



Resource Management Plan Blackstone River and Canal Heritage State Park



Adopted by the DCR Stewardship Council February, 2025

Massachusetts Department of Conservation and Recreation
Division of Conservation and Resource Stewardship
Office of Cultural Resources

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Purpose

Resource Management Plans (RMPs) are foundational documents that identify a park, forest, or reservation's defining natural, cultural, and recreational resources and identify potential threats and opportunities to guide DCR's continued stewardship of the property and to inform future decisions about the property in a way that celebrates and preserves its identity.

RMPs are prepared for "all reservations, parks, and forests under the management of the department" (M.G.L. c. 21, § 2F). These 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." DCR finalizes RMPs following a public process and adoption by the DCR Stewardship Council. The contents of this RMP represent the best available information at the time of adoption by the Stewardship Council.

Mission and Core Principles

The Massachusetts Department of Conservation and Recreation (DCR), an agency of the Executive Office of Energy and Environmental Affairs, oversees 450,000 acres of parks and forests, beaches, bike trails, watersheds, dams, parkways, and over 100 National Register listed properties. The agency's mission is to protect, promote, and enhance our common wealth of natural, cultural, and recreational resources for the well-being of all.

DCR strives to be an exemplary leader in conservation and recreation. DCR's staff is passionate, dedicated, and continuously employs best practices, expertise, and a sense of place in carrying out the mission. The following core principles ground the agency in its work. For the benefit and well-being of all—people and the environment—DCR pledges to:

- Provide access to a diversity of outdoor recreational experiences and unique landscapes that is equitable, inclusive, and welcoming.
- Conserve lands, water, and forests by integrating science, research, and technical expertise into the management of our natural resources.
- Advance climate change mitigation and adaptation efforts by implementing sustainable practices and advancing resiliency across our infrastructure, assets, and resources.
- Support healthy communities by providing places for people to connect with nature and each other.
- Inspire generations of stewards by recognizing and honoring our legacy through partnerships, public engagement, and education.

Stewardship

DCR honors Indigenous peoples for their care, throughout many generations, of the land that DCR now stewards on behalf of the people of the Commonwealth. DCR embraces this legacy of stewardship, fostering a sense of shared responsibility by all people for protection of the waters, lands and living things for the enjoyment and appreciation of all.

To learn more about the DCR, its facilities, and programs please visit us www.mass.gov/dcr. Contact us at mass.parks@state.ma.us.

Blackstone River and Canal Heritage State Park

<https://www.mass.gov/locations/blackstone-river-and-canal-heritage-state-park>

1. PROPERTY OVERVIEW

Characteristic	Value
Date Established	1981
Location	Blackstone, Millbury, Millville, Northbridge, Uxbridge, Worcester
Ecoregion	Southern New England Coastal Plains and Hills
Watershed	Blackstone
DCR Region	Central
DCR District	Central Valley
DCR Complex	Blackstone
Management Forestry District	Mid-State
Fire Control District	South Worcester
Size (acres)	1,166.7
Boundary Length (miles)	30.1
Elevation - Minimum (feet)	179.0
Elevation - Maximum (feet)	472.2
Environmental Justice (acres)	26.0
Estimated Annual Attendance (2015)	439,273
Interpretive Programs (2023) (number of programs)	111
Interpretive Programs (2023) (number of attendees)	1,510

2. LANDSCAPE DESIGNATIONS

Designation	Acres
Parkland	1,053.6
Reserve	0.0
Woodland	0.0
No Designation	113.1

3. REGULATORY DESIGNATIONS

Designation	Acres
National Register Historic District – Blackstone Canal Historic District	621.3
Priority Habitat (MESA)	180.8

4. LONG-TERM AGREEMENTS

Agreement	Expiration Year
MassDOT/DCR License Agreement regarding care and control of multi-use path	2022

5. CONCESSIONS

Concession Type
None

6. PARTNERS & FRIENDS

Group(s)
Blackstone River Valley National Heritage Corridor, Inc.
Blackstone Heritage Homecoming
Blackstone River Coalition
Blackstone River Watershed Association
MassDOT
National Park Service
New England Mountain Bike Association
Open Sky Community Services
Uxbridge First Holiday Night

7. FEATURES OF INTEREST

Feature
Blackstone Canal, towpath, and locks
Blackstone Gorge
Blackstone River
Capron Park
Lookout Rock and associated vista
Millville Lock
Plummer's Landing
Rice City Pond
River Bend Farm Visitor Center
Sugar house (maple syrup making facility)
Trail system
Worcester Visitor Center

8. NATURAL RESOURCES

Resource	Number
Tree Canopy (acres)	996.2
Rivers and Streams (miles)	12.3
Open Water (acres)	73.7
Wetlands (acres)	264.6
Certified Vernal Pools (number)	2
Potential Vernal Pools (number)	25
State-listed Species (number Regulatory)	4
State-listed Species (number Non-Regulatory)	0
Federally Listed Species (number)	0
Aquatic Invasive Plants (number of known species)	5
Terrestrial Invasive Plants (number of known species)	5

9. FOREST MANAGEMENT (SINCE 2012)

Management Objective	Acres
N/A	0.0

10. CLIMATE CHANGE (BY 2070)

Type of Change	Amount of Change
Increase in annual days above 90° F	>30
Change in annual maximum daily rainfall (inches)	>10
Massachusetts Coastal Flood Risk Model area of inundation (acres)	N/A

11. NATURAL HAZARDS

Hazard Type	Acres
Flood (1.0%-chance)	541.1
Flood (0.2%-chance)	552.1
Hurricane Inundation (Category 1)	N/A
Hurricane Inundation (Category 4)	N/A

12. CULTURAL RESOURCES

Resource Type	Number
Archaeological - listed in the Massachusetts Cultural Resource Information System (MACRIS)	19
Historical - Listed in MACRIS	26
National Register-listed	2
National Historic Landmark	0

13. RECREATION RESOURCES

Resource	Number
Bike repair stations	2
Boat ramp	1
Healthy Heart Trail	1
Paved multi-use path	1
Picnic areas	4
Pocket park (Capron Park)	1
Trail system	5
Visitor centers	2

14. RECREATION ACTIVITIES

Activity
Arts
Bicycling, mountain
Bicycling, road
Canoeing/Kayaking
Dog walking, on leash
Endurance events
Festivals
Field day events
Fishing, fin fish
Geotourism
Heritage tourism
Hiking/Walking
Horseback riding
Hunting
In-line skating
Kite flying
Nature study/Photography
Orienteering
Picnicking
Rock climbing/Bouldering
Running/Jogging
Running, races (road or trail)
Scenic vista viewing
Skiing, cross-country
Wildlife viewing

15. ROADS AND TRAILS

Metric	Value
Roads - Unpaved (miles)	0.1
Roads - Paved (miles)	0.2
Forest Roads - Unpaved (miles)	5.8
Forest Roads - Paved (miles)	0.0
Trails - Unpaved (miles)	16.4
Trails - Paved (miles)	0.0
Trails - Unauthorized (miles)	7.1
Trail Density (miles/acre)	0.026
Area of Impact (acres)	831.9

Data are not available for the Worcester area tracts and multi-use path and are not included in the above Roads and Trail metrics.

16. PARKING

Parking Resources	Number
Lots	14
Parking Spaces - Total	489
Parking Spaces - Accessible (HP)	9
Parking Spaces - Other	480

INTRODUCTION

Blackstone River and Canal Heritage State Park (Blackstone Heritage or the Park) is located along the banks of the Blackstone River, between Worcester, Massachusetts, and the Rhode Island border. The Park's Main Tract is contiguous, stretching nearly 4 miles north to south from the Church Street, Northbridge area to the confluence of the Blackstone and Mumford rivers in Uxbridge. (See Figures 1 and 2, pages 28 and 29 for the location of the Park's tracts.) In addition to the Main Tract, there are five isolated tracts, they are:

- **Worcester Visitor Center Tract.** This 7.1-acre tract is located along the Blackstone River, at 3 Paul Clancy Way, Worcester. It is home to the Blackstone River Valley National Heritage Corridor, Visitor Center at Worcester (i.e., Worcester Visitor Center). This building also serves as DCR's Central Region Headquarters. A paved multi-use path extends southward through this tract and connects to a Massachusetts Department of Transportation (MassDOT) paved multi-use path. DCR took ownership of the visitor center and assumed management responsibility for the multi-use path in 2023.
- **Worcester Canal Tract.** This approximately 11.6-acre tract is located along the Blackstone River, on the Worcester-Millbury town line. It was acquired in 1984 to protect sections of the Blackstone Canal and an associated towpath. This parcel was part of a proposed, but unimplemented, expansion of Blackstone Heritage into Worcester in the 1980s (RPPW et al. 1988). A visitor center and linear connecting greenway were also part of the proposed expansion; features that did not become part of the Park until 2023.
- **Capron Park Tract.** This tract is a 0.5-acre pocket park located on the east bank of the Mumford River in downtown Uxbridge, on the edge of dense commercial development. Access is by foot from Route 16 (Mendon Street).
- **Millville Lock Tract.** This approximately 3.1-acre parcel is located between the Blackstone River and the Southern New England Trunkline Trail (SNETT) in Millville, at the site of a historic lock. Although this tract has frontage on Prospect Street, Millville, access is from the SNETT via a trail across private land.
- **Blackstone Gorge Tract.** The Blackstone Gorge parcels are approximately 86 acres in area and are located along the Massachusetts-Rhode Island border in the Towns of Millville and Blackstone. Adjacent land uses in Massachusetts are primarily residential. The State of Rhode Island and Town of North Smithfield have protected approximately 182.5 acres south of, and contiguous with, this tract (Town of North Smithfield 2019). Public access is from County Street, Blackstone, on the east bank of the Blackstone River.

The Park is on land shaped by generations of Indigenous peoples and non-Indigenous inhabitants. Past and present Indigenous residents embody fluid, relational connections to the places and spaces now known as Blackstone River and Canal Heritage State Park. Groups and individuals, including Indigenous peoples known as the Agawam and the Nipmuc(k), are recorded in available documentation (Native Land Digital 2023) as having relationships to this place over seasons and generations. Locations of Indigenous peoples' settlements in the Worcester area are unknown but are inferred to be associated with the shores of lakes "as well as the Blackstone" (Massachusetts Historical Commission (MHC) 1984a). The Millbury area was likely used "for the exploitation of fish in the spring and of uplands for hunting in the winter" (MHC 1984b). The Blackstone is also believed to have served as a transportation corridor

throughout the region (e.g., MHC 1984a). Land grants for the Worcester area began in 1657, with colonial settlement delayed by King Philip's War (1675–1676) and Queen Anne's War (1702–1713)(MHC 1884a). Permanent colonial settlement of Worcester began in 1713, with incorporation as a town in 1722 and incorporation as a city in 1848 (MHC 1984a). In the southern portion of the Park, a large Indigenous peoples' camp is believed to have been located in Uxbridge, near the confluences of the Blackstone, Mumford, and West Rivers ((MHC) 1983a, 1984c). Much of the area now included in the southern portion of Blackstone Heritage was likely associated with that camp, serving as an area for seasonal hunting and gathering, with limited agriculture on terraces (MHC 1983a, 1984c). The four municipalities in which the southern sections of the Park are located were once part of the 1667 Mendon Grant, which established the Town of Mendon. Following Indigenous peoples' dispossession in this area, these municipalities were incorporated between 1727 and 1916 (MHC 1983a, 1983b, 1984c, 1984d). The Blackstone Canal, a waterway that extended from Providence, Rhode Island to Worcester, Massachusetts was constructed between 1824 and 1828 and operated until 1848 (Adams et al. 1995). The Park, which includes portions of the canal, was established in 1981 as one of the earliest public sector efforts to protect and promote the natural history, cultural history, and economic development of the Blackstone Valley. It initially consisted of land acquired specifically for Blackstone Heritage during the 1980s and, to a lesser degree, land acquired for Upton State Forest in 1936 (i.e., the Lookout Rock area). The Park expanded southward in the early 1990s to include portions of the Blackstone Gorge and northward into Worcester in the 2020s. Land acquisition continues as appropriate parcels become available.

Blackstone Heritage is one of nine extant DCR Heritage State Parks. The first of these, Lowell Heritage State Park, was authorized by the Massachusetts Legislature in 1976; others soon followed. The objectives of Heritage State Parks were threefold: 1) the creation of quality downtown open space; 2) the celebration of each community's cultural heritage; and 3) the stimulation of private economic development. Blackstone River and Canal Heritage State Park has a special role in celebrating the industrial history of the Commonwealth and the Blackstone Valley. As a Heritage State Park, its significance is intertwined with the larger significance of the local communities. The Park demonstrates that its protected landscapes are the cornerstones of the valley's economic and social development, and that their historic fabric is an important asset to the area's quality of life (John Knox Associates 1983).

The Park conveys the history of the Blackstone Valley. Forested uplands provide a sense of what the valley may have looked like to Indigenous peoples prior to European settlement. River Bend Farm (formerly Voss Farm), a former dairy farm and home to one of the Park's two visitor centers, provides a glimpse into the region's agrarian heritage. Numerous towpath segments and locks connect visitors to the Blackstone Canal and its impacts on the region. Water power control structures in the Park, and mill buildings just outside the Park, reflect industrial development and its importance to the Valley. Recreational areas and activities along the river are part of an economic revitalization that began at the end of the 20th century.

Portions of Blackstone Heritage are part of a larger multi-state, multi-partner effort to establish a greenway that extends from Providence, Rhode Island to Worcester, Massachusetts. As envisioned, this multi-state greenway will be a combination of on and off-road multi-use trails. The Massachusetts section of this greenway (i.e., the Blackstone River Greenway) includes seven distinct segments, three of which are on DCR property. DCR owns and/or manages Segment 1 (part of the SNETT), a portion of

Segment 2 (within Blackstone Heritage's Main Tract), and Segment 6 (the two Worcester tracts and the multi-use path that connects them).

The Park not only preserves and interprets the Blackstone's past it also celebrates its present. Each year, hundreds of thousands of visitors come to Blackstone Heritage to picnic, hike, run, mountain bike, canoe, fish, hunt, take part in interpretive programs, observe interpretive displays, view fall foliage, or participate in large seasonal events (e.g., First Day Hike, Maple Sugar Days). The Park is a destination for those seeking to enjoy the woods and waters of the Blackstone Valley.

PARK IDENTITY

Blackstone Heritage is an educational and recreational resource (John Knox Associates 1983). It is characterized by the Blackstone River and resources associated with its agrarian, industrial, and post-industrial history. As its name indicates, this Park's identity is enmeshed with the Blackstone River and Blackstone Canal. The Park's public focal points are the River Bend Farm Visitor Center and Worcester Visitor Center, which provide permanent exhibits and interpretive programming that tell the story of the interrelated nature of the valley's natural and cultural resources. Blackstone Heritage also offers a variety of recreational activities commonly associated with state parks (e.g., picnicking, hiking, biking, canoeing). All future development and activities should be consistent with the Park's identity as a Heritage State Park that focuses on preserving and interpreting the natural and cultural histories of the Blackstone Valley and leveraging the recreational and educational opportunities presented by this historic landscape.

DEFINING RESOURCES AND VALUES

Resources and values that define the Park are related to its history of industrialization and subsequent deindustrialization. They include:

- The Blackstone River and its associated recreational opportunities.
- The Blackstone Canal; its associated historic structures and landscapes, including sections of the canal, water control structures, tow paths, locks, dams, and basins. The Canal's significance has been recognized through listing in the National Register of Historic Places (National Register) as a National Register Historic District. Among the significant canal features within the Park are:
 - A section of towpath and the only remaining earthen canal prism in the City of Worcester.
 - Stone and earthen canal structures at Rice City Pond that are remarkably intact and are excellent examples of the simple, yet effective engineering that made the early Industrial Revolution possible.
 - Plummer's Landing, one of the few historical trading locations preserved along the Massachusetts portion of the Blackstone Canal. As such, it is an important example of commercial development associated with the Canal.
 - Millville Lock, the best-preserved lock on the Blackstone Canal in Massachusetts.
- The Blackstone River Valley is significant as the first industrial region in the United States (National Park Service (NPS) 2011). In 1986, this significance led to the designation of the John H. Chafee Blackstone River Valley National Heritage Corridor (National Heritage Corridor; Public Law 99-647-

November 10, 1986). Blackstone Heritage was among the earliest public sector efforts to protect and promote the natural history, cultural history, and economic development of the Blackstone Valley.

- The River Bend Farm Visitor Center, which connects visitors with the histories of the valley, canal, and the site's agricultural past. Its welcoming red barn is synonymous with Blackstone Heritage. (See cover of this RMP for a picture of the visitor center.)
- The Worcester Visitor Center, which is the primary gateway facility for the National Heritage Corridor in Massachusetts. This facility is located on the former site of Washburn and Moen, one of Worcester's largest and most enduring manufacturing concerns. Washburn and Moen was once the City's largest employer and the foremost producer of wire products in the country. The visitor center's exposed metal beams, rusty iron interpretive displays throughout its grounds, and industry-related interpretive displays within the building evoke the site's industrial past.
- A 3.0-mile-long paved multi-use path along the banks of the Blackstone in Worcester and Millbury. This multi-use path, which is owned by MassDOT and managed by DCR, connects to Union Station via recently constructed bike lanes on Worcester's streets. Approximately 900 feet of this path passes through the Worcester Canal Tract.

STATEMENTS OF SIGNIFICANCE

Statements of Significance describe the importance or distinctiveness of a place and its resources (National Park Service (NPS) 1998). These statements reflect current scholarly inquiry and interpretation and go beyond a simple listing of resources to include contextual information that makes the facts more meaningful. When developing significance statements, the following criteria are considered:

- The property's significance at the time of its establishment.
- How the property, or society's understanding of the property, has changed since its acquisition that makes it significant or unique within the state park system today.
- The property's role in recreation and its importance to the community it supports, particularly regarding activities that are unique to that property.

For park planning, these statements focus management actions on the preservation and enjoyment of those attributes that most directly contribute to the importance of the place. For interpretive planning, they comprise the information upon which the interpretive themes and overall program are built.

The following Statements of Significance have been identified for Blackstone River and Canal Heritage State Park. The sequence of these statements does not reflect their level of significance.

- Blackstone River and Canal Heritage State Park plays a special role in recognizing the industrial history of the Commonwealth and the Blackstone Valley; it is the only Massachusetts Heritage State Park in a rural community. The significance of the Park is intertwined with the larger significance of the heritage corridor. Unique to the Worcester component, part of the focus of the Heritage State Park plan was to reclaim degraded industrial landscape (Massachusetts Department of Environmental Management (DEM) 1985: 6).
- The Blackstone River helped shape the Industrial Revolution in the early 19th century; its water powered the factories that changed the landscape and allowed the region to grow and flourish.

- The Blackstone Canal runs along the length of the Park; the trade along this canal drove the development of the towns and cities in the Blackstone Valley. Worcester rapidly rose to prominence as a manufacturing and commercial center, a rise that was prompted to a large degree by the canal. The same process occurred on a smaller scale throughout the valley, creating villages like Plummers Landing where none had been before (Greenwood 1984: 99). Today, the Park serves to protect the remaining parts of the canal.
- The Park is located at the intersection of several of the important transportation routes in the 18th and 19th centuries - the Middle Post Road, the Great Connecticut Road, the Blackstone Canal, and the Providence & Worcester Railroad. This shows the evolution of transportation from foot to horse, to boat, and finally to rail.
- The paved surface of the greenway is attractive to many recreationalists and provides an opportunity for visitors with a range of capabilities and comfort with nature. It offers a place for those with mobility challenges who might not be able to use a traditional park trail and visitors do not need to worry about getting lost in a maze of trails.

UNIFYING THEME

The Unifying Theme is a statement that ties a property's stories together and shapes the overall interpretive message that DCR wants to share with visitors in their experience at the property. The theme provides an overarching conclusion for visitors to contemplate (Ham 2013) and answers the question "so what?" The theme guides all interpretation for the park, both personal (i.e., formal and informal interactions with visitors) and non-personal (e.g., exhibits, signage, brochures).

The Unifying Theme for Blackstone River and Canal Heritage State Park is:

The Blackstone River served as a catalyst for revolution. Its waters changed the way of life for people all over the world.

VISITOR EXPERIENCE

Blackstone Heritage provides a variety of visitor experiences, including the following:

- **Virtual Experience.** Potential visitors will find detailed information about Blackstone Heritage on DCR's web site. The Park has its own web page that provides potential visitors information needed to plan a visit. (<https://www.mass.gov/locations/blackstone-river-and-canal-heritage-state-park>) However, this web page lacks information on the Worcester Visitor Center and the associated multi-use path.
- **Entering the Park.** Because of its linear nature and multiple tracts, there are many ways to enter the Park.
 - **Main Tract.** The main entry point is at River Bend Farm, site of the River Bend Farm Visitor Center. Most visitors access River Bend Farm from East Hartford Avenue. From this approach, Blackstone Heritage Corridor "Visitor Center" signs direct visitors southward on Oak Street, toward the visitor center. As they approach the Park, visitors are greeted by a Main Identification Sign identifying the property as River Bend Farm, Blackstone River and Canal Heritage State Park. From this location, the welcoming red barn that serves as the visitor center is visible. (See cover photo.) Visitors may also enter this tract from the north via the Aldrich and Larkin recreation

areas on North Street, Northbridge, and from the south via the parking lot and canal access point on Cross Street, Uxbridge.

- **Worcester Visitor Center Tract.** Visitors may park at the Worcester Visitor Center, the Millbury Street, Worcester parking area, or the Main Street, Millbury parking area (i.e., The Honorable Richard J. Dwinell Blackstone Valley Memorial Access Area; see Massachusetts General Court (MGC) 2010a) to access the multi-use path or Worcester Visitor Center. A Facility Identification Sign with the words “Blackstone Heritage Corridor, Worcester Visitor Center” is located in front of the building. An additional sign in front of the visitor center bears the words “Blackstone River Valley National Heritage Corridor, Birthplace of the Industrial Revolution, Visitor Center at Worcester, Blackstone River Bikeway, Tourist Information” and bears the logos of the Blackstone River Valley National Heritage Corridor and the National Park Service.
- **Worcester Canal Tract.** This tract is accessible only by foot or bicycle, via the paved multi-use path. There is no sign along the path identifying this tract as DCR property and there is no public access to the tract’s canal trench or tow path.
- **Capron Park Tract.** Visitors may access this park on foot or by vehicle from Mendon Street in Uxbridge. There is no standard DCR sign identifying this property as part of Blackstone Heritage.
- **Millville Lock Tract.** Visitors may access Millville Lock on foot by walking or biking along the SNETT and crossing private property. There is no sign identifying the trail intersection on the SNETT as providing access to the lock.
- **Blackstone Gorge Tract.** Visitors access Blackstone Gorge from a formal gateway at the intersection of Staples Lane and County Street in Blackstone. A Main Identification Sign identifies the site as Blackstone Gorge, Blackstone River and Canal Heritage State Park. Visitor amenities at the site include parking, trailheads, interpretive panels, and a scenic overlook.
- **River Bend Farm Visitor Center.** This facility provides essential services and serves as the central point from which visitors may obtain information before exploring the park. Visitors may take stairs or an elevator to the second floor of the building to view the permanent interpretive displays. The visitor center also serves as a gathering spot for park-related meetings and programming.
- **Worcester Visitor Center.** This facility provides essential service to visitors to the Worcester portion of Blackstone Heritage, runners, walkers, and cyclists using the paved multi-use path, and visitors looking for information on Blackstone National Heritage Corridor. Amenities include a paved multi-use path, dedicated parking, picnic tables, and a visitor center with interpretive exhibits and a meeting room. Additional interpretive panels are located throughout the visitor center’s grounds and tell the story of the Blackstone River and its role in the industrialization of Worcester. The visitor center also serves as a gathering spot for park-related meetings and programming. Visitors may park at the visitor center and take a short walk to the nearby City of Worcester Blackstone Gateway Park, a nature-focused park along the Blackstone River with trails, observation platforms, and interpretive panels that provide historical and ecological information about wildlife and plants in the area (City of Worcester 2022).
- **Heritage Tourism.** DCR offers permanent interpretive displays at the River Bend Farm and Worcester visitor centers, and interpretive programs throughout the Park to educate visitors about the region’s history. The Park’s exemplary and readily interpreted historic resources, such as canal segments, tow

paths, water control structures, and former agricultural landscapes allow visitors to connect with the Blackstone Valley's history and understand the canal's impacts on the region.

- **Trail-based Passive Recreation.** A network of towpaths, forest roads, single-track trails, and high-density mountain bike trails along the river and adjacent hillsides provide scenic views of the river and opportunities to experience the nature of the Park. The 3.0-mile-long paved multi-use path in Worcester and Millbury is used both recreationally and as a transportation corridor. Recreationists may walk, run, walk their dog, in-line skate, and bicycle along the path. Bike repair stations are located outside the Worcester Visitor Center and at the two MassDOT bike path access areas (i.e., parking areas).
- **Water-based Recreation.** The river, canal, and channel to the Stanley Woolen Mill are all navigable by canoe or kayak and destinations for fishing.
- **Scenic Vistas.** The Park's waters and woods afford visitors opportunities to enjoy scenic views of the Park, river, and adjacent Blackstone Valley. The Lookout Rock Area is located along the east side of the Blackstone River in Northbridge. This rock outcrop provides spectacular views of the river, associated marshes, and surrounding landscape. It is a popular location from which to view fall foliage. Capron Park provides a pleasant spot for visitors to sit, relax, and enjoy the view of Capron Pond and the Mumford River. Blackstone Gorge offers visitors views of one of the most scenic portions of the river. Visitors may view the unique and impressive gorge from an overlook and take in the scenic landscape from the benches along the riverbank. Recreationists hiking the Park's trails or paddling the Blackstone's waters are also afforded scenic views of the Blackstone.
- **Picnicking.** Visitors may enjoy a meal at one of the Park's four picnic areas. An small accessible picnic area (tables only) is located along the north bank of the Blackstone River at the Worcester Visitor Center. Three picnic areas (Aldrich Recreation Area, River Bend Farm, and an unnamed area north of the Stanley Woolen Mill) are available to visitors in the Main Tract. All three have tables and grills.
- **Maple Sugar Days.** This annual two-day event, conducted in association with Blackstone Heritage Corridor, Inc., draws approximately 300 visitors to River Bend Farm every March to learn about how maple syrup is made. Visitors park at River Bend Farm to watch exhibitions of tapping trees, then head over the sugar house to watch the sap get boiled down into syrup.
- **Race Events.** DCR sponsors or co-sponsors several race events such as "The Goat" 300-person trail race and the Greenway Challenge. These events expand the visitor experience by attracting non-traditional park users and exposing them to the Park's historic and natural resources.

THREATS AND OPPORTUNITIES

The following information identifies potential threats to the Park's natural and cultural resources and identifies opportunities to enhance their protection and stewardship. Although recreation is not considered a resource under statute (M.G.L. c. 21, § 2F), it is included below because recreation is an important part of the park-going experience, helps define a park's values, and is a key part of assessing the consistency of activities taking place in the Commonwealth's forests, parks, and reservations.

Threats and opportunities identified below are used to inform the development of management recommendations. Potential recommendations must meet prioritization criteria to be included in the Priority Recommendations table (Table 18, page 33).

Natural Resources

Threats

- Approximately 46% of the Park is within the 1.0%-chance and 0.2%-chance flood zones. Flooding may potentially impact valuable infrastructure and historic properties, cause physical alterations to the Park landscape, and threaten public health and safety.
- Three of the Park's state-listed species are associated with rivers and wetlands throughout much of their lives. Degraded water quality and the cutting of vegetation along the upland margin of rivers and wetlands threaten these species and their continued presence in the Park.
- Although the Park has not been systematically for invasive plants, the following 10 species have been identified: Asiatic bittersweet, Carolina fanwort, common reed, crisped pondweed, garlic mustard, Japanese knotweed, multiflora rose, purple loosestrife, variable water milfoil, and winged *Euonymus*. Invasive species may negatively impact native plant communities, degrades rare species habitat, affects park aesthetics, and have the potential to damage infrastructure and historic resources.
- Storm drains in the River Bend Farm and the Tri-River Community Health Center parking lots discharge water through a vegetated buffer into the canal and river, respectively. Runoff from these lots, in the form of sheet flow, also passes down gradient through buffers toward the river and canal, increasing the likelihood of water contamination.
- The Massachusetts Department of Environmental Protection (MassDEP) has identified several water quality impairments in the Blackstone River adjacent to Blackstone Heritage, resulting in four river segments being classified as not suitable habitat for sustaining a native, naturally diverse community of aquatic flora and fauna (MassDEP 2021). The affected segments are located adjacent to the Worcester Visitor Center Tract (MA51-02), adjacent to the Worcester Canal Tract (MA51-03), upstream of Rice City Pond Dam (MA51-04), and adjacent to the Millville Lock Tract (MA 51-05). Because MassDEP updates its Integrated List of Waters (MassDEP 2023) on a regular basis, readers are directed to refer to the most recent version of that document for the most current information.
- Samples of northern crayfish tissue and sediments collected from the Blackstone immediately adjacent to the Worcester Canal Tract were found to be contaminated with 3, 4-benzo[a]pyrene; a potential carcinogen (Sutton 2009). The extent of contamination, which is believed to have originated from a storm drain on Route 146, is unknown.
- Heavy metals and organic compounds associated with a former landfill just outside the Park have been detected in water samples from wells of nearby residences along Quaker Street, Northbridge (Sovereign Consulting, Inc. 2018) and may have affected the Park's groundwater.
- Early successional habitats south of the Larkin Recreation Area are being lost due to plant succession and the area may no longer be appropriate for pheasant hunting. Such early successional areas are in "critically short supply" in the Northeast and provide habitat for many species of wildlife with declining populations (Oehler et al. 2006), including one of the Park's state-listed species.
- Agricultural fields at Youngsma Farm are being maintained by someone other than DCR, without formal approval or formal agreement. Portions of these fields are in Priority Habitat and their mowing without regulatory review is a potential threat to state-listed species.

Opportunities

- Neither of the Worcester tracts has a Landscape Designation (DCR 2012). Assigning Landscape Designations to these tracts could help with management of associated natural resources and ensure management consistent with other DCR properties statewide.
- Blackstone is located within waters with a Total Maximum Daily Load (TMDL) report required to address water quality impairments (per MassDEP 303d list). Although segments MA51-02, MA51-03, MA51-04, and MA51-05 are listed as requiring a TMDL (Category 5 of the 303d list), a TMDL has not yet been developed. Designers of future projects in the Park should focus on addressing identified impairments, in accordance with the DCR Stormwater Design Handbook (VHB 2022).
- Modifying the current flow of stormwater would decrease chemical and biological impairments into the Blackstone River from the Tri River Family Health Center parking lot.
- Modifying the current flow of stormwater would decrease chemical and biological impairments into the Blackstone River from the parking lot at River Bend Farm.
- The Blackstone River Watershed Association, which is headquartered in the Park, is actively engaged in river clean-ups, identification and management of aquatic invasive species, repairing and enhancing river access points, and providing educational programming. Opportunities exist to expand their role in the Park.
- Some of the Park's 25 potential vernal pools may "support rich communities of vertebrates and invertebrates" (Massachusetts Division of Fisheries and Wildlife (MassWildlife) 2009) and serve as important habitat components for other wildlife, including three of the Park's state-listed species. Surveying and certifying these pools (DCR (n.d.) and MassWildlife (2009)), as appropriate, may help better protect these animals.
- An opportunity exists to protect state-listed species at Youngsma Farm through implementation of Mowing advisory guidelines in rare turtle habitat: Pastures, successional fields, and hayfields (Massachusetts Natural Heritage and Endangered Species Program (NHESP) 2009).

Cultural Resources

Threats

- Activities that result in loss of ground cover and erosion, such as off-highway vehicle (OHV) use, new construction, incorrectly performed Right of Way (ROW) maintenance, and the creation of unauthorized trails on slopes may expose archaeological resources.
- Many features associated with the Blackstone Canal, including the canal prism and tow path in Worcester, Plummer's Landing, Goat Hill Lock, most of the towpath and canal itself, and Millville Lock are located within the 1.0%-chance flood zone. These historic structures may be impacted by flooding.
- A wooden building associated with Youngsma Farm is close to collapsing. As part of a historic agricultural landscape, loss of this building could diminish the property's historic integrity.
- The landscape associated with Rice City Pond contains a variety of dams and structures designed to modify the flow of water. The Rice City Pond Dam (MA00935) is classified as a Large, High Hazard Dam in Fair Condition. Inspections identified 12 deficiencies that addressed maintenance issues and remedial modifications (Pare Corporation 2018).

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- Unauthorized single-track trails are being built through sensitive cultural resource sites, potentially resulting in major impacts to these sites.

Opportunities

- The original survey for the Blackstone River and Canal National Register Historic District was performed in the 1990s. Advancements in technology since this survey provide an opportunity to improve the mapping of existing canal-related features, and to identify any existing natural soils that may contain intact, significant Indigenous peoples archaeological resources.
- Neither of the Worcester tracts has a Landscape Designation (DCR 2012). Assigning Landscape Designations to these portions of the Park could help with management of associated cultural resources and ensure management consistent with other DCR properties statewide.
- The canal prism and associated towpath in the Worcester Canal Tract provide a tangible connection to the Blackstone Canal within the City of Worcester and may be suitable for interpretation. Creating access to these historic resources, either for guided programs or general public access, can create opportunities for interpretive programming in this section of the Park.
- There is no information on the current condition of the canal prism or associated towpath in the Worcester Canal Tract.
- Youngsma Farm may have additional, unverified, cultural resources. Assessing the property may reveal such resources and their associated preservation needs.

Recreation

Threats

- An accessibility assessment identified 120 issues throughout the Park in such areas as approach, entrance routes, parking, travel routes, programs (e.g., trail, water, amenities (e.g., benches, drinking fountains, tables), toilet rooms, and universal design (Institute for Human Centered Design (IHCD) 2021). Because Capron Park was not included in the assessment, additional issues may be present at that tract.
- The Worcester Canal Tract is not mapped as Open Space and does not show on maps as being DCR property.
- Trails data do not exist for the two Worcester tracts or the associated MassDOT multi-use path. This lack of information makes planning and management difficult.
- Some people experiencing homelessness (i.e., the unsheltered) may form encampments in parks and other public greenspaces (Pitas et al. 2024), including on public and private lands along the Worcester multi-use path. Such encampments may result in damage to the environment (e.g., littering, trampling) and conflict with, or the displacement of, other park users (Pitas et al. 2024).
- Low-lying areas are exposed to the impacts of storm events. Recreation infrastructure is located within 1.0%-chance and 0.2%-chance flood zones. The Worcester Visitor Center's picnic area, adjacent parking, and operations garage are within the 1.0%-chance flood zone. The Worcester Visitor Center, adjacent parking, and multi-use path are within the 0.2%-chance flood zone. At Plummer's Landing, Aldrich Recreation Area is located within a Regulatory Floodway and the Larkin Memorial Area is within the 1.0%-chance flood zone. (See MGC 2010b for information on the naming of the Aldrich area and MGC 1983a for information on the naming of the Larkin area.) Lower

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elevation picnic sites at the Charles Ballou Recreation Area may also be affected by floods. (See MGC 1983b for information on the naming of the Ballou area.) The western half of Capron Park is predicted to be exposed to 1.0%-chance floods, and the eastern half to 0.2%-chance floods.

- A Public Health Fish Consumption Advisory has been issued for Rice City Pond and the Rolling Dam impoundment at Blackstone Gorge due to the presence of DDT and PCBs (Massachusetts Department of Public Health (DPH) 2023). Signs informing the public of this health advisory are absent from access points at both locations.
- The Blackstone River is meandering westward in the northwest section of the Main Tract, actively undercutting Plummer’s Trail and a towpath. This trail is an important part of the Park’s internal trails system, connecting Plummer’s Landing to Goat Hill and River Bend Farm. Continued erosion will result in the loss of this trail segment.
- Some of the Park’s trails are severely eroded and in need of repair, limiting their use.
- The Millville Lock parcel is accessed via a trail across private property. No legal agreement to allow agency or public access through this property was identified during the preparation of this RMP.
- There is no sign at Capron Park or the Millville Lock identifying them as DCR properties, or that they are part of Blackstone Heritage. Identifying these areas as DCR properties would let visitors know who is responsible for the maintenance of these areas.
- The lack of a DCR Main Identification sign and the presence of Blackstone Heritage Corridor and National Park Service signs may create confusion about the management of the Worcester Visitor Center.
- Current trail density (0.026 miles/acre) is slightly above the 0.0226 miles/acre (i.e., 9 km/km²) threshold for Parklands and is considered Excessive (DCR 2019a).
- An extensive network of authorized and unauthorized single-track mountain biking trails at Goat Hill is confusing and leads out of the Park into adjacent privately-owned lands.
- Potential encroachments were identified along Providence Road and Driscoll Lane, Northbridge and Hope Street, Millville; all include what appear to be privately-owned buildings constructed within the Park.
- Chapter 367 of the Acts of 2002 directed DEM (now DCR) and the Blackstone River and Canal Commission to designate a portion of the Park as the “Honorable William A. L. Bazeley Memorial Recreation Area” and to erect a suitable marker (MGC 2002). Because all existing recreation areas in the Park were named, this was not done.
- Park operations personnel have identified the lack of compliance with dog leash regulations as a common problem.

Opportunities

- Mapping the Worcester Canal Tract as Open Space would better reflect DCR properties and aid with future statewide planning efforts.
- Installing a Main Identification Sign would better communicate to the public who is responsible for the operation and maintenance of the Worcester Visitor Center.
- Information on the Worcester Visitor Center is not included in either the Blackstone River and Canal Heritage State Park web page (<https://www.mass.gov/locations/blackstone-river-and-canal->

[heritage-state-park](https://www.mass.gov/location-details/dcr-visitor-centers-and-exhibits)) or the DCR Visitor Centers and Exhibits web page (<https://www.mass.gov/location-details/dcr-visitor-centers-and-exhibits>). An opportunity exists to increase visitor awareness and enjoyment of the visitor center by creating a dedicated web page, and by adding information about the Worcester Visitor Center to existing related DCR web pages.

- Although the Worcester Visitor Center is available for use by governmental agencies and non-profit organizations, there is no publicly available information on scheduling use of the visitor center. An opportunity exists to increase transparency regarding use of the visitor center by formalizing the current use policy and making it available to the public.
- As DCR becomes aware of encampments on land under its management along the multi-use path in Worcester, it contacts the City's Quality of Life Task Force. The task force works to transition people into shelters by offering housing, treatment, and temporary storage of belongings. Following abandonment of an encampment, DCR contracts for the cleaning of the site. When encampments are located on abutting properties, DCR notifies the landowner(s) and provides them with contact information for the task force. This approach provides the unsheltered an opportunity to obtain housing and access to a variety of social services, while protecting park resources and the visitor experience.
- Establishing legal access to the Millville Lock will ensure ongoing public access to this resource.
- There is an informal agreement between Park staff and staff at the adjacent Tri River Family Health Center for the use of each other's parking areas during large events. Establishing a formal agreement will increase space for overflow parking and help accommodate accessible parking needs, while protecting DCR, the health center, and the public.
- The Emergency Action Plan for Rice City Pond Dam provides detailed information on how field operations personnel are to respond to dam safety issues, from minor issues to impending failure (Pare Corporation 2018). There is opportunity to increase awareness of this plan among Park staff and local first responders, thereby increasing public safety.
- Members of the Blackstone Valley Chapter of the New England Mountain Bike Association (NEMBA) are actively maintaining trails in the Goat Hill area. An opportunity exists to expand their role to aid with trail maintenance in other sections of the Park, to promote a culture of resource protection among cyclists, and to correct problems along the Goat Hill trails.
- Closing the Park's known 7.1 miles of unauthorized trails would restore trail density to within recommended levels.

CLIMATE CHANGE

Climate change impacts nearly every aspect of DCR's properties, from ecosystem health, to infrastructure, to recreation. (See DCR 2024 for an overview of these impacts.) The Department is actively working to mitigate and adapt to current and future impacts through such actions as forest management; decarbonizing DCR's buildings, vehicles, and power equipment; protecting wetlands; and using nature-based solutions to minimize stormwater impacts. Information on these, and other, efforts is incorporated into RMPs as available and appropriate.

Any discussion of climate change requires a shared understanding of terminology. Because of this, this RMP section adopts commonly accepted terms to the greatest extent possible. In general, climate-related technical terms used in this RMP are as defined in the Sixth Assessment Report of the

Intergovernmental Panel on Climate Change (IPCC 2021). Exceptions to this are the terms Adaptation, Risk, and Sensitivity, which are used as defined in DCR's Climate Change Vulnerability Assessment (CCVA; Weston and Sampson 2022).

DCR manages its forests to provide a range of ecosystem services such as recreation, clean water, wood commodities, and wildlife habitat (DCR 2020). For ecosystems under its management, DCR carefully considers both their vulnerability to climate change and their ability to mitigate the effects of climate change by storing carbon in ecosystems and harvested wood products. Several approaches are used to monitor DCR forests and to design forest management strategies to adapt to climate change and provide ecosystem services. (See Swanston et al. (2016) for information on adaptation strategies and approaches associated with DCR's forest management.) Established in 1957, DCR's Continuous Forest Inventory (CFI) system uses a network of more than 2,000 permanent plots on which repeated measurements are taken on an ongoing basis. The CFI measures the status, size, and health of over 100,000 trees; other vegetation; down woody material; and the forest floor. (See DCR 2022 for additional information on the CFI system.) This information helps DCR understand at a strategic scale the current character, condition, and trends of forest ecosystems under its care. DCR also uses operational inventory to help plan specific treatments and evaluate their outcomes. Using these different scales of information, remotely sensed data, and local and regional external expertise, DCR plans projects that help its stands, forests, and other lands adapt to climate change and mitigate greenhouse gas emissions. The conservation and science-based management of forest lands are an essential element to ensuring crucial carbon storage and advancing climate change resilience (Massachusetts Executive Office of Energy and Environmental Affairs (EEA) 2024). For additional information on the relationship between DCR's forest management practices and climate change, please see pages 77–85 in Massachusetts Forest Action Plan 2020 (DCR 2020) and Managing Our Forests...For Carbon Benefits (DCR 2023).

The Department is actively assessing and addressing the vulnerability of its properties and facilities to the impacts of climate change. In 2022, DCR conducted a Climate Change Vulnerability Assessment (Weston and Sampson 2022). Findings from this CCVA are being used by DCR to enhance park operations and maintenance, inform resilient investment, and provide a framework for hazard mitigation and climate adaptation for natural resources, cultural resources, recreational activities, buildings, facilities, and other infrastructure. Property-specific climate change information from the CCVA is included in the Climate Change (by 2070) table (Table 10) at the beginning of this RMP. An overview of the impacts of climate change on DCR facilities and operations is presented in the DCR Climate Impacts Story Map (DCR 2024).

Climate Exposure and Impacts

A summary of the ways in which the Commonwealth's natural, cultural, and recreational resources may be impacted by climate change is provided below. During the preparation of RMPs some resources may be identified as having particularly high exposure and/or sensitivity to the anticipated hazards or consequences of climate change. When this occurs, these resources and the projected impacts to them are described. In some instances, the potential impacts of climate change on a given resource are not well understood. When this occurs, only exposure is discussed.

Natural Resources—General Impacts

Climate change affects temperature, precipitation, and atmospheric and ocean chemistry, which in turn directly and indirectly affect the natural environment, including the plants, animals, and natural communities of DCR’s forests, parks, and reservations.

Climate is known to influence the presence, absence, distribution, reproductive success, and survival of both native and non-native plants (Finch et al. 2021). Native northern and boreal species, including balsam fir, red spruce, and black spruce may fare worse under future conditions, but other species may benefit from the projected changes in climate (Janowiak et al. 2018). Some non-native invasive species will be affected by climate change while others will remain unaffected, and some non-invasive non-native species are likely to become invasive (Finch et al. 2021). In general, elevated temperature and CO₂ enrichment associated with climate change increases the performance of non-native plants more strongly than the performance of native plants (Liu et al. 2017). Climate change may result in the presence of new non-native invasive plants on a property, and changes to the distribution and/or abundance of invasives already present on a property.

Exposure to a changing climate affects wildlife in a variety of ways. For animals that live in or near aquatic environments, “changes in habitat and hydrological regimes are expected to shift their abundance and distribution” (Isaak et al. 2018: 89). Impacts to terrestrial animals are expected to be highly variable (Halofsky et al. 2018) but may be considered to fall into the following four categories: 1. habitat loss and fragmentation; 2. physiological sensitivities (i.e., innate characteristics that influence the ability to cope with changing temperature and precipitation conditions); 3. alterations in the timing of species’ life cycles; and 4. indirect effects (e.g., disruption of ecological relationships) (Friggens et al. 2018). Although all Northeast wildlife are exposed to hazards associated with climate change, some groups, “including montane birds, salamanders, cold-adapted fish, and freshwater mussels, could be particularly affected by changing temperatures, precipitation, sea and lake level, and ocean processes” (MassWildlife 2015: 357). In addition, it is the position of the Massachusetts Natural Heritage and Endangered Species Program that state-listed species and Priority Natural Communities are likely to be highly sensitive to climate change and that all state-listed species will be negatively affected by hydrologic changes, changes in water, soil, and air temperature, and changes in forest composition.

Natural Resources—Property-Specific Exposure and Impacts

Climate change may cause some vernal pools to dry earlier in the season than they have historically, potentially interfering with amphibian life cycles (Cartwright et al. 2022). Because of this, some of the Park’s pools and associated wildlife may be negatively impacted. Similar impacts may occur at potential vernal pools that function as vernal pools.

Responses of Massachusetts’ invasive plants (i.e., those categorized as Invasive by the Massachusetts Invasive Plant Advisory Group (2024)) to a changing climate are largely unknown. However, sufficient information exists to project the likely future trend of Asiatic bittersweet, common reed, and garlic mustard. “Available data suggest that bittersweet is likely to benefit from the warming and increased precipitation that are predicted for the Northeast” (Rustad et al. 2012), resulting in expansion throughout New England. Areas where the forest canopy or forest floor has been disturbed are particularly susceptible (McNab and Loftis 2002). Because of this, it is anticipated that Oriental bittersweet will continue to expand within Blackstone Heritage in response to climate change. Lineages

of common reed in New England exhibit strong growth and photosynthetic response to elevated temperature and increased levels of CO₂, such as those associated with climate change (Eller et al. 2017). Because of this, it is anticipated that common reed will further expand at the Park and throughout Massachusetts. Climate change will negatively impact garlic mustard, reducing “establishment of a currently prolific invader...driven by poor demographic performance in warmer climates” (Merow et al. 2017: E3276). Projected future climate change “may mitigate” garlic mustard’s “invasion in southern New England while reducing otherwise prolific population growth in some parts of northern” New England (Merow et al. 2017: E3279). Because of this, it is anticipated that garlic mustard populations at Blackstone Heritage will decrease under climate change.

Cultural Resources—General Impacts

Climate change may negatively affect cultural resources, their preservation, and maintenance (EEA 2022a; International Council on Monuments and Sites (ICOMOS) Climate Change and Cultural Heritage Working Group 2019; Rockman et al. 2016: 3, 18; United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Center 2007). In Massachusetts, cultural resources may be exposed to the following natural phenomena that are correlated with adverse impacts: higher annual average temperature (especially in winter), increased numbers of freeze-thaw cycles, increased precipitation intensity, higher relative humidity, higher wind speeds, an increase in severe storm events, increased numbers and severity of wildfires, more severe seasonal droughts, increase in number and severity of inland flood events, increased coastal flooding and erosion, increased probability of landslides, changes in groundwater levels, shifts in native and invasive species distribution, performance, and phenology; and changes in oceanic and atmospheric chemistry (Rockman et al. 2016; Commonwealth of Massachusetts 2023: 5.1-31–5.1-61).

The phenomena listed above may produce a variety of adverse impacts to Massachusetts’ cultural resources. Sensitivity and potential impacts vary based on resource category (i.e., archaeological sites, cultural landscapes, ethnographic landscapes and sites, and buildings and structures). Resource-specific factors such as location, design, materials, condition, etc. will also influence sensitivity and consequent impacts. All categories of cultural resources may be subject to complete or partial destruction through wildfire, inland flooding, sea level rise, storm surge, or landslides. Additionally, these resource categories may be subject to other types of impacts, as follows. Archaeological sites may have site stratigraphy disrupted by changes in hydrography, may suffer accelerated decomposition of artifacts and features, and may be impacted inadvertently during disaster response. Cultural landscapes may lose plantings due to a variety of stressors (e.g., drought or flood, pests, soil salinity), may be infiltrated by invasives, may be eroded by surface runoff, may experience more rapid deterioration of hardscaping and site furnishings, and may be damaged by high wind or heavy snow events. Ethnographic landscapes, traditional cultural places, and associated communities (including Indigenous peoples) may suffer both tangible and intangible impacts such as loss or diminishment of natural species used for food, ceremony, or medicine; alterations in timing of hunts, etc.; increased difficulty of vulnerable subgroups (e.g., the elderly) to perform outdoor tasks; and a loss of cultural knowledge associated with resources and practices. Buildings and structures may be damaged or destroyed by high wind or heavy snow events, suffer accelerated deterioration through a variety of mechanisms (e.g., elevated humidity, chemical reactions, destructive pests and organisms), may be destabilized by hydrological changes, or be damaged by inadequate gutters or drainage systems (ICOMOS Climate Change and Cultural Heritage Working

Group 2019: 73–89; Rockman et al. 2016: 20–24). (See Rockman et al. 2016: 19–24 for a detailed assessment of the potential impacts of climate change on cultural resources.)

Cultural Resources—Property-Specific Exposure and Impacts

The Park’s known cultural resources with high exposure to climate change hazards are those features associated with the Blackstone Canal, including the canal prism and tow path in Worcester, Plummer’s Landing, Goat Hill Lock, most of the towpath and canal itself, and Millville Lock. These resources are within most recent Federal Emergency Management Agency (FEMA) 1.0%-chance flood zone (MassGIS 2023). (Precipitation changes due to climate change (see EEA 2022b and Weston and Sampson 2022) are not factored into FEMA flood plain modeling. Climate change may result in additional exposure to and impacts from flooding for cultural resources in the future. A FEMA-contracted report (AECOM 2013) finds that: “For the riverine environment, the typical 1% annual chance floodplain area nationally is projected to grow by about 45%, with very large regional variations ... approximately 70% of the 45% (or 31.5%) growth in the 1% annual chance floodplain is due solely to climate change” (AECOM 2013: ES6–ES7). Site-specific projections for future floodplain areas were not available at the time this RMP was prepared.)

Recreation—General Impacts

Outdoor recreation and park visitation are dependent on weather and climate and will be affected by a warming climate (Wilkins and Horne 2024). Higher temperatures positively affect participation in most outdoor activities, except snow-based activities (Wilkins and Horne 2024). “Winter is warming substantially faster than other seasons, and winter warming is especially pronounced in the...Northeastern United States” (Wilkins and Horne 2024: 15). Exposure to this climate change phenomenon is projected to significantly reduce the length of winter recreation seasons for downhill skiing, cross-country skiing, and snowmobiling, decreasing recreational opportunities and causing substantial economic impacts (Wobus et al. 2017). Whitewater rafting, primitive area use, and hunting are also projected to be negatively impacted by exposure changing weather patterns associated with climate change (Askew and Bowker 2018). Although “coldwater fishing habitat is expected to decline under a warming climate, which will likely result in fewer fishing days,” overall fishing participation in the Northeast is projected to rise “due to the more favorable temperatures” (Wilkins and Horne 2024: 11). Horseback riding on trails, boating, swimming, and visiting interpretive sites are also expected to see higher participation in the Northeast under climate change (Askew and Bowker 2018). Temperature preferences of campers indicate that the “number of ideal days” for camping will also increase (Wilkins and Horne 2024: 13). Participation in biking is also projected to increase, especially in the winter and shoulder months (Wilkins and Horne 2024: 13). Climate change may also impact outdoor recreation through increased impacts to recreation infrastructure (e.g., flooding impacts), and increased exposure to disease vectors (e.g., mosquitoes and ticks), longer pollen seasons, and heat-related illnesses (O’Toole et al. 2019).

Recreation—Property-Specific Exposure and Impacts

Recreation activities at the Park likely to be negatively impacted by exposure to weather changes resulting from climate change include hunting and cross-country skiing. Other recreation activities, such as fishing, heritage tourism, and horseback riding may see increased participation.

Recreation infrastructure with exposure to increased precipitation and flooding associated with climate change include the Worcester Visitor Center’s picnic area and adjacent parking, Aldrich Recreation Area, Larkin Memorial Area, lower elevation picnic sites at the Charles Ballou Recreation Area, and the western half of Capron Park. These resources are within most recent Federal Emergency Management Agency (FEMA) 1.0%- and 2%-chance flood zones (MassGIS 2023). (As noted above, precipitation changes due to climate change are not factored into FEMA flood plain models and projections for future floodplain areas were not available at the time this RMP was prepared.)

APPLIED LAND STEWARDSHIP ZONING

DCR assesses the appropriate uses and stewardship of its properties at two spatial scales: the landscape level and the property level.

Landscape Designation

In 2012, DCR engaged in a comprehensive system-wide assessment of lands managed by its Division of State Parks and Recreation, designating them as Reserve, Woodland, or Parkland. (See Landscape Designations for DCR Parks & Forests: Selection Criteria and Management Guidelines (DCR 2012) for details.) Multiple Landscape Designations may apply to individual properties with diverse resources and levels of development. All of Blackstone Heritage was designated Parkland. Identification of Land Stewardship Zones within Blackstone Heritage was performed in the context of the Parkland Landscape Designation.

The following Land Stewardship Zoning is recommended to guide management and any future development. (See Figures 1 and 2, pages 28 and 29, and the Land Stewardship Zoning layer on DCR’s Stewardship Map: <https://dcrsgis-mass-eoeaa.hub.arcgis.com/>.)

Zone 1

Zone 1 areas have highly sensitive ecological and/or cultural resources that require additional management approaches and practices to protect and preserve these special features and their values (DCR 2012). The following areas of Blackstone Heritage have been designated Zone 1.

- No portions of Blackstone Heritage have been designated Zone 1.

Zone 2

Zone 2 areas provide for a balance between resource stewardship and recreational opportunities that can be appropriately sustained. They include stable yet important cultural and natural resources. These areas provide a buffer for sensitive resources, recharge areas for surface and groundwaters, and large areas where existing public recreation activities can be managed at sustainable levels (DCR 2012). The following areas of Blackstone Heritage have been designated Zone 2.

- All portions of Blackstone Heritage, with the exception of areas identified as Zone 3

Zone 3

Zone 3 areas include altered landscapes in active use and areas suitable for future administrative, maintenance, and recreation areas (DCR 2012). The following areas of Blackstone Heritage are currently developed, appropriate for potential future development, or intensively used for recreation. They have been designated Zone 3.

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- Worcester Visitor Center; entire tract.
- Parking lot and adjacent landscaped area at 1130 Millbury Street, Worcester.
- Parking lot and adjacent landscaped areas at 205 and 207 Main Street, Millbury (i.e., The Honorable Richard J. Dwinell Blackstone Valley Memorial Access Area).
- Richard Larkin Memorial Recreation Area: existing footprint of parking area and maintained lawn. Because this entire facility is located within a Regulatory Floodway, the existing facility should not be expanded or hardened despite being designated as Zone 3.
- Spaulding R. Aldrich Memorial Recreation Area; existing footprint of parking lot and picnic area. Because this facility is located within a Regulatory Floodway and 1.0%-chance flood zone, the existing facility should not be expanded or hardened despite being designated as Zone 3.
- Rice City Pond facility, including the following areas: parking area, Honorable P. Eugene Casey Memorial Building, picnic area, adjacent field, and all of 350 Hartford Avenue East. This recommendation is made with the caveat that no hard construction occur within the 1.0%-chance or 0.2%-chance flood zones.
- Yeskowicz Area (288 and 292 Hartford Avenue East); both parcels in their entirety.
- River Bend Farm (287 Oak Street); entire parcel.
- Park garage/maintenance building and sugar house (286 Oak Street); entire parcel.
- Park Headquarters (271 Oak Street); entire parcel.
- Stanley Mill; parking lot and canal towpath access point.
- Picnic area and field north of Stanley Mill, between canal and Blackstone River; existing footprint.
- Capron Park (24 Mendon Street); entire parcel.
- Blackstone Gorge: including parking lot, adjacent maintained turf, hardened trails to overlook, and overlook.

SIGNIFICANT FEATURE OVERLAY

Significant Feature Overlays provide precise management guidance in order to maintain or preserve recognized resources features regardless of the zone in which they occur. The following Significant Feature Overlays were developed for Blackstone River and Canal Heritage State Park:

- **Multi-Use Path Overlay.** This overlay includes the multi-use path and adjacent areas associated with the Worcester Visitor Center and Worcester Canal tracts, and as identified in Exhibit A, Plan of Licensed Area in the 2023 License Agreement By and Between Massachusetts Department of Transportation and Commonwealth of Massachusetts under the care and custody of the Massachusetts Department of Conservation and Recreation. Areas within this overlay are managed for recreational purposes in accordance with the terms of the license.
- **National Register Overlay.** This overlay includes all National Register of Historic Places listed resources within the Park's boundary. This includes the following:
 - Blackstone Canal Historic District (Adams et al. 1995).

Resources within this overlay that contribute to the significance of these National Register-listed properties are to be managed in accordance with M.G.L c. 9, § 27; applicable DCR BMPs for

historic and/or archaeological resources, The Secretary of the Interior's (SOI) Standards for the Treatment of Historic Properties (Grimmer 2017), and, where applicable, the SOI's Standards for the Treatment of Historic Landscapes (Birnbaum and Peters 1996). Proposed management activities, construction and maintenance projects, and forestry projects within the overlay, including all ground-disturbing activities, should be reviewed by the DCR Office of Cultural Resources to determine whether cultural resources that contribute to the significance of the National Register-listed property will be impacted.

DCR STEWARDSHIP MAP TOOL

This RMP should be viewed in conjunction with DCR's Stewardship Map, a GIS-based tool that allows users to view a property's natural, cultural, and recreational resources. The Stewardship Map tool is dynamic, and information continues to be updated after adoption of an RMP. Guidance for using the tool, as well as Best Management Practices for resource stewardship, are located on the Stewardship Map site: <https://dcrgis-mass-eoeaa.hub.arcgis.com/>.

Because authorized trails are located within known habitat of state-listed species on this property,, managers should consult an additional GIS-based tool, the NHESP 2022 Guidance Codes for DCR Trail Maintenance Map. (<https://mass-eoeaa.maps.arcgis.com/home/item.html?id=cb252e8df40d408c81fe8fcf690e14f6>) This tool allows users to select specific trail segments and identify restrictions and regulatory review associated with performing 10 common trail maintenance activities on these segments. Because site-specific rare species information is confidential under Massachusetts law (M.G.L. c. 66 §17D), access to this tool is restricted.

CONSISTENCY REVIEW

Resource Management Plans "shall ensure consistency between recreation, resource protection, and sustainable forest management" (M.G.L. c. 21, § 2F). For planning purposes, an activity is considered consistent with resource protection if it has no significant, long-term, adverse impact on resources. To this end, a series of indicators were developed to evaluate the impacts of recreation and forest management on natural and cultural resources.

Many activities with the potential to negatively affect resources are already subject to agency and/or regulatory review (e.g., forest management activities, projects within Priority Habitat). For these activities, compliance with state regulations, regulatory authority guidance, DCR policies and processes, and Best Management Practices (BMPs) is considered an indicator of consistency between park use and resource protection. New indicators were generated for activities not subject to agency or regulatory review, and are based on available data, information readily identifiable via aerial imagery or site visits, assessments by DCR subject matter experts, or the property manager's knowledge of park conditions and use. (See Table 17, page 30.)

Indicators are applied during the RMP planning process in order to ensure a standardized assessment of consistency across all properties in the DCR system. Inconsistencies identified via the application of indicators are used to inform the development of management recommendations.

The status of indicators (Yes, No, Unknown, and N/A) were accurate at the time this RMP was prepared and were used for planning purposes. However, they represent a snapshot in time and may not reflect future conditions. In addition, the status of indicators will change as recommendations get implemented.

MANAGEMENT RECOMMENDATIONS

Thirty-seven priority management recommendations were developed for this Park. They are presented in Table 18. Priority Recommendations for Blackstone River and Canal Heritage State Park, page 33. All recommendations are of equal importance.

Priority management recommendations derive from Threats, Opportunities, and Consistency Assessment information presented in this RMP. For a recommendation to be considered a priority and listed in the table, it must meet one or more of the criteria listed below. Maintenance and management needs not meeting one or more of these criteria are not included in the table but are identified in the Threats and Opportunities sections.

The following types of recommendations are considered priority:

- Natural resource stewardship and restoration activities consistent with park identity and intended to improve ecological function and connectivity.
- Cultural resource management activities consistent with park identity and intended to prevent the loss of integrity of significant cultural resources.
- Improvements consistent with park identity that are needed to support intended park activities.
- Actions required for regulatory compliance or compliance with legal agreements.
- Activities that prevent or ameliorate threats to the health and safety of park visitors and employees.
- Activities that address inconsistencies among recreation, resource protection, and sustainable forest management, as identified through use of the Consistency Assessment checklist.

Progress toward implementing priority recommendations is tracked through the use of DCR's Capital Asset Management Information System (CAMIS). The property manager should enter each recommendation listed in Table 18 (page 33) into CAMIS as a separate work order, noting "*RMP" in the description field. Non-traditional work orders (e.g., volunteer trail work, posting of DPH Fish Consumption Advisory posters, certification of vernal pools) should be closed out by the property manager, once the recommendation has been implemented.

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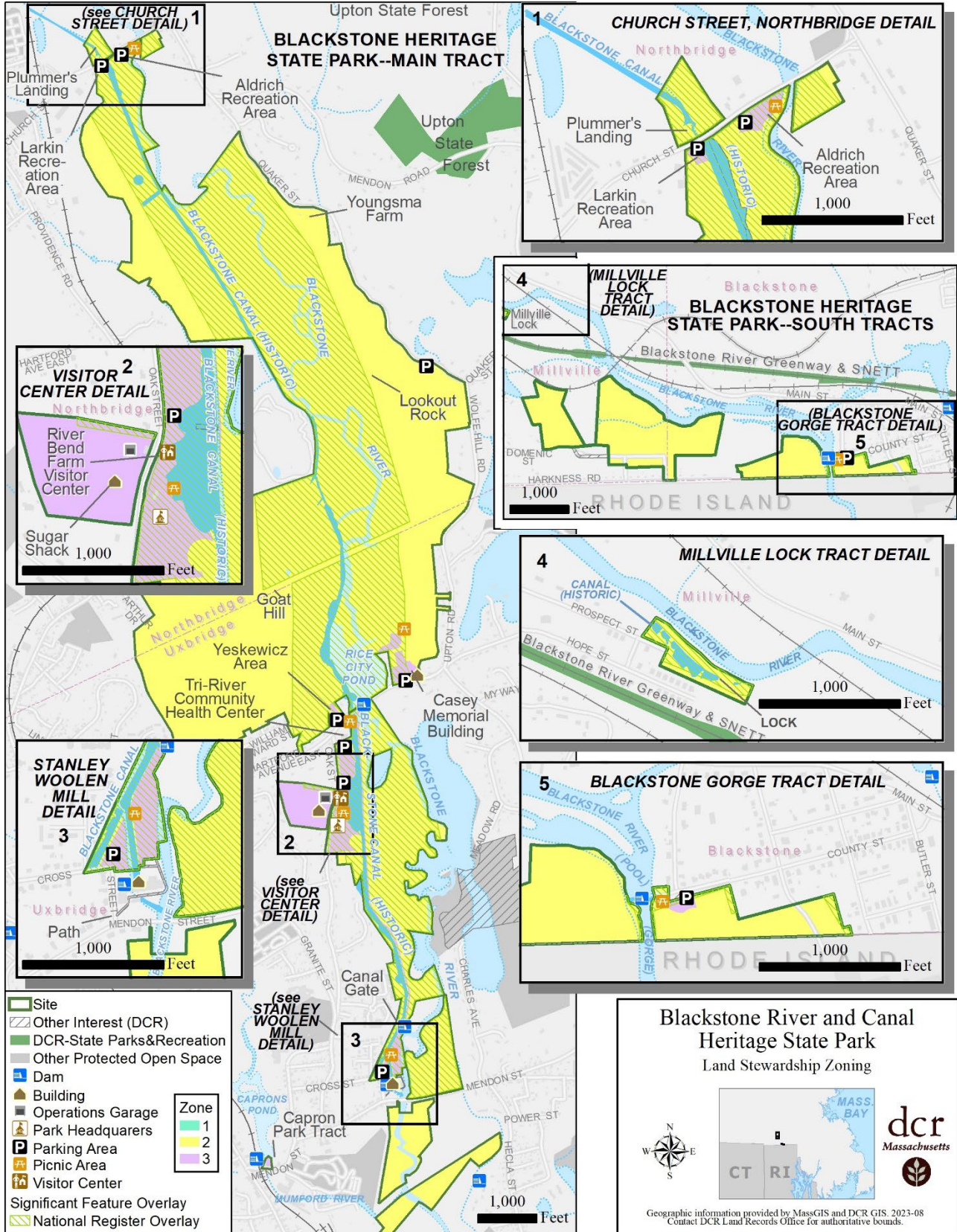


Figure 1. Land Stewardship Zoning Map.

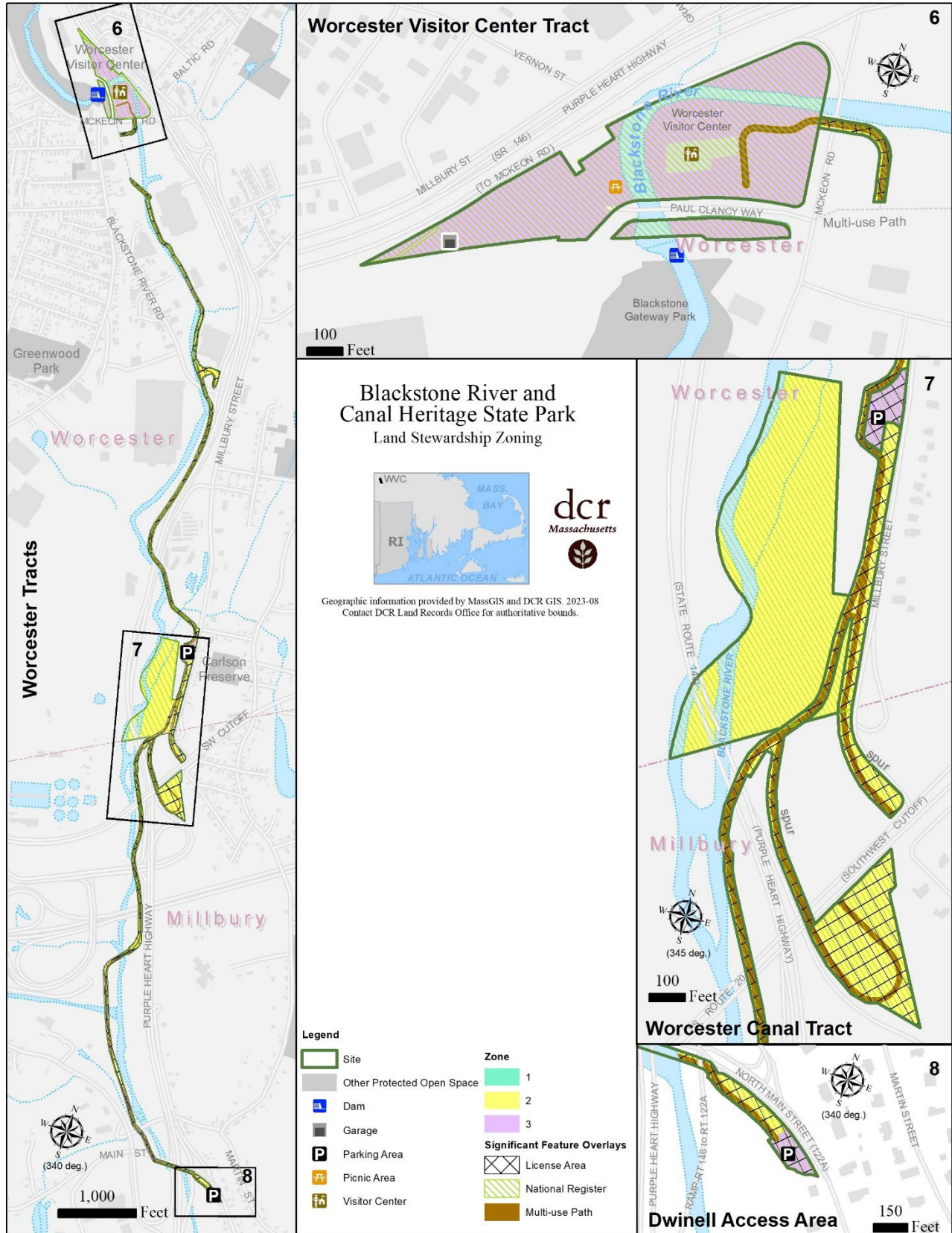


Figure 2. Land Stewardship Zoning Map (continued).

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Table 17. Consistency Assessment. This assessment represents a snapshot in time and may not reflect future conditions.

Category	Metric	Status
Landscape Designation	1. All development and uses of the park since 2012, or currently planned for the park, are consistent with its Landscape Designation(s).	Yes
Natural Resources	1. All projects (normal maintenance activities, special projects, volunteer projects) conducted within Priority Habitat were reviewed and approved through DCR's internal review process and by NHESP for potential impacts to rare species and their habitats.	No
Natural Resources	2. All projects conducted within areas subject to state and/or federal wetlands or waterways regulations were reviewed and approved through DCR's internal review process; reviewed and approved through the appropriate, local, state, and/or federal review process; and were carried out in accordance with the terms of a valid permit.	Yes
Natural Resources	3. Sensitive resource areas, such as steep slopes, riverbanks, streambanks, pond and lakeshores, wetlands, and dunes are free of desire paths and other user-created trails.	Yes
Natural Resources	4. Aquatic areas adjacent to beaches, boat ramps and launches, roads, and hiking trails are free of eroded sediments.	Yes
Natural Resources	5. The extent of exposed soil in campground and/or picnic sites is stable or decreasing.	Yes
Natural Resources	6. The extent of native vegetation in campground and/or picnic sites is stable or increasing. (As assessed by property manager.)	Yes
Natural Resources	7. Area of trail impacts in Reserves is less than 50% of area. (See Naughton (2021) for information on primary area of trail impacts.)	N/A
Natural Resources	8. Congregations of breeding, migratory, or wintering wildlife are protected from disturbance by temporary (e.g., seasonal) restrictions on recreational access.	No
Natural Resources	9. Geocaches, letterboxes, orienteering control locations, and other discovery destinations are located outside sensitive natural resource areas and their locations have been reviewed and approved by park personnel. (As assessed by property manager.)	Yes
Natural Resources	10. Zone I wellhead protection areas are free of vehicle parking, chemical storage, or concentrated recreation.	Yes

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Category	Metric	Status
Natural Resources	11. All boat ramps and launches have cleaning stations and/or educational signs and materials on preventing the spread of aquatic invasive organisms. (As assessed by property manager.)	No
Natural Resources	12. For each barrier beach there is a current, approved Barrier Beach Management Plan and all beach-related activities are conducted in accordance with this plan.	N/A
Cultural Resources	1. All maintenance activities and projects with the potential to cause sub-surface disturbance are being reviewed by the DCR archaeologist for potential impacts to archaeological resources.	Yes
Cultural Resources	2. All maintenance activities and projects affecting historic properties (buildings, structures, and landscapes over 50-years-old) are being reviewed by the Office of Cultural Resources to avoid adverse impacts.	Yes
Cultural Resources	3. Historic buildings, structures, and landscapes are being used, maintained, and repaired in a manner that preserves their cultural integrity and conveys their historic significance to park visitors.	Yes
Cultural Resources	4. Recreational activities such as hiking, biking, and boating are not eroding cultural properties such as archaeological sites or historic landscapes through creation of desire lines, rutting in the landscape, damage to historic built features, or excessive scouring (erosion) of coastal and shoreline areas.	No
Cultural Resources	5. Geocaches, letterboxes, and other discovery destinations are located away from sensitive cultural resources, and their locations have been reviewed and approved by park personnel.	Yes
Cultural Resources	6. Historic buildings, structures, landscapes, archaeological sites, and concentrations of historic resources are located outside of areas predicted to be subject to flooding, storm surge, or sea-level rise.	No
Recreation	1. Types of recreation, levels of recreational use, and types and extent of recreation infrastructure are consistent with the park's identity statement.	No

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Category	Metric	Status
Recreation	2. Trail density is consistent with the park’s Landscape Designation(s). (See Trails Guidelines and Best Practices Manual (DCR 2019a) for density thresholds.)	No
Recreation	3. All authorized trail construction was performed in accordance with an approved Trail Proposal Form.	Yes
Recreation	4. Over 90% of the park’s official trails network is classified as being in Fair or better condition.	Yes
Recreation	5. Recurring use by OHVs is restricted to authorized trails. (As assessed by property manager.)	No
Recreation	6. There is a high level of compliance with dog leash regulations and policies. (As assessed by property manager.)	No
Recreation	7. Athletic fields are free of recreation-caused impacts (e.g., bare spots) to turf. (As assessed by property manager.)	N/A
Recreation	8. Water-based recreation is consistent with “Uses Attained” designation as identified by MassDEP in its most current integrated list of waters (e.g., MassDEP 2023); DPH fish consumption advisories; and/or water quality testing at waterfront areas.	No
Recreation	9. Recreation facilities are located outside of areas subject to flooding, storm surge, or sea-level rise.	No
Sustainable Forest Management	1. Forestry activities are consistent with Landscape Designation and associated forestry guidelines.	Yes
Sustainable Forest Management	2. Forestry activities are consistent with current Forest Resource Management Plan.	N/A
Sustainable Forest Management	3. Tree cutting is performed in accordance with an approved cutting plan, if required under the Massachusetts Forest Cutting Practices Act (M.G.L. Ch. 132, Sections 40–46).	N/A

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Table 18. Priority Recommendations for Blackstone River and Canal Heritage State Park. All recommendations are of equal importance. When multiple parties are responsible for implementing a recommendation, they are identified parenthetically in the Implementation column. Property managers should enter these recommendations as work orders in CAMIS to ensure their tracking and implementation.

Category	Recommendation	Implementation
Natural Resources	Monitor available water quality test data from the Blackstone River to keep informed of impairments and to help make decisions on appropriate recreational uses within the Park.	Office of Natural Resources (Co-Lead), Park Operations (Co-Lead), Partner
Natural Resources	Post Department of Public Health Fish Consumption Advisory Posters (https://www.mass.gov/doc/fish-consumption-advisory-poster-for-marine-and-fresh-water-bodies-0/download) at kiosks and fishing access locations at Rice City Pond and Blackstone Gorge.	Interpretive Services, Park Operations (Lead)
Natural Resources	Identify appropriate stormwater runoff treatments for the River Bend Farm and Tri River Health Center parking areas. Develop design specifications and cost-estimates and construct the treatment systems.	Contractor, Lakes and Ponds Program (Co-Lead), Stormwater and Remediation(Co-Lead)
Natural Resources	Install kiosk at the Blackstone Gorge boat ramp to present educational materials on preventing the spread of aquatic invasive organisms	Interpretive Services (Co-lead), Lakes and Ponds Program (Co-Lead), Park Operations
Natural Resources	Keep current in knowledge of the status of 21E (i.e., hazardous material release) sites adjacent to the Park.	Park Operations
Natural Resources	In association with MassWildlife, create and implement a management plan to mitigate plant succession and maintain early successional habitats south of Larkin Recreation Area.	Management Forestry (Co-Lead), Office of Natural Resources (Co-Lead), Park Operations, Partner
Natural Resources	Implement mowing advisory guidelines in rare turtle habitat: Pastures, successional fields, and hayfields (NHESP 2009) at Youngsma Farm fields.	Park Operations

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Category	Recommendation	Implementation
Natural Resources	Develop, submit for regulatory review, and implement erosion control mechanisms along the Blackstone River in the northern section of the Park where there is active trail undercutting.	Consultant, Lakes and Ponds Program (Co-Lead), Office of Natural Resources(Co-Lead) , Park Operations
Natural Resources	Establish a formal agreement with the Blackstone River Watershed Association for use of the Park office and visitor center for administrative and public functions.	Park Operations, Office of the General Counsel (Co-Lead)
Natural Resources	Encourage the Blackstone River Watershed Association to expand invasive species management and water quality monitoring in the Park.	Office of Natural Resources (Co-Lead), Park Operations, Partner
Natural Resources	Survey, document, and submit documentation to certify potential vernal pools that are in NHESP habitat of MESA-protected vernal pool obligate species in accordance with DCR (n.d.) and MassWildlife (2009), as warranted.	Office of Natural Resources (Co-Lead), Volunteers
Natural Resources	Apply Landscape Designations to those portions of the Park currently lacking such designations.	Management Forestry (Co-Lead) , GIS Program
Cultural Resources	Conduct a historical and archaeological assessment to identify additional cultural resources in the park.	Contractor, Office of Cultural Resources (Lead)
Cultural Resources	Assess the potential for creating public access to the canal prism and towpath in the Worcester Canal Tract in order to access these historic resources and creating interpretive opportunities.	Interpretive Services (Co-Lead), Office of Cultural Resources, Park Operations(Co-Lead)
Cultural Resources	Develop and implement guidance on maintenance activities for the Rice City Pond Dam to preserve the pond's historic landscape features.	Consultant, Office of Cultural Resources (Co-Lead), Office of Dam Safety(Co-Lead)
Cultural Resources	Assess Youngsma Farm for cultural and historic significance.	Office of Cultural Resources

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Category	Recommendation	Implementation
Cultural Resources	Implement recommendations contained in the Phase I Inspection/Evaluation report for the Rice Pond Dam (GZA Geo-environmental, Inc. 2019) to maintain this structure.	Contractor, Office of Dam Safety (Co-Lead), Park Operations (Co-Lead)
Recreation	As appropriate, promote EEA's Environmental Justice Policy goals at the Worcester Visitor Center and Worcester Canal tracts.	Land Protection Program (Co-Lead), Trails and Greenways Section (Co-Lead), Interpretive Services (Co-Lead), Partners
Recreation	Develop a dedicated web page for the Worcester Visitor Center, including information on its public use policy. Link the visitor center's web page to DCR's existing Blackstone River and Canal Heritage State Park and DCR Visitor Centers and Exhibits web pages.	Interpretive Services, Park Operations, Regional Staff (Lead), Web Content Creator
Recreation	Continue coordinating with the City of Worcester's Quality of Life Task Force, as needed, to address encampments of unsheltered people on DCR-managed property along the multi-use path and on adjacent properties.	Park Operations (Lead), Partners
Recreation	Implement recommendation in the Program Accessibility Assessment (IHCD 2021).	Park Operations (Lead), Universal Access Program
Recreation	Review existing recreation areas to identify a potential site to be designated the "Honorable William A. L. Bazeley Memorial Recreation Area."	Park Operations
Recreation	To the greatest extent possible, relocate portable recreation infrastructure, such as picnic tables and benches, outside of 1.0%-chance flood zones.	Landscape Architecture Section (Co-Lead), Park Operations (Co-Lead), Office of Climate Resilience
Recreation	Resolve potential encroachments in accordance with draft Agency-wide guidance and Best Management Practices (DCR 2019b).	Contractor, Management Forestry (Lead), Office of the General Counsel, Park Operations

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Category	Recommendation	Implementation
Recreation	Install a Cantilevered Identification Sign at the Worcester Canal Tract indicating “Blackstone Canal, Blackstone River & Canal Heritage State Park.”	Park Operations
Recreation	Install a Cantilevered Identification Sign at Capron Park indicating “Capron Park, Blackstone River & Canal Heritage State Park.”	Park Operations
Recreation	Install a Cantilevered Identification Sign along the Southern New England Trunkline Trail at the trail entrance to the Millville Lock indicating “Millville Lock, Blackstone River & Canal Heritage State Park.”	Park Operations
Recreation	Establish a formal agreement to allow DCR and public access across private property to access Millville Lock.	Land Protection Program (Co-Lead), Office of the General Counsel (Co-Lead), Park Operations
Recreation	Map the formal and informal trails of the Worcester Visitor Center Tract, Worcester Canal Tract, and the MassDOT multi-use path under DCR’s management and incorporate this information into DCR’s trails dataset.	GIS Program
Recreation	Develop a detailed map of the high-density trails network at the Goat Hill section of the Park; make available as download on DCR’s web page.	GIS Program (Co-Lead), Interpretive Services (Co-Lead), Park Operations, Partner, Trails and Greenways Section

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Category	Recommendation	Implementation
Recreation	<p>Resolve trail-related threats and opportunities identified in this RMP, in accordance with Trails Guidelines and Best Practices (DCR 2019, or update), through the following actions:</p> <ul style="list-style-type: none"> • Maintain authorized trails, as identified in the DCR Trail Data Layer provided to the Natural Heritage and Endangered Species Program in 2021, and in accordance with the Recreational Trail Maintenance and Biodiversity Conservation 2021 update. • Evaluate trail segments for discontinuation or active closure, including those that are: unauthorized, unsafe, connecting to privately-owned property, located in environmentally or culturally sensitive areas, or otherwise inconsistent with DCR Trails Guidelines and Best Practices. Provide an updated trail data layer to the Natural Heritage and Endangered Species Program. • Establish new trails, as warranted, following regulatory review. Provide an updated trail data layer to the Natural Heritage and Endangered Species Program. 	Office of Cultural Resources, Office of Natural Resources, Park Operations (Co-Lead), Partners, Trails and Greenways Section (Co-Lead)
Recreation	Prohibit the future construction of single-use trails at Goat Hill or elsewhere in the Park.	Park Operations (Lead), Partner, Trails and Greenways Section, Volunteers
Recreation	Consider discontinuation and active closure of unauthorized trails (i.e., those not identified in the DCR Trail Data Layer provided to the Natural Heritage and Endangered Species Program in 2021) in order to reduce trail density below recommended threshold for Parkland.	Park Operations (Lead), Trails and Greenways Section
Recreation	Encourage the local NEMBA chapter to maintain trails in the Park in accordance with DCR Trail Guidelines and Best Practices Manual (2019a).	Park Operations (Lead), Partner, Trails and Greenways Section
Recreation	Formalize a reciprocal parking agreement with Tri River Family Health Center.	Office of the General Counsel (Lead), Park Operations, Partner

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Category	Recommendation	Implementation
Recreation	Increase awareness and enforcement of DCR leash regulations.	Bureau of Ranger Services (Co-Lead), Park Operations (Co-Lead)
Recreation	Increase awareness of the Emergency Action Plan for Rice City Pond Dam (Pare Corporation 2018) among Park staff and local first responders.	Office of Dam Safety, Park Operations (Lead)

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