CHAPTER 5:
PROTECTION OF WETLANDS

IMPLEMENTATION SUMMARY

RECOMMENDATION	STATUS
9.6.1 Strengthen wetlands regulations and review procedures	✓ Developed guidelines for docks and piers, and walkways and stairways that have been implemented through changes in local regulations. ➢ Evaluate additional changes to strengthen regulations, encompassing definitions, performance standards, and enlarging the area of jurisdiction within the ACEC.
9.6.3 Study barrier beach and marsh system	➢ Conduct the study of barrier beach and marsh systems as outlined in the resource management plan.
9.6.4 Relieve restricted wetlands	✓ Town of Chatham conducted detailed flushing analyses of Muddy Creek and Frost Fish Creek. ➢ Evaluate options for increasing tidal flow to Muddy Creek
✪ Public education	➢ Develop a public education campaign aimed at homeowners and contractors working in wetland resource areas.

➢ CONTINUED ✪ NEW RECOMMENDATION ✓ COMPLETED

OVERVIEW

Wetland resources cover more than 2,300 acres, or 12%, of the Pleasant Bay study area. When open water bodies are counted, wetlands cover 40% of the area. The abundance of Pleasant Bay's wetland resources is matched by the variety and condition of those resources. Sixteen categories of wetland resources have been identified in the study area, and most are in generally healthy condition.

Wetlands serve many critical environmental functions. Wetland resources are protected by federal, state and local regulations. The plan recommended steps to strengthen local regulations and increase their consistency. To date, the Alliance has addressed wetland protection issues primarily through the development of guidelines for docks and piers, which have been implemented through changes in local regulations. Guidelines for walkways and stairs also have been developed and are being used by local conservation commissions to update their regulations. However, as outlined below, further steps can be taken to strengthen local regulations.

STRENGTHENING WETLANDS REGULATIONS AND COMPLIANCE

A comparison of local wetland regulations conducted for the plan identified differences in the treatment of several issues:

- *Additional Interests and Resources Protected*. Additional interests are those community values not addressed in the WPA that must be protected in the administration of local regulations. Several resources pertinent to the study area are not covered in all towns' regulations: *erosion* and *sediment control* (not covered in Harwich*), agriculture* and *aquaculture* (not covered in Harwich, Chatham), *water quality in ponds and streams* (not covered in Harwich, Orleans), *all inland and coastal land subject to flooding,* and *rare and endangered plants* (not covered in Orleans, Harwich, Chatham).

- *Buffers and Setbacks.* Each community's regulations differ on buffers and setbacks. Consistency of enhanced buffer and setback requirements is desirable to protect resources. One way to strengthen protection of wetland resources is to increase the buffer area of jurisdiction. Increased buffer width enhances sediment and pollution removal, and increases the associated wildlife habitat value of the resource area. Designations of setbacks for no Disturb Areas and/or Limited Activity Areas within the Buffer Zone also serve to enhance protection of these wetland values.

- *ACEC Standards.* The standard that an activity may be allowed as long as it has no adverse effect on wetlands resources within an ACEC is incorporated in local regulations. However, there are no specific criteria for conservation commissions to rely on in applying the *no adverse effect* standard. Development of specific criteria for the ACEC impact standard is still a priority.

UPDATE RECOMMENDATIONS

A process for strengthening local wetlands protection regulations and review procedures recommended in the plan should be undertaken. The Alliance will convene a wetlands work group to review existing wetlands protection regulations in the Alliance communities, and where advisable, develop recommendations for strengthening regulations in the following areas:

- Establishing a goal of *no loss of wetlands* within the study area;
- Ensuring that replication of wetlands is not an allowed mitigation action.
- Developing specific criteria for applying the ACEC standard of "no adverse impact";
- Developing uniform procedures for the delineation of wetland resource boundaries, allowing for periodic review and revisions to boundaries as needed;
- Enlarging the area of jurisdiction within the ACEC**;**

- Developing performance standards for activities within the area of jurisdiction, including the potential for establishing No Disturb and/or Limited Activity zones;
- Evaluating whether wetlands should be included in lot area calculations (as also relates to zoning and health regulations);
- Developing performance standards for land subject to coastal storm flowage;
- Developing performance standards for protection of rare and endangered species;
- Developing best management practices and performance standards for storm water management;
- Developing best management practices and performance standards for landscaping and restoration of lawn areas;
- Developing standards for re-vegetation and restoration of vegetation where it has been clear-cut or removed;
- Reviewing the status of *Coastal and Inland Wetlands Restrictions* in terms of their applicability during local and state wetlands reviews;
- Increasing penalties and fines for violations of orders of condition; and
- Coordinating wetlands reviews and regulatory decisions with decisions made by other local boards such as zoning, appeals, and public works.

Public education is needed regarding landscaping practices within the ACEC and the watershed. The Alliance will work with conservation commissions, landscapers and the County Cooperative Extension to develop a public information campaign focused on best management practices for landscaping within and outside of areas of jurisdiction, including:

- General lawn care practices (soil preparation, grass and plant types, watering and fertilizer use);
- Pruning and maintenance of vegetation;
- Treatment of invasive species;
- Exploring the feasibility of training and certification for contractors.

INCREASED PROTECTIONS FOR BARRIER BEACH AND MARSH SYSTEM

Wetlands serve many critical environmental functions. Tidal marshes, in particular, are central to Pleasant Bay's ecology. Marshes serve as habitats and feeding areas to many species of marine life, as well as birds and upland fauna. Marshes also provide a natural transition between ocean and upland waters. They filter pollutants from upland run-off before they enter the ocean. Marsh vegetation also helps to mitigate storm erosion along the shore. Some of the Bay's tidal marsh resources have been lost over the past three decades. Causes for the loss of marshes include erosion, which can be hastened in some areas by erosion control structures, as well as encroaching land uses that prevent marshes from migrating upland as shoreline erosion occurs.

UPDATE RECOMMENDATION

A study of marsh-barrier beach sedimentation should be undertaken. The study would look at changes in marsh areas, beach profiles, and the impacts of existing

and proposed erosion control structures on the marsh-barrier beach sedimentation process. The study results would be used to:

- Recommend shoreline and near shore parcels that should be protected from development to sustain the natural beach re-nourishment processes and allow for marsh migration;
- Develop beach re-nourishment regulations to protect private property, public beaches and wetland resources;
- Recommend guidelines to be enforced by local conservation commissions in the review and permitting of projects or structures proposed for erosion control, or to upgrade public or private access, in marsh areas; and
- Develop guidelines for public access in sensitive areas.

RELIEF FOR RESTRICTED WETLANDS

Both the Bay-wide flushing study and the nitrogen loading study conducted for the resource management plan identified under-sized culverts at Muddy Creek and Frost Fish Creek, where crossed by Route 28, as significant impediments to good water quality.

The Town of Chatham conducted detailed flushing analyses of Muddy Creek and Frost Fish Creek as part of its wastewater management plan. The analysis looked at the effect of different sizes of culverts in terms of flushing and reduced nitrogen. Alternate design scenarios are now being reviewed.

UPDATE RECOMMENDATION

The Alliance will continue to work with the Town of Chatham and Massachusetts Highway Department, and in the case of Muddy Creek also the Town of Harwich, to evaluate design alternatives to increase flushing and improve water quality, habitat and other natural resources in Frost Fish and Muddy Creeks, and the Bay as a whole. *Coastal and Inland Wetlands Restriction Orders* should be reviewed in the process of designing and planning any improvements designed to enhance flushing.