

New Jersey Pinelands Commission



Annual Report 2002



Mission Statement *of the* **New Jersey Pinelands Commission**

The mission of the New Jersey Pinelands Commission is to preserve, protect and enhance the natural and cultural resources of the Pinelands National Reserve, and to encourage compatible economic and other human activities consistent with that purpose.



Front Cover: North Branch of Forked River, Lacey Township, Ocean County. (photo: John Bunnell, Pinelands Commission) **Above:** Frozen, snow-covered lake on border of Buena Vista Township, Atlantic County and Franklin Township, Gloucester County. (photo: Francis Rapa, Pinelands Commission)

New Jersey Pinelands Commission

2002

Gubernatorial Appointees

Governor James J. Florio, Chairman (*Nov.-Dec.*)

Jerrold L. Jacobs, Chairman (*Jan.-Nov.*)

Candace M. Ashmun

Sally Dudley (*Jan.- Nov.*)

Theodore Gordon (*Jan.-Nov.*)

Stephen V. Lee III

Jay E. Mounier (*Jan.-Dec.*)

Rev. Dr. Guy Campbell (*Nov.-Dec.*)

Linda M. Eckenhoff (*Jan.-Nov.*)

Robert Hagaman (*Dec.*)

Edward Lloyd (*Nov.-Dec.*)

Betty Wilson (*Nov.-Dec.*)

U.S. Secretary of the Interior's Appointee

Robert W. McIntosh Jr.

County Appointees

Ocean County

Alan W. Avery Jr., Vice-Chairman

Atlantic County

Edward A. Wuillermin, Jr.

Cape May County

William J. Brown

Burlington County

S. Joseph Kowalski

Cumberland County

Leslie M. Ficcaglia

Camden County

Norman F. Tomasello

Gloucester County

Richard Westergaard

Executive Director

Annette M. Barbaccia

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Pinelands Commission Staff

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John C. Stokes, Assistant Director, Management & Planning

William F. Harrison, Assistant Director, Development Review & Enforcement

Charles M. Horner, Acting Assistant Director, Development Review & Enforcement

Executive Staff

Nadine Young, Executive Assistant to the Commission
Terrence Moore, Senior Advisor to the Commission
Francis Rapa, Communications Officer
Kathleen Whitton, Supervising Executive Secretary
Martha Williams, Executive Secretary

Office of Planning

Larry Liggett, Planning Manager
Kimberly Beidler, Principal Resource Planner
Barry Brady, Cultural Resources Planner
Russell Davis, Geographic Information Supervisor
Frank Donnelly, Economic Planner
Paul Dunne, Geographic Information Specialist
Richard Federman, Resource Planner
Susan Grogan, Principal Resource Planner
Deborah Klemas, Planning Assistant
Christine Krupka, Watershed Resource Planner
Theresa Melodick, Office Assistant
Elizabeth Piner, Principal Planning Assistant
David Rickert, Geographic Information Specialist

Regulatory Programs Office

April Fijalkowski, Regulatory Programs Specialist

Science Office

Robert Zampella, Chief Scientist
John Bunnell, Principal Research Scientist
Christina Burns, Science Technician
Kim Laidig, Principal Research Scientist
Nicholas Procopio, Research Scientist

Office of Public Programs

Elizabeth Carpenter, Public Programs Supervisor

Business Services

Donna Connor, Business Services Supervisor
Kimberly Landis, Human Resources Specialist
Claud Jay Riches, Principal Procurement Specialist
Patricia Spires, Business Assistant

Office Services

Eartha Williams, Principal Office Assistant
William Lowery, Clerical Assistant
Melody Wood, Principal Clerical Assistant

Project Review Office

Kathleen Swigon, Project Review Manager & Advisor
Keith Carter, Project Support Assistant
Todd DeJesus Environmental Specialist
Ernest Deman, Environmental Specialist
Donna Graham, Project Coordinator
Mary Hornor, Environmental Specialist
Sharon Kimball, Principal Project Support Assistant
Mary Knight, Project Support Assistant
Branwen Lambertson, Applicant Services Representative
Donna McBride, Supervising Environmental Specialist
Jean Montgomerie, Environmental Specialist
Jennifer Ruegg, Environmental Specialist
Fredrick Seeber, Environmental Specialist
Deborah Stranahan, Project Support Assistant
Brian Szura, Environmental Specialist
Rhonda Ward, Environmental Specialist
Edward Wengrowski, Wastewater Mgmt. Coordinator
Karen Young, Supervising Environmental Specialist

Management Information Systems (MIS)

John LaMacchia, MIS Manager
Maureen Cook, MIS Tech
Janet Pierce, Principal MIS Specialist

Abbreviations commonly used in this report:

CMP - (Pinelands) Comprehensive Management Plan
NJDEP - New Jersey Department of Environmental Protection
USEPA - United States Environmental Protection Agency
PDC - Pinelands Development Credit

Chairmen's



The initiation of the third review of the Comprehensive Management Plan (CMP) gave me and my fellow commissioners the opportunity to reflect on the past achievements of the CMP and issues that will need to be addressed in the future to ensure its continued success. The design and implementation of the Plan has been tremendously successful. The January 2002 report shows that over the past two decades the most sensitive ecological areas continue to be preserved. Those areas included in the conservation area continue to be protected and the Commission has made great strides in adding to the total protected areas.

Habitats supporting threatened and endangered species, particularly snakes, continue to be a challenge for the Commission. Data from the timber rattlesnake studies show that these snakes are often difficult to locate and forage for food miles from den sites. Management areas, such as Pinelands Rural Development Areas allow low-density development and are typically adjacent to preservation areas. Further, disturbances and improvements in the Rural Development Areas, such as clearings, and their proximity to preservation areas often create extended habitats for these species.

One of the crowning achievements in 2002 was the implementation of the Alternative Design Wastewater Treatment Program, a program designed to protect and improve the quality of the Kirkwood-Cohansey Aquifer through the significant reduction of nitrogen loadings from residential septic systems serving lots less than 3.2 acres throughout the Pinelands. Led by the Commission, the development of the program was a collaborative effort with environmental groups, state and local agencies and the development community. Programs like this are central to the mission of the Commission, protecting the vital water resources that define the Pinelands. While there will always be healthy and robust debate regarding specific projects and reviews, the future of the Pinelands will be best served by all interested parties coming together and developing proactive, long-term protection measures.

The Commission took a leadership role in providing relief from growth pressures for some of our towns with the greatest development pressure. These towns were allowed to take advantage of a 20 percent density reduction. This was not a surrogate for smart growth planning, but it does give the towns, the Commission and other responsible state agencies the opportunity to reassess the needs of these communities and develop zoning, infrastructure plans and other improvements that will maintain and enhance their quality of life.

Jerrold L. Jacobs
Chairman

Messages

It was with great honor that I began serving as chairman of the Pinelands Commission on November 8, 2002. Not only does this opportunity allow me to continue the work that I began as a member of Congress a quarter century past, but I am also privileged to lead one of the most dedicated and talented appointed governing bodies that I am aware of.

The Pinelands Commission's work as a land-use planning and regulatory agency is recognized worldwide. The Commission protects and preserves natural and ecological resources in a roughly million-acre area that comprises all or part of 56 municipalities in seven counties. The Pinelands Comprehensive Management Plan, or CMP, is viewed by many as a prototypical model of smart growth planning. Its land use management map and resource management standards have successfully redirected growth to appropriate areas based on economic needs and the availability of supporting infrastructure. In turn, the CMP has also prevented inappropriate growth in the core conservation areas, which support unique Pine Barrens ecosystems and critical habitat.



While the CMP has been a success to date, it is not always perfect. As a reinvigorated Commission begins to forge ahead with tackling the remaining and emerging challenges of protecting the Pinelands, there will be opportunities to make something great even better. As we begin the final stages of the Third Plan Review in 2003, the Commission will be making recommendations on how we can better plan for growth in the designated growth areas and how we can strengthen protection of our resources, including open space, endangered and threatened species, surface and ground water and agriculture. As Chairman, I will continue to build bridges to all of our stakeholders so that improving the CMP will be an open, comprehensive and effective process.

As a sponsor of Pinelands protection legislation in Congress in 1978 and later as Governor of New Jersey, protection of the Pinelands has been a highlight and priority throughout my career in public service. The opportunity to lead the Commission as Chairman is an honor and privilege that I fully embrace, especially given the chance to work with such a highly capable group of colleagues. I also want to thank former Chairman Jerrold Jacobs for his dedication and commitment as Chairman. Jerry led the Commission through some difficult issues and made significant strides in areas such as permanent land protection during his three-year tenure.

Looking forward, 2003 promises to bring progress toward bolstering protection of one of our nation's great natural treasures - the New Jersey Pinelands.

James J. Florio,
Chairman

Executive Director's Message

2002 was a year of reflection, as the Commission began the third review of the Comprehensive Management Plan (CMP) in January. It was also a year of change as five new commissioners, led by former Governor James Florio, were appointed by Governor James McGreevey. One of the hallmarks of the Commission is continuity in its work program and a commitment to protect and preserve the ecological resources of the Pinelands. The mix of federal, state and local representation on the Commission and independence are critical to its continued success as a regional planning agency and need to be safeguarded in the future to ensure the long-term integrity of its efforts.



The Third Progress Report on the CMP was submitted to the Commission in January to provide an update and assessment of what changes had occurred in the Pinelands since both the last review and creation of the CMP 22 years prior. While the report identifies a number of issues and recommendations for the Commission to consider as part of this review, it also provides a valuable baseline of information of how effective the implementation of the CMP has been. For example, the Plan has been successful at keeping the conservation areas, which have changed by less than 0.4 percent since 1980, intact.

Some of the key issues that face the Commission in both the near and long term include: 1) addressing the growth-related issues in regional growth area communities, towns and villages; 2) continued efforts to permanently protect areas with important ecological resources and farmland; 3) maintaining water policies and related land use policies to ensure the long term protection of Pinelands water resources; 4) developing protocols and regional plans to protect and preserve threatened and endangered species; and 5) improving the application process by making information electronically available to all involved in the process.

The Commission made great strides in 2002 in several major project areas, including: kick-off of a \$5.5 million study of the Kirkwood-Cohansey Aquifer to better understand ecological needs to ensure its long term sustainability; implementation of the Alternative Design Wastewater Program to reduce nitrate pollution to groundwater; the permanent protection of nearly 10,000 acres of land through the Pinelands Development Credit Program, the Cape May Acquisition Fund and the NJDEP Green Acres program; and selection of Hamilton and Winslow townships to participate in the Pinelands Excellence Program, a program designed to foster smart growth planning and infrastructure initiatives in the Regional Growth Area communities. In addition, long-term monitoring by the science and planning offices resulted in a number of completed studies including the Rancocas Creek Basin Study. These studies provide valuable information that serves as a basis for informed decision-making.

In 2003, the Commission is expected to complete the Third Review of the CMP and further the ongoing programs and initiatives described in the report. It is anticipated that new projects and initiatives will result from the completion of the Commission's review, some of which will begin in 2003. The renovation of the Fenwick Manor complex - historic structures which house Pinelands Commission offices and staff - is expected to begin in 2003, through funding from the New Jersey Building Authority.

Annette M. Barbaccia
Executive Director

PINELANDS COMMISSION NEW AND DEPARTING MEMBERS IN 2002

During November and December of 2002, the Commission bid farewell to five members who served the Commission with distinction during their tenures: Chairman Jerrold Jacobs; Sally Dudley; Ted Gordon; Linda Eckenhoff; and Jay Mounier.

Former New Jersey Governor James Florio, a key sponsor of the original Pinelands legislation, was asked to lead the Commission by Governor James McGreevey and chaired his first Commission meeting in November. Governor McGreevey also appointed four new Commissioners: Reverend Dr. Guy Campbell; Mayor Robert Hagaman; Edward Lloyd; and Betty Wilson. Long time members Candace Ashmun and Steven Lee were re-appointed by Governor McGreevey to continue in their service as Commission members.

A brief description of newly appointed and departing members is provided below. Detailed biographies of all 15 Commission members can be found on the Commission's web site at www.nj.gov/pinelands.

New Commissioners:

- **James J. Florio, Chairman**, former US Congressman and New Jersey Governor, was selected by Governor McGreevey to serve as Chairman of the Pinelands Commission. As a Congressman, Mr. Florio was instrumental in writing and guiding the passage of the National Parks and Recreation Act of 1978, the federal law that established the Pinelands National Reserve.
- **Reverend Dr. Guy Campbell** has served as pastor of Evergreen Baptist Church in Palmyra since 1969 and holds leadership positions in a number of clergy organizations, including as Fourth Vice-President of the National Baptist Convention. He is also past President of the Baptist Ministers Conference of Philadelphia and Vicinity.
- **Robert Hagaman** is Mayor of Mullica Township, a 57-square-mile rural community located entirely in the Pinelands of Atlantic County. There he has farmed for most of his life and served on the township committee, planning board, board of education and as a volunteer fireman.
- **Edward Lloyd** is Clinical Professor of Environmental Law at Columbia Law School. He previously served for 15 years as Director of the Rutgers University Environmental Law Clinic. Among his many contributions, he has served on the New Jersey Supreme Court Committee on Environmental Litigation.
- **Betty Wilson** has served as a member of the New Jersey General Assembly and as Assistant Commissioner and Deputy Commissioner of the NJ Department of Environmental Protection. There, she handled environmental policy issues including Pinelands planning efforts following Governor Byrne's 1979 signing of Executive Order 71, which established a Pinelands planning process and authorized creation of the first Pinelands Commission.

Reappointed Commissioners:

- **Candace Ashmun** has served as a member of the Pinelands Commission since its creation in 1979. She also has served on the State Planning Commission and as Executive Director and three-term President of the Association of New Jersey Environmental Commissions.
- **Stephen Lee** has served on the Pinelands Commission since 1982. An owner/partner of a 1,800-acre cranberry and blueberry farm in the heart of the Pinelands, he has served on the Board of Directors of Ocean Spray Cranberries, Inc., and on the Pinelands Environmental Council, an agency that preceded the Pinelands Commission.

Exiting Commissioners:

- **Jerrold Jacobs** served as Chairman of the Pinelands Commission since January 2000. He is retired Chairman and Chief Executive Officer of Atlantic Electric/Energy. He served on the State Planning Commission and as a Trustee of New Jersey Future, the State's largest smart-growth advocacy group, and as a Trustee to the NJ Chapter of the Nature Conservancy.
- **Sally Dudley** served since March 2000. She was Executive Director of the Association of New Jersey Environmental Commissions from 1987 to 2001. She also has served as mayor of Harding Township, Chair of the NJ Natural Lands Trust, member of the Governor's Council on NJ Outdoors and founding Trustee of the Pinelands Preservation Alliance.
- **Linda Eckenhoff** served since November 1998. Before becoming a full-time farmer, she worked in public schools for seventeen years as a physical education teacher, coach and recreation director. She initiated a drug awareness program for students, chairs an Educational Foundation and serves on both the Southampton Township Environmental Commission and Historical Society
- **Theodore Gordon** served since January 1999. He is the Director of Pine Barrens Inventories, a botanical consulting and research firm. He chairs the NJ Natural Areas Council, served as President of the Philadelphia Botanical Club and served as Chairman of the Burlington County Pinelands Conservation Easement Advisory Committee. He has taught pinelands and botany courses for the Philadelphia Academy of Natural Sciences, Rutgers University and the NJ Audubon Society.
- **Jay E. Mounier** served since January 1995. A hay and livestock farmer, he has served as chairman of the Franklin Township Environmental Commission, chairman of the Township Planning Board and Trustee and Treasurer of the South Jersey Land Trust. He is a founding member of the South Jersey Astronomy Club and Upper Maurice River Watershed Association.

OFFICES OF THE PINELANDS COMMISSION

Office Overview

Although relatively small, the dedicated 55-member Commission staff is responsible for designing and implementing the initiatives and functions of the Commission. The office's and their key responsibilities are as follows:

- **Executive Office:** Supports Commission members and meetings; directs commission staff; develops overall work programs and financial budgets, interfaces with elected officials, federal, state and local government agencies, residents and environmental and business organizations; makes administrative decisions and recommendations to the Commission; and testifies at legislative hearings.
- **Planning Office:** Responsible for long-term planning and monitoring of Pinelands land-use, zoning, socio-economic, and cultural resources; in consultation with federal, state, and local agencies, critiques land use and environmental laws, regulations and policies; works with municipalities to ensure master plan and local zoning compliance and consistency with the CMP; advises the Commission on planning matters and specific applications; and manages planning initiatives and projects.
- **Project Review Office:** Reviews and tracks public and private development applications and permits to ensure compliance with the CMP through rigorous application of environmental and land-use standards; ensures that development does not adversely affect the environment; interfaces with public agencies regarding permits, memoranda of agreement and regulatory policies; works closely with the NJ Attorney General's office, other agencies and municipalities to address violations of the CMP through enforcement actions; and advises the Commission on applications, enforcement matters, litigation and agreements.
- **Science Office:** Conducts the long-term scientific monitoring and research studies; advises the Commission and staff on biological, hydrological and geological issues; interfaces with federal and state and local agencies, academia and scientific bodies to develop and review environmental policies; and initiates special research studies to address specific resource questions and issues.
- **MIS/GIS Offices:** Responsible for the development and maintenance of computer technology and geographic information systems (GIS) to support all functions of the Commission; helps to inform staff and the Commission through the preparation of maps and graphics that illustrate important information and assessments; and conducts special studies and initiatives to increase efficiency.
- **Communications & Education Offices:** Works with the media, public and academia to inform and educate about the Pinelands and Commission; prepares press releases, interfaces with the Executive Director, Commission, staff and reporters to both initiate and respond to news items; prepares and organizes informational and educational events; administers Open Public Records Act program; and assists in the preparation of reports and articles.
- **Administration/Fiscal:** Responsible for developing and administering annual budgets, invoicing, payroll, personnel policies and matters, requests for proposals, vendor and consultant contracts, and facility operations.

Collaboration on Cross-cutting Issues

A number of the major initiatives described in this report were possible due to the collective team efforts of all Commission offices. The Review of the CMP, the Alternative Septic Program, the permanent land protection efforts, the streamlining process and study of the Mullica Watershed resources were important initiatives in 2002 that involved collaborative efforts by staff.

While a description of each office's achievements for 2002 would be far too extensive to detail in this report, provided below are some highlights for each office.

The Planning Office took a leadership role in the commencement of the Third Review of the CMP through the preparation of the initial report and the organization of four panel discussions to address the most significant issues in this review. Planning staff worked closely with the Regional Growth Area communities and other interested parties in the implementation of the 20 percent down-zoning amendment and the Pinelands Excellence Program, designed to foster smart growth principles in these growing communities. Staff reviewed and certified 110 ordinances during 2002.

The Project Review Office also carried a significant workload in 2002, reviewing approximately 1,300 new applications coupled with an existing caseload of approximately 3,000 applications. Staff was able to successfully identify environmental issues and facilitate modifications to numerous projects to address those issues. Through the faxed permit procedure used for nearly 1,500 local permits in 2002, and other streamlining measures, the office was able to expedite the review of those projects that would not result in adverse impacts to the environment.

The Science Office developed a work plan for the \$5.5 million Kirkwood-Cohansey Study, and completed all or significant portions of a number of important long-term monitoring efforts and studies, including the Rancocas Creek Basin Study, the Great Egg Harbor River Basin Study, and the Timber Rattlesnake Study.

The MIS Office was instrumental in outfitting the Commission's offices with new computer equipment and software. The GIS office was successful in establishing a Pinelands-wide cooperative agreement for the data sharing of tax-block and lot data among state and local agencies to facilitate comprehensive planning and expedited reviews throughout the seven Pinelands counties. Both offices worked closely together to initiate Phase One of the streamlining initiative, which will ultimately result in the redesign of the Commission's Information System to enable the access of information electronically by the Commission's partnering agencies and all interested parties.

The Public Information and Education Offices were successful in getting out information about the Pinelands and Commission activities through press releases, special events such as the 13th Annual Pinelands Short Course at Richard Stockton College of New Jersey and the Local Public Officials Seminar. The Pinelands Educational Advisory Council met during that period to provide staff with recommendations on public outreach and educational opportunities.

The Administrative and Fiscal Offices advanced a number of important fiscal and operational initiatives in 2002. To support the Commission's fiduciary and financial oversight responsibilities, staff worked with consultants and the Office of the State Treasurer to ensure timely and high quality financial statements and audits. Staff worked with the New Jersey Building Authority to advance the \$1 million restoration of the Fenwick Manor complex, which houses Commission operations and offices.

MAJOR INITIATIVES IN 2002

THIRD REVIEW OF THE COMPREHENSIVE MANAGEMENT PLAN (CMP)

An important initiative for the Commission in 2002 was the commencement of the third review of the Pinelands CMP. The review was officially launched in January 2002, through the submission of the *Third Progress Report on Plan Implementation* by the Executive Director to the Commission. A periodic review of the CMP is required by Section 502 of the National Parks and Recreation Act of 1978 and the New Jersey Pinelands Protection Act. This review ensures that the CMP continues to be a "living" and "workable" document that responds to changing conditions, lessons learned and innovations.

The report describes actions taken to further Pinelands protection goals over the past ten years (since the last progress report was issued) and presents the status of key programs since the CMP's inception in 1980. The report also includes recommendations to stimulate discussion during the review period.

Permanent land protection of ecological resources and farmland and pursuing smart growth for the Regional Growth Communities were two of the key issues targeted for the review. To address those issues, leaders from government, municipalities, environmental organizations, academia, the business community and developers participated in a series of public panel discussions in the Spring of 2002 to discuss these issues and develop potential solutions. In addition, former Chairmen Richard J. Sullivan, Daniel Keleher and other state leaders, were panelists on a special forum to discuss regional issues and major policies relevant to the review of the CMP. Each of the forums entailed a moderated discussion of expert panelists followed by public comment. The information conveyed during these forums will serve as a significant source of input to Commission staff in crafting a series of goals, strategies and initiatives for the Commission to consider.

In December 2002, the Pinelands Commission held a special meeting at the Eagleton Institute of Politics at Rutgers University to review the work completed to date and discuss the next steps in plan review implementation. In the coming year, the Commissioners will be reviewing goals and selecting the strategies and initiatives that best match priorities. This effort will result in an overall critique of the Plan and recommendations that may result in modifications to the Plan and future work plan initiatives over the coming years.

ADDRESSING GROWTH ISSUES IN REGIONAL GROWTH AREA COMMUNITIES

The Pinelands Excellence Program

The Pinelands Excellence Program, funded by a grant from the Geraldine R. Dodge Foundation, was created in 2001 with the goal of fostering the development of "livable communities" in the rapidly developing Pinelands Regional Growth Areas. The overall approach to be taken in achieving this goal involves providing expert consulting assistance to two Regional Growth Area communities to identify and address their most pressing growth-related issues, resulting in the development of detailed community action plans. Results will then be shared with other communities facing similar issues through a series of educational seminars.

Several key project milestones were accomplished in 2002, beginning with the selection of the participating communities. With assistance from the Pinelands Municipal Council and the New Jersey Office of Smart Growth, the Commission selected two municipalities to participate in the program: Hamilton Township in Atlantic County and Winslow Township in Camden County.

The two towns then joined the Commission, again with help from the Pinelands Municipal Council, in selecting a consultant to work closely with the communities throughout the project. The request-for-proposals issued by the Commission attracted interest from nationally recognized firms, with a contract ultimately awarded to the firm of Glatting Jackson Kercher Anglin Lopez Rinehart, Inc. (subcontractors are Kise Straw & Kolodner and Cahill Associates). Preliminary areas of interest identified by the communities included: development of new stormwater management techniques; architectural guidelines; approaches to relieve traffic congestion; adaptive reuse of historic buildings; and town center development.

Using the input provided from a visioning process to take place during 2003, the consultants will lead community design "charrettes" to rough out concepts and physical plans for future development, which will be used to develop a long-range strategic vision. This vision will guide the preparation of community action plans for both towns, focusing on specific products and recommendations in the areas of zoning, subdivision, and site plans; architectural design; and transportation, infrastructure, and community facilities (including open space). The action plans will include implementation strategies with information on responsibilities and support for implementation. At the conclusion of the project, results will be shared with the broader community through a series of educational seminars at the Commission's Richard J. Sullivan Center.



Nine Pinelands Management Area designations regulate the types and intensities of development that are permitted throughout the Pinelands. This aerial photograph shows the contrast between a Pinelands Forest Management Area (left) and Pinelands Regional Growth Area (right) in Stafford Township, Ocean County (divided by Route 72). The photo illustrates how effective Pinelands zoning has been at directing growth. Note the vivid sand trails through the forest. The darker-shaded forest areas are Atlantic White Cedar swamps along the Manahawkin Mill Creek. (photo: USGS National Aerial Photography Program, 1995/97)

Down-zoning for Egg Harbor and Hamilton Townships

In advance of analyzing the regional growth area issues in greater detail as part of the Third Review, the Commission elected to provide immediate relief to regional growth area communities experiencing significant growth pressures, through approval of an amendment to the CMP in 2001. The amendment allows those regional growth communities with the highest permitted residential densities to reduce their overall density by up to 20 percent.

The amendment was adopted in 2002 after an extensive comment period and discussions with the affected communities, developers, environmental groups and other interested parties. The amendment affords these towns the ability to re-examine land use and zoning issues and opportunities, as well as providing them the time to plan for their long-term infrastructure needs.

During 2002, the Atlantic County towns of Egg Harbor Township and Hamilton Township worked closely with Pinelands Commission planning staff to implement the permitted reductions through the development of modifications to their master plans and local zoning. These modifications, when combined with other recent actions, resulted in a 30 percent reduction of permitted capacity for both townships. In addition to reducing the permitted density, the local ordinance changes promote greater use of the Pinelands development transfer program by requiring the purchase of PDCs at lower residential densities. Greater use of this program results in the permanent protection of ecological resources and farmland throughout the million-acre Pinelands. The zoning changes were also designed to ensure that new density assignments are achievable and that local planning is done to address density-related impacts.

PERMANENT PROTECTION OF LAND FOR CONSERVATION & AGRICULTURE

Permanent Land Protection Committee

The Pinelands Commission Permanent Land Protection Committee was formed in 2002 to oversee one of the most critical aspects of ecological preservation within the Pinelands - the long-term protection of environmentally, historically, or agriculturally significant tracts of land. This may be accomplished through conservation-oriented land acquisition, open space or farmland easements, or a variety of other land protection tools and initiatives. Among the new Committee's objectives are:

- prioritization of key ecological or other attributes as a basis for land preservation decisions;
- identification and consideration of study areas which possess a number of these desirable qualities;
- analysis of data relating to specific properties under consideration for permanent protection;
- establishment and fostering of partnerships with State, local, and non-profit agencies and organizations sharing a common goal of land protection;
- examination of existing regulations and policies with an eye toward enhancing our ability to facilitate protection of ecologically sensitive areas; and
- oversight of the cataloguing of existing permanent land protection information in order to provide the Commission and its partners with a useful database for future land protection endeavors.

Cape May County Municipal Utilities Authority Acquisition Fund

2002 marked a significant milestone in the implementation of the Cape May County Municipal Utilities Authority (CMCMUA) land acquisition fund, as the program funded its first land purchases under a 1999 agreement between the Pinelands Commission and The Nature Conservancy (TNC) of New Jersey to jointly administer the program. The fund was established under a mitigation agreement between the Pinelands Commission and the CMCMUA under which the CMCMUA pledged \$2.25 million to fund acquisitions throughout the Pinelands National Reserve.

In May 2002, the Commission reimbursed TNC \$238,494 for half of the acquisition costs of 382 acres of critical Pinelands habitat in Atlantic and Ocean Counties. A 15-acre acquisition in Galloway Township expanded TNC's Hirst Ponds Preserve, the site of high-quality Pinelands vernal ponds, and an acquisition in Barnegat Township will permanently protect a 367-acre swath of the unique East Pine Plains, dominated by pygmy pitch pine forest.

In late 2002, the Pinelands Commission and TNC initiated a \$400,000 land acquisition grant program for local and county governments and non-profit organizations, also funded by the CMCMUA agreement. In addition, the Commission and TNC were finalizing the terms of a new acquisition of some 500 acres in Burlington County.



The Pinelands Commission worked with The Nature Conservancy (TNC) of New Jersey in 2002 to permanently protect 382 Pinelands acres, including expanding TNC's Hirst Ponds Preserve (above) in Galloway Township, Atlantic County. Hirst Ponds is a system of Pinelands vernal ponds which provide habitat for Pine Barrens treefrogs (*Hyla andersonii*) as well as the rare Hirsts' panic grass (*Panicum hirstii*), first collected at this location in 1959 by Frank and Robert Hirst. (photo: Melissa Morris, The Nature Conservancy of New Jersey)

SADC Farmland Preservation

In 2002, in cooperation with the Pinelands Commission, the State Agricultural Development Committee (SADC) continued to work toward protecting farmland within the Pinelands. SADC prepared for the first purchases of development easements under a 2001 Memorandum of Agreement between the Commission and the SADC to share the costs of purchasing the deed restrictions on Pinelands farms. This agreement complements a revised valuation formula developed by the SADC that changed the way farmland easement values are calculated in the Pinelands. Under the shared funding initiative, the Commission will help fund the preservation of 30 farms, totaling more than 3,100 acres.

In addition, the SADC is proceeding with a second round of 29 Pinelands farms totaling nearly 2,500 acres. Another six farms totaling 689 acres are slated for protection under a Southampton Township Planning Incentive Grant program.

Limited Practical Use Program

The Limited Practical Use (LPU) Program offers owners of small properties in the Pinelands (less than 50 acres), whose application for a Waiver of Strict Compliance (a variance from normal Pinelands zoning or environmental standards) has been denied by the Commission, the opportunity to sell their land to the State of New Jersey. In 2002, 30 land parcels, totaling 68 acres, were declared eligible for this acquisition program by the Commission, bringing the total number of parcels declared eligible since the inception of the program in 1995 to 396, totaling 1,440 acres. To date, more than \$1.4 million has been spent to buy and permanently protect 306 of these parcels totaling 950 acres, using a combination of Green Acres funds and federal reimbursements. Acquired land may be subsequently transferred to Pinelands municipalities, other government agencies and conservation organizations. All of the purchased parcels are permanently deed restricted to ensure they remain undeveloped.

Pinelands Development Credit Program

Pinelands Development Credits (PDCs) are allocated to landowners in the Preservation, Agricultural and Special Agricultural Production Areas (known as sending areas). These credits can then be purchased by property owners/developers interested in developing land in Regional Growth Areas (known as receiving areas) and used to increase the densities at which they can build. Once credits are "severed" from a sending area property, the property is permanently protected by a conservation deed restriction and the credits on the property can then be sold. Credits are bought and sold in units called "rights." Four rights are equal to one credit. During 2002, 363 rights were severed, protecting over 2,700 acres of ecologically sensitive areas and farmland. This brings the total land area protected through the severance of PDCs since 1982 to 36,750 acres.

NJDEP Green Acres Pinelands Acquisitions

In 2002 the NJ Department of Environmental Protection Green Acres Program continued to acquire land for open space preservation within the Pinelands. One of the largest projects completed during the year was the Thomas acquisition, consisting of over 3,000 acres spread over six municipalities. During 2002, over 6,000 acres were acquired by the State within the Pinelands, bringing total State Pinelands acquisitions since 1980 to over 125,000 acres.

Pinelands License Plates

In 1998, Pinelands specialty license plates became available to New Jersey motorists who want to demonstrate their support for the Pinelands while helping to protect open space in the region. After reimbursement of the Division of Motor Vehicles for expenses associated with the plates, proceeds from application and renewal fees are deposited in the Pinelands Preservation Fund for acquisition of ecologically sensitive land in the Pinelands. The fund is managed by the NJ Department of the Treasury and land acquisitions are administered by the NJDEP. During Fiscal Year 2002, 975 new sets of Pinelands plates were issued and 3,125 sets were renewed. The fund balance at the close of Fiscal 2002 stood at \$232,855.

Other Land Protection Projects

In 2002, staff completed mapping and data collection for 13 study areas identified as high priority protection zones due to their ecological attributes. Additionally, staff prepared a comprehensive report on permanently protected land in the Pinelands. The Commission played a large role in at least two major buildout analyses, and worked cooperatively with other state and federal agencies, local governments and non-profit conservation groups.

PROTECTING & PRESERVING WATER, ECOLOGICAL & HABITAT RESOURCES

Pinelands Commission Science Committee

Chaired by Pinelands Commissioner Robert McIntosh, the Pinelands Commission Science Committee held its first meeting in June 2002 and a second meeting in December 2002. The purpose of the committee is to consider and evaluate the short and long-term scientific assessments and studies that facilitate a greater knowledge of the Pinelands resources, development and modification of measures and regulations to protect these resources, and development of information to support on-going land use and development decision-making by the Commission. The Science Committee also provides a public forum for the discussion of ongoing science program activities.

Water Supply Planning

Protection of water resources, both quantity and quality, was a major goal behind passage of the State and federal Pinelands Protection Acts. The Commission is engaged in many long-term studies to characterize the Pinelands water resources and develop measures to ensure their long-term protection. A number of these new and on-going initiatives are described below.

The Commission is working closely with NJDEP, other state, federal and local agencies to protect the shallow Kirkwood-Cohansey Aquifer from the threat of over-exploitation. In November of 2002, the Commission participated in the Public Advisory Committee kickoff meeting for the development of the next New Jersey Statewide Water Supply Plan by NJDEP. This effort will incorporate the suggestions of a long list of stakeholders into a planning process that will determine how to best meet the water supply needs of the state over the next several decades. Commission staff will be participating members on the Smart Growth and Water Supply Subcommittee as part of this ongoing effort. In response to water supply issues and a state-wide drought emergency, Governor McGreevey declared a building moratorium for the Pinelands Regional Growth Area communities in Atlantic County in September. The order continued through the end of the year. The \$5.5 million Kirkwood-Cohansey Study, headed up by the Commission and its partners, will be invaluable in guiding long-term protection measures for this important water resource.

Pilot Program for Alternate Design Wastewater Treatment Systems

Based on studies conducted by the Commission's Alternative Design Wastewater Treatment Systems Committee, the Commission promulgated regulations in 2002 to implement a pilot water protection program in the the Pinelands. This new program, which took effect on August 5, 2002, will result in residential wastewater systems that are two to three times more effective than conventional and pressure-dosing systems in reducing groundwater nitrate pollution. The new systems will be required for new homes on lots smaller than 3.2 acres in size. Five advanced treatment technologies (Amphidrome, Bioclere, Cromaglass, FAST and ASHCO RFS III) have been authorized for use subject to a number of stringent operation and maintenance standards. The culmination of a two-year effort, these technologies were selected by an Ad Hoc Committee comprised of representatives from the Commission, the Pinelands Municipal Council, the New Jersey Builders Association and the Pinelands Preservation Alliance, with the support of engineers and scientists from the NJDEP.

The draft rule for the Program was published in the New Jersey Register on February 4, 2002. A public hearing on the draft rule was held on March 11, 2002. Significant outreach efforts and dialogue helped to shape the proposed program. To ensure the long-term success of the program, the Commission hired a Wastewater Management Coordinator in January 2002 to coordinate and manage all design and implementation aspects of the program.

In support of this effort, Commission staff drafted ordinances for each of the 40 municipalities that are affected by the program. Commission staff met and will continue to meet with municipalities to explain the program and answer questions posed by municipal representatives and residents.

During October and November of 2002, the Pinelands Commission held a two-day seminar to inform health department and municipal officials, treatment plant operators, engineers, septic installers, realtors and home builders how to best meet their responsibilities under the new program. Attended by over 200 people, the seminar addressed key aspects of the new regulatory program, including technologies, permitting, warranty, operation and maintenance, monitoring and deed notice requirements. Working with technology vendors and representatives from other agencies, staff developed prototypical system warranties, operation and maintenance contracts, user manuals, wastewater sampling, reporting procedures and deed notices. The program was approved by the New Jersey Department of Health and Senior Services for credit toward Health Officer and Registered Environmental Health Specialists license renewal requirements.

Water Allocation Permits

As part of its regular review of water diversion applications received by NJDEP, the Commission commented on a proposed withdrawal from a Kirkwood-Cohansey well in Manchester Township, Ocean County. Partly because of the concerns raised by the Commission regarding potential impacts of the draw-down on local wetlands and stream systems, a public hearing was convened, and alternative water supply sources are being pursued.

Earlier in the year, Pinelands Commission Executive Director Annette Barbaccia testified at a NJDEP hearing, urging the agency to recall the Water Allocation Permit for a well in Berlin Township that began operation in 1997, arguing that depletion of the aquifer can have far-reaching adverse impact on the viability of Pinelands ecosystems. Although not located within the boundaries of the Pinelands Area, operation of the well has resulted in reductions of ground water levels, surface waters and streamflows in nearby Pinelands areas. The impacts also threaten local populations of Swamp Pink (*Helonias bullata*), a plant species listed as threatened under the federal Endangered Species Act.

As a result of these and other recent developments, the Commission hopes to work with the NJDEP in re-evaluating a 1989 policy agreement between the two agencies. The policy provides a mechanism for the Pinelands Commission to comment on proposed water diversions that are outside the Pinelands, but have direct hydrologic connection to the region. The policy calls for alternative water supply sources to be used, unless it can be shown that Kirkwood-Cohansey withdrawals will not adversely affect the Pinelands ecosystem.

The Kirkwood-Cohansey Study

The Pinelands Commission, working with state and local elected officials, federal, state and local agencies and other interested parties helped to advance important legislation to protect the 17-trillion-gallon Kirkwood-Cohansey Aquifer that supports the ecological habitats, farmland and communities within the Pinelands. Pursuant to New Jersey Public Law 2001, Chapter 165 adopted by the State Legislature in 2001, the Pinelands Commission has been charged by the Legislature to assess and prepare a report on the key hydrologic and ecological information needed to determine how the current and future water-supply needs within the Pinelands area may be met while protecting the Kirkwood-Cohansey Aquifer system and avoiding any adverse ecological impact on the Pinelands area.

The \$5.5-million-dollar aquifer assessment study is to be implemented by the Commission in cooperation with the NJDEP, Rutgers University, the US Fish and Wildlife Service, and the US Geological Survey. Scientists from the cooperating agencies and institutions met throughout 2002 to design a draft work plan for the project. The work plan addresses two major research questions. First, what are the probable hydrologic effects of groundwater diversions from the Kirkwood-Cohansey Aquifer on stream flows and wetland water levels? Second, what are the probable ecological effects of induced stream-flow and groundwater-level changes on aquatic and wetland communities?

Great Egg Harbor River Basin Study

A significant part of the 2002 field season was dedicated to completing a survey of the Great Egg Harbor River basin. Monthly pH and specific conductance measurements were completed at 58 stream stations from April through December. Fish were surveyed at 33 stream sites and 11 stream impoundments, frog-vocalization surveys were completed at 44 stream impoundments, and stream vegetation was sampled at 40 stream sites. Water-quality sampling will continue through March 2003. A report describing the results of this assessment will be prepared in the upcoming year.

Rancocas Creek Basin Study

A draft report describing the ecological status of surface waters in the Rancocas Creek basin was completed in 2002 and reviewed by the Pinelands Commission Science Advisory Committee. This is the second in a series of reports describing the aquatic resources of major Pinelands drainage basins. The Rancocas Creek report was based on water-quality and biological-community data collected throughout this drainage basin. Stream or lake sampling stations included 69 water-quality (pH and specific conductance) monitoring sites, 58 fish-survey sites, 67 anuran-survey sites, and 45 stream-vegetation sampling sites. Most of the Rancocas Creek monitoring sites were co-located with the NJDEP's Ambient Biomonitoring Network and Index of Biotic Integrity monitoring sites. Coordinating the Commission's assessment with NJDEP's efforts will result in a better characterization of the status of Pinelands surface waters. The report is planned for release in 2003.



A blanket of cinnamon fern (*Osmunda cinnamomea*) dominates the understory of a hardwood swamp near the North Branch of the Rancocas Creek in Pemberton Township, Burlington County. In 2002, Commission Scientists completed a comprehensive assessment of aquatic and wetland resources in Pinelands portions of the Rancocas Creek Basin. (photo: Robert Zampella, Pinelands Commission)

Mullica River Basin Study

During 2002, the Pinelands Commission continued to assess the implications of the comprehensive report, released in December 2001, describing results of the Commission's landscape, water-resources, and wetland-community monitoring program in the Mullica River basin. The data presented in the report clearly demonstrated a relationship between aquatic and wetland resources, water quality and land-use-related watershed disturbances. The results of the study provide a sound scientific foundation for the Commission's watershed-planning efforts in the Mullica River basin. The Commission plans to use the results to develop a method for identifying impaired waters in the basin. The results of the Mullica River basin study also established protocols for evaluating the status of other Pinelands stream systems.

Mullica Watershed Planning Project

Under a contract with the NJDEP, the Pinelands Commission oversees development of management strategies for the Mullica River Watershed, also known as Watershed Management Area 14. The Mullica Watershed encompasses part or all of 24 municipalities in four counties (Atlantic, Burlington, Camden, and Ocean), and has a population of approximately 84,000 people. A Steering Committee was formed by the Commission to represent a broad variety of interests in the Mullica watershed, including environmental and business groups, academia, local government, and agricultural and recreational interests.

2002 was truly a "watershed" year for the project. The initial five Technical Focus Groups - Permanent Land Protection, Recreation, Agriculture, Wastewater Management and Sustainable Development - met during the spring and summer to discuss issues relevant to water quality, water quantity and ecosystem health in the watershed. Each group brought together national, state and local experts to consider a series of questions related to their specific topic area, identified needs for additional data and produced practical recommendations for the project.

Project participants identified nearly 80 potential projects for NJDEP's "Action Now" funding program, which was designed to address immediate watershed needs. Pinelands Commission staff submitted several projects to NJDEP for funding, including remediation of erosion damage along four Mullica tributaries that flow through Wharton State Forest and a Backyard Wildlife Habitat Program in Galloway Township. Staff continued to work with watershed partners to develop other project proposals, including mapping and retrofitting the Hammonton Town stormwater management system; designing a model community wastewater system for the Village of New Gretna in Bass River Township; and assessing and retrofitting stormwater infiltration basins in the watershed.

In July 2002, comments were submitted to NJDEP on the proposed 2002 *Integrated List of Waterbodies*, which identifies New Jersey's impaired streams and lakes. Staff found that some of the classifications assigned to streams in the Mullica Watershed were inconsistent with Commission monitoring data and began working with NJDEP scientists to develop a stream classification strategy that accounts for unique Pinelands conditions. Staff also met with NJDEP water monitoring staff to make recommendations on the siting of monitoring stations in the Mullica Watershed, based on knowledge gained through the Commission's Long-Term Environmental Monitoring Study.

Commission staff developed several efforts to educate the public about watershed management, including the presentation of a hands-on Project WET (Water Education for Teachers) workshop for teachers; the publication of two issues of the project newsletter, "Mullica Watershed Watch"; and updates to the project website (www.nj.gov/pinelands/mullica). Commission staff also presented information about the watershed project at several local events, including the Pinelands Short Course, the Burlington County Natural Science Club, the NJ Farm Bureau - Burlington County chapter, the NJ Science Olympiad, the Burlington County Earth Fair and the 26th Annual NJ Science Convention.

Mullica River and Great Egg Harbor River Stream Monitoring

The Commission and the US Geological Survey (USGS) continued to implement two cooperative stream-gaging programs in 2002. Funded by the Camden County Municipal Utilities Authority, the project is designed to determine whether wastewater transfers from the lower Camden County area are having an impact on stream flows in portions of the Mullica River basin. The Commission and the USGS are conducting a similar stream-gaging project at five stream stations in the Upper Great Egg Harbor River basin of Gloucester County in cooperation with the Monroe Township Utilities Authority. An updated analysis of stream-flow trends will be completed for both programs during the upcoming year.

Water-level Monitoring

During 2002, monitoring of growing-season water levels at five pitch pine lowland reference sites continued for the 15th year. With the exception of one year, these sites have been monitored continuously since 1987. Growing-season water levels were monitored at 14 coastal plain ponds for the seventh consecutive year. The results of these monitoring program have been applied directly towards development of the Kirkwood-Cohansey project work plan.

Cranberry Agriculture and Wetlands

Begun in 2000, A USEPA-funded study of the potential effect of past and present cranberry agriculture on selected landscape features and aquatic communities in the Mullica River and Rancocas Creek basins continued. During 2002, monthly crest-gage measurements were completed at 17 stream sites. Specific conductance, pH, and dissolved oxygen were measured at 21 stream sites. Fish and macroinvertebrates were surveyed at six and 13 sites, respectively, and fish sampling for length-weight estimates was also conducted at three stream sites. Vegetation was sampled along 31 stream transect sites. Periphyton (attached algae) were sampled at 17 sites on two separate occasions. A methodology to assess wetland characteristics and stream metrics for the stream drainage and wetland-landscape pattern analysis was developed. The project is expected to be completed by 2005.

Littoral Communities

In 2001, the Commission received a grant from the USEPA for a research project titled, "Monitoring the ecological integrity of Pinelands wetlands: the effect of watershed disturbance on the littoral communities of stream impoundments." The results of this study of littoral (near-shore) biota will allow the existing baseline inventory of Pinelands vegetation, fish, and anuran communities to be expanded to include impoundments and help to refine previously developed land-use/ecological relationship models. During 2002, a list of potential study sites was prepared and study-site reconnaissance and selection was initiated.

Coastal Plain Ponds

Commission staff is participating in a study of coastal plain ponds led by the NJDEP Office of Natural Lands Management. Funded by a USEPA grant, the objectives of the Pinelands portion of the study are to classify plant communities of coastal plain ponds throughout the Pinelands National Reserve, identify reference coastal plain ponds for comparison with pond communities in need of restoration, assess threats and management needs to maintain environmental quality, and establish study plots in high quality and degraded ponds as part of a permanent monitoring program to track the status of coastal plain ponds. The study builds upon the Commission's ongoing coastal plain ponds investigations and will contribute to the Kirkwood-Cohansey Study project. Commission scientists surveyed 18 ponds in 2002.

Remotely Sensed Indices of Land Use Intensity for Watershed-Level Monitoring

Commission scientists are participating in a study by the Center for Remote Sensing and Spatial Analysis at Rutgers University. The study objective is to monitor land use and habitat changes in the Mullica River basin and to relate the changes to surface water quality. The water quality component of the project will build upon the results of the Commission's long-term environmental monitoring efforts in the Mullica River basin. The study is funded by the National Oceanic and Atmospheric Agency's Cooperative Institute for Coastal and Estuarine Environmental Technology Program.

Pine Snake Surveys

Following the discovery of a dead juvenile pine snake (*Pituophis m. melanoleucus*) at an Evesham Township housing development in late 2001, Pinelands Commission science staff began regular surveys of the area during the spring of 2002 to determine if the area supports a pine snake population. In late June, Commission scientists discovered an underground pine snake nest containing an adult female, a clutch of ten viable eggs, and two sets of eggs hatched in previous years. This prompted the Commission's to halt further construction in portions of the site until appropriate measures can be taken to protect the pine snake habitat.

Rattlesnake Study

As part of a settlement agreement of litigation regarding the discovery of endangered timber rattlesnakes (*Crotalus h. horridus*) at an Evesham Township housing development project, the Commission and the NJDEP Endangered and Nongame Species Program jointly initiated a three-year program to monitor the movement of timber rattlesnakes in a section of the Township. 2002 was the second year of the study. The purpose of the study is to assess the movements of transmitter-implanted snakes relative to the constructed portion of a development and to evaluate the effectiveness of snake-exclusion fences and under-road passages intended to direct snakes away from the development.

Six rattlesnakes were monitored during the 2002 field season, from April to October. During the active season, snakes traveled distances up to six kilometers from their hibernacula. A gravid female snake stayed in the immediate vicinity of her hibernaculum during the gestation period. Although only partly constructed during the 2002 field season, the snake exclusion fence was of limited effectiveness. All rattlesnakes crossed the fence at least once by either moving through damaged sections or under using animal burrows.



Pinelands Commission Science Office Field Technician Andrew Du Brul moves an eastern timber rattlesnake (*Crotalus h. horridus*) for observation in Evesham Township, Burlington County. As part of the Commission's ongoing rattlesnake monitoring program, the snakes are tracked using radio telemetry to help enhance understanding of the elusive species' ranges and behavior. (photo: Francis Rapa, Pinelands Commission)

OTHER PLANNING ACTIVITIES

Review of Municipal Ordinances

All municipalities and counties in the Pinelands Area are required to revise their master plans and land use ordinances in order to implement the objectives and standards of the CMP. To date, all 7 counties and 52 of the 53 municipalities with land in the state-designated Pinelands Area have had their master plans and land use ordinances certified by the Commission. Amendments to certified county and municipal master plans and land use ordinances must also be submitted to and reviewed by the Commission.

During 2002, the Commission reviewed and certified 110 such ordinances and master plans from 26 different Pinelands municipalities. Notable among these were master plans and ordinances that implemented density reductions in residential zoning capacity in the Regional Growth Areas of Egg Harbor and Hamilton Townships in Atlantic County. A number of farm-related re-zonings were certified as well, including the expansion of existing Agricultural Production Areas in Franklin Township and the Town of Hammonton by 85 and 49 acres, respectively, and the expansion and creation of approximately 825 acres of new Agricultural Production Areas in Buena Vista Township. These re-zonings were adopted to reflect the existing uses of the affected parcels, to qualify these parcels for allocations of Pinelands Development Credits, and ultimately to allow the landowners to take advantage of the State Agricultural Development Committee's program to purchase farmland easements in Pinelands agricultural areas.

Also in 2002, the Commission began posting information on its website related to municipal and county master plans and ordinances in an effort to provide additional notice of the Commission's review process. A continuously updated list of such documents submitted to the Commission for review, including a brief description of each master plan or ordinance amendment, is now available.

Long-term Economic Monitoring Program

A cooperative project administered by the Pinelands Commission and funded by the National Park Service, the Pinelands Long-term Economic Monitoring Program monitors, collects and analyzes data to gauge the economic health of the Pinelands region over time. In 2002, the program tracked 20 variables, and for the first time the program compiled a municipal fact book, included in the program's annual report, which presents economic data arranged by municipality. The municipal fact book provides a better understanding of the unique economic characteristics of each of the 53 Pinelands Area municipalities. Additionally, data for each Pinelands municipality is ranked and averages are compared using data from 202 South Jersey municipalities.

The Commission also made changes in variables collected in 2002, including the adjustment of monetary values from 1995 to 2000 Consumer Price Index dollars for data such as retail sales, per capita income, average property tax bill, equalized property values, median home prices, and blueberry and cranberry production and sales data. Another improvement for 2002 is the addition of block-level census data for municipalities both inside and outside of the Pinelands, which allows for more accurate comparative analysis between Pinelands and non-Pinelands area population data.

In 2002, work continued on special studies. Data collection for vacant land analysis continued throughout 2002 and data for the municipal health study was also updated. Data collection for these projects will end in 2003, and analysis will begin. The economic program also collected a number of supplemental variables, particularly from the 2000 census, and restructured the Commission's economic database, enhancing its consistency and usefulness.

Pinelands Scenic Byway

2002 saw the proposed Pinelands Scenic Byway advance ever closer to fruition. Scenic byways have been designated throughout the nation as a result of the federal Intermodal Surface Transportation Efficiency Act of 1991. The Act provides grant funding and other incentives to entities seeking formal recognition of public thoroughfares with surpassing natural and/or cultural qualities. New Jersey adopted a parallel program a few years later and delineated its first byway not long after. The Pinelands Scenic Byway could become New Jersey's second such route.

The Pinelands Commission has been working with sixteen municipalities and five counties to develop a scenic byway through the southeastern portion of the Pine Barrens. The "South Jersey Pineway" (the current working title for the byway) meanders through areas of striking natural beauty and rich historic heritage. With a focus on maritime portions of the Pinelands, the route takes particular advantage of the scenic qualities and historic hamlets of the Mullica, Maurice and Tuckahoe River Corridors.

The impetus for the byway designation arose from the Pinelands Rural Economic Development Program, which examined economic conditions in several Pinelands towns and recommended measures to stimulate environmentally suitable growth through various planning initiatives, incentives, public improvements, and redevelopment. One suggestion was for a New Jersey and National Scenic Byway that would bring widespread awareness of, and interest in, the natural assets of the Pinelands.

In May of 2002, a temporary organizing committee was formed, comprising six municipal representatives. The organizing committee will review any proposed amendments to the route and drafts of byway nomination materials until such time as a permanent management committee of municipal representatives is appointed to administer the byway over the long term. Also during 2002, the Pinelands Commission began soliciting official support from the municipal and county governments along the route. At year's end, ten municipalities and two counties had passed resolutions supporting the byway. Once all of the resolutions are adopted, work will begin on an inventory of natural and cultural resources along the byway.



The Pinelands Commission is working with 16 municipalities to create a Scenic Byway that will highlight some of the scenic natural and cultural resources of the lower Mullica River Basin and Delaware Bayshore portions of the Pinelands. The historic village of Head of the River, above, which straddles Estell Manor, Atlantic County and Upper Township, Cape May County is included along the route. (photo: Kimberly Beidler, Pinelands Commission)

After the byway receives state recognition, the nomination will be forwarded to the US Secretary of Transportation for federal designation. Listing as a byway enables the sponsors to apply for program-affiliated grants and provides access to a variety of promotional and marketing opportunities, including development of visitor centers, wayside exhibits, and self-guided tours. The byway will also be featured in the US Department of the Interior's byway website and in other state and national tourism materials and maps and will receive signage supplied by the DOT.

Cultural Resources

Late in 2002, Commission staff entered into discussions with Fort Dix archaeologist Dr. Peter Pagoulatos about the possibility of developing a predictive model of prehistoric site occurrence. The predictive model will involve an examination of the Commission's prehistoric cultural resource data in order to clearly identify both site and non-site locations (i.e., locations where presence or absence of evidence of Native American occupation is securely documented). With the help of GIS staff, this information will be combined with data about certain environmental attributes in the vicinity. The results will then be subject to a statistical analysis wherein it is hoped that reliable patterns will emerge that demonstrate, with a reasonable degree of accuracy, the probability of site occurrence at other locations with similar attributes. It is anticipated that, when completed, the model will increase efficiency and prevent unnecessary surveys.

The staff has been coordinating with Mullica Township officials in an effort to find a buyer or a new use for the historic site of Pleasant Mills, near Batsto. Through the efforts of the staff, the picturesque ruins of this early nineteenth century mill had previously been entered on to the National Register of Historic Places, but the site had not been occupied for several years and was beginning to deteriorate. Fortunately, a prospective buyer has been found and that individual will be meeting with the staff in 2003 to become acquainted with the CMP regulations regarding the rehabilitation of historically significant buildings.

In 2002, the Commission's staff archaeologist reviewed 275 development applications for the need for a cultural resource survey. He also evaluated 24 completed survey reports, undertook three preliminary cultural resource surveys for forestry and public development applications and reviewed two draft wireless communications cellular tower siting plan amendments

PROJECT REVIEW ACTIVITIES

Permitting

Commission staff reviews municipal and county permitting decisions and development approvals to determine potential impacts on the Pinelands environment, including water quality, plants and animals. In cases where the local approval may be inconsistent with CMP standards, the Executive Director has the authority to refer the approval to the Commission, which may modify or overturn the approval.

During 2002, the Project Review office received 1,283 new applications and had active files on 2,969 applications. This compares with 1,405 applications received and 3,573 active files in 2001. In 2002, Atlantic County led in new applications with 487 received, followed by: Burlington, 315; Ocean, 261; Camden, 92; Gloucester 63; Cape May, 38; and Cumberland, 27.

Of the 1,914 local permits that were handled by the Pinelands Commission in 2002, 1,468 or 77 percent were processed through the faxed permit procedure. Under the faxed permit procedure, a local code or health official can telefax a construction or septic application to the Commission prior to issuing the permit. The file is then reviewed and the municipality or county is notified within two days as to whether the issuance of a permit will raise any regulatory issues with the Pinelands Commission. The permit can then be issued or the applicant advised of a problem to be addressed or corrected. This process dramatically reduces the 15-day review period provided under the Pinelands Protection Act.

Commission staff work with other public agencies to authorize certain activities important to the public, with proper safeguards that facilitate a streamlined process while ensuring that there will be no adverse affects to the environment. In a continuing effort to improve its coordination with Pinelands Area municipalities, the Pinelands Commission enters into Memoranda of Agreement with municipalities to streamline the Commission's application process for certain minor development activities. These activities generally involve development that disturbs less than 5,000 square feet.

Another streamlined procedure is the Local Review Officer (LRO) Program, which allows participating municipalities to process applications for single-family dwellings on conforming lots with no substantial issues. Of the 883 private and public applications for development that were completed with the Commission in 2002, 252, or 29 percent, were through the MOA or LRO streamlined procedures.

Forestry Applications

Based on a 1996 amendment to the Pinelands Comprehensive Management Plan forestry regulations, the Commission continues to jointly review most private forestry applications in the Pinelands Area in partnership with the New Jersey Department of Environmental Protection, Forest Service under the auspices of the New Jersey Forest Stewardship Program. In addition to private forestry applications, the Commission also reviews forestry applications that are submitted by public agencies. To assist the Commission with these reviews, and other forestry management issues, the Commission formed the Pinelands Forestry Advisory Committee.

Wetlands Permits

In addition to the other initiatives that the Commission has instituted to streamline its permitting processes, the Commission has also been delegated the responsibility for issuing New Jersey Department of Environmental Protection (NJDEP) Freshwater Wetlands General Permits in the Pinelands Area. In 2002, the Commission issued 17 such permits on behalf of the NJDEP.

Violations

The Pinelands Commission continues its efforts to provide increased assistance to municipalities in pursuing and resolving violations of the local land use ordinances and the CMP. Reflective of those efforts, during 2002, Commission staff participated in site inspections with municipal officials and provided support and expert testimony in municipal court proceedings and pursued multiple violations of local land use ordinances and the CMP. Staff also worked closely with the State Attorney General's Office on a number of violations. Of the 77 violations reported to the Commission in 2002, the largest categories of violations were vegetative clearing (28 reported) and illegal uses (28 reported). Of the violations reported in 2002, 10 have already been resolved. There were a total of 18 violations resolved in 2002.

PUBLIC, INFORMATION, PARTICIPATION & EDUCATION

Pinelands Educational Advisory Council

Members of the Pinelands Educational Advisory Council, an advisory body to the Pinelands Commission, continued to meet quarterly during 2002. The seven educators, led by Council Chair Walter B. Freas, Jr., recommend ways to improve, expand and better coordinate Pinelands educational and interpretive programs. In 2002, the Council assisted Commission staff in: planning for future outreach programs; organizing the thirteenth annual Pinelands Short Course; adapting the Pinelands Speakers Directory for inclusion on the Commission's website; collaborating with the Commission's Pinelands interpretive partners - the New Jersey Division of Parks and Forestry and the National Park Service - in finalizing plans for the fabrication and installation of kiosks and wayside exhibits; and identifying events such as the Burlington County Earth Fair and the NJ Science Convention where the Commission's Pinelands information could be shared with educators as well as the interested public.

Frog Calls on CD

In early 2002, the NJDEP Endangered and Nongame Species Program released an audio CD featuring vocalizations of 16 species of frogs and toads native to New Jersey. The CD is the joint creation of Pinelands Commission scientist John Bunnell and NJDEP biologist Dave Golden to help residents and visitors to the state accurately identify calling anurans. Most of the vocalizations were recorded by John Bunnell from sites within the Pinelands. The CD also includes shaded distribution maps showing the occurrence of each species by county and graphs showing when calling typically occurs for each species. The release of the CD generated a great deal of interest from around the world. Media news coverage included CNN, National Public Radio, the BBC, Radio Tokyo, German Public Radio, Radio Australia and the Discovery Channel Canada, as well as numerous newspapers and magazines. About 2,000 copies were sold, with all sales proceeds supporting the Conserve Wildlife Foundation, a private, not-for-profit organization dedicated to conserving and protecting New Jersey's endangered and threatened wildlife.



Frog and toad calls are the subject of an educational audio CD jointly produced in 2002 by the Pinelands Commission and the NJDEP Endangered and Non-game Species Program. Above, a fowlers toad (*Bufo woodhousii fowleri*, left) and northern spring peeper frog (*Pseudacris crucifer crucifer*, right) are seen calling. (photos: John Bunnell, Pinelands Commission)

Pinelands Interpretive Exhibits

During 2002, Pinelands Commission Public Programs staff, working in close cooperation with the National Park Service and the New Jersey Division of Parks and Forestry, completed the design and construction of dozens of Pinelands interpretive kiosk panels and way-side exhibits. In 2003, these exhibits will be installed at locations in Bass River State Forest, Belleplain State Forest, Byrne State Forest, Double Trouble State Park, Wharton State Forest and the New Jersey Forest Resource Education Center. The exhibits will introduce visitors to the Pinelands, describe the region's unique natural, cultural and historic features and explain its designation as our country's First National Reserve. This is a significant step in recognizing the Pinelands as a National Park Service affiliate.

13th Annual Pinelands Short Course

The Pinelands Short Course is a day-long adult educational opportunity that has been held on the first Saturday in March each year since 1989. Held at The Richard Stockton College of NJ in Pomona for the past two years, the 2002 Short Course was co-hosted by the Pinelands Commission and Stockton College's Office of Continuing Professional Education. The 2002 event was attended by 208 people and offered 21 educational sessions and workshops on a wide range of topics, including watershed planning, history, Pinelands frogs and toads, soils, landscaping with native vegetation, outdoor photography and cranberry agriculture.

Local Public Officials Seminar

Each year, the Pinelands Commission holds an orientation session for newly elected and newly appointed local officials to familiarize them with the Pinelands environment and the Pinelands CMP. The program is well attended by mayors, municipal council/committee members, planning and zoning board members and members of municipal environmental commissions. While it is intended to serve as an orientation, the half-day session is also a great refresher on Pinelands issues for any local official. The 2002 session was held in Mays Landing in April and was attended by 30 local officials from 15 municipalities.

Pinelands Municipal Council

The Pinelands Municipal Council, created under the Pinelands Protection Act of 1979, is comprised of mayors (or their designees) of the 53 municipalities in the Pinelands Area. The Council is empowered to review any changes to the Pinelands CMP, and advises the Pinelands Commission on any matters of interest. During 2002, under the leadership of Buena Vista Township Mayor Chuck Chiarello, the Council met five times and provided important guidance and oversight to the Commission on a number of key issues. Of particular note, the Council provided important guidance regarding: the implementation of the Pinelands Excellence Program to assist Regional Growth Communities to address challenges associated with intensive development pressures; and the Alternate Wastewater Treatment Pilot Program to improve water quality through the use of advanced residential wastewater treatment technologies.

Science Office Coordination and Outreach

Pinelands science staff coordinated with or participated in other environmental monitoring programs, including NJDEP Endangered and Nongame Species Program projects and the NJDEP biological monitoring programs. Staff scientists made presentations on various environmental monitoring-related topics at several events, including an NJDEP Agriculture and Environment Conference, a Rancocas Creek watershed meeting, a Rutgers University threatened and endangered species short course, the Pinelands Short Course, the Whitesbog Pinelands Month Celebration, and Cedar Run Wildlife Refuge. Science staff also appeared in a film, *Life on the Edge*, about the Jacques Cousteau National Estuarine Research Reserve at Mullica River-Great Bay shown as part of a display at the Tuckerton Seaport.

TECHNOLOGY IMPROVEMENTS

Management Information Systems (MIS)

The Commission initiated the redesign of its legacy information systems in June of 2002 with the hiring of Applied GIS, Inc. as the lead consulting firm for the project. As part of the Commission's permit review streamlining initiative which was launched in 2001, this three-phase re-design project will create a new Pinelands Commission Information System based on state of the art programming language, database and GIS technologies, and will ultimately allow for public access to information via the Internet. With the MIS office leading the project and the GIS office with primary responsibility for the geographic components, this new system will greatly expand upon and combine the functionality of the legacy permit review, violations tracking, zoning information, and PDC tracking systems and spatially enable the data via integration with the information maintained in the GIS.

Close to 20 joint application design workshops were held, with extensive participation by key project review and planning staff, as well as participation from the PDC bank during 2002. A similar number of workshops are expected to be held in the first half of 2003, with final database design to be completed by mid-year, at which time programming will begin in earnest. The new system is projected to be delivered in calendar year 2004.

Geographic Information Systems

The Pinelands Commission Geographic Information System (GIS) Office made significant strides in 2002 toward development of geographically based information systems to support all aspects of planning and development review at the Commission. Following a two-year effort, the GIS Office completed the development of complete digitized parcel (block and lot) data sets for 30 Pinelands municipalities that did not have the data. The Commission also obtained data for all remaining Pinelands towns from the Atlantic and Burlington County Planning Offices. Through this cooperative data-sharing effort, parcel data is now available to all of the Commission's government partners. The Commission is using this data to enhance its permanent land protection efforts, such as the PDC program. This data also provides a foundation for the Commission's development review system and land use planning efforts.

Another major GIS accomplishment for 2002 was the completion of the updated "Pineview" software application package, whereby site data has been converted into data layers that allow Commission staff to view geographic areas and see environmental, geographic and geologic attributes as well as Pinelands and local zoning designations. The Commission ultimately plans to integrate development application data with parcel data and make the information available to the public via the Internet.

FACILITIES & OPERATIONS

Fenwick Manor Restoration

2002 saw long-awaited progress in efforts to "rescue" Fenwick Manor, the Pinelands Commission's historic office complex. Dating back to 1820, the Fenwick Manor property is a 4.5-acre remnant of a farmstead of special historical significance to the Pinelands. The property contains a main building, a carriage house, a barn and an outbuilding, in addition to a new office and meeting facility which houses about half of the Commission staff. The property and the buildings, included on both the State and National Registers of Historic Places, are in a state of deterioration and are in need of major improvements, many of which are essential to the continued use and occupation of the buildings.

In June of 2002, the New Jersey legislature Approved SCR50/ACR113 - sponsored by Senators Shirley Turner and Peter Inverso and Assemblymembers Bonnie Watson-Coleman and Reed Gusciora - which approves the Fenwick Manor renovations and an estimated \$1 million in project costs. Soon after passage of the legislation, bidding procedures were begun for selection of an architectural firm to perform inspection, evaluation and design services.

Fiscal & Budget

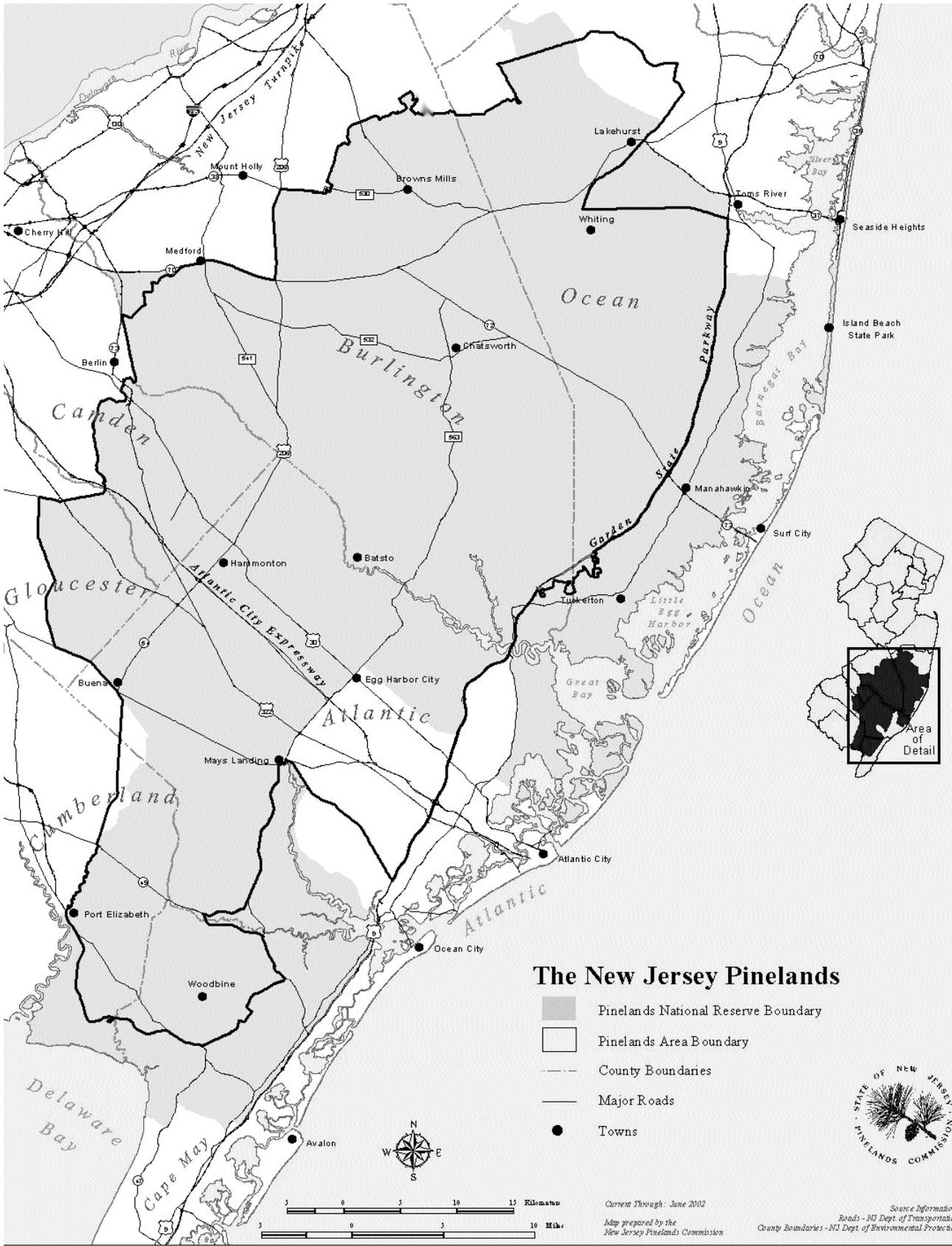
The Pinelands Commission's operating budget for fiscal year 2003 (July 2002 through June 2003) is \$5.51 million. Of this, \$3.57 million, or 65 percent, is budgeted for personnel expenses. The 2003 fiscal year budget anticipates new revenues of \$5.04 million and projects expenditures of \$5.51 million and the use of \$474,000 from the Commission's fund balance and reserves. Revenue sources include \$626,300 in federal grants, a \$2.95 million State appropriation and \$1.1 in State grants and other State funding.

In addition to the operating budget, the fiscal 2003 budget for the Pinelands Development Credit Special Purchase Program is \$4.06 million, and \$1.5 million was budgeted for the Commission's commitment to the special land acquisition program funded through the Cape May County Municipal Utilities Authority.

The balance of the Kathleen M. Lynch-Van de Sande Fund for the reforestation of the New Jersey Pinelands totaled \$12,400 at the end of fiscal year 2002. The fund is maintained by private contributions.

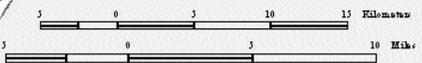


A sand road winds its way through a typical Pinelands pitch pine upland forest in Shamong Township, Burlington County. (photo: John Bunnell, Pinelands Commission)



The New Jersey Pinelands

- Pinelands National Reserve Boundary
- Pinelands Area Boundary
- County Boundaries
- Major Roads
- Towns



Current Through: June 2002
 Map prepared by the New Jersey Pinelands Commission
 Source Information:
 Roads - NJ Dept. of Transportation
 County Boundaries - NJ Dept. of Environmental Protection