

Natural Resources

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3. Natural Resources

Overview

The mainland is described by Champlain as very hilly. It was well wooded although in places the natives had made considerable clearings, where they cultivated corn and other cereals. There were many walnut trees, oaks and cedars, but few pines. Wild grape vines were common, and beach plum bushes furnished an abundance of fruit "All the harbors, bays and coasts," writes Champlain, "are filled with every variety of fish. There are also many shellfish of various sorts, principally oysters. Game birds are very plenty."

Samuel de Champlain as quoted by E.C. Smith
A History of Chatham, Massachusetts, p.11

From the early 1600 description of Chatham it is clear that humans have significantly impacted the natural environment. Trees have been cut, the land cleared for farming, salt marshes have become cranberry bogs. Hunting and fishing villages were established to take advantage of abundant game birds and sea resources. Much of the environment was altered.

Natural coastline alteration still is evolving. Eroding bluffs have been reinforced, groins have been built to stall the natural migration of beaches. Harbors continue to be dredged to clear constantly shifting, swiftly moving channels.

Coastal resources attracted visitors initially as tourists. Some returned. Houses were built consuming land, destroying forests squeezing out wildlife by the destruction and fragmentation of upland habitat and generally affecting water quality by human waste. Street runoff, fertilizers and the reduced circulation of estuaries due to culverting resulted in pond closures and eutrophication.

Natural drainage patterns have been altered by roadways. Today "build-out" or development of all parcels of land in town (with the exception of legally protected and conservation lands) is in the foreseeable future.

Although the town has a small sewer system and wastewater treatment plant, nitrogen is accumulating in groundwater primarily from septic systems. Nitrogen has become a serious threat to our surface water particularly to the estuaries and salt ponds so nitrogen sensitive.

Despite the tremendous impact humans have had, Chatham's natural systems are largely healthy and have successfully adapted and re-adapted to changing conditions. Given their own resilience and some positive intervention, our resources are far from doomed.

Chatham still has abundant shellfish; our potable water resources are projected to remain within nitrate guidelines except under extreme scenarios and are constantly monitored; reduction of phosphates in detergents have significantly reduced the introduction of the nutrients into freshwater systems; dwindling animal species are showing a comeback with cooperative habitat management.

As pressures continue on our natural environment, it is more important than ever to protect our natural resources from negative and unnecessary alteration and to identify measures that can be taken to counter and undo damage where we can. Maintaining the high quality of Chatham's natural assets is vital to the character and economic future of the town.

Policies Goals and Implementation

Long-term objective: To preserve and protect, and where possible, to enhance, the quality of Chatham's unique natural resources for the benefit of all current residents and visitors, and for generations to come. Recognizing the fragile nature of our local ecological system and the pressures that are imposed on it by continuing growth in population density, growth in residential and commercial developments, increasing intensity of recreational use of both coastal and inland waterways, and decreasing acreage of undeveloped open land to sustain wildlife habitat, a nevertheless important second objective is to enhance access and enjoyment of those resources by the public at large. This objective must be accomplished in ways that minimize the potential negative impact on these precious resources.

Policy: Consistent with these long-term strategic natural resource protection objectives it shall be the policy of the Town of Chatham that:

All future development efforts within the town, including residential, commercial, and municipal, and the infrastructure required to support such developments, be designed, implemented and managed in a way that will maintain the Town's natural resources.

To be consistent with the carrying capacity of the Town's natural resources, all projects involving new or expanded access to, and increased or more intensive use of its natural resources (as enumerated in this plan) shall include an assessment of the resulting impact on those resources and include steps to minimize any adverse impact that might result *before being approved*.

Future growth and development projects be encouraged to locate away from sensitive natural resource areas to maintain and enhance wildlife habitat.

Additional regulations and bylaw revisions be used to improve the protection and preservation of land areas adjacent to coastal and inland waters.

Protect natural resources by acquiring or securing development rights to land for conservation in keeping with the Regional Policy Plan's goal of protecting at least 50% of the remaining developable land in Chatham.

3.1 Goal

Protecting the quality of our air and water resources.

While air quality in Chatham is not currently considered to be a problem, the quality of our water resources is of strategic and vital importance, since so much of the economic and social fabric of the community is dependent in one way or another on our water

resources. Monitoring and improving the quality of our groundwater, our coastal in inland waters and protecting them from adverse impacts that often result from population pressure is one of the most important goals of the community. To achieve this goal, the following actions are planned:

Water Quality Protection

Complete and adopt the Comprehensive Wastewater Management Plan as expeditiously as possible and move forward with implementing its recommendations, and undertake the following associated actions: (NR1)

Designate nitrogen sensitive areas as appropriate, through the processes outlined in state environmental and Chatham Board of Health regulations. (NR2)

Support research, evaluation, and approval of alternative septic system technology aimed at nutrient reduction (nitrogen and phosphorus), especially on systems appropriate for seasonal use. (NR3)

Reduce the nitrogen load to impacted embayments or freshwater bodies through the purchase, or seek donation, of land. Target for public purchase lands on which development would adversely impact resources. (NR4)

Educate the public to the benefits of, and encourage the use of, native, low maintenance landscaping to minimize the use of fertilizers. (NR5)

Move forward with integration of Assessors, Water, and septic system data within the town Geographic Information System (GIS) to allow comprehensive management of nitrogen impacts. (NR6)

Require where feasible that new and replacement septic system disposal areas be located at least 300 feet from the high water line of freshwater ponds, streams and wetlands. (NR7)

Update the inventory and elevation data for the town's numbered conservancy districts, and review and update the information on a regular basis and incorporate it into the town's Geographic Information System (GIS). (NR8)

Continue the town's Coastal Water Nutrient Monitoring Program and freshwater pond monitoring programs to ensure the availability of sound scientific data upon which to evaluate the condition of Chatham's waters and to guide management decisions. (NR9)

Regularly update data associated with inland wetlands which serve as the basis for environmental regulation. (NR10)

Continue efforts, including land acquisition, to protect the watersheds of public wells from over-development and restrict land-use to those with minimal threat to groundwater quality. (NR11)

Institute a public education effort aimed at water conservation. (NR12)

Develop a Drought Management Plan to improve the effectiveness of the water use restriction ordinance now in place. Apply use restrictions to private wells. Require rain shut off devices on all automatic irrigation systems (with possible agricultural exemptions). (NR13)

Storm Water

Continue to employ appropriate stormwater Best Management Practices (BMP)(to reduce run-off into sensitive areas) for all town properties. (NR14)

Continue the implementation of the recommendations of the Oyster Pond Stormwater Management Study including: (NR15)

The design and installation of stormwater BMPs for those areas under town responsibility. (NR15)

Continue working with Massachusetts Highway to expedite the correction of stormwater problems under its jurisdiction. (NR15)

Continue to work with Massachusetts Highway to address stormwater problems from state highways in an expeditious manner. (NR16)

Continue to seek grant funding to offset town costs to implement stormwater management programs. (NR17)

For stormwater management purposes, amend the Zoning Bylaw, subdivision regulations, and other development regulations as necessary to require the following at the time of subdivision or site plan approval: (NR18)

A written operation and maintenance plan including the designation of responsible party for stormwater management systems. (NR18)

The posting of a bond, or other appropriate means, to ensure the long-term maintenance, and replacement if needed, of stormwater management systems. (NR18)

Control and mitigation of the impacts of stormwater runoff both during and after construction. (NR18)

Prohibition of the connection of privately owned drainage systems into any publicly controlled system. (NR18)

Appropriate testing and engineering for all proposed stormwater management systems. (NR18)

Encouragement of the use of low maintenance non invasive plant varieties in landscaping. (NR18)

Prohibition of any new direct discharge(s) of untreated stormwater into any fresh or marine surface water or wetland. (NR18)

Encouragement of the use of alternative stormwater systems that can be incorporated into the site landscaping such as drainage swales and turf pavers. (NR18)

Minimization of the amount of impervious surface on sites and maintain the maximum amount of undisturbed pre-development vegetation. (NR18)

Require that undisturbed natural buffer strips be maintained around all marine water resource area and freshwater resource areas to minimize the impacts of surface runoff. (NR18)

Coastal Resources

- Discourage the construction of revetments and other “hard” coastal protection structures unless “soft” solutions such as beach nourishment have been found to be ineffective. In cases where a “hard” structure is determined to be necessary, require that the beach is maintained in front of the structure to allow public passage along the shore whenever practical. (NR19)
2. In cases where “hard” structures have been permitted and constructed in the past, the Conservation Commission will continue to address the issue of renourishment to restore rights under State law for public passage for fishing and fowling. Along Chatham Harbor, revetments were constructed after the 1987 break in the barrier beach. When the barrier beach restores itself and beaches in front of revetments return, public rights for passage must be maintained. (See Environmental Impact Report entitled, “Phase I - Draft Environmental Impact Report - Shore Protection Structures - Aunt Lydia’s Cove to Beach and Tennis Club - Chatham, MA,” dated January 1993.) (NR20)
 3. Work with property owners in the Little Beach area to permit the subterranean wall proposed by the Coastal Erosion Advisory Committee’s study (Phase II) should protection become necessary because of changes in the configuration of South Beach. (NR21)
 4. Complete the management plan for North and South beaches to provide general guidelines for balancing protection of natural resources with recreational, municipal and private property use. (NR22)
 5. Carry out the proposed nourishment of Cockle Cove beach to restore the beach and shoreline habitat and to maintain the beach for public use. (NR23)
 6. Support the update of the Stage Harbor Management Plan and expand its scope to cover areas along Nantucket Sound and The Southway (area between South Beach and Monomoy) and the area between Outermost Harbor and Minister’s Point (where it joins the Pleasant Bay Management Plan). (NR24)
 7. Continue the town’s active participation in the Pleasant Bay Alliance and implement recommendations of the Alliance, pursuant to the Pleasant Bay Management Plan, to the extent that they are consistent with Chatham’s amended plans and policies. (NR25)
 8. Develop policies for coastal structures in areas not presently covered in a harbor management plan and require reviews for consistency with these policies prior to the issuance of any special permit or state permit for such structures. (NR26)
 9. Continue the town’s participation in the National Flood Insurance Program and Community Rating System. (NR27)
 10. In promulgating development regulations and reviews, take into account the impacts of sea level rise and erosion in evaluating development proposals and in revising and updating applicable town policies, regulations and bylaws. (NR28)

Shellfish Resources

Expand the Town's shellfish propagation programs. (NR29)

Update the existing facilities housing the up-welling system for the shellfish propagation program to ensure the facilities are adequate to maintain the program in the long-term. (NR30)

Continue efforts at coastal and estuary water quality protection and improvement to ensure the long-term viability of the local shellfish industry. (NR31)

3.2 Goal

Protection of vegetation and wildlife habitat

To protect the health and vitality of our inland vegetation and wildlife habitat areas, Chatham shall develop and strengthen current regulations by:

1. Prohibiting the clearing and grading of land without a site plan approval or, in the case of single family houses, without a building permit and requiring measures to protect wildlife habitat and to control runoff during and after construction. (NR32)
2. Requiring the consideration of habitat and tree preservation in development planning and that information on topography and vegetation particularly mature trees be required at the time of application for site plan approval and, in cases where site plan approval is not required, at the time of application for a building permit. (NR33)
3. Developing a bylaw to include specific procedures to preserve trees during construction, such as fencing around the tree's root zone to prevent compaction, heavy mulching, and pruning of damaged limbs. When removal of valuable trees is being proposed, the property owner be encouraged to plant replacement trees where appropriate. (NR34)

B. Undertake the following actions by:

1. Developing an educational program that will provide Chatham property owners with information on the control of insects and on indigenous plants that will provide wildlife food sources and habitat. (NR35)
2. Developing a management program for town conservation lands to include measures to enhance plant and habitat diversity, control invasive plants and insect infestation. (See Town Conservation Lands Management section of this element). (NR36)
3. Recommending native species to be sold by local nurseries for use by residential and business property owners. (NR37)
4. Identifying and acquiring where possible lands which are contiguous with or provide connections between other conservation areas to preserve wildlife habitat and prevent further fragmentation of undeveloped areas. (NR38)

5. Developing a comprehensive inventory of shade and other ornamental trees along Route 28, and certain areas (downtown Main St., Old Village, etc.), and developing recommendations for maintenance, areas for tree planting, desirable species types, and preservation mechanisms. This can be coordinated with Friends of Trees' data (all of their trees are tagged and listed). (NR39)
6. Exploring the conversion of abandoned cranberry bogs to a true wetlands function in cooperation with private landowners. (NR40)

3.3 Goal

Conservation Land Management for the protection of natural resources on town lands.

All lands designated under this plan as Conservation/Passive Recreation lands and all lands purchased or donated for conservation shall be monitored by the Conservation Commission. The Commission shall make recommendations as deemed necessary for management of these lands in keeping with the provisions of this plan. (NR42)

The Conservation Commission will develop a comprehensive plan for the management of all lands purchased or donated to the Town for conservation. The plan will include:

Measures to preserve and protect natural resources while allowing passive recreational use in keeping with the Natural Resources and the Open Space and Recreational Elements of this plan. (NR43)

2. An assessment and management program for vegetation including the control and eradication of invasive plants, and wildlife habitat. (NR44)

Maintenance, upgrade and extension of pedestrian trails, publication of trail maps, an annual maintenance program for clean-up and rectifying damage from misuse, measures for preventing misuse. (NR45)

Addition of amenities such as benches, signage, and parking areas. (NR46)

Appropriate funds should be budgeted to provide for protection of the natural resources in these areas, and the passive recreational use of our conservation lands. (NR47)

A 5 year program, updated annually, for actions to carry out the plan with cost estimates for inclusion in requests for funds in the town's capital program and annual budget. (NR48)

The Town will appropriate funds to investigate conservation land deeds of acquisition and restrictions, if any, and to develop and implement the Conservation Management plan. (NR49)