



3. NATURAL RESOURCES

New Shoreham 2016 Draft Comprehensive Plan

VISION

Preservation, protection and restoration of the natural habitats and populations on Block Island will continue to be a priority of the Town of New Shoreham and its citizens. Land conservation efforts, local government practices, and education of residents and visitors will ensure that the island remains ecologically healthy and attracts those who value its natural scenic beauty.

NATURAL RESOURCES

Supporting Documents

Rhode Island Wildlife Action Plan, 2015, Prepared by Terwillinger Consulting Inc. for The Rhode Island Chapter of the Nature Conservancy for The Rhode Island Department of Environmental Management.

The Rhode Island Sea Level Affecting Marshes Model (SLAMM) Project, Summary Report, March 2015.
Available at: www.crmc.ri.gov/maps/maps_slamm.html

Introduction

The Nature Conservancy has identified Block Island as *“the most ecologically significant place in Rhode Island and one of the most ecologically important places in North America.”*

With its dramatic bluffs, sandy beaches, and coastal ponds, Block Island’s natural resources are the reason it is a major tourism destination. These significant natural resources are part of what makes Block Island a special place and serve as the foundation for the quality of life of residents. The island’s natural resources provide scenic beauty, leisure and recreational opportunities, and also serve as the major driver of the local economy.

Habitat Areas

Block Island is one of the most ecologically significant places in Southern New England. It has a variety of high quality terrestrial and wetland habitats which include farmlands, open fields and grasslands, freshwater wetlands, coastal shrublands, beach and dune complexes, coastal ponds, rocky shorelines, freshwater ponds, vernal ponds, and salt marsh. These habitats support a rich variety of plant and animal species, including about 40 rare and endangered species. Unique natural features include dramatic coastal bluffs and Rodman’s Hollow a meltwater channel.

Freshwater and Wetland System

There exists a unique abundance of freshwater ponds on Block Island. Ponds, swamps and freshwater marshes provide high quality habitat areas for a variety of fish and wildlife, as well as recreational areas for birdwatchers and other outdoor enthusiasts. Vernal ponds are arguably the most important freshwater habitat on Block Island with their immense biodiversity. The diving beetle, fairy shrimp, red-spotted newt (salamander), and countless insects including dragonfly and damselfly inhabit vernal ponds on Block Island. The island’s freshwater resources also create scenic landscapes such as the view of Spring House Pond, Sachem Pond, Franklin Swamp, Champlin Farm Pond, and Seneca Swamp. Sands Pond and Fresh Pond contribute to the island’s EPA designated sole source aquifer upon which both public and private water

supplies depend. *Map NRI Surface Water and Aquifers* provides a visual of the freshwater resources of Block Island including wellhead protection areas.

Maintaining regulatory standards for wetland setbacks from dwellings and septic systems are critical to safeguarding both surface water resources and groundwater, as well as water quality of the Great Salt Pond. Recent state legislation provides for a standard wetlands setback statewide. Although specific regulations are still in development, New Shoreham is concerned that this uniform policy may not adequately protect the significant and fragile ecosystems on Block Island.

Coastal Shrublands

Block Island has some of the best and most extensive shrublands along the Atlantic coast. The key species of native shrubs include arrowwood, shadbush, chokeberry, bayberry, winterberry, and others. Shad is an important shrub for nesting and for its rich food source. The majority of species of migratory songbirds and breeding birds on Block Island rely heavily on this coastal shrub habitat. While shrub habitats are found in many places around the Island, the large tracts on the north end are most important to fall migratory birds. Clayhead Preserve is a popular birdwatching location on the island for migratory songbirds including the Magnolia Warbler and Canada Warbler. Beyond being an important habitat, the coastal shrubland on Block Island contributes to the scenic quality of Block Island's landscapes by softening the aesthetic impacts of development.

Coastal Ponds and Salt Marshes

Salt marshes around the Great Salt Pond provide a habitat for a diversity of species including birds, fiddler crabs, horseshoe crabs, ribbed mussels, grass shrimp, soft shelled clams, quahogs, periwinkles and seaweed. Two of the most well-known and visited salt marshes on Block Island are Andy's Way and Mosquito Beach.

Beaches and Dunes

Dunes serve as critical natural features because they provide protection from flooding and erosion by wind and waves. Coastal dunes are also sensitive habitat areas for species such as the dusty miller, meadow voles, sea rocket and beach plum. The dunes of Block Island serve as important nesting area for birds and are a feeding area for barn owls. Dune preservation efforts by the Town and its partners should be continual. In an effort to stabilize the dunes, a private-public partnership regularly transplants American beach grass to exposed dune faces on Block Island. Additional strategies should be identified and implemented to ensure that people do not encroach on this important and sensitive habitat.

Forest Lands

Block Island was heavily forested prior to settlement in the mid 1600's according to several accounts by early navigators. Once the settlers arrived, the forest was cut for lumber for homes, farm structures, boats, fences, fuel and other uses. The majority of Block Island's landscape was open agricultural fields from then on for several centuries until farming declined considerably in the mid-1900's. Inactive fields became covered with native shrub species mentioned above. Block Island now has some small patches of forest dominated by black cherry, and some forest-like areas dominated by large shad. There are a few isolated forest patches of large native black gum or tupelo trees in the middle of the island near swamps north and south of the airport, and

one small patch of American beech in the same area. Another native tree species, the red maple, is found in most parts of the island but usually isolated to one or two individual trees in any location.

Currently, no properties on Block Island are classified as forest under the State Farm, Forest and Open Space law that allows such land meeting certain standards to be taxed based on use rather than potential market value.

See *Map NR2 Habitats* which displays lands classified as forested and wetlands under the Ecological Communities Classification data from RIGIS.

Farmlands

There is a small number of working farms left on the island as well as lands which are separate from farms which are used for agriculture. There are also conserved lands with agricultural potential which are currently benefiting the scenic quality of the island and contributing valuable habitat for many species. See Economic Development Chapter for additional discussion on agriculture and maps of existing agricultural operations and agricultural soils on Block Island.

Endangered Species

BLOCK ISLAND IS HOME TO MANY FRAGILE SPECIES INCLUDING OVER 40 SPECIES WHICH ARE ON THE FEDERAL OR STATE ENDANGERED SPECIES LIST.

More than 50 species of birds nest on Block Island including the American oystercatcher, black-crowned night heron, and grasshopper sparrow. Some of these species of birds are on the state-endangered species list.

The American Burying Beetle, Block Island's rarest animal, is found in only 5 places in the world. Threats to the American Burying Beetle include outdoor lighting, pesticides, loss of open field habitat, and a number of other factors. The population is currently stable on Block Island due primarily to the protection of large tracts of open land in the southwestern portion of the Island. The burying beetle was recently named Rhode Island's official state insect.

Many of the other rare and endangered species found on Block Island require open field habitats, including the barn owl, Block Island meadow vole, northern blazing star, and savannah sparrow. Protection of the declining monarch butterfly will require management of open fields for monarchs to ensure there are both breeding habitat and nectar sources.

An Assessment of Issues Facing Significant Natural Resources

Stormwater Pollution

Pollution remains a major threat to the island's natural resources. Increased impervious surfaces associated with development along with failing septic and wastewater systems contribute to a degradation of water quality on the island. The Town is currently exploring strategies to control stormwater impacts on the Great Salt Pond and its watershed. For additional information see the Great Salt Pond Chapter and Services and Facilities Chapter.

Buffer zones around fresh and saltwater resources can play an integral role in both protecting these resources and providing habitat for wildlife. The use of local land use authority to preserve or restore vegetative buffers is critical to the overall health of watershed systems and to public health and should be explored on Block Island.

Higher standards on the use of nitrogen fertilizers and pesticides, and limiting other sources of nitrogen inputs in the watershed of the Great Salt Pond, should also be considered. The spawning and nursery functions of Great Salt Pond are well documented; nitrogen, pesticide and herbicide runoff should be prevented from entering this important and vital system via waterfront properties and the watershed.

Natural Hazards and Sea Level Rise

Climate change is a potential major threat to marine and wildlife population and habitats on Block Island. It is anticipated that sea level rise will have a substantial impact on the coastal features, marshes, wetlands and coastline habitat on Block Island. CRMC reports that based on the Sea Level Affecting Marshes Model (SLAMM), Block Island is projected to lose 3.6, 49.6 and 61.4 acres with 1, 3, and 5 feet of sea-level rise, respectively. Considering that the island has a total of about 72 existing coastal wetlands as of 2010, these projected losses are very significant and would result in substantial habitat loss. SLAMM Project report and maps for all Rhode Island can be found on the CRMC website at: www.crmc.ri.gov/maps/maps_slamm.html. More frequent and severe storm events will also contribute to an acceleration of bluff erosion and dune destabilization. See the Great Salt Pond and Natural Hazards & Climate Change sections for additional discussion and Map NHC4 SLAMM.

Bluff Erosion

One of Block Island's greatest natural resources is its remarkably scenic coastal bluffs. Bluffs are subject to continuing erosion by the natural forces of gravity, water, and wind. However, human activity such as the development of roads and walking paths can increase the possibility of erosion and bluff instability. Added weight on the bluff face by objects and structures, removal of vegetation, and stormwater runoff can also contribute to increased destabilization and erosion rates. Proper land management practices including generous development setbacks from bluffs can help to ensure that erosion rates are not dramatically increased by human activity and development.

Invasive Species

The key threat to grasslands, open fields, ponds, and shrubland habitats is habitat succession and colonization by invasive species like black swallowwort, multiflora rose and autumn olive. Other species of concern which can dominate habitats when not controlled are mile-a-minute vine, bittersweet, Japanese Knotweed, Black Swallowwort and bamboo. Overgrowth of these species will shade out and eventually kill native shrubs. Efforts should be made to protect and maintain large stands of native shrubs and even smaller patches if of high quality. The Town may also want to consider regulations regarding land clearing and invasive control and pesticide use. Grasslands and open fields require continuous or periodic maintenance by mowing or grazing to keep from growing into shrublands and eventually forests.

Deer Population

Block Island did not historically have a large deer population. The last valid record of deer existing on Block Island was around the time white settlers arrived in 1661. At the request of local hunters, the State reintroduced deer to Block Island in 1968 bringing over four does and a buck on the ferry. With mild winters, acres of low-lying brush in which to hide, and no natural predators on Block Island other than man, the deer thrived. There is concern that an overpopulation of deer results in negative impacts on the local ecosystem. To address this concern, Block Island provides permits to local hunters in order to control the deer population. The hunting season has been lengthened and once-stringent permitting procedures have been loosened. Some argue for eradication of deer on Block Island, however, the proximity of houses and large tracts of land where hunters are not allowed provide deer a safe haven. Others argue total eradication is not necessary in order to protect the environment.

Compounding the issue is the high incidence of Lyme disease on the island. This is a major public health issue and a factor in decision-making related to controlling the deer population on Block Island. The Town currently has in place a Deer Task Force whose work is dedicated to addressing the deer population and control measures on Block Island. This is a controversial issue and additional discussion and consensus building may be necessary.

Human Intrusion

On Block Island, human intrusion and disturbance especially along beaches and dunes pose a threat to habitat quality and natural populations. The island's many visitors must be educated on the importance of remaining off dunes, not disturbing wildlife and not polluting or littering.

There is a concern that incremental approval of individual beach access structures, particularly stair structures, may lead to a cumulative degradation of the island's scenic resources. Local regulations should be crafted and adopted to protect the aesthetic qualities of Block Island's natural coastline and applications for beach access structures should be evaluated on the basis of multiple considerations including visual impacts. The coastline should be inventoried and areas where beach access structures may not be appropriate due to safety concerns, sensitive ecological conditions, or visual impacts on significant scenic resources should be identified for further protection within the local regulations. In crafting regulations, consideration and preference should be given to public beach access structures that serve greater numbers of people.

TECHNIQUES IN PLACE FOR MINIMIZING NEGATIVE IMPACTS OF DEVELOPMENT ON SIGNIFICANT NATURAL RESOURCES

Land conservation is arguably the single greatest strategy in achieving natural resource protection goals. The island's robust program of land conservation began in 1972 with the establishment of the Block Island Conservancy. As of 2015, 2,210 of the island's 6,076 acres (which excludes coastal ponds – the Great Salt Pond, Cormorant Cove, Trims Pond and Harbor Pond) are protected as open space through public or non-profit ownership. Another estimated 600 acres consist of wetlands or waterbodies and cannot be developed. Current records and calculations indicate that 44.8% of the island's land area is conserved, 36.4% through deeded protection and 9.8% through regulation.

MAP NR3 *Conserved Land* identifies the protected lands by ownership category on Block Island. This includes land owned by the federal government, the State of Rhode Island, and the Town of New Shoreham; a number of conservation organizations including The Nature Conservancy, Audubon Society of Rhode Island, Block Island Conservancy, Block Island Land Trust and the Ocean View Foundation; and privately held lots with conservation easements or development restrictions. See Recreation and Conserved Areas Chapter for additional discussion on protected open spaces and priorities for land preservation.

In addition to land conservation, many town codes and regulations have been adopted for the purposes of natural resource protection. Chapter 11 Natural Resources of the Town Code establishes the Conservation Commission and wildlife refuge areas, protective measures for groundwater and surface water including wetlands, and soil erosion and sediment control measures.

Within the Town's Zoning regulations is a Coastal Overlay which provides a high level of protection for critical coastal features by greatly restricting development a minimum of 100 feet from delineated coastal features. Additionally, a Waterfront Overlay Zone provides protection to the island's harbors and ponds by restricting uses in designated zones.

Within the Town's Subdivision regulations is the option for Flexible Design Residential Development which provides an alternative to conventional style subdivisions in that a significant portion of the land is set aside as permanently protected open space. This option provides for the same number of house lots at reduced sizes to allow greater design flexibility in order to increase protection of natural resources.

GOALS, POLICIES, AND ACTIONS

GOAL NRI: Mitigate adverse impacts on the island's natural resources due to human development and activities

Policy	Action	Responsible Party	Timeframe
NRI.A. Direct new development to areas and locations that minimize the potential for negative environmental impacts	NRI.A.1. Review new State wetlands setback regulations and determine if additional protection measures are required to protect the quality and habitat of the wetlands systems on Block Island	Building, Land Use, & Planning; Planning Board; Conservation Commission; Town Manager; Town Council	Short-term
	NRI.A.2. Develop zoning overlay district with special use permit for high hazard areas that include storm surge inundation, sea level rise and SLAMM projected potential salt marsh areas	Building, Land Use, & Planning; Planning Board; Town Council	Medium-term
NRI.B. Focus land protection efforts on critical natural resources	NRI.B.1. Identify undeveloped land containing habitats of endangered species and/or having a high potential for coastal wetland migration	Land Trust; Town Council	Medium-term
	NRI.B.2. Explore issues related to reforestation and identify potential lands where reforestation may be a good option	Land Trust; Conservation Commission; Planning Board; Town Council	Long-term
NRI.C. Ensure open fields and shrublands remain high quality habitats	NRI.C.1. Develop informational guides for property owners on how to manage open fields for wildlife and the best cutting practices to achieve various desired results	Land Trust; Planning Board; Conservation Commission	Long-term
NRI.D. Control invasive species by reducing their density and abundance to a level which does not compromise the integrity of the ecosystem and allows native species to thrive	NRI.D.1. Develop an invasive species management plan for Town-owned open space properties	Conservation Commission; Planning Board; Recreation	Long-term

NR1.E. Promote Environmental Stewardship	NR1.E.1. Develop an education program aimed at visitors and renters to promote good environmental behavior and responsible stewardship	Tourism Council; Conservation Commission; Recreation	Medium-term
	NR1.E.2. Institute programs at the Block Island School with partners that encourage outdoor learning, natural resources preservation and stewardship among the next generation	School Department	Ongoing

GOAL NR2: Protect the water quality and habitat of coastal ponds and marshes and the freshwater resources of Block Island

<u>Policy</u>	<u>Action</u>	<u>Responsible Party</u>	<u>Timeframe</u>
NR2.A. Manage stormwater volumes and reduce pollutants	NR2.A.1. Investigate strategies to reduce and limit impervious surface on the island and establish a policy identifying an upper limit on the total percentage of impervious cover on the island to be incorporated in the next update of the Comprehensive Plan	Building, Land Use, & Planning; Planning Board; Town Council	Long-term
	NR2.A.2. Enact guidelines and institute an education campaign on the appropriate use of fertilizers, pesticides and herbicides; Town should serve as a model of best practices	Conservation Commission; Recreation; Building, Land Use, & Planning; Planning Board; Town Manager; Town Council	Medium-term
	NR2.A.3. Review and strengthen current regulations regarding LID (low impact development)	Building, Land Use, & Planning; Planning Board; Town Council	Medium-term

	NR2.A.4. Review and strengthen landscaping requirements to ensure low maintenance native vegetation that minimizes the need for watering and use of lawns, fertilizers, and pesticides are used for all new development projects	Building, Land Use, & Planning; Planning Board	Medium-term
NR2.B. Preserve and restore naturally buffered areas along coastal ponds and freshwater resources	NR2.B.1. Draft and adopt regulations to require the preservation or restoration of naturally buffered areas along the Great Salt Pond and significant freshwater ponds	Building, Land Use, & Planning; Planning Board; Town Council	Short-term
	NR2.B.2. Determine appropriate minimum buffer width and establish incentives for property owners who maintain a vegetated buffer in excess of the minimum	Building, Land Use, & Planning; Planning Board	Short-term
	NR2.B.3. With partners, conduct an inventory of vernal ponds; enforce buffers and control use of fertilizers in these area	Land Trust, Conservation Commission; Building, Land Use, & Planning; Planning Board	Long-term

GOAL NR3: Protect Block Island's natural scenic coastline and features

<u>Policy</u>	<u>Action</u>	<u>Responsible Party</u>	<u>Timeframe</u>
NR3.A. Control the proliferation and adverse impacts of individual beach access structures	NR3.A.1. Enact a twelve-month moratorium on individual beach access stair structures	Town Council	Short-term
	NR3.A.2. Craft and enact regulations to ensure private beach access structures are located and designed in a manner that minimizes any adverse impacts	Building, Land Use, & Planning; Planning Board; Town Council	Short-term
NR3.B. Preserve the natural flood protection function and high quality habitat of the dunes system	NR3.B.1. Install beach access signage to encourage pedestrians to remain off dunes	Recreation, Town Manager	Short-term
	NR3.B.2. Implement an effective public education campaign which explains the importance of people remaining off dunes	Recreation; Town Manager; Town Council	Short-term; Ongoing
	NR3.B.3. Install public walkover structures at the Town Beach to discourage traversing the fragile dunes (NHCI.B.2.)	Facilities Director; Building Official; Town Manager	Short-term

Timeframes: Short-term (1-3 years); Medium-term (4-6 years); Long-term (7-10 years)