Section V.J.

Critical Natural Resources

This inventory chapter updates and builds on data in similar chapters in the 1987 Islesboro Growth Management Action Plan, 1994 Town of Islesboro Comprehensive Plan, and 2002 Islesboro Comprehensive Plan and are adopted herein by reference.

I. Riparian Habitat

Forested swamps are characterized by woody vegetation 20 feet tall or taller, particularly along rivers and in mountains. They occur only in palustrine and estuarine systems and normally possess an overstory of trees, an understory of young trees and shrubs, and an herbaceous layer and may include broad or needle-leaved deciduous, broad or needle-leaved evergreen, and dead trees. There are significant areas of forested swamps UpIsland, including in the vicinity of each of the high yield aquifers and the cluster of potential threats to groundwater discussed in a previous inventory chapter. There are also areas of forested swamps in the vicinity of Point Comfort, Coombs Cove, Sabbathday Harbor, Sprague Cove, and on portions of Keller Point. Smaller areas of forested wetland are found DownIsland within the area defined by West Bay, Main, and Mill Creek roads. Forested swamps also occur south of Mill Creek and east of Main Road. There are a number of smaller forested swamps scattered throughout the DownIsland area.

Ponds/open water

Islesboro Lake Fish Species Inventory		
Common Name	**Scientific Name**	**Fishery Value**
American eel	Anguilla rostrata	1
Chain pickerel	Esox niger	2
Smallmouth bass	Micropterus dolomieu	2
Largemouth bass	Micropterus salmoides	2
White perch	Morone americana	2
Golden shiner	Notemigonus crysoleucas	1

Source: Maine Department of Inland Fisheries and Wildlife, last updated November 2004

There largest fresh water body in Islesboro is Meadow Pond. According to the Maine Department of Inland Fisheries and Wildlife (MDIFW), American eels and Golden shiners, both of #1 fishery value, are found in Meadow Pond. Chain pickerel, smallmouth bass, largemouth bass, and white perch are also found in the Pond.

Salt marshes are important to wildlife and estuarine or marine fisheries for a number of reasons. They serve as spawning and nursery grounds for more than two-thirds of commercial and recreational marine fishes. They are highly productive environments within the estuarine food web. Salt marshes also act as a barrier against storm surges, significantly reducing shoreline erosion by absorbing flood waters and attenuating wave action. They improve water quality by removing suspended solids, excessive nutrients, and pollutants from overlying waters. They are used by many waterfowl and shorebirds for feeding, resting, and nesting. Salt marshes have high scenic value and provide recreational opportunities. Salt marshes are inland of Spragues Beach and Parker/Coombs coves UpIsland, within the Narrows, and between Islesboro Harbor and Hewes Point and north of Grindel Point DownIsland.

Shrubby swamps are dominated by woody vegetation less than 20 feet tall and may include true shrubs, young trees, or shrubs that are small or stunted because of environmental conditions. They occur only in estuarine and palustrine systems. Large blocks of scrub shrub wetlands are found UpIsland in the northern part of the loop formed by Meadow Pond and Main roads and around Meadow Pond. DownIsland, larger areas of scrub shrub wetlands are found along either side of Main Road and near the western base of Abrams Mountain.

II. High Value Plant and Animal Habitat

There are five areas where Bald Eagle nests have been identified – two areas in the loop formed by Meadow Pond and Main roads, around Ram Island, in the cove south of Hewes Point, and around Jobs Mountain and Charlottes Cove.

Flat Island is a designated as a Sea Bird Nesting Island and is protected by the Department of Marine Resources. Sea bird nesting is also found on small islands both east and west of Lime Island.

Much of Islesboro's shoreline provides important Coastal Wading/Waterfowl Habitat. Most wading and waterfowl habitat is on Islesboro's western shores and other islands; however areas in Parker and Coombs coves and Hutchins Island, Ryder Cove, and

Billys Shore all have sizable wading and waterfowl habitat. Other areas along the western UpIsland shores include Spragues Beach and Seal Harbor. Crow Cove in the Narrows as well as Flat, Warren, Spruce, and portions of Seven Hundred Acre Island also have significant wading and waterfowl habitat areas. DownIsland, the largest blocks of wading and waterfowl habitat is found in the vicinity of Gooseberry Point, Broad Cove, and Sherman Point, Ames Cove, Shattuck Point DownIsland extending out to Minot Middle, Job, Ensign, and Lime islands, and in the vicinity of two unnamed islands, east of Lime Island. On the eastern shore DownIsland, coastal wading and waterfowl habitat is also identified in Islesboro Harbor and Dark Cove.

III. Large Habitat Blocks

Not surprisingly, there are a number of large blocks of undeveloped land (> 100 acres) UpIsland, as overall development has traditionally taken place DownIsland. The largest unfragmented blocks of land in the Narrows and DownIsland occur in the vicinity of Buring Point and in the area surrounded by West Bay, Main, and Mill Creek roads, in the vicinity of Broad and Sherman points, Abrams Mountain, and west of Charlottes Cove and Jobs Mountain. Most of Seven Hundred Acre Island and the island south of Lime Island are undeveloped. Large forested blocks of undeveloped land are identified west of Freshwater Pond Road, west of Main Road to Sprague Cove, and include Spruce and Warren islands.

IV. Scenic Views

Two inventories of Islesboro's scenic resources have been undertaken – one in 1987 and the other in 1992. The first study, prepared by the Island Institute in collaboration with Holly Dominie, was commissioned by the Islesboro Islands Trust.[1] The second was prepared for the Maine Critical Areas Program to identify scenic areas appropriate for designation.[2][3]

The 1987 inventory describes the overall visual character of the Island and the scenic quality of 49 views to the water from public roads. Data was gathered in Phase I to be used in Phase II to formulate long term management plans for each scenic area, including land acquisition strategies. The overall visual characterization was prepared through discussions with local residents and observations while driving public roads to assess a range of visual features present in each view.

The study describes the overall visual picture of Islesboro as

> "one of a rural New England landscape…enhanced by the marine surrounding and the remnants of the farms that once dominated the northern part of the island. Residential development predominates…The homes are provincial and the architecture well maintained. The graveyards add to the picturesque New England landscape...Historical and present patterns of use reflect the relaxed-residential ambiance of the island...Supporting the fact that the island is geared towards a rural landscape, the nodes of activity on the island are dispersed and difficult to distinguish."[4]

The study notes that Islesboro's physical geography contributes to its special visual quality, including its long, narrow, highly configured shoreline and the eastern shore where "overlooking slopes are more prominent and visually distinctive." It also describes

[1] Island Institute in collaboration with Holly Dominie. Visual Resource Study for the Town of Islesboro. Rockland, Maine. December 1987.
[2] Terrence J. Dewan & Associates. Scenic Inventory: Islesboro, Vinalhaven, North Haven, and Associated Offshore Islands. A Report Prepared for the Maine Critical Areas Program, Maine State Planning Office, Augusta, Maine. June 1992.
[3] Replaced by the Natural Areas Program, which focuses on plant and animal habitat.
[4] Op cit, Visual Resource Study for the Town of Islesboro.

island roads as “narrow, curving and continually changing in elevation” in some places enhancing views “from a vantage point close to sea level, overlooking residential landscapes.” It identifies the ferry landing, the Narrows, and Dark Harbor as important identifying landmarks, contributing to Islesboro’s sense of place and notes that as the ferry approaches the island, aside from Grindle Light, “there is no other development visible on the shore. The rest of the view is of seemingly endless spruce woods originating at the waters edge.”

The study describes four distinct landscape settings:

- “old farm rural residential” along West Side Road and along Meadow Pond-Turtle Head-Main roads where views to the water overlook open agrarian landscapes and views at higher elevations look over open expansive landscapes;
- “medium density residential development” found through the center of the island on Main and the extension of Ferry roads which are relatively open, further from the water’s edge, at moderate elevations, and without many views to the water;
- “enclosed woodlands” below Dark Harbor on Main Road and along Ferry Road depict wooded areas that have either no or minimal development along the roadside edge;
- “old summer colony” noted in the area surrounding Dark Harbor on Hewes Point Road and Billys Shore Drive at Ryder Cove with traditional summer residences and significant views to the water.”

The study points out that the Narrows divides UpIsland from DownIsland and that UpIsland is characterized by an “old farm rural residential” landscape with “views from the roads on this end of the island …expansive from moderately high elevations.” DownIsland the views to the water are fewer, “although the landscape is more diverse along the road corridor. Stately homes peer through the woods and sit close to the roadside edge.” Below Dark Harbor, the road passes through heavily wooded, undeveloped areas and views are hidden until it ends at the Town Beach, which provides a “panoramic view of nearby islands, distant shore and mountains, and the open ocean.”

Islesboro Scenic Views - 1992															
			Hilltop views from public roads	Settlements	Cottages	Open water views	Semi-enclosed views	Harbors	Enclosed water views	Points	Intermittent views	Lightouses	Beaches	Moorings	Score
Pendleton Point	X					X	X			X			X		**74**
Grindle Point	X				X		X	X		X		X		X	**74**
West Side Rd	X				X						X				**71**
Islesboro Harbor				X		X	X	X						X	**71**
Kissel Point Rd				X	X		X	X						X	**70**
Sabbathday Harbor				X			X	X						X	**67**
Parker Cove	X		X			X									**67**
Dark Harbor		X		X	X				X						**65**
Seal Harbor							X	X						X	**63**
Main Rd Overlook	X		X		X	X									**62**
Charlottes Cove						X	X						X		**60**
Broad Cove	X						X								**58**
Billys Shore							X								**57**
Hinckley Beach							X						X	X	**56**
Crow Cove		X					X							X	**55**
Mill Creek		X					X								**51**
Turtle Head Cove						X							X		**49**
Ferry Rd							X								**42**

Source: Scenic Inventory: Islesboro, Vinalhaven, North Haven, and Associated Offshore Islands. Office Terrence J. DeWan & Associates for Maine State Planning Office, 1992.

The 1992 study inventories scenic areas as seen from public access points and the major viewsheds, based on evaluation by trained observers of eight scenic indicators.[5] In Islesboro, of the 18 sites evaluated, 5 sites were recommended for inclusion on the

[5] Landform, open land, shoreline configuration, special scenic features, views of water from major roads, land use, vegetation, and landscape composition and effect.

State's Critical Areas Register, 11 sites of moderate to high scenic quality were recommended for further field investigation and verification before being considered for Critical Area status, and 2 sites were identified as of local significance.

The study generally notes that "viewing locations have often been established by traditional economic uses of the land, (farming… and clearing for residential or recreational use], foresight (conservation easements, state or local parks), or the fortuitous location of roads or utility rights of way" and suggests that roadside thinning or opening of view corridors can reestablish overgrown views or open new viewing opportunities. It also points out that several established fields in Islesboro "punctuate the landscape, providing directed and relatively narrow vistas to the water and that "while the scale of these pastures is relatively small when compared to the open land found on the mainland, their relative scarcity and the contrast they offer makes them an important component of the landscape."

The study makes the following management recommendations to guide local and state officials with specific actions to preserve or improve the visual environment:

- Pendleton Point: Provide additional sanitary and picnic facilities near outer parking area. Screen parking areas from view of beach users.
- Grindle Point: Separate parking from historic buildings and adjacent green. Remove or relocate overhead utility lines to make them less obvious. Incorporate interpretive signage in limited areas. Clean stone beach of litter and debris.
- West Side Road: Screen power cable crossing where visible next to road. Use careful vegetation management to open views from road to bay. Use design guidelines and site plan review to maintain architectural and landscape integrity found within scenic area.
- Islesboro Harbor: Protect open fields surrounding Bounty Cove through conservation easements. Scenic easements on Northeast Point and land east of Main Rd.
- Sabbathday Harbor: Protect lands surrounding Ryder Cove through conservation easements and/or strict adherence to shoreland zoning.

- Parker Cove: Preserve open field on east side of road to maintain visual access to bay. Conservation easements on fields on east side of road. Site plan review to direct new construction away from fields and prevent blockage of public view.
- Dark Harbor: Strict site plan review standards to assure site and architectural compatibility for future development.
- Seal Harbor: Provide better definition of parking areas. Selective vegetation management necessary to open new views or maintain existing vistas to harbor.
- Main Rd Overlook: Work with private property owners to establish permanent view corridors to Penobscot Bay.
- Charlottes Cove: Minor maintenance work on roadway and culvert.
- Broad Cove: Preserve visual access to cove with protective covenants on open fields and strict site plan review standards.
- Hinckley Beach: Provide parking as demand warrants.
- Crow Cove: Continue enforcing shoreland zoning to prevent further development along waterfront.
- Turtle Head Cove: Provide limited amount of public parking.
- Ferry Road: Install low vegetative screen on east side of warning sign used to notify navigators of presence of cable crossing.

As part of 2008 update of the Comprehensive Plan, members of the Comp Plan Committee revisited the views identified in the 1987 study to document them with photos and attempt to assess whether the views remain, have been obscured by tree growth, or impacted by the construction of structures or disturbance of the landscape. It is difficult to use this inventory to track changes in the views since 1987 because of the lack of photo documentation in 1987; however, it appears that at least three, possibly four, views have been lost, at least two have shifted (and possibly been reduced in linear extent) due to tree growth, and nine others may have been obscured due to tree growth.

Two new views were identified. Now that the views have been documented with photos and their locations are identified on a map in the Town's GIS system, it should be easier to update the inventory of changes in the future.

As noted in each of the previous inventories of views, views were identified and rated based on "professional" assessment, with no input from the community about how it "valued" each view. Perhaps this explains why recommended steps to protect the identified views were never undertaken.

V. Coastal Hazards

Significant portions of Islesboro's shoreline are made up of coastal bluffs. UpIsland, there are two landslide hazard areas near Marshall Point and at Decker Point. DownIsland, there are landslide hazard areas in the vicinity of the western shore of Broad Cove, the shoreline near Maddie Dodge Field, and in two areas west of Pendleton Point Road south of Dark Harbor. There are also two landslide areas each on Seven Hundred Acre Island and Job Island.

Human activity and land use may contribute to the risk of a landslide. In general, human activities that increase the amount or rate of natural processes may, in various ways, contribute to landslide risk, including actions that:

- increase surface water flow to a bluff face (watering lawns; grading slopes; stormwater from roofs, driveways, paths, and lawns);
- saturate the ground with water (septic systems) that raises the water table, causing seepage and increasing weight on the bluff;
- clear vegetation or otherwise, disturb the bluff face (for views, walkways), leading to greater erosion, a steeper slope, and destabilization;
- add weight to the top of a bluff (buildings and other structures);
- cause ground vibration (well drilling, deep excavation); and
- increase erosion on adjacent properties where engineering ends along a shore (seawalls, rip rap, or other solid structures).

In 1995, the Maine Geologic Society (MGS) assessed the potential impact of sea level rise on Maine's "soft coast—coastal sand dune systems, coastal wetlands, and coastal eroding bluffs", [6] which, just based on historic rates of change, face the prospect of significant coastal erosion and inundation. For beaches and coastal wetlands, that erosion and inundation would be exacerbated by an accelerated rate of sea level rise associated with global climate change.[7]

Researchers found that eroding bluffs are more vulnerable to erosion from coastal storms than by a rise in sea level and that the most profound changes as a consequence of accelerated sea-level rise will probably be experienced by sand beaches based on a sea level rise ranging from over that same period. The analysis also projects that significant impacts will also be felt by tidally influenced wetlands. Not surprisingly, rocky shorelines are not particularly vulnerable to a change in sea level.

The Narrows, as a low lying area, has the potential for increased flooding.

VI. Invasive Species

[6] United States Environmental Protection Agency Office of Policy, Planning, and Evaluation and Maine State Planning Office, Maine Geological Survey, Marine Law Institute. Anticipatory Planning For Sea-Level Rise Along The Coast of Maine, EPA-230-R-95-900. September 1995.

[7] The State is planning for a 0.5 to 2 m rise in sea level over the next 100 years.

Since nearly the beginning of Islesboro's European settlement, Islesboro has struggled with "pests". In some of the earliest written records of the community, there were numerous bounties offered for crows. For a number of years, perhaps since hunting with firearms has been outlawed, the deer population has been largely unmanaged and has caused unwelcome impacts. Most recently, the community has observed the beginning of an invasion of non-native plants, like purple loosestrife, in town wetlands. It is not clear how serious this problem is at present.

VIII. Issues and Implications

1. Are Islesboro's various riparian and high value plant and animal habitats adequately protected by current land use regulations?

2. What should the Town do to encourage the preservation of large blocks of undeveloped land? Should the Town adopt some type of density transfer technique to direct growth to more compact "villages" in areas best able to support development while compensating land owners for reduced development potential of large undeveloped blocks of land that are among the most sensitive or valuable?

3. The two scenic inventories identify a number of views from public access points, some important at the state or even national level. Both studies recommend steps the Town could take to protect these assets, including acquisition of conservation easements and/or protective covenants, screening or removal of land use elements that detract from views, selective management of vegetation to preserve or open up views, and site plan review and development standards to prevent development from blocking public views and assuring that new development blends compatibly with existing development.

   Should the Town undertake a local effort to identify additional locally valued views and clarify which views are most important to protect? What steps, if any, should the Town take to protect and enhance its most important scenic views?

4. Given the existence of landslide hazards and the likelihood of sea level rise over the coming century, should the Town adopt more stringent setback and development standards to reduce the risk of damage to both developed areas and important coastal features?

5. The Narrows, with its highest point just about 50 feet above sea level, will be particularly vulnerable to sea level rise and extreme storm surges.

   What steps should the Town take to prepare for increasingly likely flooding events, particularly in the area of fire and ambulance services? The Town investigated the impact of sea level rise to determine its impact of the shoreline, particularly in the Narrows and Grindle Point areas; designate evacuation areas, breach points susceptible to flooding and overwash during storm events, and specific water elevations that may trigger flooding of emergency transportation corridors.[8]

6. For many years, landowners have struggled with the impact of a largely unmanaged deer population and, more recently, the threat of Lyme disease and "invasive" species. How serious are these problems on the Island? Should the Town prepare management plans to control the spread of pests and/or invasive species?

[8] Coastal Storm Vulnerability Grindle Point and The Narrows Report, Ransom Consulting Engineers and Scientists, August 21, 2017.