8.0 WILDLIFE AND BIODIVERSITY

8.1 Wildlife

Hopewell Township is part of the Delaware Bayshore, or Delaware Bay Watershed, which stretches along the southwest coast of New Jersey. The Delaware Bayshore is known globally for the wildlife associated with its many wetlands. A major stop on the Atlantic flyway, the Delaware Bayshore offers a resting place for over a million migratory birds each spring.[51] The area has a stable population of Bald Eagles, tiger salamanders, southern gray tree frogs and 30 other threatened and endangered species. More than 200 migrant and resident species of finfish use the Delaware estuary for feeding, spawning, or nursery grounds, including sharks, skates, striped bass, shad, sturgeon, American eel, blueback herring, Atlantic menhaden, alewife, bluefish, weakfish and flounder. Oysters and blue crabs are important shellfish in the area. The estuary is home to the largest population of horseshoe crabs in the world.[52] Every Friday evening WSNJ, 1240 on the am radio, airs a fishing show relating fish catch data and species running in the Delaware watershed.[53]

Diverse wildlife populations are not only valuable to environmental health but also to the tourism industry in the region. The Cohansey River, which bounds Hopewell Township, is famous for anadromous fish, salt water fish which breed in fresh water, runs and oyster beds at the mouth of the river. Recreational fishing, crabbing and shell fishing are a growing economic engine for the area with fishermen spending an average of $62-$100 a day[54]. The largest active Bald Eagle nesting area in New Jersey is located in Hopewell Township and Bared owls share the forested wetlands with the Cooper's Hawk and Cope's Gray Tree frogs. Thousands of Birdwatchers gather in the area each spring and fall to observe the migration of millions of songbirds and raptors.

Cope's Gray Tree frog Photo by J. D. Willson

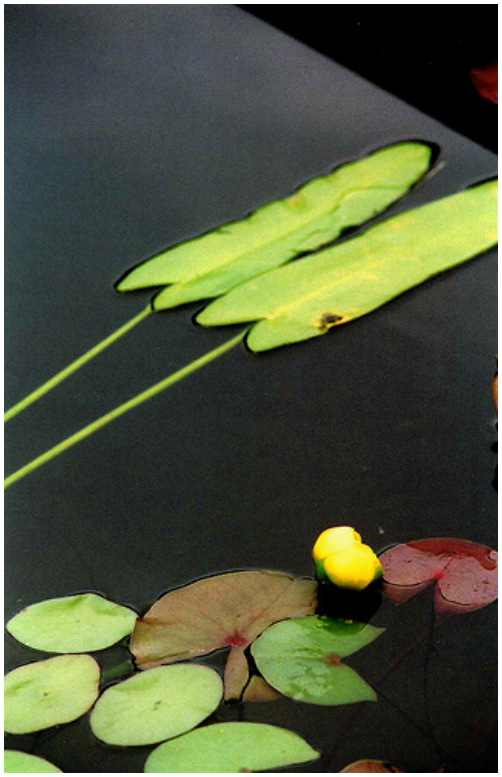
8.2 New Jersey's Landscape Project

In 1994, the New Jersey Division of Fish and Wildlife's Endangered and Nongame Species Program, ENSP, created a large scale approach to protecting rare and endangered wildlife species. The Landscape Project is an ecosystem level identification system which focuses on large areas which are ecologically similar with regard to plant and animal communities. Computer generated mapping of critical habitats for threatened and endangered species is divided into 5 geographic regions: The Delaware Bay, Pinelands, Piedmont Plains, Skylands and Atlantic

[51] Honigfeld, Harriet, B., *Charting a Course for the Delaware Bay Watershed*,New Jersey Conservation Foundation, Bamboo Brook, 170 Longview Road, Far Hills, New Jersey, 07931, c. 1997.
[52] www.nj.gov/dep/watershedmgt/delaware-estuary.htm.
[53] Bob Brewer, Cumberland County Department of Planning and Economic Development, telephone interview, June 13, 2006.
[54] www.nj.gov/dep/watershedmgt/delaware-estuary.htm

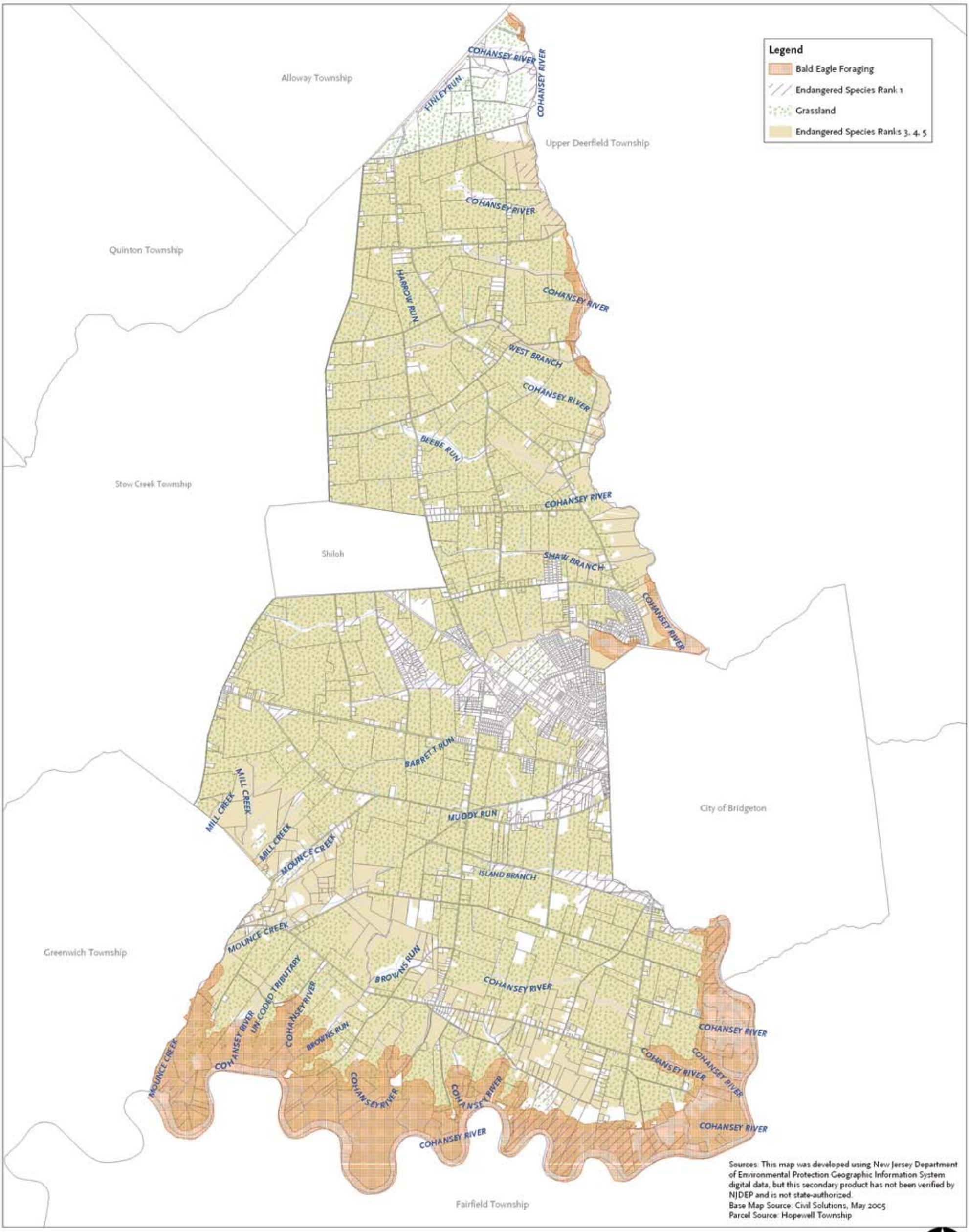
Coastal Plain. Each region has specific mapping of habitat patches which do not correspond to political boundaries but instead to habitat niches. A habitat ranking system ranging from 1-5, five the most important, describes actual sightings, probable locations, or suitable habitat, for threatened and endangered species to occur. Most of Hopewell Township has been designated as 3,4,5 habitat.

Grasshopper Sparrow Endangered



Yellow Pond Lily Endangered

http://www.flickr.com/photos/37323778@N00/332798259/



Environmental Resource Inventory

Threatened and Endangered Species

Hopewell Township, Cumberland County, NJ February 2007

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8.3 Hopewell Rare and Endangered Species:

The Natural Heritage Database and the Landscape Project habitat mapping identified the following rare or endangered wildlife species which have occurred in Hopewell Township.

American kestrel	*Falco sparverious*	Increasing/Stable
Bald eagle	*Haliaeetus leucocephalus*	Threatened/Endangered
Barred owl	*Strix varia*	Threatened
Carpenter's frog	*Rana virgatipes*	Special Concern
Cooper's hawk	*Accipiter cooperii*	Threatened
Cope's gray treefrog	*Hyla chrysoscelis*	Endangered
Eastern box turtle	*Terrapene Carolina*	Special Concern
Eastern kingsnake	*Lampropeltis g. getula*	Undetermined
Eastern meadowlark	*Sturnella magna*	Declining/Stable
Fowler's toad	*Bufo woodhousii fowleri*	Special Concern
Grasshopper sparrow	*Ammodramus savannarum*	Threatened
N. diamond back terrapin	*Malaclemys terrapin terrapin*	Special Concern
Savannah sparrow	*Passercululus sandwichensis*	Threatened
Spotted turtle	*Clemmys guttata*	Special Concern

8.4 Bald Eagle Project

The Division of Fish and Wildlife's Endangered and Nongame Species Program (ENSP)biologists and volunteer observers located and monitored bald eagle nests and territories. Anew record high of 53 eagle pairs was monitored during the nesting season; 48 of those were active (with eggs) and five more were territorial (in a nest area). Southern New Jersey remained the state's stronghold, with 80 percent of the nests in Cumberland and Salem counties. Three new nests were found this year in northern New Jersey. Forty nests were successful in producing 64 young, for a productivity rate of 1.33 young per active nest. ENSP staff banded and took blood samples from 16 eaglets at 10 nests. Eight nests failed to produce viable hatchlings and for the most part the causes were unknown. ENSP staff, regional coordinators, and volunteers reported a total of 179 bald eagles counted in the January 2005 annual Midwinter Bald Eagle Survey. Thirty-one eagles were recorded in north NJ and 148 in the south. The state's eagle population would not be thriving without the efforts of the dedicated eagle volunteers who observe nests, report sightings, and help protect critical habitat.[55] In Hopewell one nest along the Cohansey River west had a nesting pair which had an unexplained nest failure.

[55] Abstract :New Jersey Bald Eagle Management Project 2005.
http://www.state.nj.us/dep/fgw/ensp/pdf/eglrpt05.pdf

The following photographs detail the different appearance of mature and immature bald eagles.

Immature Bald Eagle

Immature Bald Eagle in Flight, photos by Matt Blake

Pair of Mature Bald Eagles, photo by Carol Bell

8.5 Conservation Incentive Programs

The following state and federal grant programs exist to fund conservation and enhancement of wildlife habitiat:

- Landowner Incentive Program (LIP), US Fish and Wildlife Grant administered by theDEP Endangered and Nongame Species Program. 75% project cost 25% landowner cost. Must contribute to enhancement of at least one rare species or its habitat. Grassland projects, migratory stopovers.

- Wildlife Habitat Incentives Program (WHIP), US Fish and Wildlife and NRCS program to improve fish and wildlife habitat. Technical and financial assistance, 75% funding ,minimum 5 acres. Grassland restoration, riparian buffers, invasive species eradication, early successional habitat resoration. 5-10 year plan priority.

- Wetlands Reserve Program (WRP), NRCS program to protect restore and enhance wetlands. Permanent easements, 30 year easements.10 year easements, 75% restoration cost.

- Conservation Reserve Program (CRP), USDA and FSA program. voluntary enrollment in removal of marginal land from production. $100-150 per acre. 50% of conservation practice costs.

- Partners for Fish and Wildlife, US Fish and Wildlife program, 50% cost share, financial and technical assistance , enhancement of Federally listed species, migratory birds, anadromous fish, marine mammals, 10 year easement.

- Private Stewardship Grant Program (PSGP), Us Fish and Wildlife program. Up to 90% cost share for enhancement of at risk species, invasive eradication, stream buffers, planting of native vegetation, competitive funding in north east.

- Forest Land Enhancement Program (FLEP), Federal program long term management of private forest. 75% cost share technical and financial assistance, 10 year easement, minimum5 acres.

9.0 POLLUTION AND CONTAMINATED SITES

Five superfund sites impacting the Cohansey Aquifer in Cumberland County have been identified.[56] All are located in the City of Vineland. One project is ongoing at the Vineland Chemical Company, a former pesticide manufacturer where soil is being washed and river sediments are excavated, washed and re-deposited. Also as a part of treatment for the Chemical Company site, Union Lake is being dredged and ground water is being treated. One project is still under review for remediation by the EPA at a dry cleaner site where 16 private wells were contaminated with volatile organic compounds. The other three projects are completed or no further action is required.

One active contaminated site in Hopewell Township has been registered by the NJDEP, ID# 001824. That site, Durham's Auto Repairs had a gasoline discharge from an underground storage tank. A new well is required and soil contamination remediation is necessary. No new cases of immediate environmental concern, IEC, which cause acute threat to human health or a direct threat to drinking water of the state, have been registered as of May 31, 2006.[57] Contaminated sites are mapped on the well head protection map found in section 6.5 of this document. In addition, Block 76 Lot 35, known as the convenience center, is a closed landfill known contaminated site with a closed plan. There are monitoring wells on site with quarterly data available in the municipal building. These show good results, below the ground water levels specified by the DEP, since the old landfill was closed.

10.0 SOLID WASTE AND RECYCLING

Hopewell Township residents take trash and recyclables to the convenience center on Trench Road or contract privately to have trash picked up. Solid waste is landfilled at the Cumberland County Landfill located in Deerfield Township. The landfill is operated by Cumberland County Improvement Authority, covers a 75 acre site and accepts 550 tons of material per day. The projected life of the landfill is through 2016.[58] Steve Wymbs, director of the facility, describes the landfill as the best class B landfill in North America. The leachate from the landfill is captured, pretreated, and discharged into the sewage treatment plant in Bridgeton. The facility is one of two closed loop system landfills in the state of New Jersey. Other innovations include a tire shredder capable of shredding 1,800 car tires per hour into a 3" by 6" shred. The shred is used at the toe of the slope on active landfill cells and acts as a drainage medium to facilitate percolation of stormwater into the leachate system and reduce mosquito infestation.[59] The landfill has a materials separating facility for recyclables and boasts the highest recycling rate in New Jersey. 80% of the residents in the county have curbside pick up of recyclable materials. Hopewell Township has over 70 miles of roads and does not have curbside pick up. Hopewell has a convenience center to collect recyclables and used motor oil. The landfill has an agricultural plastics recycling center, one of only two in the state. Greenhouse and nursery plastic film is collected for a cost of $20 per ton. Most of the plastic is exported to China and reused as construction and mulch film. In addition, five collection sites are operated to collect and

[56] www.epa.gov/superfund/sites/npl/nj.htm#statelist.
[57] Robert Steinhagan, case manager New Jersey Departmewnt of Environmental Protection, Site Remediation and Waste Management. Telephone interview May 31, 2006.
[58] Denis DeMatte , Cumberland County Improvement Authority, telephone interview May 31, 2006.
[59] Steve Wymbs, Director of Cumberland County Landfill, telephone interview, May 31, 2006.

redistribute 20,000 pounds of nursery containers and plastics bedding plant trays. Pesticide containers are collected from all licensed pesticide applicators in a center in Upper Deerfield and there are 3 household hazardous waste and electronics disposal days per year.[60]

11.0 ENVIRONMENTAL PLANNING AND CONSERVATION OPTIONS

11.1 Farmland Preservation

Hopewell Township adopted a Farmland Preservation Plan Element of the Master Plan in November, 2004. The plan details Hopewell Township's plan to develop the agricultural industry by "1) preventing and minimizing the incursion of large scale residential development into its agricultural zones, and 2) by 'staying out of agricultures way' by not hindering or restricting the private sector's efforts to change flex and innovate as the agricultural industry evolves over time."[61] As of February 20, 2007, Hopewell Township has permanently protected 3,142 acres of farmland on 26 farms from development through the New Jersey Farmland Preservation Program. See Preserved Lands Map below. A broad expansion of the Township's participation in the Farmland Preservation Program is anticipated through the award of a $1,500,000 Planning Incentive Grant from the State Agriculture Development Committee. The list of Hopewell farms eligible to participate in funding for preservation through this grant includes 4,800 acres.. The township staff, volunteers and non-profit groups are all working collaboratively to reach out to landowners to accelerate participation in the preservation of farmland within the Township.

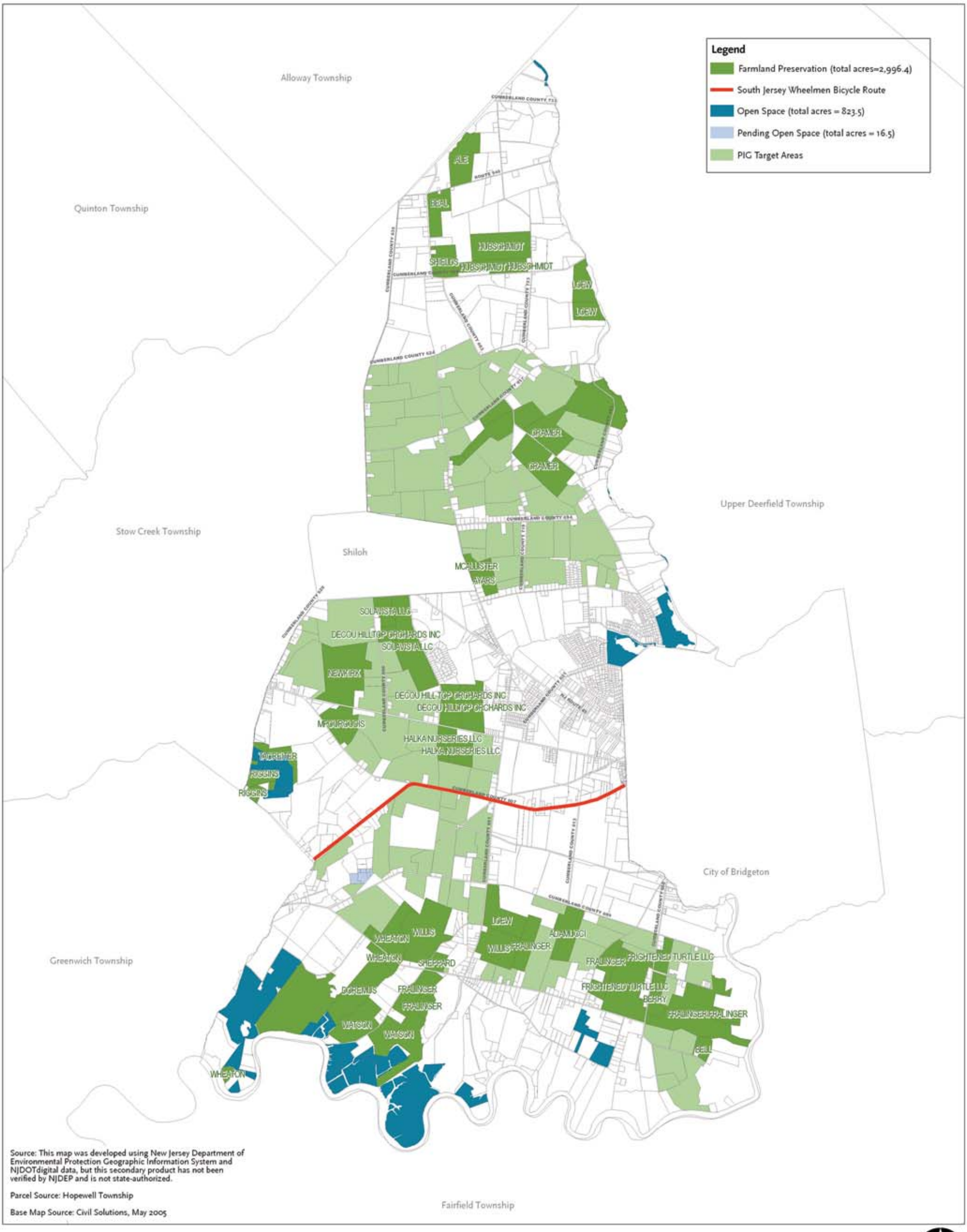
11.2 Transfer of Development Rights

The Transfer of Development Rights Program which is currently under review by the Township will proactively address environmental and agricultural protection issues through clustering development where infrastructure can support growth and away from the heart of the active agricultural and sensitive environmental areas. Environmentally sensitive areas of preserved farms, along stream corridors, wetlands, and forested areas, will be identified and preserved.

11.3 Non-Profit Sector

Non profit environmental groups such as New Jersey Audubon Society and the American Littoral Society are actively seeking landowners to increase participation in wildlife conservation incentive and land preservation programs offered through the Natural Resource Conservation Service, NRCS, and the NJDEP.[62]

[60] Ken Hildreth, Hopewell Township recycling coordinator, telephone interview May 31, 2006.
[61] Farmland Preservation Plan Element of the Hopewell Township, November, 2004, p. 14.
[62] Matt Blake, American Littoral Society, telephone interview, June 2006.



Source: This map was developed using New Jersey Department of Environmental Protection Geographic Information System and NJDOTdigital data, but this secondary product has not been verified by NJDEP and is not state-authorized.

Parcel Source: Hopewell Township

Base Map Source: Civil Solutions, May 2005

Environmental Resource Inventory

Preserved Lands

Hopewell Township, Cumberland County, NJ February 2007

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11.4 Open Space Protection

The New Jersey Department of Environmental Protection Green Acres program, non profit groups and PSE&G have protected approximately 850 acres of open space in Hopewell Township through conservation easements and fee simple purchase. The Cohansey River Wildlife Management area is located in the southern portion of the Township and was protected as part of the PSEG wetlands enhancement initiative along the lower Cohansey River. While the Green Acres program does not target specific parcels for preservation, program staff would support expanding the wildlife management area to include more water bodies and lands along the wetland/upland edge which makes up important wildlife habitat.[63] Green Acres efforts to secure a conservation easement on the Girl Scout Camp in Hopewell are ongoing. A Green Acres purchase of the Elk Lake Estate from the Blake family is also pending.

11.5 Parkland in Hopewell Township

Parks and Recreation

There are currently three parks in Hopewell Township, two of which border the City of Bridgeton boundary – Mary Elmer Lake and Piney Point. Both parks are located partially in the City of Bridgeton and are entirely managed and operated by the City. They also have pavilions for picnicking and Mary Elmer Lake is a state-stocked fishing lake. The third park is Bostwick Lake Park, which is located primarily in Upper Deerfield Township. Bostwick Lake was a state-stocked fishing lake, but has since been drained. The park still offers camping and picnicking facilities.

Table 7. Hopewell Township - Active Parks and Open Space
1. Bostwick Lake - Hopewell/Upper Deerfield/Alloway Townships Friesburg Road Campground, picnicking, formerly a state-stocked fishing lake
2. Mary Elmer Lake - Hopewell/City of Bridgeton Mary Elmer Drive 3 pavilions, 2 BBQ grills, 2 horseshoe pits, and a state-stocked fishing lake.
3. Piney Point Park – Hopewell/City of Bridgeton Beebe Run Road 3 picnic pavilions, with a single comfort station - electricity is available.
4. West Cumberland County Little League – Hopewell Township Greenwich Road
5. Hopewell Crest School – Hopewell Township Sewell Road

Township recreational facilities are located at the West Cumberland Little League ballfields on Greenwich Road. This site includes seven ball fields of varying sizes and physical conditions. Some of the ball fields have lights with public stands and dug-outs. Recreational facilities are also available at Hopewell Crest School during non-school hours. [64]

[63] Kurt Gellerman, NJ Green Acres Program, Funding and Acquisitions Department, telephone interview June 21, 2006.
[64] Hopewell Township Draft Land Use Plan Element

12.0 CRITICAL ENVIRONMENTAL AREAS

Critical environmental sites and issues which have been identified in this inventory are summarized below:

12.1 Favorable Development Potential

75% of the Township is farmed or forested. While this statistic appears a community benefit, it is also a potential environmental threat due to the favorable development potential of these lands. Hopewell's soils are excellent for building and development as very few of the soils are limiting for septic effluent with non critical depth to seasonal high water table. In fact, soils in Hopewell are actually mined and transported to other locations for septic field construction.

12.2 The Cohansey River

Hopewell Township is defined by the Cohansey River which bounds the township completely on two sides of its triangular form. The river and its associated wetlands provide important wildlife habitat, mitigation of flood waters, and recreational opportunities. One of the largest and most stable nesting populations of Bald Eagles is located along the Cohansey River wetland/upland interface in Hopewell.

Approximately 12% of Hopewell Township is classified as wetlands most of which are associated with the Cohansey River, its tributaries, and the tidal estuary of the Delaware River. These wetlands create important habitat for birds, fish and wildlife. In addition, there is high recreational value to the community and the region through fishing, crabbing, boating and bird watching. The flood prone areas of Hopewell Township are generally associated with the Cohansey River and its associated tributaries. The Cohansey River, which bounds Hopewell Township, is famous for anadromous fish runs and oyster beds at the mouth of the river. Recreational fishing, crabbing and shell fishing are a growing economic engine for the area with fishermen spending an average of $62-$100 a day.

12.3 Aquifers

The USEPA has recommended the Coastal Plain Aquifer system, upon which Hopewell completely relies for drinking water supply, be designated as a sole source aquifer. The Safe Drinking Water Act (SDWA), Public Law 93-523, of December 16, 1974, contains a provision in Section 1424(e), which states that if the Administrator determines, on his own initiative or upon petition, that an area has an aquifer which is the sole or principal drinking water source for the area and which, if contaminated, would create significant hazard to public health, he shall publish notice of that determination in the Federal Register. This designation will provide additional review of groundwater protection for projects requesting federal funding.

12.4 Contaminated Water

Water testing laboratories and treatment services commonly find contaminant levels high for gross alpha, excessive iron, and nitrates in Hopewell. The state limit for nitrates in drinking water is 10mg/L. Typically Hopewell wells will test at 8-9.5 mg/L. although the level tends to fluctuate with the season, higher in summer and lower in winter.

12.5 Burden Hill Forest

A small finger of the 15,000 acre Burden Hill Forest Complex extends into Hopewell Township. This important upland forest has been added to the area targeted for preservation through the New Jersey Conservation Foundation. The ridge vegetation consists of pineland, forested headwaters and native vegetation of the coastal plain. The largest threat to mature woodlands and interconnected forest habitat is residential development.

12.6 Bald Eagles and other T&E Species

The largest active Bald Eagle nesting area in New Jersey is located in Hopewell Township and Bared owls share the forested wetlands with the Cooper's Hawk and Cope's Gray Treefrogs. Computer generated mapping of critical habitats for threatened and endangered species is divided into 5 geographic regions. Each region has specific mapping of habitat patches which do not correspond to political boundaries but instead to habitat niches. A habitat ranking system ranging from 1-5, five the most important, describes actual sightings, probable locations, or suitable habitat, for threatened and endangered species to occur. Most of Hopewell Township has been designated as 3,4,5 habitat.

12.7 Contaminated Sites

Five superfund sites impacting the Cohansey Aquifer in Cumberland County have been identified. All are located in the City of Vineland. One active contaminated site in Hopewell Township has been registered by the NJDEP, ID# 001824. Durham's Auto Repairs had a gasoline discharge from an underground storage tank. A new well is required and soil contamination remediation is necessary.

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Many thanks go to the citizens, volunteers, government officials, private businesses, academic specialists, cooperative extension agents and non-profit organizations that have provided guidance, research and expertise in the compilation of this Natural Resources Inventory.

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