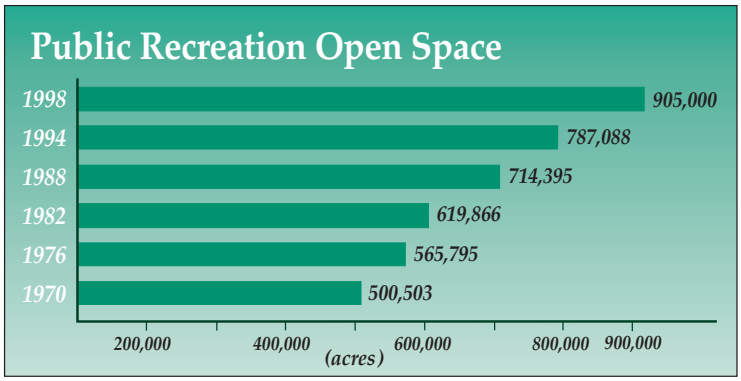
Cooperative Acquisitions In cooperative preservation efforts, the Green Acres Program worked with the State Agriculture Development Committee, county and municipal governments, nonprofit organizations and private landowners in the acquisition of several major properties, including 554 acres of an area known as the Alpha Grasslands in Pohatcong Township, Warren County, helping to protect critical nesting habitat for endangered and threatened bird species; two properties totaling 332 acres along the Black River Greenway in Chester Township, Morris County; and 220 acres of a forested mountain known as Pochunk Mountain in Vernon Township, Sussex County, located within the Appalachian Trail's scenic viewshed.

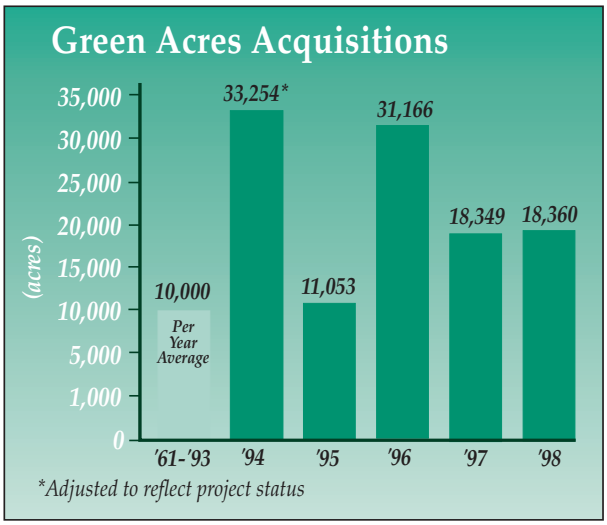
Providing Matching Grants Governor Whitman announced approval of $25 million in matching grants for 35 municipal and county open space acquisition projects to preserve more than 4,200 acres of open space in 14 counties. The funds were provided by a one-time budget appropriation that also included $25 million for farmland preservation. The projects included Hunterdon County's acquisition of 400 acres along the Musconetcong River to preserve the Musconetcong Mountain ridge, improve river access and complement the state's Musconetcong River Greenway Project; the Township of South Harrison's Oldmans Creek Land Acquisition Project to preserve 80 acres of the creek's headwaters in Gloucester County; and Washington Township's 400-acre Montana Mountain Acquisition Project in Warren County to protect the headwaters of two pristine creeks that support trout reproduction.

Preserving History In efforts to protect and promote historic sites, the Department published *A Revolutionary Time: The Guide to New Jersey's American Revolutionary War Trail*; assisted Drew University in the creation of New Jersey's first certificate program for historic preservation; opened a new ferry service on Delaware Bay to link Fort Mott State Park in New Jersey with Fort Delaware State Park on Pea Patch Island and Delaware City in Delaware; and began historic restoration programs at the Walt Whitman House in Camden and the Grover Cleveland Birthplace State Historic Site in Caldwell, the nation's leading repository of Cleveland artifacts and political memorabilia.

Promoting Ecotourism *The New Jersey Wildlife Viewing Guide*, a full-color, 160-page publication, was introduced in June as part of the Wildlife Diversity Tours/Watchable Wildlife Program. The guide showcases 87 sites throughout New Jersey where visitors can observe and learn about the state's wide array of wildlife and the variety of habitats that support it. Partnerships are being developed with viewing-site hosts, municipalities and local businesses to foster a sense of local ownership and related recreational and educational projects at each viewing site.

Trends


Public Recreation Open Space
1998
1994
1988
1982
1976
1970
905,000
787,088
714,395
619,866
565,795
500,503
200,000
400,000
600,000
800,000
900,000
(acres)


Green Acres Acquisitions
35,000
30,000
25,000
20,000
15,000
10,000
5,000
1,000
0
(acres)
10,000
Per Year Average
33,254*
11,053
31,166
18,349
18,360
'61-'93
'94
'95
'96
'97
'98
*Adjusted to reflect project status

Healthy Ecosystems

'98

Goal: The health, diversity and integrity of New Jersey's ecosystems will be restored and sustained.

Actions

3 Species Proposed for Delisting New Jersey in October proposed that the great blue heron, little blue heron and cliff swallow be taken off the state's endangered and threatened species list. This marks the first time the state has proposed species for delisting as the result of successful efforts to protect their habitat and restore their populations. There are approximately 900 pairs of great blue herons compared to 400 pairs in 1979; 200 little blue herons, double the 1985 total; and 900 nesting pairs of cliff swallows compared to 400 pairs in 1980.

Tracking Waterfowl Numbers A total of 523,904 waterfowl of 28 different species were counted in New Jersey in January 1998 as part of the state's annual participation in the U.S. Fish and Wildlife Service's Atlantic Flyway Mid-Winter Waterfowl Survey. The total is a 6 percent increase from the previous year and a 3 percent increase over the past 10-year average. The information collected in the interstate survey helps state and federal biologists better manage migratory waterfowl species along the coast.

Stocking for New Fishery Approximately 16,000 brown trout were released in the Manasquan River in Monmouth County as part of a new stocking program to develop sea run brown trout. After residing in freshwater, young brown trout sometimes migrate to saltwater to take advantage of the abundant food sources. They grow between two and four pounds or more and then return to freshwater. The program will be evaluated for five years and continue if a successful fishery develops.

Saving Hemlocks The State Forest Service, in cooperation with the Department of Agriculture, released 40,000 Japanese ladybugs in six state parks to combat the tree-killing hemlock wooly adelgid and save native hemlock trees. The success of the release will be measured in spring 1999.

Apprehending Violators Twenty-seven people were charged with 174 wildlife violations during an 18-month undercover operation conducted by the Division of Fish, Game and Wildlife in Morris and Passaic counties. Charges included illegal possession of deer parts, shooting of hawks, possession of untagged deer, shooting from a motor vehicle and numerous waterfowl and wild turkey violations. Anyone with knowledge of wildlife violations is encouraged to call the toll-free Operation Game Thief Hotline at 1 (800) 222-0456. Anonymity is guaranteed.

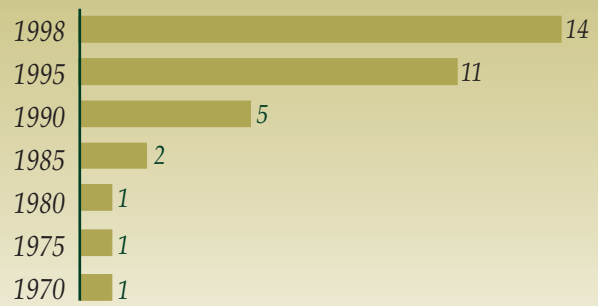
Recovering Damages The Office of Natural Resource Damages, which assesses natural resources that have been harmed by the release of oil or other hazardous substances and oversees their restoration, settled six natural resource damage cases for a total of $1.5 million. Damage recoveries from previous settlements funded the purchase and protection of 658 acres of ecologically valuable land; research and management initiatives to protect and restore wildlife injured during past oil spills; and a pilot project in which permanent boom anchors were constructed at the mouth of three tributaries to Delaware Bay. These boom anchors will allow rapid deployment of booms to this remote area during any future oil spills, protecting hundreds of acres of salt marsh ecosystem.

Encouraging Smart Coastal Growth The Department proposed new rules to implement the Coastal Area Facility Review Act (CAFRA), which regulates growth in the coastal region by setting the allowable development intensity for any particular site. Under the proposal, allowable development intensity will be based on a site's location in a planning area or center as described in the State Development and Redevelopment Plan or in a DEP-delineated coastal center until a State Plan center has been designated. The new approach will further the State Plan's goals of focusing development in centers, or compact growth areas, while limiting it in outlying and environmentally sensitive areas. Based on public comment, the rules will be reproposed in 1999 to make certain changes regarding the regulation of barrier islands and interim center boundaries.

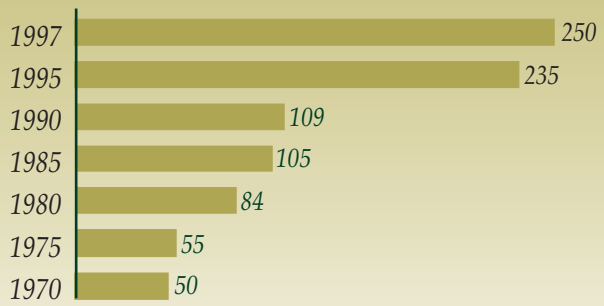
Restoring Wetlands Under the direction of DEP, efforts by responsible parties to restore freshwater wetlands harmed by unauthorized activities included the restoration of 30 acres of freshwater wetlands and 1,600 feet of stream to a thriving freshwater wetlands ecosystem in Middlesex County; the restoration of two major wetlands areas totaling 35 acres of freshwater and coastal wetlands in Cape May County; and the payment of $1.2 million to the Hackensack Meadowlands Development Commission for the creation of a wetlands mitigation project to compensate for the filling of approximately 25 acres of wetlands in Bergen County.

Trends

Bald Eagle Nesting Pairs

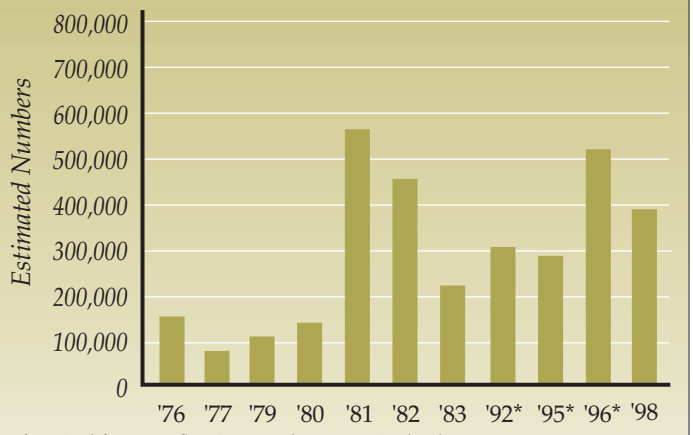


Osprey Nesting Pairs



Delaware River Shad Populations

Includes years for which data are available



**Revised figures reflect improved accuracy in depth measurements*

Open and Effective Government '98

Goal: *The Department will achieve its vision, mission and goals by involving citizens and stakeholders as critical partners and through a commitment to quality that will result in continuous improvement in its operations.*

Actions

Managing for Results The DEP continued to implement its comprehensive system of managing for environmental results through participation in the National Environmental Performance Partnership System (NEPPS). Key to NEPPS are the development of environmental indicators – scientifically sound measures of environmental quality and progress – and encouraging public participation in the management process. Efforts to develop environmental indicators and to share information with the public included:

- publication of *New Jersey's Environment 1998*, the first comprehensive report on the quality of the state's environment. The report describes New Jersey's environmental goals and features a variety of environmental indicators that show successful trends and remaining challenges.

- publication of New Jersey's first *Environmental Indicators Technical Report*, which provides the technical basis and background for the environmental indicators New Jersey has developed to date.

- creation of the Center for Environmental Indicators, a partnership among DEP, Rutgers University, the University of Medicine and Dentistry of New Jersey, and the Environmental and Occupational Health Sciences Institute. The center will help to develop and utilize environmental indicators in environmental management and other sectors, such as transportation and land use planning.

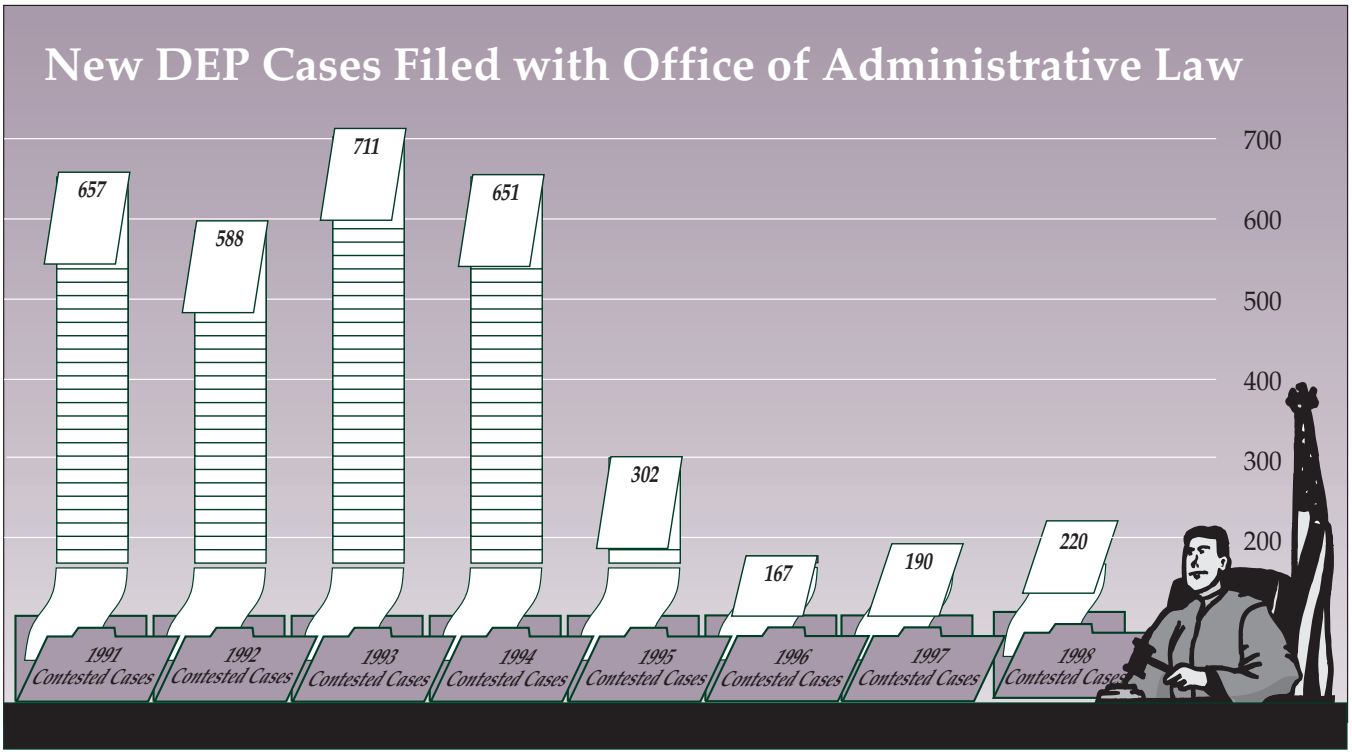
Offering Permitting Assistance More than 75 major new development projects were managed through the Department's One Stop permitting process. One Stop is a coordinated permitting and compliance assistance process that helps identify early in a project all of the required permits and pollution prevention opportunities. Through the One Stop process, the Department worked with Orion Elizabeth New Jersey on plans to remediate two adjacent sites in Bayonne. The proposed remediation involved covering the combined site, approximately 30 acres of coastal and freshwater wetlands, with fill and creating a golf course on top of it. As a result of cooperative efforts, the number of acres to be filled was substantially reduced, preserving 22.5 acres of wetland habitat.

Resolving Disputes Twenty new cases were referred to and mediated by the DEP's Office of Dispute Resolution. Since the office was established in 1994, 100 cases have been mediated through the Alternative Dispute Resolution process. Seventy-five of those mediations have resulted in signed agreements. Five cases are ongoing.

Ensuring Environmental Justice DEP was awarded a $100,000 grant from the U.S. EPA to implement a model environmental equity program in poor and urban areas where air pollution, water pollution or soil contamination may be disproportionately high. The intent of the program is to build partnerships, examine concerns and address problems before they escalate.

Advances in Information Technology The Department began to receive, process and monitor air permits electronically through the nation's first integrated database system. Air permitting is the first program in the Department to use the new system, called the New Jersey Environmental Management System (NJEMS). The system will be expanded to other programs, enhancing DEP's ability to process permits on a timely basis as well as track environmental compliance on permit conditions.

Mapped information on New Jersey's land use, streams, other environmental features and regulated facilities is now available over the Internet through a new Geographic Information System (GIS) web page. The web page is designed to give experienced GIS users access to DEP's GIS data and also to introduce newcomers to the many uses of this valuable computer mapping technology. The web page can be accessed at www.state.nj.us/dep/gis.


New DEP Cases Filed with Office of Administrative Law
700
600
500
400
300
200
657
588
711
651
302
167
190
220
1991 Contested Cases
1992 Contested Cases
1993 Contested Cases
1994 Contested Cases
1995 Contested Cases
1996 Contested Cases
1997 Contested Cases
1998 Contested Cases

Safe and Healthy Communities '98

Goal: Every New Jersey community will be free from unacceptable human health and ecological risks due to direct exposure from hazardous substances and other potentially harmful agents. Natural resources will be managed to protect the public from floods, fires and storms.

Actions

Brownfields Inventory New Jersey has identified 1,130 brownfields sites, according to a draft inventory completed in December. The inventory, a preliminary attempt to identify the state's brownfields "universe," is expected to grow each year based on the continued interest of private parties and local and county governments in undertaking voluntary cleanups. The sites will be tracked until their eventual reuse.

Offering Brownfields Assistance Six more cities and counties became part of the U.S. Environmental Protection Agency's Brownfields Economic Redevelopment Initiative. This brings to 12 the number of communities participating in this effort to stimulate economic redevelopment through environmental cleanup. The EPA in 1998 awarded brownfields grants to Atlantic City, Hudson County, Long Branch, Middlesex County, Morris County and Paterson. The Department is assisting local officials in identifying and assessing sites and neighborhoods that have the potential for redevelopment and in addressing the many issues associated with remediation and redevelopment.

Ensuring UST Compliance The Department in December announced a program of random inspections, registration reviews and other enforcement actions to ensure that owners and operators of regulated underground storage tanks comply with state and federal upgrade requirements. The requirements guard New Jersey's groundwater, drinking water and soil from contamination. The announcement followed a concerted two-year outreach program to help owners and operators achieve compliance by the Dec. 22, 1998 deadline. As of December, nearly $20 million had been provided to private parties and local governments to help meet the upgrade requirements and perform any necessary cleanups. The Department is overseeing cleanup work at more than 3,800 sites throughout the state where tanks have leaked. In the past four years, 3,000 leaking tanks have been removed under DEP oversight.

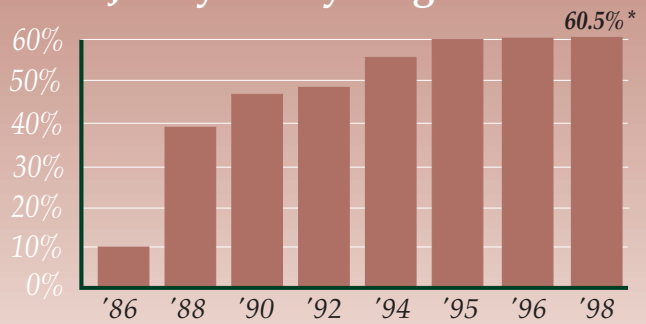
Addressing Historic Pesticide Use New Jersey became the first state to take action to control exposure from historic pesticide use with the development of recommendations for sampling and remediation of soil tainted with pesticide residues. The recommendations are contained in a draft report issued by the Historic Pesticide Contamination Task Force in early 1999. The recommendations include sampling former agricultural areas that have exposed soil and are used by children, and sampling of former agricultural areas prior to development.

Reducing Mercury Releases A Mercury Task Force was established in March to develop a mercury pollution reduction plan for New Jersey. The task force is assessing the effects of environmental mercury contamination on public health, the environment, recreation and tourism, and will recommend approaches for reducing mercury releases to the environment from all sources. The DEP is continuing mercury-related research in several key areas: the extent and sources of mercury contamination in ground water in southern New Jersey; characterization of mercury exposure in pregnant women; an expanded survey of mercury levels in New Jersey freshwater and saltwater fish; development of new methods for measuring mercury levels in air and water; and characterization of mercury deposition in New Jersey surface waters from in-state and out-of-state sources.

Demanufacturing Televisions, computers and other consumer electronic appliances are being collected in Union County for reuse and recycling as part of a new demanufacturing project. The project, a partnership between the DEP, the U.S. EPA and the Union County Utilities Authority, is designed to divert lead, cadmium and mercury from the Union County Resource Recovery facility. A total of 116 tons of consumer electronic appliances were diverted for reuse and recycling during the first 18 months of the project.

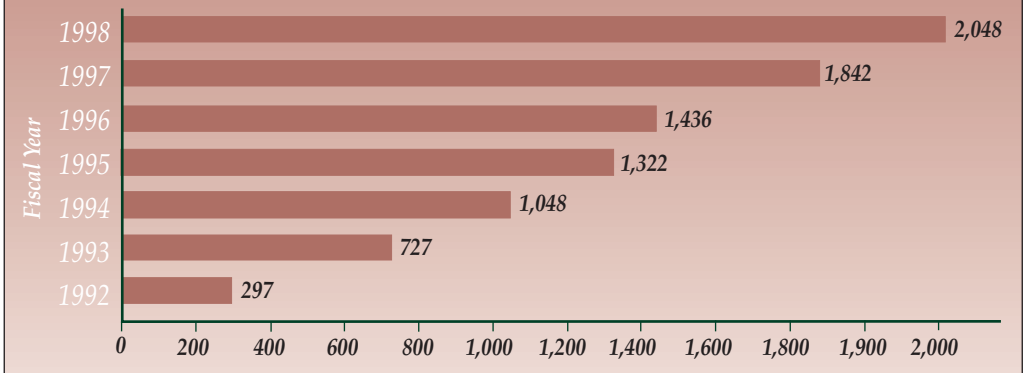
Providing Leadership Commissioner Shinn was elected in November as president of the Environmental Research Institute of the States (ERIS), a national organization dedicated to improving cleanups and promoting environmental technology. The institute is an educational subsidiary of the Environmental Council of the States (ECOS), an association of state environmental commissioners.

New Jersey's Recycling Rates



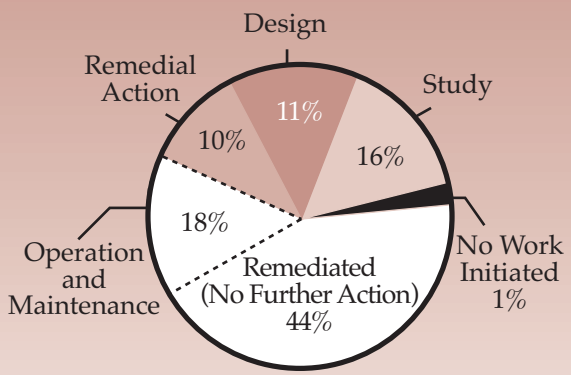
*Percentage of total solid waste stream based on 95% of NJ towns reporting

Voluntary Cleanup Agreements Signed



Superfund Cleanup Status

(408 subsites as of June 30, 1998)



Publicly Funded Cleanups

(Non-Superfund)

(351 subsites as of June 30, 1998)