dcr
Massachusetts

Resource Management Plan
Lake Wyola State Park

PUBLIC COMMENT DRAFT NOVEMBER 2025

Adopted by the DCR Stewardship Council MONTH, 2025

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

Maura T. Healey, Governor
Kimberley Driscoll, Lieutenant Governor
Rebecca L. Tepper, Secretary
Nicole LaChapelle, Commissioner

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

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, 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 at www.mass.gov/dcr. Contact us at mass.parks@mass.gov.

PUBLIC REVIEW DRAFT - SEPTEMBER

Lake Wyola State Park

https://www.mass.gov/locations/lake-wyola-state-park

1. Property Overview

Characteristic	Value
Date Established	1997
Location	Shutesbury
Ecoregion	Worcester Plateau
Watershed	Connecticut
DCR Region	Central
DCR District	Central Highlands
DCR Complex	Erving
Management Forestry District	Eastern Connecticut Valley
Fire Control District	Franklin
Size (acres)	41.9
Boundary Length (miles)	1.9
Elevation - Minimum (feet)	831.9
Elevation - Maximum (feet)	885.0
Environmental Justice (acres)	0.0
Estimated Annual Attendance (2020)	15,000
Interpretive Programs (# programs, 2023)	0
Interpretive Programs (# attendees, 2023)	0

2. Landscape Designations

Designation	Acres
Parkland	41.9
Reserve	0.0
Woodland	0.0
No Designation	0.0

3. Regulatory Designations

Designation	Acres
Priority Habitat (MESA)	<0.1

4. Long-Term Agreements

Agreement	Expiration Year
Appalachian Mountain Club MOA for maintenance of the New England National Scenic Trail	2034
National Park Service General Agreement, New England National Scenic Trail	2029

5. Concessions

Concession Type
None

6. Partners & Friends

Group(s)
None

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

7. Features of Interest

Feature
Lake Wyola
New England National Scenic Trail
Ripley-Ames House and Barn

8. Natural Resources

Resource	Value
Tree Canopy (acres)	33.3
Rivers and Streams (miles)	<0.1
Open Water (acres)	0.6
Wetlands (acres)	0.5
Certified Vernal Pools (#)	0
Potential Vernal Pools (#)	1
State-Listed Species (# Regulatory)	1
State-Listed Species (# Non-Regulatory)	0
Federally Listed Species (#)	0
Aquatic Invasive Plants (# known species)	0
Terrestrial Invasive Plants (# known species)	5

9. Forest Management (Since 2012)

Management Objective	Acres
None	0.0

10. History of Wildfires and Conditions Influencing Future Wildfires

Wildfire Attribute	Value or Characteristic
Number of wildfires on property; 2019–2023	0
Acres burned by wildfires on property; 2019–2023	0.0
Number of wildfires in Fire Control District; 2019–2023	220
Acres burned by wildfires in Fire Control District; 2019–2023	108.5
Type of Wildland-Urban Interface.	Intermix
Predicted rate of spread, based on Fire Behavior Fuel Model 13	Not easily spread

11. Natural Hazards

Hazard Type	Acres
Flood (1.0%-chance)	Data unavailable
Flood (0.2%-chance)	Data unavailable
Hurricane Inundation (Cat. 1)	N/A
Hurricane Inundation (Cat. 4)	N/A

12. Climate Change (By 2070)

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

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

13. Cultural Resources

Resource Type	#
Archaeological	4
Historic - Total MACRIS Listed	6
Historic - National Register Listed	0
Historic - National Historic Landmark	0

14. Recreation Resources

Resource	#
Athletic Field	1
Horseshoe Pitch	1
Picnic Area	2
Trail System	1
Volleyball Court	1
Waterfront Area	1

15. Recreation Activities

Activity
Boating, non-motorized
Canoeing/Kayaking
Dog walking, on leash
Fishing, fin fish
Hiking/Walking
Horseshoes
Nature study/Photography
Picnicking
Running/Jogging
Skiing, cross-country
Snowmobiling
Snowshoeing
Swimming/Sunbathing (beach or pool)
Volleyball
Wildlife viewing

16. Roads and Trails

Metric	Value
Roads - Unpaved (miles)	0.5
Roads - Paved (miles)	0.1
Forest Roads - Unpaved (miles)	0.5
Forest Roads - Paved (miles)	0.0
Trails - Unpaved (miles)	0.5
Trails - Paved (miles)	<0.1
Trails - Unauthorized (miles)	0.02
Trail Density (miles/acre)	0.026
Area of Impact (acres)	40.9

17. Parking

Parking Resources	#
Lots	3
Parking Spaces – Total	86
Parking Spaces - Accessible (HP)	6
Parking Spaces – Other	80

PUBLIC REVIEW DRAFT - NOVEMBER 2023

INTRODUCTION

Lake Wyola State Park (the Park) is in the Town of Shutesbury (the Town), approximately 28 miles northeast of Springfield. Wendell State Forest is approximately two miles north of the Park and Shutesbury State Forest is approximately three miles east. The Park lies on the northwest shore of Lake Wyola and is transected by Lakeview Road, which passes within 100 feet of the lake shore and Park beach. Suburban homes and lakefront cottages on small lots bound the Park to the northeast and southwest; to the north are undeveloped private lots owned by a camping and conference center.

Lake Wyola is a prominent natural landmark and recreational resource in the Town and is visited by both in- and out-of-state recreationists. The 128-acre waterbody (an enlarged Great Pond) is up to 33 feet deep with water levels controlled via the Town-owned and managed Lake Wyola Dam. Two-foot drawdowns occur every November 1st–April 1st for shoreline protection, dam inspection, and weed control purposes (Franklin Regional Council of Governments (FRCOG) 2023: 8). The hydraulic height of the dam is 10 feet, indicating a natural lake size of about 55 acres (based on bathymetry (Massachusetts Bureau of Geographic Information (MassGIS) 2019)). The present dam was constructed circa 1885 as the Locks Pond Reservoir Dam to control the Sawmill River and provide a reservoir for the sawmills during low flows (Root Engineering 2023). However, a gristmill is documented at or near the dam site circa 1754, indicated that lake water levels may have been controlled for some time prior to 1885 (Darling 1830; Holland 1855: 432). The Park's approximately 830 feet of water frontage represents a small proportion of the roughly 3-mile lake shore, most of which is densely developed with year-round homes and summer cottages (i.e., camps). Town-owned land, chiefly the Lake Wyola Conservation Area, makes up the remaining shoreline. The Conservation Area contains a boat ramp, and the lake is intensively used year-round for recreational activities including fishing (year-round), swimming, boating, water skiing, and snowmobiling. Although the lake is classified as a warmwater fishery, the Massachusetts Division of Fisheries and Wildlife (MassWildlife) stocks it with trout. Two organizations collaborate on environmental and recreational issues at the Lake: the Lake Wyola Association of homeowners and the Town's Lake Wyola Advisory Committee (LWAC). (The LWAC includes members from the Association.) Neither organization is currently a DCR partner. The LWAC performs an annual lake drawdown and implements water quality-related studies and projects (Shutesbury Open Space Committee 2022: Appendix A).

The New England National Scenic Trail (NET), which incorporates the shorter Metacomet-Monadnock Trail (M&M), runs through Lake Wyola State Park. The NET, designated in 2009, runs 215 miles as a north-south corridor in Massachusetts and Connecticut, with the M&M trail continuing the path into New Hampshire (NET 2020). The NET uses multiple DCR properties including nearby Wendell and Shutesbury State Forests. In 2023, the National Park Service (NPS) designated the NET a National Park. The NPS and the Appalachian Mountain Club (AMC) conduct trail maintenance under separate agreements with DCR (DCR and AMC 2024; DCR and NPS 2024).

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 Lake Wyola State Park. Groups and individuals, including Indigenous peoples known as the Nipmuc, Pocumtuc, and Wabnaki, are recorded in available documentation (Massachusetts Historical Commission (MHC) 1983; Native Land Digital 2023) as having relationships to this place over seasons and generations. In particular, Pocumtuc tribal members from Connecticut River Valley settlements such as

Norwottuck may have frequently used the area around the lake on a cyclical basis for resource collection (MHC 1983). Following Indigenous peoples' dispossession, the Massachusetts General Court (MGC) allocated the lands that would become Shutesbury as the Roadtown Grant in 1735 and incorporated Shutesbury in 1761. Hereafter, the area that would become Lake Wyola State Park would develop strong associations with the history of transportation and recreation in the Town because of its proximity to the lake and Lakeview Road. During this period, the northwest side of the lake (then called Locks or Lockes Pond) was settled and Lakeview Road was established as a county road (MHC 1983). Ambrose Ripley built the core of the Ripley-Ames House in the Park around 1785 and operated a store and tavern. Subsequent owners expanded the home with hotel and dancing infrastructure and built the barn between 1842 and 1890. In the 1890s, the lake became a recreation destination and the name changed to Lake Wyola (Greenfield Gazette 1892:104; Warner 1891: 26–27). The property was converted to a resort under the Decker family (1917–1947, as the Lakeview House) and continued as such under the Bennett family (1947–1997, as Lake Wyola Lodge). These families created and enlarged the beach and made other recreational improvements that included a campground (Arcuti and Mulholland 1998). The Department of Environmental Management (DEM) identified the resort as a facility that could meet regional demand for public swimming and consequently purchased the property from the Bennetts in 1997–1998 (DEM 1997a: 61). The DEM's Board voted to name the developed recreational facilities within the property the Carroll Holmes Recreation Area in honor of Carroll A. Holmes (1941–1998, director of DEM Region 4 1979–1998) and the facility was so dedicated October 18, 1997 (DEM 1997b: September 24, 1997; DEM 1997c). Public use began July 1999, when the bathhouse and headquarters building and parking lots were finished (Our Town 1999: n.p.).

Lake Wyola State Park's center of activity is the Carroll Holmes Recreation Area encompassing the waterfront between the shore of the lake and Lakeview Road. Here, approximately 0.5-acres of sand beach (see cover photo) are ringed by a large lawn with picnic tables and grills, with the bathhouse and headquarters close at hand at the northeast edge of the lawn. Beachgoers enjoy long water vistas and the sight of Ames Hill rising above the pond's east shoreline. The Skerry Brook inlet on the north edge of the beach provides a quiet, shady refuge and an opportunity for exploration along the brook's bank. West of Lakeview Road, the historic Ripley-Ames House (vacant, but eligible for a Curatorship Program tenant, see Cultural Resources below) and barn (used for maintenance and storage) are on a slight rise overlooking the road. To the northwest and northeast of the cleared home site are former farm fields and stands of white and red pine that shelter an additional picnic area and a modest trails network. Skerry Brook flows through the woods, and a large field northeast of the brook offers chances for impromptu sports and games. (This field is also a designated landing zone for State Police and med-flight helicopters.) Visitors may enjoy a range of waterfront activities, picnicking, and scenic walks as they enjoy the Park for the afternoon or an entire day.

PARK IDENTITY

Lake Wyola State Park offers outstanding freshwater beach swimming to visitors from Franklin County hill towns and adjacent portions of the Connecticut River Valley. The Park is strongly identified with the Carroll Holmes Recreation Area along the lake shore. The beach and lake, along with the picnic grounds and bathhouse, form the core of the recreationist experience. Secondary resources are the historic Ripley-Ames House and barn, and the trails and picnic areas to the northwest of the Lakeview Road. All future activities and improvements in the Park, including improvements to the Ripley-Ames House under

the DCR Historic Curatorship Program, should ensure continued high-quality waterfront experiences while honoring the long history of recreational use associated with the Ripley-Ames House and grounds.

DEFINING RESOURCES AND VALUES

Resources and values that define the Park are related to its location on Lake Wyola. They are:

- Lake Wyola, which is the anchoring recreational and scenic amenity of the Park and also holds values relating to conservation and cultural heritage (described below).
- The Ripley-Ames House and Barn and their setting of former farm fields converted into recreation grounds. This complex of historic buildings and their associated landscape, which includes the beach, are significant in the history of Franklin County recreation and tourism. These resources are inventoried in the MHC's Massachusetts Cultural Resources Information System (Arcuti and Mulholland 1998).
- The Lake Wyola beach, waterfront area, and supporting infrastructure for recreation, all sited east of Lakeview Road. The facility offers a high-quality waterfront experience to residents of Shutesbury and visitors from a wide swath of surrounding counties. It is also the only public beach in Shutesbury.
- The picnic areas on both sides of Lakeview Road.

STATEMENTS OF SIGNIFICANCE

Statements of Significance describe the importance or distinctiveness of a place and its resources (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 Lake Wyola State Park. The sequence of these statements does not reflect their level of significance.

- Previously a private campground, at the owner's request, the state acquired the property to continue providing recreational opportunities to the community.
- The Ripley-Ames House originally dates to circa 1785. It and the barn have served many functions over the past three centuries, from a farmhouse to a tavern and inn to a popular vacation resort. The evolution of the farmhouse's use is visible through its architecture and is a landmark in the region.
- The Park is on the shore of Lake Wyola, which has been identified as a core habitat for a state-listed fish.

PUBLIC REVIEW DRAFT SEPTEMBER 2025

- The Lake Wyola State Park complex exemplifies a rural retreat of the 19th century and a mountain bathing and tourist establishment of the 20th century (Arcuti and Mulholland 1998).

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 Lake Wyola State Park is:

> A community gathering spot can evolve over time. Ultimately, it takes the form needed by the community.

VISITOR EXPERIENCE

Lake Wyola State Park provides a variety of visitor experiences, including the following:

- **Virtual Experience.** Potential visitors will find information about Lake Wyola State Park 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/lake-wyola-state-park).
- **Entering the Park.** Visitors enter the park in vehicles from the south or north via Lakeview Road (see Land Stewardship Zoning Map on page 25). Approaching from the north, a well-kept Main Identification Sign is posted near the field near the northerly property boundary, and a second Main Identification Sign is located on the lawn in front of the Ripley-Ames House. Coming from the south, visitors pass through cottages along the lakeshore before reaching the Ripley-Ames House and its signage. Travelers from either direction turn west into a driveway adjacent to the barn where a contact station is located and DCR employees can guide cars to the lower lot (adjacent to Lakeview Road) or to the upper lot (in the woods behind the house and barn). Visitors walk from their cars to a single crosswalk on Lakeview Road and then progress across the street to the recreation area. Visitors with disability vehicle placard or plate may park on the easterly side of the road in an accessible lot sited next to the bathhouse and in close proximity to the beach.
- **Carroll Holmes Recreation Area.** The majority of the park's recreation facilities and activities are concentrated in the 2.5-acre land area between Lakeview Road and the lake shoreline. Here are located a sand beach for swimming and sunbathing, picnic tables, grills, a volleyball net, and the bathhouse with accessible (HP) parking. A beach mat accommodates visitors with limited mobility. Visitors often spend an entire day enjoying the waterfront and recreating with their friends or family.
- **Picnicking.** Approximately 20 picnic tables are sited in two groupings in the park: one group on the lawn behind the beach and one group in the woods to the northwest of Lakeview Road.
- **Trail-based Passive Recreation.** An approximately 1-mile trail network offers families a chance for nature exploration. Visitors can also hike a segment of the NET that leads to Wendell State Forest (to the north) or Shutesbury State Forest (to the south).

PUBLIC REVIEW DRAFT - SEPTEMBER 202

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 19, page 29).

Natural Resources

Threats

- Water quality may be threatened at the Park's well (Well ID No. 1272001) because the wellhead is not physically secured against unauthorized access. This condition is inconsistent with Massachusetts Department of Environmental Protection (MassDEP) guidance and BMPs for wellhead protection (MassDEP 1995; 2011).
- Little brown bats, designated as an Endangered species by the Massachusetts Natural Heritage and Endangered Species Program (NHESP), have established a maternity colony in the attic of the Ripley-Ames House (Stanmayer 2023). Monitoring (via emergence counts) to assess the population size of this colony is ongoing. It is unknown whether bats are residing elsewhere in the Park. These animals may be threatened by rehabilitation or repair of the building or by future forest management projects if such actions are not completed in collaboration with staff of the DCR Office of Natural Resources and the NHESP. At the time this RMP was being finalized, the U.S. Fish & Wildlife Service (USFWS) was reviewing the status of this species under the Endangered Species Act (USFWS 2023).
- Beach maintenance below the water line of the lake may be injurious to Priority Habitat for an NHESP fish Species of Special Concern that is protected under the Massachusetts Endangered Species Act (MESA).
- The MassDEP has identified several water quality impairments in Lake Wyola (Assessment Unit (AU) MA34103), resulting in the waterbody being classified as not suitable habitat for sustaining a native, naturally diverse community of aquatic flora and fauna (MassDEP 2021). Because MassDEP updates its Integrated List of Waters on a regular basis, readers are directed to refer to the most recent version of that document for current information.
- The following five species of invasive plants have been identified in the Park: glossy buckthorn, Japanese barberry, Morrow's honeysuckle, multiflora rose, Oriental bittersweet. (These invasives have been identified in the Park by field staff. The Park was not field surveyed in the 2017 Invasive Plant Management Plan: Central Region (BSC Group 2017).) Invasive species may negatively impact both the ecological integrity and biodiversity of the Park.
- There is no Park-wide information on the distribution of invasive plants. Such information is needed to determine if any sensitive resources are being impacted by invasive plants.
- The boat ramp at the town-owned Lake Wyola Conservation Area is unmonitored, which may permit the spread of aquatic invasive species into the lake from watercraft.

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

- There are approximately 25–50 dead and declining white and red pine trees throughout the picnic area that indicate an unhealthy forest, are unsightly for recreationists, and may damage park infrastructure.
- In general, white pine stands in the Park are overstocked and stagnated, indicating that an increased level of mortality is likely in these areas.

Opportunities

- The Park is located within the Quabbin to Cardigan Initiative's (Q2C) project area. This initiative is a public-private collaborative effort to conserve the Monadnock Highlands of north-central Massachusetts and western New Hampshire. The Park's location within the project area offers opportunities to participate in organizational partnerships, grants, and land acquisitions in support of DCR's and Q2C's mutual conservation and recreation goals (Q2C 2023).
- There are peripheral private undeveloped land parcels that may offer opportunities to increase forest habitat and/or contribute to landscape-scale conservation in the region, including improvements to connectivity between the Park and Wendell State Forest.
- At the time of this RMP's preparation, the FRCOG had drafted, but not finalized, a watershed-based plan to improve water quality in Lake Wyola (FRCOG 2023). There may be future opportunities to partner with the LWAC and other entities on lake water quality initiatives (e.g., stormwater management) that may be included in the final watershed-based plan.
- Priority Habitat for a MESA-protected, NHESP fish Species of Special Concern is present in the Park. In the future, there may be opportunities to protect this species' habitat through collaboration with NHESP staff on management or restoration projects.
- If beach improvement projects are contemplated in the future that would extend below the water line of Lake Wyola, there may be opportunities to consult with the NHESP on protection of habitat for a MESA-protected, NHESP fish Species of Special Concern that is present in the lake.
- As noted previously, a maternity colony of MESA-protected little brown bats, designated as an Endangered species by the NHESP, is using the attic of the Ripley-Ames House (Stanmayer 2023). There may be opportunities to protect this population during potential future activities in the Park, including renovations of the house and forest management projects.
- The Park's potential vernal pool 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. Surveying and certifying this pool (DCR (n.d.) and MassWildlife (2009)), as appropriate, may help better protect these animals.
- There is an opportunity to improve public safety by improving Park roads for easier fire control access.
- To date, Lake Wyola is free of invasive aquatic vegetation. There is an opportunity to protect lake habitat and the recreational experience of waterfront users by partnering with the LWAC on their invasive species monitoring program (Shutesbury Open Space Committee 2022: Appendix A).
- Lake Wyola State Park is located within the Connecticut sub-basin of the Connecticut River Watershed; a DCR Priority Watershed. DCR construction projects within Priority Watersheds maximize Stormwater Control Measures, potentially beyond those necessary to meet regulatory

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

criteria (VHB 2022). By maximizing treatment, DCR addresses existing impairments in the receiving waters and contributes to improving water quality in the Priority Watershed. Designers of future projects at Lake Wyola should review the latest MassDEP 303d list to understand other impairments of the receiving water and to fine tune stormwater treatment to address these pollutants, in accordance with the DCR Stormwater Handbook (VHB 2022).

- There is an opportunity to implement forest management strategies (consistent with the Park's current Landscape Designation) to reduce the impact of biological stressors and maintain and enhance species and structural diversity.

Cultural Resources

Threats

- Some, but not all, portions of the Park have been subject to reconnaissance archaeological survey (Mangan et al. 2000). A lack of knowledge concerning archaeological resources in sections of the park not surveyed threatens their effective management and protection.
- Known archaeological resources in the Park may be threatened by erosion and soil disturbances due to changes in Lake Wyola water levels, natural storm events, and unmanaged park maintenance activities.
- Current digitized and spatially referenced flood maps from the Federal Emergency Management Agency (FEMA) do not cover Lake Wyola State Park. This limits DCR's ability to identify potential threats from flood events to cultural resources in the Park.
- The Ripley-Ames House (i.e., the Lodge, Lakeview House, or Lake Wyola Farmhouse) and barn are eligible for lease to a third party through DCR's Historic Curatorship Program (Chapter 85, § 44, of the Acts of 1994; as amended by Chapter 236, § 19, of the Acts of 2002). However, no feasible reuse proposals for the buildings have been submitted over the last five years. Although DCR continues to maintain the property through upkeep and stabilization measures, continued vacancy threatens the long-term integrity of the property.
- The Ripley-Ames House needs several preventative maintenance tasks completed that, if left undone, would lead to larger threats to the building in the future: repainting the exterior, repair or replacement of the bulkhead doors, replacement of rotten and missing clapboards (and possibly sill rot behind them), replacement of broken and missing roof slates, and gutter cleaning.
- Effective reuse of the Ripley-Ames House may be threatened by the fact that there is no entrance to the building that is compliant with the Americans with Disabilities Act.
- Capital investments, beginning with the doors and cupola, are needed to ensure that the barn remains in good condition. Otherwise, deterioration will threaten long-term DCR use of the building.
- A small cabin known as the Ames Shop (i.e., Robert Decker Cabin) is located south of the Ripley-Ames House at the intersection of Lakeview and Farrar roads. The historical associations and potential significance (if any) of this building are not well understood, which may threaten its appropriate management as a historical resource.

Opportunities

- There is an opportunity to improve management, protection, and interpretation of cultural resources in the Park through completion of a cultural resources reconnaissance survey in geographic areas

PUBLIC REVIEW DRAFT - SEPTEMBER 2023

that the previous archaeological survey (Mangan et al. 2000) did not cover. Such a survey could be done in partnership with municipal, tribal, and regional entities.

- Archaeological sites and resources have been identified in the Park, including in developed areas that are intensively used for recreation. There is an opportunity to protect cultural resources in the Park by ensuring that all ground-disturbing activities on the property, including those of any future Historic Curatorship lease holders, are reviewed by DCR's Office of Cultural Resources.
- The entire Park is located in the Sacred Ceremonial Hill Site, a "highly significant Native American "prayer hill" containing stone features" (Matthews 2008). This site has been determined to be eligible for listing on the National Register (Matthews 2008). The "site is considered by Tribal authorities to be part of a ceremonial district" (Shutesbury Historical Commission (SHC) 2021). Although the boundaries of the district "are presently undetermined," its approximate boundary is "a 16-mile radius around the Turners Falls Site" (SHC 2021). Because of the Park's location within this potential district, there is a possibility that Indigenous ceremonial stone features occur within the Park.
- There is an opportunity to enhance preservation of the Ripley-Ames House by finding a Historic Curatorship tenant for the building.
- There is an opportunity to maintain or improve the condition of the Ripley-Ames House by completing preventative maintenance tasks not limited to: repainting the exterior, repair or replacement of the bulkhead doors, replacement of rotten and missing clapboards (and possibly a sill on the northeast side of the building), replacement of broken and missing roof slates, and gutter cleaning.
- The Ripley-Ames House has known structural deficiencies, including deflecting spans over the dining room, outward spreading of exterior walls, and roof framing that is deficient for snow loads (Clark & Green Architects 2013). The house likely has additional structural deficiencies. Such deficiencies impede long-term reuse of the building through the Historic Curatorship Program. There is an opportunity to encourage adaptive reuse of the building by conducting a structural analysis (underway in 2025), designing remediation and stabilization solutions, and contracting to have the solutions implemented.
- There is an opportunity to preserve the barn for future use by continuing upkeep and rehabilitation work on the building.
- There is an opportunity to protect the Ames Shop from tree damage by evaluating the health of, and possibly pruning and/or cutting, the pine trees that hang over the building.
- The long history of hospitality and recreation tourism at the Ripley-Ames House and the Park may provide future opportunities for educational or interpretive programming.
- There may be opportunities to use facilities at Lake Wyola State Park for education and outreach between DCR, the Town and local communities and tribal partners.

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

Recreation

Threats

- On several occasions, lightning strikes have disabled the Park's well. Continuation of this pattern of events threatens effective staff management of the Park, may damage expensive park infrastructure that is necessary for daily operations, and may interfere with the public's enjoyment of the park.
- Water supply infrastructure (pressure tank, pumps, etc.) for the recreation area is housed in the basement of the Ripley-Ames House. The basement is heated all winter long to maintain the equipment and water system for the park, which is not energy efficient because the house is not heated and is poorly insulated.
- The number of water quality issues at the waterfront has spiked in the recent past, beginning in 2021, with 5 exceedances and 32 posted beach days, and continuing through 2023 (4 exceedances and 28 posted days). It is not apparent whether these water quality issues derive from Park-based and/or external sources. Continued water quality issues may threaten the quality of recreational experience for Park visitors (Massachusetts Department of Public Health (DPH) 2022; 2023; 2024).
- Current digitized and spatially referenced flood maps from FEMA do not cover Lake Wyola State Park. This limits DCR's ability to prepare for flood emergency operations and to identify potential threats from flood events to recreational resources in the Park.
- There are accessibility issues Park-wide that are identified in the March 2022 Lake Wyola State Park, Shutesbury, MA: Program Accessibility Assessment (Institute for Human Centered Design (IHCD) 2022). These accessibility issues threaten the access to and quality of experiences at the Park for people with disabilities. Noteworthy issues include, but are not limited to:
  - A lack of adequately sized accessible parking spaces.
  - Bathhouse fixture design and placement.
  - A lack of accessible routes to certain Park amenities.
  - Beach furniture and viewing area design.
- Condition problems on the accessible boardwalk threaten some visitors' ability to access the waterfront.
- The speed and volume of traffic of cars on Lakeview Road makes it difficult for park patrons to cross this road safely.
- High levels of visitation and demand for access to the park waterfront often exceed capacity limits, leading to management difficulties for park field staff and reducing the quality of experience for visitors.
- During the peak visitation days, large quantities of vehicles attempting to access the park create traffic issues on Lakeview Road that strain the Town's police department and park staff and cause complaints from local residents.
- Walk-in visitors exacerbate overcrowding of the beach on busy weekends and holidays. There is no policy to prevent walk-in visitors, and, if there were, enforcement would be challenging.
- Management of visitor parking takes up a large proportion of staff time (often requiring two staff members simultaneously), which takes away staff resources from other essential tasks such as maintenance and visitor assistance.

PUBLIC REVIEW DRAFT SEPTEMBER 2025

- Crowding on beach sometimes causes altercations, threatening the quality of Park experience for other visitors.
- Motorboat users on the lake sometimes dock or attempt to dock their boats in the Park waterfront, which may threaten visitor safety and the quality of their experience.
- The barn, which is used as a maintenance shop by Park staff, is not wired with electricity. Staff use extension cords running from the house, which is inconvenient and may result in staff overloading these cords.
- Not all vehicle and chemical storage areas in the barn have impervious floor surfaces. Oils and gasoline may soak into the barn's wood floors, increasing the building's flammability.
- Park lifeguards have no dedicated shelter with air conditioning where they can cool off during breaks. The lifeguards currently use the headquarters for this purpose, which creates overcrowding and difficult working conditions for other staff.
- The lack of a phone or electricity in contact station limits staff efficiency and comfort.
- Staff currently have no dedicated space for a woodworking shop. (Rooms in the Ripley-Ames House are currently used for this activity.) With appropriate infrastructure improvements (heat and electricity), there may be opportunities to create such a shop in the Ames Shop or the barn.
- Poor grading of the main gravel parking lot and the entrance to the accessible parking area by the bathhouse results in flooding or large puddles during rain events, which then hinders visitors' ability to use these lots.
- There is no trail map for the Park, which makes it difficult for visitors to enjoy the trail network.
- The trail density for the Park slightly exceeds the maximum density recommended in the Trails Guidelines and Best Practices Manual (DCR 2019). Additional trail construction would result in greater magnitude exceedance and could threaten the quality of the trail users' experience, as well as natural resources, in the Park.
- The Park's Main Identification sign in front of the Ripley-Ames House does not meet current DCR graphics standards.
- The Park has no Welcome Wayside, which limit's visitors' ability to understand the recreational opportunities and history of the Park.

Opportunities

- There is an opportunity to evaluate the susceptibility of the Park's water well to lightning strikes and, as necessary, install surge arrestor equipment or other lightning protection for this essential Park infrastructure.
- There is an opportunity to protect the Park's water supply by ensuring that the wellhead is secured against unauthorized visitation.
- Lake Wyola State Park's beach has historically achieved a high Beach Safety Score (MassDEP 2012:26). Continued observation and management of water quality at Lake Wyola provides an opportunity to minimize beach postings and maximize the quality of visitors' maintenance. In particular, clarifying for Park staff the DCR policy for water quality testing and posting will ensure a consistent implementation of the policy and protection of visitors.

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

- There may be opportunities to protect water quality at the Park for recreationists by:
  - Implementing Canada goose control measures such as recreational hunting, prohibiting the feeding of waterfowl, barriers, and harassment measures (MassDEP 2001: 46, 49).
  - Partnering with the Town (via the Committee) and private residents on septic system upgrades for properties that border the Lake.
  - Improving stormwater management.
- There is an opportunity to expand and improve the visitor experience of people with disabilities by addressing identified accessibility issues (Institute for Human Centered Design (IHCD) 2022), not limited to:
  - A lack of adequately sized accessible parking spaces.
  - Bathhouse fixture design and placement.
  - A lack of accessible routes to certain Park amenities.
  - Beach furniture and viewing area design.
- There is an opportunity to design and construct a new accessible fishing dock so that park staff may more easily install and remove it on a seasonal basis.
- There is an opportunity to ensure access to the waterfront for all users by fixing the walkway and replacing the beach ramp.
- There is an opportunity to reduce crowding and traffic issues at the Park by creating a well-defined policy for beach capacity limits and associated closures and employing social media to make prospective visitors aware of closures.
- There is an opportunity to better understand Park visitation patterns and numbers by installing an automated counter at the Park's pedestrian entrance.
- There is an opportunity to work with the Town of Shutesbury Police Department to assist with controlling walk-ins and traffic during busy visitation periods by paying for an officer to work at the park during these busy periods.
- In the past a lack of reliable cellular data service prevented use of contact-less payment methods and staff were not collecting parking fees. However, there is now reliable cellular service in the park, and, consequently, an opportunity exists to implement contactless payment methods.
- Funds for additional public safety personnel may be acquired through enactment of MGC legislation permitting a surcharge on parking fees at the Park and the establishment of a Lake Wyola State Park Trust Fund.
- There is an opportunity to enhance the visitor experience and safety at Lakeview Road by working with the Town on traffic calming measures such as an automated radar speed sign, lit crosswalk signs, or speed bumps.
- There is an opportunity to enhance waterfront visitors' safety and quality of experience by ensuring that watercraft warning buoys are sited at the appropriate locations and distances from the swimming area.
- There is an opportunity to post "No Docking" or other signage to keep motorboats away from the park waterfront.

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

- The park website indicates that several types of boat use (e.g. canoeing and kayaking, sailing, etc.) are permitted in the Park, but the launching must be done from a separate, non-DCR location on Randall Road (the Lake Wyola Conservation Area). Consequently, visitors sometimes try to launch their boats inappropriately from within the Park. There is an opportunity to enhance visitor experience of the Park and make park staff more efficient by installing signage to the effect that car-top boat launching is not permitted in the Park and to proceed to the Lake Wyola Conservation Area. Alternately, boating-related activities could be removed from the list on the website.
- There is an opportunity to improve the barn's utility and safety as a maintenance building by installing impervious floors over the historical wood floors in shop and chemical storage areas and by wiring the building for electricity.
- There is an opportunity to increase the usability of the main parking lot by re-grading the lot and elevating portions of the surface so that it no longer floods during rain events.
- There is an opportunity to improve forest health and enhance the visitor experience of the picnic area and fulfill other objectives permitted under Parkland silviculture guidelines by implementing forest management projects on the west side of Lakeview Road to enhance the species and structural diversity of the mature pine stands.
- The Main Identification Sign in front of the Ripley-Ames House does not conform to current DCR graphics standards. There is an opportunity to improve the Park's image and enhance DCR brand consistency by replacing the sign panel.
- There is an opportunity to enhance visitors' enjoyment of the park and its natural, cultural, and recreational resources by installing a Welcome Wayside.
- There is an opportunity to enhance visitors' experience of the Park by creating a trail map.
- The trail density for the Park slightly exceeds the maximum density recommended in the Trails Guidelines and Best Practices Manual (DCR 2019). During future trail evaluation work, there may be opportunities to reduce the trail density through selective trail closures and naturalizations.

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

REVIEW DRAFT - SEPTEMBER 2025

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 CCVA (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 12) 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 CO_2 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 NHESP 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 and negatively impacting associated wildlife (Cartwright et al. 2022). Similar impacts may occur at the Park's potential vernal pool if it functions as a vernal pool.

Spotted salamanders have been reported in the Park. Populations of this amphibian may be threatened by the impacts of climate change.

Responses of Massachusetts' invasive plants (i.e., those categorized as Invasive by the Massachusetts Invasive Plant Advisory Group (MIPAG) (n.d.)) to a changing climate are largely unknown. However, sufficient information exists to project the likely future trend of Japanese barberry and Oriental bittersweet. Climate change facilitates invasion by Japanese barberry "because of higher growth and germination in warmer climates" (Merow et al. 2017: E3276). Because of this, it is anticipated that barberry will further spread at Lake Wyola. "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 Lake Wyola State Park in response to climate change.

Cultural Resources—General Impacts

Climate change may negatively affect cultural resources, their preservation, and maintenance (EEA 2022; 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 at 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

No cultural resources with known elevated exposure or sensitivity to potential consequences of climate change were identified at this property.

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

Fishing, swimming, and other water-based activities associated with the waters of Lake Wyola may experience increased participation due to the anticipated increase in temperature (i.e., more than 30 additional days with temperatures over 90° F; Table 12).

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 Lake Wyola State Park was designated Parkland. Identification of Land Stewardship Zones within Lake Wyola 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 Figure 1. Land Stewardship Zoning Map, page 25, and the Land Stewardship Zoning layer on DCR's Stewardship Map: https://dcrsgis-mass-eoeea.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 Lake Wyola have been designated Zone 1.

- No areas within the park 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 Lake Wyola have been designated Zone 2.

- All areas not 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 Lake Wyola are currently developed, appropriate for potential future development, or intensively used for recreation. They have been designated Zone 3.

- The entire waterfront area on the east side of Lakeview Road.
- Developed areas on the west side of the road associated with the Ripley-Ames House and with DCR parking lots and picnic areas, including mown fields and other altered landscapes in active use.

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 Overlay was developed for Lake Wyola.

- Wellhead Protection Overlay. This overlay includes the Zone I Wellhead Protection Area. Within this overlay, activities should be consistent with Wellhead Protection Tips (MassDEP 1995) and MassDEP Guidance (MassDEP 2011).

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 (BMPs) for resource stewardship, are located on the Stewardship Map site: https://dcrsgis-mass-eoeea.hub.arcgis.com/.

Because authorized trails are located within State-Listed Species Habitat on this property, managers should consult an additional GIS-based tool, the NHESP 2022 Guidance Codes for DCR Trail Maintenance Map. (https://mass-eoeea.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 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 18, page 26.)

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

Twenty-seven priority management recommendations were developed for this property. They are presented in Table 19, page 29. 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 19 (page 29) 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.

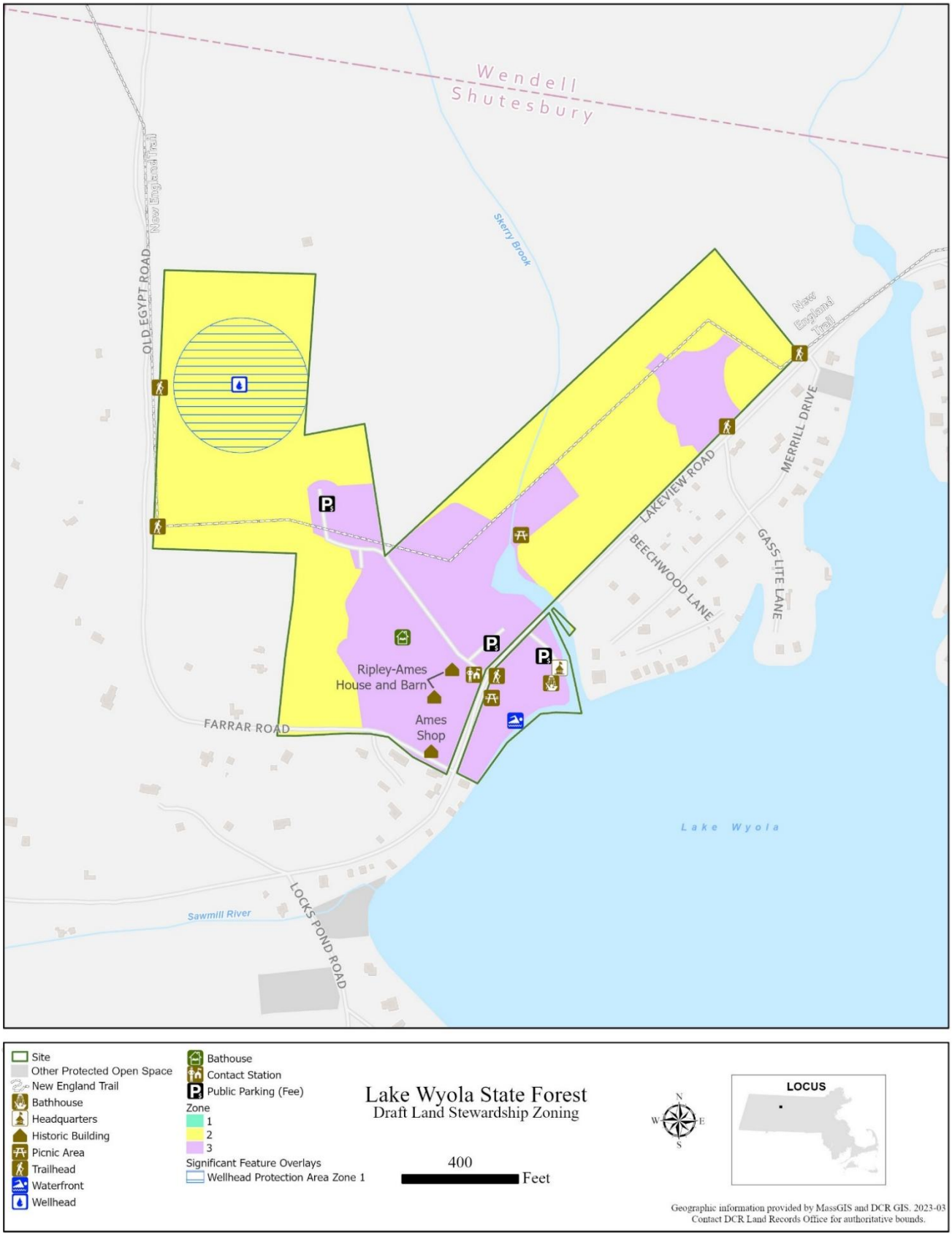

Figure 1. Land Stewardship Zoning Map.

Table 18. 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.	Yes
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.	No
Natural Resources	4. Aquatic areas adjacent to beaches, boat ramps and launches, roads, and hiking trails are free of eroded sediments.	No
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 total 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

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

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.)	N/A
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.	Unknown
Recreation	1. Types of recreation, levels of recreational use, and types and extent of recreation infrastructure are consistent with the park's identity statement.	Yes

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

Category	Metric	Status
Recreation	2. Trail density is consistent with the park's Landscape Designation(s). (See Trails Guidelines and Best Practices Manual (DCR 2019) 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.)	Yes
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.	Yes
Recreation	9. Recreation facilities are located outside of areas subject to flooding, storm surge, or sea-level rise.	Unknown
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. c. 132, §§ 40–46).	N/A

PUBLIC REVIEW DRAFT SEPTEMBER 2025

Table 19. Priority Recommendations for Lake Wyola State Park. All recommendations are of equal importance. When multiple agency parties are responsible for implementing a recommendation, the lead party, or parties, 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	As appropriate, protect conservation and recreation values by enhancing landscape connectivity between the Park and Wendell State Forest.	Land Protection Program
Natural Resources	Continue monitoring of the Endangered little brown bats in the Ripley-Ames House attic. Prior to any renovations of the Ripley-Ames House, consult with the Office of Natural Resources and Natural Heritage & Endangered Species Program (and possibly US Fish & Wildlife Service) regarding protection measures for this protected species.	Office of Cultural Resources, Office of Natural Resources (Lead), Partner
Natural Resources	Conduct forest management activities as necessary to improve appearance and long-term health and safety of forest stands around picnic areas.	Management Forestry
Cultural Resources	Conduct an archaeological reconnaissance survey (950 CMR 70) in cooperation with municipal, tribal, and non-profit partners, including the Town of Shutesbury. Complete appropriate Massachusetts Historical Commission archaeological site forms for identified archaeological resources.	Consultant, Office of Cultural Resources (Lead), Partners
Cultural Resources	Work with Indigenous partners to inventory, document, conserve, and interpret Indigenous resources and history within the Park.	Management Forestry, Office of Cultural Resources (Lead), Partner
Cultural Resources	To ensure long-term preservation of the Ripley-Ames House, complete preventative maintenance tasks not limited to: repair or replacement of the bulkhead doors, replacement of rotten and missing clapboards (and possibly sill rot behind them), replacement of broken and missing roof slates, and gutter cleaning.	Contractor, Office of Cultural Resources, Park Operations (Lead)

PUBLIC REVIEW DRAFT SEPTEMBER 2025

Category	Recommendation	Implementation
Cultural Resources	Ensure viability of a future Ripley-Ames House curatorship by preparation of a structural analysis and implementation of any recommended structural stabilization work.	Contractor, Office of Cultural Resources (Lead)
Cultural Resources	Conduct historical evaluation of Ames Shop to determine historical and architectural significance and character-defining features.	Contractor, Office of Cultural Resources (Lead)
Cultural Resources	Evaluate health and safety of white pine trees adjacent to Ames Shop and remove or prune as needed.	Contractor, Forest Health (Lead), Management Forestry
Recreation	Review and implement MassDEP Wellhead Protection Tips and Guidance (MassDEP 1995, MassDEP 2011) within the Park's Zone I Wellhead Protection Areas.	Contractor, Park Operations (Lead)
Recreation	Conduct an evaluation of Park water well infrastructure to identify feasible measures, if any, for protection against lightning strikes. Implement any identified measures.	Contractor, Electrical Engineering (Lead)
Recreation	Implement Key Recommendations from the 2022 Program Accessibility Assessment (IHCD 2022).	Contractor, Universal Access Program (Co-Lead), Facilities Engineering (Co-Lead)
Recreation	Design and acquire a new, accessible fishing dock and beach access route.	Contractor, Universal Access Program (Lead)
Recreation	Implement contactless parking fee payment and collection.	Contractor, EEA Information Technology (Lead), Park Operations
Recreation	Partner with the Town of Shutesbury and, if necessary, Massachusetts Department of Transportation, on design and installation of traffic calming and/or pedestrian crossing infrastructure.	Contractor, Partner(s), Traffic Engineering Section (Lead)
Recreation	Develop and implement a policy, staff guidelines, and public communications strategy (virtual and in-person, including the DCR Facility Alerts App) for determining beach capacity limits, notifying the public of closures to high visitation, and deterring walk-ins.	Aquatics Program (Lead), Lakes and Ponds, Park Operations

PUBLIC REVIEW DRAFT SEPTEMBER 2025

Category	Recommendation	Implementation
Recreation	Systematize and enhance buoys and waterborne signage to 1) ensure that motorboat warning buoys are of an appropriate quantity and distance from the swimming beach; and 2) prevent motorboats from attempting to dock within the Park.	Aquatics Program (Lead), Park Operations
Recreation	As appropriate and desired, install signage in the Park directing boaters to launch their craft at the Lake Wyola Conservation Area and/or remove boating-related activities from the Park web page.	Aquatics Program (Co-Lead), Interpretive Services, State Parks Operations (Co-Lead), Interpretive Services (Co-Lead), Web Content Creator
Recreation	Install electrical service in the barn. Consult with Office of Cultural Resources on materials and installation methods.	Architecture Section, Contractor, Electrical Engineering (Lead), Office of Cultural Resources
Recreation	Install impervious floor surfaces in vehicle service and chemical storage areas of the barn. Consult with Office of Cultural Resources on materials and installation methods.	Architecture Section (Lead), Office of Cultural Resources, Park Operations
Recreation	Install electrical service in the contact station.	Architecture Section, Contractor, Electrical Engineering (Lead)
Recreation	Explore feasibility of reusing Ames Shop as woodworking shop or lifeguard break area.	Architecture Section, Office of Cultural Resources, Park Operations (Lead)
Recreation	Regrade or use other appropriate means to resolve drainage and flooding issues in the main gravel parking lot and the accessible lot next to the bathhouse.	Contractor, Facilities Engineering (Lead)
Recreation	Replace Main Identification Sign in front of the Ripley-Ames House with new sign conforming to DCR graphic standards.	Park Operations (Lead), Sign Shop
Recreation	Develop and Install a Welcome Wayside panel.	Interpretive Services (Lead), Park Operations

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

Category	Recommendation	Implementation
Recreation	Reduce trail miles to conform to ensure consistency with trail density thresholds associated with Parkland, in accordance with Trails Guidelines and Best Practices (DCR 2019, or update).	Forest Fire Control, Management Forestry, Office of Cultural Resources, Office of Natural Resources, Park Operations (Co-Lead), Trails and Greenways (Co-Lead)
Recreation	Prepare Park trail map.	GIS Program, Interpretive Services, Trails and Greenways Section (Lead)

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

REFERENCES

Arcuti, T. and M. Mulholland. 1998. Lake Wyola State Park. (SHU.B). Massachusetts Historical Commission Form A—Area Form. On file, Massachusetts Historical Commission, Boston, MA. https://mhc-macris.net/details?mhcid=SHU.B

Askew, A. E., and J. M. Bowker. 2018. Impacts of Climate change on outdoor recreation participation: Outlook to 2060. Journal of Park and Recreation Administration 36: 97–120. https://www.srs.fs.usda.gov/pubs/ja/2018/ja_2018_bowker_001.pdf (PDF)

BSC Group, Inc. (BSC). 2017. Invasive Plant Management Plan: Central Region. Produced in association with: DCR Ecology & ACEC Program, June 2017.

Cartwright, J., T. L. Morelli, and E. H. Campbell Grant. 2022. Identifying climate-resistant vernal pools: Hydrologic refugia for amphibian reproduction under droughts and climate change. Ecohydrology 2022, 15, e2354. https://onlinelibrary.wiley.com/doi/epdf/10.1002/eco.2354 (PDF)

Clark & Green Architects. 2013. Building conditions survey report: Lake Wyola Farmhouse and Barn. Prepared for the Massachusetts Department of Conservation and Recreation by Clark & Green Architects, Great Barrington, MA.

Commonwealth of Massachusetts. 2023. ResilientMass Plan: 2023 Massachusetts State Hazard Mitigation and Climate Adaptation Plan. ResilientMass Action Team, Boston, Massachusetts. https://www.mass.gov/doc/resilientmass-plan-2023/download (PDF)

Darling, E. S. 1830. Plan of Shutesbury. https://collections.leventhalmap.org/search/commonwealth:25152h70b

Finch, D. M., J. L. Bitler, J. B. Runyon, C. J. Fettig, F. F. Kilkenny, S. Jose, S. J. Frankel, S. A. Cushman, R. C. Cobb, J. S. Dukes, J. A. Hicke, and S. K. Amelon. 2021. Effects of Climate Change on invasive species. Chapter 4 *in* T. M. Poland, T. Patel-Weynand, D. M. Finch, C. F. Miniat, D. C. Hayes, and V. M. Lopes (Editors) Invasive species in forests and rangelands of the United States: A comprehensive science synthesis for the United States forest sector. Springer. https://library.oapen.org/bitstream/handle/20.500.12657/46792/2021_Book_InvasiveSpeciesInForestsAndRan.pdf?sequence=1&isAllowed=y (PDF)

Franklin Regional Council of Governments (FRCOG). 2023. Watershed-Based Plan, Lake Wyola. Draft for public review dated June 2023. Prepared for MassDEP by Franklin Regional Council of Governments, Greenfield, MA. https://www.shutesbury.org/sites/default/files/LakeWyola_WBP_PublicReview_draft.pdf (PDF)

Friggens, M. M., M. I. Williams, K. E. Bagne, T. T. Wixom, and S. A. Cushman. 2018. Effects of climate change on terrestrial animals. Pages 264–315 *in* Halofsky, J. E., D. L. Peterson, J. J. Ho, N. J. Little, and L. A. Joyce (Eds.). Climate change vulnerability and adaptation in the Intermountain Region. Gen. Tech. Rep. RMRS-GTR-375. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Part 2. pp. 199–513. https://www.fs.usda.gov/rm/pubs_series/rmrs/gtr/rmrs_gtr375_2.pdf (PDF)

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

Greenfield Gazette. 1892. Greenfield Gazette Centennial Edition. February 1. https://catalog.hathitrust.org/Record/100773901
Ham, S. H. 2013. Interpretation: Making a difference on purpose. Fulcrum Publishing, Golden, CO.

Halofsky, J. E., D. L. Peterson, J. J. Ho, N. J. Little, and L. A. Joyce (Eds.). 2018. Climate change vulnerability and adaptation in the Intermountain Region. Gen. Tech. Rep. RMRS-GTR-375. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Part 2. pp. 199–513. https://www.fs.usda.gov/rm/pubs_series/rmrs/gtr/rmrs_gtr375_2.pdf (PDF)

Holland, J. G. 1855. History of Western Massachusetts, the Country of Hampden, Hampshire, Franklin, and Berkshire. Samuel Boles and Company, Springfield, MA. https://www.google.com/books/edition/History_of_Western_Massachusetts/ZZgZEOt2c4AC?hl=en&gbpv=1&pg=PA1&printsec=frontcover

Institute for Human Centered Design (IHCD). 2022. Lake Wyola State Park, Shutesbury, MA: Program Accessibility Assessment. Boston, MA. Prepared for the Department of Conservation and Recreation, Boston, MA.

Intergovernmental Panel on Climate Change (IPCC). 2021. Annex VII: Glossary [Matthews, J.B.R., V. Möller, R. van Diemen, J.S. Fuglestvedt, V. Masson-Delmotte, C. Méndez, S. Semenov, A. Reisinger (eds.)]. In Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 2215–2256, doi:10.1017/9781009157896.022.
https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_AnnexVII.pdf (PDF)

International Council on Monuments and Sites (ICOMOS) Climate Change and Cultural Heritage Working Group. 2019. The Future of our Pasts: Engaging Cultural Heritage in Climate Action. ICOMOS, Paris, France.
https://civvih.icomos.org/wp-content/uploads/Future-of-Our-Pasts-Report-min.pdf (PDF)

Isaak, D. J., M. K. Young, C. Tait, D. Duffield, D. L. Horan, D. E. Nagel, and M. C. Groce. 2018. Effects of climate change on native fish and other aquatic species. Pages 89–111 *in* Halofsky, J. E., D. L. Peterson, J. J. Ho, N. J. Little, and L. A. Joyce (Eds.). Climate change vulnerability and adaptation in the Intermountain Region. Gen. Tech. Rep. RMRS-GTR-375. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Part 1. Pp. 1–197.
https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd578946.pdf (PDF)

Janowiak, M. K., A. W. D'Amato, C. W. Swanston, L. Iverson, F. R. Thompson, III, W. D. Dijak, S. Matthews, M. P. Peters, A. Prasad, J. S. Fraser, L. A. Brandt, M. J. Butler-Leopold, S. D. Handler, P. D. Shannon, D. Burbank, J. Campbell, C. Cogbill, M. J. Duveneck, M. R. Emery, N. Fisichelli, J. Foster, J. Hushaw, L. Kenefic, A. Mahaffey, T. L. Morelli, N. J. Reo, P. G. Schaberg, K. R. Simmons, A. Weiskittel, S. Wilmot, D. Hollinger, E. Lane, L. Rustad, and P. H. Templer. 2018. New England and northern New York ecosystem vulnerability assessment and synthesis: A report from the New England Climate Change Response Framework project.

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

Gen. Tech. Rep.NRS-173. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. 234 p.
https://www.fs.usda.gov/nrs/pubs/gtr/gtr_nrs173.pdf (PDF)

Liu, Y., A. M. O. Odour, Z. Zhang, A. Manea, I. M. Tooth, M. R. Leishman, X. Xu, and M. Van Kleunen. 2017. Do invasive alien plants benefit more from global environmental change than native plants? Global Change Biology (2017), doi: 10.1111/gcb.13579.
https://www.researchgate.net/profile/Xingliang-Xu/publication/310902903_Do_invasive_alien_plants_benefit_more_from_global_environmental_change_than_native_plants/links/5a20bb30a6fdcccd30e032dc/Do-invasive-alien-plants-benefit-more-from-global-environmental-change-than-native-plants.pdf (PDF)

Mangan, P. H., C. Donta, M. Mulholland, and T. Arcuti. 2000. Archaeological intensive (Locational) Survey for the Carroll Holmes Recreational Area, Lake Wyola State Park, Shutesbury, MA. Prepared by UMass Archaeological Services, Amherst, MA, for the Massachusetts Department of Environmental Management.

Massachusetts Bureau of Geographic Information (MassGIS). 2019. MassGIS data: MA Inland Water Bathymetry. July 2019.
https://www.mass.gov/info-details/massgis-data-inland-water-bathymetry

Massachusetts Department of Conservation and Recreation (DCR). n.d. Best Management Practices: Vernal pool certification on DCR lands. Office of Regional Planning, Boston, MA.
https://www.mass.gov/doc/vernal-pool-certification-on-dcr-lands/download (PDF)

Massachusetts Department of Conservation and Recreation (DCR). 2012. Landscape designations for DCR parks & forests: Selection criteria and management guidelines. Boston, MA.
https://archives.lib.state.ma.us/handle/2452/200210

Massachusetts Department of Conservation and Recreation (DCR). 2019. Trails guidelines and best practices manual. Updated July 2019.
https://www.mass.gov/doc/dcr-trails-guidelines-and-best-practices-manual/download (PDF)

Massachusetts Department of Conservation and Recreation (DCR). 2020. Massachusetts State Forest Action Plan 2020. Executive Office of Energy & Environmental Affairs, Department of Conservation and Recreation, Massachusetts Bureau of Forest Fire Control and Forestry.
https://archives.lib.state.ma.us/handle/2452/840801

Massachusetts Department of Conservation and Recreation (DCR). 2022. Manual for Continuous Forest Inventory field procedures. Bureau of Forestry, Division of State Parks and Recreation. Rev. March 2022.

Massachusetts Department of Conservation and Recreation (DCR). 2023. Managing our forests…for carbon benefits.
https://www.mass.gov/info-details/managing-our-forests-for-carbon-benefits

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

Massachusetts Department of Conservation and Recreation (DCR). 2024. DCR Climate Impacts. Story Map series highlighting the expected impacts caused by climate change across the DCR's facilities and operations in Massachusetts.
https://storymaps.arcgis.com/collections/666258ae0e3543efa3612b9bf380bb30

Massachusetts Department of Conservation and Recreation (DCR) and the Appalachian Mountain Club (AMC), and the AMC Berkshire Chapter. 2024. Memorandum of Agreement by and between the Commonwealth of Massachusetts DCR and AMC for Trail Development and Maintenance of portions of the New England National Scenic Trail. August 1. On file, Massachusetts DCR, Boston, MA.

Massachusetts Department of Conservation and Recreation (DCR) and the National Park Service (NPS). 2024. General Agreement between the U.S. Department of the Interior, NPS, New England National Scenic Trail, and the Commonwealth of Massachusetts DCR. June 28. On file, Massachusetts DCR, Boston, MA.

Massachusetts Department of Environmental Management (DEM). 1997a. Guidelines for operations and land stewardship (GOALS): State forests and parks in the Northeastern Connecticut Valley Region. Boston, MA.
https://archives.lib.state.ma.us/handle/2452/836386

Massachusetts Department of Environmental Management (DEM). 1997b. Meeting minutes of the Board of Environmental Management.
https://archive.org/details/departmentofenvi1997mass/mode/2up

Massachusetts Department of Environmental Management (DEM). 1997c. New park honors one of DEM's best. DEM Newsline November 1997:1.

Massachusetts Department of Environmental Protection (MassDEP). 1995. Wellhead protection tips for small public water supply systems.
https://www.mass.gov/files/documents/2016/08/op/welltips.pdf (PDF)

Massachusetts Department of Environmental Protection (MassDEP). 2001. Total Maximum Daily Loads of phosphorous for selected Connecticut Basin lakes. Prepared by: Division of Watershed Management, Bureau of Resource Protection. DEP, DWM TMDL Report MA34002-202104, December 17, 2001.
https://www.mass.gov/doc/final-tmdls-of-phosphorus-for-selected-connecticut-basin-lakes/download (PDF)

Massachusetts Department of Environmental Protection (MassDEP). 2011. Implementation of Zone I requirements. DWP Policy 94-03. Effective Date: 3/10/2008. Amended Date: 5/01/2011.
https://www.mass.gov/files/documents/2016/08/qs/9403a.pdf (PDF)

Massachusetts Department of Environmental Protection (MassDEP). 2012. Report to the Senate and House of Representatives on water quality at beaches under the care and control of the Department of Conservation and Recreation. DEP, Boston, MA.
https://www.mass.gov/doc/appendices-to-beach-report/download (PDF)

Massachusetts Department of Environmental Protection (MassDEP). 2021. Final Massachusetts integrated list of waters for the Clean Water Act 2018/2020 Reporting Cycle: Appendix 15, Connecticut

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

River Watershed Assessment and Listing Decision Summary. CN. 505.1. Prepared by: Watershed Planning Program, Division of Watershed Management, Bureau of Water Resources. http://www.mass.gov/doc/20182020-integrated-list-of-waters-appendix-15-connecticut-river-watershed-assessment-and-listing-decision-summary/download (PDF)

Massachusetts Department of Environmental Protection (MassDEP). 2023. Final Massachusetts integrated list of waters for the Clean Water Act 2022 reporting cycle. CN. 568.1. May 2023. Massachusetts Department of Environmental Protection, Bureau of Water Resources, Division of Watershed Management, Watershed Planning Program. Worcester, MA. https://www.mass.gov/doc/final-massachusetts-integrated-list-of-waters-for-the-clean-water-act-2022-reporting-cycle/download (PDF)

Massachusetts Department of Public Health (DPH). 2022. Massachusetts freshwater beaches [2021]: Water quality data for public and semi-public beaches. https://www.mass.gov/doc/2021-freshwater-beach-data-0/download (PDF)

Massachusetts Department of Public Health (DPH). 2023. Massachusetts freshwater beaches [2022]: Water quality data for public and semi-public beaches. https://www.mass.gov/doc/2022-freshwater-beach-data-0/download (PDF)

Massachusetts Department of Public Health (DPH). 2024. Massachusetts freshwater beaches [2023]: Water quality data for public and semi-public beaches. https://www.mass.gov/doc/2023-freshwater-beach-data-0/download (PDF)

Massachusetts Division of Fisheries and Wildlife (MassWildlife). 2009. Guidelines for the certification of vernal pool habitat, March 2009. https://www.mass.gov/doc/guidelines-for-the-certification-of-vernal-pool-habitat/download (PDF)

Massachusetts Division of Fisheries and Wildlife (MassWildlife). 2015. Massachusetts State Wildlife Action Plan 2015. Westborough, MA. https://www.mass.gov/info-details/state-wildlife-action-plan-swap

Massachusetts Executive Office of Energy and Environmental Affairs (EEA). 2022. 2022 Massachusetts Climate Change Assessment, Volume II – Statewide Report. Executive Office of Energy and Environmental Affairs, Boston, MA. https://www.mass.gov/doc/2022-massachusetts-climate-change-assessment-december-2022-volume-ii-statewide-report/download (PDF)

Massachusetts Executive Office of Energy and Environmental Affairs (EEA). 2024. Response to the report of the Climate Forestry Committee. https://www.mass.gov/doc/forests-as-climate-solution-response-to-cfc-report/download (PDF)

Massachusetts General Court (MGC). 1994. Chapter 85 of the Acts of 1994. An act relative to bond authorizations for certain emergency capital projects of the Commonwealth. https://archives.lib.state.ma.us/handle/2452/25732

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

Massachusetts General Court (MGC). 2002. Chapter 236 of the Acts of 2002: An act providing for the preservation and improvement of the environmental assets of the Commonwealth. https://archives.lib.state.ma.us/handle/2452/121643

Massachusetts Historical Commission (MHC). 1983. Massachusetts Historical Commission Reconnaissance Survey Report: Shutesbury. Boston, MA.
https://www.sec.state.ma.us/mhc/mhcpdf/townreports/CT-Valley/shu.pdf (PDF)

Massachusetts Invasive Plant Advisory Group (MIPAG). n.d. Plants voted as: Invasive.
https://www.massnrc.org/mipag/invasive.htm

Matthews, J. S. 2008. Determination of Eligibility Notification: The Turners Falls Sacred Ceremonial Hill Site. National Register of Historic Places, National Park Service, Washington DC.

McNab, W. H., and D. L. Loftis. 2002. Probability of occurrence and habitat features for oriental bittersweet in an oak forest in the southern Appalachian Mountains, USA, Forest Ecology and Management 155(2002): 45–54.
https://www.srs.fs.usda.gov/pubs/ja/ja_mcnab006.pdf (PDF)

Merow, C., S. T. Bois, J. N. Allen, Y. Xie, and J. A. Silander, Jr. 2017. Climate change both facilitates and inhibits invasive plant ranges in New England. Proceedings of the National Academy of Sciences E3276–E3284.
https://www.pnas.org/doi/pdf/10.1073/pnas.1609633114

National Park Service (NPS). 1998. Planning for interpretation and visitor experience. Prepared by the Division of Interpretive Planning, Harpers Ferry Center, Harpers Ferry, WV. 1998.
https://www.nps.gov/subjects/hfc/upload/interp-visitor-exper.pdf (PDF)

Native Land Digital. 2023. Native Land Digital.
https://native-land.ca/

Naughton, M. 2021. Wildlife & recreation: Understanding and managing the effects of trail use on wildlife. Prepared for Vermont Fish and Wildlife and Vermont Forests, Parks, and Recreation. November 2021.
https://anr.vermont.gov/sites/anr/files/2023-01/wildlife_and_recreation_%20M_naughton_2021.pdf (PDF)

New England Trail (NET). 2020. About the Trail.
https://newenglandtrail.org/about-the-net/

O'Toole, D., L. A. Brandt, M. K. Janowiak, K. M. Schmitt, P. D. Shannon, P. R. Leopold, S.D. Handler, T. A. Ontl, and C. W. Swanston. 2019. Climate adaptation strategies and approaches for outdoor recreation. Sustainability 2019, 11, 7030.
https://www.mdpi.com/2071-1050/11/24/7030/pdf (PDF)

Our Town. 1999. Gates at Lake Wyola Open at Last. July.
http://www.wa1mba.org/wyola.htm

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

Quabbin-to-Cardigan Partnership (Q2C). 2023. The Quabbin-to-Cardigan Partnership. https://q2cpartnership.org/

Rockman, M., M. Morgan, S. Ziaja, G. Hambrecht, and A. Meadow. 2016. Cultural Resources Climate Change Strategy. National Park Service, Cultural Resources, Partnerships, and Science and Climate Change Response Program, Washington, D.C. https://www.nps.gov/subjects/climatechange/upload/NPS-2016_Cultural-Resoures-Climate-Change-Strategy.pdf (PDF)

Root Engineering. 2023. Lake Wyola Dam: Phase I Inspection / Evaluation Report. National I.D. Number MA00053. Inspected by Tighe & Bond on May 13, 2021, for the Massachusetts Department of Conservation and Recreation, Boston, MA.

Rustad, L., J. Campbell, J. S. Dukes, T. Huntington, K, F. Lambert, J. Mohan, and N. Rodenhouse. 2012. Changing climate, changing forests: The impacts of climate change on forests of the northeastern United States and eastern Canada. Gen. Tech. Rep. NRS-99. Newtown Square, PA: U.S. Department of Agriculture, Forest Service, Northern Research Station. https://www.fs.usda.gov/nrs/pubs/gtr/gtr_nrs99.pdf (PDF)

Shutesbury Historical Commission. 2021. Introduction to Indigenous cultural sites in Shutesbury, Massachusetts. https://www.shutesbury.org/sites/default/files/offices_committees/historical/Introduction%20to%20Indigenous%20Cultural%20Sites%20in%20Shutesbury_0.pdf (PDF)

Shutesbury Open Space Committee. 2022. Draft Shutesbury Open Space and Recreation Plan, 2022–2029. Town of Shutesbury, with assistance from the Franklin Regional Council of Governments. https://shutesbury.org/OSRP-update

Stanmyer, E. 2023. Re: Bats at Lake Wyola. E-mail message to J. Daly. March 21, 2023

Swanston, C. W., M. K. Janowiak, L. A. Brandt, P. R. Butler, S. D. Handler, P. D. Shannon, A. Derby Lewis, K. Hall, R. T. Fahey, L. Scott, A. Kerber, J. W. Miesbauer, L. Darling, L. Parker, and M. St. Pierre. 2016. Forest adaptation resources: Climate change tools and approaches for land managers, 2nd ed. Gen. Tech. Rep. NRS-GTR-87-2. U.S. Department of Agriculture, Forest Service, Northeast Research Station. Newtown Square, PA. https://www.fs.usda.gov/nrs/pubs/gtr/gtr_nrs87-2.pdf (PDF)

United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Center. 2007. Climate Change and World Heritage. Report on predicting and managing the impacts of climate change on World Heritage and strategy to assist States parties to implement appropriate management responses. World Heritage Reports 22. UNESCO World Heritage Center, Paris, France. https://whc.unesco.org/uploads/activities/documents/activity-474-1.pdf (PDF)

U.S. Fish & Wildlife Service (USFWS). 2023. Little Brown Bat. https://www.fws.gov/species/little-brown-bat-myotis-lucifugus

PUBLIC REVIEW DRAFT - SEPTEMBER 2025

VHB. 2022. DCR Stormwater Design Handbook. October 19, 2022. Prepared for the Massachusetts Department of Conservation and Recreation.
https://www.mass.gov/doc/dcr-stormwater-design-handbook/download (PDF)

Warner, C. F., ed. 1891. Picturesque Franklin. Wade, Warner & Co., Northampton, MA. https://catalog.hathitrust.org/Record/001262012

Weston and Sampson. 2022. Climate change vulnerability assessment. September 2022. Report prepared for Massachusetts Department of Conservation and Recreation.

Wilkins, E. J., and L. Horne. 2024. Effects and perceptions of weather, climate, and climate change on outdoor recreation and nature-based tourism in the United States: A systematic review. PLOS Climate 3(4): e0000266.
https://journals.plos.org/climate/article?id=10.1371/journal.pclm.0000266 (PDF)

Wobus, C., E. E. Small, H. Hosterman, D. Mills, M. Rissing, R. Jones, M. Duckworth, R. Hall, J. Creason, and J. Martinich. 2017. Projected climate change impacts on skiing and snowmobiling in the United States. Global Environmental Change. 45(2017) 1–14.
https://www.sciencedirect.com/science/article/am/pii/S0959378016305556 (PDF)

PUBLIC REVIEW DRAFT - SEPTEMBER 2025