ACEC

Areas of Critical Environmental Concern

Massachusetts Coastal Zone Management

Site Summaries and Regulations

COASTAL ZONE
INFORMATION CENTER

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U.S. DEPARTMENT OF COMMERCE NOAA
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CHARLESTON, SC 29405-2413

AREAS OF CRITICAL ENVIRONMENTAL CONCERN

(ACEC'S)

The Massachusetts program for identification, designation, and protection of critical areas.

by Steve Bliven

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Revised, February 1982

COASTAL ZONE
INFORMATION CENTER

Massachusetts Coastal Zone Management Office
Richard F. Delaney, Director
100 Cambridge Street
Boston, MA 02202

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THE ACKNOWLEDGMENTS

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Shelly Putnam and Noga Waldman - CZM cartographers extraordinare.
Gary Clayton and Fran Schofield - for their editorial comments and review.
Maronn W. Sternack - for doing the typing.
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While many of the better features of the guide came from the above sources, the flaws remain the sole responsibility of the author, who would appreciate being made aware of them.

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THE INTRODUCTION

The Area of Critical Environmental Concern (ACEC) program was established in 1974 as a part of a legislative reorganization of state agencies dealing with natural resources, environmental matters, and conservation. Included in this reorganization was a requirement for the development of "statewide policies regarding the acquisition, protection and use of areas of critical environmental concern to the Commonwealth" (Mass. G.L. C. 21A s. 2(7)). This action was a recognition of the fact that certain land and water resources are of such a limited nature or central importance to the welfare, safety, and pleasure of all Massachusetts citizens that the protection and management of these resources transcends purely local concern.

The techniques to be used in identifying, designating and protecting these ACEC's were left to the Office of Environmental Affairs. Identification criteria and designation procedures for coastal sites were included in the Coastal Zone Management (CZM) regulations; the process for inland areas was incorporated into the regulations of the Massachusetts Environmental Policy Act (MEPA). Protection of coastal or inland ACEC's does not require new permits or administrative programs. Instead, existing environmental programs provide higher performance standards for activities proposed in an area designated as an ACEC. Regulations of many of the state's environmental programs have sections pertaining to ACEC's. Section III of this guide compiles these regulations in one place and presents a comprehensive picture of the ACEC program.

In the seven years since the inception of the program, thirteen sites have been investigated and six have been designated as ACEC's. Five of these are in the coastal zone and were designated through the CZM process and one is inland and was designated through the MEPA regulations. Section II is devoted to a discussion of these areas and includes maps, background information and copies of the designation findings. The program is ongoing and in the winter of 1981 several additional areas are under consideration for nomination as ACEC's.

Although many different sites - including historic, scenic, agricultural and forest areas - may meet ACEC designation criteria, the program has thus far been used primarily as a wetlands protection tool. For example, the CZM program has used the ACEC designation to establish a comprehensive regulatory framework to protect relatively unaltered estuarine areas along the coast (Policy #2 of the CZM Program). The ACEC program, of course, is only one several available resource protection devices ranging from acquisition to zoning to legislation such as the Wetlands Protection Act described in Section III. Depending on the management objectives and the resources present, the ACEC program may be appropriate; it certainly deserves careful consideration.

The protection of critical areas is important to CZM and the Executive Office of Environmental Affairs; it is a goal that we will continue to pursue. Rather than creating a new layer of bureaucracy, existing agencies and legislation have been used to implement this program. Therefore, understanding and cooperation among those agencies involved in the ACEC program as well as the public at large is a key its success.

For further information or to comment on the ACEC program, please contact:

Executive Office of Environmental Affairs
20th Floor, Saltonstall Building
100 Cambridge Street
Boston, MA 02202

(617)-727-9800

THE DESIGNATED AREAS OF CRITICAL ENVIRONMENTAL CONCERN

Through December of 1981, the Secretary of Environmental Affairs has designated six ACEC's; five in the coastal zone and one inland. The following pages provide general information about the sites, with emphasis on the coastal areas. This information includes:

- A locus map showing the general location of the coastal ACEC's;
- Site maps of the six designated ACEC's showing boundaries, water segments and land formations;
- Summary data sheets providing site information, important dates and map references for the designated areas. Two map references are provided: U.S. Geological Survey Quadrangle maps (USGS Quad Sheets) are listed by name, and map numbers are given from Volume II of The Massachusetts Coastal Zone Management Plan: Massachusetts Coastal Regions and An Atlas of Resources (CZM Atlas sheets). Barrier beach identification numbers refer to mapping done through, and available at, the CZM office (the format includes a two-letter town code and a numerical reference to the specific beach within that town);
- Copies of the designation findings providing details of boundaries, designation procedures, and resource features.

Larger scale maps and more detailed information on the coastal ACEC's are available through the Coastal Zone Management office; details of the inland site are available through the MEPA Unit of the Executive Office of Environmental Affairs. Addresses are listed below:

COASTAL ACEC'S

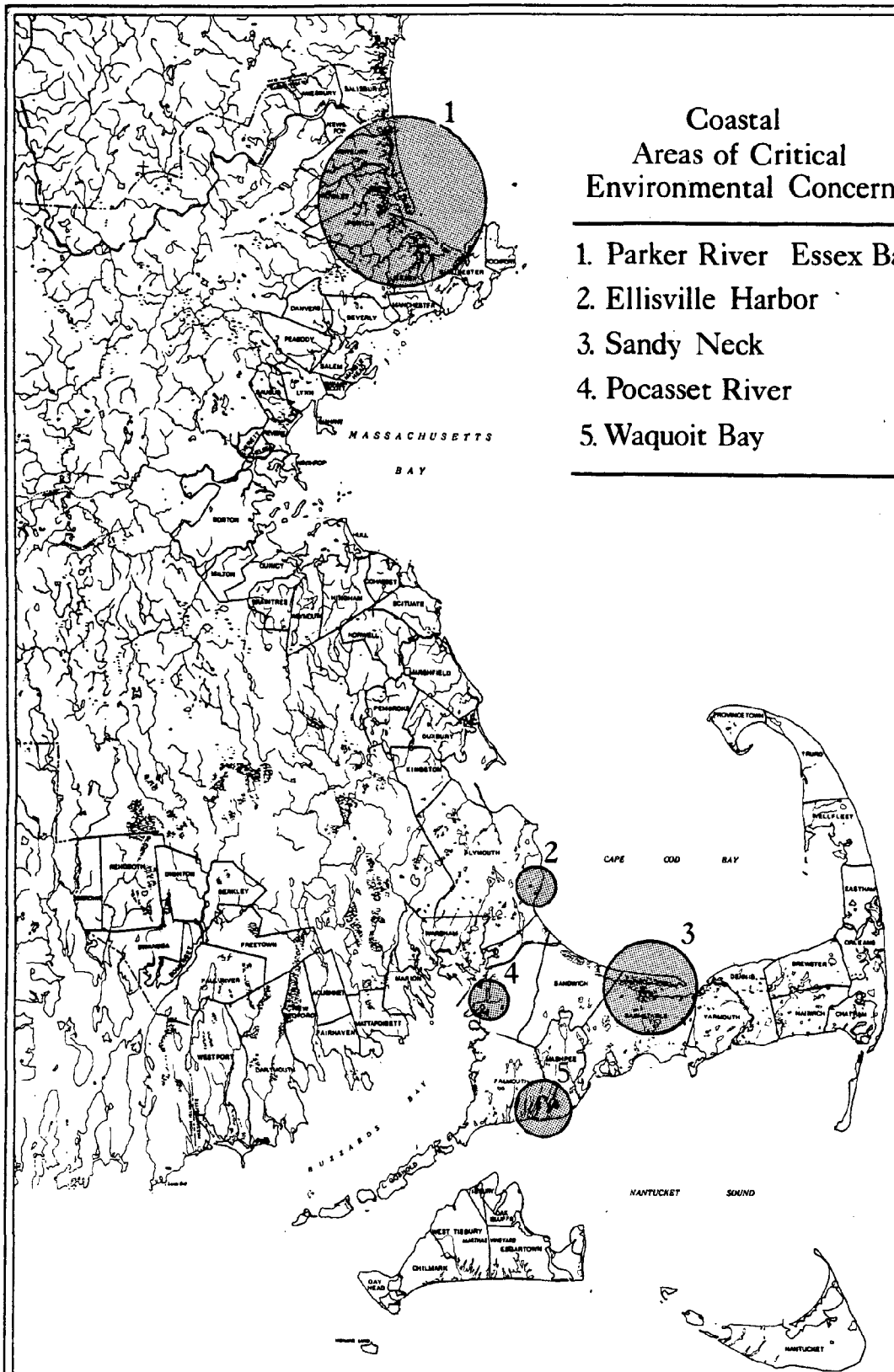
Coastal Zone Management
Saltonstall Building, 20th floor
100 Cambridge Street
Boston, MA 02202

(617)-727-9530

INLAND ACEC'S

MEPA Unit,
Executive Office of Environmental Affairs
Saltonstall Building, 20th floor
100 Cambridge Street
Boston, MA 02202

(617)-727-5830



Coastal Areas of Critical Environmental Concern

1. Parker River Essex Bay
2. Ellisville Harbor
3. Sandy Neck
4. Pocasset River
5. Waquoit Bay

EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS

COASTAL ZONE MANAGEMENT PROGRAM

AREA OF CRITICAL ENVIRONMENTAL CONCERN

(ACEC) COASTAL

Data Sheet

Location: PARKER RIVER/ESSEX BAY

Towns: Gloucester, Essex, Ipswich, Rowley, Newbury

USGS Quad sheets: Newburyport North, Newburyport East, Georgetown, Ipswich, Gloucester.

CZM Atlas sheets: 1,2,3,4,5.

Water Bodies included in ACEC:

Newbury
Plum Island Sound
Rivers: Little, Mill, Parker, Plum Island.
Creeks: Jerico, Little Pine Island, Mud, Pine Island, Plumbush.

Rowley
Plum Island Sound
Rowley River
Ox Pasture Brook (portion)
Creeks: Carolton, Club Head, Mud, Sand, Sawyer, Shad, West.

Ipswich
Plum Island Sound
Rivers: Castle Neck, Eagle Hill, Egypt(port.) Ipswich, Muddy (port.), Roger Island, Rowley.
Creeks: Broad, Fox, Labor in Vain, Laws, Lords, Metcalf, Neck, Paine, Six Goose, Stacy, Third, Treadwell.

Essex
Essex Bay
Essex River
Creeks: Ebben, Lufkin, Songinese (portion).

Gloucester
Essex Bay
Creeks: Farm, Lanes, Walker.

Barrier Beaches included in ACEC: Castle Neck/Crane Beach (Gt-1; Is-5,6), * portion of Plum Island (Is-1,2; Rl-1; Nb-1), area fronting Clark Pond in Ipswich (Is-3), isthmus connecting Little Neck in Ipswich (Is-4), beach on Gloucester side of Essex Bay Inlet (Gt-2).

Resource Summary:

23,793 acres of barrier beach, dunes, saltmarsh and water bodies are included in this ACEC. The designated portions of Plum Island and Castle Neck are two of only a limited number of major, undeveloped barrier beaches in the Commonwealth. The more than 10,000 acres of salt marsh comprise the largest concentration of that resource north of Long Island in New in New York. Its recreational beaches are known throughout Massachusetts.

* Barrier Beach Identification Code; CZM Barrier Beach Inventory, 1982.

Included within the ACEC is a 2900-acre Federal wildlife refuge known nationally as an important stopping and staging site on the Atlantic Flyway Migration route. More than 60 species breed here including the rare seaside sparrow and the least tern.

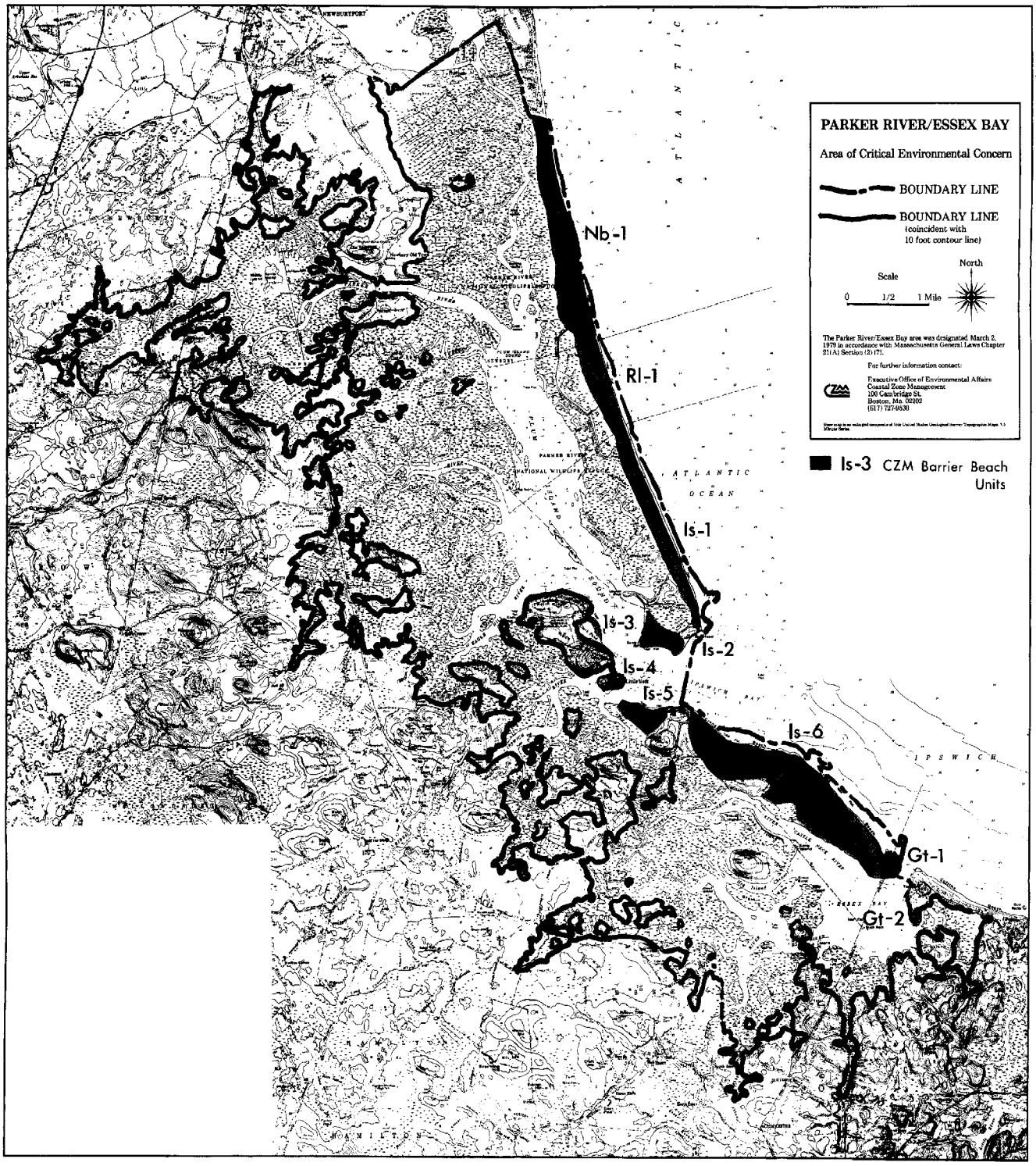
Over 300 species of birds have been sighted in this area with 145 considered uncommon and 75 rare. During the spring and fall migrations, concentrations of up to 25,000 ducks and 6,000 Canadian Geese have been noted. Other visitors of note include the snowy and great egrets, the glossy ibis, phalaropes, peregrine falcons and shorteared and snowy owls.

The flora of Plum Island has been the subject of a scientific study which recorded over 490 species of vascular plants. Waters of the ACEC contain vast amounts of shellfish and support some of the largest runs of alewives and smelt on the north shore.

Just as people today visit the area for fishing, shellfishing and recreation, in years past Native Americans used the site, leaving behind artifacts of their civilizations which are of great historical significance.

State Regulations apply (date of designation): 2 March 1979

Federal Consistency applies (date of OCZM concurrence): 1 August 1979


PARKER RIVER/ESSEX BAY
Area of Critical Environmental Concern
BOUNDARY LINE
BOUNDARY LINE
(coincident with
10 foot contour line)
North
Scale
0 1/2 1 Mile
The Parker River/Essex Bay area was designated March 2, 1978 in accordance with Massachusetts General Laws Chapter 21A1 Section (3) (7).
For further information contact:
Executive Office of Environmental Affairs
Coastal Zone Management
100 Cambridge St.
Boston, Ma. 02202
(617) 727-9530
Is-3 CZM Barrier Beach Units
Nb-1
Rl-1
Is-1
Is-2
Is-3
Is-4
Is-5
Is-6
Gt-1
Gt-2
ATLANTIC
OCEAN
NEWBURYPORT
PARKER RIVER
NATIONAL WILDLIFE REFUGE
IPSWICH
ESSEX BAY
HAMILTON

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202

EDWARD J. KING
GOVERNOR

JOHN A. BEWICK
SECRETARY

Designation of Parker River/Essex Bay Area as an Area of Critical Environmental Concern and Supporting Findings

Following an extensive process, including nomination by a variety of local governmental bodies, many informal meetings with local groups, two public informational meetings, a public hearing, and a formal evaluation of all assembled data, I, the Secretary of Environmental Affairs, hereby designate the Parker River/Essex Bay area as an Area of Critical Environmental Concern pursuant to the authority granted to me by G.L. c. 21A, § 2(7).

I also hereby find that the Parker River/Essex Bay ACEC is significant to flood control, the prevention of storm damage, the protection of land containing shellfish and fisheries; interests protected by the Wetlands Protection Act, G.L. c. 131, § 40.

1. Boundary of the Parker River/Essex Bay Area of Critical Environmental Concern

The boundary of this ACEC runs as follows: from the intersection of the northern boundary of the Parker River National Wildlife Refuge with the mean low water line as it appears on the most recent NOAA National Ocean Survey Chart on the eastern shore of Plum Island; then southerly, following that mean low water line of Plum Island to the southern end of Plum Island; then southerly along a closure line running between the "South Plum" bench mark at Bar Head and the bench mark at Steep Hill to the mean low water line at Crane Beach; then easterly and southerly along the mean low water line of Crane Beach to the southeasternmost point of Castle Neck; then southeasterly along a closure line running between the southeasternmost point of Castle Neck and the highest point of Two Penny Loaf to the 10 foot contour line, which is a line 10 feet above mean sea level, as shown on the appropriate U.S.G.S. 7½ minute series topographic map; then following such 10 foot contour line clockwise around Essex Bay until its intersection with a closure line running northerly between the northernmost point of such 10 foot contour line between Ebben Creek and the Essex River and the easternmost point of such 10 foot contour line between the Essex River and Soginese Creek; then northerly along such closure line to the continuation of such 10 foot contour line on the westerly side of the Essex River; then generally northerly and westerly along such 10 foot contour line to a closure line at the entrance to a former gravel pit off Soginese Creek; then southwesterly along such closure line to

the continuation of the 10 foot contour on the westerly side of the entrance to the former gravel pit, then generally northerly along such 10 foot contour line to its intersection with Mitchell Road in Ipswich; then northerly and westerly along Mitchell and Paradise Roads until its intersection with the 10 foot contour line on the westerly side of Muddy Run; then generally northerly along such 10 foot contour line to its intersection with the Newbury-Newburyport corporate boundary; then southeasterly and northeasterly along such boundary to Old Point Road, then southerly along the western edge of Old Point Road and Sunset Drive to its intersection with the northern boundary of the Parker River National Wildlife Refuge; then easterly along such boundary to the point of beginning.

The Parker River/Essex Bay Area of Critical Environmental Concern includes all of the Parker River National Wildlife Refuge, the Plum Island State Park, Castle Neck (including Steep Hill, Castle Hill and Crane Beach), Kent's Island in Newbury and Long, Round, Hog and Dilly Islands in Essex.

All areas not mentioned in the preceding sentence which are upland of the 10 foot contour line are excluded, as is the portion of the Ipswich River west of, and including the Town Wharf; that area near the Newbury town line operated on the date of this designation by the Town of Rowley as a sanitary landfill; and that portion of the Parker River westerly of Central Street in Newbury.

II. Description of the Resources of the Parker River/Essex Bay Area of Critical Environmental Concern

To qualify as an ACEC an area must have at least five of the 17 significant resources in Section 6.44 of the CZM Program Regulations. The Parker River/Essex Bay ACEC contains virtually all of these significant resources, the most important of which are listed below:

(1) Barrier Beach System: Plum Island, protecting Plum Island Sound and the Parker River estuary, and Castle Neck, protecting Essex Bay and the Ipswich River estuary, combine to form a barrier beach system of over 10 miles in length. Relatively undeveloped, nearly all of this area is protected under public or private management.

(2) Salt Marsh: This ACEC contains the largest expanse of salt marsh north of Long Island, New York, containing some 10,700 acres of high and low marsh. The salt marsh has high biological productivity and acts as a natural filtration system for river waters flowing into the estuary.

(3) Dunes: Castle Neck and Plum Island contain extensive dune formations that, in many areas, extend from the barrier beach to inland bays and marshes. They provide storm shelters for Plum Island Sound and Essex Bay and are a natural source of sand for replenishment of Crane and Plum Island beaches.

(4) Beach: There are approximately 12 miles of clean, sandy beaches within the ACEC; nearly all of them are open to the public.

(5) Shellfish: The rivers, estuaries and bays of this area contain some of the richest soft shell clam flats on the east coast. With the exception of a portion of the Ipswich River, the shellfish are uncontaminated and provide the basis for a significant local industry catering to the wholesale, retail and restaurant trade.

Shellfish wardens from 4 of the towns have estimated the shellfish harvest for 1976 as follows:

Newbury	10,800 bushels
Rowley	5,805 bushels
Ipswich	30,000 bushels
Essex	6,200 bushels

(6) Estuaries and Embayments: A series of rivers (the Parker, Mill, Rowley, Eagle Hill, Ipswich and Essex Rivers) and Plum Island Sound and Essex Bay produce an intricate network of estuarine environments. These estuaries are valuable commercial, recreational and scenic resources.

The outstanding feature of these estuaries is the abundance of clean, unpolluted water that ensures productive marine life and creates a healthy environment for recreation. Although the Ipswich River clam flats are closed due to pollution, the vast majority of the water within these estuarine systems is classified as "water of highest purity" (the coliform count has been documented to be below 50 for Plum Island Sound, Ipswich Bay, Essex Bay, the Rowley River, and most of the Parker River). Another important environmental indicator, dissolved oxygen, has been shown to be substantially above the 6 parts per million needed to sustain healthy aquatic flora and fauna. Average dissolved oxygen within Plum Island Sound and Essex Bay is 8 ppm and 9.8 ppm, respectively.

(7) Anadromous Fish Runs: There are five anadromous fish runs in this area. They are, from north to south, the Parker, Mill, Rowley, Ipswich and Essex Rivers. All provide spawning areas for smelt, and the Rowley, Parker and Mill Rivers host alewife and blueback herring runs. The Parker is the largest alewife run on the North Shore.

(8) Floodplain: The 100 year floodplain within the ACEC is primarily marsh land, but there are fringes of dry lowland. The lowlands are covered by a thin layer of glacial till and are underlain by clay-silt soil or bedrock. These soils are, in general, unsuitable for residential development relying on individual septic systems.

(9) Erosion and Accretion Areas: Because barrier beaches are among the most dynamic coastal environments, it is only logical that the ocean shoreline of this area is not stationary. Littoral drift, moving from

north to south, is eroding the beach along the ocean side of both Plum Island and Castle Neck and depositing sand at the southern ends of these beaches.

(10) Coastal Related Recreation: The beaches, dunes, marshes, rivers and bays of this ACEC are used for swimming, boating, hunting, fishing and many other recreational pastimes. Crane Beach attracted some 170,000 people during the summer of 1977, and Plum Island is well known for its bathing, surf fishing and birdwatching opportunities. Plum Island Sound and Essex Bay are prime recreational boating areas, with traffic on the Ipswich and Essex Rivers classified as "very heavy" by the U.S. Army Corps of Engineers. Sport fishing for striped bass, winter flounder, mackerel, white perch and smelt is becoming increasingly popular.

(11) Salt Pond: Clark's Pond on Great Neck in Ipswich is the only salt pond along this stretch of coast. Although relatively small, it is noteworthy for the many rare and unusual birds seen in the vicinity.

(12) Historic Site or District: In addition to being one of the first settlements in the Massachusetts Bay Colony, the Ipswich coastal area is the site of numerous discoveries of paleo-Indian artifacts. Dating back some 10,000 years, archeological evidence from this area shows it to be one of the oldest sites of human habitation in the Commonwealth.

(13) Significant Wildlife Habitat: The area hosts two wildlife refuges: the Parker River National Wildlife Refuge and the Cornelius and Mine Crane Wildlife Refuge. The Parker River Refuge is nationally noted for its importance as a stopover on the Atlantic Flyway.

It is a primary feeding area for Snowy and Great Egrets, Glossy Ibises and Little Blue, Louisiana and Black-crowned Night Herons, which breed nearby. It is also an important night roosting area for herons in late summer when the young have fledged (more than a thousand individuals). It is one of five major heron locations in the state.

It is an important roosting, feeding and staging area for shorebirds in spring and particularly during the fall migration when concentrations numbering in the tens of thousands utilize the area. It is one of six such areas on the northeast Atlantic coast.

Recently, it has been an important staging area for Snow Geese during spring migration and, historically, important for Canada Geese and other migrating waterfowl during both the spring and fall.

The Crane Refuge hosts the last remaining deer herd in the area.

(14) Significant Scenic Site: Because the entire ACEC area is in a natural, undeveloped state, it is extremely scenic and attracts a significant summer tourist trade. The many glacially formed hills which dot the area provide outstanding vistas of the marshes, beaches and ocean. From the higher elevations, one can see downtown Boston, the Isles of Shoals off the New Hampshire coast and Mt. Agamenticus in Maine.

III. Procedures Leading to ACEC Designation

The Parker River/Essex Bay ACEC located in the Towns of Newbury, Rowley, Ipswich, Essex and the City of Gloucester was initially nominated by the Ipswich Conservation Commission on October 25, 1978. Subsequently, nominations were received from the Newbury Board of Selectmen, Planning Board and Conservation Commission, the Rowley Conservation Commission and the Essex Board of Selectmen and Conservation Commission. After reviewing these nominations, the Secretary of Environmental Affairs decided on December 15, 1978 to proceed with a full review of the proposed ACEC.

Notice of the receipt of the nominations and an announcement of a public hearing was published in the Environmental Monitor, the Gloucester Daily Times, the Salem Evening News, the Beverly Times and the Newburyport Daily News on December 22, 1978 and in the Ipswich Chronicle on December 21, 1978. Additional information on the region was collected by the Coastal Zone Management Office staff in consultation with local officials, town boards and natural resource officers. Individual meetings were held with town selectmen, planning boards, and conservation commissions. Two meetings of the regional CZM Citizen Advisory Council were held on the proposal. Two public informational meetings were held on January 11th and January 18th, 1979, with a total attendance of about 45 persons. Over 100 copies of a background report on the resources of the proposed ACEC were sent out to town officials, organized interest groups and to interested private individuals. More than 24 articles appeared in local papers regarding the ACEC nomination.

The public hearing on the designation of the Parker River/Essex Bay area as an ACEC was held at the Ipswich High School on Wednesday, January 31, 1979. Over 100 area residents attended and approximately 30 made formal comments. With one exception, all speakers were in favor of proceeding with the designation. All speakers emphasized the ecological value of the area and its susceptibility to development. Many speakers felt the environmental resources were an important part of their town's character and economy. The importance of recreation and the shellfish industry was stressed. Many saw the ACEC designation as a way to strengthen further efforts by the towns and city involved and citizen groups to protect the area. The overwhelming impression given by the statements at the hearing was one of great concern for the Parker River/Essex Bay area and support for its designation as an ACEC. The hearing record remained open until February 7, 1979 for those persons who wished to submit written comments. All comments received, whether oral or written, were given full consideration.

I then reviewed the hearing record and the results of the staff work with respect to the natural resources of the area and decided to make this ACEC designation.

IV. Discussion of Factors Specified in Section 6.48 of the CZM Program Regulations

Prior to designation of a region as an Area of Critical Environmental Concern, the Secretary must consider the factors specified in Section 6.48 of

the CZM Program regulations. Based on research and information from local residents, I find that the following factors are applicable to the Parker River/Essex Bay area:

Threat to the Public Health: The use of the rivers and bays for shellfishing, water sports, and fishing is dependent upon maintaining the existing high water quality. Any pollutants discharged into these waters could adversely affect their users and consumers. In particular, pollutants could threaten the resource base of the economically important shellfish industry. Public safety could also be threatened if marshes or beaches are destroyed. These features act as storm buffers and their destruction would be potentially damaging to harbors and inland development.

Quality of the Natural Characteristics: Because there has been a minimum of alteration of the natural features of this area, they are presently functioning at their maximum capacity. The vegetation is healthy and wildlife habitat is plentiful; marsh production is unimpaired; the dunes, undiminished, offer highly affective storm protection; and the unpolluted water helps create optimal conditions for water life and recreation. In addition to these functional characteristics, the scenic quality of the area significantly contributes to the recreational enjoyment of its visitors.

Productivity: The high productivity of the area is documented in Section II under the headings: salt marsh, shellfish, estuaries, and anadromous fish runs. This area has a biological productivity that is nearly double that of the most productive agricultural lands.

Uniqueness: There are only ten major barrier beach systems on the Massachusetts mainland that remain undeveloped. This ACEC contains two; the Castle Neck barrier beach system and the Plum Island barrier beach system. The importance of the area to migratory waterfowl, its extensive shellfish resources and vast salt marshes also contribute to its uniqueness. The area is also unique from an archeological perspective, as pointed out in Section II.

Irreversibility of Impact: Man's destruction of estuaries, marshland and barrier beaches is irreversible. Alteration of barrier beaches will result in the loss of a natural storm barrier, the destruction of marshland will decrease the nutrient supply within the adjacent rivers and bay and inappropriate development can pollute ground and surface water. It is technically possible to correct some of this pollution, but the time and money needed to do so usually result in such pollution becoming a permanent condition.

Economic Benefits: The natural resources of this ACEC contribute directly to the financial well-being of the region. The shellfish industry is the largest employer in the area. The average annual harvest of about 60,000 bushels of clams represents $1.5 million in direct income to clammers. By the time the clams end up on someone's plate in a restaurant, they are worth over $200 per bushel or $12 million. The restaurant and tourist trades are heavily dependent on both the scenic qualities of the area and its fish and shellfish resources.

Recreation is a very significant economic factor in the region, but its value is difficult to quantify due to the lack of statistics. But there can be no question but that the beaches are heavily used and recreational boating and fishing activity is substantial during the summer season.

Supporting Factors: The strong public consensus on the intrinsic value of the area weighs heavily in favor of the ACEC designation. There was overwhelming support voiced at the public hearing and in numerous written comments. The presence of the nationally recognized Parker River Wildlife Refuge, the Plum Island State Park, and the Crane Reservation all lend importance to the area. Local wetlands zoning by-laws, shellfish management programs and conservation restrictions further demonstrate local efforts to protect the area.

All of these factors taken together convince me that the Parker River/ Essex Bay area is indeed an Area of Critical Environmental Concern to the Commonwealth. Application of the ACEC designation criteria to this area demonstrates that the area is unique and is valuable in both environmental and economic senses. Local residents have long recognized the importance of the region. Through the designation of this ACEC, I intend to enlist the support of state agencies in the continued protection and appropriate use of this important region.

John A. Bewick
Secretary of Environmental Affairs

March 2, 1979
Date

AREA OF CRITICAL ENVIRONMENTAL CONCERN

(ACEC) COASTAL

Data Sheet

Location: ELLISVILLE HARBOR

Town: Plymouth

USGS Quad sheet: Sagamore

CZM Atlas Sheet: 28

Water Bodies included in ACEC: Ellisville Harbor, Center Hill Pond, Black Pond.

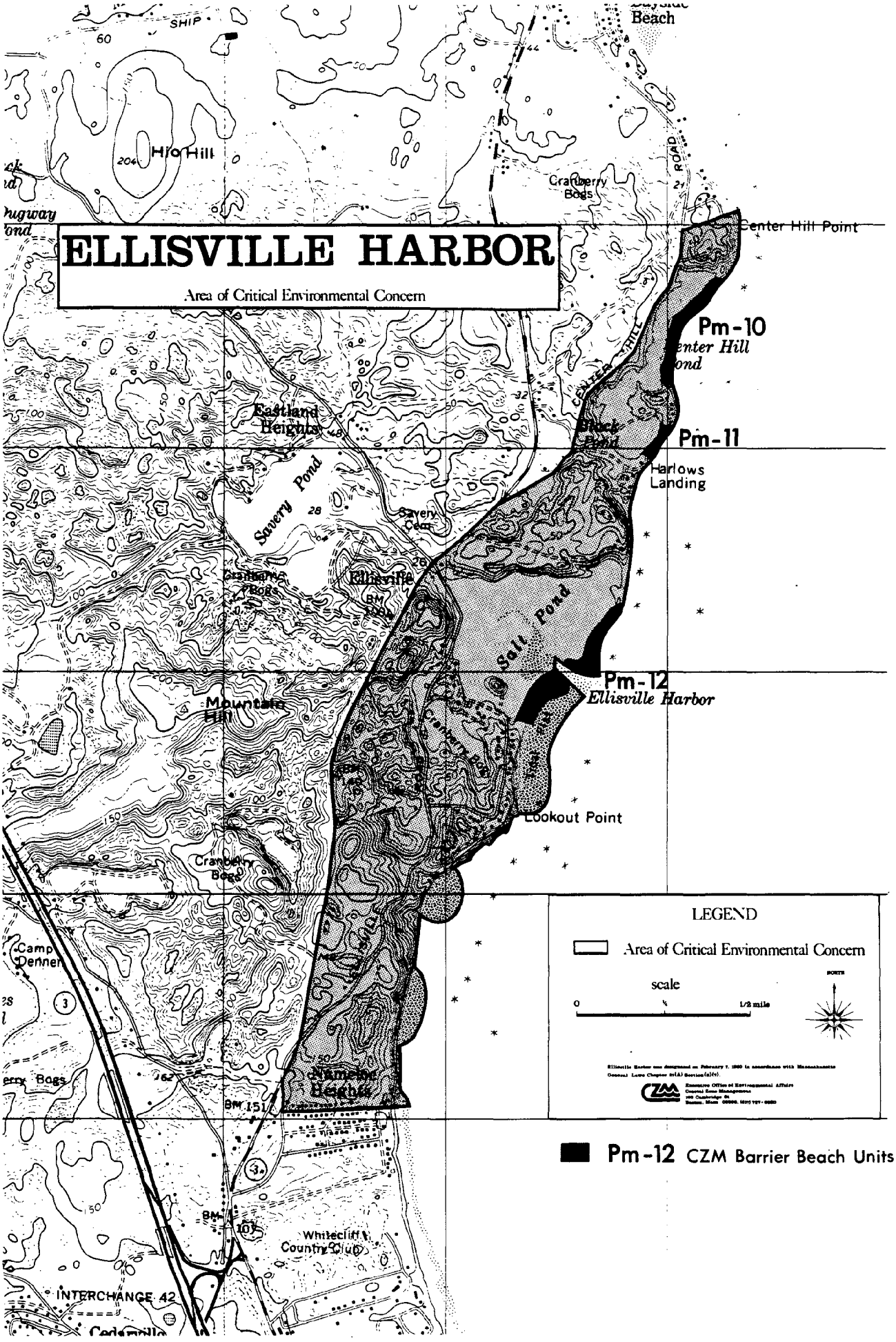
Barrier Beaches included in ACEC: Beaches flanking harbor mouth (Pm-12), areas fronting Black Pond (Pm-11) and Center Hill Pond (Pm-10).

Resource Summary:

This area comprises 614 acres of widely diverse habitats and vegetation including a sheltered harbor, sandy beaches, salt marsh, steep bluffs and scenic, rural upland sites. Its ponds and marshes are feeding and breeding grounds for many aquatic birds, and the salt marsh supports shellfish and fin fish.

State Regulations apply (date of designation): 16 January 1980

Federal Consistency applies (date of OCZM concurrence): 24 March 1980


ELLISVILLE HARBOR
Area of Critical Environmental Concern
Beach
Center Hill Point
Pm-10
Pm-11
Harlows Landing
Pm-12
Ellisville Harbor
Lookout Point
Eastland Heights
Savery Pond
Ellisville
Mountain Hill
Cranberry Bogs
Whitecliff Country Club
INTERCHANGE 42
LEGEND
Area of Critical Environmental Concern
scale
Pm-12 CZM Barrier Beach Units

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202

EDWARD J. KING
GOVERNOR

JOHN A. BEWICK
SECRETARY

Designation of Ellisville Harbor as an Area of Critical Environmental Concern and Supporting Findings

Following an extensive process, including nomination, research, informal meetings with local groups, public information meetings, public hearings, on-site visits, and a formal evaluation of all assembled data, I, the Secretary of Environmental Affairs, hereby designate Ellisville Harbor an Area of Critical Environmental Concern pursuant to the authority granted to me by G.L. c. 21A, s. 2(7).

I also hereby, find that the Ellisville Harbor ACEC is significant to flood control, the prevention of storm damage, the protection of land containing shellfish and fisheries; public interests protected by the Wetlands Protection Act, G.L. c. 131, s. 40.

1. Boundary of the Ellisville Harbor ACEC

The Area of Critical Environmental Concern (ACEC) extends from the intersection of the southerly side line of Mayflower Lane and the easterly side line of Center Hill Road, near Center Hill Point, in a southerly direction along the easterly side line of Center Hill Road to the point of intersection with the easterly side line of Route 3A. The ACEC boundary then extends in a southerly direction along the easterly side line of Route 3A to a point of the second intersection with the easterly side line of Ellisville Road. The ACEC boundary extends from this point of intersection in a southerly direction along the easterly side line of Route 3A to a point of the third intersection with the easterly side line of Ellisville Road and continues from this point in a southerly direction to the point of the intersection of the northerly side line of George Street. The ACEC boundary then extends in an easterly direction along the northerly side line of George Street to the eastern most point of George Street and thence in a straight line to the mean low water (MLW) line. The ACEC boundary then proceeds from this point in a northerly direction following the MLW line to a point of intersection with the southerly side of the entrance to the Ellisville Harbor inlet channel. The ACEC boundary continues to follow the MLW line of the southerly side of the Ellisville Harbor inlet channel in a northwesterly direction to a point of intersection coincident with the landward limit of the coastal dunes which comprise the barrier beach spit immediately south of Ellisville Harbor inlet channel. From this point of intersection, the ACEC boundary extends straight across the Ellisville Harbor inlet channel in a northerly direction by the shortest distance to the point of intersection with the MLW line on the northerly side of the Ellisville Harbor inlet channel.

The ACEC boundary then extends from this point of intersection following the MLW line in an easterly direction along the northerly side of the Ellisville Harbor inlet channel. At the northerly side of the entrance to the Ellisville Harbor inlet channel, the ACEC boundary continues along the MLW line in a northerly direction to a point of intersection with a straight line which extends in an easterly direction from the southerly side line of Mayflower Lane. From this point of intersection the ACEC boundary follows the above-mentioned straight line and the southerly side line of Mayflower Lane in a westerly direction to the point or origin.

II. Designation of the Resources of Ellisville Harbor

The Ellisville Harbor area is an extensive and largely unaltered resource system. Among the natural components of the system, many are specified as Significant Resource Areas (SRA's) in the Massachusetts CZM Program. These include a barrier beach system, dunes, three miles of sandy beach, 55 acres of salt marsh, productive shellfish beds, 195 acres of floodplain, and numerous significant scenic sites. The area is a spawning and nursery ground for many marine species as well as an important habitat for upland species and waterfowl. The beaches, dunes, and salt marshes provide protection against storms for low lying inland areas. The area clearly meets the regulatory criterion of the ACEC Program, that an area proposed for designation must contain at least five of the Specified Significant Resource Areas.

III. Procedures Leading to ACEC Designation

The Ellisville Harbor area was first proposed for ACEC designation by the Plymouth Conservation Commission in November of 1978. Active planning began in December, 1978. Public information meetings were held in January, March and June of 1979 at the Little Red School House in Plymouth. These meetings were attended by local officials, a member of the Conservation Commission, members of the CZM Citizens Advisory Committee, local residents and property owners.

On January 30, 1979, the Board of Selectmen unanimously voted to endorse the nomination. As a result of the aforesaid actions, I called for a full public review of the proposed area, which took place on November 29, 1979.

Notice of the receipt of the nomination request and a public hearing notice were published in the Environmental Monitor on November 23, 1979. The public hearing notice also appeared in two local newspapers: the Old Colony Memorial and the Patriot Ledger. Additional information on the area was collected by the CZM staff in consultation with local officials, town boards and natural resource officers. The results of this research were forwarded for comment and review to the Selectmen, Conservation Commissions, Planning Boards and members of the CZM Citizens Advisory Committee for the Plymouth area. Copies also went to interested individuals and were available to the general public upon request.

A public hearing was conducted on November 29, 1979 in the Little Red School House in Cedarville. The record testimony was largely favorable. There were eleven residents of the Plymouth area in attendance. As a result of questions raised by an attorney representing one of the landowners, a comprehensive response was drafted by CZM legal staff and sent to the attorney and other interested persons.

The hearing record remained open until December 10, 1979 for those persons who wished to submit written comments. No written comments were received.

IV. Discussion of Factors Specified in Section 6.48 of the CZM Program Regulations

Prior to designation of an area as an Area of Critical Environmental Concern, the Secretary must consider the factors specifed in Section 6.48 of the CZM Program regulations. Based on research and information from local residents, I find the following factors are applicable to the Ellisville Harbor area.

Quality of Natural Characteristics: The area possesses outstanding natural characteristics. The vegetation and wildlife habitat is diverse. To a certain extent, the area is undeveloped; marsh production is unimpaired; the dunes offer highly effective storm protection; and the unpolluted water helps create optimal conditions for shellfish and waterfowl.

Public Health: The area has a high water table. Building in certain areas may create health problems. The use of the harbor and coastal waters for shellfishing and fishing is dependent upon maintaing the high water quality that exists. Any pollutants discharged into these waters could adversely affect the health and safety of the users. Public safety could also be threatened if dune destruction occurs. Currently, they act as a storm buffer protecting the harbor and residential areas.

Uniqueness: Ellisville is an area on the Massachusetts coast that remains undeveloped. A scenic rural qulaity is given to the area by the farms where horses graze on the upland meadows, by a small harbor that shelters several commercial lobster boats, and by a small cluster of homes known as Ellisville Center.

Irreversability of Impact: The destruction of dunes and marshland is generally irreversible. Uncontrolled development can exacerbate coastal bluff and dune erosion. This may lead directly to potentially greater damage to adjacent homes, beaches, and shellfish resources. Siltation of ponds and marsh areas could cause adverse effect on aquatic and marine life.

Economic Benefits: The barrier beaches of Ellisville Harbor provide an important buffer to storm wave damage. The protection of the adjacent harbor, marshlands and uplands is provided without cost. Without this

naturally functioning system, costly man-made structures would have to be constructed. Although the long-term effectiveness of any of these structures against storm damage is questionable, the costs of maintaining these structures are not.

Ellisville Harbor is also the site for a small amount of shellfishing. In addition, the harbor also serves as a mooring area for 7 commercial lobstermen. Historically, marsh haying was an important economic activity.

Supporting Factors: The ACEC designation will help support local efforts to protect this area. There is also a strong consensus among the area residents that Ellisville Harbor ought to be protected.

John A. Bewick

JOHN A. BEWICK
Secretary of Environmental Affairs

1/16/80
Date

AREA OF CRITICAL ENVIRONMENTAL CONCERN

(ACEC) COASTAL

Data Sheet

Location: SANDY NECK
BARNSTABLE HARBOR

Towns: Barnstable, Sandwich

USGS Quad Sheets: Hyannis, Sandwich

CZM Atlas Sheets: 48, 49

Water Bodies included in the ACEC:

Sandwich
Scorton Harbor
Scorton Creek

Barnstable
Barnstable Harbor
Broad Sound
Creeks: Bass, Boat Cove, Brickyard, Bridge, Eel, Great Island, Mill (portion), Scorton, Smith, Wells.

Barrier Beaches included in ACEC: Sandy Neck (Ba-29, Sd-1), Beach on east side of Scorton Harbor running to Scorton Shores (Sd-2), several areas along southern side of Barnstable Harbor (Ba-25,26,27,28).

Resource Summary:

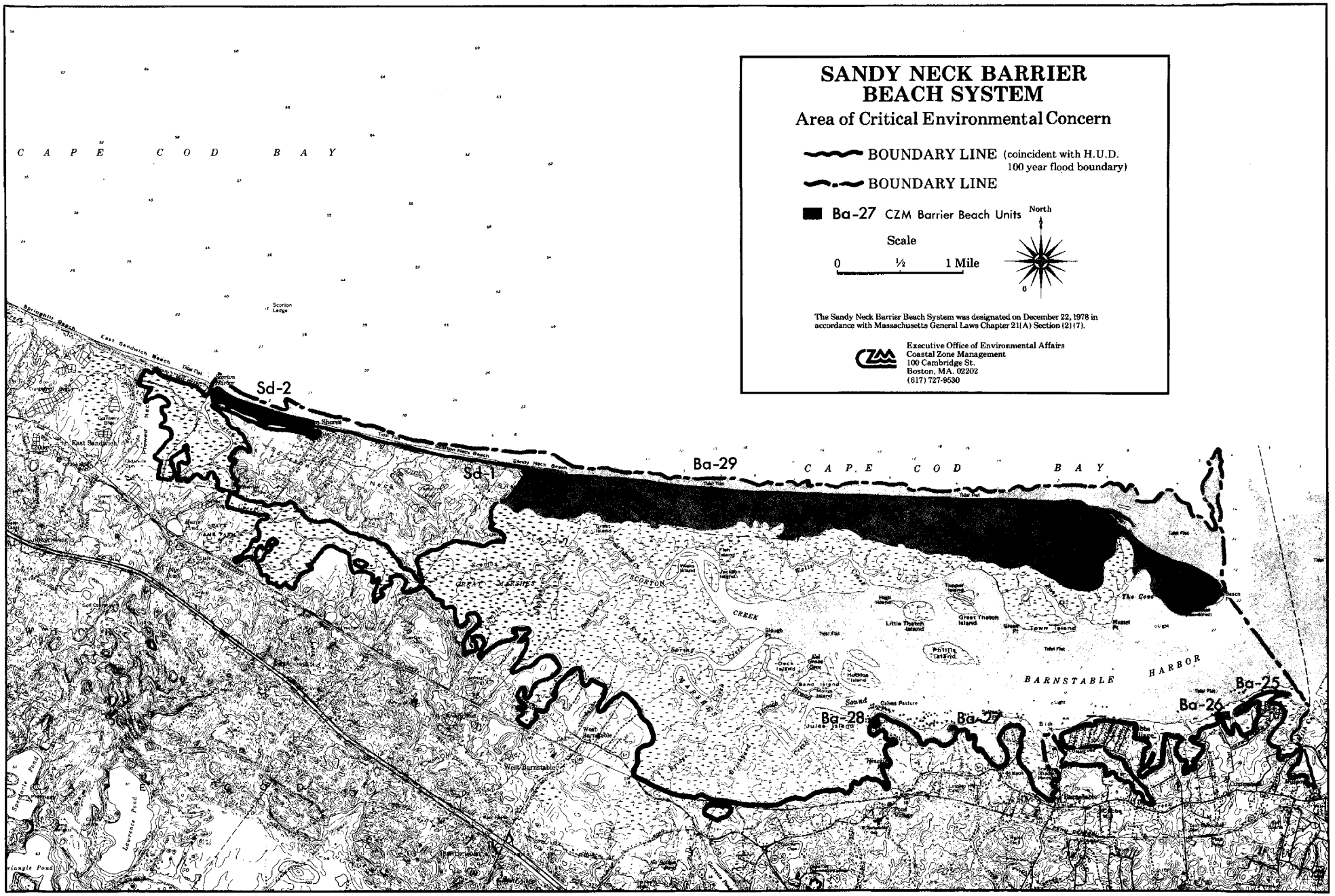
8,447 acres of Sandy Neck barrier beach, Scorton Harbor and Creek, Barnstable Harbor, surrounding saltmarsh, and uplands to the 10.5 foot elevation above mean sea level are included in this ACEC. With the exception of the Cape Cod National Seashore, this is the largest barrier beach complex between Rhode Island and Cape Ann. Thousands of acres of productive salt marsh backing the barrier support substantial shellfish beds and help maintain the high water quality noted here.

Wildlife abounds in the marsh, dunes and beach. Sightings of almost 300 species of birds have been made and over 160 species of vascular plants, including some 85 varieties of wildflowers, have been noted. The marsh and adjacent dunes are feeding and nesting areas for the endangered diamondback terrapin.

Significant scientific studies have been conducted here including major work on the terrapins and a classic study of the historical development of the saltmarsh.

State Regulations apply (date of designation): 15 December 1978

Federal Consistency applies (date of OCZM concurrence): 1 August 1979


SANDY NECK BARRIER BEACH SYSTEM
Area of Critical Environmental Concern
BOUNDARY LINE (coincident with H.U.D. 100 year flood boundary)
BOUNDARY LINE
Ba-27 CZM Barrier Beach Units
North
Scale
0 ½ 1 Mile
The Sandy Neck Barrier Beach System was designated on December 22, 1978 in accordance with Massachusetts General Laws Chapter 21(A) Section (2)(7).
Executive Office of Environmental Affairs
Coastal Zone Management
100 Cambridge St.
Boston, MA. 02202
(617) 727-9530
CAPE COD BAY
Sd-2
Sd-1
Ba-29
Ba-28
Ba-27
Ba-26
Ba-25
BARNSTABLE HARBOR
SCORTON CREEK
East Sandwich
West Barnstable

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202

MICHAEL S. DUKAKIS
GOVERNOR

EVELYN F. MURPHY
SECRETARY

Designation of Sandy Neck Barrier Beach System as an Area of Critical Environmental Concern and Supporting Findings

Following an extensive process, including nomination, research, informal meetings with local groups, a public informational meeting, a public hearing, and a formal evaluation of all assembled data, I, the Secretary of Environmental Affairs, hereby designate the Sandy Neck Barrier Beach System an Area of Critical Environmental Concern pursuant to the authority granted to me by G.L. c. 21A, s. 2(7).

I also hereby find Sandy Neck Barrier Beach System is significant to flood control, the prevention of storm damage, the protection of land containing shellfish and fisheries; interests protected by the Wetlands Protection Act, G.L. c. 131, s. 40.

I. Boundary of the Sandy Neck Barrier Beach System ACEC

The ACEC boundary extends eastward along the mean low water line from Scorton Harbor to Beach Point; then follows a closure line extending in a southeasterly direction across Barnstable Harbor to Mill Creek, following the Barnstable town line to Hallet's Mill Pond. The boundary then extends in a westerly direction along the 100 year floodplain line through Barnstable and Sandwich to Scorton Harbor, as delineated on the HUD Flood Insurance Rate map. Three exclusions are made: (1) land in Cobbs Village north of Commerce Road and east of Mill Way; (2) Freezer Road Point and the developed marina; and (3) Scorton Neck, as defined by the land located above the 100 year floodplain line with the exception that the northeastern exclusion boundary is the Sandy Neck Road.

II. Description of the Resources of the Sandy Neck Barrier Beach System

The Sandy Neck area is an extensive and largely unaltered resource system. Among the natural components of the system are many specified as Significant Resource Areas (SRA's) in the Massachusetts CZM Program. These include a seven mile long barrier beach system, dunes and sandy beaches, several thousand acres of salt marsh, productive shellfish beds, a large coastal embayment, an anadromous fish run and floodplain, erosion and accretion areas. The area is a spawning and nursery ground for many marine species, as well as an important habitat for upland species and waterfowl. The beaches, dunes, and salt marshes provide protection against storms for low-lying inland areas. During the

summer months, local residents and visitors flock to Sandy Neck to swim, picnic, walk, fish and use recreational vehicles. The region clearly meets the regulatory criterion of the ACEC Program, that a region proposed for designation must contain at least five of the specified Significant Resource Areas.

III. Procedures Leading to ACEC Designation

The Sandy Neck Barrier Beach System located in the Towns of Barnstable and Sandwich was nominated by a letter from the selectmen of both towns on October 13, 1978. After reviewing this nomination, the Secretary of Environmental Affairs decided on October 20, 1978 to proceed with a full review of the proposed area.

Notice of the receipt of the nomination request and a public hearing notice were published in the Environmental Monitor on October 21, 1978. The public hearing notice also appeared in the Boston Globe as well as in three local newspapers: the Cape Cod Times, the Register, and the Barnstable Patriot. Additional information on the region was collected by the Coastal Zone Management Office staff in consultation with local officials, town boards, and natural resource officers. The results of this research were forwarded for comment and review to the Selectmen, Conservation Commissions, Planning Boards, Park and Recreation Committees, and members of the CZM Citizen Advisory Committee for Cape Cod. Copies also went to interested individuals and were available to the general public upon request. Informational articles about the proposed nomination appeared in several local newspapers, and an informational meeting was held at the Barnstable Town Hall on November 30, 1978. In addition, at the request of the Barnstable Conservation Commission, an explanation of the ACEC Program was given to that group.

The public hearing for the Sandy Neck ACEC proposal was held at the Barnstable High School on Tuesday, December 5, 1978. Approximately eighty residents attended the meeting, and formal comments were made by seventeen persons. All speakers emphasized the extreme importance and fragility of the Sandy Neck barrier beach and marsh system. A number of speakers emphasized the importance of local responsibility for management of the resource system. State support for local management efforts, however, was seen as a positive ramification of the ACEC designation. Several others urged that management efforts should strive to include a wide variety of activities to be conducted in a manner compatible with the various resources. The overwhelming impression was one of great concern for the Sandy Neck system, and an interest in possible state support through the ACEC designation. The hearing record remained open until 3:00 p.m., Friday, December 8, 1978 for those persons who wished to submit written comments. All comments that were received were given consideration.

IV. Discussion of Factors Specified in Section 6.48 of the CZM Program Regulations

Prior to designation of a region as an Area of Critical Environmental Concern, the Secretary must consider the factors specified in Section 6.48 of the CZM Program regulations. Based on research and information from local

residents, I find that the following factors are applicable to the Sandy Neck Barrier Beach System:

Inappropriate use - Future development of this area is a very real threat because strong development pressures on Cape Cod could threaten public welfare in several ways. The individual resource features of the Sandy Neck Barrier Beach System each perform a specific and important function. Inappropriate use or alteration of any one of these features may impair the ability of the particular resource as well as all the other resources present to function well. The long barrier beach, for example, provides protection from storms to inland areas. The natural tendency of a barrier beach is to slowly migrate landward. Efforts to stabilize the beach by constructing groins or jetties would alter the natural movements of the beach and the existing form of the beach, thereby reducing its ability to absorb storm impacts. Another important resource function is nutrient production in the salt marshes and its export to more open waters. This food production and export system supports large numbers of marine species, among them such endangered species as the diamondback terrapin. Inappropriate construction, dredging, filling or release of pollutants will reduce this marsh productivity with consequences effecting the food chain and the population of at least one endangered species.

Quality of the Area - All of the resources of Sandy Neck are of an extremely high quality. Water quality is designated as the highest, SA, and swimming and shellfishing are popular activities. As described in more detail in the data assembled prior to designation, the region supports extensive and varied vegetation, and bird and animal populations. Among the species found on Sandy Neck are several that have been classified as rare, threatened, or endangered; including the least Tern and the diamondback terrapin. The region is generally undeveloped; the natural areas offer varied opportunities for recreation, fishing, shellfishing, and nature study.

Productivity - The extensive marshes of Sandy Neck produce nutrients which support large numbers of marine species important in the food chain. These nutrients are exported from the marshes to Barnstable Harbor and beyond to Cape Cod Bay. The low-lying lands also provide food and habitat for large waterfowl populations. Upland species in large numbers are also found in the region. Because of its size, this area has a particularly high productivity level.

Uniqueness of Area - Perhaps the most important factor leading to the designation of this area as an ACEC is its uniqueness. Inappropriate use of other coastal areas would also lead to a potential threat to the public welfare. But Sandy Neck's quality, its productivity, its size, present recreational and scientific use elements which contribute to its uniqueness - set it apart and make it a most appropriate area for designation as an ACEC. Sandy Neck is the largest barrier beach system in the Commonwealth outside of the Cape Cod National Seashore. This extensive, undeveloped area provides unique opportunities for active and passive recreation to residents and to visitors alike. Sandy Neck is also unique in that it has served as a model for the study of barrier beach and marsh development through studies conducted by Dr. A.C. Redfield of the Woods Hole Oceanographic Institution. Today, Sandy Neck continues to be the

site of important research being conducted by scientists from Woods Hole and elsewhere. A particularly interesting example of on-going research is that being conducted by Mr. Peter Auger, an ecology teacher from the Barnstable High School. Mr. Auger's work is providing extensive new data on the Northern diamondback terrapin, as well as material for ecology courses at the school. Another endangered species susceptible to study in Sandy Neck is the least tern. Students in this area are presented a unique opportunity to participate in primary research.

There are also sites in Sandy Neck which are being studied for their historical and archaelogical significance, for example, sites indicative of Wampanoag Indian inhabitance of Sandy Neck.

Economic Benefits - Sandy Neck is a substantial economic asset to the Towns of Barnstable and Sandwich. Visitors to the area buy permits for beach use, vehicular use and shellfishing. As stated in the Sandy Neck report, fees of over $50,000 were paid for dune and parking fees during the 1978 season. It is important to note that it is the high quality of the area that attracts many visitors. Continued maintenance of this quality is essential if the area is to remain attractive to many users.

Supporting Factors - Strong public consensus on the intrinsic value of the area weighs in favor of the designation. Residents and officials of Barnstable and Sandwich have long recognized both the environmental and economic importance of the region. Land acquisitons by the two Conservation Commissions, shellfish propagation programs, dune management practices, and general management attempts demonstrate the interest and concern of residents in the future of Sandy Neck. One of the purposes of the ACEC nomination by the Selectmen was to ensure that state agency actions in the area are consistent with the character and environmental integrity of the region. The Selectmen also expressed the hope that, upon request, state authorities might be enlisted to assist local agencies in meeting their stated goals for the region.

All of these factors taken together convince me that the Sandy Neck Barrier Beach System is indeed an Area of Critical Environmental Concern to the Commonwealth.

Application of the ACEC designation criteria to the Sandy Neck Barrier Beach System demonstrates that the area is indeed unique, and is valuable in both environmental and economic senses. Local residents have long recognized the importance of the region. Through the designation of the Sandy Neck Barrier Beach System as an Area of Critical Environmental Concern, I intend to enlist the support of state agencies in the continued protection and appropriate use of this important region.

Evelyn F. Murphy
Secretary of Environmental Affairs

12/15/78
Date

AREA OF CRITICAL ENVIRONMENTAL CONCERN

(ACEC) COASTAL

Data Sheet

Location: POCASSET RIVER

Town: Bourne

USGS Quad Sheet: Pocasset

CZM Atlas Sheet: 43

Water bodies included in ACEC:
Pocasset River (portion)
The Basin
Ponds: Freeman, Mill, Shop, Upper.

Resource Summary:

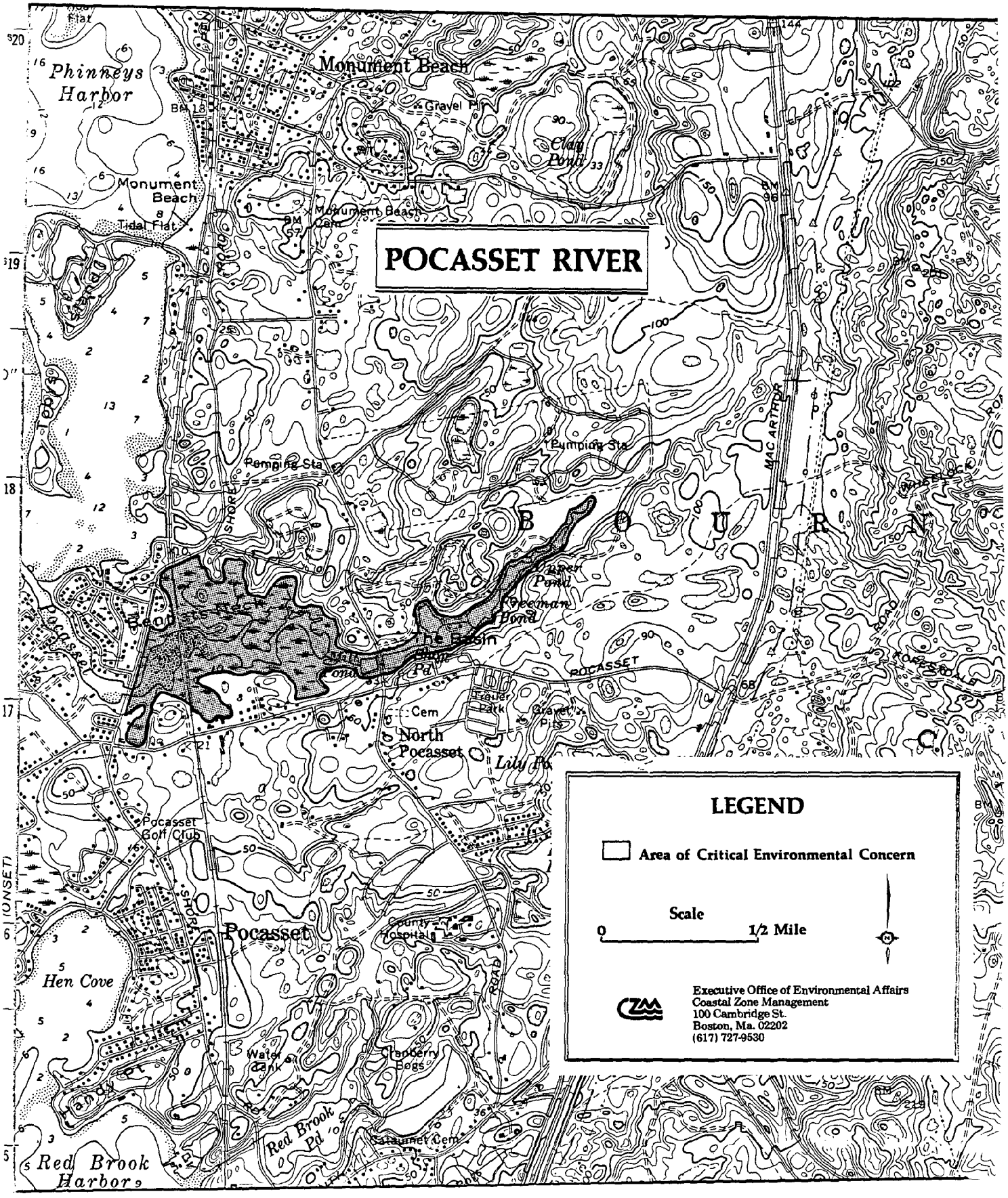
The 192 acres of this relatively small river and estuarine system run from the Shore Road Bridge to the headwaters, and include a diversity of resources ranging from the saltmarsh, tidal lands and floodplains of the estuary to the connecting freshwater wetlands, ponds and streams. With its relatively undeveloped nature, water quality is high throughout the complex.

The freshwater ponds, created originally for use by an iron foundary, are spring fed and generally remain ice-free in winter. Because of this they provide seasonal habitat for water birds and other wildlife. At least 40 bird species are probable or confirmed breeders in the area. The ponds support recreational fishing, while the town's most productive oyster crop is found in the more saline waters of the estuary.

The system has been the site of a fair amount of scientific investigation. A comprehensive ecological inventory of the lower portions has been made and a new species of crustacean was first discovered in the river.

State Regulations apply (date of designation): 5 December 1980

Federal Consistency applies (date of OCZM concurrence): 7 April 1981


POCASSET RIVER
Phinneys Harbor
Monument Beach
Gravel Pit
Clay Pond
Monument Beach
Tidal Flat
Monument Beach Cem
Pumping Sta
Pumping Sta
MAC ARTHUR
B O U R N
Upper Pond
Freeman Pond
The Basin
Mill Pond
Cem
North Pocasset
Trailer Park
Gravel Pits
Lily Pd
Pocasset Golf Club
Pocasset
County Hospital
Hen Cove
Water Tank
Cranberry Bogs
Red Brook Pd
Catamet Cem
Red Brook Harbor
LEGEND
Area of Critical Environmental Concern
Scale
0
1/2 Mile
Executive Office of Environmental Affairs
Coastal Zone Management
100 Cambridge St.
Boston, Ma. 02202
(617) 727-9530

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202

EDWARD J. KING
GOVERNOR

JOHN A. BEWICK
SECRETARY

DESIGNATION OF THE POCASSET RIVER AS AN AREA OF CRITICAL ENVIRONMENTAL CONCERN

Following an extensive public participation process and a formal evaluation of all assembled data, I, the Secretary of Environmental Affairs, hereby designate the Pocasset River as an Area of Critical Environmental Concern (ACEC) pursuant to the authority granted me by G.L. c. 21A, s 2(7).

I also hereby, find that the area of Pocasset River ACEC subject to the jurisdiction of the coastal wetlands regulations of the Wetlands Protection Act, G.L. c. 131, s. 40 is significant to flood control, the prevention of storm damage, the protection of land containing shellfish and fisheries; public interests protected by the Wetlands Protection Act.

I intend to review this designation one year after its effective date under the authorization and procedures established in Section 6.52 of the CZM Program regulations. At that time, I will review any other mechanisms, such as a conservation restriction, that have been legally enacted and which provides at least equal or greater protection to the natural resources of any section of the designated area. Should such restrictions, easements or other protective devices be enacted, I can seek in accordance with Section 6.52 of the CZM Program regulations to amend, repeal or adjust the designation accordingly.

1. Boundary of the Pocasset River ACEC

Within the tidal portion of the Pocasset River, the boundary for the Area of Critical Environmental Concern extends upriver from the easterly side line of Shore Road bridge crossing of the Pocasset River to the landward limit of tidal extent including all of the adjacent intertidal lands and lands within the 100 year flood line elevation (ELE. 14 FT, MSL DATUM). Above the limit of tidal extent, the boundary includes all of the connecting freshwater ponds, surface water courses and adjacent wetlands (as defined in c. 131, s. 40) from Mill Pond to the tributaries of Upper Pond. This boundary also includes a 100 foot setback distance that borders all of the above described freshwater ponds, surface water courses and adjacent wetlands.

2. Discussion of Factors Specified in Section 6.48 of the CZM Program Regulations

Prior to designation of a site as an Area of Critical Environmental Concern, I must consider the factors specified in Section 6.48 of the CZM Programs regulations.

These 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 information compiled during the public review process and on the opinions and comments expressed by local officials, residents and landowners, I find that the following factors are applicable to the Pocasset River:

a) Threat to the Public Health, Inappropriate Use:

Inappropriate development of the Pocasset River area may adversely affect the high water quality of this system, particularly in the freshwater ponds and springs. Construction in or near the ponds could increase suspended solid loadings to the detriment of aquatic plants and animals. Storm run-off from paved surfaces near the river could also degrade water quality. The loss or alteration of wetlands could remove a potentially important pollutant filtering mechanism for this entire watershed.

b) Quality of the Natural Characteristics:

The Pocasset River is characterized by a high level of water quality. In the area proposed for ACEC designation, the estuary has been classified as SA waters by the Massachusetts Division of Water Pollution Control. The freshwater portion of the river is classified as B waters. No known discharges from pipes occur within this proposed ACEC.

c) Productivity:

The Pocasset River estuary is a rich, productive coastal resource feature. This type of environment produces large amounts of organic material and helps promote the rapid cycling and availability of nutrients to organisms higher in the food chain. While the Pocasset River is a relatively small coastal stream, it offers a significant diversity of habitats for wildlife ranging from intertidal flats and marshes to small woodland ponds and forests.

d) Uniqueness of Area:

Regionally, the Pocasset River is of special interest because it offers actual and potentially excellent oyster habitat within its estuary. The upstream areas are also significant because the springs which feel the river system seldom freeze. This, in combination with its relative seclusion, offer an important source of freshwater during the winter to indigenous wildlife and migratory waterfowl. The proposed ACEC boundary for the Pocasset River also provides for the first time in Massachusetts the opportunity to designate almost an entire river and its adjacent wetlands as an ACEC. This boundary recognizes the river as an ecological system or unit. This is especially important where the volume and quality of freshwater inflow into the estuary appears to be critical in maintaining the existing faunal assemblage.

e) Irreversibility of Impact:

Significant alterations in water quantity or quality would be likely to seriously adversely affect shellfish populations in the estuary. Removing or altering the wetlands of the Pocasset River would contribute to the degradation of water quality as well as eliminate important wildlife habitat.

f) Economic Benefits:

In Bourne, shellfishing is a significant commercial and recreational enterprise. The Pocasset River contributes to the maintenance of this economic activity.

g) Supporting Factors:

The Town of Bourne considers the Pocasset River as an important natural resource. The area is identified in the Town Master Plan as an environmentally sensitive area, a key open space area and as land appropriate for conservation and/or parks. Also, adjacent to this area if the Town Forest, an important groundwater source of potable water for Bourne.

John A. Bewick
Secretary of Environmental Affairs

December 5, 1980
Date

AREA OF CRITICAL ENVIRONMENTAL CONCERN

(ACEC) COASTAL

Data Sheet

Location: WAQUOIT BAY

Towns: Falmouth, Mashpee

USGS Quad Sheets: Falmouth, Cotuit

CZM Atlas Sheets: 46,47

Water Bodies included in ACEC:

Falmouth
Waquoit Bay
Rivers: Childs (portion), Quashnet (port.)
Ponds: Bog, Bourne, Caleb, Hamblin.

Mashpee
Waquoit Bay
Red Brook (portion)
Ponds: Flat, Hamblin, Jehu, Jim, Little Flat, Sage Lot, Witch.

Barrier beaches included in ACEC:

Falmouth:
Washburn Island: beach to west of bay inlet (Fm-1), beach to east of Eel Pond Inlet (portion)(Fm-11), areas fronting marshes on east side of island (Fm-7,8,9), beach on west side of island opposite Bayview Drive (Fm-10). Within Waquoit Bay: Mouth of Quashnet River (Fm-3,4), area fronting Caleb Pond (Fm-5), fronting pond south of Waquoit cemetary (portion)(Fm-6), fronting Hamblin Pond (Fm-2).

Mashpee:
South Cape Beach/Dead Neck (Ms-5), beach fronting Flat Pond (Ms-9).

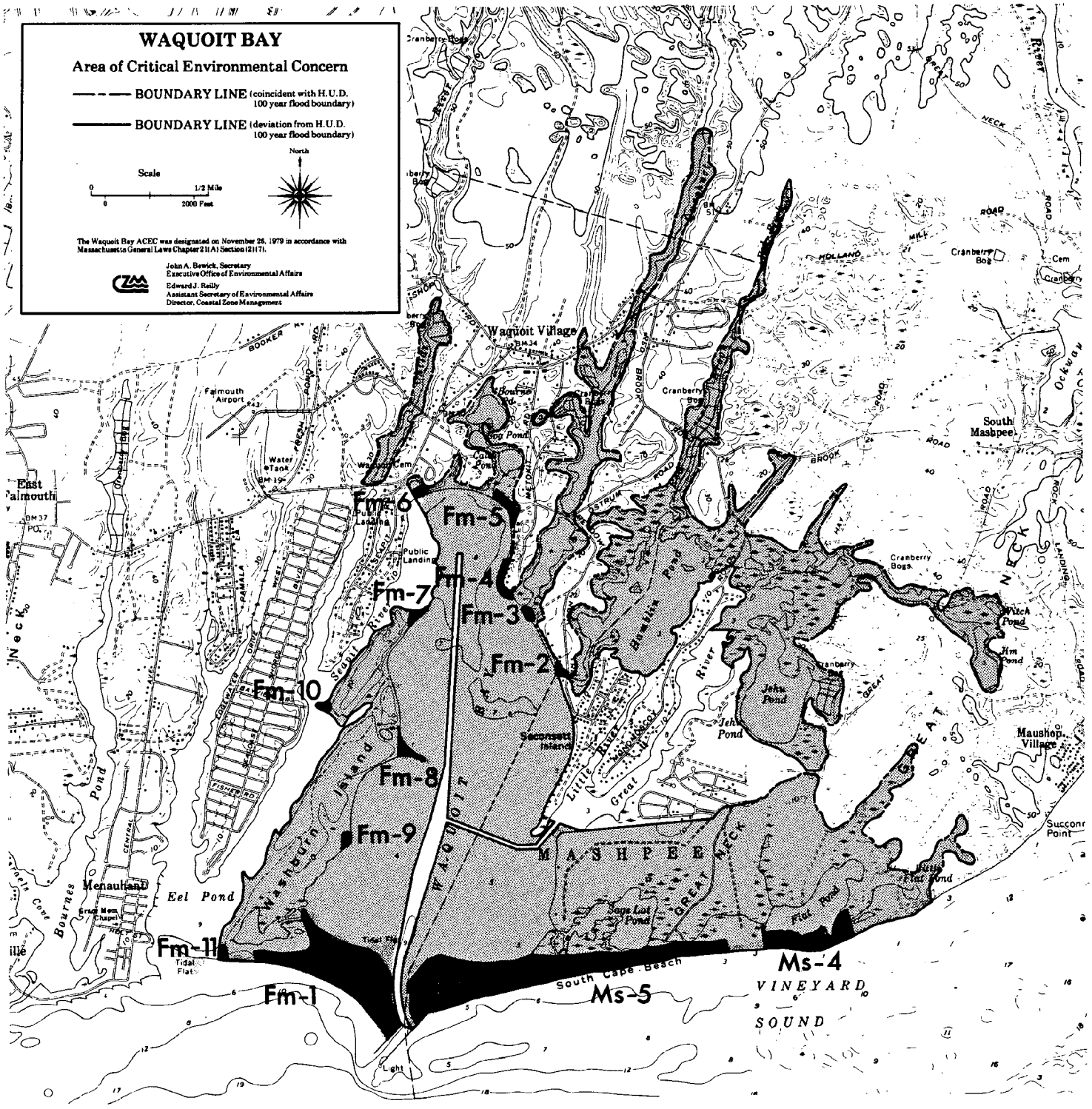
Resource Summary:

This 2,522-acre ACEC includes Washburn Island, South Cape Beach and surrounding areas up to the 11-foot contour above mean sea level (the 100-year storm level). The Great and Little Rivers and a central channel through the bay itself are excluded from the designation. The Waquoit Bay and barrier complex is the most extensive, largely unaltered estuarine system on the south shore of Cape Cod.

High water quality and productivity are reflected in good shellfish crops and a high diversity of finfish. Several commercially important species, including winter flounder, spawn here and use the bay as a nursery. Migratory alewives and blueback herring pass through the bay to their upstream breeding areas. The barriers, bay and marshes support many species of upland, shore and aquatic birds.

State Regulations apply (date of designation): 26 November 1979

Federal Consistency applies (date of OCZM concurrence): 26 March 1980



Fm-3 CZM Barrier Beach Units

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202

EDWARD J. KING
GOVERNOR

JOHN A. BEWICK
SECRETARY

Designation of Waquoit Bay as an
Area of Critical Environmental Concern
and Supporting Findings

Following an extensive process, including nomination, research, informal meetings with local groups, public informational meetings, public hearings, on-site visits, and a formal evaluation of all assembled data, I, the Secretary of Environmental Affairs, hereby designate Waquoit Bay an Area of Critical Environmental Concern pursuant to the authority granted to me by G.L. c. 21A, s. 2(7).

I also hereby, find that the Waquoit Bay ACEC is significant to flood control, the prevention of storm damage, the protection of land containing shellfish and fisheries; public interests protected by the Wetlands Protection Act, G.L. c. 131, §40.

1. Boundary of the Waquoit Bay ACEC

The Area of Critical Environmental Concern (ACEC) extends from the extreme southwestern end of Dead Neck barrier beach (mean low water, MLW) and extends straight across the entrance channel to Waquoit Bay by the shortest distance to the mean low water line of the western side of the entrance channel. The ACEC boundary then follows the MLW line in a westerly direction (excluding the western jetty of the Waquoit Bay entrance channel) to a point approximately 1370 feet (straight line measure) from the westernmost tip of Washburn Island. This point falls on a line perpendicular to the MLW line of Vineyard Sound and tangent to a segment of shoreline which is both the southeast MLW shoreline of Eel Pond and a western edge of Washburn Island.

The ACEC boundary then follows that perpendicular line to the intersection with the western MLW shore of Washburn Island. The boundary follows the MLW line along the Washburn Island to its extreme northeastern point. The boundary then extends from this point north into Waquoit Bay by the shortest distance to the 6 foot depth curve (datum: MLW). The boundary follows the 6 foot depth curve in a northerly direction to the point of intersection with a true azimuth bearing line of 150°, drawn from the southwestern most point of shoreline of the un-named pond east of Seapit Road. From this point of intersection the ACEC boundary then follows this above-mentioned bearing line in a northwesterly direction to the southwestern most point of shoreline of the un-named pond east of Seapit Road and continues along an extension of this straight line to the intersection with the 100 year flood boundary still east of Seapit Road.

The ACEC boundary then follows the 100 year flood boundary in a generally easterly direction including all of Bourne Pond, Bog Pond, Caleb Pond, parts of the Quashnet River and Red Brook and all of Witch Pond, Fells Pond, and Jehu Pond. At the point of the fifth intersection of the 100 year flood boundary with Great Oak Road, the ACEC boundary extends west on the northern side line of Great Oak Road across the 10 foot contour line (datum: mean sea level) to the second intersection with the 10 foot contour line (MSL). The ACEC boundary extends from this point in a northwesterly direction along the 10 foot contour line (MSL) to the point closest to the eastern shore (MLW) of the Great River. From this point the line extends by the shortest distance to the eastern shore (MLW) of the Great River. The boundary then extends in a northerly direction along the eastern shore (MLW) of the Great River to the western most point of the entrance channel to Jehu Pond. The boundary then extends due west to the MLW line on the west side of Great River and following the MLW line northward to the boundary between Monomoscoy Island and the adjacent northerly salt marsh. The boundary follows a northwesterly trend along the southern edge of this salt marsh, crosses Monomoscoy Road, and continues along the southern edge of this salt marsh to the intersection with the MLW line on the eastern side of Hamblin Pond. The boundary continues in a southerly direction along the MLW line on the east side of Hamblin Pond, across the northern channel entrance of the Little River and continues along the MLW line on the northern edge of Seconsett Island to the intersection of the MLW line and the town boundary between Falmouth and Mashpee. The ACEC boundary follows the town boundary to the intersection with the MLW line on the eastern shore of Waquoit Bay. The ACEC boundary extends from this point in a southerly direction along the MLW line, around Seconsett Island and then in a northerly direction to the point of intersection (Point A) with a true azimuth bearing line of 290°, drawn from the point (Point B) along the MLW line on the eastern shore of the Great River which is also the northernmost point (Point B) of property along the MLW line on the eastern shore of the Great River as described in the Plan of Land, South Cape Beach, Mashpee, Mass., prepared for the Department of Environmental Management, Scale 1"=200', February 16, 1976, Briggs Engineering and Testing Co., Inc., Norwell, Mass., as revised March 31, 1976. The ACEC boundary then proceeds southeasterly from Point A along the previously described true azimuth bearing line of 290° to Point B and continues in an easterly direction along the northern boundary line of said Plan of Land for South Cape Beach to the intersection with the southern side line of Wills Work Road. The ACEC boundary follows the southerly side line of said Road to the intersection with Great Oak Road and then follows the southerly side line of Great Oak Road to the intersection with 100 year flood boundary. The ACEC boundary follows the 100 year flood boundary in a northeasterly direction to the intersection of the southerly side line of Great Oak Road. The ACEC boundary then follows the southerly side line of said Road to the next intersection with the 100 year flood boundary. From this point, the ACEC boundary follows the 100 year flood boundary in a southerly direction to the southernmost extent of the 100 year flood boundary in Mashpee. The boundary then extends due south in a straight line to the MLW line of Vineyard Sount and thence in a westerly direction along the MLW line along South Cape Beach to the point of origin.

Also included within the ACEC boundary is the land along the upper reaches of the Child's River. The ACEC boundary begins at the intersection of the northerly side line of Rt. 28 and the 100 year flood boundary on the eastern side of the Childs River. The ACEC boundary proceeds northerly along the 100 year flood boundary on the eastern side of the Childs River to the point where the 100 year flood boundary crosses in a westerly direction the Childs River. The ACEC boundary then follows the 100 year flood boundary on the western side of the Childs River in a southerly direction to the point of intersection with the northern side line of Rt. 28. The ACEC boundary then proceeds from this point in an easterly direction across the Childs River to the point of origin.

Within the boundary the following exclusions exist:

1) The existing Waquoit Bay navigational channel (6 foot depth, Mean Low Water) extending in a northerly direction from the entrance jetties of Waquoit Bay to the head of Waquoit Bay. Specifically, this measn the channel delineated by existing U.S. Coast Guard buoys (See National Oceanic and Atmospheric Administration, nautical chart #13229, 15th Ad., February 3, 1979, page C, Waquoit Bay and U.S. Coast Guard navigational buoys). Where the channel is unmarked by buoys, the west channel boundary will be delineated by a straight line drawn from buoy C-7 northerly to the western edge of Bourne Pond. This channel would extend no further than 100 feet to the east of the west channel boundary and not exceed a dredged depth of 6 feet below mean low water. This channel will extend no further north than the present Falmouth town landing (near Seapit Road).

2) The existing Seconsett navigational channel extending from U.S. Coast Guard buoy N-6 (see NOAA nautical chart #13229, 15th Ad., February 3, 1979, page C, Waquoit Bay and U.S. Coast Coast navigational buoys) to the entrance of the Great and Little Rivers, Mashpee. The southern boundary of the Seconsett channel extends from buoy N-6, southeasterly in a direct line not to extend beyond Seconsett point. The width of the Seconsett channel will not exceed 100 feet from the southern boundary line. The Seconsett channel will not exceed a dredged depth of 6 feet below MLW.

3) The existing small culvert beneath Monomoscoy Road, Mashpee.

II. Designation of the Resources of Waquoit Bay

Waquoit Bay area is an extensive and largely unaltered resource system. Among the natural components of the system are many specified as Significant Resource Areas (SRA's) in the Massachusetts CZM Program. These include a long barrier beach system, dunes and sandy beaches, many acres of salt marsh, productive shellfish beds, a large estuary, anadromous fish runs and floodplain, erosion and accretion areas. The area is a spawning and nursery ground for many marine species, as well as an important habitat for upland species and waterfowl. The beaches, dunes, and salt marshes provide protection against storms for low-lying inland areas. The region clearly meets the regulatory criterion of the ACEC Program, that a region proposed for designation must contain at least five of the specified Significant Resource Areas.

III. Procedures Leading to ACEC Designation

The Waquoit Bay Area was first proposed for ACEC consideration by local citizens at a CZM planning meeting over two years ago. Active planning commenced in March 1979. Meetings on May 3, May 24, and August 2 were held in Falmouth and Mashpee and attended by local officials and local planning boards, committee members, owners of the area's three marinas and some property owners.

On August 2 a proposed boundary was unanimously endorsed by the six officials and marina owners present at this meeting. On July 9, 1979, a letter nominating the Waquoit Bay Estuarine System as an Area of Critical Enviornmental Concern was submitted by the Selectmen, Conservation Commission and Waterways Committee/ Harbormaster of the Towns of Falmouth and Mashpee. After reviewing this nomination, the Secretary of Environmental Affairs decided, on August 21, 1979 to proceed with a full review of the proposed area.

Notice of the receipt of the nomination request and a public hearing notice were published in the Environmental Monitor on August 22, 1979. The public hearing notice also appeared in two local newspapers: The Cape Cod Times and The Falmouth Enterprise. Additional information on the region was collected by the Coastal Zone Management office staff in consultation with local officials, town boards and natural resource officers. The results of this research were forwarded for comment and review to the Selectmen, Conservation Commissions, Planning Boards, Waterways Committee, and Natural Resource Officers and members of the CZM Citizen Advisory Council for Cape Cod. Copies also went to interested individuals and were available to the general public upon request. Informational articles about the proposed nomination appeared in the local newspaper. A final informational meeting was held at Mashpee Town Hall on August 30, 1979.

A public hearing was conducted on September 27, 1979 in the Falmouth Town Hall. The recorded testimony was largely favorable and an informal vote was 50-3 in favor of the designation. As the result of a number of concerns raised at this meeting, on-site visits were also arranged. On October 19, eighteen citizens and officials toured Waquoit Bay by boat following existing main navigational channels. In addition, CZM staff conducted site visits with individual landowners who had concerns.

A second public hearing was scheduled for October 25, 1979. A public hearing notice was published in the Environmental Monitor on October 22, 1979. The public hearing notice also appeared in the Cape Cod Times and The Falmouth Enterprise.

The hearing record remained open until November 7, 1979 for those persons who wished to submit written comments. After careful consideration of all public comments, final boundary modifications were defined.

IV. Discussion of Factors Specified in Section 6.48 of the CZM Program Regulations

Prior to designation of a region as an Area of Critical Environmental Concern, the Secretary must consider the factors specified in Section 6.48 of the CZM Program regulations. Based on research and information from local residents, I find that the following factors are applicable to the Waquoit Bay Barrier Beach System.

Quality of Natural Characteristics: This estuarine system is a relatively large unaltered physical and biological resource. Its unpolluted water attracts a wide range of finfish species and nurtures large numbers of shellfish. The undeveloped stretches of Washburn Island and Dead Neck accommodate contiguous environments of beach, dune, marsh, and low wooded hills. Minimum alteration of the natural features of this area will allow them to function at their maximum capacity. These undeveloped expanses also contribute significantly to the scenic beauty enjoyed by users of the area.

Public Health: The high water quality currently existing supports many important activities, including swimming, boating, fishing and shellfishing. Clean water must be maintained to ensure the safety of the recreational users of the area. Activities that would degrade water quality would have both environmental and economic consequences. The barrier beach formed by Washburn Island and Dead Neck acts as a natural storm buffer to protect the property of shore dwellers within the system. Development of this barrier would impair its natural form and protective function.

Uniqueness: An estuary, where fresh water inflow meets and mixes with salt water, is the most significant of all coastal features in the amount and variety of biological production. The largely unaltered Waquoit Bay estuarine system makes this area both a highly significant and uncommon feature of the Massachusetts coast. The availability of nutrients supports a great number and variety of species. These conditions provide excellent opportunities for scientific research. In a study conducted in the late 1960's, the Massachusetts Division of Marine Fisheries determined that of nine sample estuaries in the state, Waquoit Bay supported the greatest diversity of estuarine-associated fin-fish. Currently, a biologist from the Woods Hole Oceanographic Institution is studying the genetics and distribution of quahogs in the estuary.

Productivity: The region contains diverse and viable populations of fish, shellfish and waterfowl. The biological productivity of this area is sustained by its ponds and salt marshes which contribute large quantities of nutrients to the coastal food chain.

Imminence of Threat to the Resource: Alterations which could severely impact the natural functions or reduce productivity of the components of the Waquoit Bay system have been considered for the area. The ACEC designation would focus attention on the area's significant environmental and economic resources, and would serve as a guide regarding future activity in the area.

Irreversibility of Impact: Because the estuary has only limited access to the open Sound through the narrow cuts at the east end of Washburn Island, the entire basin is susceptible to inadequate flushing. The discharge of pollutants into this system would tend to remain concentrated rather than to disperse. As a result, impacts on shellfish and finfish could be severe, thereby damaging an important economic resource of the Waquoit basin. Other habitat alterations such as filling or removal could also severely affect sensitive spawning or nursery areas, thereby decreasing the abundance of valuable commercial, recreational, and aesthetic resources.

Economic Benefits: This ACEC brings significant income to Falmouth and Mashpee through tourists and area residents who purchase shellfish permits, the use of area services such as boatyards, and the wholesale trade in shellfish. Any alteration in the area that threatens to disrupt its utilization and/or attractiveness carries a potentially detrimental economic impact. Damage to the groundwater is also an important consideration because the shoredwellers depend on private groundwells for their fresh water supply.

Supporting Factors: Residents, business persons and other users of the ACEC agree that the area carries environmental importance, economic utility and aesthetic qualities. Groups at many levels, including local residents, town authorities and state administrative agencies, have voiced their concern about the need to preserve the undeveloped portions, particularly Washburn Island and South Cape Beach.

John A. Bewick
Secretary of Environmental Affairs

11/26/79
Date

AREA OF CRITICAL ENVIRONMENTAL CONCERN

(ACEC) INLAND

Data Sheet

Location: WESTBORO CEDAR SWAMP

Towns: Hopkinton, Westboro

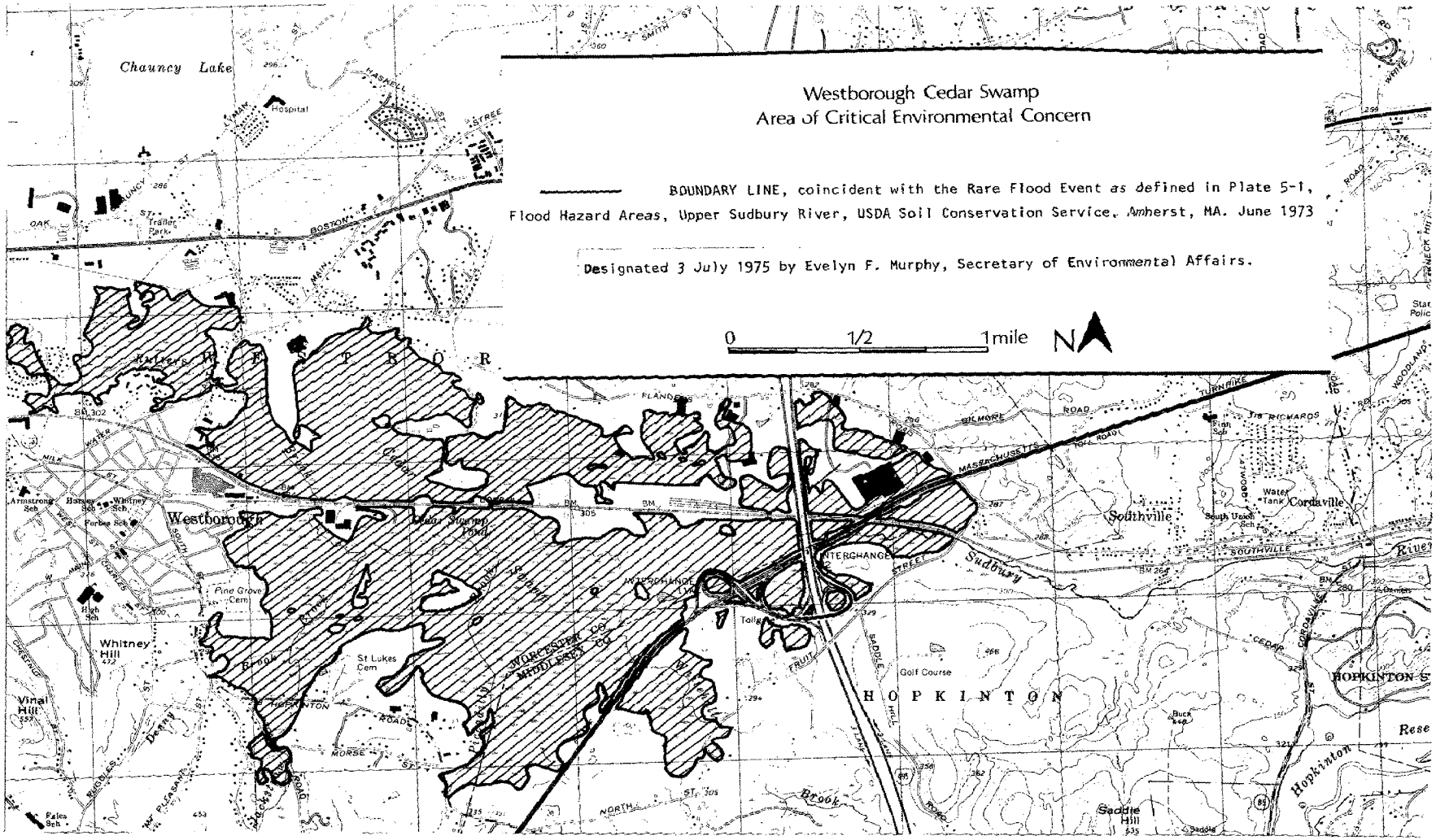
USGS Quad Sheet: Marlboro

Water Bodies included in ACEC:
Sudbury River
Cedar Swamp Pond
Brooks: (portions of) Denny, Jackstraw, Picadilly, Rutters, Whitehall

Resource Summary:

This inland ACEC contains some 1500 acres of cedar swamp in the towns of Westboro and Hopkinton which form the headwaters of the Sudbury River. Two principal benefits derived from the swamp are flood storage and protection for downriver areas. The ACEC, defined by the rare flood boundaries, acts to hold water during times of high flow and to release it during low flow periods. Cedar Swamp overlies a major aquifer and provides high water quality for MDC reservoirs downstream, thus playing a large role in protecting public water supplies. Traditionally the area has been used for recreational activities including hiking, birdwatching, hunting, canoeing, and fishing.

State Regulations apply (date of designation): 3 July 1975


Westborough Cedar Swamp
Area of Critical Environmental Concern
BOUNDARY LINE, coincident with the Rare Flood Event as defined in Plate 5-1, Flood Hazard Areas, Upper Sudbury River, USDA Soil Conservation Service, Amherst, MA. June 1973
Designated 3 July 1975 by Evelyn F. Murphy, Secretary of Environmental Affairs.
0
1/2
1 mile
N
Chauncy Lake
Hospital
Westborough
Whitney Hill
Vinal Hill
Pine Grove Cem
St Lukes Cem
Cedar Swamp Pond
INTERCHANGE
Tollgate
Golf Course
HOPKINTON
Southville
Cordaville
Water Tank
Saddle Hill
Sudbury
Hopkinton
WORCESTER CO
MIDDLESEX CO
MASSACHUSETTS
TURNPIKE
BOSTON
HASKELL
SMITH
MAIN
WATER
MILK
FLANDERS
GILMORE
ROAD
RICHARDS
SOUTHVILLE
CEDAR
CORDAVILLE
HOPKINTON
MORSE
NORTH
SADDLE
FRUIT
Brook
Rese

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
18 Tremont Street
Boston, Massachusetts 02108

Evelyn F. Murphy
Secretary

ORDER DESIGNATING AN AREA

OF

CRITICAL ENVIRONMENTAL CONCERN

I. Background

On January 23, 1975 the Executive Office of Environmental Affairs (EOEA) received a request to designate land in Westboro known as Cedar Swamp as a particularly sensitive environmental area or as an area of critical environmental concern. This request was made pursuant to Section 8.2 of the Regulations of EOEA adopted under Massachusetts General Laws, Chapter 30, Section 62.

II. Purpose of the Designation

Pursuant to Massachusetts General Laws, Chapter 30, Section 62 each executive office and agency of the Commonwealth has promulgated rules and regulations governing the preparation of environmental impact reports. Most secretaries and agencies have listed certain relatively minor projects which, in their judgement, had an "insignificant" environmental affect, and therefore did not require the preparation of an Environmental Assessment Form. These relatively minor projects and activities are thereby exempted from the Environmental Impact Report Process and are referred to as "categorical exemptions." The purpose of a designation of a particular land area under Section 8.2 of the EOEA regulations, is to render ineffective all categorical exemptions for that particular land area. The result is that any state agency which performs any work,project or activity within that land area must file an Environmental Assessment Form and, if necessary, an Environmental Impact Report before proceeding with such work, project or activity.

III. Public Notice of the Proposed Designation

Notice was published in consecutive issues of the Environmental Monitor beginning with theMarch 21, 1975 issue and ending with the April 7, 1975 issue of the Monitor. In addition, a public hearing was held in Westboro, Massachusetts on May 14, 1975.

In response to the notice published in the Monitor, over 100 written comments have been received by EOEA on the proposed designation. The Metropolitan District Commission favors the proposed desigation. The Department of Public Works and the Division of Fisheries and Game oppose it. In general, business interests in the Westboro-Worcester area oppose the designation while residents of the Town of Westboro and representatives from towns down river support the designation.

IV. Values of Cedar Swamp

A. Flood Storage Capacity

In 1971 Arthur W. Brownell, Commissioner of the Department of Natural Resources, recognized the flood storage importance of this area and declared a moratorium on all current and future Hatch Act applications which involved Cedar Swamp until a comprehensive study was completed by the Division of Water Resources. The report, entitled "Flood Hazard Analyses, Upper Sudbury River, Massachusetts" dated June, 1973 states:

> "No additional impoundment sites are available on the Sudbury River which could feasibly provide the flood storage equal to the present capacity of Cedar Swamp. The loss of present flood water storage capacity and increased urbanization in the study area would directly increase flood damage anddanger downstream."

The area proposed for designation is with minor exceptions the same area designated as a rare flood flood-plain by the Soil Conservation Service in June, 1973, in a report entitled "Flood Hazard Analyses, Upper Sudbury River, Massachusetts."

B. Public Water Supply

The Town of Westboro has two wells on the margin of Cedar Swamp. These wells provide approximately 30% of Westboro's water supply capacity or between 600,000 and 800,000 gallons per day.

In addition, the Metropolitan District Commission maintains public drinking water reservoirs in Framingham which are supplied by Cedar Swamp and the Sudbury River. In its letter to this office dated May 6, 1975, William J. Byrne, Jr., Commissioner, Metropolitan District Commission stated:

> "We are also particularly concerned with the possible effect of development in the Swamp on water quality. Increased industrial and water discharge directly into the swamp appears nearly inevitable. Any reduction in water quality would impact on M.D.C.'s plans for utilizing the Sudbury as a major increment to our present water yield capabilities."

C. Public Recreation

Located in the area between the Framingham and Worcester urban centers and easily reached by road, Cedar Swamp is accessible to many urban people in the middle eastern part of Massachusetts. It naturally lends itself to passive and active recreation such as hiking, bird watching, canoeing, hunting, and fishing. In a letter dated January 18, 1972, Paul Mugford, Acting Assistant Director of the Massachusetts Division of Fisheries and Game, wrote:

> "Located as it is between Framingham and Worcester, the Westboro Area's contribution to the public's recreation needs and to local resource values is of inestimable value."

House No. 5364 of 1975, the Special Report of the Executive Office of Environmental Affairs Relative to the Identification, Designation and Protection of Critical Environmental Concern Areas, identifies the criticality of inland wetlands:

> "The inland wetlands constitute an extremely varied category of land and water areas; they are similarily varied when viewed in terms of their local, regional and statewide significance. Those related

directly or indirectly, to the water supply of communities and regions undoubtedly fall into a critical category, and would include reservoirs and their watersheds, aquifers and recharge areas. Floodplains should similarly be included in a critical category. The criticality of the others, however, cannot be judged fairly on the basis of a single environmental value even though some values should, in particular instances, be given greater weight than others. Not every wetland need fall within restrictive controls, but each should be evaluated in terms of local or regional significance, its intrinsic interest or character, and particularly its linkage to other areas of environmental concern or value.

V. Potential for Development in Cedar Swamp

— At the present time Cedar Swamp is crossed by the Massachusetts Turnpike, Interstate 495, and the main track of the Penn. Central Railroad. In addition, major portions of the swamp are zoned for industrial use. The combination of access to major transportation lines, and zoning favorable to commercial and industrial development, indicates the likelihood that future such development will be proposed in the Cedar Swamp.

In addition, the Town of Westboro turned down a flood plain zoning by-law at its 1975 town meeting. At the public hearing, many town officials requested that EOEA not make a designation of Cedar Swamp because the town would amend its zoning by-laws for Cedar Swamp. Since that action has not been taken by the town, the potential for development and environmental damage in the Cedar Swamp area remains high.

VI. Designation

I have reviewed the documents, reports and written comments submitted to this office, In addition, I have taken into account the oral statements made at the public hearing on May 14. Based on this review I hereby determine that Cedar Swamp is a particularly sensitive environmental area where an otherwise insignificant impact could become significant and is an area of critical environmental concern. The land area so designated is delineated by the outer boundary of the Rare Flood on plate 5-1, Flood Hazard Areas, Upper Sudbury River, Flood Hazardous Analyses, Upper Sudbury River, Massachusetts, Soil Conservation Service, U.S.D.A., June 1973. This order will take effect immediately. However, additional comments and requests for specific amendments by state agencies or other interested parties may be submitted within the next 14 days for my consideration.

3 July 75
DATE

Eve[illegible]. Murphy, Secretary

THE IMPLEMENTING AGENCIES AND THEIR REGULATIONS

The guidelines for an Area of Critical Environmental Concern are not found in one set of laws or regulations, but rather are implemented through policies and regulations promulgated by a variety of agencies within Massaschusetts state government. Presented here are synopses of the roles of those agencies and regulations pertaining to ACEC's. As these regulations are quite complex, the following discussions will provide only an introduction and broad overview. Detailed or specific questions should be directed to the particular agency in question.

It should be noted that there are two types of ACEC: those located in the coastal zone and those located inland. The designation processes and the regulations involved differ for the two types. For information on the single inland ACEC, other potential inland sites, or the applicable regulations, contact:

Massachusetts Executive Office of Environmental Affairs, MEPA Unit
100 Cambridge Street
Boston, MA 02202 or (617)-727-5830

Executive Office of Environmental Affairs Page IV-3
- Coastal Zone Management IV-3
- Massachusetts Environmental Policy Act (MEPA) IV-5

Department of Environmental Quality Engineering Page IV-7
- Wetlands Division IV-7
- Waterways Division IV-9
- Division of Water Pollution Control IV-11

Department of Environmental Management Page IV-13

Energy Facilities Siting Council Page IV-15

Miscellaneous Page IV-17

Agency: Massachusetts Coastal Zone Management Office (CZM)
Executive Office of Environmental Affairs

Area of Critical Environmental Concern (ACEC) Designation Process

Note: In the Code of Massachusetts Regulations, two sections pertain to the designation of ACEC's; one is found within the Coastal Zone Management regulations as listed below, the other is found in regulations pursuant to the Massachusetts Environmental Policy Act (MEPA) (Mass. G.L. C. 30 s. 62-62H) in 301 CMR 10.17. While the MEPA regulations are applicable to the entire state, CZM regulations apply only to areas within the defined coastal zone. The two bodies of regulations are quite similar; differences will be noted below.

Reference: Mass. G.L. C. 21A s. 2(7)
301 CMR 20.00 et seq

Purpose: To establish the procedure for designation of a coastal Area of Critical Environmental Concern (ACEC).

General Procedures:

Nomination:

Areas may be nominated for designation as ACEC's by;

a) any 10 citizens of the Commonwealth
b) the Board of Selectmen, City Council or Mayor, the Planning Board or the Conservation Commission of any city or town which would be affected by designation;
c) any state agency or a regional planning agency; or
d) the Governor or any member of the General Court.

Nomination must be accompanied by summary information regarding the resources of the proposed area; a suggested boundary for the area; and a general description of the benefits that would be achieved by designation.

Eligible Areas:

To be eligible for nomination an area shall contain at least five of the following features: coastal beach, dune or estuary; barrier beach system; embayment; salt marsh; salt pond; shellfish bed; habitat for threatened, rare or endangered species; fish spawning and nursery areas; other significant wildlife habitats; erosion area; flood plain; historic district or site; public recreational beach; or significant scenic site. (The MEPA, or "inland", regulations also include: fresh water bodies; swamps and marshes; aquifer recharge areas; agricultural and forest lands.)

Review of the Nomination:

On receipt of the nomination, the Secretary of Environmental Affairs will make an initial review of the proposed area and the reasons for its nomination. The Secretary may request further information on the nomination as is deemed necessary. Within 45 days of receiving the nomination, or the additional information requested, the Secretary must either decline

the nomination or accept it and proceed with a full public review.

Public Notice and Hearing:
Before a site is designated as an ACEC, the Secretary of Environmental Affairs must hold a public hearing within 25 miles of the nominated area. Notice of this hearing shall be published at least 30 days in advance in the Environmental Monitor as well as in a local paper of general circulation. Notice will also be sent to the appropriate local boards and agencies and may be sent to individuals and organizations that have expressed an interest.

Criteria for Designation:
The Secretary shall base his designation decision on the following criteria: threat to public health through inappropriate use, quality of the natural characteristics, productivity, uniqueness of area, irreversibility of impact, imminence of threat to the resources, economic benefits and other supporting factors.

Decision of Secretary:
The Secretary shall make a decision whether or not to designate an ACEC within 60 days of the hearing. If he decides to designate, a notice must be published in the Environmental Monitor; the publication date becomes the effective date of state regulations pertinent to the ACEC. CZM must then notify the Federal Office of Coastal Zone Management (OCZM) that the designation of the ACEC was done as part of a routine program implementation; an action that is also subject to public notice and comment. The date of agreement by OCZM is the date that federal consistency requirements begin to apply to federally funded or permitted actions within the ACEC.

Effects of Designation:
Designation of an ACEC will require all agencies under the Secretary of Environmental Affairs to write or revise regulations, administer programs, and issue permits so as to conform with Policy 2 of the CZM program; "ensuring that activities in or impacting on such complexes are designed and carried out to minimize adverse effects on marine productivity, habitat values, water quality and storm buffering values of the entire complex." (Under the MEPA regulations the standard is to "minimize adverse effects"; the particular interests on which the impacts take place are not specified.) Further, any activity that directly affects an ACEC that is funded, supported, or licensed by any federal agency must be consistent with the designation to the maximum extent possible.

Review of the Designation:
The Secretary will periodically review designated ACECs to evaluate whether they should be amended or repealed. At any time after one year from the designation date, any of the parties who may make a nomination may seek to amend or repeal the designation. This process shall be the same as that for nominations as described above.

Agency: Massachusetts Environmental Policy Act (MEPA) Unit
Executive Office of Environmental Affairs

Massachusetts Environmental Policy Act (MEPA)

Reference: Mass. G.L. C. 30 s. 61-62H
301 CMR 10.00; MEPA Regulations
(especially 10.17(1); 10.17(9); 10.32(4))

Purpose: To provide a uniform method of gathering information to be used in evaluating the impact of an activity. MEPA also provides for public and state agency review and comment on certain activities/levels of activities which either require a state permit, are conducted by state agencies, or use state funds.

General Procedure: Projects which are within the jurisdiction of MEPA require the filing of an Environmental Notification Form (ENF). The MEPA unit publishes notice of the ENF in the Environmental Monitor, issued twice monthly. The public has 20 days from the Monitor notice in which to comment to the MEPA unit on the project; the Secretary of Environmental Affairs has 30 days in which to decide if an Environmental Impact Report (EIR) is required. If an EIR is required and submitted, notice is published in the Monitor of its availability and the public has 30 days from date of publication to comment on the project, again to the MEPA unit.

ACEC: Designation of an ACEC has the following effects on the MEPA process:

1) All Executive Office of Environmental Affairs agencies shall take action, administer programs and/or revise regulations in order to protect the area and to ensure that activities in, or impacting, the area are designed and carried out to minimize adverse effects. (301 CMR 10.17(9)(2)).

2) Exclusion, or threshold, levels on projects proposed within an ACEC are rescinded: "in such an area, no project, of whatever magnitude, requiring any (state) permit, approval or other authorization .... shall be excluded" from the MEPA process (301 CMR 10.32(4)(c)). Projects receiving state funding also fall into the above category.

Under these provisions any state-regulated or -funded project within an ACEC will trigger a MEPA review and call for public input, including such activities as:

- Replacement or reconstruction of existing structures, facilities and equipment.
- Construction, demolition, abandonment, addition, expansion or installation of structures, facilities or equipment.
- Alteration affecting land, water or vegetation, including ordinary maintenance.
- Acquisition or disposition of interests in real property.
- Planning and policy development.

Agency: Wetlands Division
Department of Environmental Quality Engineering

Wetlands Protection Act

Reference: Mass. G.L. C. 131 s. 40
310 CMR 10.00 et seq.

Purpose: To establish uniformity of process and standards for implementating of the provisions of the Wetlands Protection Act.

General Procedure: The Wetlands Protection Act requires that no one shall remove, fill, dredge or alter any coastal or freshwater wetland without a review by the local Conservation Commission to protect specific interests as stated in the Act. The definition of wetlands provided by the Act includes such resource areas as coastal banks, dunes, beaches, salt-marshes, land under waterbodies and land subject to flooding. The Conservation Commission must hold an open hearing to determine whether the area or the impacts of the project are significant to the seven public interests specified by the Act. These are:

1) public or private water supply
2) ground water supply
3) flood control
4) storm damage protection
5) prevention of pollution
6) land containing shellfish
7) fisheries

The Conservation Commission will then produce an Order of Conditions regulating the project to protect those interests.

Under the regulations governing activities in coastal sites (310 CMR 10.13-10.28), performance standards are set for projects proposed for various resource areas. The standard for most work in a coastal bank; coastal beach; dune; land under a salt pond; land containing shellfish; and banks of, or land under, the ocean, rivers, streams, creeks, ponds or lakes that are part of an anadromous/catadromous fish run is "no adverse effect". The standard for a saltmarsh is even more stringent, stating that a project "shall not destroy any portion of the salt marsh and shall not have an adverse effect on the productivity of the salt marsh."

For most activities proposed on land under the ocean, tidal flats, coastal dunes (when activity is accessory to existing building, excluding coastal engineering structures), and rocky intertidal shores, the standard is to "minimize" adverse effects on the seven interests of the Act.

ACEC: In issuing the designation of an ACEC, the Secretary of Environmental Affairs may make a finding of significance for the resource areas within that ACEC. This finding of significance shall be presumed by the permitting authority in any project proposed. Further, within an ACEC, the performance standard for land under the ocean, tidal flats, coastal dunes

and rocky intertidal shores becomes "no adverse effect". An exception to this is maintenance dredging of land under the ocean for navigation improvement; such dredging must "minimize adverse effects using best available measures as defined by regulation" and may not expand on pre-existing channels (310 CMR 10.17 (4)).

It should be noted that land already in agricultural use (including aquaculture and mariculture) is exempted from the Wetlands Act as are approved mosquito control projects.

A variance procedure does exist, however it will be granted only in rare and unusual cases by the Commissioner of DEQE.

Agency: Waterways Division
Department of Environmental Quality Engineering (DEQE)

Waterways Licensing Program

Reference: Mass. G.L. C. 91 s. 1-63
301 CMR 9.00 et seq

Purpose: To establish uniform procedures for licensing activities in the waterways and subtidal lands of the Commonwealth, incorporate programs of and coordinate with other agencies of the Executive Office of Environmental Affairs, and integrate the public trust doctrine into the administration of Chapter 91.

General Procedure: The Division reviews and licenses activities, and/or carries out those activities, to improve or modify waterways or sub-tidal lands including, but not limited to, dredging and wharf and pier construction. The standard of waterways projects proposed for areas outside an ACEC is to "minimize" adverse effects to the environment (310 CMR 9.07 (2)(j)). As a matter of policy, the Division defers issuing a license until a permit under the Wetlands Protection Act has been written for the project; the conditions under that Order are generally included in the Waterways permit to provide environmental protection standards. A varience procedure does exist but will be used only in very rare or unusual cases.

ACEC: Within an ACEC the standard becomes "no adverse impact" using the same definition as is used in the Wetlands Protection Act (310 CMR 9.23 (2)(c)). The Division may not license improvement dredging in any portion of an ACEC, except for the purposes of shellfish enhancement or other marine productivity (310 CMR 9.25 (4)(b)). Further, maintenance dredging shall not be licensed in any shellfish bed, salt pond or salt marsh located in an ACEC (310 CMR 9.25 (4)(c)).

Dredge material shall not be disposed of within an ACEC except if clean, non-degrading and used for salt marsh creation, beach nourishment or dune stabilization (310 CMR 9.26 (4)(b)).

Agency: Division of Water Pollution Control
Department of Environmental Quality Engineering (DEQE)

Water Quality Standards

Reference: Mass. G.L. c. 21 s. 27
314 CMR 4.00 et seq.

Purpose: To enhance the quality and value of the water resources of the Commonwealth through the designation of uses for which the waters shall be maintained and protected, prescription of quality criteria required to sustain the designated usage, and, where appropriate, prohibition of discharges.

General Procedures: The Division classifies the waters of the Commonwealth and establishes parameters for each class. The classification procedure involves setting attainment goals for the various water bodies. Standards to prevent or minimize any degradation are established and testing criteria are provided.

ACEC: The CZM Program calls on the Division to classify waters within ACECs at high quality standards, SA in marine waters and B in fresh (see below), and to incorporate strict antidegradation standards. This will serve to eliminate discharges of hazardous substances, new industrial discharges and direct discharges from new sewage treatment facilities.

Class SA - Marine or coastal waters assigned to this class are designated for the uses of protection and propagation of fish, other aquatic life and wildlife; for primary and secondary contact recreation; and for shellfish harvesting without depuration in approved areas.

Class B - Fresh waters assigned to this class are designated for the uses of protection and propagation of fish, other aquatic life and wildlife; and for primary and secondary contact recreation.

Agency: Department of Environmental Management (DEM)

Coastal Wetlands Restriction Act

Reference: Mass. G.L. C. 130 s. 105
302 CMR 4.00-4.19

Purpose: To establish a procedure for the protection of coastal wetlands as significant environmental entities on a regional, rather than a site-specific basis. (The latter procedure is covered under the Wetlands Protection Act, Mass. G.L. C. 131 s. 40.)

General Procedure: This statute authorizes the Commissioner of DEM, following a public hearing and with the approval of the Board of Environmental Management, to restrict or prohibit large scale alterations of significant coastal wetlands. The tool used is an "Order of Restriction", fashioned to affect land use to promote public health, safety and welfare and to protect public and private property, wildlife and marine fisheries. Ownership rights, however, are not affected. The Order generally prohibits large scale alterations of wetlands such as filling, dredging and discharge of pollutants. Permitted activities include agriculture and aquaculture; building and maintenance of docks and piers; upkeep of existing roads, marine channels and structures; and construction and maintenance of temporary structures erected on pilings.

The Order of Restriction is recorded in the local Registry of Deeds and a marginal notation is made either on the deed of a recorded parcel or the Land Court certificate of a registered parcel.

ACEC: Within an ACEC, DEM will restrict the coastal wetlands within 15 months of designation; if this cannot be completed, a single 3 month extension may be requested from the Sectretary of Environmental Affairs (310 CMR 4.01 (4)).

Agency: Energy Facilities Siting Council

Energy Facilities Siting Program

Reference: Mass. G.L. C. 164 s. 69H-69R
980 CMR 1.00-10.04

Purpose: To provide a necessary power supply for the Commonwealth with a minimum impact on the environment at the lowest possible cost. Implementation of this policy includes a review process ensuring timely and appropriate location of new facilities. In addition, the Council has the authority, upon appeal by an electric, gas, or oil company, to balance energy needs against environmental impact should construction of that company's facility be prohibited or unduly delayed for failure to meet standards imposed by state or local agencies. Procedures for review of such an appeal, known as a petition for a Certificate of Environmental Impact and Public Need, are established in Chapter F of the Council's regulations.

General Procedure: The Council reviews long-range forecasts of electric, oil, and gas companies. Interstate natural gas companies regulated by the Federal Energy Regulatory Commission pursuant to the Natural Gas Act (15 USC sec. 717 et seq.) are not generally regulated except as specifically provided. Forecast reviews include evaluation of the energy needs of service territories, company actions to meet those needs, and the potential environmental impacts of those actions. By law, facilities may not be constructed if they do not comply with the most currently approved forecast. Public hearings are held on long-range forecasts, proposed facilities, notices of intent to construct an oil facility, and on petitions for Certificates of Environmental Impact and Public Need. In addition, local public informational hearings are held near the site with regard to new facility proposals.

A gas, oil, or electric company petitioning for a Certificate of Environmental Impact and Public Need may do so pursuant to procedures set forth in G.L. C. 164 s. 69L-P. If issued, the Certificate is the equivalent of all the various permits, approvals, and authorizations required by state or local agencies which would otherwise be necessary for the construction and operation of the facility (G.L. C. 164 s. 69K), except that the Council shall not issue a Certificate the effect of which would be to grant or modify a permit which, if so granted or modified, would conflict with applicable federal laws and regulations.

ACEC: The Council specifically recognizes the policies of the Massachusetts Coastal Zone Management Program in its proceedings and gives "prime consideration" to the protection of ACECs against degradation. "Prime consideration" is defined as giving "special weight to the environmental impact of a facility in or impacting such environmentally sensitive areas" (Rule 83.1 (1),(2) Regulations of the Energy Facilities Siting Council/ 980 CMR 1.00-1.04.)

Agencies: Miscellaneous

Policy #2 of the CZM Program, listed below, is included as departmental policy in various other sets of regulations, including:

Division of Water Pollution Control
Department of Environmental Quality Engineering
Regulations for Water Quality Certification for Dredging, Dredged Materials Disposal and Filling in Waters of the Commonwealth.
314 CMR 9.01 (2)(d) 2. a.,b. pursuant to
Mass. G.L. C. 21 s. 26-53.

Waterways Division
Department of Environmental Quality Engineering
Regulations for the Administration of Waterways Licenses.
310 CMR 9.03 (2) (a),(b) pursuant to
Mass. G.L. C. 91 s. 1-63.

Department of Environmental Management
Ocean Sanctuaries Regulations
302 CMR 5.05 (1) (a),(b) pursuant to
Mass. G.L. C. 132A s. 13-16, 18.

Policy #2 of the Coastal Zone Management Program:

To protect complexes of marine resource areas of unique productivity (Areas for Preservation or Restoration (APRs) and Areas of Critical Environmental Concern (ACECs)) and to ensure that activities in or impacting such complexes are designed and carried out to minimize adverse effects on marine productivity, habitat values, water quality and storm buffering values of the entire complex.

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