

DESIGNATION OF PORTIONS OF THE TOWNS OF  
BREWSTER, CHATHAM, HARWICH, AND ORLEANS

AS THE

PLEASANT BAY AREA OF CRITICAL ENVIRONMENTAL CONCERN

WITH SUPPORTING FINDINGS

Following an extensive formal review required by the regulations of the Massachusetts Coastal Zone Management program (301 CMR 20.00) including nomination review, research, meetings, and evaluation of all public comments, I, the Secretary of Environmental Affairs, hereby designate portions of the Towns of Brewster, Chatham, Harwich, and Orleans and portions of the Pleasant Bay adjacent to these Towns as an Area of Critical Environmental Concern (ACEC). I take this action pursuant to the authority granted me under Massachusetts General Law c. 21A, s. 2(7).

I also hereby find that the coastal wetland resource areas included in the Pleasant Bay ACEC are significant to the protection of groundwater and public water supplies, the prevention of pollution, flood control, the prevention of storm damage, the protection of land containing shellfish, and fisheries; those public interests defined in the Wetlands Protection Act (MGL c. 131, s. 40; 310 CMR 10.00).

I. Boundary of the Pleasant Bay ACEC

Upon review of the boundaries as recommended in the nomination letter and subsequent recommendations made in testimony received, the final boundaries generally include those areas north of Allen's Point and Strong Island and generally landward to 100 feet beyond the 10 foot elevation above mean sea level. The nominated boundary differs from the one described herein in two significant ways: 1) The phrase "...within 100 feet of a continuum of points 10 feet above the level of any stream..." has been changed to "within 100 feet of a continuum of points 10 feet above the natural high water mark, as defined in 310 CMR 9.02, of any stream...". This revision was made to further define the "level" of the stream or other water body. 2) All of the exclusions of channels from the improvement dredging prohibitions have been eliminated from the boundary description. These were eliminated because they were found to lack the necessary level of specificity and were seen as somewhat contrary to the intent of the designation. Should these areas require dredging in the future, this can be accomplished through a revision in the boundary. A larger scale boundary map is on file at the CZM Office at 100 Cambridge Street, Boston, MA.

Specifically, the boundary is defined as follows: Beginning at the most easterly point on the 10 foot contour line at Allen Point as shown on the Chatham quadrangle of the USGS topographical map, as revised to 1974, thence in a northerly direction to a point on the Chatham-Orleans town

line 500 feet easterly of the town boundary rock at the northeasterly end of Strong Island, thence easterly by said town line and an extension thereof to the easterly boundary of Cape Cod National Seashore, thence northerly by said easterly boundary to a point due east of the southerly end of the 10 foot contour line approximately 750 feet southerly of the Nauset Beach Municipal Parking Lot in East Orleans, thence due west to a point 100 feet east of said 10 foot contour line, thence northerly by a line 100 feet easterly of the 10 foot contour line, thence westerly, southerly, easterly, and northerly, as the case may be, by a line 100 feet inland of said 10 foot contour line as it follows the perimeter of several channels, bays, coves, ponds, marshes, and swamps of the greater Pleasant Bay to a point 100 feet west of the point of beginning, thence to the point of beginning, including any areas inland within 100 feet of a continuum of points 10 feet above the natural high water mark, as defined in 310 CMR 9.02, of any stream, swamp, marsh, bog, pond, or other wetland the outflow of which flows into Pleasant Bay. The fact that an artificial improvement such as a road or driveway has interrupted or may in future interrupt such contour line shall not exempt such areas from the ACEC designation. All areas seaward of the above defined boundary shall be included in the ACEC designation.

## II. Designation of the Resources of the Pleasant Bay ACEC

In my letter of acceptance of the nomination of the Pleasant Bay as an ACEC, I indicated that our evaluation indicated that it easily met the minimum threshold for consideration. Indeed, this nomination cited all fourteen criteria as being resources of the Pleasant Bay system. The nomination letter clearly lists the quantity and quality of the resources present.

The presence of these critical resources, and their relatively undisturbed nature, clearly indicate their value to the region and the state.

## III. Procedures Leading to ACEC Designation

On 29 October, 1986, a letter of nomination, signed by the selectmen and chairmen of the conservation commissions and planning boards of the affected towns, pursuant to 301 CMR 20.06:15(a), was received by my office. The nomination was formally accepted by letter on 28 November, 1986, and the review process was begun.

Notice of the acceptance of the nomination and of an informational meeting and a public hearing was published in the Boston Globe, Cape Codder, and in the Massachusetts Environmental Monitor on 24 December, 1986. Numerous informational articles appeared in the local and regional newspapers.

In addition to the many public meetings held by the nominating committee during the preparation of the nomination and its local review,

an informational meeting for the general public was held on 20 January, 1987. The public hearing was held on 27 January, 1987, and the public comment period was held open until 10 February, 1987. Written and oral testimony was received from 27 individuals and organizations and is on file at the CZM office.

#### IV. Discussion of Factors Specified in Sections 6.46 of the CZM Program Regulations

In the review process leading to the decision on a nominated area, the Secretary must consider the factors specified in Section 6.48 of the CZM Program regulations. As stated in these regulations, the factors need not be weighed equally, nor must all of these factors be present for an area to be designated. While the more factors an area contains the more likely its designation, the strong presence of even a single factor may be sufficient for designation.

Based on the information in the nomination letter, presented at the public hearing, and through written comments, and on the research of my staff, I find the following factors relevant to the designated ACEC:

##### Quality of the Natural Characteristics

The Pleasant Bay system possesses outstanding natural resource attributes such as well-preserved and largely unaltered barrier beaches and islands, marsh systems, salt and fresh water ponds, rivers, bays and tidal flats. Although there has been significant development in the region, Pleasant Bay has not yet experienced significant degradation from this activity, though the warning signs are evident. Most of the marshes, tidal flats and barrier beaches are unaltered and undeveloped, allowing them to function at their maximum capacity as habitat areas, nursery and spawning areas, and, in the case of barrier beaches, for the purposes of storm damage prevention.

##### Productivity

The high productivity of estuarine/saltmarsh ecosystems has been well documented in the scientific literature. The plant growth within the marsh is exported by the tides and ultimately incorporated into the marine food web. The protected, shallow waters of the estuary act to a nursery to shellfish and finfish and the relatively high water quality of the tributaries and headwaters provide spawning sites for anadromous fishes. The diverse benthic population supported by the marshes, estuary and tidal flats is also extremely important as a food source for migratory and resident shorebirds and waterfowl. The ACEC includes almost 1200 acres of saltmarsh and several thousands acres of tidal flats.

##### Uniqueness of the Area

Beyond the unique quality of the area containing all fourteen

criteria for designation, as cited in 301 CMR 20.06:21, The Bay is extremely important as an area of transition between two biogeographic provinces, areas which by virtue of their unique physical characteristics contain significantly different types of plants and animals. As such, the biological communities of Pleasant Bay are made up of organisms which are as far north as they can be reasonably expected to be found, and others in the far southerly portions of their range. Given that many of these animals and plants are living at the extremes of their ranges, they are somewhat more sensitive to changes in their environment, hence the need for greater protection of this unique resource.

#### Irreversibility of Impact

Changes in the salinity regime of estuaries may eliminate or substantially alter the broad mixing zone important as a nursery for juvenile fishes and shellfish. Both coastal development, which changes the runoff characteristics of the adjacent upland, and dredging of channels within the marsh, which may lead to overdrainage of watersheds, saltwater intrusion into groundwater, and disrupt nutrient inputs, can act to irreversibly alter estuarine ecosystems such as Pleasant Bay.

#### Threats to Public Health through Inappropriate Use

As noted in the nomination, portions of the designated area are used for public shellfish harvesting. Inappropriate discharges, either direct or indirect, into this system could have public health repercussions through contamination of these shellfish. Salt marshes are valuable for their ability to remove contaminants from adjacent waters. Disruptions of this function of the marsh could also have detrimental effects on the quality of the harvested shellfish. The high quality of the waters within the designated ACEC also makes the areas safe for water contact activities.

The numerous barrier beaches within the ACEC act as natural storm buffers to protect landward areas and structures from damage. The marsh system also aids in this protective role. Disruption of this protection could lead to significant storm damage to public property and private homes in exposed coastal areas..

#### Imminence of Threat to Resources

Cape Cod, in the past decades, has been under ever increasing development pressure. All predictions see these pressures increasing in the future, especially in the towns affected by this designation. These development activities present two particular forms of threat to the areas included in the designated area.

First is the incremental effect of construction along the edges of marshes and waterways. Run-off from roadways and landscaped areas can bring increased levels of nutrients to the aquatic system resulting in eutrophication, possible algal blooms, and the resultant lowering of oxygen levels in the water to the detriment of marine organisms. Run-off

can also carry pathogens (often indicated by elevated counts of coliform bacteria), oil and gasoline residues, and other contaminants. Even properly designed, installed, and maintained septic systems can allow leaching of nutrients into marshes and waterways in levels which cannot be easily assimilated, while failing systems can discharge raw sewage into directly into surface waters.

Despite laws and regulations to the contrary, construction along marshes and waterways can also bring incremental filling over time.

Secondly, the increasing population has led to increased proposals for dredging tidal creeks and flats for boating activities. The protections afforded by designation will act to limit this activity to only those areas excluded by nomination and supported by full and sufficient documentation.


It is hoped that this designation will serve to focus attention on the value and sensitivity of the area and will serve as a guide for future development proposals.

#### Economic Benefits

This area has intrinsic values related to the region's economic stability. Cape Cod's, and each town's, is based on fishing, tourism, and retirement industries. the fisheries are supported through the healthy and productive marsh and estuarine systems and serve a regional recreational, and commercial fin and shellfish industry. People come to Cape Cod communities, either to visit or to live, for its unspoiled beauty, recreational opportunities, and quality of life. Tourism is supported through the waterfront vistas, the historical significance, and the recreational facilities of the public beaches. The retirement community is attracted to the region because of the serenity of the landscape and the relatively untouched nature of the environment. Any alteration of the area that results in a decrease in its productivity, attractiveness and use carries a potential for adverse economic impact.

#### Supporting Factors

There has been virtually unanimous agreement on the appropriateness of the designation among local residents, environmental groups, and Boards and Commissions from the affected towns. There has also been support from State Legislators. Each of the Towns has taken steps to protect their natural resources and have indicated that the ACEC designation will be an important part of planning and protection policies. It is therefore my strong feeling that Pleasant Bay is very appropriate for designation as an Area of Critical Environmental Concern.

  
James S. Hoyte  
Secretary of Environmental Affairs

  
Date