



Figure 1.1: Emergent marsh in the Beaver Brook North Reservation, 2005 (Pressley Associates).

## Chapter 1

### Introduction

This Resource Management Plan for the Expanded Beaver Brook Reservation was prepared under the direction of the DCR Resource Management Planning Program, by Pressley Associates and LEC Environmental Consultants. The RMP evaluates and makes recommendations for both the original Beaver Brook Reservation and the 254-acre Beaver Brook North Reservation, formerly a portion of the Metropolitan State Hospital (MSH). In addition, the RMP addresses a 54-acre parcel, also formerly part of the MSH property and now owned by the City of Waltham, on which DCR holds a conservation easement.

With sound land stewardship as a guiding principle, the RMP proposes short and long-term development, programming, and management strategies that will enhance the recreational, ecological, cultural, and visual resources within the expanded Beaver Brook Reservation.

#### DCR Mission

The Department of Conservation (DCR) is responsible for the stewardship of approximately 450,000 acres of Massachusetts' forests, parks, reservations, historic sites and landscapes, seashores, lakes, ponds, reservoirs, and watersheds. It is one of the largest state park systems in the country. The mission of DCR is to protect, promote and enhance our common wealth of natural, cultural, and recreational resources.

In meeting current needs and responsibilities, and planning for the future, DCR focuses on:

- Improving outdoor recreational opportunities and natural and cultural resource conservation;
- Restoring and improving DCR facilities;
- Expanding public involvement in carrying out the DCR's mission; and
- Establishing first-rate management systems and practices.

The DCR was created by state legislation in 2003 (FY04), which merged the former Metropolitan District Commission (MDC) and the former Department of Environmental Management (DEM). The Division of State Parks and Recreation manages approximately 317,000 acres of state forests, beaches, mountains, ponds, riverbanks, trails and parks outside greater Boston, excluding water supply lands that contribute to the total 450,000 acres under DCR stewardship. The Division of Urban Parks and Recreation manages approximately 18,000 acres of woodlands, river, and coastal reservations within the greater Boston area and has broad management responsibilities for the preservation, maintenance, and enhancement of the natural, scenic, historic, recreation, and aesthetic resources that characterize the state reservations in this area. The health and happiness of residents of and visitors to Massachusetts

depends on the accessibility and quality of our green spaces, including the natural and cultural resources, recreation facilities, and historic landscapes comprising the state park system. DCR continues to improve this vital connection between people and their environment.



Figure 1.2: Picnic area near the Duck Pond along Mill Street, Beaver Brook Reservation, 2006 (Pressley Associates).

## Resource Management Plans

Resource Management Plans (RMPs) are “working” documents that consider the past, present, and future of a forest, park, or reservation. They include an inventory and assessment of environmental, cultural, and recreational resources; identify unique characteristics and values; and develop clear management goals and objectives. RMPs provide a guide to the short and long-term management of properties under the stewardship of the DCR. They are intended to be working documents for setting priorities, capital and operational budgeting and resource allocation, and enhancing communication and cooperation with park visitors and the surrounding communities.

This RMP is part of a comprehensive, state-wide effort coordinated by the DCR to provide sound stewardship for the state parks and forests under its care. This includes a focus on the protection of natural and cultural resources and provisions for public input in developing an RMP. M.G.L. Chapter 21, Section 2F revised as Chapter 25, Section 79 in July 2003,

provides more specific direction related to the preparation of resource management plans for state parks, reservations, and forests, a portion of which is included below:

The commissioner of conservation and recreation shall submit management plans to the stewardship council for the council's adoption with respect to all reservations, parks, and forests under the management of the department, regardless of whether such reservations, parks, or forests lie within the urban parks district or outside the urban parks district. Said management plans shall include guidelines for the operation and land stewardship of the aforementioned reservations, parks and forests, shall provide for the protection and stewardship of natural and cultural resources, and shall ensure consistency between recreation, resource protection, and sustainable forest management. The commissioner shall seek and consider public input in the development of management plans, and shall make draft plans available for a public review and comment period through notice in the *Environmental Monitor*. Within thirty days of the adoption of such management plans, as amended from time to time, the commissioner shall file a copy of such plans as adopted by the council with the state secretary and the joint committee on natural resources and agriculture of the general court.

The commissioner of conservation and recreation shall be responsible for implementing said management plans, with due regard for the above requirement.

The DCR Stewardship Council is a 13-member citizen advisory board that works with the Department to provide a safe, accessible, well-maintained, and well-managed system of open spaces and recreational facilities that are managed and maintained on behalf of the public for the purposes of natural, historic, and cultural resource protection, sustainable recreation, and education.

Resource Management Plans generally follow a consistent organizational structure and content. They begin with a description of the property; identify and assess existing conditions; identify the defining characteristics and management goals; and conclude with management recommendations. This structure was developed to present information concisely, while providing sufficient detail to understand a property's resources, potential, and management needs. Because RMPs follow a standard organization, information contained in these plans may

be compared across properties (i.e., plans) to identify common issues, challenges, and opportunities.

Much of the information in an RMP is conveyed through maps. The maps provide extensive information on a property's physical and social settings, its natural and cultural resources, locations of proposed management actions, and land stewardship zoning. These maps both clarify and expand upon information presented elsewhere in the RMP.

Resource Management Plans are written to meet the information needs of a diverse audience. Those decision-makers directly involved in the operation and management of a property, and those involved in the regional or system-wide administration of that property are the primary audiences. However, RMPs are not intended as internal DCR documents. Information contained in these plans benefits a variety of stakeholders including individuals and organizations interested in recreation, natural resources, cultural resources, and environmental education and interpretation. Those in local, regional, and State government will also benefit from information contained in RMPs. Finally, RMPs are of value to those who live near a state park, forest, or reservation and are interested in learning more about that property and how decisions affecting it are made. Information contained in RMPs helps all of these stakeholders become more engaged in the operation and management of lands within the DCR system.

## The Planning Process

Resource Management Plans are developed by the DCR Resource Management Planning Program and its consultants through an iterative process of data gathering and analyses, public input, review, and revision. The first step in preparing an RMP is identification of the property or properties to be included in the plan (i.e., the planning unit). Some RMPs cover a single property, while others cover multiple properties. Once the planning unit has been identified, administrative, cultural (i.e., historic), ecological, recreational, social, and spatial (i.e., mapping) information is gathered. Sources of information include site visits and data collection, administrative files and reports, legal documents, map data, municipal and regional plans, and interviews with DCR staff.

A draft RMP comprised of text, photographs, and maps is prepared following the standard content developed by the DCR RMP Program. This draft is then distributed within the DCR to the Commissioner; Division, Regional, and District staff; Bureau of Planning and Resource Protection, and others for internal review. The draft RMP is repeatedly reviewed and corrected to produce a revised draft RMP for public review and comment.

## The Expanded Beaver Brook Reservation

### Project Area

The primary project area of the Beaver Brook RMP includes the 254 acres of the former MSH land and the historic 59-acre Beaver Brook Reservation (Figure 1.3). The secondary study area also includes the 54-acre parcel owned by the City of Waltham, over which DCR holds a conservation easement. An evaluation of the City's proposal for a 9-hole municipal golf course is included as Appendix E. Public and private park and conservation lands not owned by the DCR, but which are located adjacent to or nearby the Beaver Brook Reservation are considered briefly in the RMP because the geographic relationship between the parcels provides connections that enhance both conservation values and recreation opportunities.

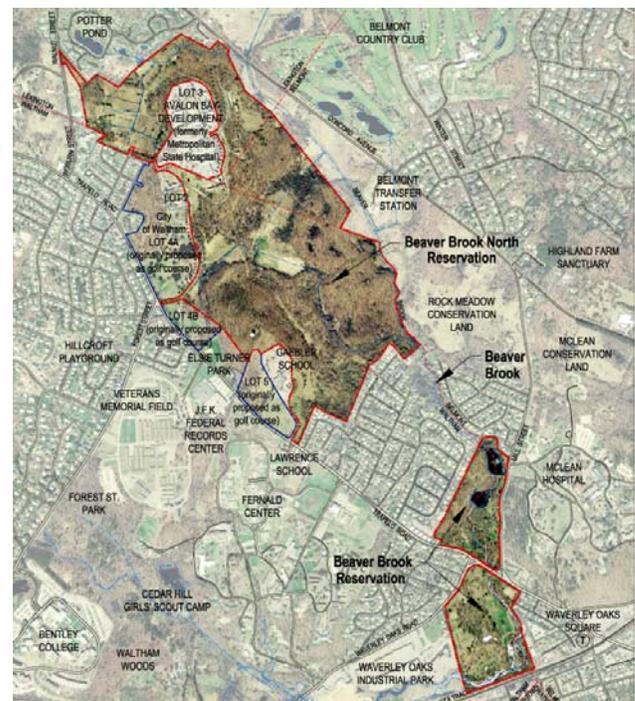


Figure 1.3: RMP Project Area (Pressley Associates).

Beaver Brook Reservation is comprised of 59 acres of land bisected by Trapelo Road. The northern (Mill Street) parcel is triangular in shape, and is bordered by Mill Street on its eastern boundary, Trapelo Road along the southern boundary, and residential properties along its western boundary. The southern (Waverley Oaks) parcel is bordered by Trapelo Road and Waverley Oaks Road to the north, an MBTA railroad to the south, and commercial and residential development. Parking for the reservation is found on Waverley Oaks Road, Mill Street, and along Trapelo Road. In addition, Waverley Square in

Belmont, located very near the existing reservation, has MBTA bus and commuter rail service.



Figure 1.4: Picnic area along Beaver Brook in the Waverley Oaks parcel of Beaver Brook Reservation (Pressley Associates).

The 254-acre Beaver Brook North Reservation is located north of Trapelo Road between Marguerite Avenue and Porter Street, extending northerly toward Beaver Brook. This property located northwest of the original reservation with entrances off Trapelo Road and Concord Avenue. The property is nine miles northwest of Boston, three miles east of Route 128, and falls inside the borders of Waltham, Lexington and Belmont. The DCR land is also easily accessible from Rock Meadow conservation land in Belmont.

Structures and infrastructure associated with the former Metropolitan State Hospital are located adjacent to the reservation; selected buildings were recently rehabilitated by AvalonBay Communities, Inc. as residential (apartment) dwellings. The remainder of the Beaver Brook North site contains a broad expanse of undeveloped land containing a diverse assemblage of habitat types.

Beaver Brook Reservation contains a mixture of maintained recreational parklands (particularly within the southern parcel) and natural, relatively undisturbed forested areas (more so in the northern parcel). Beaver Brook flows through the reservation, including two ponds, Mill Pond and Duck Pond, within the northern parcel, continuing southerly toward the MBTA railroad, where the brook redirects in a westerly direction. It is located within walking distance from Waverley Square.

The expanded Beaver Brook Reservation is strategically located amidst several open space parcels including Belmont's Rock Meadow Conservation Land, Massachusetts Audubon Society's

Highland Farm and Habitat Sanctuary, Waltham Woods, Middlesex County Hospital open space, McLean Hospital open space, and Concord Avenue Conservation Land in Lexington. In combination with the open space resources of the expanded reservation, these properties provide an important network of wildlife habitat and public recreation opportunities within the metropolitan region area known as the Western Greenway.



Figure 1.5: Picnic pavilion near the spray pool in the Beaver Brook Reservation, 2006 (Pressley Associates).

## **Characteristics**

The original Beaver Brook Reservation property is geographically divided by Trapelo Road, creating two distinct properties. Prior to acquisition by the Metropolitan Park Commission, the land was farmland, with a wooded area north of Trapelo Road that contained two ponds, a dam and cascade, and two abandoned mill sites. Today, the reservation's open fields, wetlands, archaeological sites, and woodlands offer opportunities for hiking and exploring. Ponds, fields, marsh, and a cascading waterfall make the park's north section located off Mill Street, scenic. The more developed south section features ball fields, tennis courts, a spray pool, and a playground. Features associated with Beaver Brook Reservation include the remains of a 17<sup>th</sup> and 18<sup>th</sup> century fulling and grist mill, the historic [Landscape Architect] Robert Morris Copeland House (c.1835), and a monument to the Waverley Oaks, celebrated during the nineteenth century. While Beaver Brook Reservation, established in 1893, was the first state reservation in the Metropolitan Park System, it is not yet listed on the State or National Registers of Historic Places although the entire Metropolitan Parks System has been declared eligible for NR listing by the Massachusetts Historical Commission.



Figure 1.6: Cascade in the north parcel of Beaver Brook Reservation (Pressley Associates, 2005).

The Beaver Brook North Reservation has abundant natural resources including two bordering vegetated wetlands, three restricted wetland systems, fourteen vernal pools, woodlands, meadows, a pond, three perennial brooks, and several intermittent streams supporting four major plant communities with over 225 species of trees and shrubs identified and a diverse population of reptiles, amphibians, birds, and mammals. This relatively undeveloped site provides important protection to the water quality and flood storage capacity of the Beaver Brook watershed with its extensive wetlands and open space. Mackerel Hill, the primary geologic feature offers splendid views of the surrounding open space and the Boston skyline while providing visual and acoustic buffer to the site's open space resources. The existing path system provides opportunities for hiking, jogging, cross-country skiing, bird watching, and nature study.

The North Reservation is also part of a larger historic district, listed on the National Register of Historic Places in 1994. Contributing resources listed in the nomination and located on DCR land include the cemetery, carriage roads, water tower, and several buildings demolished by DCAM in 2005. The balance of the MSH property has been disbursed by the Division of Capital Asset Management (DCAM), including the aforementioned land acquired by the City of Waltham, which also includes the historic former MSH Administration Building. A private residential development utilizing many of the former hospital buildings has been created in the core campus by AvalonBay Communities, Inc. DCAM also constructed a new parkway through the former MSH site to provide access to the private development and parkland, and cleaned up the former debris site. The non-active MetFern Cemetery is also located in the center of the 254 acre parcel.



Figure 1.7: Open meadow in the Beaver Brook North Reservation, 2006 (Pressley Associates).



Figure 1.8: Carriage road in the Beaver Brook North Reservation, 2009 (Pressley Associates).

## RMP for the Expanded Beaver Brook Reservation

### Purpose

The purpose of the RMP for the Expanded Beaver Brook Reservation is to develop a feasible management strategy to protect and enhance the ecosystem of the reservation and promote opportunities for passive and active recreation, developed with public participation and stakeholder input. The RMP addresses the expanded reservation in the context of a larger open space system and provides recommendations to strengthen the park boundaries, provide trail linkages to adjacent properties, and address issues related to adjacent uses, encroachments, or intrusions.

## **Goals and Objectives**

In order to meet the purposes established for the RMP Program, the comprehensive RMP for the expanded Beaver Brook Reservation supports the following goals for the property:

- Preserve and enhance wetlands and natural communities for the health and diversity of the flora and fauna;
- Preserve the cultural and historic resources of the expanded reservation, including its cultural landscapes, archaeological sites, and historic buildings and structures;
- Manage the new Beaver Brook North Reservation as an ecological preserve open to the public;
- Enhance and refine existing access, including the network of trails throughout the property;
- Maximize environmental education opportunities afforded by the reservation;
- Ensure the public's enjoyment of the reservation by promoting its diversity of flora and fauna, extensive views, cultural resources, and opportunities for solitude in a natural setting;
- Strengthen the reservation boundaries and prevent/resolve inappropriate encroachments or intrusions;
- Assess the environmental impacts of the City of Waltham's proposed nine hole golf course on both the reservation and DCR's conservation easement;
- Identify opportunities for strengthening the open space network around the reservation by identifying potential parcels for acquisition or conservation easement, and maintaining key connections to other public open spaces;
- Decrease any non-point pollutants presently entering the reservation or brook;
- Provide opportunities for public education to promote the natural and cultural resources of the reservation;
- Continue to strengthen DCR's relationship with constituency groups, with a particular focus on joint ventures with neighbors and communities abutting the reservation;
- Determine areas most suitable/desirable for recreation, education, and natural/cultural resource preservation.

The RMP also identifies specific strategies and actions to meet the following objectives:

- Continue development of a greenway corridor that provides continuity throughout the reservation to the adjacent open space properties;

- Develop policy guidelines, procedures, and techniques for daily maintenance, management and operation of the reservation;
- Develop a public participation and volunteer framework to help care for the reservation;
- Identify opportunities to obtain private funding for capital improvements, maintenance, and operation; and
- Develop a phasing strategy for RMP implementation.

## **Methodology**

The RMP for the Expanded Beaver Brook Reservation uses a multi-phased methodology to address the issues pertaining to the property and identify feasible management alternatives. In 2005-2006, Pressley Associates utilized available written documentation, plans, site maps, GIS files, and aerial photography to produce scaled base plans of the reservation. These base plans are then used to record information related to existing site features, resources, and conditions, which were collected through a combination of field inventory, research, and the review of select historic documents. LEC Environmental Consultants also reviewed appropriate maps and scientific literature to compare existing site conditions with wildlife habitats and ecological relationships documented under similar conditions throughout New England. This combined documentation and research developed a knowledge base for understanding the natural and cultural resources, and analyzing existing conditions and prevalent uses of the reservation.

The findings of the inventory and analysis were presented at a public meeting in March 2006 to discuss the issues pertaining to the reservation and to introduce the RMP concept to the community and stakeholders. Management recommendations were also developed for the reservation based on public input to identify and prioritize issues. The recommendations were evaluated and revised following the second public meeting in May 2006 that presented the draft RMP for public review and comment. A revised draft plan was prepared incorporating public comments, for additional review by DCR staff. In 2009, DCR finalized the RMP, integrating DCR review comments and updating some of the site conditions information so that the recommendations could be completed for resource stewardship; interpretation and education; recreational activities and site accessibility; management, maintenance, and operation; and capital improvements. Supplementary Appendices compiled in a separate volume include Cultural Resource Technical Appendices and the Metropolitan State Hospital Reuse documents.