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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