

Waquoit Bay National Estuarine Research Reserve Management Plan 2006-2011

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A: Summary of Public Review Process

Prior to development of this document, citizens and public officials attended a public meeting in December 2004 to help focus the Reserve's priorities for the next five years. Meeting participants included Rick York; Mashpee Shellfish Constable; Steve Tucker, Cape Cod Commission; and WBNERR volunteers George Harrison and Don Root.

A thirty-day public comment period for the Draft WBNERR Management Plan was formally initiated with a notice in the April 10, 2006 online edition of the Massachusetts Environmental Monitor (<http://www.mass.gov/envir/mepa>). Press releases were also issued to all Cape Cod regional media outlets. The announcements summarized the purpose and content of the Draft Management Plan; noted the availability of copies online and at the Falmouth and Mashpee public libraries; stated the end date of the comment period (May 12, 2006), announced a public meeting scheduled for May 3, 2006 and described how to submit comments.

The Reserve, ultimately, received a limited number of comments. Comments were discussed at the public meeting, submitted through the U.S. mail, and left as a voice mail message.

Public Meeting

The Acting Reserve Manager began the meeting with a presentation describing the Reserve's activities and highlighting selected objectives related to each of the five goals contained in the Draft Management Plan. Three citizens attended the public meeting. Because of the small number of attendees, the tone was casual and conversational. Many of the attendees' questions were points of clarification. For instance:

- How many researchers use the Reserve annually?
Answer: Dozens.
- What is the Reserve's annual budget?
Answer: \$560,000 grant from NOAA for operations and staff plus additional funding from DCR for about half of the staff positions.
- Is dredging of the Mashpee River an issue the Reserve would get involved with?
Answer: The Coastal Training Program could potentially host a workshop or other appropriate event if, through its assessments of informational and training needs, it determined that there was a need for information about dredging issues.
- How do the Reserve's K-12 educational programs relate to standardized State requirements (e.g., the MCAS test)?
Answer: WBNERR education programs adhere to *Massachusetts Frameworks for Science Education*. Also, programs and lessons are linked to key academic concepts identified by the State.

Participants in the public meeting also offered general comments:

- The series of workshops on renewable energy is a good program.
- It would be nice to offer a series of classes on the geology of Cape Cod, with particular emphasis on spring sapping valleys.
- WBNERR is filling a niche for a “natural history center” on the Upper Cape.

Written Comments

Written comments were submitted by the Massachusetts Office of Coastal Zone Management (MCZM). The text of the letter is included below in italicized text. WBNERR’s response to MCZM’s comments are in bold text.

April 18, 2006

*Brendan Annett
Acting Reserve Manager
Waquoit Bay NERR
PO Box 3092
Waquoit, MA 02536*

Dear Brendan—

The Massachusetts Office of Coastal Zone Management (CZM) has reviewed the Waquoit Bay National Estuarine Research Reserve (WBNERR) Draft Management Plan 2006-2011 and offers the following comments.

We commend WBNERR for the production and dissemination of a comprehensive management planning document. It is well-organized, well-written, and provides clear Goals and Objectives. While we do offer comments on other Objectives of the Draft Plan, the crux of our comments pertain to improved coordination and integration of our respective programs (Objectives 1.7, 4.2).

As noted in the document, the CZM and WBNERR programs have had varying types and levels of coordination since WBNERR’s inception in 1988. The National Oceanic and Atmospheric Administration’s (NOAA) joint §312 review in 2004 found that while the two programs work well together, “...CZM and WBNERR are encouraged to take a more strategic approach to coordination and continue to ensure that the science meets the managers’ needs and research supports management and improved decision-making statewide.” The Draft Plan accurately reflects recent efforts to address this improved inter-program coordination, including CZM’s involvement in the WBNERR Administrative Committee and WBNERR participation in CZM staff and coordination meetings. CZM affirms our commitment to coordination and integration and we welcome any additional thoughts that you or your staff may have to address this.

In the Plan Highlights section of the Executive Summary, we note several new initiatives—including more emphasis on invasive species management, expansion of the biomonitoring program, and development of an integrated restoration science program—which intersect with current CZM program areas and efforts. The initiatives are described in more detail later in the Draft Plan and our comments are organized according to the Objectives they fall under. We do note that it is only through the review of the Draft Plan that CZM is first learning of these new initiatives.

In regards to Objective 1.1, while not cited in the Draft Plan, CZM and WBNERR have recently agreed that in WBNERR’s effort to identify gaps in knowledge and publish a prioritized list of research topics and critical coastal

resource concerns annually, the input of CZM (as an important set of coastal decision-makers) should be invited and considered. Discussions have begun to establish a way to best implement this.

The text under Objective 1.1 now specifically mentions CZM as a participant in the process to identify, refine and prioritize research topics and critical coastal resource management concerns.

The focus of Objective 1.3 is on WBNERR's environmental monitoring, and CZM is interested to note an emphasis on transitioning an initial bio-monitoring program into a permanent one, with resources being directed to tracking the status and trends of submerged aquatic vegetation (including eelgrass), macro-algae, salt marsh plants, and invasive and rare species. We would welcome the opportunity to find out more about the initial bio-monitoring program—in terms of what biological assemblages were sampled, how they were sampled, what the initial findings were, and how WBNERR is envisioning the program as a permanent operation. As you know, CZM maintains program areas and staff expertise in coastal habitat management, including the monitoring and assessment of salt marsh, eelgrass, and marine invasive species. One suggestion is to present the WBNERR bio-monitoring program at a CZM staff meeting in the near future. Objective 1.3 should also include a clear description of how monitoring results, including monitoring by WBNERR staff and volunteer-based monitoring (e.g., BayWatchers and CoastWatchers), are reported. Timely and user-accessible reporting will facilitate the development of appropriate management and research strategies.

- ***WBNERR staff will work with CZM to schedule a presentation on the bio-monitoring program in the near future.***
- ***Monitoring results are made available to researchers and other interested parties according to the mechanisms described under Objective 1.5.***

Under Objective 2.1, CZM would like to commend WBNERR for its continued strong leadership role in the Coastal Training Program (CTP) and to add our emphasis to the recommendations in the Draft Plan to “seek appropriate partners for specific training events and to expand the geographic scope of its activities.” Because WBNERR is located on Cape Cod and has strong partners and relationships there, most of its training and outreach efforts are directed there. This has been a tremendous asset to the region, and while we do not wish to detract from this important role, we do share the belief that most of the training has broader audiences and implications. Again, CZM is committed to working with WBNERR and the CTP to extend the program to other coastal (and even non-coastal) regions.

In Objective 3.5 WBNERR discusses the creation of a Restoration Science Program—modeled on a national implementation plan in development by NOAA—and commits to continued work on restoration projects. The goal of the Restoration Science Program is to improve the effectiveness of habitat restoration practices by advancing the science of restoration through two primary elements: Restoration Demonstration Projects and Restoration Reference Sites. As you are well aware, CZM, through its Wetlands Restoration Program, works with a broad and diverse network of partners in the pro-active restoration of coastal wetlands, including salt marshes, coastal wetlands associated with anadromous fish runs, and eelgrass beds. We also continue to be very involved with the preservation and restoration of coastal dunes and barrier beaches and their role as habitat for threatened and endangered shore birds. Because the restoration of coastal habitats is a high priority programmatic goal for CZM, we have a strong interest in the development of the Restoration Science Program, including (1) the framing of the most appropriate restoration science questions and the strategies to answer them, (2) the decisions about Restoration Reference Sites and the types, extent, and protocols for restoration reference data collection, and (3) the criteria for prioritizing restoration sites in the Reserve. We strongly encourage WBNERR to engage CZM staff as you move forward with this objective.

WBNERR will certainly involve CZM in the development of the Restoration Science Program. At a minimum, CZM will be invited to be a member of the advisory group.

As previously stated, much of CZM's comments on the Draft Plan involve improved coordination and more frequent and consistent communication. We are optimistic that by following through on elements cited in the Draft Plan (e.g., CZM participation in the WBNERR Administrative Committee and WBNERR participation in CZM staff meetings) and other non-prescribed venues for coordination and communication, WBNERR will go along way to address these comments. We are looking forward to a new period of improved relationships and partnerships.

*Sincerely,
Susan Snow-Cotter
Director*

Verbal Comments

A caller from the Seacoast Shores neighborhood of East Falmouth left a lengthy voice mail message expressing her concerns related to over development of the local area. In particular, the caller was concerned about the heavy traffic along Route 28 and a lack of infrastructure to support the existing population. To alleviate traffic along Route 28 (the main east-west corridor along Cape Cod's south shore), she proposed creating an alternate shore route wherein South Cape Beach, Washburn Island, Seacoast Shores and Central Ave. (Falmouth) would be connected by a series of swinging bridges that are open to vehicle traffic on a very limited schedule throughout the day. She also suggested that the town stop approving requests for high-density new developments that set aside 25 percent of the units as affordable housing (so called 40B developments). Instead, she supports renovation of existing housing stock.

WBNERR Response:

The Reserve is actively engaged in efforts to minimize the impacts of development. For instance, the Reserve seeks to preserve undeveloped land in and around the Waquoit Bay watershed (Objective 3.6). Reserve staff also provides sustained support of community coastal decision making (Objective 4.3). For example, the Reserve's renewable energy education programs target homebuilders, vocational technical schools, college students and homeowners and brings together the Cape Cod Community College, the Cape Cod Economic Development program, Cape and Islands Self Reliance, and several other entities.

Summary of Revisions to Draft Document

Based on the limited comments described which were submitted during the public review process documented above, no major changes have been made to the final Waquoit Bay National Estuarine Research Reserve Management Plan 2006-2011 from the draft version circulated during this public review process.

B: Federal Consistency Certification



THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
OFFICE OF COASTAL ZONE MANAGEMENT
251 Causeway Street, Suite 800, Boston, MA 02114-2136
(617) 626-1200 FAX: (617) 626-1240

October 17, 2005

Christine Gault, Reserve Manager
Waquoit Bay National Estuarine Research Reserve
P.O. Box 3092
Waquoit, MA 02536

RE: Federal Consistency Certification: WBNERR Management Plan

Dear Ms. Gault:

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the proposed Waquoit Bay National Estuarine Research Reserve Management Plan.

We concur with your certification and find that the plan as proposed is consistent with the CZM enforceable program policies.

If the above-referenced plan, which has received this concurrence from CZM, is modified in any substantive manner or is noted to be having effects on the coastal zone or its uses that are substantially different than originally proposed, please submit an explanation of the nature of the change to this Office pursuant to 301 CMR 21.17 and 15 CFR 930.66.

Thank you for your cooperation with CZM.

Sincerely,

Susan Snow-Cotter
Director

SSC/th

Cc: Truman Henson, Jr.,
CZM Cape & Islands Regional Coordinator

MITT ROMNEY GOVERNOR KERRY HEALEY LIEUTENANT GOVERNOR STEPHEN R. PRITCHARD SECRETARY SUSAN SNOW-COTTER DIRECTOR
www.mass.gov/czm



C: WBNERR Active Research and Monitoring Project List for 2005 (Updated 8/3/2005)

Internal Projects

Project	Institution / Organization	Principle Contacts
Bay Watchers: Citizen Water Quality Monitoring (since 1993, currently 8 sites)	WBNERR	MK. Fox C. Weidman
Coast Watchers: Citizen Shoreline Change Monitoring (since 2000, 4 times /yr, 75 sites / 3 miles of beach)	WBNERR	C. Weidman H. Tschaekofske MK. Fox
NERR SWMP-Water Quality (since 1996, 1/2 hrly continuous records at 4 sites currently)	WBNERR	H. Tschaekofske C. Weidman
NERR SWMP-Meteorology (since 2002, 15-min continuous records)	WBNERR	H. Tschaekofske MK. Fox C. Weidman
NERR SWMP-Nutrients (since 2002, monthly records at 4 sites currently)	WBNERR	MK. Fox C. Weidman
NERR SWMP-Bio-mapping of the Reserve's salt marsh vegetation, seaweed and seagrass (2004-2005 initial year of project – to be repeated every 3-5 yrs)	WBNERR WBNERR WBNERR WBNERR Mashpee Mass. DEP	A. Reynolds H. Tschaekofske C. Weidman B. Annett R. York C. Costello
Restricted Salt Marsh Monitoring (Salt marsh restoration project)	WBNERR Mass. CZM	B. Annett B. Carlisle
Salt Marsh Fish Survey	WBNERR	B. Annett

Other NOAA Estuarine Research Division-Supported Projects (NERR-Graduate Research Fellowships and CICEET projects)

Project	Institution / Organization	Principle Contacts
Designing effective coastal outreach programs	URI	B. Barak (Grad. Fellow-Waquoit Bay NERR)
Stable isotope signatures in saltmarsh cordgrass	BUMP / MBL BUMP/MBL	E. Kinney (Grad. Fellow-Waquoit Bay NERR) I. Valiela
Plant-herbivore interactions: latitudinal variation and impacts of climate change	University of Houston	C.-K. Ho (Grad. Fellow-ACE NERR)
Web Framework for comparative N-loading models (CICEET project)	BUMP / MBL	J. Bowen (Grad Fellow- Jobos Bay NERR)

	BUMP / MBL	I. Valiela
Shellfish Aquaculture and Nitrogen-load mitigation (CICEET project)	WHOI WHOI / USGS WHOI-SG / Barnstable Cty WHOI	H. Kite-Powell K. Kroeger B. Walton D. Angel
Designing a new efficient onsite denitrification septic system (CICEET project)	UMASS-Dartmouth UMASS-Amherst	S. Sengupta S. J. Ergas
Fecal coliform /colliphage RNA monitoring (CICEET project)	Univ. of North Carolina Univ. of North Carolina	G. Lovelace M. Sobsey
Reactive barrier technology for reducing estuarine N-loading (CICEET project)	Ecosystems Center / MBL Ecosystems Center / MBL Lombardo Assoc.	K. Foreman J. Valino P. Lombardo
Rapid assessment of anthropogenic copper pollution in estuaries (CICEET project)	WHOI Univ. of Maryland	J. Moffet R. Thompson
Synthesis of SWMP data for ASSETS eutrophication assessment of the Northeast Region NERRs	NOAA Wells NERR FB Environmental	S. Bricker C. Dalton F. Dillon

Collaborative Projects

Project	Institution / Organization	Principle Contacts
Creating a 30-year faunal database from the Mass. Div. of Fisheries Young of the Year Winter Flounder seine survey in Waquoit Bay and Cape Cod south coast estuaries	WBNERR MDMF WBNERR	E. Shields V. Manfredi C. Weidman
Falmouth Buzzard's Bay Shoreline Study	Falmouth CRWG USGS WBNERR WBNERR	J. Tucker, Chair R. Thielier C. Weidman A. Reynolds
Sedimentological processes and evolution of Waquoit Bay	WBNERR WHOI WHOI	C. Weidman M. Charette J. Donnelly
Shelf–estuarine interactions	WHOI WHOI WBNERR	S. Gallagher R. Beardsley C. Weidman
Trace elements in <i>M. mercenaria</i> shells	WHOI WHOI WHOI WBNERR	A. Rago M. Charrette S. Thorrold C. Weidman
N ¹⁵ in <i>M. mercenaria</i> shells	Univ. Maine-Machias WBNERR/WHOI	R. Carmichael C. Weidman

Monitoring changes in endangered coastal plain plant populations: <i>Agulinus</i> , <i>Liatris</i>	MDFW MDFW WBNERR	P. Somers S. Brownback B. Annett
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External Projects

Project	Institution / Organization	Principle Contacts
Macroalgae and Nitrogen-loading	BUMP / MBL BUMP / MBL	S. Fox I. Valiela
The effects of N-loading on phytoplankton populations	BUMP / MBL BUMP / MBL	G. Tomasky I. Valiela
Near-source atmospheric deposition as a nitrogen source to coastal lagoons	Cornell Univ. Cornell Univ. Cornell Univ.	B. Howarth N. Bettez E. Davidson
Geochemical transformations in subterranean estuaries: reactions, rates, and fluxes	WHOI WHOI	M. Charette A. Mulligan
Mechanisms of dinitrogen production in coastal permeable sediments	WHOI WHOI WHOI WHOI	M. Charette K. Kroeger K. Casciotti K. Edwards
Developing the Concept of a Coastal Groundwater Observatory	WHOI WHOI	M. Charette A. Mulligan
Macroalgal blooms	BUMP / MBL BUMP / MBL	M. Teichberg I. Valiela
Eelgrass dynamics	BUMP / MBL BUMP / MBL	Y. Olsen I. Valiela
Mapping storm-driven nearshore sediment transport	WHOI WHOI	B. Raubenheimer P. Shultz
Using seismic reflection to resolve the glacial history of Cape Cod, MA	Boston College	Matt Gruber
Body size variability of Spotted Salamanders across Massachusetts	UMASS-Lowell Oxbow Assoc.	S. Smyers
Eutrophication and seagrass assessment using a bio-optic approach	NOAA-CCFHA MDEP Smithsonian-ERC	W. J. Kenworthy C. Costello C. Gallegos
Coastal dune plant community structure	UMASS-Dartmouth	T. Rajaniemi

Acronym Key:

BUMP / MBL: Boston University Marine Program at the Woods Hole Marine Biological Laboratory

CICEET: Cooperative Institution for Coastal Environmental and Estuarine Technology

Falmouth CRWG: Town of Falmouth Coastal Resources Working Group

MDEP: Massachusetts Dept. of Environmental Protection

MDFW: Massachusetts Division of Fisheries and Wildlife

MDMF: Massachusetts Division of Marine Fisheries

NOAA: National Oceanic and Atmospheric Administration

NOAA-CCFHA: NOAA Center for Coastal Fisheries and Habitat Research
Smithsonian-ERC: Smithsonian Environmental Research Center
UMASS: University of Massachusetts
WBNERR: Waquoit Bay National Estuarine Research Reserve
WHOI: Woods Hole Oceanographic Institution
WHOI-SG: WHOI-Sea Grant

D: Land Stewardship Zoning Guidelines

Department of Conservation and Recreation

Revised Draft 8/15/05

Background

In July, 2003 state legislation established the Department of Conservation and Recreation (DCR), consisting of a Division of Urban Parks and Recreation, a Division of State Parks and Recreation, and a Division of Water Supply Protection. This legislation essentially merged the former Department of Environmental Management (DEM) and the Metropolitan District Commission (MDC). In addition, the legislation required the preparation of management plans for state parks, forests and reservations under the management of DCR (Chapter 21, Section 2F). This legislation states that management plans shall include guidelines for operation and land stewardship, provide for the protection and stewardship of natural and cultural resources, and shall ensure consistency between recreation, resource protection, and sustainable forest management.

As part of addressing this legislative requirement, land stewardship zoning guidelines will be incorporated into the development and implementation of DCR Resource Management Plans. These Land Stewardship Zoning Guidelines (Guidelines) represent a revision of the previous Land Stewardship Zoning system developed by Executive Office of Environmental Affairs (EOEA) agencies in the early 1990s, and which had been applied to the preparation of management plans for state parks, forests and reservations under the management of the former DEM.

The purpose of these revised Guidelines is to provide a general land stewardship zoning framework for the development of Resource Management Plans for all state reservations, parks and forests under the management of the DCR Divisions of Urban Parks and Recreation and State Parks and Recreation. The Guidelines do not apply to Division of Water Supply Protection (DWSP) properties because DWSP watershed planning has a separate legislative mandate and established planning procedures.

Overview of Guidelines

The Guidelines define three types of zones to address the legislative requirement to provide for the protection and stewardship of natural and cultural resources and to ensure consistency between recreation, resource protection, and sustainable forest management. The Guidelines are intended to provide a general land stewardship zoning framework that is flexible and that can guide the long-term management of a given DCR property or facility. The three zones may be supplemented with significant feature overlays that identify specific designated/recognized resource features (such as Forest Reserves, Areas of Critical Environmental Concern, or areas subject to historic preservation restrictions). DCR parks, forests and reservations are also subject to specific policy guidelines and/or performance standards (such as Executive Order No. 181 for Barrier Beaches) and applicable environmental laws and regulations of the Commonwealth.

Application of the three-zone system to a particular DCR park, forest or reservation is facilitated by the development and application of Geographic Information Systems (GIS) technology. GIS resource overlays provide a general screen whereby lands of special resource significance and sensitivity can be mapped and identified. General landscape features such as forested areas, wetlands, streams and ponds can also be mapped as part of this overlay approach. Further, additional data regarding recreational uses and developed facilities and sites can be added. This type of mapping and data collection, based on the best information currently available, provides the basis for subsequent analysis and ultimately the development and application of appropriate land stewardship zoning guidelines to a specific state park, forest or reservation.

Land Stewardship Zoning Guidelines provide a foundation for recommendations that will address resource stewardship and facility management objectives, and are intended to cover both existing DCR property or facility conditions and desired future conditions for that property or facility. Proposals for changing the Guidelines in a previously approved Resource Management Plan should be submitted to the DCR Stewardship Council for review and adoption.

Land Stewardship Zones

Zone 1

General Description

This zone includes unique, exemplary and highly sensitive resources and landscapes that require special management approaches and practices to protect and preserve the special features and values identified in the specific Resource Management Plan. Examples of these resources include rare species habitat identified by the Natural Heritage & Endangered Species Program as being highly sensitive to human activities, fragile archaeological or cultural sites, and unique or exemplary natural communities. Management objectives emphasize protecting these areas from potentially adverse disturbances and impacts.

General Management Guidelines

- Only dispersed, low-impact, non-motorized, sustainable recreation will be allowed provided that the activities do not threaten or impact unique and highly sensitive resources.
- Existing trails and roads will be evaluated to ensure compatibility with identified resource features and landscape, and will be discontinued if there are suitable sustainable alternatives. New trails may be constructed only after a strict evaluation of need and avoidance of any potential adverse impacts on identified resources. New roads may only be constructed to meet public health and safety needs or requirements; however, the project design and siting process must avoid any potential adverse impacts on identified resources and demonstrate that there are no other suitable alternatives.
- Vegetation or forest management will be utilized only to preserve and enhance identified resource features and landscapes.

Zone 2

General Description

This Zone includes areas containing typical yet important natural and cultural resources on which common forestry practices and dispersed recreational activities can be practiced at sustainable levels that do not degrade these resources and that hold potential for improving their ecological health, productivity and/or protection through active management. Examples include terrestrial and aquatic ecosystems characterized by a diversity of wildlife and plant habitats, rare species habitat that is compatible with sustainable forestry and dispersed recreation, agricultural resources, and resilient cultural sites and landscapes. Zone 2 areas may be actively managed provided that the management activities are consistent with the approved Resource Management Plan for the property.

General Management Guidelines

- Management approaches and actions may include a wide range of potential recreational opportunities and settings that are consistent and compatible with natural resource conservation and management goals.
- Utilize Best Management Practices for forestry and other resource management activities to encourage native biodiversity, protect rare species habitats and landforms.
- Protect and maintain water quality by providing for healthy functioning terrestrial and aquatic ecosystems.
- Provide a safe, efficient transportation network with minimal impact on natural and cultural resources while serving public safety needs and allowing visitors to experience a variety of outdoor activities.
- New trails may be allowed dependent upon existing area trail densities, purpose and need, physical suitability of the site, and specific guidelines for protection of rare species habitat and archaeological resources.
- Sustainable forest management activities may be undertaken following guidelines established through ecoregion-based assessments, district level forestry plans, current best forestry management practices, and providing for consistency with resource protection goals.
- Roads may be constructed if access for resource management or public access is needed and construction can be accomplished in an environmentally protective manner. Existing roads will be maintained in accordance with the DCR road classification system and maintenance policy.
- Additional site-specific inventory and analysis may be needed prior to any of the management activities described above to ensure that no adverse impacts occur to previously un-documented unique and sensitive resources and landscape features.

Zone 3

General Description

This zone includes constructed or developed administrative, maintenance and recreation sites, structures and resilient landscapes which accommodate concentrated use by recreational visitors and require intensive maintenance by DCR staff. Examples include areas developed and deemed appropriate for park headquarters and maintenance areas, parking lots, swimming pools and skating rinks, paved bikeways, swimming beaches, campgrounds, playgrounds and athletic fields, parkways, golf courses, picnic areas and pavilions, concessions, and areas assessed to be suitable for those uses.

General Management Guidelines

- The management approach and actions will emphasize public safety conditions and provide for an overall network of accessible facilities that meets the needs of DCR visitors and staff.
- Maintenance of these facilities and associated natural and cultural resources, and new construction or development, will meet state public health code, and state building code and environmental regulations.
- Shorelines and surface waters may be used for recreation within constraints of maintaining public safety and water quality.
- Historic restoration, rehabilitation or reconstruction for interpretation or adaptive reuse of historic structures will be undertaken only in conjunction with a historic restoration plan.
- To the greatest extent possible, construction will include the use of “green design” for structures, such as use of low-flow water fixtures and other water conservation systems or techniques, solar and other renewable energy sources, and the implementation of Best Management Practices to protect the soil and water resources at all facilities.

Significant Feature Overlays

General Description

The three land stewardship zones may be supplemented with significant feature overlays that identify specific designated/recognized resource features. These significant features are generally identified through an inventory process or research, and are formally designated. The purpose of these overlays is to provide more precise management guidance for identified resources and to recognize, maintain, protect, or preserve unique and significant values, regardless of the zone in which they occur. Examples of significant feature overlays include Forest Reserves, areas subject to public drinking water regulations, or areas subject to historic preservation restrictions.

Management Guidelines

Specific management guidelines for significant features overlays are provided by resource specialists or by the Federal/state/regional/local agency that has recognized and listed the resource or site.

E: Waquoit Bay ACEC Designation Document



EDWARD J. KING
GOVERNOR

JOHN A. BEWICK
SECRETARY

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

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 Sound 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 means 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 Environmental Concern was submitted by the Selectmen, Conservation Commission and Waterways Committee/Harbor Master 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 shore-dwellers 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

F: Waquoit Bay ACEC Resource Summary

Summer, 2003

Waquoit Bay Area of Critical Environmental Concern (ACEC)

Designation Date: November 26, 1979
Total approximate acreage: 2,575 acres
Watershed/subwatershed: Cape Cod/Waquoit Bay
Municipalities (% of ACEC): Falmouth (48%) and Mashpee (52%)

What makes this area so special?

Designated Habitats

The Waquoit Bay ACEC was nominated by the Conservation Commissions, Boards of Selectmen, and Waterways Committees in the Towns of Mashpee and Falmouth and was designated as an ACEC in 1979 because of the area's extraordinary natural resources. The ACEC boundary generally follows the 100-year floodplain elevation on the landward side of the Bay and mean low water on the seaward side and includes the Waquoit Bay National Estuarine Research Reserve (WBNERR). The entire bay is designated by the state as an Ocean Sanctuary while much of the surrounding upland is also part of the Mashpee National Wildlife Refuge. Important habitats within the boundary include estuarine waters, freshwater wetlands and ponds, shrub and wooded swamps, streams, salt marsh, tidal flats, coastal dunes, and beaches. These areas provide flood control, storm damage prevention, improved water quality, wildlife habitat, and recreation opportunities to surrounding communities.

Wildlife

The diverse and relatively unaltered habitats of this ACEC provide feeding, spawning, and nursery grounds for numerous shellfish, finfish, amphibians, reptiles, birds, and mammals. In 2002, the state's Natural Heritage and Endangered Species Program (NHESP) identified approximately 500 acres or 20 % of the ACEC as core habitat through their BioMap project that highlights areas in Massachusetts with high biodiversity and most in need of protection. That same year, NHESP listed 7 species that were either Endangered (E), Threatened (T) or of Special Concern (SC), including: the Shortnose Sturgeon (E- fish), Mattamuskeet Panic-Grass (E-plant), Diamondback Terrapin (T - reptile), Piping Plover (T- bird), Least Tern (SC- bird), New England Blazing Star (SC-plant), and Bristly Foxtail (SC - plant). American eel, rainbow smelt, blueblack herring, striped bass, trout, and white perch have also been sited in the area. In 2001, the NHESP also certified one vernal pool and located 6 potential vernal pools in this ACEC.

The Quashnet River, which stretches from the Bay to John's Pond in Mashpee, is an important migratory fish run for alewife and trout and is the site of successful restoration efforts. Habitat for soft shell clams, bay scallops, and quahogs can be found within the ACEC boundary according to draft maps made in 2003 by the Division of Marine Fisheries and based on historical information and interviews with local shellfish officers.

Land Use

One quarter of the land within the Waquoit Bay ACEC boundary is forested while approximately 15% of the area is covered by freshwater wetland or salt marsh habitats. The majority of the 770

acres or approximately 30% of the ACEC that is protected open space is owned by the state's Department of Environmental Management and includes Washburn Island and South Cape Beach State Park. Although only 70 acres of land within the boundary has been converted to residential development, a large portion of the land immediately adjacent to the ACEC has a mix of residential areas, especially in the densely developed Seacoast Shores on the west side of the Bay. Because of the high proportion of development near the ACEC, sources of nitrogen entering local waterways from septic systems and lawn fertilizers and their effects on such things as eelgrass beds are being studied by stewardship groups working in the region.

Economy

The economies of Falmouth and Mashpee are tied to this area since local fishing and tourism industries depend on the natural resources in this ACEC. Rich shellfish populations, including soft shell clams, quahogs, and bay scallops, are an important part of the recreational and commercial fishing industry in the Bay. In 2002, tidal areas in the ACEC supported 22 acres of aquaculture lease sites used by one license holder. Residents and tourists are also drawn to the clean waters and beaches for recreational activities such as boating, swimming, walking, and bird watching. Public access is provided at WBNERR and on the town and state owned South Cape Beach.

Archaeology

"Waquoit" is the Wampanoag name used by the Mashpee tribe who originally settled here. The Waquoit Bay ACEC contains nine archaeological sites, with four sites on Washburn Island alone. However, this number greatly underestimates the significant archaeological record around Waquoit Bay because many sites are lumped together on Washburn Island. One discovery of undated human remains from the Island was identified as that of a 30-year-old Native American female, while arrowhead and shellheap evidence can still be found in the area. Although limited, available information suggests that Waquoit Bay was first occupied 9,000 - 8,000 years ago.

Stewardship

One goal of the ACEC program is to promote stewardship of this area's resources through the participation, cooperation, and expertise of many interest groups. The Waquoit Bay National Estuarine Research Reserve provides long-term protection of habitats and natural resources, serves as a natural laboratory for research, and promotes outreach and training activities. The Reserve works with partners to explore solutions to coastal management issues and transfers the information learned to the public and coastal decision makers in the region.

There have been numerous studies, restoration projects, and water quality monitoring conducted by a variety of groups in Waquoit Bay. A collaborative effort between Trout Unlimited and the Massachusetts Department of Fish and Wildlife is helping to restore the Quashnet River and has resulted in a self-sustaining brook trout population. Important studies are investigating the effects of nutrient loading and eutrophication of Bay waters. Other studies have focused on the loss of eelgrass beds, protection of drinking supplies, pathogens in the water, erosion of the coastline and barrier beaches, protection of endangered species, and ecological impacts of boats, docks, and piers.

The Quashnet River, Hamblin Pond, and Jehu Pond were selected in 2001 as priority waterbodies for the *Estuaries Project - Southeastern Massachusetts Embayment Restoration* conducted with collaboration of state agencies, academic institutions, and local municipalities. The goal of the Estuaries Project is to classify the nitrogen sensitivity of southeastern Massachusetts's coastal bays and estuaries. This study will result in the generation of planning and policy guidance

documents to help the communities of Waquoit Bay consider how to improve water quality by implementing nitrogen management strategies.

By becoming active stewards, community members can help monitor the condition, target problems, and find ways to improve and protect the natural resources in their ACEC. If you have any questions or ideas for stewardship in the Waquoit Bay ACEC, please contact the Massachusetts Office of Coastal Zone Management's ACEC Stewardship Coordinator, Katie Lund, at (508) 289-2889 or the Department of Environmental Management's ACEC Coastal Coordinator, Liz Sorenson, at (617) 626-1394. Also see the ACEC website, <http://www.mass.gov/dem/programs/acec> and WBNERR website, <http://www.waquoitbayreserve.org>.

Who are local ACEC stewards?

Waquoit Bay National Estuarine Research Reserve (WBNERR)
WBNERR volunteers
Citizens for the Protection of Waquoit Bay
Waquoit Bay Watchers
Waquoit Association
Falmouth Associations Concerned with Estuaries and Saltponds (FACES)
Trout Unlimited
Coonamessett River Park Coalition

What coastal resources are included (partially or entirely) in the ACEC?

Harbors, Sounds, Bays: Waquoit Bay (*Falmouth, Mashpee*)

Rivers: Childs River, Quashnet River (*Falmouth*)

Lakes, Ponds: Bog, Bourne, Caleb, and Hamblin Ponds (*Falmouth*); Flat, Hamblin, Jehu, Jim, Little Flat, Sage Lot, and Witch Ponds (*Mashpee*)

Brooks, Creeks: Red Brook (*Mashpee*)

Great Ponds (ponds > 10 acres): Jim Pond (*Mashpee*)

Outstanding Resource Waters (ORWs): Waquoit Bay and Hamblin Pond (*Falmouth, Mashpee*); Childs River, Quashnet River, Bog, Bourne, and Caleb Ponds (*Falmouth*); Flat, Hamblin, Jehu, Jim, Sage Lot, and Witch Ponds, Red Brook (*Mashpee*). (ORWs are waters, such as public water supplies and vernal pools that are protected by the most stringent standards because they constitute an outstanding resource as determined by their socio-economic, recreational, ecological, and/or aesthetic values).

Barrier Beaches included in ACEC (Massachusetts Barrier Beach Inventory, CZM, 1982): *in Falmouth - on Washburn Island:* beach to west of bay inlet (Fm-1), beach to east of Eel Pond Inlet (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 cemetery (Fm-6), fronting Hamblin Pond (Fm-2); *in Mashpee:* South Cape Beach/Dead Neck (Ms-5), beach fronting Flat Pond (Ms-9)

NATURAL RESOURCE ACREAGE ESTIMATES

Note: acreages are estimated using Massachusetts Geographic Information System data (2001).

HABITAT TYPE	ACREAGE in ACEC	% of ACEC	LAND USE	ACREAGE in ACEC	% of ACEC
barrier beach	135	5	recreation	105	4
eelgrass	100	4	agriculture	--	--
salt marsh	280	11	residential	72	3
tidal flat	6	<1	commercial	--	--
freshwater wetland	155	6	industrial	<1	<1
cranberry bog	30	1			
forest	665	26			
open water	1,227	48			
100 yr floodplain	2,105	79			

G: Waquoit Bay ACEC Legal Boundary Description

The Waquoit Bay Area of Critical Environmental Concern (ACEC) boundary is defined as follows: the ACEC extends from the extreme southwestern end of Dead Neck barrier beach (mean low water, MLW)

CONNECTING LINE and extends straight across the entrance channel of Waquoit Bay by the shortest distance to the mean low water line of the western side of the entrance channel.

MLW 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.

CONNECTING LINE *The ACEC boundary then follows that perpendicular line to the intersection with the western MLW shore of Washburn Island.*

MLW *The boundary follows the MLW line along the Washburn Island to its extreme northeastern point.*

CONNECTING LINE *The boundary then extends from this point northerly into Waquoit Bay by the shortest distance to the 6 foot depth curve (datum: MLW).*

6 FOOT DEPTH CURVE *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.*

CONNECTING LINE *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.*

FLOODPLAIN *The ACEC boundary then follows the 100 year flood boundary (floodplain definitions are based on the most currently available Flood Insurance Rate Maps from the Federal Emergency Management Agency) 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.*

ROAD

10 FOOT CONTOUR 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).

CONNECTING LINE	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.
MLW	From this point the line extends by the shortest distance to the eastern shore (MLW) of the Great River.
CONNECTING LINE	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.
MLW	The boundary then extends due west to the MLW line on the west side of Great River
WETLAND	<i>and following the MLW line northward to the boundary between Monomoscoy Island and the adjacent northerly salt marsh.</i>
CONNECTING LINE	<i>The boundary follows along the southern edge of this salt marsh until it</i>
WETLAND	<i>crosses Monomoscoy Road at the southern edge of the culvert,</i>
MLW	
CONNECTING LINE	<i>and continues along the southern edge of this salt marsh to the intersection with the MLW line on the eastern side of Hamblin Pond.</i>
MLW	The boundary continues in a southerly direction along the MLW line on the east side of Hamblin Pond,
TOWN LINE	connecting across the northern channel entrance of the Little River,
MLW	and continues along the MLW line on the northern edge of Seconssett 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.
CONNECTING LINE	The ACEC boundary extends from this point in a southerly direction along the MLW line, around Seconssett 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
PROPERTY LINE	

ROAD	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.
FLOODPLAIN	The ACEC boundary then proceeds southeasterly from Point A along the previously described true azimuth bearing line of 290° to Point B
CONNECTING LINE	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.
MLW	<p>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.</p> <p>From this point, the ACEC boundary follows the 100 year flood to the southernmost extent of the 100 year flood boundary in Mashpee.</p> <p>The boundary then extends due south in a straight line to the MLW line of Vineyard Sound</p> <p>and thence in a westerly direction along the MLW line along South Cape Beach to the point of origin.</p>

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.

FLOODPLAIN	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 the Childs River in a westerly direction. 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.
ROAD	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 means 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.

Where ACEC boundaries are defined by the location of natural resource features (e.g. floodplain, wetlands), the boundaries are subject to change based on the most current definitions and data. For a review of site specific projects within the ACEC boundary, determinations need to be made in the field or in consultation with ACEC Program staff.

Coastal ACEC Boundary Clarification Project, November 2002.

H: WBNERR Land Acquisition Plan: 2006-2011

Introduction

Purpose

The WBNERR Land Acquisition Plan documents a strategy to acquire interest (fee simple or easement) in key land parcels in proximity to the Reserve boundary that provide one or more of the following values:

- Resource protection for terrestrial resources,
- Resource protection for aquatic/estuarine resources,
- Access for research,
- Access for education programs,
- Sites for stewardship demonstrations,
- Locations for potential research/education facilities, and/or
- Access for passive coastal recreation.

The Reserve will pursue acquisitions independently and in partnership with other organizations. Reserve acquisitions are covered by the NOAA OCRM 2005 Programmatic Environmental Assessment and Finding of No Significant Impact (PEA/FONSI) for the Coastal and Estuarine Land Conservation Program/Fish and Wildlife Conservation Act/National Estuarine Research Reserves (CELCP/FWCA/NERR) acquisitions.

Overview of WBNERR

Waquoit Bay National Estuarine Research Reserve, located in the towns of Falmouth and Mashpee in Massachusetts, was formally established in June 1998. It is composed of open waters, barrier beaches, sand dunes, fresh and salt marshes, rivers, and mixed pine and oak forests. The more than 2,700 acres of aquatic and terrestrial habitat in the Reserve are representative of the New England portion of the Virginian biogeographic province.

The Reserve is guided by the following mission, vision, and goal statements:

Mission: To improve the stewardship of the region's estuarine and coastal watershed ecosystems.

Vision: To be recognized as a vital regional resource for expertise on sustainable coastal management provided through integrated programs of coastal ecosystem research and monitoring; management and stewardship; and education and training aimed at coastal communities, organizations, and individuals.

Goals:

1. Improve the understanding of coastal ecosystems and the human influences on them.
2. Improve environmental literacy in our communities to enable environmentally-sustainable decision-making.
3. Demonstrate sustainable stewardship of the land and water ecosystems within the Reserve to serve as a model for community stewardship in the region.
4. Foster dialogue and development of coastal ecosystem management solutions through sustained community engagement.
5. Improve the operations, infrastructure and stature of the Reserve.

The Reserve's primary activities are organized into three program areas: research and monitoring, training and education, and stewardship. All of the programs address the themes of water quality/eutrophication, climate change/renewable energy, and coastal ecosystem management. The program areas are supported by the Reserve's administrative and maintenance functions. Presently, there are thirteen full-time positions, two job-sharing positions, and six categories of seasonal employees. The actual number of seasonal employees changes annually based on funding.

Local Real Estate Market

Cape Cod is one of the nation's major resorts, located 75 miles from Boston and Providence and 250 miles from New York City. WBNERR is located in two towns, Falmouth and Mashpee, with roots dating back to the seventeenth century. Today, both towns are becoming increasingly more developed. In fact, they are two of the most rapidly growing towns in Massachusetts.

Undeveloped land in the area is rapidly disappearing as the once rural landscape becomes suburbanized. Developable parcels greater than 100 acres no longer exist in the vicinity of Waquoit Bay and its watershed. In fact, there are only a few examples of developable parcels of greater than 30 acres. Most unprotected, undeveloped land remaining in the area is in parcels of two to thirty acres and many of these pieces are already, or are in the process of being, subdivided.

The decreasing regional supply of developable land makes land protection ever more important. The associated increase in land pricing, however, makes land protection ever more challenging. Waterfront and waterview land is almost entirely developed and remaining parcels are priced at a tremendous premium. Even inland of the water within the Waquoit Bay watershed, the demand for residential housing is driving up the price of undeveloped land. Recent market research indicates that neighborhood subdivisions with privacy and a high level of conformity support home prices in the range of \$650,000 and above. The remaining undeveloped land parcels in the vicinity of the Reserve are currently highly vulnerable to this type of development. Additionally, the State of Massachusetts' Comprehensive Permit Law (known as Chapter 40 B) which allows for a relaxation of local zoning restrictions when a proposed development includes affordability

restrictions on 25% of its units, enables higher housing densities that, in turn, lead to higher land values.

In the past, WBNERR has been integral in protecting large tracts of land threatened by conversion to residential developments. The Reserve's land preservation efforts have created the regionally unique environment that exists today for research, education, stewardship and recreation. WBNERR's role in land acquisition is changing with the changing regional real estate market. There are few opportunities for large parcel protection that match the high profile successes of the past. A variety of opportunities exist, however, to protect important resource values and provide sites for enhanced research, education and stewardship activities through the acquisition of certain smaller parcels in the area. This plan describes the strategy for identifying parcels for acquisition by WBNERR.

Boundary Change

Despite the very challenging real estate market, the Reserve has gained title to five properties since the last management plan was written. These properties, listed below, are being incorporated into the Reserve boundary with this management plan (refer to Figure 1).

- The two Childs River properties total 19 acres and straddle the Childs River (the second largest tributary to the Bay) just upstream of tidal influence. The property includes coastal pine/oak woodland habitat and unique coastal low gradient stream habitat important to multiple migratory fish species.
- The 35 acre Abigail Brook parcel is located immediately adjacent to the easternmost portion of the Reserve in the vicinity of Upper Great River. This property includes coastal upland pine/oak woodland and important riparian buffer to the adjacent Abigail Brook and its associated wetlands.
- The 10 acre Phinney parcel is located near the Quashnet River in the central portion of the Bay's watershed. The property includes pine oak woodland characteristic of coastal uplands in the area.
- The 35 acre NStar parcel is also located near the Quashnet River in the central portion of the Bay's watershed. It is immediately adjacent to the Reserve's Quashnet River Area property and includes a variety of coastal upland and wetland habitats, including some vernal pool and freshwater wetland habitats not previously represented in the Reserve.

The Reserve has also acquired a conservation easement on about seven acres of Town of Mashpee open space land which is not being incorporated into the Reserve boundary at this time.

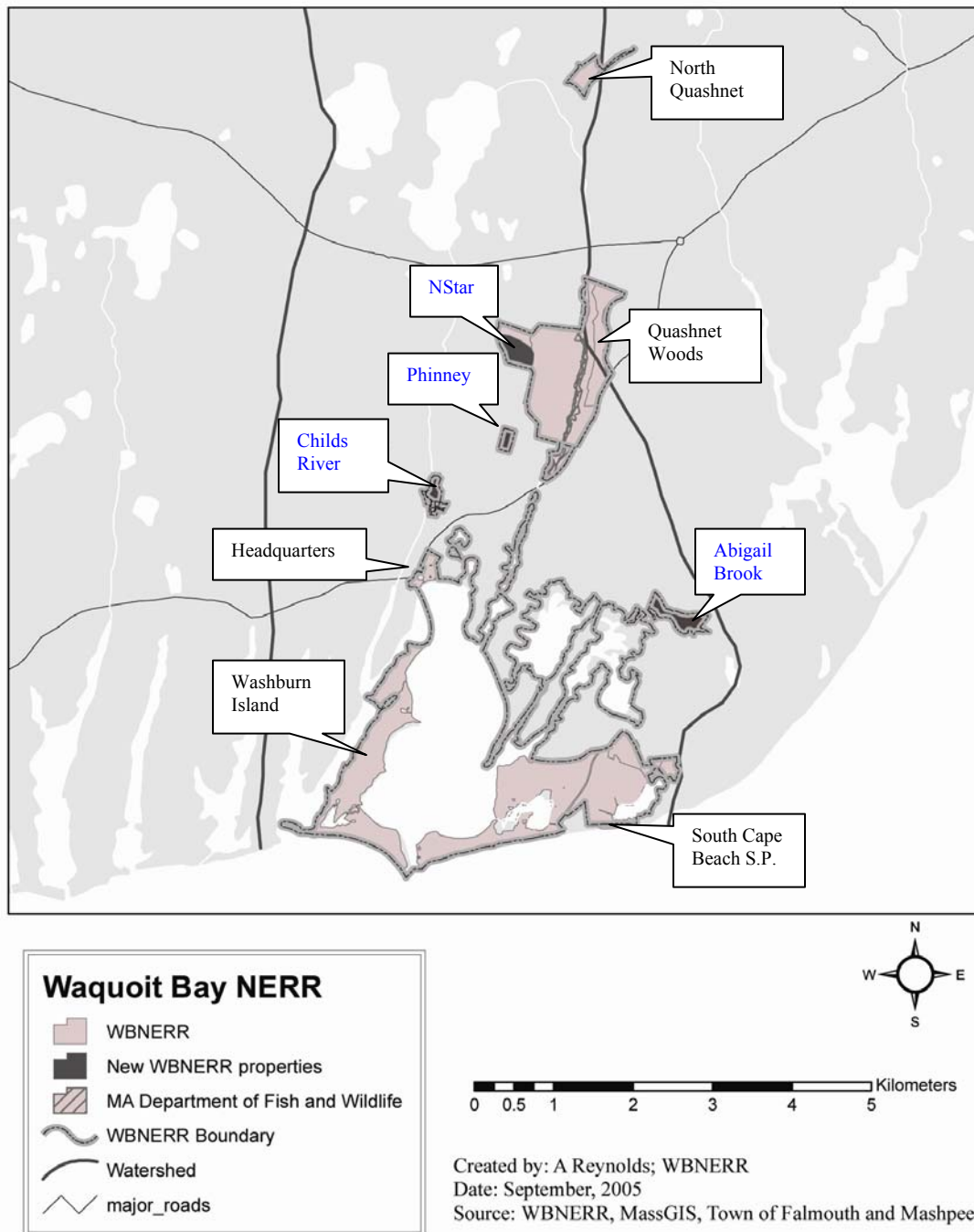
Protection of the five properties listed above prevents their future development and, thus, eliminates potential new sources of nitrogen in the Waquoit Bay estuarine ecosystem. Inclusion of these properties within the Reserve boundary adds underrepresented habitats typical of the biogeographic province, including various migratory fish runs, coastal forested uplands and freshwater wetlands. These properties also provide previously non-existing access and further opportunities for the Reserve's research and education programs.

All of these parcels have a history of rural agricultural land use. Cranberry operations existed at the Childs River and Abigail Brook parcels, while grazing was the likely historic land use at the other parcels. Agricultural operations at all sites have been abandoned for at least 30 years and vegetation succession is occurring on all of the properties.

With the inclusion of these properties into the NERR boundary, they are subject to all land and water resource management, signage and public information, law enforcement, and other site control activities outlined in this Management Plan. Reserve led biological monitoring, including vegetation and rare species, has already begun in these areas. The habitats represented on these properties are currently being made available to research, education and stewardship demonstration activities. For example, an invasive species control project is currently underway at the Childs River property, vernal pool monitoring is occurring at the NStar property and restoration of tidal restrictions is being planned for the Abigail Brook property.

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Figure 1: WBNERR Boundaries.



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Public and Community Involvement in Development of the Land Acquisition Plan

WBNERR's land acquisition activities are guided by, and coordinated with, the land acquisition priorities of the Mashpee National Wildlife Refuge. The Refuge was established in 1995 by the U.S. Fish and Wildlife Service, through an act of Congress, to assure long-term protection of the unique and highly productive natural resources associated with the Waquoit Bay watershed. The authorizing legislation established a land acquisition boundary that includes 5,871 acres, the majority of which lie within the Waquoit Bay watershed. Also in 1995, the U.S. Fish and Wildlife Service developed a Land Protection Plan that prioritized all land parcels within the land acquisition boundary based on:

- Biological significance of the habitat for the protection of the Waquoit Bay watershed,
- Existing and potential development threats,
- Continuity with other protected parcels within the Refuge, and
- Availability of willing sellers.

Concurrent with establishment of the Reserve, eight Federal, state, local and private conservation organizations, including WBNERR, formed the Mashpee National Wildlife Refuge Conservation Partnership (MNWRCP). At the time of designation, 2,782 acres of land within the acquisition boundary were already protected by the organizations of the MNWR Partnership. Since 1995 the partners have protected approximately 1,400 additional acres of land within the acquisition boundary. WBNERR has gained title to several parcels and has facilitated the acquisition of land by partner organizations. In recent years WBNERR has focused all land acquisition activities toward parcels that are both within the MNWR land acquisition boundary and within the Waquoit Bay watershed boundary, and has worked closely with other MNWR partner organizations in planning, prioritizing and implementing land acquisitions.

All of the new lands acquired by WBNERR during the past five years are within the MNWR land acquisition boundary. A Final Environmental Assessment of the MNWR (USFWS 1995) found “no significant impact” would result from the proposal to cooperatively preserve, protect, and manage lands within the towns of Mashpee and Falmouth. The proposal was developed by USFWS after extensive public input from citizens, elected officials, government agencies, and interested organizations.

The *Waquoit Bay National Estuarine Research Reserve Management Plan, 2006-2011* (of which this land acquisition plan is a part) was, likewise, developed with input from core constituents and partners. About a dozen citizens attended a public meeting on December 8, 2004 to offer their advice about where the Waquoit Bay Research Reserve's efforts should be focused over the next five years. Participants were invited to address three broad questions:

- Which of the Reserve's programs are most beneficial?
- Which could be improved? and,
- Are there unmet needs the Reserve can address?

WBNERR staff also met individually with representatives of the scientific, education, and coastal management communities (refer to Acknowledgements) to solicit their insights and

recommendations for future management of the Reserve. The WBNERR interviewer prepared notes following each meeting and shared these with other staff members, as appropriate, for their consideration and potential inclusion in the Management Plan.

A full draft of the *Management Plan* was circulated in the summer of 2005 to key partners within state and Federal government. Once recommendations generated by this first review were incorporated and partner agencies were comfortable with the content of the plan, a 30-day public comment period was initiated by publishing a notice in the MEPA Environmental Monitor on April 10, 2006. A public meeting was held May 3, 2006. A summary of all comments received during the MEPA review and actions taken to address them is included in Appendix A.

Existing Land Protection Tools

A variety of excellent conservation planning tools currently exist to guide land protection in the State of Massachusetts. WBNERR and the Mashpee National Wildlife Refuge Conservation Partnership drew heavily upon the resources and policies of BioMap, Living Waters, the Massachusetts Statewide Land Conservation Plan (SLCP), and the Coastal and Estuarine Land Conservation (CELC) Plan when developing this land acquisition plan.

- **BioMap:** BioMap, a program of the the Massachusetts Natural Heritage and Endangered Species Program (NH&ESP), maintains and continually updates a series of maps depicting “Core Habitats” and “Supporting Natural Landscapes” critical for protecting biodiversity in Massachusetts. The maps are based on a long-term data base of rare plants, animals and natural communities in the state. The terrestrial “Core habitat” areas include multiple sites for 246 rare plant species, 129 rare animal species (vertebrates and invertebrates), and 92 natural community types.
- **Living Waters:** Living Waters, another MA NH&ESP effort, is intended to compliment BioMap. Living Waters identifies the lakes, ponds, rivers and streams that should be the highest priority for freshwater biodiversity conservation in Massachusetts. Similar to BioMap, these special areas are referred to as “Core Habitats” and are comprised of the most important habitats for rare aquatic animals and plants and exemplary freshwater habitats. The Living Waters report also identifies the “Critical Supporting Watershed” for each of the freshwater “Core Habitats.” The Supporting Watersheds included the portion of the watershed that has the greatest potential to sustain or degrade the “Core Habitats”.
- **Massachusetts Statewide Land Conservation Plan (SLCP):** The Massachusetts Statewide Land Conservation Plan (SLCP) was developed by a 33-member task force that was appointed by the Commonwealth’s Secretary of Environmental Affairs in the spring of 2001 and included all major state and regional land trusts, state and Federal conservation agencies, statewide watershed and conservation commission organizations, a regional planning agency, and a conservation foundation. The goal of the task force was to use existing statewide and regional plans and other data to develop a strategy that would protect the six major resource categories of the Commonwealth including: water resources, important habitat, working farms and forests, greenways, outdoor recreation sites, and urban parks.

The plan includes specific acreage goals that should be protected by the partners and a discussion of the various tools that should be considered for conservation protection. Core Habitat and Supporting Natural Landscape areas identified in the BioMap project form a large component of the plan. Other areas were considered to have statewide or regional significance and in the Cape Cod region, were included in the SLCP if they were contained in three or more regional conservation planning efforts. Land acquisitions by Massachusetts state agencies, including DCR are guided by the SLCP.

- **Coastal and Estuarine Land Conservation (CELC) Plan:** In 2005, the Massachusetts Office of Coastal Zone Management in cooperation with other state and Federal land management agencies, including the Department of Conservation and Recreation, developed a statewide Coastal and Estuarine Land Conservation (CELC) Plan. This plan was developed as a requirement to allow Massachusetts coastal land protection projects to be eligible for funding from NOAA's Coastal and Estuarine Land Conservation Program (CELCP). This plan provides an assessment of priority conservation needs and clear guidance for nominating and selecting coastal and estuarine land conservation projects within the state. Land areas identified for protection in this plan are based on lands identified within the BioMap, Living Waters and the SLCP that occur in the coastal towns of Massachusetts. The CELC Plan does not include parcels from the SLCP that were valued solely for agricultural/silvicultural values and gives parcels protective of drinking water resources equal importance to parcels protective of other resource values (SLCP gives twice the consideration to drinking water as to other resource values). Additional parcels were included in the CELCP for proximity to marine and estuarine shoreline (all parcels greater than three acres in size and within 2,000 feet of shoreline), for proximity to major surface water tributaries (all parcels greater than three acres in size within 1000 feet of a major tributary), and for proximity to regional trails (all parcels within 200 feet of an existing or proposed regional trail).

WBNERR Stewardship Focus Area

The Stewardship Focus Area (SFA) is the geographic planning area identified by WBNERR that contains those lands and resources that, if altered, are likely to change (improve or degrade) the quality of resources and/or uses within the Reserve boundary. The SFA includes the designated lands and waters of the Reserve, as well as other lands as defined below.

Research at WBNERR has clearly demonstrated that changes in land use within the watershed are capable of causing drastic degradation of natural resources within the Waquoit Bay estuary. Thus, WBNERR is concerned with land use planning throughout the Waquoit Bay watershed, particularly activities that are known to increase watershed derived nitrogen loads to the estuary (*i.e.*, discharge of nitrogen to the atmosphere, land, surface water or groundwater) and all lands within the watershed of the Waquoit Bay estuarine system are included in the SFA. Most land within the Waquoit Bay watershed that has not been set aside for conservation has already been developed for residential, commercial, retail and military aviation uses. Nonetheless, several parcels containing important habitat or other attributes of value to advance WBNERR's mission still exist.

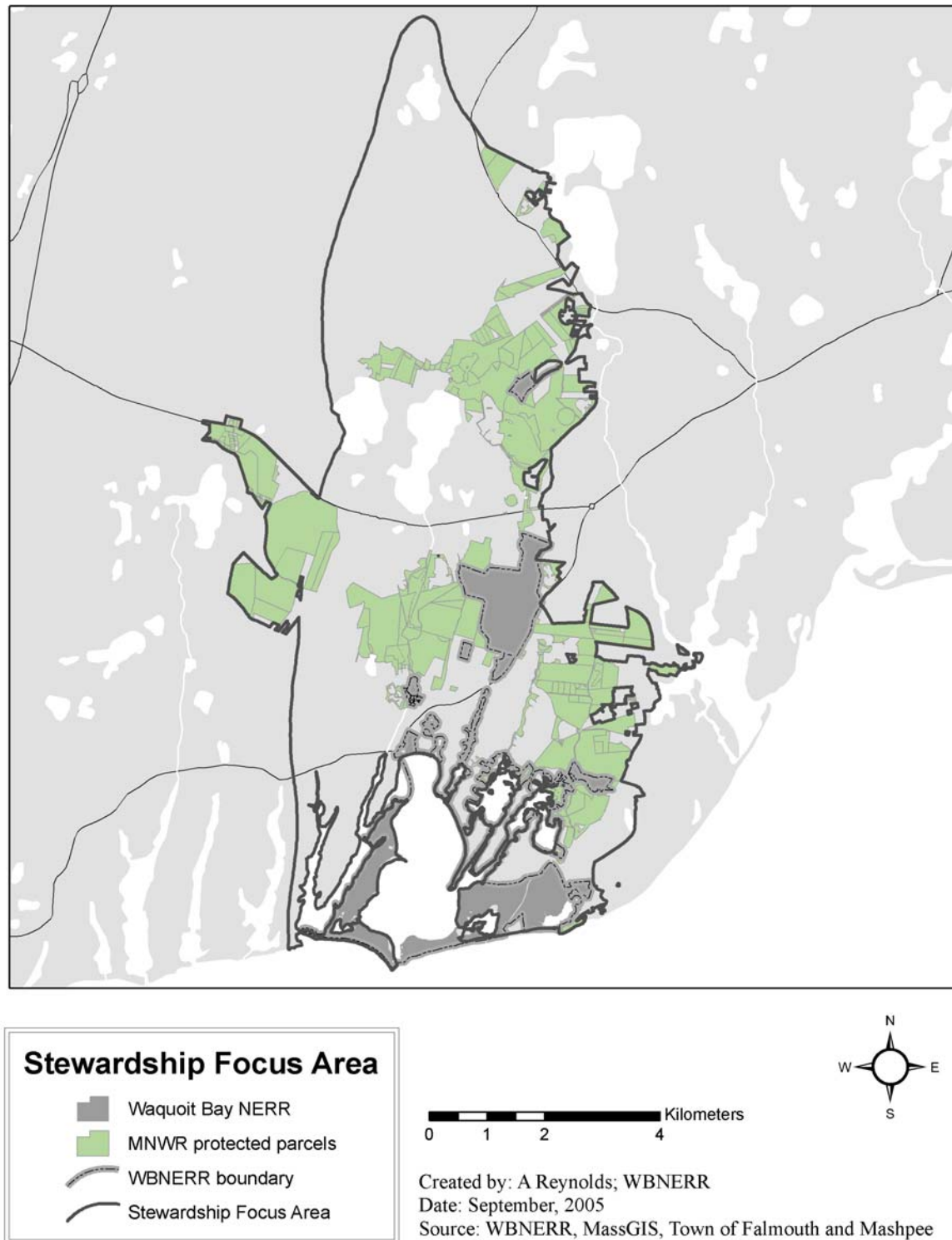
Additionally, there are some parcels that lie outside of the Waquoit Bay watershed that have been included in the MNWR boundary because they are the last remaining contiguous parcels of representative coastal terrestrial and freshwater wetland habitats remaining in the vicinity of the estuary. WBNERR has an interest in the ecological integrity of the habitats contained on these lands as well. Therefore, all lands included in the MNWR land acquisition boundary are included in the WBNERR SFA.

The WBNERR Stewardship Focus Area, thus, includes all of the following areas:

- All designated Reserve lands and waters,
- All land parcels that lie (at least partially) inside the watershed boundary of the Waquoit Bay estuarine system.
- All land parcels within the MNWR land acquisition boundary

The WBNERR SFA is depicted in Figure 2.

Figure 2: WBNERR Stewardship Focus Area.



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Resource Assessments

Land Use

Lands within the SFA are primarily composed of upland pitch pine/oak forests, freshwater wetlands, kettle ponds and other habitats representative of the bioregion. Much of the forested open space in the watershed has been converted to low density single family home residential development (Figure 3). The towns of Falmouth, Mashpee and Sandwich lie within the Waquoit Bay watershed. These are some of the most rapidly growing towns in Massachusetts. Commercial and retail developments occur along Route 28 and Route 151. The Massachusetts Military Reservation, including a large airstrip and associated facilities, exists in the northern most portion of the watershed. A limited amount of land in the watershed is still used for cranberry agriculture.

Rare, Threatened or Endangered Species

A variety of state and Federally listed protected species occur within the watershed (Figure 4).

Archeological, Historical, and Cultural Resources

The Waquoit Bay region is the ancestral and modern home of the Wampanoag Indians. There are, therefore, an abundance of significant archeological sites within both the Reserve Boundary and the SFA. Details about specific sites, including locations, are kept confidential because of the vulnerability of these irreplaceable resources. The information is maintained by the Massachusetts Historical Commission and the DCR Office of Cultural Resources. Such resource values should be considered in planning future land acquisition and protection activities.

The Reserve's headquarters are located within the Waquoit National Historic District (Figure 5). The Historic District was established in 2004 in recognition of the area's significance as an isolated Falmouth Village that reached the high point of its development in the 1850s with industrial, marine, agricultural, and summer tourism components. The Historic District is roughly bounded by the Childs River, Carriage Shop Rd., Waquoit Hwy., Moonakis River, Moonakis Rd., Waquoit Bay, and Waquoit Landing.

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Figure 3: Land Use Change in the Waquoit Bay Watershed.

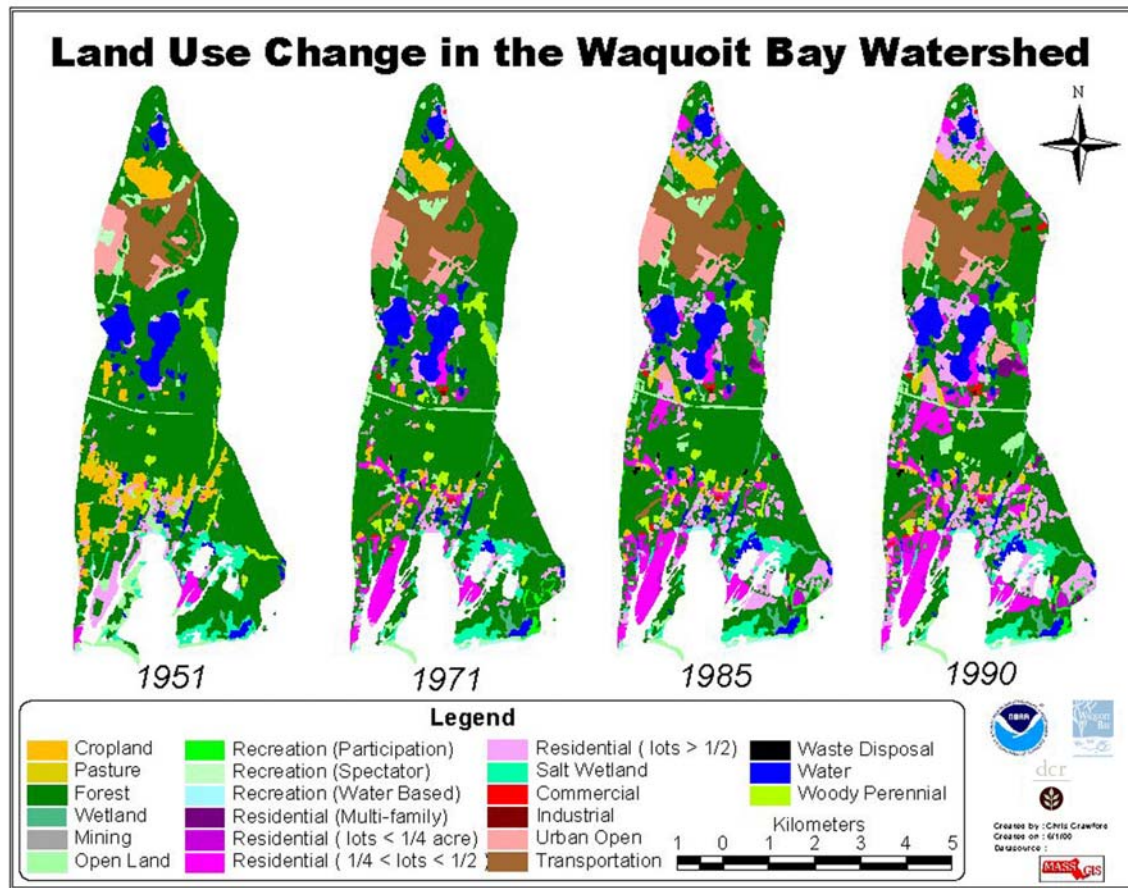
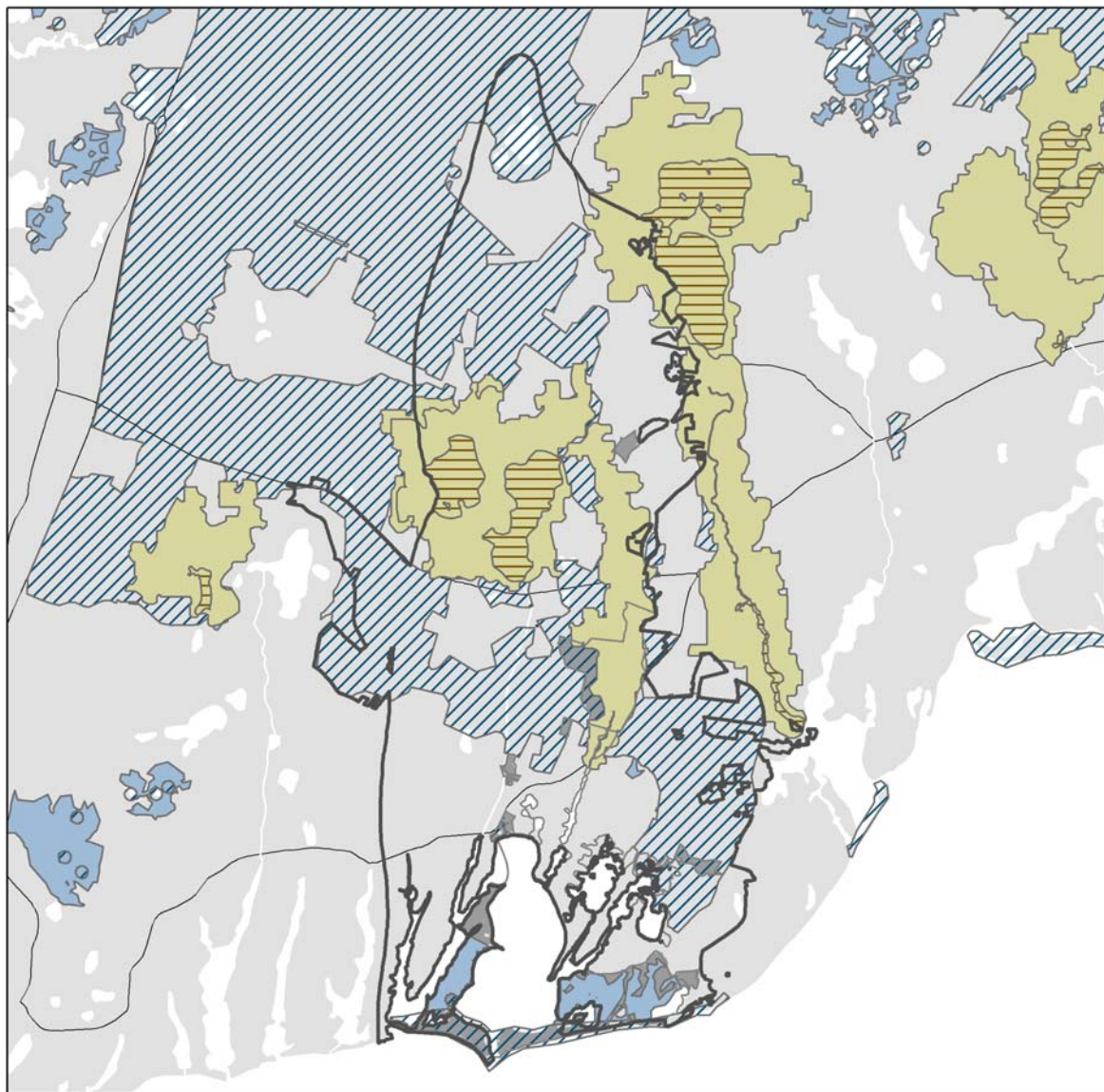
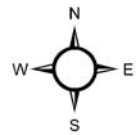


Figure 4: Rare species habitat.



Rare Species Habitat

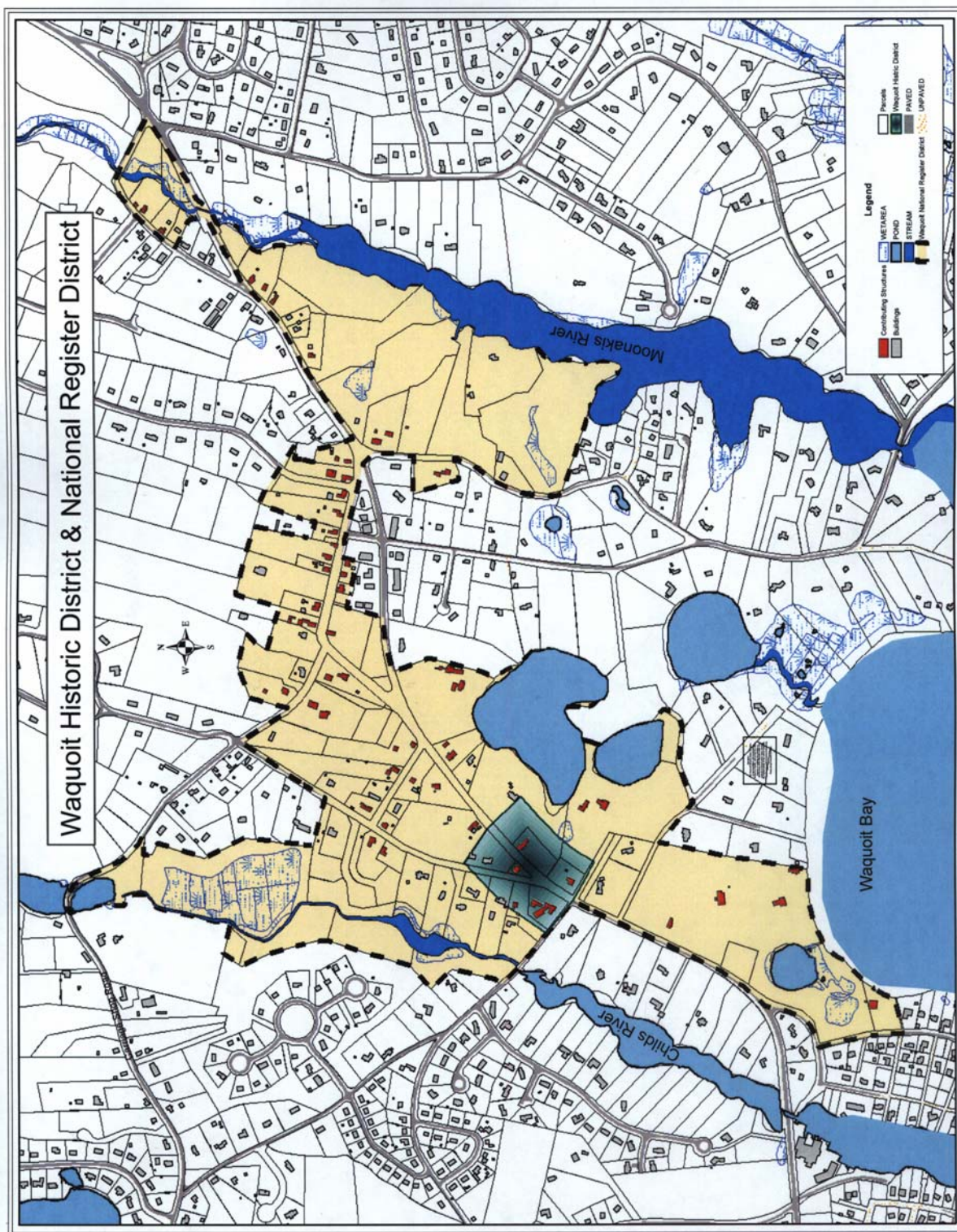
-  Stewardship Focus Area
-  Waquoit Bay NERR
-  NHESP BioMap Core Habitat
-  NHESP BioMap Supporting Natural Landscape
-  NHESP Living Waters Core Habitat
-  NHESP Living Waters Critical Supporting Watershed
-  Major Roads



0 1.25 2.5 5 Kilometers

Created by: A Reynolds; WBNERR
Date: September, 2005
Source: WBNERR, MassGIS,
Town of Falmouth and Mashpee,
Natural Heritage and Endangered Species
Program (NHESP)

Figure 5: Waquoit National Historic District.



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Priority Land Types

The following descriptors classify land types that exist within the SFA that are priorities for acquisition in order to advance the WBNERR mission.

- **Shoreline:** This category includes actual coastal shoreline on Nantucket Sound, the Waquoit Bay Estuarine System and its associated salt pond embayments and salt marshes, the estuary's tributary rivers, and the kettle ponds of the watershed.
- **Coastal habitats:** This category includes any land within 2000 feet of a shoreline. These areas often contain important habitats and are critical to controlling non-point source nitrogen loading to surface waters.
- **Rare/protected species and unique natural habitats:** This category includes state identified coastal "core habitats" for listed species such as piping plover and least tern (which would also be included in "coastal habitat" above), but also includes "core habitat" areas for inland and freshwater species within the SFA which are also very important coastal resources needing protection.
- **Contiguous large undisturbed habitats:** This category includes parcels that abut or are adjacent to existing protected conservation lands. Such parcels can significantly build upon the values of the existing protected land by buffering existing protected habitats and providing large, unfragmented natural habitat areas for flora and fauna that require them. Preservation of large contiguous areas of undeveloped land is particularly important in the Waquoit Bay area on Cape Cod because development patterns in the region have made these unfragmented areas increasingly rare.
- **Contributing watershed area:** This category refers to any piece of land that drains to groundwater discharging into the Waquoit Bay estuary system. The waters of the Waquoit Bay estuary are highly affected by land derived pollutants, particularly nitrogen, moving to the Bay by groundwater and streams. Protecting watershed land can reduce pollutants from a variety of the most prominent sources. Also, natural habitats effectively intercept pollutants coming from outside sources, such as atmospheric deposition.

Priority Areas

The following list describing WBNERR's priorities for land acquisition, including land parcels within the Stewardship Focus Area that remain threatened with development. Working through the Mashpee National Wildlife Refuge Partnership, or alone, using established DCR land acquisition procedures, the Reserve will work to acquire these priority land parcels from willing sellers. Acquisition will occur with funds from NOAA, DCR, other grant sources, a combination of these or through donation. The Reserve will prioritize fee simple acquisitions, but will consider easements of the appropriate type on parcels where it will better suit the needs of the Reserve and the available funding. Individual properties are not given priority ranking because of the constantly changing market environment. Inclusion of valuable habitat, continuity with existing WBNERR land or water, continuity with other conservation lands, proximity to surface waters, and level of development threat are all considered along with development threat, market conditions and available funding when making specific land acquisition decisions.

Possible partners for land acquisition include the Compact of Cape Cod Conservation Land Trusts and all of the members of the MNWR Conservation Partnership: United States Fish and Wildlife Service, MA Department of Fisheries and Wildlife, Town of Mashpee, Town of Falmouth, The 300 Committee, The Orenda Wildlife Land Trust, and Falmouth Rod and Gun Club.

Individual parcel acquisition projects will include a variety of actions by WBNERR. Funding will be sought from state, Federal and other sources in order to acquire parcels within the areas identified in this plan. The possibility of real estate donations of parcels within the SFA will be investigated and donations will be accepted. The Reserve will continue to work with the MNWR partners to encourage creative land protection deals in the spirit of the three way land swap that resulted in the 2005 acquisition of the NStar parcel. Acquisition of conservation restrictions will be investigated as an alternative to full fee acquisition. When funding is not available to the Reserve, partner organizations will be encouraged and assisted in protecting lands within the SFA.

Estuary Waterfront

Reasons for acquisition: Undeveloped parcels in this area represent the few remaining unprotected, undeveloped land parcels that immediately abut the estuaries, tributaries or associated surface waters of the Waquoit Bay estuary ecosystem. Because of their proximity to the water these parcels are burdened with the highest risk of development. These parcels are unique and valuable for their proximity to the shoreline. The natural communities that they support, including fish, wildlife and vegetation resources are limited and vanishing resources in the Waquoit Bay area. These parcels also yield significant benefits to surface water quality in their undeveloped condition. Proximity to the water also gives these parcels very high value for Reserve research, education and stewardship activities. Some of these parcels could provide sites for waterfront research and education facilities.

Land use regulations: The use of these undeveloped parcels is regulated by Falmouth and Mashpee bylaws. Land use is also subject to regulation under Massachusetts laws including the Massachusetts Environmental Policy Act (MGL c. 30, ss. 61-62H and 301 CMR 11.00), Public Waterfront Act (MGL c. 91 and 310 CMR 9.00), Wetlands Protection Act (MGL c. 131, s. 40 and 310 CMR 10.00), Massachusetts Coastal Zone Management (MCZM) Program Regulations (310 CMR 21.00), and State and Federal Endangered Species Act (M.G.L. c. 131A and 321 CMR 8.00, 321 CMR 10.00).

How acquisition will further purpose and goals of Reserve: The acquisition of estuarine waterfront land will protect estuarine and surface water quality and natural communities. Acquisition will also allow access to the estuary and shoreline for research, education and stewardship activities. Additionally, some of these parcels could provide valuable public access for passive recreation.

Post acquisition stewardship: Stewardship at each acquired parcel would be similar to stewardship at existing Reserve parcels and would likely include signage, surveillance, enforcement, and habitat protection and restoration.

Potential partners: The organizations of the Mashpee National Wildlife Refuge conservation are possible partners for all land acquisition projects.

Acquisition costs and future ownership: Full fee ownership is desirable for most parcels. Conservation restrictions on some of these parcels, however, could provide significant benefits if fee ownership is not negotiable due to limited funding or other reasons. Market values in the vicinity of the Reserve range from \$200,000 to over \$1 million per developable acre depending on proximity to waterfront. All interests, fee or otherwise, would be owned by the Commonwealth of Massachusetts.

Central Watershed

Reasons for acquisition: These key land parcels remain unprotected from development in an area where a very successful coordinated effort has protected large tracts of land. This area includes the subwatersheds for the Childs and Quashnet Rivers, the two largest tributary streams of the Waquoit Bay estuary system. Protection efforts by the partners of the Mashpee National Wildlife Refuge have had tremendous benefits in terms of protecting water quality in the estuary and natural habitat in and adjacent to the two streams, both of which are important anadromous fish runs. Development of any of these key parcels will contribute to nitrogen loading in the estuary and will undermine benefits of the proposed plan to protect large contiguous tracts of habitat anchored by the existing WBNERR Quashnet River Area and Childs River Area parcels. Each of these parcels has very high value for Reserve research, education and stewardship activities.

Land use regulations: The use of these undeveloped parcels is regulated by Falmouth and Mashpee bylaws. Land use is also subject to regulation under Massachusetts laws including the Massachusetts Environmental Policy Act (MGL c. 30, ss. 61-62H and 301 CMR 11.00), Public Waterfront Act (MGL c. 91 and 310 CMR 9.00), Wetlands Protection Act (MGL c. 131, s. 40 and 310 CMR 10.00), Massachusetts Coastal Zone Management (MCZM) Program Regulations (310 CMR 21.00), and State and Federal Endangered Species Act (M.G.L. c. 131A and 321 CMR 8:00, 321 CMR 10:00).

How acquisition will further purpose and goals of Reserve: Acquisition of parcels in the central watershed will protect estuarine and surface water quality and natural communities. Acquisition would also protect significant tracts of undisturbed natural habitat important for some research, education and stewardship activities. Some of these parcels could also provide valuable public access for passive recreation.

Post acquisition stewardship: Stewardship at each acquired parcel would be similar to stewardship at existing Reserve parcels and would likely include signage, surveillance, enforcement, and habitat protection and restoration.

Potential partners: The organizations of the Mashpee National Wildlife Refuge conservation are possible partners for all land acquisition projects.

Acquisition costs and future ownership: Full fee ownership is desirable for most parcels. Conservation restrictions on some of these parcels, however, could provide significant benefits if fee ownership is not negotiable due to limited funding or other reasons. Market values in the vicinity of the Reserve range from \$200,000 to over \$1 million per developable acre depending on proximity to waterfront. All interests, fee or otherwise, would be owned by the Commonwealth of Massachusetts.

East Reserve

Reasons for acquisition: These key land parcels remain unprotected from development in an area where a very successful coordinated effort has protected large tracts of land. This area includes the subwatershed for Jehu Pond, one of the few remaining areas containing eel grass habitat in the Waquoit Bay estuary system. WBNERR's Abigail Brook area is in this vicinity and some of these priority parcels would protect the upper portion of Abigail Brook's watershed and area with high potential for habitat restoration research and demonstration projects. Protection of each of these parcels has very high value for Reserve research, education and stewardship activities and would help to limit nitrogen loading.

Land use regulations: The use of these undeveloped parcels is regulated by Mashpee bylaws. Land use is also subject to regulation under Massachusetts laws including the Massachusetts Environmental Policy Act (MGL c. 30, ss. 61-62H and 301 CMR 11.00), Public Waterfront Act (MGL c. 91 and 310 CMR 9.00), Wetlands Protection Act (MGL c. 131, s. 40 and 310 CMR 10.00), Massachusetts Coastal Zone Management (MCZM) Program Regulations (310 CMR 21.00), and State and Federal Endangered Species Act (M.G.L. c. 131A and 321 CMR 8:00, 321 CMR 10:00).

How acquisition will further purpose and goals of Reserve: Acquisition of parcels in the east watershed will protect estuarine and surface water quality and natural communities. Acquisition would also protect significant tracts of undisturbed natural habitat important for some research, education and stewardship activities. Some of these parcels could also provide valuable public access for passive recreation.

Post acquisition stewardship: Stewardship at each acquired parcel would be similar to stewardship at existing Reserve parcels and would likely include signage, surveillance, enforcement, and habitat protection and restoration.

Potential partners: The organizations of the Mashpee National Wildlife Refuge conservation are possible partners for all land acquisition projects.

Acquisition costs and future ownership: Full fee ownership is desirable for most parcels. Conservation restrictions on some of these parcels, however, could provide significant benefits if fee ownership is not negotiable due to limited funding or other reasons. Market values in the vicinity of the Reserve range from \$200,000 to over \$1 million per developable acre depending on proximity to waterfront. All interests, fee or otherwise, would be owned by the Commonwealth of Massachusetts.

Northern Watershed

Reasons for acquisition: These parcels fall within the land acquisition boundary of the Mashpee National Wildlife Refuge in the northern part of the Waquoit Bay watershed. Protection of these parcels would limit nitrogen loading associated with land development to the Quashnet River and the estuaries. Protection of these parcels will also contribute to protection of large contiguous parcels of natural habitat that are important for some Reserve research, education and stewardship activities.

Land use regulations: The use of these undeveloped parcels is regulated by Falmouth and Sandwich bylaws. Land use is also subject to regulation under Massachusetts laws including the Massachusetts Environmental Policy Act (MGL c. 30, ss. 61-62H and 301 CMR 11.00), Public Waterfront Act (MGL c. 91 and 310 CMR 9.00), Wetlands Protection Act (MGL c. 131, s. 40 and 310 CMR 10.00), Massachusetts Coastal Zone Management (MCZM) Program Regulations (310 CMR 21.00), and State and Federal Endangered Species Act (M.G.L. c. 131A and 321 CMR 8:00, 321 CMR 10:00). Some parcels in this area are also subject to military aviation easements.

How acquisition will further purpose and goals of Reserve: Acquisition of parcels in the northern watershed will protect estuarine and surface water quality and natural communities. Acquisition would also protect significant tracts of undisturbed natural habitat important for some research, education and stewardship activities. Some of these parcels could also provide valuable public access for passive recreation.

Post acquisition stewardship: Stewardship at each acquired parcel would be similar to stewardship at existing Reserve parcels and would likely include signage, surveillance, enforcement, and habitat protection and restoration.

Potential partners: The organizations of the Mashpee National Wildlife Refuge conservation are possible partners for all land acquisition projects.

Acquisition costs and future ownership: Full fee ownership is desirable for most parcels. Conservation restrictions on some of these parcels, however, could provide significant benefits if fee ownership is not negotiable due to limited funding or other reasons. Market values in the vicinity of the Reserve range from \$200,000 to over \$1 million per developable acre depending on proximity to waterfront. All interests, fee or otherwise, would be owned by the Commonwealth of Massachusetts.

I: Outline of Final Report of U.S. Commission on Ocean Policy

Part I – Our Oceans: A National Asset

Chapter 1: Recognizing Ocean Assets and Challenges

Chapter 2: Understanding the Past to Shape a New National Policy

Chapter 3: Setting the Nation's Sights

Part II – Blueprint for Change: A New National Ocean Policy Framework

Chapter 4: Enhancing Ocean Leadership and Coordination

Chapter 5: Advancing a Regional Approach

Chapter 6: Coordinating Management in Federal Waters

Chapter 7: Strengthening the Federal Agency Structure

Part III – Ocean Stewardship: The Importance of Education and Public Awareness

Chapter 8: Promoting Lifelong Ocean Education

Part IV – Living on the Edge: Economic Growth and Resource Conservation along the Coast

Chapter 9: Managing Coasts and their Watersheds

Chapter 10: Guarding People and Property against Natural Hazards

Chapter 11: Conserving and Restoring Coastal Habitat

Chapter 12: Managing Sediments and Shorelines

Chapter 13: Supporting Marine Commerce and Transportation

Part V – Clear Waters Ahead: Coastal and Ocean Water Quality

Chapter 14: Addressing Coastal Water Pollution

Chapter 15: Creating a National Monitoring Network

Chapter 16: Limiting Vessel Pollution and Improving Vessel Safety

Chapter 17: Preventing the Spread of Invasive Species

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Part VI – Ocean Value and Vitality: Enhancing the Use and Protection of Ocean Resources

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For full report, visit <http://www.oceancommission.gov>.

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J.1: WBNERR Research Registration Procedure: 2005

The Waquoit Bay National Estuarine Research Reserve (WBNERR) has a Research Registration Procedure, which entails your filling out the attached form (pages 2-4). The purpose of this process is threefold.

First, the information provides Reserve staff with a concise description of your research program at WBNERR in your own words. An important component of the Reserve's mandate is to provide outreach between the science sector and the public regarding coastal zone management and estuarine issues. The registration process will ensure that our descriptions of activities underway at the reserve are timely and accurate. Also, the scope of your endeavors will be more generally known by WBNERR staff, other researchers, and an interested public. This will also enhance our staff's ability to assist you in the protection of your study sites from disturbance by the legitimately curious public or other activity.

Second, it results in the assignment of a WBNERR Research Project number to your project. When you mark your buoys, etc. with this number Reserve staff can assist you in your work by easily identifying your site and equipment should the need arise (e.g. gear adrift, tampering, etc.).

The third objective is to facilitate the compliance of field research activities at the Reserve with regulations stipulated by town authorities of Mashpee and Falmouth. Many of these regulations have been in place for a number of years and researchers were previously expected to address them on their own back in the early days. However, the WBNERR research program has obtained permits of general scope from the two towns. These permits apply to many common field research activities and are implemented through the registration process. Registered researchers conducting projects that entail the specified permitted activities no longer have to seek specific permission from the towns to be in legal compliance. WBNERR staff listed below will assist you with any questions.

Chris Weidman (ext. 105), Research Coordinator;

- questions about the registration process,
- assignment of a WBNERR Research Project number,
- availability of laboratory or storage space, and
- other questions about conducting research at the reserve.

MaryKay Fox (ext. 109), Research Assistant Research Coordinator;

- availability of laboratory space, storage space, boat mooring
- assistance with research equipment, and
- questions about conducting research at the reserve

Heather Tschaekofske (ext. 129), Research Assistant;

- other questions about conducting research at the reserve

Christine Gault (ext. 101), Reserve Manager;

- general information

Vaira Harik (ext. 100), Administrative Assistant;

- availability of (and scheduling) dormitory housing, and
- using other WBNERR facilities, such as meeting rooms, classroom or library.

WBNERR Research Registration Form

Date: /2005

1. Project Title (make as concise as possible, 10 words or less):

2. Duration (month/year to month/year):

3. Funding Source(s):

4. Principal Investigator(s), institutional affiliation(s), and contact info

(Indicate lead investigator as well as on-site contact responsible for field activities if different)

Lead Investigator:

Affiliation:

Phone:

Email:

Primary contact mailing address:

On-site Contact:

Affiliation:

Phone:

Email:

Other Participants:

Please provide any additional telephone numbers useful in case of emergency situation:

5. Project Description: *Briefly (150 words or less) describe your research project and its motivation (in language for the non-technical audience):*

6. Planned Activities: Briefly list field activities planned at the reserve this year along with an estimated schedule (if this is first year of multi-year project include a general outline of planned activities over course of project)

7. Study Site Location: Identify the exact location of your study site(s) and / or mark the position(s) on a map of Waquoit Bay (i.e., use one off our web site) and surrounding areas. This information is used to reduce interference with other researchers, high-use water-ways, and other conflicting uses. It will also help WBNERR answer queries from local authorities and the public regarding equipment observed in the field. If your field equipment is sensitive to "disturbance", we will assist you in designing a scheme to minimize intrusion.

8. Hazardous material and activities: Does your planned research include any potentially hazardous materials or activities, such as radioisotopes, toxic chemicals or reagents, or environmentally-impacting electromagnetic, sonic or optic emissions?

Are any unusual or special services / facilities required?

Specifics relating to any items indicated above should be noted below and discussed with the Research Coordinator:

9. WBNERR General Research Permit: Many research activities require permits from local town resource management authorities. The WBNERR Local Research Permit applies to a range of routine field activities and covers projects that are registered with the Reserve. Contact the WBNERR Research Coordinator, Dr. Chris Weidman at 508-457-0495 (ext. 105), for help or clarification.

10. Other Permit Requirements: Project activities that are outside the scope of the WBNERR Local Research Permit (based on the WBNERR Research Coordinator's assessment) will need separate approval by the appropriate local or state authority (e.g., Falmouth and/or Mashpee Conservation Commission, shellfish warden, Mass. Department of Marine Fisheries). **This is your responsibility.** Examples include (but are not limited to) a Scientific Collectors Permit issued by the Massachusetts Division of

Marine Fisheries for the collection of fishes and/or invertebrates, and migratory bird and vertebrate handling permits issued by various state and federal authorities. Contact the Research Coordinator for assistance in determining whether such additional permits are required. If your research requires such permits, we will need copies of them on file with the Research Coordinator.

11. Lab Space Needs: If you plan to use the WBNERR laboratory, precisely describe your need. The Research Coordinator will try to provide you with lab space in so far as other activities allow. WBNERR generally does not supply equipment, laboratory materials or expendable supplies. Requests for exceptions to this rule will be considered on an individual basis (e.g., a collaborative project with the Reserve). A classroom adjoining the laboratory is primarily a facility supporting the WBNERR education program. If you desire to make use of this space, we will need to coordinate with the Education Program Coordinator.

12. Boating Needs: Several boat moorings are available for research programs being conducted at the reserve, on a “first come, first serve” basis. Generally, a project is allocated one mooring only. List below the dates needed, the name and contact info of the person responsible for the boat (bailing, etc.), and other pertinent information (e.g. need for storage of equipment or boat trailer). Note that there are no docking facilities at the reserve and Waquoit Bay is shallow (typical depths are <2 m). If you only have a limited need for boat on just a few occasions, the Reserve may be able to provide you with a boat and driver as our other commitments allow.

13. Last Questions

- A. Have you received and have read the attached WBNERR document "Information for Researchers and Guests: 2005"?
- B. Do you have a field Safety Plan ?

Confirmation of these last two questions is a requirement of project registration.

J.2: 2005 Field Season at WBNERR—Information for Researchers and Guests

The science program at the Waquoit Bay National Estuarine Research Reserve (WBNERR) continues to grow (currently an average of over 20 individual and group research projects are carried out annually -- See our website: www.waquoitbayreserve.org). The following information contains 2005 guidelines regarding the use of the Reserve's grounds and facilities. This document is distributed to help all users (scientists, technicians and students) to be informed about the proper procedures for maximizing their access to the Reserve's resources. If you have any questions, contact WBNERR's Research Coordinator, Chris Weidman, at 508-457-0495 ext. 105 (email: chris.weidman@state.ma.us) , or the Research Assistant, Heather Tschaekofske (ext. 109) (email: heather.tschaekofske@state.ma.us).

1. Registering a Research Project:

The reserve has a research registration process to facilitate communication and coordination between visiting users of the reserve and the Reserve's research program. At the start of each field season (typically in the late spring), users must complete a WBNERR Research Registration form and return it to the Research Coordinator / Assistant.

Upon approval, each user will be assigned a WBNERR Project Number that will be unique to that project for that year's field season. Users are required to use this number and the initials "WBNERR" to label equipment used and/or stored in the laboratory or at field site(s). This will help harbormasters, shellfish wardens, and WBNERR staff to monitor the status of your equipment or experiment and to notify you in the event of an emergency. Items to be marked include buoys, flags, and other markers (e.g., sticks).

Once a project is registered, certain conforming aspects are covered by the conditions provided by the WBNERR Researcher's Permit the reserve has obtained from the towns of Falmouth and Mashpee. This permit applies to Determinations of Applicability that local authorities require to demonstrate compliance with wetlands regulations. Each research project conducted within either of these towns, whether at WBNERR or elsewhere, is required to obtain a negative determination of applicability from the local selectmen. In the past, it was the responsibility of each researcher using the Reserve to obtain this designation. This is no longer the case once a project has been registered.

The WBNERR Research Registration is an umbrella authorization that provides the needed designation to WBNERR registered projects which entail "typical" field research activities. A list of such activities within the scope and specific conditions of this permit is contained in a copy of the permit itself, which can be requested from WBNERR or you can call to clarify.

Other licenses and permits (e.g., Scientific Collectors Permit from the Mass. Division of Marine Fisheries or Migratory Bird research permit from US Fish and Wildlife) remain the responsibility of individual researchers. Copies of these must be presented to WBNERR along with the completed registration form. It is the user's responsibility to adhere to the provisions of the regulations pertinent to each of them.

2. Safety Plan: All registered research project applicants need to confirm that they have a safety plan in place to minimize the potential for injury or to ensure a rapid response in case of an emergency. The specifics of the plan would, of course, depend on the nature of the project and the planned activities. Waquoit Bay is a beautiful place, but, like any marine or coastal area, it can become dangerous and precautions are prudent. For example, it is best if researchers in the field have a buddy system (two is better than one), carry a cell phone or radio for emergency communication, and notify Reserve staff (or some designated person) of your field whereabouts and your departure and estimated return times. Ask the Research Coordinator or Research Assistant for further suggestions or about your concerns regarding field safety.

Special arrangements must be made with the Research Coordinator if you plan to handle non-aquatic vertebrates or use radioactive or highly toxic materials (See Research Registration form item # 8).

3. Upon project completion, researchers using WBNERR facilities or conducting studies on WBNERR grounds (either Reserve grounds proper or on lands managed by the Reserve) are requested to send us a **project summary** that is suitable for use in the library (e.g., project final report, thesis, or journal publication).

We also request that documents, published or otherwise, containing data obtained from work done at WBNERR acknowledge the support provided by the Waquoit Bay National Estuarine Research Reserve, and our parent agencies the National Oceanographic and Atmospheric Agency and the Massachusetts Department of Conservation and Recreation.

4. Reserving use of the laboratory facilities (See Research Registration form item # 11):

a. The laboratory in the Carriage House is sometimes available for processing field samples, etc. However, to ensure the lab's availability, researchers must make prior arrangements with the Research Coordinator or Research Assistant. The latter is responsible for the day-to-day management of laboratory operations and will assist you with questions regarding your use of laboratory facilities. Laboratory safety is an important issue and needs to be discussed directly with the Research Assistant or Research Coordinator when planning your use of the facilities. However, space is limited and reservations are required.

5. Boat Use at WBNERR:

WBNERR does not provide boats for general research use, other than a dingy to access moored vessels. However, in some cases, the Research Coordinator or

Research Assistant may be able to assist a project by operating a WBNERR boat. Contact either of them to see if their work load allows them to accommodate you.

The Reserve does have a limited number of moorings available for researchers. Boat trailer storage space is also available. **A project is usually limited to one mooring (depending on demand).** You must reserve a mooring during the Research Registration process. Call the Research Assistant (Heather Tschaekofske: WBNERR ext. 124) for information.

Neither WBNERR, the Commonwealth of Massachusetts, nor NOAA assumes any liability or responsibility for vessels using these moorings. Do not leave items of value or gas cans in an unattended boat. Users are responsible for keeping their boats bailed out. If your boat will be unused for an extended period, arrange to have someone bail it out when needed or install an automatic bilge pump. A major cause of fuel spillage into the estuarine environment is sunken boats with portable fuel tanks.

The Falmouth and Mashpee harbormasters have officially designated all bay waters as a "No Wake Zone", except for an area to the east of Washburn Island that is set aside for waterskiing and Hamblin Pond. Boaters are allowed to travel at high speed in the main navigation channel that passes from the "no wake" buoy at the northern end of Washburn Island southward to the "no wake" buoy near the inlet to Nantucket Sound. Speeding regulations (less than 5 knots) are enforced in the mooring area at the head of the bay and in the various rivers and channels.

The bay is patrolled by Assistant Harbormasters who are local citizens using their personal boats. Occasionally the official markings on these boats are not conspicuous. If you exceed about 6 mph (5 knots) in areas exclusive of the navigation channel passing North/South through the "center" of the bay (e.g., Child's River, Jehu Pond, etc.), you may be stopped. You are personally responsible for any fines levied against you.

6. Gasoline storage at WBNERR:

Gasoline and oil for motorboat use are to be stored outside the Boathouse in the two yellow, lockable storage cabinets located next to the parking area adjacent to the building (near the fuel oil tank). Approved gasoline storage containers (e.g., boat gasoline tank) are the only type of container allowed. Label your containers stored in these cabinets. The key for the cabinet doors is stored in the Boathouse lower level on a nail in the support post between the two entrance doors (above the light switch). (Additional storage is available in the small shed in the maintenance compound near the Carriage House. A separate key is required for this shed.)

Transferring gasoline into portable boat tanks is not allowed on the lower level of the Boathouse or beach. Transferring gas into boat-type tanks is allowed near the yellow storage containers at the upper level of the Boathouse but only when the transferring occurs on the cement pad leading to the walkway and stairs to the beach.

7. Identification of field sites:

Each field site identification marker (float, stake, etc.) must be labeled with your project's registration number and the initials "WBNERR". The reserve often receives calls from officials and the public about floats or markers. We cannot respond appropriately (or inform a researcher of a problem) without a means of identification.

Area harbormaster regulations stipulate that **yellow floats** be used to mark temporarily moored objects. Proper floats should be obtained from marine equipment suppliers. Researchers are to retrieve floats and equipment (including cinder block anchors, etc.) when a season's field work is done. Local authorities (e.g., harbormasters) reserve the right to remove improperly labeled field markers.

8. Other WBNERR buildings and facilities:

- a. **Main house** -- Reserve headquarters offices, exhibit center, meeting room, library.
- b. **Gatehouse** -- dormitory with 12 beds, a kitchen, and two full baths. Users may reserve space in the Gatehouse by contacting the Research Coordinator (ext.105).
- c. **Boathouse upper level** -- meeting room and resource center (i.e., GIS) . The Boathouse upper level also has a kitchen and bathroom, though we prefer that visiting researchers usually use the restrooms located in the Carriage House next to the classroom and the laboratory. There is a privacy corner in the Boathouse basement for changing out of wet clothes and there is a freshwater hose on the outside of the building as well. Requests to use the upstairs bathroom and kitchen area for meal preparation must first be cleared through the Research Coordinator or the Administrative Assistant.
- d. **Boathouse lower level** -- This area is primarily for storing field gear. The left side is for WBNERR use only. The right side is for guest researchers. There are several lockable storage bins at the rear of the right side which provide a degree of security for stored gear. Users must reserve the use of a bin at the time of registration and bins are available on a first-come-first-served basis. Gear not stored in a bin should be labeled. On the outside of the building next to the right door is a hose (cold freshwater only) for rinsing gear. There are a few benches for setting up field operations and processing field samples in the lower level as well. However, this area should not be used for laboratory analytical work without first clearing it the Research Coordinator as it is not a facility that can be easily cleaned and is proximate to the sensitive estuarine environment.
- e. **Carriage House maintenance shop** -- Tools and equipment in the shop are for WBNERR staff use only.
- f. **Facility etiquette** -- Users of the WBNERR facilities are responsible for keeping them clean, particularly bathrooms and the kitchen.

9. Telephone use at WBNERR:

The reserve has only three telephone lines. Lines 1 and 2 are local access (508-457-0495). Line 3 is a Centrex long distance line (617-727-xxxx) and is only for staff use. A special code is required to access this line. No long distance calls are to be billed to

WBNERR lines 1 and 2. Use your credit card to charge such calls to your own account.

There are phones in the Main Building, in the Gatehouse, and in the Boathouse. WBNERR business use of the telephone lines has priority, particularly in the summer. During business hours, visitors are to limit their calls to brief business and emergency purposes. Best these days is to have your own cell phone. For connecting to the internet, ask someone on the WBNERR research staff.

10. Resource conservation:

Practice resource conservation while using reserve facilities. Do not waste water, for example by unnecessarily leaving a hose flowing when washing gear at the Boathouse. Be aware that too much toilet paper will easily clog the "low flow" toilets at the Reserve. Turn off lights when they are not needed, except when you expect to return to a lighted work space soon (it takes about as much energy to start a florescent fixture as it does to run one for 1 hour). WBNERR recycles.

11. Miscellaneous:

- Smoking is prohibited in WBNERR buildings. Do not smoke while transporting or filling fuel containers.
- Alcohol is not allowed on any state property. This includes all reserve lands and all reserve buildings.
- It is also official policy of the Massachusetts Department of Recreation and Conservation that pets are prohibited from all state buildings. This includes reserve buildings (e.g., dormitories). Dogs are allowed on the grounds of the reserve headquarters during visits but they must be on a leash.

12. Research coordination at WBNERR:

Scientists and students are asked to contact the Research Program Coordinator (Chris Weidman) to arrange an orientation meeting at the beginning of your field season. This meeting will be an informal opportunity to get to know our staff and facilities and to discuss any questions or concerns you may have.

J.3: Gatehouse Policies and Guest Registration Form

Welcome to the Waquoit Bay National Estuarine Research Reserve. This research and education facility, one of 26 sites around the country that make up the National Estuarine Research Reserve System, is jointly funded and managed by the National Oceanic and Atmospheric Administration (NOAA) and the Commonwealth of Massachusetts, Department of Conservation and Recreation (DCR).

Please be advised that we conduct regular tours of the Reserve, which includes a visit to the common areas of the Gatehouse, so please keep it neat!

General House Rules

Please be respectful of the other guests and follow the following rules:

- Quiet hours in the house are from 10:00pm to 7:00am, Monday through Saturday.
- Quiet hours on Sunday are extended to 10:00am.
- Pets are not allowed.
- Please observe the need for privacy and security of others.
- Smoking is prohibited in all state buildings, including the Gatehouse.
- Reservations are required. Beds will be assigned on a first come – first served basis.

Kitchen Guidelines

Please remember you must clean up after yourself or as a group. Individual responsibilities include washing dishes and insuring the refrigerator is kept clean. Storage space for food is limited, please be conscious of how much space you are using to store your supplies. Prior to departure all guests **MUST** remove **all** food items stored in the refrigerator. This is particularly important during the non-summer months because the Gatehouse may remain vacant for long periods of time.

Bathroom Guidelines

Please clean up after yourself. This includes insuring that the shower, sinks and floor are free of dirt, sand, hair, and water. Researchers and other visitors who work in the field should rinse off as much as possible in the Carriage House or using the Boathouse outdoor shower before entering the Gatehouse. Please use the bathrooms in the Gatehouse and Carriage House instead of the Boathouse or Main House. The Carriage House Bathrooms should be used primarily for cleaning off after fieldwork. They are open from approximately 7:30am – 5:00pm, 7 days a week in the summer. The Carriage House Bathrooms have more limited hours in the winter, check with the office for details.

Use of Phones

The phones at the Reserve are for Reserve business. You may make and receive personal calls only after normal business hours (5:00 Monday – Friday), unless it is an emergency. To make a local call: pick up the receiver and press line 1 or 2, then dial the number as you would on any normal telephone. Please note that here in Massachusetts you must enter the area code and the seven-digit number for all local calls (e.g. 508-457-0495). The phone will not allow you to make calls that require a 1 in front of the 10 digit number (those are calls outside the local calling area and must be charged to a calling card). To make a call within the Reserve, pick up the receiver and dial the 3-digit extension (for the main office just dial 0). Unless you are a summer staff person who has a voicemail account set up, the Reserve staff will **NOT** take messages for you.

Keys

You will need a key to the Gatehouse if you reserve a bed. To obtain a key, contact the office. Arrangements can be made if you are arriving after hours. **ALL** keys **MUST** be returned to the office at the conclusion of your stay! Please do not lend your key out.

Gates

Gates are open weekdays (and on Saturdays in summer) from 7:30am to 5:00pm. Please leave the gates as you find them. If you will be arriving or departing after 5:00pm please contact the office about how to deal with the gates. Please do not leave them open after hours.

Parking

Limited parking for vehicles is available at the Gatehouse. Special arrangements must be made if you have a trailer.

Trash and Recycling

Prior to your departure please deposit **all** trash in the dumpster behind the Carriage House. Recycling bins are provided. If you leave and the recycling bin is full, please inform the office.

Fees

The fee is \$12:00 per night. Fees are waived for employees of the Department of Conservation and Recreation and for other individuals under certain circumstances.

Departure Check List

Before you leave, don't forget to:

- Place all trash in the dumpster behind the Carriage House.
- Inform the Reserve office if the recycling bin is full.
- Turn the heat down to 50 (unless otherwise noted on thermostat).
- Empty and clean the refrigerator-do not leave any food for us.
- Tidy up the kitchen (wipe counters, tables, sweep floors).
- Make sure all lights are off.
- Close all windows.
- Close and lock the door.
- Return the key to the Reserve office.

Thanks for your help in keeping the Gatehouse clean!

Waquoit Bay NERR Gatehouse Guest Registration Form

Please complete and return form to your on-site contact person prior to your stay.

Name: _____

Organization: _____

Address: _____

Phone (h): _____ (w): _____

E-mail address: _____

Date of Arrival _____

Date of Departure _____

Purpose of stay: _____

On-Site Contact: _____

The fee is \$12.00 per night and MUST be paid in full before you pick up your key, prior to your stay. Checks should be made out to the Commonwealth of Massachusetts. Cash is accepted, credit cards are not

By signing this form you certify that you have read and agree to the conditions explained on the Gatehouse Policies.

Signature _____

Date: _____

J.4: WBNERR Mooring Agreement

Welcome to the Waquoit Bay NERR! We are hoping that you have a great summer and a successful research season! Summer is here and it's time to put the boats back in the water.

In the interest of the safety of your boat and to clarify liability, please sign and return the following agreement and form:

I understand that I have been assigned to a specific Waquoit Bay NERR mooring for use only for a specified period during 2005. I am fully responsible for the boat including maintenance, bailing out after storms, etc. I will remove my boat from the water if requested by Waquoit Bay NERR or in the event of a major forecasted storm (i.e. hurricane). I will remove my boat in the fall, before the moorings are replaced with winter sticks, unless otherwise authorized by the Reserve's Mooring Coordinator (MaryKay Fox (508)-457-0495 x109).

The above action is necessary to prevent environmental and equipment damage.

Additionally, please provide Waquoit Bay NERR Research Department with your contact information (personnel using the boat, phone, fax and institutional affiliation) and your boat registration number.

Waquoit Bay NEER is responsible for maintaining the mooring and informing you if the staff observes any problems with your boat. Waquoit Bay NERR is NOT responsible for your boat, its maintenance, or securing it in the event that a hurricane is eminent.

Please report any mooring deficiencies to the Mooring Coordinator.

AGREED:

Name/Researcher

Date

MaryKay Fox
Mooring Coordinator/Assistant Research Coordinator

Date

Mooring number

J.5: WBNERR Mooring Contact Information

Welcome to the Waquoit Bay NERR! We are hoping that you will have a great summer and a successful research season! Please provide the Research Department at Waquoit Bay NERR with your contact information. Please include your boat registration number and the names of all personnel using the boat, their phone numbers (office, cell, and fax), and institutional affiliation.

Supervisor Contact Information:

Name: _____

Phone# _____

Cell# _____

Fax# _____

Institution _____

Make of Boat _____

Boat Registration # _____

Duration of Research at WBNERR _____

Research Vehicle # _____

Research Crew

1) Name: _____ 2) Name: _____

Phone #: _____ Phone #: _____

Cell #: _____ Cell #: _____

Email: _____ Email: _____

3) Name: _____ 4) Name: _____

Phone #: _____ Phone #: _____

Cell #: _____ Cell #: _____

Email: _____ Email: _____

5) Name: _____
Phone #: _____
Cell #: _____
Email: _____

6) Name: _____
Phone #: _____
Cell #: _____
Email: _____

J.6: External Organization Program/Event Reservation Form

Time of Program/Event: _____ Date of Program/Event: _____

Contact Information Name: _____
Organization: _____
Address: _____
Phone #: _____

Expected number of people attending: _____

Type/title of program/event: _____

Short description of program/event: _____

Waquoit Bay NERR Staff

Contact: _____

Equipment Needs:

☐ Overhead Projector ☐ Slide Projector ☐ Other _____

Location:

☐ Boathouse ☐ Main House ☐ Classroom ☐ Other _____

By signing this form you and your organization agree to abide by the External Organization Facilities Use Guidelines.

Signature: _____ Date: _____

**Please submit this form to Waquoit Bay NERR administrative offices
via fax at (617) 727-5537 or mail to: PO Box 3092, Waquoit, MA 02536**

J.7: Special Use Permit to Conduct an Event at WBNERR

Date

Permittee

Organization

Address

City, State Zip

Dear Permittee,

Enclosed is your Special Use Permit. After you have thoroughly read the permit, please sign both copies, retain one for your records, and return the other to me as soon as possible. Your copy must be in your possession at the time of the authorized event.

Well in advance of your event, all the necessary arrangements must be made with the Supervisor of the facility. Please contact him or her to see if there are any additional matters of concern.

You should Contact: Brendan Annett
 WBNERR
 508-457-0497

I hope that you and your group have a pleasant visit to the Waquiot Bay National Estuarine Research Reserve and that your event is a successful one.

Sincerely,

Brian Shanahan
Regional Director

SPECIAL USE PERMIT TO CONDUCT AN EVENT AT THE:

Waquoit Bay National Estuarine Research Reserve

Pursuant to the rule and regulations promulgated in conjunction with recreation facilities, under Chapter 30A, permission is hereby given by the Massachusetts Department of Conservation and Recreation TO:

(Permittee)

As representative of the:

(Permittee's Organization)

As sponsors to utilize a specific area at the above-mentioned state research reserve to conduct the following activity:

(Planned Activity)

This authorization is intended to cover the period:

Begin Date: _____ End Date: _____

Start Time: _____ End Time: _____

In order to insure the rights and safety of the general public as well as to insure the reasonable exercise of the above-mentioned authorization, the following conditions that are preceded by an asterix(*) shall prevail:

- _____ 1. The Permittee, organization and sponsored event are subject to all applicable Federal, state and municipal laws.
- _____ 2. The exercise of this permitted use shall constitute the Permittee's acceptance of complete liability for Permittee's actions upon the aforementioned site and agreement that he Permittee will indemnify and hold harmless the Department against any claims that may arise therefrom. Further, Permittee will not make any claims against the Department for any injury, loss or damage to person (including bodily injury and death) or property occurring from any cause arising out

of the Permittee's actions or those of its agents and guests.

- _____ 3. The Director of the Division of State Parks and Recreation or approving Regional Supervisor may cancel this permit at any time for any reason which in his/her opinion is in the best interest of the Commonwealth.
- _____ 4. Being a state owned and operated facility this authorization does not grant exclusive use of the property involved. The general public shall be allowed to attend this event.
- _____ 5. This permit shall not grant the right to engage in commercial or promotional activity or any other form of advertisement on state lands.
- _____ 6. This permit is not transferable and no privilege contained herein may be sublet to any other person or organization.
- _____ 7. The Permittee shall also be responsible for complying with all rules and regulations set forth by the Department of Conservation and Recreation governing the use of their lands which include the prohibition of alcoholic beverages being consumed within the state Facility.
- _____ 8. The terms of this permit are to cover the designated route (s) or areas (s) to be used in conjunction with this permit.
- _____ 9. The Permittee shall provide the necessary number of police officers prescribed by the appropriate local Police Department for the purpose of crowd and traffic control in the interest of public safety.
- _____ 10. The Permittee shall be responsible for the hiring and paying of the necessary number of uniformed law enforcement officers, as per our hiring procedures, if alcoholic beverages are to be consumed and the total number of adults in the group of legal drinking age exceeds twenty-four (24). One officer is required for such groups of 25 to 50 persons plus one officer per each multiple of 50 persons thereafter. The hourly pay for the officers will be the current overtime rate for each officer.

- _____ 11. All intersecting roads and/or trails throughout the permit area used shall have adequate road guards provided by the Permittee to control other types of recreational traffic and provide warnings that the event is in progress.
- _____ 12. The Permittee shall provide the necessary first aid for the participants.
- _____ 13. Upon completion of the event, the entire permit area and/or route shall be checked by the Permittee to be certain that no participants remain in the state facility.
- _____ 14. In the event the fire danger rating becomes extreme or a fire does occur in the vicinity of the event, this permit may be canceled.
- _____ 15. All signs, markers, directions and warnings erected for this permitted event shall be removed and disposed of by the Permittee within one (1) day following the event.
- _____ 16. The Permittee shall notify the facility headquarters and the Department of Conservation and Recreation Regional Headquarters in South Carver at 508-866-2580 immediately of any serious accidents that occur during the running of the event.
- _____ 17. The Permittee shall notify the contact person specified in the second paragraph of the cover letter within two days after the event the number of participants and of spectators for out attendance records.
- _____ 18. The Permittee shall check in and out with the facility Supervisor or his/her designee at the facility headquarters.
- _____ 19. The Permittee shall agree that any and all reasonable requests made by the Regional Supervisor and/or his/her designee are to be complied with.
- _____ 20. Any and all work is to be done under the direct supervision of the Regional Supervisor and/or his/her designee.
- _____ 21. The Permittee shall be responsible for cleaning up and removing all litter that was generated from this event.

- _____ 22. Permittee shall make the necessary vehicle parking arrangements with the facility Supervisor.
- _____ 23. The Permittee shall need to make the necessary trail, route or area improvement prior to being allowed to conduct the event and shall be done in cooperation with and to the satisfaction of the facility Supervisor.
- _____ 24. The Permittee agrees to restore the surface of land to its original state as nearly as possible. If this action is necessary, it will be done to the satisfaction of and within a reasonable time period as determined by the facility Supervisor.
- _____ 25. The Permittee shall have received permission to cross all privately owned land involved in the course covered by this permit.
- _____ 26. All vehicles shall be subject to an inspection by an Environmental Police Officer and participating machines shall be equipped with lawful spark arrestor and mufflers to be determined within the sole discretion of the Department of Environmental Management or previously mentioned officers.
- _____ 27. All machines participating in this event shall be registered for recreational trail use in the Commonwealth of Massachusetts unless this agency receives from the Permittee written authorization issued by the Division of Law Enforcement that waives this requirement.
- _____ 28. All refueling of participating machines shall take place on lands other than those controlled by the Department of Conservation and Recreation.
- _____ 29. All open fires are prohibited.
- _____ 30. Day use fee is waived for this permit.
- _____ 31. The Permittee shall be responsible for complying with all state and federal laws pertaining to this activity.
- _____ 32. The Permittee is responsible for insuring that vehicles are parked in appropriate areas and do not impact endangered plant management areas.

- _____ 33. The Permittee is responsible for making sure that all buildings are locked upon departure.
- _____ 34. The Permittee is responsible for making sure that the front and Gatehouse gates are closed and that all visitors have vacated the property.
- _____ 35. The beach area in front of and adjacent to the Reserve is not to be used for recreational purposes. The Permittee is responsible for ensuring that guests do not trespass on private beaches adjacent to the Reserve.

I have read the foregoing conditions and provisions and approve of, and agree to, these terms.

Issued and approved by: _____

Brian Shanahan
Regional Director

Accepted by:

(Requestors' Signature(s))

(Printed Name(s))

(Name of Organization)

J.8: Work Order Requisition

Event Date: _____

Requested by: _____

Authorized: _____

Location:

Action Requested (list time if necessary):

Special Set-up (use diagram if necessary):

- ☐ **Tables** _____
- ☐ **Chairs** _____
- ☐ **Trash-bins** _____
- ☐ **Recycling bins** _____

Comments:

Date of Request _____ Forest & Parks

Supervisor _____

J.9: WBNERR/CPWB Gift Shop Log

Date	Item	Size	Color	Quantity	Amount Collected	Cash or Check
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
16.						
17.						
18.						
19.						
20.						
21.						
22.						
23.						

J.10: Waquoit Bay NERR Mailing List

Please add your name to this list to be entered onto our mailing list. This will entitle you to receive our newsletter 3-4 times per year and other periodic mailings. If at any time you wish to change or remove your address from the list, you can do so on our website, by emailing us or by calling the main office.

[illegible]

J.11: Weekly Staff Meeting Agenda

Date: _____

Staff	Agenda Item	Action Needed
Christine		
Joe		
John		
Chris/Research Staff		
Brendan/Seasonal Staff		
Joan/Education Staff		
Pat		
Vaira		
Heather		
Tonna-Marie		
MaryKay		
Laurie		

J.12: WBNERR Key Sign-out Sheet

[illegible]

J.13: WBNERR Informational Technology Equipment Sign-out Sheet

<u>NAME</u>	<u>Equipment Taken</u>	<u>Date √ out</u>	<u>Date Returned</u>	<u>Signature</u>

J.14: Volunteer Information Form

Name: _____ Date: _____

Address: _____

Town: _____ State: _____ Zip: _____

Phone: (H) _____ (W) _____

Email address: _____

Place of Employment: _____

Person to notify in an emergency: _____ Phone: _____

The following questions are to help us match you up with a job that best fits your interests and qualifications. Please feel free to add any information you think would be useful to us.

(Please check the top 5 that interest you)

Check here		Check here		Check here	
	Administrative		Education/Outreach		Construction Projects
	Mailings		Hosting/Special Events		Painting
	Filing		Phone Calls		Carpentry
	Phone Calls		Interpretive Programs		Signs
	Minute Taking		Visitor Greeting		
	Library		Public Relations		Grounds and Maintenance
	Slide Cataloguing		Childrens Outreach Programs		Beach Cleanup
	Computer Work		Posting of Flyers		Trail Work
	Coordinating Volunteers				Grounds Maintenance
			Graphic Arts		Building Maintenance
	Resource Protection		Photography		Individual Cleanups
	Piping Plover/Tern Patrol		Design and Layout of Materials		Gardening/Landscaping
	Other Surveys		Sign Making for Special Events		
			Illustrations		Research
	Fund Raising				

- Continued on back -

What kind of time commitment are you interested in making?

A) 10 or less hours per week

B) 10 or more hours per week

C) As needed for special events

D) Other _____

Please list any previous experience you feel would be relevant (volunteer and/or paid):

Other interests and talents:

Is there anything else we forgot to ask that you would like to tell us about?

How did you hear about the volunteer opportunities at Waquoit Bay NERR?

Is there anything in particular you hope to gain from working as a volunteer at WBNERR?

WBNERR Staff Use:

Interview Conducted By: _____ Date: _____

Training: _____ Date: _____

J.15: WBNERR Volunteer Sign-in Sheet

Waquoit Bay National Estuarine Research Reserve

VOLUNTEER SIGN IN SHEET

Name	Year:
-------------	--------------

[illegible]

Comments

K: 312 Report: Summary of Program Suggestions

November 2004

- Although the two programs work well together, CZM and WBNERR are encouraged to take a more strategic approach to coordination and continue to ensure the science meets manager's needs and research supports management and improved decision-making statewide.
- The CZM should work with coastal communities to build enhanced awareness and increase local protection of Areas of Critical Environmental Concern (ACEC) and continue enhancements to ACEC boundaries.
- The CZM should continue to enhance its Coastal Nonpoint Pollution Control Program (CNPCP), and should continue to address important sources of nonpoint pollution, including failing septic systems.
- The CZM is encouraged to integrate the goals of the Wetlands Restoration Program into existing CZM programs.
- WBNERR should continue to work with state partners to assure Waquoit Bay watershed land acquisition priorities are addressed and included in the Massachusetts Coastal and Estuarine Land Conservation Program (CELP) plan and the WBNERR management plan.
- WBNERR should analyze future facility needs and incorporate these needs into a revised WBNERR facilities plan.
- The DCR should consider funding other WBNERR positions or utilities and maintenance costs so that NOAA award funding could be used for programs and projects.
- WBNERR and DCR should agree on a staffing and hiring plan (based on needs identified in WBNERR's management plan) to address deficiencies in personnel needs. WBNERR and DCR Human Resources should explore opportunities to increase interaction between staff and increase effectiveness of communication.
- DCR should provide WBNERR with the necessary means to fill seasonal positions in an expedient manner so that the Reserve can take advantage of hiring the best and brightest summer interns.
- DCR should modify the approval process to ensure timely acquisition of equipment and supplies, especially since such equipment and supplies requests have already been approved through the annual NOAA grants process. Within three months of receiving the final Findings, DCR should submit a strategy to NOAA for addressing this issue.
- DCR and WBNERR should develop a plan to address issues that have been problematic in the past, specifically: Reserve placement within the agency, staffing, equipment and supply needs, communication and visibility, and overall support and recognition from parent agency. A plan should be submitted to NOAA within six months of receiving final findings.

L: MOU between NOAA and Massachusetts Department of Conservation and Recreation

MEMORANDUM OF UNDERSTANDING BY AND BETWEEN THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION AND THE COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

DETAILING THE STATE-FEDERAL ROLES IN THE MANAGEMENT OF THE WAQUOIT BAY NATIONAL ESTUARINE RESEARCH RESERVE

This Memorandum of Understanding (MOU) by and between the National Oceanic and Atmospheric Administration (NOAA), Office of Ocean and Coastal Resource Management (OCRM), 1305 East-West Highway N/ORM, Silver Spring, Maryland, 20910, and the Commonwealth of Massachusetts, Department of Conservation and Recreation, 251 Causeway Street, Boston, MA 02114 (DCR) shall serve to establish the framework for coordination, cooperation and communication regarding the Waquoit Bay National Estuarine Research Reserve (WBNERR or Reserve).

WHEREAS, NOAA designated WBNERR as a National Estuarine Research Reserve (NERR) in 1988 pursuant to its authority under Section 315 of the Coastal Zone Management Act of 1972, as amended, (CZMA, P.L. 92-583, 16 U.S.C. 1461) and in accordance with implementing regulations at 15 CFR 921.30, for the purpose of creating a natural field laboratory in which to gather information by promoting and conducting scientific studies of the natural and human processes occurring along Massachusetts' coastline to: contribute to the science of estuarine ecosystem processes; enhance the quality of environmental education; and provide the technical information essential to effective coastal zone management to ensure the protection of estuarine ecosystems throughout Massachusetts and the United States; and

WHEREAS, DCR determined that the waters and related coastal habitats of the estuarine ecosystem of WBNERR provide opportunities to study a relatively undisturbed natural estuarine ecosystem and the natural and human processes occurring along the Massachusetts coastline; and

WHEREAS, WBNERR has an established program that has been recognized at the state and federal levels for achievement in accomplishing both state and federal goals of natural resource protection through environmental education, scientific research, and on-site resource management practices; and

WHEREAS, DCR and NOAA have found that the value of the natural and cultural resources of the Waquoit Bay estuary to the citizens of Massachusetts and the United

States benefit from the management of this site as part of the National Estuarine Research Reserve System (NERRS); and

WHEREAS, DCR, as the responsible agency of the Commonwealth of Massachusetts for the management of WBNERR, and NOAA, as the responsible federal agency for the national administration of the NERRS, acknowledge the value of establishing federal-state cooperation in the long-term management of this Reserve in a manner consistent with the purposes of their designation; and

WHEREAS, the Management Plan for WBNERR describes the goals, objectives, plans, administrative structure, and institutional arrangements for this Reserve, including this MOU and others;

NOW, THEREFORE, in consideration of the mutual agreements contained herein, DCR and NOAA agree, contingent on the availability of legislative funding from the Commonwealth of Massachusetts and the Congress of the United States, respectively, as follows:

ARTICLE 1: STATE-FEDERAL ROLES IN RESERVE MANAGEMENT

A. DCR Responsibilities in Reserve Management

The DCR shall:

Be responsible for compliance with federal law and regulations of the NERRS, and goals and objectives of the Reserve's Management Plan;

Ensure that the Reserve's Management Plan and annual work plans are consistent with the provisions of the CZMA;

Be responsible for the administration and on-site management of the Reserve;

Assume the responsibility of managing the Reserve with advisory input from the Reserve's Advisory Committee and any ad hoc subcommittees that may be established to address scientific research, environmental education, or on-site management;

Ensure protection of the natural and cultural resources of the Reserve, and ensure enforcement of the provisions of state law, including the rules and regulations of the Massachusetts Coastal Zone Management Program;

Annually apply for, budget, and allocate funds received for scientific research and environmental monitoring, environmental education, public land acquisition, general program operations, and the construction of Reserve facilities;

Coordinate and conduct active research and monitoring programs at the Reserve with scientists from a variety of institutions to obtain a better understanding of the ecology of

the Reserve's ecosystem for application to the improved manageability of the Reserve, similar coastal ecosystems, and the NERRS;

Disseminate the information gathered through scientific research to environmental regulators, local school systems, the general public, and any other interested parties;

Maintain state funding for the facilities and staff required to implement the provisions of the Reserve's Management Plan, such as: field research laboratories; classrooms for environmental education; libraries; administrative offices; interpretive displays; equipment; storage space; and staff to perform the duties related to the management of the Reserve;

Maintain liaison with local, regional, state, and federal policy makers, regulators, and the general public;

Seek partnerships for the protection of the natural and cultural resources of the Reserve with residents, commerce, industry, property owners, adjacent landowners, government agencies at the local, state, and federal levels, and any other appropriate parties;

Provide for public recreational uses that are compatible with natural and cultural resource protection; and

Respond to NOAA's requests for information and respond to evaluation findings made pursuant to Sections 312 and 315 of the CZMA.

B. Federal Role in Reserve Operation

The Office of Ocean and Coastal Resource Management will serve to administer the provisions of Section 315 of the CZMA to ensure that the Reserve operates in accordance with the goals of the NERRS and the Reserve's Management Plan. These responsibilities are subject to the availability of appropriated funds. In carrying out its responsibilities, OCRM will:

Review and process applications for financial assistance from DCR and other eligible entities, consistent with 15 CFR Part 921 for the operation of the Reserve and acquisition, development, management, education, research and monitoring programs for the benefit of the Reserve, provided however, that this agreement does not create any obligation on the part of OCRM to award financial assistance;

Make periodic evaluations in accordance with Sections 312 and 315 of the CZMA to measure DCR's performance in Plan implementation;

Advise DCR of existing and emerging national and regional issues; and

Establish an information exchange network cataloging all available research data and educational material developed on each Reserve included within the NERRS.

C. General Provisions

Nothing in this agreement or subsequent financial assistance awards shall obligate any party in the expenditure of funds, or for future payments of money, in excess of appropriations authorized by law.

Both parties agree to comply with all applicable federal or State laws regulating ethical conduct of public officers and employees.

Each party will comply with all applicable laws, regulations, and executive orders relative to Equal Employment Opportunity.

Upon termination of this agreement or any subsequent financial assistance awards, any equipment purchased for studies initiated in furtherance of this agreement will be returned to the agency of initial purchase.

A free exchange of research and assessment data among agencies is encouraged and is necessary to insure the success of these cooperative studies.

D. Other Provisions

Nothing in this MOU diminishes the independent authority or coordination responsibility of each agency in administering its statutory obligations. Nothing herein is intended to conflict with current agency directives. If the terms of this MOU are inconsistent with existing directives of any agency entering into this agreement, then those portions, which are determined to be inconsistent, shall be invalid; but the remaining terms not affected by the inconsistency shall remain in full force and effect. At the first opportunity for review of this agreement, all necessary changes will be made by either an amendment to this MOU or by entering into a new MOU, whichever is deemed expedient to the interest of both parties. Should disagreement arise on the interpretation of the provisions of this MOU, or amendments and/or revisions thereto, that cannot be resolved at the operating level, the area(s) of disagreement shall be stated, in writing, by each party and presented to the other party for consideration.

ARTICLE II: REAL PROPERTY ACQUIRED FOR THE PURPOSE OF THE RESERVE

As well as agreeing to adhere to the rest of the provisions set forth at 15 CFR Part 921, DCR agrees to the conditions set forth at 15 CFR 921.21(e), which specify the legal documentation requirements concerning the use and disposition of real property acquired for Reserve purposes with Federal funds under Section 315 of the CZMA.

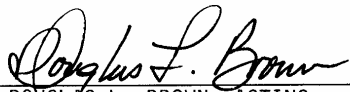
ARTICLE III. PROGRAM EVALUATION

OCRM will schedule periodic evaluations of DCR's performance in meeting the terms of financial assistance awards, in implementing the Reserve's Management Plan and in meeting the provisions of this MOU. Where findings of deficiency occur, NOAA may initiate action in accordance with the designation withdrawal procedures established by the CZMA and applicable regulations.

ARTICLE IV. EFFECTIVE DATE, REVIEW, AMENDMENT AND TERMINATION

This MOU is effective on the date of execution and replaces the previous MOU with the Commonwealth of Massachusetts dated August 1, 2000. The MOU will be reviewed periodically. This MOU may be amended by the mutual consent of the parties. This MOU may be terminated by mutual consent of the parties, or by NOAA if it withdraws designation of Waquoit Bay as a NERR, pursuant to applicable provisions of the CZMA and its implementing regulations as described under 15 CFR Part 921 Subpart E. Should this MOU be terminated, reimbursement of unexpended funds shall be determined on a pro rata basis according to the amount of work done by the parties at the time of termination.

IN WITNESS THEREOF, the parties hereto have caused this MOU to be executed.



DOUGLAS L. BROWN, ACTING
DIRECTOR
OFFICE OF OCEAN AND COASTAL
RESOURCE MANAGEMENT
NATIONAL OCEAN SERVICE
NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE



STEPHEN H. BURRINGTON
COMMISSIONER
DEPARTMENT OF CONSERVATION
AND RECREATION
COMMONWEALTH OF
MASSACHUSETTS

5/10/06

Date

3/23/06

Date

M: MOU between the Town of Mashpee and the Commonwealth of Massachusetts regarding South Cape Beach

AMENDED AGREEMENT

Agreement entered into this 29 day of June in the year 1981, by and between the Town of Mashpee and the Commonwealth of Massachusetts acting through the Commissioner of the Department of Environmental Management (DEM) pursuant to Chapter 1058 of the Acts of 1971, as amended whereby DEM is authorized to acquire by gift, purchase or eminent domain South Cape Beach in the Town of Mashpee.

WHEREAS, the aforementioned parties entered into an agreement dated September 22, 1980 by substituting in its entirety therefor this Amended Agreement and all the provisions, covenants, and condition wherein contained.

IN CONSIDERATION OF the mutual covenants herein contained and expressed and for other good and valuable consideration the parties mutually covenant and agree as follows:

- (1) That development and use of the park shall be limited to bathing, sunning, hiking, fishing, nature interpretation, non-motorized biking, and associated passive enjoyment through recreational use consistent with the fragile ecology of the site, which shall expressly exclude overnight camping, and private vehicles, except only as provided for in paragraph (4) below. Any proposed recreational use not specified in this paragraph shall first be submitted to South Cape Beach Advisory Committee for its review and recommendation.
- (2) That all park facilities will be designed, sited and maintained so that they do not harm the natural and scenic qualities of the area. The Executive Order for Barrier Beaches of Governor Edward J. King signed August 8, 1980, (attached as "Exhibit A") shall be incorporated by reference into this Agreement and the Department will undertake to enforce all its provisions throughout the area designated as South Cape Beach State Park
- (3) That the Department will manage the fragile wetland, dune and upland areas of the site to prevent erosion and to preserve critical habitat and the area's natural scenic qualities. Local ordinance and bylaws now effective will be incorporated into and made part of the park's rules and regulations and shall govern and control, provided no legal conflict exists. No park rule or regulation will permit an activity or use otherwise prohibited by the rules, regulations and bylaws of the Town of Mashpee in existence as of the date of execution of this Agreement.
- (4) That the Department may allow vehicle access to designated service roads for the sole purpose of access to fishing areas to persons over sixty years of age, those suffering from ambulatory disabilities, or holding disabled veteran status. Said access shall be by permit only, restricted to a maximum of six vehicles at any one time, and such travel shall be allowed only between the hours of sunset and sunrise. Such vehicles shall be limited to designated ways and shall in no circumstances be driven off the designated route onto sand or other unimproved terrain or used for overnight stays. Any violations of the permit provisions shall, upon finding of violation by the South Cape Advisory Committee, cause the revocation of said permits.

- (12) That any specific taking by eminent domain would be considered only when efforts for a negotiated purchase have failed despite due diligence by the Department to reach a settlement; or when title to the land in question is of such unmarketability that remedial title action would be impractical.
- (13) That the Mashpee Board of Selectmen will grant the Department eminent domain authority by appropriate vote for the purpose of acquisition of the proposed South Cape Beach State Park.
- (14) That as a result of the proposed development of the Park, it may be necessary for the Department to acquire all municipally owned lands within the proposed boundaries of the Park. These lands include the existing town beach, a portion of Great Oak Road and other isolated parcels standing in the name of the Town of Mashpee.
- (15) That such acquisition of town owned lands would be in the form of land exchange in which the Town would received from the Commonwealth land of equal value adjacent to the existing town beach. In conjunction with any exchange, the Department will make improvements to Great Oak Road, from its intersection with Red Brook Road all the way to the Beach. In addition, the Department will assume costs associated with the relocation of the town beach, including the cost of a new access road, parking areas and necessary fencing and other essential improvements. Said town beach will be to the east of the state beach in the area of Great Flat Pond and shall consist of approximately 30 acres and shall have an ocean frontage of approximately 1700 linear feet. (Map attached and incorporated by reference "Exhibit B").
- (16) That the town regards as recreation/conservation lands, all properties which may be transferred to the Department in any land exchange in conjunction with the establishment of the Park.
- (17) That the Department will reserve a suitable site on Great River, Waquoit Bay for future use and development by the Town of Mashpee for construction for a boat launch/pier facility, the metes and bounds to be mutually agreed upon by the Town of Mashpee and the Department. The area, or site, is to be no less than 10 acres with access to and from Wills Work Road. The Department will construct an improved access road to said facility and will seek on behalf of the Town of Mashpee such state funds that are available for municipal boat launching facilities. In furtherance of the above, the Department will initiate and support legislation transferring title of said site to the Town of Mashpee. In the event such legislation fails of passage, the Department will lease such land to the Town of Mashpee for a period of ninety-nine years for nominal consideration of one dollar.
- (18) That the Department shall at all times continue to recognize a South Cape Beach State Park Advisory Committee comprised of eleven (11) voting members and four (4) ex-officio, non-voting members. The voting membership of the Committee shall consist of the following eight (8) residents of or representatives for the Town to be appointed by the Board of Selectmen of the Town, and one (1) resident of or representative for the Town of Sandwich,

CERTIFICATE OF VOTE

At a meeting of the Board of Selectmen of the Town of Mashpee, Barnstable County, in the Commonwealth of Massachusetts, said meeting being held on July 15, 1981, having been duly called and a quorum being present and voting, upon motion duly made and seconded, it was,

VOTED: That the Commissioner of Environmental Management be, and is hereby authorized, pursuant to the provisions of Chapter 132A, Sections 3 and 3A of the General Laws, and Chapter 1058 of the Acts of 1971 as amended to acquire by eminent domain all that land as shown on a two sheet plan entitled, "Plan of Land-South Cape Beach - Mashpee, Mass. - prepared for Dept. of Environmental Management - Scale 1" = 200' Feb. 16, 1976 - Briggs Engineering & Testing Co.", on file with said Department, provided however, that no land owned by the Town of Mashpee shall be taken. The approval and vote hereunder is expressly subject to and conditional upon the full performance and compliance by both the Commonwealth of Massachusetts and the Department of Environmental Management of the terms, promises, covenants and conditions all of which are included and incorporated into a written agreement entitle "Amended Agreement" dated June 29, 1981 between the Town of Mashpee and the Commonwealth of Massachusetts acting through the Commissioner of the Department of Environmental Management, a copy of which agreement is attached hereto, incorporated and made part of the Certificate of Vote; the approval and vote hereunder is also expressly conditional upon the passage of Legislation by the General Court of the Commonwealth incorporating and adopting all the terms, provisions, conditions and restrictions contained in the agreement dated June 29, 1981. The Board of Selectmen reserve to itself the unconditional right to rescind and cancel the within vote for breach of any of the conditions above stated.

(Signed by Mashpee Board of Selectmen)

N: MOU Concerning Cooperation and Coordination with Regard to the Mashpee National Wildlife Refuge

MEMORANDUM OF UNDERSTANDING

AMONG

THE U.S. FISH AND WILDLIFE SERVICE

AND

THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL MANAGEMENT/
THE WAQUOIT BAY NATIONAL ESTUARINE RESEARCH RESERVE

AND

THE MASSACHUSETTS DIVISION OF FISHERIES AND WILDLIFE
AND

THE TOWN OF MASHPEE/ MASHPEE CONSERVATION COMMISSION

AND

THE TOWN OF FALMOUTH/ FALMOUTH CONSERVATION COMMISSION

AND

THE FALMOUTH ROD AND GUN CLUB INC.

AND

THE ORENDA WILDLIFE LAND TRUST

AND

THE MASHPEE WAMPANOAG INDIAN TRIBAL COUNCIL

INTRODUCTION

The importance of the Waquoit Bay, its tributaries, and watershed area has long been recognized by the Towns of Mashpee and Falmouth, the Commonwealth of Massachusetts, conservation groups and the Mashpee Wampanoag Indian Tribal Council. Mashpee and Falmouth have protected lands within the watershed by fee title purchase and by creating open space by use of conservation restrictions and easements. The Commonwealth of Massachusetts has protected a significant amount of the watershed area around the Quashnet River by fee title purchase. In 1988, the Commonwealth of Massachusetts and the National Oceanic and Atmospheric Administration (NOAA) jointly established the Waquoit Bay National Estuarine Research Reserve in Falmouth. Most recently, the U.S. Fish and Wildlife Service established a National Wildlife Refuge which encompasses all these existing protection efforts. In addition, the Refuge provides a boundary within the watershed for future protection efforts.

This Memorandum of Understanding provides a formal basis for cooperation and coordination between the U.S. Fish and Wildlife Service, the Mass. Division of Fisheries and Wildlife, the Massachusetts Department of Environmental Protection/Waquoit Bay National Estuarine Research Reserve, the Town of Mashpee/the Mashpee Conservation Commission, the Town of Falmouth/the Falmouth Conservation Commission, the Falmouth Rod and Gun Club Inc., the Orenda Wildlife Land Trust and the Mashpee Wampanoag Indian Tribal Council for matters pertaining to Mashpee National Wildlife Refuge (NWR) in Mashpee and Falmouth. Although the responsibilities of the undersigned concerning Mashpee NWR are different, there are complimentary functions and areas of common interest that permit and would benefit from cooperation, coordination, and joint endeavors.

RESPONSIBILITIES AND AREAS OF COOPERATION

1. By this Memorandum of Understanding, it is agreed that the undersigned will establish a Management Committee. This Management Committee will be composed of representatives from each of the signatories (partners) and will meet regularly to discuss refuge related issues of mutual interest and to explore appropriate areas of cooperation. All partners will retain whatever ownership and management rights of the lands they may currently have under their jurisdiction.
 - a. The Management Committee's role will be coordination and cooperation between the signatory partners.
 - b. The Management Committee will establish its own ground rules and operational logistics (ex., decision making through the process of consensus).

2. The U.S. Fish and Wildlife Service will consult with all partners in the development of the National Wildlife Refuge Management Plan, and in periodic review and updates of the Management Plan.
3. All partners will coordinate and cooperate in program development including education, research, public relations, outreach, public safety, maintenance and recreational opportunities.
4. All partners agree that existing long standing management activities, on lands owned by the respective partners shall be allowed to continue.
5. All partners will consult with the Management Committee before implementing new management activities.
6. All partners will provide the resource management necessary to:
 - a. Perpetuate the native fauna and flora, including federal and state listed species, within the boundaries of Mashpee NWR.
 - b. Provide compatible uses of the resources, including wildlife dependent recreational uses such as hunting, fishing, trapping and nature studies.
7. All partners will continue to cooperate in the law enforcement activities on lands for which they are responsible.
8. All partners will encourage the joint publication of studies, press releases, and grant proposals.
9. All partners agree to focus and coordinate land and water protection efforts within the Mashpee NWR boundary.
10. All partners are encouraged to be proactive in appraising and acquiring land within the Mashpee NWR boundary as it becomes available. Land acquisition shall not be limited to any one partner.
11. All partners agree to share staff expertise and labor as feasible for the benefit of the land management and protection program within the boundaries of Mashpee NWR. All partners also agree to enter into working arrangements, as appropriate for the use of lands, buildings, and other facilities owned and operated by signatories, for special projects.
12. Nothing in this Memorandum of Understanding shall be construed as obligating any of the partners hereto to the expenditure of funds.
13. Nothing contained herein shall be construed as limiting in any way the responsibility and authority, as defined by law, of any of the partners, in connection with the administration and protection of lands and resources under their respective administrations.

14. Additional parties holding fee title to permanently restricted conservation land(s) within the Mashpee NWR boundary may be added as partners.

EFFECTIVE DATE, DURATION, AND TERMINATION

This Memorandum of Understanding shall become effective when signed by the partners hereto. It shall continue in effect for three years unless extended through written agreement by all participating partners. All partners will review this Memorandum of Understanding annually. Should amendments or revisions to the Memorandum of Understanding be needed, such changes or adjustments may be made promptly, or at this annual review, by consent of all partners. This Memorandum of Understanding will be automatically renewed upon the end of the three year period pending approval from all partners. Any signatory partner may terminate their participation in this Memorandum of Understanding by providing 30 days written notice to all other partners.

Cathy Drost
Regional Director
U.S. Fish and Wildlife Service

4/19/95
Date

Ken C. Brown, Acting Secretary
Secretary, Executive Office of
Environmental Affairs

4/19/95
Date

John C. Chubb
Commissioner, Department of Environmental
Management/
Waquoit Bay National Estuarine Research Reserve

4/19/95
Date

John B. ...
Commissioner, Department of Fisheries, Wildlife
and Environmental Law Enforcement

4/19/95
Date

John B. ...
Director, The Massachusetts Division
of Fisheries and Wildlife

4/19/95
Date

...
Board of Selectmen
Town of Mashpee

4/19/95
Date

...
Board of Selectmen
Town of Falmouth

4/19/95
Date

Stephen L. Baker
President, The Falmouth Rod and Gun
Club Inc.

4/19/95
Date

...
President Orenda Wildlife Land Trust

4/19/95
Date

George ...
President, The Mashpee Wampanoag
Indian Tribal Council

4/19/95
Date

O: Letter of Agreement between the Massachusetts Department of Fisheries and Wildlife (DFW) and the Massachusetts Department of Environmental Management (DEM) to add the Quashnet Woods Property to the Boundary of the Waquoit Bay NERR



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

100 CAMBRIDGE STREET, BOSTON, MA 02202
PHONE 617-973-8700 FAX 617-973-8798
www.state.ma.us/dem



July 5, 2000

Argeo Paul Cellucci
GOVERNOR

Jane Swift
LIEUTENANT GOVERNOR

Bob Durand
SECRETARY

Peter C. Webber
COMMISSIONER

Wayne MacCallum, Director
Division of Fisheries and Wildlife
100 Cambridge Street, 19th Floor
Boston, MA 02202

Dear Wayne:

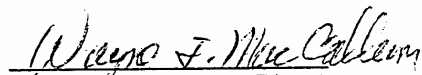
For several years the Massachusetts Department of Environmental Management (DEM) and the Massachusetts Department of Fisheries, Wildlife and Environmental Law Enforcement (DFWELE), Division of Fisheries and Wildlife (DFW) have jointly owned and managed the Quashnet River Property. As outlined in the July, 1988 Memorandum of Understanding between DEM and DFWELE, DFW has primary management responsibility for the DFW owned river banks. DEM's Waquoit Bay National Estuarine Research Reserve (WBNERR) has primary responsibility for the rest of the property.

For the past several years local staff from WBNERR and DFW have coordinated efforts on projects that affect the entire property. Projects have included interpretive and educational activities, a trail system and resource protection efforts.

This agreement would terminate any previous Memorandum of Understanding and add the entire Quashnet Woods Property to the boundary of DEM's Waquoit Bay NERR. Under this agreement the property would continue to be managed in the same way subject to the provision that all activities must be in accordance with the Federal National Estuarine Research Reserve (NERR) regulations, 15 CFR Part 922. The inclusion of this property within the Reserve boundaries would in no way diminish the coordination responsibility of each agency. Each agency would continue to own and manage their lands as always, subject to the provision that all activities must be in accordance with the Federal NERR regulations. Current hunting or fishing practices and other activities important to DFW would continue. Field staff from the two agencies would continue to communicate and coordinate with each other. Any specific changes would have to be mutually agreed upon and in accordance with the Federal NEER regulations.

Expanding the WBNERR boundary to include the Quashnet River property would allow the Reserve/DEM to use Federal funds there. The Reserve staff would work cooperatively with DFW staff to conduct research and educational activities and develop appropriate stewardship and wildlife habitat programs. As an example, funds might thus become available for the ongoing river restoration work supported by DFW and Trout Unlimited. The inclusion of this land within Reserve boundaries, making DFW a management partner, would also give DFW an opportunity to have input into Reserve research priorities, increasing the likelihood that the research will be pertinent to your management issues. Signature below constitutes agreement with the above.


Todd A. Frederick, Director
MA Dept. of Environmental Mgmt.


Wayne MacCallum, Director
MA Dept. of Fisheries & Wildlife

DATE: 8/8/00

DATE: 8/11/00

P: Memorandum of Agreement between Massachusetts Department of Conservation and Recreation Waquoit Bay National Estuarine Research Reserve and Town of Mashpee Regarding South Cape Beach Salt Marsh Restoration Project

Memorandum of Agreement

Between

Massachusetts Department of Conservation and Recreation
Waquoit Bay National Estuarine Research Reserve
And
Town of Mashpee

Regarding

South Cape Beach Salt Marsh Restoration Project

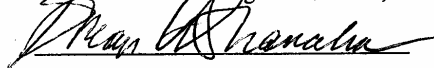
Through this agreement, the Waquoit Bay National Estuarine Research Reserve (WBNERR) and the Town of Mashpee each recognize the other's contributions toward improving the natural resources of Waquoit Bay, by restoring salt marsh at the South Cape Beach project site. Under this agreement the Town of Mashpee agrees to support WBNERR in pursuing this project and WBNERR agrees to continue its efforts to lead the team of partners to implement the South Cape Beach Salt Marsh Restoration Project.

The Town of Mashpee authorizes the WBNERR led project team to implement this project, including replacement of the culvert under the South Cape Beach road and deepening of the salt marsh channel, on property owned by the Town. The Town of Mashpee agrees to participate in the process by providing a liaison to the project team for the purpose of assisting in project development, coordination and implementation in any way it is able. This may include reviewing and authorizing engineering designs, advancing applications for local, state and federal project permits, and identification of reasonable in kind contributions by the town that will assist with acquisition of outside funding to support the project. WBNERR agrees that project related work will not require closure of the South Cape Beach Road during the "beach season" of May through September. Any necessary road closure will be limited to as brief a period as possible in the "off season" months of October through April.

This agreement is entered into this 20 day of November in the year of 2004.

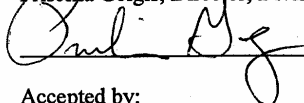
Recommended By:

Brian A. Shanahan, Regional Director, Southeast Mass State Parks, DCR

 11.12.2004

Approved By:

Priscilla Geigis, Director, Division of State Parks & Recreation, DCR



Accepted by:

, Town of Mashpee



Q: MOU between WBNERR and Citizens for the Protection of Waquoit Bay

MEMORANDUM OF UNDERSTANDING

Agreement made this _____ day of _____, 2005 by and between the Commonwealth of Massachusetts acting by and through its Department of Conservation and Recreation, (DCR), 251 Causeway Street, Boston, MA 02114 and the Citizens for the Protection of Waquoit Bay (CPWB), P.O. Box 3021, Waquoit, MA 02536, a Massachusetts non-profit corporation organized under M.G.L. Ch. 180.

WHEREAS the DCR is the owner and manager of the property known as the Waquoit Bay National Estuarine Research Reserve (WBNERR), with a property address at 149 Waquoit Highway, Waquoit, MA 02536, located in Falmouth and Mashpee, Cape Cod and is charged with the care and oversight for the natural, cultural and historic resources of the WBNERR and with the support of the Reserve's research, education, stewardship programs and quality recreational opportunities.

WHEREAS the CPWB wishes to support the mission of DCR by promoting the wise use of the natural and historical features of WBNERR in a manner consonant with its protection and preservation, through the provision of educational, cultural, scientific and civic activities at WBNERR.

NOW, THEREFORE in consideration of mutual covenants herein contained, the parties agree as follows:

- I. Responsibilities of the CPWB:
 - A. To promote the wise use of the natural, historical and recreational resource of WBNERR through the provision of research, monitoring, stewardship, educational, interpretive, cultural and recreation programs and activities.
 - B. To attract and organize volunteer assistance and public involvement at the WBNERR.
 - C. To solicit and receive donations for funding of research, monitoring, stewardship, education, interpretive, cultural, and recreational programs and activities related to WBNERR.
 - D. To provide the means for pursuing fundraising to promote improvements to WBNERR

- E. To accept donations, receive grants, acquire educational materials, acquire artifacts related to the WBNERR as well as additional WBNERR equipment and materials.
 - F. To manage those concessions requested and approved in writing by DCR.
 - G. To raise funds on WBNERR property to accomplish the purposes set forth herein, with prior approval of WBNERR.
- II. The CPWB will provide the DCR by January 30th each year with the following:
- A. The revenue and expenses statement, prepared by a Certified Public Accountant, of
the services managed by the CPWB for the preceding calendar year.
 - B. A report of the previous calendar year's activities and services of the CPWB. The
Report shall include a listing of the fund raising and promotional activities held.
 - C. A list of proposed major events for the upcoming year. Such list shall be delivered to WBNERR and DCR.
- III. The CPWB shall not make improvements or alterations (temporary or permanent) to the WBNERR land or buildings or post any permanent or temporary signs without receiving a Special Use Permit issued by DCR. Any improvements or alterations shall become the property of DCR.
- IV. The CPWB, its agents, employees and volunteers shall comply with all reasonable directives (written or verbal) from the DCR.
- V. The CPWB understands that it does not have, nor does this agreement imply, exclusive use of the WBNERR or any portion thereof.
- VI. The CPWB agree to notify DCR/WBNERR immediately of all incidents of emergency or unusual nature as a result of their use of the WBNERR.
- VII. The CPWB shall obtain written permission from the DCR/WBNERR to conduct all programs, activities, events or concessions not otherwise authorized by this agreement. A list of proposed programs, activities, events or concessions for the upcoming year authorized by this agreement shall be attached to this MOU.
- VIII. The CPWB shall not assign or transfer this agreement

- IX. The CPWB shall not store cash or receipts overnight at the WBNERR. All cash accounting and reconciliation at or after major events shall be conducted with no less than 2 board members present.
- X. The CPWB shall obtain public liability insurance policy in the minimum face amount of \$500,000/\$1,000,000. A certificate of insurance naming the DCR as an additional insured shall be presented to DCR upon the execution date of this agreement and each renewal period. Such insurance policy shall be maintained during the term of this agreement.
- XI. The DCR/WBNERR reserves the right to direct the CPWB to discontinue the use of any equipment, materials, actions or supplies that it deems unsafe or inappropriate for use at the WBNERR.
- XII. The CPWB shall comply with and encourage public compliance with the rules and regulations governing the public use of DCR properties.
- XIII. The CPWB by acceptance of this agreement assumes all liability for injuries, loss or damage or any cause of action that may arise in connection with their use or activities conducted by them at WBNERR. The CPWB hereby agrees to hold the Commonwealth of Massachusetts, their agents and employees harmless and indemnified from any and all claims or demands for damages, either in law or equity, arising out of or by virtue of their use or conducting activities at WBNERR.
- XIV. The CPWB agree that they are not to discriminate against anyone, for any reason, based upon race, religion, sex, ethnic background, age or place of domicile.
- XV. Any items or artifacts owned by the CPWB and placed on display or used in conjunction with any activity of the CPWB at the WBNERR shall remain the sole property of the CPWB unless a transfer of title is evidenced by a bill of sale or other appropriate documentation. CPWB hereby acknowledges that DCR is unable to carry insurance for said items, and therefore, CPWB agrees to assume liability and hold DCR harmless for any damage, loss, destruction, vandalism or other risk resulting to any such property retained at WBNERR.
- XVI. The parties agree to attempt to resolve disputes arising out of the exercise of this agreement. The CPWB agree to notify the WBNERR Director, in writing, of any problems or complaints. If said problem or complaint is not resolved to the satisfaction of the CPWB, then the DCR's Region 1 Supervisor shall be notified in a like manner. If satisfaction cannot be achieved at this level, then the CPWB shall notify the DCR's Director of State Parks and Recreation. The CPWB agrees to abide by the decision or determination of said Director.
- XVII. CPWB understands and agrees to inform its members that neither CPWB nor its members represent DCR or the Commonwealth of Massachusetts in their

activities or actions. This Agreement does not create any agency relationship and CPWB cannot represent themselves as representatives of the Commonwealth of Massachusetts.

- XVIII. Copies of any printed materials prepared for public distribution, such as program announcements, brochures, leaflets, maps or other form of publicity shall be sent to the Facility Supervisor for review prior to distribution.
- XIX. This agreement shall take effect on the date of execution by all parties and shall be in effect three years from that date.
- XX. Either party may cancel this agreement without cause by serving written notice by certified mail, return receipt requested, at the address listed in this paragraph, at least 90 days in advance of the effective date of cancellation. The DCR may at that time remove any and all personal property of the CPWB therefrom without being liable for trespass, conversion or other cause of action. The CPWB upon expiration or cancellation of this agreement, shall be responsible for leaving the WBNERR in a clean and neat condition, free of all damages resulting from their use of the WBNERR.

Citizens for the Protection of Waquoit Bay (CPWB)
PO Box 3021
Waquoit, MA 02536

DCR-WBNERR (State)
PO Box 3092
Waquoit, MA 02536

And copy to:
Director, Division of State Parks and Recreation
Department of Conservation and Recreation
251 Causeway Street
Boston, MA 02114

I hereby agree to the aforesaid terms and conditions:

Citizens for the Protection of Waquoit Bay, Inc.

By: _____
Michael O'Leary, President
Citizens for the Protection of Waquoit Bay

Priscilla Geigis, Director
Department of Conservation and Recreation
Division of State Parks and Recreation

Date

Date

Stephen H. Burrington, Commissioner
Department of Conservation and Recreation

Date

R: Agreement of Cooperation and Exchange between WBNERR and UMass-Boston

AGREEMENT OF COOPERATION AND EXCHANGE between THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (Waquoit Bay National Estuarine Research Reserve) and THE UNIVERSITY OF MASSACHUSETTS, BOSTON (Department of Environmental, Coastal and Ocean Sciences, and Urban Harbors Institute)

The Waquoit Bay National Estuarine Research Reserve (WBNERR) of the Massachusetts Department of Environmental Management (DEM) and the Department of Environmental, Coastal, and Ocean Sciences (ECOS) and the Urban Harbors Institute (UHI) at the University of Massachusetts, Boston (UMB) hereby agree to establish a framework for the development of cooperative initiatives based on the principle of equality and mutual benefit that will include staff/faculty and student exchanges, collaborative research activities, joint curriculum and course development, administration of funds, and special programs to address the research, education, and outreach needs of the National Estuarine Research Reserve System (NERRS) and the University of Massachusetts, Boston.

To promote this objective, each institution will stimulate awareness among its faculty, staff, and students of the environmental research, education, and outreach activities potentially available as a result of this cooperative agreement. Possible new initiatives include, but will not be limited to:

- Establishing an exchange of staff/faculty and students, through adjunct faculty positions and student internships or projects.
- Facilitating study and training programs that involve the faculty/staff at both institutions, including the development of:
 - Specialized curriculum and courses that cross disciplines and promote the sharing of knowledge and experiences; and
 - Integrated workshops that focus on understanding and managing human impacts on linked watershed and coastal systems.
- Conducting collaborative research and coastal monitoring activities, and sharing analytical facilities and data.
- Administering, when appropriate, the exchange of extramural funds that may be associated with the above activities or new initiatives.

Toward the accomplishment of these objectives, DEM's Waquoit Bay National Estuarine Research Reserve and UMB's Department of Environmental, Coastal, and Ocean Sciences and Urban Harbors Institute will develop a time-frame and strategic plan for

action which will be approved in writing by DEM and UMB. WBNERR and ECOS/UHI will also serve as the mechanism through which all communications and initiatives will be channeled and coordinated for the two institutions.

Any grant application submitted by WBNERR as applicant or co-applicant under this agreement that is to be administered by DEM must be approved by DEM's grant coordinator.

By signing this agreement, UMB accepts complete liability for the actions or omissions of its employees, agents and invitees while present upon DEM property and agrees to indemnify and hold the DEM, its agents and employees harmless against any and all claims, actions, loss, damage, liability and expense, including loss of life, personal injury or damage to property, that may arise with regard to the activities permitted herein.

Each party reserves the right to terminate this agreement by delivering 60 days written

notice to the other party. In witness whereof, we have here onto set our hands and seals

thisday ofof the year Two Thousand and One.

Arthur MacEwan,
Vice Chancellor for Academic Affairs
and Provost
University of Massachusetts, Boston

Peter Webber,
Commissioner
Massachusetts Department of
Environmental Management

S: Interdepartmental Service Agreement between Executive Office of Environmental Affairs (DCR) and the University of Massachusetts, Boston

Issued 5/2001

COMMONWEALTH OF MASSACHUSETTS INTERDEPARTMENTAL SERVICE AGREEMENT FORM



This form is issued and published by the Office of the Comptroller (CTR) pursuant to 815 CMR 6.00 for use by all Commonwealth Departments. Any changes to the official printed language of this form shall be void. This shall not prohibit the addition of non-conflicting terms. By executing this Interdepartmental Service Agreement (ISA), the Buyer and Seller Departments, under the pains and penalties of perjury, make all certifications required by law and certify compliance with the following requirements: that the Seller Department is qualified and shall at all times remain qualified to perform this ISA; that performance shall be timely and meet or exceed ISA standards, including obtaining requisite licenses, permits and resources for performance; that the Buyer and Seller are legislatively authorized to enter into this ISA; that the Buyer and Seller Departments agree to maintain the necessary level of interdepartmental communication, coordination and cooperation to ensure the successful completion of the ISA; that the Buyer certifies that sufficient funds are available for this ISA; that the Seller Department is required to provide reports as specified in the ISA; that the terms of this ISA shall survive its termination for the purpose of resolving any claim, dispute or other action, or for effectuating any negotiated representations and warranties; that the Buyer and Seller agree that all terms governing performance of this ISA are attached to this ISA or incorporated by reference herein, including the Interdepartmental Service Agreement Instructions, all relevant Massachusetts state and federal laws, regulations, Executive Orders, treaties, and any corresponding policies and procedures issued by CTR; and that the Buyer and Seller are responsible for reviewing and complying with the Interdepartmental Service Agreement Instructions and ISA Policy and 815 CMR 6.00 available under Comptroller Policy Memo #306 (or as amended) available at www.state.ma.us/osc/Accounting/mimemos/memo3.htm.

MMARS DOCUMENT ID: _____	
BUYER DEPARTMENT: CONSERVATION + RECREATION MMARS 3-POSITION DEPARTMENT CODE: D C R	SELLER DEPARTMENT: UMASS-BOSTON MMARS 3-POSITION DEPARTMENT CODE: U M S
ISA MANAGER: VAIRA HARIK	ISA MANAGER: _____
PHONE: 508-457-0495 x100	PHONE: _____
FAX: 617-727-5537	FAX: _____
E-MAIL ADDRESS: VAIRA.HARIK@STATE.MA.US	E-MAIL ADDRESS: _____
BUSINESS MAILING ADDRESS: _____	BUSINESS MAILING ADDRESS: 100 MORRISSEY BLVD, BOSTON MA 02425
COMPENSATION: (Check and complete all that apply) <input type="checkbox"/> Single Fiscal Year Financial ISA <input checked="" type="checkbox"/> Multiple Fiscal Year Financial ISA Total Maximum Obligation for Duration of this ISA: \$ \$36,000 Transaction Amount for current fiscal year obligation: \$ _____	TRANSACTION DOCUMENTATION ATTACHED: (Check option that applies) <input type="checkbox"/> ASTA Form (when required to establish new Child Account) <input checked="" type="checkbox"/> AC Transaction (for total of current fiscal year obligation) <input checked="" type="checkbox"/> SC Transaction (for total duration of ISA, including outyears. Only allowable if Seller is a Higher Education State Department) <input type="checkbox"/> Other (only upon prior approval of CTR)
BUYER ACCOUNT INFORMATION (complete as many that apply) Parent Account: _____ Fund: _____ TO: _____ Parent Account: _____ Fund: _____ TO: _____ Parent Account: _____ Fund: _____ TO: _____ Parent Account: _____ Fund: _____ TO: _____	
SELLER ACCOUNT INFORMATION (complete as many that apply) Child Account: OFF MMARS Fund: _____ Child Account: _____ Fund: _____ Child Account: _____ Fund: _____ Child Account: _____ Fund: _____	
BRIEF DESCRIPTION OF PERFORMANCE: (Reference to attachments without a narrative description of performance is insufficient.) LAB SERVICES TO CARRY OUT BASIC NUTRIENT ANALYSIS ON MONTHLY WATER SAMPLES RFR REFERENCE NUMBER: (If Seller responded to a Buyer RFR or "N/A" if not applicable) MA	
ANTICIPATED ISA EFFECTIVE START DATE: Performance shall begin on 7/1/05 , which shall be no earlier than the latest date this ISA is signed by authorized signatories of the Buyer and Seller Departments pursuant to 815 CMR 6.00.	
TERMINATION DATE OF THIS ISA: This ISA shall terminate on 7/1/08 unless terminated or amended by mutual written agreement by the parties prior to this date pursuant to 815 CMR 6.00.	
AUTHORIZING SIGNATURE FOR THE BUYER DEPARTMENT: X: (Signature of Buyer Department's Authorized Signatory) DATE: 8/8/05 (Date must be handwritten at time of signature) NAME: TRISCILLA GETOIS	AUTHORIZING SIGNATURE FOR THE SELLER DEPARTMENT: X: (Signature of Seller Department's Authorized Signatory) DATE: 7/19/05 (Date must be handwritten at time of signature) NAME: Richard F. Antonak

TITLE: **DIR STATE PARKS & RECREATION**

Page 1. of 3. TITLE: **Vice Provost for Research**

INTERDEPARTMENTAL SERVICE AGREEMENT FORM

MMARS DOCUMENT ID: _____



ATTACHMENT A - DESCRIPTION OF PERFORMANCE:

Check one: ☒ Initial ISA Description of Performance
☐ Amendment to Description of Performance

Include a statement of purpose; justification for ISA; responsibilities of the parties; any relevant definitions; a schedule of performance or completion dates if applicable; resources to be committed to the ISA and any reporting requirements. Reference to attachments without a narrative description of performance is insufficient. If amending the description of performance, identify what performance is being amended. Attach any supporting documentation and reporting requirements. This Attachment Form must be used. Insert (type or copy and paste) all relevant information using as many pages as necessary. An electronic copy of this form is available in Policy Memo #306 under Comptroller Policy Memos.

As part of the mandated NERR System-Wide-Monitoring Program (SWMP) a long term coastal monitoring program – Waquoit Bay National Estuarine Research Reserve (WBNERR) will be collecting estuarine water samples for nutrient analysis on a year round basis at several locations within the reserve. It will be the responsibility of the Reserve to deliver the samples to the laboratory. Laboratory services will be required to carry out basic nutrient analysis on approximately 20 water samples collected every month (about 250 per year) and to report these results to the reserve in a timely manner. Our SWMP-approved protocol requires that these water samples be analyzed for the following parameters:

TIER 1

- a) Ammonium, Nitrate, Nitrite
- b) Ortho-phosphate

TIER 2

- a) Total Dissolved Nitrogen
- b) Particulate Nitrogen
- c) Silica

The cost for analyzing for all Tier 1 parameters is \$36.00 per sample.
The cost for tier 2 parameters is \$30.00 per sample

ANTICIPATED BUDGET

X Initial ISA Budget
 _____ ISA Budget Amendment Enter Current Maximum Obligation of ISA before this Amendment: \$ _____

[illegible]

FISCAL YEAR SUBTOTALS AND TOTAL MAXIMUM OBLIGATION FOR DURATION OF ISA	
FISCAL YEAR: <u>05</u>	SUBTOTAL (or New Subtotal if Fiscal Year Subtotal being amended) <u>5</u> <u>12,000</u>
FISCAL YEAR: <u>06</u>	SUBTOTAL (or New Subtotal if Fiscal Year Subtotal being amended) <u>5</u> <u>12,000</u>
FISCAL YEAR: <u>07</u>	SUBTOTAL (or New Subtotal if Fiscal Year Subtotal being amended) <u>5</u> <u>12,000</u>
FISCAL YEAR: _____	SUBTOTAL (or New Subtotal if Fiscal Year Subtotal being amended) <u>5</u> _____
TOTAL MAXIMUM OBLIGATION FOR DURATION OF ISA (or New Total Maximum Obligation if amended) <u>5</u> <u>36,000</u>	

A-114 WBNERR Management Plan, 2006-2011, Vol. II

T: Agreement between Framingham State College, Division of Graduate and Continuing Education (DGCE), and Waquoit Bay National Estuarine Research Reserve



FRAMINGHAM STATE COLLEGE

100 State Street, P.O. Box 9101
Framingham, Massachusetts 01701-9101

Center for Global Education

Tel (508) 626-4037 Fax (508) 626-4030
e-mail: global@frc.mass.edu
Web: <http://www.choosefsc.org/global/>

AGREEMENT

Framingham State College, Division of Graduate and Continuing Education (DGCE), and Waquoit Bay National Estuarine Research Reserve

Introduction

This is an agreement between Framingham State College DGCE and Waquoit Bay National Estuarine Research Reserve to provide graduate credit for professional development courses offered by Waquoit Bay National Estuarine Research Reserve instructional staff, including Pat Harcourt and Joan Muller.

Period of Agreement

This agreement shall be in effect for one (1) year from the date of signing. Upon satisfactory evaluation and review by both Framingham State College DGCE and Waquoit Bay National Estuarine Research Reserve the agreement will remain in effect for an additional one year. Either party may terminate this agreement in the event of a material breach of this agreement by the other party, such termination to be effective only as of the date corresponding to the end of the school term of any year, upon not less than six months prior written notice.

Waquoit Bay National Estuarine Research Reserve instructional staff responsibility will be as follows:

- A. To submit complete course syllabi to the college for review and approval;
- B. To submit resume, official transcripts of undergraduate and graduate work, and two letters of recommendation of potential faculty to the college for review and approval;
- C. To provide all physical facilities, personnel and equipment necessary and appropriate to deliver the approved courses;
- D. To take any and all steps reasonably necessary so as to ensure that the policies and procedures will be in accord with the policies and procedures of the College;
- E. To provide all financing necessary to maintain the instructors and the courses, including without limitation:
 - (i) classroom facilities
 - (ii) faculty to teach the courses
 - (iii) the acquisition of all necessary equipment and materials appropriate to deliver the course of study of the program;
 - (iv) all approved marketing and promotions

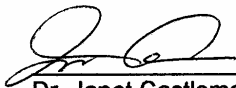
Framingham State College responsibilities will be as follows:

- A. To review and approve or disapprove within thirty (30) days after receipt from instructional staff of Waquoit Bay National Estuarine Research Reserve the proposed courses for the program;
- B. To review and approve or disapprove the qualifications of all course instructors;
- C. To respond to all written requests from instructors at Waquoit Bay National Estuarine Research Reserve for review, advice, consultation, and approval of additional course descriptions, additional faculty approvals, and any other obligation set forth in this Agreement within thirty (30) days of said request;
- D. To determine and notify instructors at Waquoit Bay National Estuarine Research Reserve of any reasonable action necessary to ensure the operation and management of the courses are consistent with the College's other courses and academic policies;
- E. To periodically review and evaluate classes;
- F. To allow instructors at Waquoit Bay National Estuarine Research Reserve the reasonable use of the College's name and logo in connection with all printed and/or electronically transmitted and/or live advertising or promotions of the courses.
- G. To provide Framingham State College Graduate credit with the understanding that these credits are not applicable to a degree program offered by the college without written approval by the student's advisor;
- H. To provide college registration materials or an approved substitute to instructors at Waquoit Bay National Estuarine Research Reserve prior to the start of program courses;
- I. To maintain student records.

Revenue

Each course participant shall pay the College \$55 to enroll in a one (1) credit professional development graduate course, \$110 to enroll in a two (2) credit course and \$165 for a three (3) credit professional development graduate course. At the beginning of each semester, unless otherwise negotiated, the instructor from Waquoit Bay Research Reserve shall provide a list of all courses approved by the college and offered for graduate credit by Waquoit Bay National Estuarine Research Reserve by course number and title.

Participants' checks for the total amount as outlined above made out to Framingham State College or individual payment from each student via Visa/MasterCard will be sent at the beginning of each course.



Dr. Janet Castleman
Dean, Division of Graduate
and Continuing Education
Framingham State College

Date: 11/1/04



Christine Gault
Manager, Waquoit Bay Nat'l Estuarine
Research Reserve
Waquoit, MA

Date: 11/11/04