

DESIGNATION OF PORTIONS OF THE TOWNS OF
EASTHAM, TRURO AND WELFLEET

AS THE

WELFLEET HARBOR AREA OF CRITICAL ENVIRONMENTAL CONCERN

WITH SUPPORTING FINDINGS

Following an extensive formal review required by the regulations of the Executive Office of Environmental Affairs (301 CMR 12.00) including nomination review, research, meetings, and evaluation of all public comments, I, the Secretary of Environmental Affairs, hereby designate portions of the Towns of Eastham, Truro, and Welfleet and portions of the Welfleet Harbor 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 Welfleet Harbor 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, fisheries, and wildlife habitat; those public interests defined in the Wetlands Protection Act (MGL c. 131, s. 40; 310 CMR 10.00).

I. Boundary of the Welfleet Harbor ACEC

Upon review of the boundaries as recommended in the nomination letter, subsequent recommendations made in testimony received and EOEa agency review, the final boundaries generally include those areas seaward of a line 100 feet inland from the 10 foot contour (MSL), referring to the Welfleet Quadrangle of the USGS topographic map, or seaward of the Cape Cod National Seashore Boundary, and including the waters of Welfleet Harbor and associated wetlands and watercourses. The nominated boundary substantively differs from the one described herein only in that it did not include, on the proposed boundary map, two important wetland resource areas, Pole Dike Creek and Mayo Creek, which have been included in the designated boundary.

Specifically, the boundary is defined as follows: Beginning at the northwest corner of the boundary of the Cape Cod National Seashore (CCNS boundary), located in South Truro, the ACEC boundary proceeds southerly along said boundary to its southernmost point, where it turns easterly, proceeding across the mouth of Welfleet Harbor to Sunken Meadow Beach, in Eastham. The ACEC boundary proceeds eastward along the northerly side of South Sunken Meadow Road to the 10-foot elevation contour line and follows said contour line northeasterly to North Sunken Meadow Road, crosses this road, and continues along the aforementioned contour line to the easterly side of West Road. The ACEC boundary continues along a line 100 feet southerly of Hatches Creek until it intersects U.S. Route 6, follows northerly along the westerly side of U.S. Route 6 until it intersects with a line 100 feet northerly of Hatches Creek. The ACEC boundary follows along said line until it again intersects with the line 100 feet inland of

the 10 foot-contour, which it follows along the thread of the shore generally in a northwesterly direction to a point on Chequesset Neck where the CCNS boundary intersects the beach. The ACEC boundary then follows the CCNS boundary initially to the west but generally in a northeasterly direction to a point of intersection with Old County Road, where it proceed in an easterly direction along a line 100 feet inland from the 10-foot contour, then following the thread of the shoreline along the marshes and watercourses until it again intersects with the CCNS boundary. The ACEC boundary then follows the CCNS boundary in a northerly direction until it intersects a line 100 feet inland of the 10-foot contour line, where it follows the thread of the shoreline in a westerly direction until it intersects with the CCNS boundary and Old County Road. The ACEC boundary continues along the CCNS boundary generally in a northeasterly direction to an intersection with U.S. Route 6, where it continues along a line 100 feet inland of the 10-foot contour along the southerly side of Herring River, around and encompassing Herring Pond, Higgins Pond, Gull Pond, and Williams Pond, and back along the northerly side of Herring River and the easterly side of Bound Brook, in and out of Paradise Hollow and Lombard Hollow to a point where this line again intersects Old County Road. The ACEC boundary then proceeds northwesterly along the western side of Old County Road and thence along the southerly side of Ryder Beach Road to the northerly side of the barrier beach (TR-5 of the MCZM Barrier Beach Inventory), and thence along this boundary to its westerly corner and continuing due west into the Cape Cod Bay to a northerly extension of the westerly CCNS boundary, and southerly to the point of beginning.

Within this above described boundary are three areas which, above a line 100 feet inland of the 10-foot contour, are excluded from the designated area. These include the eastern and western portions of Lieutenant's Island, Old Wharf Point westerly of the causeway, and that portion of Indian Neck southerly of the of Sewall's Gutter. Specifically included in the boundary are Mill Hill Island and Cannon Hill in Duck Creek. A number of areas within the harbor have also been excluded to facilitate their dredging. Areas which have been previously dredged, (fully described in DEM, Division of Waterways Contract Nos. 1271, 1478, 1769, 1879, 2644, 3010, and US Army Corps of Engineers Federal Navigation Project Description for Wellfleet Harbor, Massachusetts) and are excluded from the boundary of this ACEC, are generally described as the inner basin (north of the parking area on Shirttail Point), the channel around Shirttail Point, the mooring basin, and the buoyed channel leading out of the harbor, approximately three-quarters of a mile long, to Buoy #12. Additional areas which have not been dredged previously, but may be dredged in the future, and are therefore excluded from the boundary, include a 100-foot wide strip along the northern side of the inner basin, and an approximately 2500-yard long extension of the previously-licensed 125-foot wide dredged channel from Buoy #12 due south to Buoy #10.

II. Designation of the Resources of the Wellfleet Harbor ACEC

In my letter of acceptance of the nomination of the Wellfleet Harbor as an ACEC, I indicated that our evaluation indicated that it easily met the minimum threshold for consideration. Indeed, this nomination cited the presence of nine of the eleven resource categories, listed at 301 CMR 12.06, in the Wellfleet Harbor 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 December 21, 1988, a letter of nomination, signed by ten citizens of the Commonwealth, pursuant to 301 CMR 12.05(1)(a), was received by my office. The nomination was formally accepted by letter on February 1, 1989, 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 Cape Codder, and in the Massachusetts Environmental Monitor on or about February 27, 1989. 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 March 30, 1989. A public hearing was held on April 6, 1989, and the public comment period was held open until April 14, 1989. Written and oral testimony was received from numerous individuals and organizations and is on file at the MCZM office.

IV. Discussion of Criteria for Designation

In the review process leading to the decision on a nominated area, the Secretary must consider the factors specified in Section 12.09 of the EOEa regulations regarding the designation of Areas of Critical Environmental Concern. 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 Wellfleet Harbor system possesses outstanding natural resource attributes such as well-preserved and largely unaltered barrier beaches (24 of which are state-designated), islands, marsh systems, salt and fresh water ponds, rivers, bays and tidal flats. Although there has been considerable development in the region, Wellfleet Harbor 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.

In addition to the biological resources in the Wellfleet Harbor system, the area has been identified by Department of Environmental Management in their Massachusetts Landscape Inventory (1982) as containing visual landscapes and cultural resources that place it in the top 5% of all landscapes in the Commonwealth. As such, while this important resource may be less tangible than a barrier beach or sand flat, and its attributes more difficult to define than habitat for an endangered species or the flood protection afforded by a coastal bank, its preservation is equally important. Therefore, all EOE agencies should give the preservation of this resource due consideration when implementing the ACEC designation.

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 as a nursery for 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. When compared to the whole of Barnstable County, while the Town of Wellfleet accounts for only 5.1% of the land area of the County and 7.5% of the tidal shoreline, the ACEC contains 6.8% of all salt marsh acreage, 9.8% of all shrub marsh acreage, and over 10% of the tidal flat acreage.

Of particular interest with regard to the productivity of this system is shellfish productivity. The various tributary streams and direct groundwater inputs, as well as the generally good water quality, provide a highly favorable growing environment for shellfish, particularly the renowned Wellfleet oyster. In 1987, harvest of shellfish in Wellfleet contributed \$1.5 million to the local and regional economy. Recent aquacultural successes with quahogs reinforce the especially productive nature of Wellfleet Harbor.

Uniqueness of the Area

The designated area is not unique by virtue of the inclusion of any single significant attribute, but the presence of so many. Such factors include: 1) The DEM Scenic Landscape classification - as described above; 2) The presence of an extraordinarily large amount of habitat for Federally-listed or state-listed rare, threatened, and endangered species - while described in greater detail in the nomination, the most important statistic in this regard is that well over half of the area of the ACEC lies within estimated habitat of state listed rare wildlife species, as defined by the Massachusetts Natural Heritage and Endangered Species Program; 3) Kettle ponds - the kettle ponds at the headwaters of the Herring River are frequently referred to by geologists as the Cape Cod archetype of a kettle pond complex; 4) Archeological resources - The Indian Neck Ossuary is considered, by the Massachusetts Historical Commission, to be the most unusual Native American burial site yet discovered on Cape Cod; 5) The unique environmental conditions as related to shellfish - as described above.

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, an issue of particular concern in Wellfleet Harbor. 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.

Threats to Public Health through Inappropriate Use

As has been emphasized in both the nomination and this designation, the shellfish resources of Wellfleet Harbor are very important. Portions of the designated area are used for recreational shellfish harvesting, commercial harvesting, and shellfish aquaculture. Most of the areas are currently open to shellfishing. Inappropriate discharges, either direct or indirect, into the headwater areas, ponds, tidal waters, or even groundwater 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 numerous barrier beaches within the ACEC act as natural storm buffers to protect landward areas and structures from coastal storm 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 increasing development pressure. The Cape Cod Planning and Economic Development Commission predicts these pressures will increase in the future, especially in the towns affected by this designation. Development presents 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. Seasonal anoxia, caused by both natural and man-induced factors, has already been identified as a problem in a number of tributary streams within the Wellfleet system. Runoff 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 directly into surface waters.

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

Second, the increasing population has led to increased proposals for dredging tidal creeks and flats for private, recreational 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. The local and regional economy is largely 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 finfish and shellfish harvesting industry. People come to Cape Cod, either to visit or to live, for its pockets of 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 strong support from state legislators, and the National Park Service. Each of the towns, and the Cape Cod National Seashore, 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 Wellfleet Harbor is very appropriate for designation as an Area of Critical Environmental Concern.



John P. DeVillars
Secretary of Environmental Affairs

5/18/89

Date