

DESIGNATION of the
FOWL MEADOW and PONKAPOAG BOG
AREA OF CRITICAL ENVIRONMENTAL CONCERN

located in portions of the municipalities of

Boston, Canton, Dedham, Milton,
Norwood, Randolph, Sharon and Westwood

WITH SUPPORTING FINDINGS

Following an extensive formal review required by the regulations of the Executive Office of Environmental Affairs (301 CMR 12.00) including nomination, review, on-site visits, research, public information meetings, a public hearing and written comment period, and evaluation of all public comment and assembled data, I, the Secretary of Environmental Affairs, hereby designate the Fowl Meadow and Ponkapoag Bog, located in portions of the municipalities of Boston, Canton, Dedham, Milton, Norwood, Randolph, Sharon and Westwood, as an Area of Critical Environmental Concern (ACEC). I take this action pursuant to the authority granted me under Massachusetts General Law Chapter 21A, Section 2(7).

I also hereby find that the wetland resource areas included in the Fowl Meadow and Ponkapoag Bog ACEC are significant to the protection of groundwater supply and public and private water supplies, the prevention of pollution, flood control, the prevention of storm damage, the protection of fisheries, and the protection of wildlife habitat - all of which are public interests defined in the Wetlands Protection Act and regulations promulgated thereunder.

In addition, with regard to the Massachusetts Surface Water Quality Standards, 314 CMR 4.00, I recommend that the current Class B water quality standards and antidegradation provisions continue to be applied to the waters of the Fowl Meadow and Ponkapoag Bog ACEC.

I. Procedures Leading to ACEC Designation

On May 30, 1991 I received a letter of nomination for the Neponset River Basin ACEC signed by the Neponset River Watershed Association (NepRWA) and twelve Conservation Commissions of cities and towns affected by the potential designation, pursuant to the ACEC Regulations 301 CMR 12.05(1)(b). This was a revised and updated version of an original nomination for the Neponset River Basin prepared a decade ago (dated February, 1981). Following an initial review, the Neponset River Basin nomination was rejected for full review in correspondence dated July 15, 1991. This letter recommended that NepRWA and the Conservation Commissions consider potential nominations for the Fowl Meadow and the Neponset River Estuary.

NepRWA revised the original nomination, worked with communities to develop a different boundary proposal, and submitted a joint nomination with area conservation commissions on September 24, 1991. This nomination was rejected in correspondence dated October 4, 1991, with

recommendations for additional revisions.

The current revised, joint nomination for the Fowl Meadow and Ponkapoag Bog ACEC was submitted on January 29, 1992 by NepRWA and the eight Conservation Commissions of cities and towns affected by the potential designation. I acknowledged receipt of the nomination in correspondence dated February 10, 1992, and accepted the nomination for full review in correspondence dated March 13, 1992. Copies of the acceptance letter and a summary of the nomination were sent to the boards of selectmen, mayors and city councils, conservation commissions, and planning boards in Boston, Canton, Dedham, Milton, Norwood, Randolph, Sharon, and Westwood, the eight municipalities included in the nominated area. Letters and summaries were also sent to the conservation commissions of Foxborough, Medfield, Quincy, and Walpole, co-nominators of the original nomination; state legislators representing the area; regional and state agencies; environmental organizations; and other interested parties.

Public information meetings were held on April 30, 1992 at the Memorial (Town) Hall in Norwood; and on May 6, 1992 and June 18, 1992 at the MDC Trailside Museum in Milton. Public notice of the June 18 information meeting, the June 24 public hearing, and a ten-day written comment period following the hearing was sent to the above-mentioned parties in correspondence dated May 20, 1992. Public notice was also published in the Patriot Ledger on May 22, 1992, and in the May 25, 1992 issue of the Environmental Monitor.

A public hearing regarding the nomination was conducted on my behalf by Peter Webber, Commissioner of the Department of Environmental Management (DEM), on June 18, 1992. Sixteen persons representing individual residents and a variety of groups and organizations presented oral testimony, all in support of the nomination. A ten-day period for the submission of additional written comment followed the public hearing.

Written testimony was received from numerous individuals, state legislators, private organizations, and public agencies. Copies are on file at the offices of the DEM Division of Resource Conservation in Boston. Over sixty (60) comments were received in the course of the public participation and review process. Additional information regarding these comments is described below in section IV, Discussion of the Criteria for Designation, Supporting Factors.

In the review process leading to the designation of a nominated area, the Secretary must consider the factors specified in Section 12.09 of the ACEC Regulations regarding the designation of Areas of Critical Environmental Concern. These factors are: "(1) threat to the public health through inappropriate use; (2) the quality of the natural characteristics; (3) productivity; (4) uniqueness of area; (5) irreversibility of impact; (6) imminence of threat to the resource; (7) magnitude of impact; (8) economic benefits; and (9) supporting factors." Further explanation of these factors in relation to the Fowl Meadow-Ponkapoag Bog ACEC is given below in section IV, Discussion of the Criteria for Designation.

II. Description of the Resources of the Fowl Meadow and Ponkapoag Bog ACEC

A summary and overview of the resources and their critical interrelationships are provided here. Information, testimony, comments and materials submitted for the review of the nomination, some

of which are specifically referenced in this document, are on file with the Department of Environmental Management.

Resource Overview

The central resource features of the Fowl Meadow and Ponkapoag Bog ACEC are the Neponset River and the Ponkapoag Pond and Bog. The Neponset River and its tributaries, the adjacent wetlands and floodplains, the associated aquifers and public water supplies, and the diverse habitats form the core resources of the Fowl Meadow area. Ponkapoag Pond and Bog flow into the Neponset River to the west. The pond, bog, and the natural community and habitats form the core resources of the Ponkapoag Bog area. Historical and archaeological resources, and the recreational and educational values within these areas contribute to the overall significance of the ACEC to the people and communities of the region.

Surface Waters

The Neponset River traverses the heart of the Fowl Meadow area from Route 1 in Norwood northeasterly to Paul's Bridge at the Boston-Milton border. The Fowl Meadow section of the Neponset River is approximately 8 miles in length. The overall length of the Neponset River is approximately 28 miles from its source in Foxborough to its mouth in Dorchester Bay.

Portions of several tributaries flow into the Neponset River within the ACEC, and include Plantingfield, Purgatory and Traphole Brooks in Norwood, and the East Branch (Canton River) and Pecunit and Ponkapoag Brooks in Canton. Ponkapoag Pond in Canton and Randolph is 210 acres in size and is the largest surface water body in the ACEC. Sprague Pond, located in Boston and Dedham, is less than 2 acres in size.

Wetlands and Floodplains

The Fowl Meadow, located in seven communities, is the largest contiguous wetland area in the Neponset River basin. In correspondence regarding the nomination dated June 25, 1992, the Metropolitan Area Planning Council (MAPC) states that Fowl Meadow is "one of the most significant wetlands in the metropolitan Boston region." According to GIS data, based on United States Fish and Wildlife Service National Wetlands Inventory maps, these wetlands include approximately 2,800 acres. The Ponkapoag Bog wetland is about 250 acres in size. The total amount of wetlands located within the ACEC is approximately 3050 acres, or 37 percent of the ACEC.

The Neponset River Basin Flood Plain Management Study (1982), prepared by the Army Corps of Engineers, documents the extent and importance of the flood storage capacity of the Fowl Meadow area. This study also included a draft ACEC nomination for the Neponset River Basin, reflecting the significance of the floodplains and other related resources of the basin. According to GIS data, based on Federal Emergency Management Agency (FEMA) flood boundary maps, floodplains include about 4,350 acres, or 52 percent of the ACEC. Most of this acreage is located in or adjacent to Fowl Meadow. According to the nomination, extensive flooding of Fowl Meadow has occurred several times since the early 1800s, most notably in 1955 and 1968, and as recent as 1982 and 1987.

Water Supply Areas

Several public and private water supply wells are located within the Fowl Meadow area. The aquifers underlying the Fowl Meadow area have been studied extensively. Recent reports include the draft Neponset Basin Water Supply Protection Study (1990) by MAPC and the draft Yields and Ground Water Quality of Stratified Drift Aquifers in the Neponset River Basin, Massachusetts (1990), by the United States Geologic Survey (USGS). Additional aquifer studies have been conducted by hydrogeological consultants for the towns of Canton, Dedham, Norwood and Westwood, in conjunction with the Department of Environmental Protection (DEP) and the Massachusetts Water Resources Authority (MWRA). The surface waters, wetlands and floodplains of the ACEC are hydrologically connected with these important aquifers.

According to an MAPC letter dated October 28, 1991, "An aquifer of regional significance underlies the Fowl Meadow area. This aquifer currently provides drinking water to the communities of Canton, Dedham, and Westwood, which have a total of six (6) municipal wells with a combined pumping capacity of over 7 million gallons per day of installed capacity." These wells are known as the White Lodge wells, operated by the Dedham-Westwood Water District and located near University Avenue, and the Canton Water Department wells, located in the vicinity of the East Branch in Fowl Meadow.

According to comments submitted by the DEP's Division of Water Supply (DWS), dated July 21, 1992, "the White Lodge wells (1,2,3 and 4) induce approximately 50% of their water from the Neponset River." This information emphasizes the interrelationship between surface water and groundwater in this area.

Another public supply well, located north of Route 93 in Fowl Meadow, with a proposed capacity of over one million gallons per day, is currently in the approval process. According to the DWS, approximately 10% of this well will be drawn from the Neponset River. Other public supply wells, most notably the Ellis Wellfield in Norwood (located east of Route 1), are contaminated and currently out of operation, but may be utilized in the future.

According to the DEM's Office of Water Resources (OWR), the USGS, and the DEP DWS, the potential for future water supply development in this area is limited. The Neponset River Basin Plan (1991) prepared by the OWR, states that "The Neponset River basin is hydrologically stressed because historically extensive water use has reduced the amount of water stored in the stratified drift which would naturally flow into the river during dry spells." The Basin Plan states that, "There are some subbasins in which the withdrawal of water is close to or surpasses the estimated yield in a moderate drought." Most of the Fowl Meadow and Ponkapoag Bog ACEC is included in one of these subbasins. According to the USGS draft study noted above, "the Fowl Meadow Reservation area is no longer considered an aquifer suitable for municipal development." Finally, according to the DWS comments, "Apparently, the most productive parts of the buried (Fowl Meadow) aquifer have been explored and developed, although the potential for smaller well development may exist."

This information confirms the importance of the ACEC designation for water supply purposes, and

strongly emphasizes the need for implementing measures to preserve, restore and enhance these resources whenever and wherever possible.

Habitat Resources

The habitat resources of both the Fowl Meadow and Ponkapoag Bog areas include a diverse wildlife population, important natural communities and state-listed rare species. These resources are all the more significant and remarkable due to the proximity and density of the urban development that surrounds the ACEC.

According to comments submitted by the Metropolitan District Commission (MDC), dated July 7, 1992, the northern portion of Fowl Meadow was designated by the National Park Service in 1982 as a National Environmental Study Area, "due to its unique amalgam of habitats, its species diversity (including state-listed species), and its opportunities for environmental education." According to the Natural Heritage and Endangered Species Program of the Division of Fisheries and Wildlife (DFW), the northern part of Fowl Meadow provides habitat for five state-listed rare species, for example, the Least Bittern, which is listed as 'threatened.' There are also two other animal and two plant species documented as occurring in this area. The Natural Heritage Program and the MDC also describe recent observations of rare species in the southern part of Fowl Meadow, as well as in the northern portion.

A detailed description of the various natural communities located in the Fowl Meadow area is provided in the nomination, based on the Fowl Meadow Marsh Natural Resources Inventory (1972), by Jason Cortell and Associates.

The MDC letter states that the Ponkapoag Bog also is included in the National Environmental Study Area, "due to its classic lakefill process of peatland development" and model of "Hydrarch Succession." According to the MDC, "This succession model is based on a sequence of ecological communities existing in series from the oak forest to open water, via pines, soft maples/swamp climax community, cedar swamp climax, leatherleaf sere, sedge meadow sere, white cedar sere, and an invasion sere at the water's edge." The three major types of vegetation identified are the leatherleaf thicket, the Atlantic white cedar forest, and the red maple swamp-forest. The Ponkapoag Bog, also referred to as an "oligotropic fen," is the largest bog of its kind in eastern Massachusetts. According to a 1988 Boston University study, the Bog should be designated a "National Registered Landmark."

According to the Natural Heritage Program, Ponkapoag Bog "is particularly important as a natural community and as a site for a number of rare insects." There are eight state-listed rare species, among them, the Blue-Spotted Salamander, considered a 'species of special concern.' There are four other animal and three plant species also listed, as well as the Spotted Salamander, which is on an unofficial 'watch list.'

Historical/Archaeological Resources

The archaeological and historical resources of the ACEC, and their significance, are also documented extensively. According to comments of the Massachusetts Historical Commission

(MHC) dated August 4, 1992, "A number of properties in the proposed ACEC are listed on the National Register and the State Register of Historic Places. These include part of the Blue Hills Multiple Resource Area (the AMC Ponkapoag Bog Camp Cabins on Ponkapoag Pond, the Brookwood Farm and Barn, the Redman Farm House, the Ponkapoag Site and the Green Hill Site) and Paul's Bridge. In addition, two archaeological sites, the East Branch Workshop Site and the Green Hill Site, have been determined eligible for listing in the National Register of Historic Places by the Secretary of the Interior." The documented continuum of human habitation along the Neponset River, the Fowl Meadow and the Blue Hills extends for approximately 10,000 years to the "Paleo-Indian Period."

According to the MHC letter, "the nomination contains an excellent summary of the archaeological resources known to exist within the proposed ACEC and their significance." The MHC letter includes some corrections of the nominators' information, and adds that numerous historic structures dating from the early 1700s to the early 1900s and an important Native American and colonial period trail are located within the proposed boundary. The MHC also recommended that Ponkapoag Brook be included within the ACEC.

Special Use Areas

The northern portion of Fowl Meadow and Ponkapoag Bog are owned and managed as part of the MDC Blue Hills Reservation. These MDC lands include approximately 2,330 acres within the ACEC, or 28 percent. Public recreational activities within the ACEC include hiking, nature study, canoeing and boating, fishing, golfing, and environmental education programs. The entire length of the Neponset River within the ACEC is used for canoeing. The proposed extension of the Warner Trail from the Sharon-Canton border through Fowl Meadow would link a 30-mile-long trail from Rhode Island to the MDC Blue Hills Reservation. In addition to being the largest bog of its type in eastern Massachusetts, Ponkapoag Bog is the site of the second oldest and one of the longest (over 2200 feet) bog boardwalks in America.

In a letter of support for the nomination dated July 7, 1992, MDC Commissioner M. Ilyas Bhatti states, "We feel that this complex is a logical, and appropriate extension of the Blue Hills Reservation ecosystem. Additionally, we feel that the awareness of ACEC designation will assist in contributing to opportunities for the Commonwealth to continue its program of linkage among publicly owned parcels along the Neponset River."

In addition, scenic views of the Fowl Meadow area, as well as the adjacent Blue Hills, are available from many locations within and outside of the ACEC.

III. Boundary of the Fowl Meadow-Ponkapoag Bog ACEC

The boundary as recommended in the nomination letter includes both the Neponset River/Fowl Meadow area and the Ponkapoag Bog area within a single boundary, with the two parts connected by a corridor of land. Based upon a review of the nomination along with information gathered in the course of EOEIA agency review, the final boundary of the ACEC modifies the original boundary and separates the ACEC into two areas - the Fowl Meadow and Ponkapoag Bog. The Neponset River/Fowl Meadow area and the Ponkapoag Bog area are each highly significant ecosystems and

stand on their own merits as critical resource areas. The proposed corridor connecting the two areas in the nomination does not include the same high concentrations of resources as the Fowl Meadow and Ponkapoag Bog areas nor critical ecological relationships between the two areas.

Several other boundary revisions were requested in the public review process but were not incorporated into the final boundary delineation, as follows:

- The Massachusetts Highway Department (MHD) requested an exemption from ACEC designation for MHD rights-of-way of Routes I-93, I-95, and 138. The Massachusetts Bay Transportation Authority (MBTA) requested exemption from ACEC designation for MBTA facilities and transit rights-of-way. The concerns raised in the MHD and MBTA letters relate less to boundary delineation (which is based upon the resources of the ACEC), than to regulatory concerns regarding normal maintenance, rehabilitation, repair and minor alterations of transportation facilities. Although I am not exempting these lands and facilities from the ACEC boundary, I find that the agencies' concerns are legitimate. I am directing the director of the Massachusetts Environmental Policy Act (MEPA) Unit to meet with the MHD and MBTA and to prepare a statement clarifying how ACEC designation would affect MEPA review of such activities.

- The Massachusetts Water Resource Authority (MWRA) requested an exemption from ACEC designation for construction and future maintenance activities in the corridor of the existing New Neponset Valley Sewer System and the New Neponset Valley Relief Sewer. The Department of Environmental Protection (DEP) Northeast Regional Office (NERO) requested exemption from ACEC designation for all 21E (hazardous waste) sites (estimated to be at least sixteen) and "previously developed areas." The concerns raised in the MWRA and DEP NERO letters do not relate directly to boundary delineation, so I am not modifying the ACEC boundary to reflect exclusion of these projects or sites. Nevertheless, these agencies raise legitimate resource protection issues that are addressed below in Section IV, Discussion of the Criteria for Designation.

- The Dedham Planning Board requested boundary modifications to exclude "established urban areas" in Dedham. The Norwood Planning Board and Three Rivers Interlocal Council (subregional group within Metropolitan Area Planning Council (MAPC)) requested boundary modifications to exclude portions of Route 1 used as a western boundary for the ACEC. Based upon a thorough environmental review of the nomination, activities in these areas may have direct impacts on the resources of the ACEC. Therefore, the final boundary of the ACEC includes these areas.

In summary, after considerable environmental review by the DEM staff, none of these revisions were considered appropriate in keeping with the requirements of 301 CMR 12.12 (1) "(b) [to] preserve, restore, or enhance the resources of the ACEC, [and] (c) [to] ensure that activities in or impacting on the area are carried out so as to minimize adverse effects on: 1. aquatic productivity, 2. surface and ground water quality, 3. habitat values, 4. storm damage prevention or flood control, 5. historic and archaeological resources, 6. scenic and recreational resources, and 7. other natural resource values of the area."

The final boundaries are shown on the attached map taken from the 1985 Norwood United States Geologic Survey (USGS) 1:25,000-scale metric topographic map. An official map and supplemental maps noted below are on file at the offices of the DEM, Division of Resource

Conservation.

The USGS map is supplemented by the following maps:

- a) Town of Canton Assessors' Maps 19 and 31, dated 1974.
- b) Town of Westwood Assessors' Maps 18 and 25, dated 1/1/1991.
- c) Town of Dedham Assessors' Map 181.

The boundary generally follows streets and roads, railroad right-of-ways, portions of state-owned property boundaries and private property boundaries, and pipeline easements. Unless otherwise specified, the boundary described below extends to and includes the entire width of the right-of-ways of public and private streets, roads, and highways, and other right-of-ways such as utility easements. Specifically, the boundary is defined as follows:

1) For the Fowl Meadow area: Beginning at the northern point of the Neponset River on Paul's Bridge in Milton, the ACEC boundary proceeds northeasterly across Brush Hill Road to Milton Street; thence easterly on Milton Street to Blue Hill Avenue or Route 138; thence southerly on Route 138 across the town line into Canton to Royall Street; thence westerly on Royall Street to Green Street; thence southerly on Green Street to the right-of-way of Route I-93; thence southwesterly directly across Route I-93 to the intersection of Elm Street and Green Lodge Street; thence southwesterly on Elm Street to Dedham Street; thence southerly on Dedham Street to the property boundary line between Lots 99 and 43, as shown on the town of Canton Assessors' Map 31, dated 1974; thence southwesterly along the line between Lots 99, 104, 23, 25 and Lots 43, 50, 51, 52, 53, Oakdale Road extension, and Lot 19 to the property line between Lot 26 and Lot 25; thence northwesterly along the property line between Lots 26, 25, and 24 to the intersection of Lot 19-17; thence westerly along the property line between Lot 19-17 and Lots 26, 31-26 as shown on the town of Canton's Assessors' Maps 31 and 19, dated 1974, to the New York, New Haven & Hartford Railroad right-of-way; thence southerly along the railroad right-of-way to the intersection of Neponset Street and Walpole Street; thence southwesterly along Walpole Street to the town line of Sharon where the street becomes Edge Hill Road; thence westerly along Edge Hill Road to Tiot Street; thence northwesterly along Tiot Street to the town line of Norwood where the road continues as Union Street; thence northwesterly and westerly on Union Street to Route 1 (Boston-Providence Turnpike); thence northerly along Route 1 to Dean Street; thence easterly on Dean Street to Neponset Street; thence southerly on Neponset Street to Ridgewood Drive; thence northerly and northwesterly on Ridgewood Drive to Neponset Street; thence northerly on Neponset Street to Route 1; thence northeasterly on Route 1 to Everett Street; thence easterly on Everett Street to University Avenue; thence southeasterly and easterly on University Avenue, crossing the Westwood town line, and northeasterly to Blue Hill Drive; thence northwesterly on Blue Hill Drive to the easternmost point where Lot 61 on the town of Westwood Assessors' Map 25 intersects Blue Hill Drive; thence northwesterly across Route 128 in a direct line to Overlook Avenue, as shown on the town of Westwood Assessors' Maps 18 and 25; thence northeasterly along Overlook Avenue across the Dedham-Westwood town line to Vincent Road; thence southeasterly on Vincent Road to Fox Meadow Lane; thence northeasterly on Fox Meadow Lane to Greenlodge Street; thence northeasterly on Greenlodge Street to Colwell Drive; thence easterly on Colwell Drive to the property boundary line between Lots 19 and 20, as shown on the town of Dedham Assessors' Map 181; thence northeasterly along this property boundary line to the property line between Lots 1508

and 1509 to Greensboro Road; thence northeasterly on Greensboro Road to Hillsdale Road; thence easterly on Hillsdale Road to Bonham Road; thence northeasterly on Bonham Road to Louise Road; thence northeasterly on Louise Road to Sprague Street; thence northeasterly on Sprague Street across the Boston town line to the Conrail right-of-way; thence northeasterly along the Conrail right-of-way to Hyde Park Avenue; thence southerly on Hyde Park Avenue to Neponset Valley Parkway; thence easterly on Neponset Valley Parkway to the beginning point of the ACEC boundary on Paul's Bridge over the Neponset River at the town line of Milton.

2) For the Ponkapoag Bog area: Beginning at the intersection of Farm Street and Turnpike Street (Route 138), the ACEC boundary proceeds northerly on Route 138 to the eastbound entrance road to Route I-93 east; thence northeasterly along the outside boundary of the right-of-way of the entrance road to its intersection with the MDC Ponkapoag Pond section of the Blue Hills Reservation property boundary line; thence easterly and southerly along the MDC boundary outside of the right-of-ways of Route I-93 and Route 24, to Canton Street; thence westerly, northerly, westerly, southwesterly, and westerly along the MDC boundary, crossing the town line of Canton and continuing next to Randolph Street; thence continuing northerly, northwesterly, and southerly along the MDC boundary around the perimeter of the Cynthia Road-Harrison Road subdivision to Randolph Street; thence westerly along the pipeline easement, as shown on the USGS Map, to the MDC boundary around the perimeter of Massasoit Community College and Blue Hills Regional High School; thence generally westerly on the MDC property line to Farm Street; thence northwesterly on Farm Street to the beginning point of the ACEC boundary at Turnpike Street (Route 138).

The size of the Fowl Meadow-Ponkapoag Bog ACEC, according to GIS data, is approximately 8,350 acres. There are approximately 6,850 acres or 82 percent in the Fowl Meadow area and 1,500 acres or 18 percent in the Ponkapoag Bog area. The approximate acreage located in each municipality is as follows:

Boston - 185 acres
Canton - 3,575 acres
Dedham - 665 acres
Milton - 415 acres
Norwood - 2,185 acres
Randolph - 635 acres
Sharon - 505 acres
Westwood - 170 acres

IV. Discussion of the Criteria for Designation

In the review process leading to the designation of a nominated area, the Secretary must consider the factors specified in section 12.09 of the ACEC Regulations. As stated in the regulations, the factors need not be weighed equally, nor must all of these factors be present for an area to be designated. The strong presence of a single factor may be sufficient for designation.

Based on the information presented in the letter of nomination, at the public hearing, in written comments received throughout the public review process, and in agency research and review, I

make the following findings in support of the designation of the Fowl Meadow and Ponkapoag Bog ACEC.

(1) Threat to the Public Health Through Inappropriate Use

Water Resources

As described in Section II, Description of the Resources of the Fowl Meadow and Ponkapoag Bog ACEC, numerous public and private water supply wells are located within the Fowl Meadow area. The nomination and many of the comments submitted pointed to the closure of several contaminated public wells located within and nearby the ACEC as demonstration of the threat to public health through inappropriate use. According to the MAPC Neponset Basin Water Supply Protection Study, groundwater contamination caused the closure of the following public wells within the ACEC:

- Canton Wells #2 (1969) and #7 (1979);
- Norwood Ellis Wells (1957); and
- Westwood White Lodge Wells #3 and #4 (1979).

The permeability of the soils and underlying geology contribute to the vulnerability of these groundwater resources, and add to the threat to public health through inappropriate use and contamination. This vulnerability is exacerbated by the fact that the Neponset River basin is hydrologically stressed and water supplies are limited, as described above in section II, Description of the Resources of the Fowl Meadow and Ponkapoag Bog ACEC.

The long-term threat to these resources is heightened because the municipal wells are affected by activities and land uses in neighboring municipalities. According to the MAPC study, Dedham, Norwood, Sharon and Westwood are upgradient of the groundwater source of the Canton wells. Canton and Norwood are upgradient of the Dedham and Westwood wells. Dedham and Westwood are upgradient of the Norwood wells. According to MAPC, "This shows the high degree of interdependence among many of the study area communities. This highlights the need for coordination among the communities for the management and protection of all drinking water resources."

Improving the water quality of the Neponset River and the Fowl Meadow and Ponkapoag Bog ACEC will require a concerted and coordinated effort on the part of several regional and state agencies and municipalities. One positive action to improve water quality is the future construction of the MWRA New Neponset Valley (NNV) Relief Sewer in Canton, Milton and Norwood, within the ACEC. The purpose of this project is to eliminate the discharge of untreated sewage and storm water into the Neponset River and Fowl Meadow area during extreme wet weather flows. According to comments submitted by the MWRA regarding the nomination dated June 24, 1992, "the NNV Relief Sewer project will alleviate serious environmental contamination and threats to public health caused by chronic surcharging of the NNV Sewer System." I find that because the MWRA's NNV relief sewer project is needed to reduce current threats to the resources in the area, I view this project as consistent with ACEC designation. In fact, this ACEC designation should be implemented to facilitate and expedite this project so that both initiatives can move forward to protect public health and to restore and preserve the resources of the ACEC.

I find that the threat to public health through contamination of these water supplies clearly supports designation. I strongly support the recommendations of the draft MAPC water supply protection study, and recommend that the communities located within the ACEC work together and with the MAPC to implement these recommendations to protect, preserve and restore these resources. I also urge that the findings and recommendations of the Neponset River Basin Plan and recent decisions of the Water Resources Commission regarding the proposed Fowl Meadow Well (1992) and the New Neponset Valley Relief Sewer (1992) be implemented.

Flood Hazard Areas

As described above under section II, Description of the Resources of the Fowl Meadow and Ponkapoag Bog ACEC, extensive floodplains are located in the heart of the ACEC, along the Neponset River in the Fowl Meadow. The preservation and enhancement of this flood storage capacity is essential to the health and safety of communities located within and downstream of the ACEC. Development has already taken place in floodplain areas of the ACEC, increasing the potential for flooding in these areas and reducing the flood storage capacity of the Fowl Meadow area. I find that inappropriate development in sensitive areas, increased impervious surfaces, and inadequately designed and constructed storm water measures constitute an additional threat to the resources of the ACEC and to public health and safety.

Hazardous Waste Sites

The threat to public health through inappropriate use is underscored in comments submitted by the DEP Northeast Regional Office, dated July 13, 1992. According to DEP, potentially over 16 hazardous waste sites (also known as 21E sites) are located in the vicinity of the ACEC. In finding that ACEC designation is appropriate because of threats associated with inappropriate use, I recommend that this ACEC designation be implemented to facilitate and expedite the clean-up of hazardous waste sites located within the ACEC by the DEP and authorized parties to protect public health and to restore and preserve the resources of the ACEC.

(2) Quality of the Natural Characteristics

The Fowl Meadow and Ponkapoag Bog areas contain a variety of outstanding natural characteristics. I find that the natural communities and habitat resources of the ACEC, especially Ponkapoag Bog and the northern part of Fowl Meadow, support designation, as do the recreational opportunities associated with the resources of the area. In addition, the water quality tests for the proposed Fowl Meadow well located north of I-93 show extremely high ground water quality.

Where resource quality is poor or degraded, this ACEC designation should be implemented to restore and enhance the resources of the ACEC.

(3) Productivity and Uniqueness of Area

In regard to productivity, the following comments of the MDC address this criterion succinctly: "Both the Fowl Meadow and Ponkapoag Bog support a large diversity of plant and animal life.

They are valuable locations as stopovers for migratory birds, and provide an important open space corridor for mammals, to and from the Blue Hills Reservation and the Neponset River Marshes."

I find that the uniqueness of the ACEC derives from several factors. The Fowl Meadow area of the ACEC includes the largest wetland and flood storage area within the Neponset River basin. It is one of the most significant wetlands in the metropolitan Boston region. The contrast between the open stretches of meadow and diverse wildlife habitat and the highly developed area that surrounds them is remarkable. This contrast is further underscored by the concentrations of state-listed rare species that occur within both areas of the ACEC. The concentration of historic and archaeological sites adds to the uniqueness of the area. As emphasized by the MDC, "This is an unusually high site density (of prehistoric archaeological sites) ..., and undoubtedly reflects the rich mosaic of topographical and geographical features of the Fowl Meadow/Ponkapoag Bog region."

One of the unique features of the Fowl Meadow and Ponkapoag Bog areas is their exceptional educational value. These areas have been designated as a National Environmental Study Area, and environmental education programs are conducted by a wide variety of groups and organizations.

This ACEC presents a unique environmental education opportunity. Emphasis on the bioregion will allow communities and state agencies to demonstrate how they can work together to restore the water quality of the Neponset River and Fowl Meadow area, and to enhance the overall habitat and recreational values of the ACEC.

(4) Irreversibility and Magnitude of Impact, and Imminence of Threat to the Resources

The imminence of threats to the resources of the ACEC is illustrated in comments submitted by the DEP on water quality and by the Natural Heritage Program regarding habitat resources.

Historically, discharges to the Neponset River from a variety of sources resulted in extremely poor water quality. Water quality has improved since the passage and implementation of the Clean Water Act, but according to recent information from the DEP Bureau of Resource Protection (BRP), the river does not meet Class B standards. According to BRP, "Through the discharge permit and construction grant programs, point sources have largely been cleaned up, but unless nonpoint sources are addressed, the river will not meet Class B standards. The river does not meet its designated uses because of high coliform bacteria counts, nutrient enrichment, and low dissolved oxygen levels. The sources of these pollutants are CSOs (Combined Sewer Outflows), exfiltration, urban runoff and septic systems, not municipal and industrial discharges." In regard to sediment contamination, there are not enough data available "to determine the extent of sediment deposition and contamination in the river, or the best way to deal with it."

The comments submitted by the Natural Heritage Program indicate the irreversible and imminent nature, as well as the magnitude, of the threat of alteration to the resources of the ACEC: "The rare species habitats occurring in the southern part of the Fowl Meadow [have] been more severely damaged by development [as compared to the northern part]. The Purgatory Brook area is the site of a number of historical records of rare plants. Unfortunately, we believe that these have all been destroyed by development."

The contamination of public wells, and the large number of hazardous waste sites in the area, further underscore the threat to the resources of the ACEC. In addition, current and future proposals for major development and public infrastructure projects are an imminent threat if they are not adequately designed and constructed to preserve, restore or enhance the resources of the ACEC.

Therefore, I find that the ACEC designation is warranted to protect the resources from imminent threats, and adverse and irreversible impacts.

(5) Economic Benefits

Although the record does not include a comprehensive tally of economic benefits associated with the protection afforded by ACEC designation, I find that there are clear and substantial economic benefits in protecting public drinking water supplies and in the prevention of flooding and storm damage. According to comments submitted by the DEP DWS dated June 11, 1991, the recent cost of treating contaminated water supplies for a central Massachusetts town exceeded \$3 million. According to the nomination, capital outlay alone for a treatment plant for the Norwood Ellis Wellfield was estimated at \$2.2 million. Storm damage resulting from flooding could easily exceed these figures, according to estimates submitted in the nomination and by the Army Corps of Engineers.

The prevention of the occurrence of future hazardous waste sites will avoid adding to the costs that are already required to cleanup existing sites.

More intangible economic benefits accrue from maintaining and preserving open space and recreational lands, and clean rivers and streams, and from using these areas for recreation and environmental education programs that will benefit citizens of all ages.

(6) Supporting Factors

Over 60 comments were received regarding the nomination. Testimony submitted at the public hearing from sixteen individuals or representatives of organizations was unanimously in support of designation. In addition to the public hearing and the written comments described below, approximately eight individuals submitted written comments. Overall, one comment was received opposing designation.

Written or oral testimony supporting designation was received from sixteen municipal boards and commissions; three state legislators; five nonprofit organizations; and nine regional or state agencies.

The state legislators supporting designation were Senator William R. Keating and Representatives Louis L. Kafka and Marie-Louise Kehoe.

The municipal boards and commissions that submitted supporting comments are: the Canton Board of Selectmen; the Milton Board of Selectmen; the Norwood Planning Board; and the conservation commissions of Boston, Canton, Dedham, Dover, Foxborough, Medfield, Milton, Norwood, Quincy, Randolph, Sharon, Walpole and Westwood.

Nonprofit organizations include the Massachusetts Association of Conservation Commissions, Massachusetts Audubon Society, Natural Resources Trust of Easton, the Water Supply Advisory Committee to the MWRA, and the Neponset River Watershed Association.

Regional and state agencies submitting comments are the Metropolitan Area Planning Council; Three Rivers Interlocal Council; Department of Environmental Protection, Northeast Regional Office, and Division of Water Supply; Natural Heritage Program, Division of Fisheries and Wildlife, Department of Fisheries, Wildlife and Environmental Law Enforcement; Massachusetts Highway Department, Executive Office of Transportation and Construction; Massachusetts Historical Commission; Massachusetts Water Resources Authority; and the Metropolitan District Commission.

I find that this record of testimony demonstrates strong public consensus on the intrinsic value of the area and public awareness of the importance of the area.

ACEC designation of the area, which spans eight municipalities, will encourage coordination among municipalities, as well as between municipalities, regional and state agencies, and nonprofit organizations regarding actions to protect and preserve the resources of the area. As stated above in section IV, Discussion of the Criteria for Designation, this collaboration and cooperation is essential to the long-term preservation, restoration and enhancement of the resources of the ACEC.

Finally, the designation will help to support the efforts of the MDC, which owns approximately 2,330 acres or 28 percent of the land within the ACEC, to protect and manage the Blue Hills Reservation in the public interest.

Conclusion

Therefore, I am pleased to exercise the authority granted to me pursuant to M.G.L. Chapter 21A, Section 2(7), to designate the Fowl Meadow and Ponkapoag Bog as an Area of Critical Environmental Concern. The significance of this ACEC requires that the highest standards of environmental review and protection be applied to actions that may affect its resources.

(signed) Susan F. Tierney
Secretary of Environmental Affairs

August 20, 1992

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