

CONSERVATION ELEMENT

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Focusing on Conservation

The unbuilt environment in Sussex County includes wetlands, waterways, beaches, upland forests, farmland, meadows and other open areas that support a wide variety of plant and wildlife species. These undeveloped areas are a major part of Sussex County's unique physical character, scenic appeal, and quality of life.

A range of public and private parties strive to preserve Sussex County's natural environment. Lands already protected, on-going efforts to protect the area's ecology, and additional conservation measures Sussex County and others should consider undertaking are the topics addressed in this chapter of the Sussex County Comprehensive Plan.

Protected Lands

The Developed and Protected Lands Map in the Future Land Use element of this Comprehensive Plan Update shows the location of all land in Sussex County permanently protected from further development. These lands include property owned and managed by the federal government, the state government, and private land conservancies. Lands preserved by easement and wetlands whose future development are severely limited by state and federal regulations are also included. The Land Preservation Office of DNREC's Division of Parks and Recreation estimated in 2006 that 21% of Sussex County is permanently protected against further development.

Federal Land

The Prime Hook National Wildlife Refuge is located approximately 10 miles north of Lewes. It contains over 10,000 acres devoted to habitat and protection for waterfowl, migratory birds and other endangered species. The U.S. Fish and Wildlife Service manages this site as part of the National Wildlife Refuge System, which encompasses over 94 million acres.

State Land

DNREC's Division of Fish and Wildlife oversees State wildlife areas, ponds, and other open spaces that comprise over 18,000 acres in Sussex County. The Delaware Department of Agriculture's Forest Service is responsible for Redden State Forest which is primarily north of Georgetown. The Redden State Forest at 9,500 acres is the largest of Delaware's three state forests and the only one in Sussex County.

Private Preserved Land and Land Under Conservation Easements

Permanently preserved private land in Sussex County also includes property owned in fee simple by private non-profit conservation entities such as the Sussex County Land Trust, Delaware Wild Lands, Inc., Ducks Unlimited, and the Nature Conservancy, among others.

Instead of selling to a land conservancy, many property owners retain title to their land and place it under a legally binding easement that prohibits or severely restricts future development. Different types of conservation easements exist. Many of these easements are held by the conservation groups noted directly above. Agricultural conservation, easements under which farmland owners sell their development rights to the State are also a prominent type of conservation easement in Sussex County. As of January 2007, the Delaware Agricultural Lands Preservation Foundation had acquired the development rights to 171 Sussex County farms totaling 26,766 acres. In addition, DNREC holds 17 conservation easements protecting 338 acres.

Regulated Wetlands

DNREC's 2006 estimate that 21% of Sussex County is protected land includes tidal wetlands because of State and federal laws that make it difficult to convert these areas to any other use. The Developed and Protected Lands Map shows tidal wetlands but also includes non-tidal wetlands in the Protected Lands category because of Army Corps of Engineers regulations that may regulate construction activity in these areas.

DNREC wetlands publications summarize the following scientifically-supported rationale for protecting wetlands:

- *Flood Control* – Fresh water wetlands act as slow-release reservoirs that reduce the impact of flooding.
- *Water Quality* – Freshwater wetlands help remove impurities and trap sediment before they enter other ponds, streams and coastal waters.
- *Habitat* – A variety of wetland types provide invaluable habitat for plant life and many species of waterfowl, water birds, fishes, reptiles, amphibians, and mammals, including rare threatened and endangered species.
- *Shoreline Stabilization* – The root networks formed by wetland vegetation can help hold shorelines in place by buffering against erosion.
- *Water Supply* – Freshwater wetlands help recharge rainfall into the aquifers many people depend on for potable water supplies.
- *Recreation* – Canoeing, hiking, birding, nature photography, and environmental education are very popular leisure time activities in and around wetlands.

However, recent court decisions have severely limited the Corps' jurisdiction over "isolated" wetlands.

Both tidal and non-tidal wetlands have extensive resource values. The location of these areas must be accurately determined by qualified professionals prior to any site plan reviews or before any County permits may be used. Wetlands protection is much more effective under state and federal laws if qualified professionals are involved in site design at the earliest possible stage. Qualified professionals should be informed on the status of relevant court cases and the regulations associated with state and federal programs—including but not limited to: The State of Delaware Subaqueous Lands Act, Delaware Wetlands Act, Water Quality Certification, and Coastal Zone Consistency.

- Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) prohibits the construction or alteration of navigable waters of the United States without a permit from the Corps of Engineers.
- Section 404 of the Clean Water Act (33 U.S.C. 1334). Section 301 of this Act prohibits the discharge of dredged or fill materials into waters of the United States without a permit from the Corps of Engineers.
- Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972, as amended (33 U.S.C. 1414) authorizes the Corps of Engineers to issue permits for the transportation of dredged material for the purpose of dumping it into ocean waters.

Other law may also affect the processing of applications for Corps of Engineers permits. Among these are the National Environmental Policy Act, the Coastal Zone Management Act, the Fish and Wildlife Coordination Act, the Endangered Species Act, the National Historic Preservation Act, the Deepwater Port Act, the Federal Power Act, the Marine Mammal Protection Act, the Wild and Scenic Rivers Act, and the National Fishing Enhancement Act of 1984.

Major Conservation Initiatives Underway

Federal, State, County, municipal, and private parties work together and separately to help preserve Sussex County's natural environment. The following is a summary overview of selected major conservation initiatives now underway that affect the County.

Delaware Bay Estuary Project

The U.S. Fish and Wildlife Service is collaborating with other federal agencies, non-profit conservation groups, and the states of Delaware, Pennsylvania, Maryland, Virginia and New Jersey to protect and restore the ecological integrity of wildlife resources in the Delaware River and Delmarva Peninsula. While the project involves extensive research and mapping of natural resources, technical and financial assistance is also available to eligible landowners who wish to restore habitat on their property.

Prime Hook Wildlife Refuge Comprehensive Conservation Plan

The U.S. Fish and Wildlife Service began preparing a Comprehensive Conservation Plan for the Prime Hook Wildlife Refuge in 2005. When finished in 2008, the plan will: a) identify how the refuge can best address its resource conservation and management priorities; and b) recommend how to synchronize these conservation priorities with the refuge's obligation to provide area for hunting, fishing, hiking, canoeing, environmental education and related public recreation activities.

Livable Delaware and Related State Initiatives

Among broader land use planning goals, the State's wide-ranging Livable Delaware initiative calls for protecting Delaware's critical environmental resources. In support of this goal and other State objectives, State agencies have endeavored to identify and help preserve Delaware's "green infrastructure", which DNREC describes as a network of natural areas, parks, conservation areas, and working lands with conservation value that contribute to the health and quality of life in Delaware. Several separate and overlapping state programs and strategies help carry out this broad conservation mandate.

- *The Delaware Open Space Program* – The 1990 Delaware Land Protection Act led to the Delaware Open Space Program. The State uses funding from this program to acquire lands the State identifies as environmentally important. Once purchased, these lands are managed by the appropriate state agency as public open space to protect natural features, conserve cultural resources, and provide recreation opportunities where appropriate.
- *Agricultural Land Preservation* – Participation by Sussex County landowners in the Delaware's Agricultural Land Preservation Program is described in the Future Land Use Element of this plan. These preserved farms are mapped on the Developed and Protected Lands map. Sussex County also makes major annual financial contributions towards acquiring these easements.
- *Forest Conservation* – The Delaware Department of Agriculture's Forest Service oversees the State's forest management activities. In addition to acquiring conservation easements, the Forest Service manages a host of programs that assist local communities and private landowners to re-forest, manage and/or enhance their woodland resources. Sussex County is home to two of Delaware's four Forest Legacy Areas: Redden/Ellendale and Cypress Swamp. Forest Legacy Areas are specially designated concentrations of forest land, within which the State can use certain federal funds to acquire forest conservation easements.

Forest Legacy Areas in Sussex County



- *Soil Conservation and Farmland Management* – In cooperation with the State, the three County Conservation Districts in Delaware each offer cost sharing incentives for landowners willing to initiate best management practices for: a) controlling erosion and sedimentation; b) managing animal waste; c) restricting cattle access to streams; and d) related conservation activities on working farms.
- *Wildlife Conservation* – Sussex County’s coastal marine waters, marshes, freshwater streams, wetlands, upland forests and meadows are among the 125 different habitat types identified in Delaware by the State Wildlife Action Plan. This plan prepared under the supervision of DNREC’s Division of Fish and Wildlife, recommends a wide range of conservation strategies affecting nearly 90 different conservation issues and concerns. In support of this plan and related wildlife conservation goals, DNREC’s Division of Fish and Wildlife provides technical assistance and financial incentives to landowners interested in establishing, restoring, and/or enhancing wildlife habitat to benefit species of concern.
- *Wetlands Conservation* – As noted earlier, state and federal regulations provide extensive protection to wetlands when wetlands are mapped accurately and wetland regulations are actively enforced (and provided these regulation continue to pass legal scrutiny). Recognizing that wetlands throughout Delaware have disappeared due to development, DNREC and others offer both technical assistance and financial help to landowners who wish to restore wetlands, establish permanent wetlands on their property, or permanently conserve existing wetlands through conservation easements. In addition, DNREC’s Ecological Restoration and Protection Team has used federal, state, and private funds, along with volunteer labor, to oversee projects in each of the three Delaware counties to improve degraded wetlands, stabilize eroding streambanks and restore other sensitive ecological areas.

Inland Bays Preservation

The Center for the Inland Bays (CIB) is a private non-profit organization dedicated to preserving the ecology of the Delaware Inland Bays: Rehoboth Bay, Indian River Bay and Little Assawoman Bay. The Delaware Inland Bays estuary is one of 28 federally-designated “estuaries of national significance.” CIB’s major concerns include the following:

- Sustaining and restoring water quality and marine life in the bays.
- Combating invasive species and algae blooms in the bays.
- Protecting the shoreline and dune system along the bays.
- Preserving wetlands and other habitat for critical plant and wildlife in the bay areas.
- Promoting best management practices for agricultural uses in the Inland Bays watershed.
- Supporting land use planning, land use ordinances, and stormwater management practices that minimize impacts of development on the bays.

These goals, specific strategies for implementing these goals, and the results of numerous technical monitoring studies on the bays’ ecology are incorporated in *A Comprehensive Conservation and Management Plan for Delaware’s Inland Bays*, which CIB completed in 1995. Recently, CIB reviewed Sussex County’s 2002 Comprehensive Plan and analyzed what specific progress the County has made towards accomplishing that plan’s conservation objectives. CIB also provided detailed input on how Sussex County’s 2007 Comprehensive Plan update can promote policies critical to the inland bays in the following areas:

- Nutrient reduction
- Wetlands protection
- Open space preservation
- Growth management
- Community design

CIB works in concert with the Little Assawoman Bay Conservancy, the Nature Conservancy, officials at all levels of government (including the Sussex County Council), and several other conservation groups to promote the health of the inland bays and educate people about public policy issues relevant to the bays’ future. The Inland Bays region is, and will continue to be, a major population growth center. While public awareness has been raised and technical improvements have been made, stormwater runoff from this development and the region’s agriculture continue to threaten the Inland Bays’ complex and fragile ecology.

Watershed Pollution Control In Sussex County

Under Section 303(d) of the 1972 Federal Clean Water Act (CWA), states are required to identify all impaired waters and establish total maximum daily loads to restore their beneficial uses. A TMDL defines the amount of a given pollutant that may be discharged to a water body from point, non-point, and natural background sources and still allows attainment or maintenance of the applicable water quality standards.

A TMDL is the sum of the individual Waste Load Applications (WLAs) for point sources and Load Allocations (Las) for non-point sources and natural background sources of pollution. A TMDL may include a reasonable margin of safety (MOS) to account for uncertainties regarding the relationship between mass loading and resulting water quality. A TMDL matches the strength, location and timing of pollution sources within a watershed with the inherent ability of the receiving water to assimilate the pollutant without adverse impact.

A Pollution Control Strategy (PCS) specifies actions necessary to systematically achieve pollutant load reductions specified by a Total Maximum Daily Load for a given water body and must reduce pollutants to level specified by State Water Quality Standards.

Sussex County is located within the greater Delaware River and Basin drainage, Chesapeake Bay drainage, and the Inland Bays / Atlantic Ocean drainage. Within the combined area of all three of these basins are 19 individual watersheds. All 19 of these watersheds are subject to pollution reduction targets because they are impaired. The individual watersheds are assigned specific nutrient (nitrogen and phosphorus) and bacterial TMDL load reduction rates that must be met in order to comply with the State Water Quality Standards. The following table is a listing of nutrient and bacteria reduction requirements established for the 19 Sussex County watersheds.

**Table 9
TMDL Reduction Targets for Sussex County Watersheds**

Delaware River and Bay Drainage		Nitrogen	Phosphorus	Bacteria
1	Misphillion River	57%, 88% in Kings Causeway Branch	57%, 88% in Kings Causeway Branch	87%
2	Cedar Creek	45%	45%	96%
3	Broadkill	40%	40%	75%
Chesapeake Bay Drainage		Nitrogen	Phosphorus	Bacteria
4	Marshyhope	20%	25%	21%
5	Nanticoke	30%	50%	2%
6	Gum Branch			
7	Gravelly Branch			
8	Deep Creek			
9	Broad Creek			
10	Wicomico	NL	NL	NL
11	Pocomoke	55%	55%	28%

Chesapeake Bay Drainage		Nitrogen	Phosphorus	Bacteria
Inland Bays / Atlantic Ocean Drainage		Nitrogen	Phosphorus	Bacteria
12	Lewes / Rehoboth Canal	40% low reduction area, 85% high reduction area	40% low reduction area, 65% high reduction area	40% Fresh, 17% Marine
13	Rehoboth Bay			
14	Indian River	40% low reduction area, 85% high reduction area	40% low reduction area, 65% high reduction area	40% Fresh, 17% Marine
15	Iron Branch			
16	Indian River Bay			
17	Buntings Branch	31%	19%	
18	Assawoman	NL	NL	
19	Little Assawoman	40%	40%	

Source: DNREC.

The Sussex County Land Trust

The Sussex County Land Trust is a private non-profit organization that works closely with Sussex County Council, state government and other conservation groups to preserve open space by acquiring easements and acquiring title to undeveloped land. The Land Trust advises County Council on how to allocate County funds available for open space preservation. Sussex County provides financial support to the Sussex County Land Trust from the County’s general fund and from fees land developers pay the County for the right to build in designated growth areas at higher densities than otherwise permitted.

In addition to acquiring and administering easements on smaller tracts, the Sussex County Land Trust has been successful in using its funds to leverage State dollars, donations from the Nature Conservancy, federal monies and other support towards large open space purchases. Examples include acquisition of the 908-acre Ponders tract near Milton which is a forested property now managed by the Nature Conservancy, and 43 acres secured as part of a 600-acre acquisition to link the Great Marsh area near Lewes with the Prime Hook National Wildlife Refuge.

Sussex County Regulations

In addition to the standard regulations that counties and municipalities use to govern permitted uses, lot size, density, yard size and similar matters, Sussex County’s Zoning Ordinance and Subdivision Code contain numerous special regulations designed to protect environmental resources. Examples include the following:

- The Environmentally Sensitive Development Overlay Zone District, where an environmental assessment must be prepared in conjunction with development applications.

- Subdivision regulations that require forested buffers, minimum common open space, and a special design review by a County-appointed Technical Advisory Committee.
- Regulations mandating construction setbacks from primary coastal dunes.
- Regulations restricting building activity within the 100-year floodplain.
- Regulations that mandate building setbacks from tidal waters and tidal wetlands.
- A Combined Highway Corridor Overlay Zoning District where building setbacks, landscaping and other regulations are enforced to enhance roadside aesthetics.

Sussex County Council recognizes that rapid growth creates extraordinary environmental pressures, particularly in complex and sensitive coastal ecosystems. To augment current regulations, Sussex County Council is now evaluating alternative approaches to protecting non-tidal wetlands and groundwater recharge areas, among other critical natural features.

Conservation Strategies

The following strategies identify ways Sussex County can: a) continue its participation in conserving more land in the County; b) help ensure that the County's environmental resources are better protected; and c) encourage more farmland preservation. Sussex County government can carry out some of these initiatives on its own. In other cases, cooperative efforts will be needed. Many of these actions are helpful techniques for protecting specific natural features. However, to be most effective, they will need to be implemented in association with the more comprehensive growth management strategies outlined in the Future Land Use Element (Chapter 2) of this plan.

Land Preservation Strategies

- Continue working with the State to identify opportunities for the State to acquire additional lands in Sussex County designated as Natural Areas.
- Encourage more interested farmers to enroll in Agricultural Preservation Districts as a prerequisite for having the State purchase farmland development rights.
- Continue working with the Sussex County Land Trust to use funds collected from local developers and funds leveraged from other sources to preserve more land through conservation easements and fee simple acquisitions.
- Adopt a locally-formulated Transfer of Development Rights (TDR) program so that private sector developers can take a larger role in funding the permanent preservation of open space.

- Strengthen County development regulations to ensure that open space dedicated by developers contains enough contiguous legitimate open space to facilitate environmental protection and /or passive recreation.
- Establish future public sewer service areas that will help preserve open space by promoting orderly growth rather than unplanned sprawl.

Resource Protection Strategies

- Adopt zoning regulations that mandate an appropriate buffer distance between non-tidal wetlands and development.
- Support the Center for the Inland Bays and other conservation groups in their efforts to educate more people about the necessity of protecting wetlands.
- Encourage the State and tributary action teams to finish formulating pollution control strategies for the Inland Bays, the Nanticoke River, and the Broadkill Creek – and to focus on implementing these strategies.
- Continue to assess the potential value of including stream setback regulation in water pollution control plans for the Inland Bays and other local water bodies.
- Amend appropriate sections of Sussex County’s zoning and subdivision codes to encourage more “green” stormwater management techniques as an alternative to traditional detention basins.
- Amend appropriate sections of Sussex County’s zoning and subdivision codes to add regulations that will help protect critical wildlife habitat.
- Raise landowners’ awareness about the myriad of financial incentives the State offers to protect and better manage forest land, wetlands, wildlife habitat and farmland.
- Adopt a wellhead protection ordinance with commonly accepted setback standards for protecting groundwater recharge areas.
- Prioritize the provision of public sewers to areas with concentration of failed or potentially failing septic systems in order to better protect surface water and groundwater.
- Provide more public education about how to properly construct and operate on-site septic systems.
- In the Environmentally Sensitive Developing Area, delete all wetland areas from the gross lot size calculation used as the basis for determining allowable site density.

- Evaluate the County’s development regulations to ensure that maximum building coverage regulations reflect appropriate concern for reducing stormwater and promoting on-site recharge.
- Encourage better nutrient management techniques, improved erosion control techniques, the installation of fences to keep livestock out of waterways, and other best management practices on local farms.
- Strengthen County development regulations that mandate forested buffers between new residential uses and contiguous agricultural uses.
- Continue working with the State and local land owners to help sustain and protect well managed working forest lands through the Forest Legacy Program and related initiatives. The County understands that working forests have been (or will be) harvested to some degree, and that working forests are not necessarily managed for biodiversity or protection of critical natural habitat. Nonetheless, Sussex County recognizes the value of conserving these areas in accordance with approved wood lot management practices.

Map: Watersheds and Waterways

Map: Woodlands and Natural Areas

Map: Floodplains and Wetlands