



# Resource Management Plan Wachusett Mountain State Reservation



Adopted by the DCR Stewardship Council MONTH, 2025

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

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## **Purpose**

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

RMPs are prepared for "all reservations, parks, and forests under the management of the department" (M.G.L. c. 21, § 2F). These plans "shall include guidelines for the operation and land stewardship of the aforementioned reservations, parks and forests, shall provide for the protection and stewardship of natural and cultural resources and shall ensure consistency between recreation, resource protection, and sustainable forest management." DCR finalizes RMPs following a public process and adoption by the DCR Stewardship Council. The contents of this RMP represent the best available information at the time of adoption by the Stewardship Council.

## **Mission and Core Principles**

The Massachusetts Department of Conservation and Recreation, 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](http://www.mass.gov/dcr). Contact us at [mass.parks@mass.gov](mailto:mass.parks@mass.gov).

# Wachusett Mountain State Reservation

<https://www.mass.gov/locations/wachusett-mountain-state-reservation>

## 1. PROPERTY OVERVIEW

Characteristic	Value
Date Established	1899
Location	Princeton, Westminister
Ecoregion	Worcester Plateau
Watershed	Chicopee, Nashua
DCR Region	Central
DCR District	Central Highlands
DCR Complex	Wachusett
Management Forestry District	Mid-State
Fire Control District	North Worcester
Size (acres)	2,391.9
Boundary Length (miles)	20.0
Elevation - Minimum (feet)	912.2
Elevation - Maximum (feet)	2,006.0
Environmental Justice (acres)	0.0
Estimated Annual Attendance (2020)	800,000
Estimated Ski Area Attendance (ski season)	400,000
Estimated Ski Area Attendance (off-season)	200,000
Interpretive Programs (# programs, 2022)	406
Interpretive Programs (# attendees, 2022)	3,213

## 2. LANDSCAPE DESIGNATIONS

Designation	Acres
Parkland	2,256.0
Reserve	0.0
Woodland	0.0
No Designation	135.9

## 3. REGULATORY DESIGNATIONS

Designation	Acres
National Register Historic District – Four Corners/Goodnow Farm Historic District	21.4
Outstanding Resource Waters – Bickford Pond – Quinapoxet Reservoir – Wachusett Lake Watershed – Wachusett Reservoir – Ware River Intake	1,925.6
Priority Habitat (MESA)	362.4
Surface Water Supply Protection Zone A	502.7
Watershed Protection Act	321.4

#### 4. LONG-TERM AGREEMENTS

Agreement	Expiration Year
Mass. Electric Co. (HQ)	2007
Mass. Electric Co. (summit)	2016
Army Corps of Engineers	2024
Cork & Windsor LLC	2058
Princeton Municipal Light Department	N/A
Wachusett Mountain Assoc., Inc.	2071

Excludes telecommunications-related agreements.

#### 5. CONCESSIONS

Concession Type
None

#### 6. PARTNERS & FRIENDS

Group(s)
<a href="#">AmeriCorps, Student Conservation Association</a>
<a href="#">Appalachian Mountain Club, Worcester Chapter</a>
<a href="#">Friends of Wachusett Mountain, Inc.</a>
Wachusett Mountain Advisory Council
Wachusett Mountain Monitoring Board

#### 7. FEATURES OF INTEREST

Feature
Balance Rock
Fall Hawk Migration
High Meadow
Historical Recreation Infrastructure
Machias, Needham, and Siplas Pools
Midstate Trail
Old Growth Forest
Summit with scenic views

#### 8. NATURAL RESOURCES

Resource	Value
Tree Canopy (acres)	2,237.67
Rivers and Streams (miles)	11.6
Open Water (acres)	4.6
Wetlands (acres)	90.1
Certified Vernal Pools (#)	0
Potential Vernal Pools (#)	7
State-Listed Species (# Regulatory)	9
State-Listed Species (# Non-Regulatory)	21
Federally Listed Species (#)	0
Aquatic Invasive Plants (# known species)	1
Terrestrial Invasive Plants (# known species)	9

#### 9. FOREST MANAGEMENT (SINCE 2012)

Management Objective	Acres
N/A	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	294
Acres burned by wildfires in Fire Control District; 2019–2023	1,169.6
Type of Wildland-Urban Interface.	Intermix
Predicted rate of spread, based on Fire Behavior Fuel Model 13	Moderate

## 11. NATURAL HAZARDS

Hazard Type	Acres
Flood (1.0%-chance)	0.0
Flood (0.2%-chance)	42.4
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

## 13. CULTURAL RESOURCES

Resource Type	#
Archaeological	18
Historic - Total MACRIS Listed	27
Historic - National Register Listed	1
Historic - National Historic Landmark	0

## 14. RECREATION RESOURCES

Resource	#
Picnic Area	4
Summit Road/Parkway	1
Trail System	1
Viewing Platforms/Lookouts	3
Visitor Center	1
Wachusett Mountain Ski Area	1

## 15. RECREATION ACTIVITIES

Activity
Bicycling, mountain
Bicycling, road
Dog walking, on leash
Educational Programs
Endurance events
Festivals
Fishing, fin fish
Geotourism
Heritage Tourism
Hiking/walking
Horseback riding
Hunting
Nature study/photography
Orienteering
Picnicking
Running/Jogging
Running, races
Scenic Vista viewing
Skiing, cross-country
Skiing, downhill
Snowshoeing
Wildlife viewing

## 16. ROADS AND TRAILS

Metric	Value
Roads - Unpaved (miles)	0.8
Roads - Paved (miles)	5.1
Forest Roads - Unpaved (miles)	4.3
Forest Roads - Paved (miles)	1.3
Trails - Unpaved (miles)	13.6
Trails - Paved (miles)	0.1
Trails - Unauthorized (miles)	1.0
Trail Density (miles/acre)	0.009
Area of Impact (acres)	1,230.9

## 17. PARKING

Parking Resources	#
Lots	8
Parking Spaces - Total	1,112
Parking Spaces - Accessible (HP)	15
Parking Spaces - Other	1,097

## **INTRODUCTION**

Wachusett Mountain State Reservation (Wachusett or the Reservation) is in the Towns of Princeton and Westminster, 16 miles north of Worcester. Routes 2 and 190 pass approximately 3.5 miles north and 7.5 miles southeast, respectively, of Wachusett and a variety of state and local roads provide easy access to the property. The Massachusetts Bay Transportation Authority's Fitchburg Commuter Rail Line's Wachusett Station is 5 miles north of the Reservation. Nearby (within 5 miles) DCR properties are Leominster State Forest, Westminster State Forest, and Hubbardston State Forest. Roads bound the park in certain locations: Bolton Road (to the north), Mountain Road and Mile Hill Road (to the east), Westminster Road (portions of the southern border), and West Princeton Road (portions of the westerly border). Tracts of private non-profit and municipal conservation land adjoin Wachusett at its northeast and south ends. The remainder of the Reservation is bounded primarily by developed residential lots of varying size, historical origin, and level of development.

The Midstate Trail passes roughly north-south through the Reservation and over Wachusett's summit. This 92-mile-long regional hiking trail runs from Rhode Island to New Hampshire and links to regional trails in adjacent states. Along its course it passes across Wachusett and 10 other DCR-owned or managed properties, the closest of which to Wachusett are Leominster State Forest and Oakham State Forest. The Midstate Trail Committee of the Appalachian Mountain Club's (AMC) Worcester Chapter maintains the treadway and provides trail information at <http://www.midstatetrail.org/> (Midstate Trail Committee n.d.).

Mount Wachusett's geographic prominence has lent it significance in regional Indigenous and non-Indigenous culture and the Reservation is on land shaped by generations of these inhabitants. Past and present Indigenous residents embody fluid, relational connections to the places and spaces now known as Wachusett Mountain State Reservation. Groups and individuals, including Indigenous peoples known as the Nipmuc, are recorded in available documentation as having relationships to this place over seasons and generations (Epsilon Associates and PAL, Inc. 1994; Ingham and Leveillee 2002). The name Wachusett is derived from an Algonquin word meaning "at/on the hill". The mountain was a traditional meeting place and spiritual site that was sometimes used in conjunction with tribes such as the Wampanoags, Narragansetts, Penacooks, Pequots, and Massachusetts (Epsilon Associates and PAL, Inc. 1994: 4-3; Ingham and Leveillee 2002: 25). Nipmuc peoples, though reduced in numbers due to European settlement, continue to have a presence in their traditional homeland. Permanent European settlement in the immediate area occurred during the late 18th century. During the 19th century, the mountain's summit (then privately owned) became one of the Commonwealth's most popular inland tourist destinations, attracted famous personages as visitors, and was developed with tourist infrastructure. The Massachusetts General Court (MGC) established the Massachusetts State Reservation system in 1898 and created Wachusett in 1899 as the Commonwealth's second reservation (Mount Greylock State Reservation was the first) (MGC 1899). The intent (described in 1901 by Reservation commissioners) was "to provide a fitting and creditable park for the free use of its [the Commonwealth's] inhabitants" (Wachusett Mountain State Reservation Commission 1901: 3). The initial purchase and takings totaled 563.51 acres and the Reservation has expanded approximately fourfold since those acquisitions. In 1966, control of the Reservation was transferred from Worcester County to the Commonwealth's Department of Natural Resources (MGC 1966).



The heart of Wachusett Reservation is the 2,006-foot summit of Mount Wachusett, a granodioritic monadnock (a visually conspicuous and isolated hill of bedrock). Forested slopes rise to the summit and comprise most of the Reservation's land area. The mountain is the dominant setting for visitor experiences and is noteworthy for its diverse recreational, natural, and cultural resources. Major forest cover types include mixed northern hardwood, red oak (including old growth), hemlock, and white pine. Additional features include scattered upland meadows, wetlands, perennial and intermittent streams, natural and artificial ponds, ledge outcrops, talus slopes, and boulders. Wachusett also incorporates three noncontiguous land tracts totaling approximately 99 acres in Princeton: the two Westminster Road Tracts near the core Reservation, and the outlying Old Colony Road Tract that straddles this public way (see Land Stewardship Zoning maps, pages 38–40). These tracts are not developed with any recreational infrastructure.

The Reservation's natural, cultural, and recreational resources coexist in a complex landscape that reflects the varied past and present land uses at the mountain. This is especially evident at the summit, where modern telecommunications equipment exists alongside recreational buildings and structures of various ages. Archaeological sites from Indigenous peoples and historical Euro-American occupancy have been identified in the Reservation. Other historical and recreational features of note include the 19<sup>th</sup>-century "Down Road", land survey marks of various periods, 1930s Civilian Conservation Corps (CCC) and Works Progress Administration (WPA) buildings and "Up Road", and the 1972 John H. Hitchcock Visitor Center. (DCR publications do not agree on the construction dates for the visitor center. Documents in the State Archives confirm that construction was completed in 1972. However, the facility may not have opened to the public until 1975, due to budget constraints (Fisher 2024).) The "Up" and "Down" roads make up the important Summit Road which, along with forest roads and hiking trails, offer access for visitors. Motor vehicles are seasonally allowed on the paved Summit Road, while other trails and ways are exclusively for passive recreation such as hiking, cross-country skiing, and snowshoeing. Forest roads and trails are accessed via trailheads at various locations, many of which have informational kiosks. Observation platforms and picnic areas provide additional visitor engagement points. Wachusett Mountain Ski Area, currently operated under lease by Wachusett Mountain Associates, Inc. (WMA), has offered lift-served skiing since the 1960s.

Since 1999, Wachusett has been managed under a Resource Management and Protection Plan (RMPP, Epsilon Associates et al. 1999). Adjacent DCR Division of Water Supply Protection (DWSP) properties are managed under a variety of watershed-specific plans (DCR 2018, 2023a, 2023b). Since RMPP publication, nearly 300 acres have been added to the Reservation. Additionally, DCR completed two major improvement projects: the Historic Parkway Rehabilitation Project (for the Summit Road) and a rehabilitation of summit infrastructure that included the new Princeton Fire Tower and observation deck, relocation of parking, reconfiguration of pedestrian circulation, and new interpretive panels. The Superintendent's House was rehabilitated and is currently managed and maintained as Mountainside Market by Cork & Windsor LLC through a Historic Curatorship lease agreement. WMA upgraded ski area infrastructure in a 1999–2004 expansion program.

Wachusett's year-round popularity, varied recreational uses, cultural significance, unique and important natural resources, and diverse stakeholders create a management task of unique scope within the DCR. In 1999, the Commonwealth's Secretary of Environmental Affairs (the Secretary) called responsible stewardship of Wachusett "one of the greatest environmental challenges found anywhere in the state" (Massachusetts Secretary of Environmental Affairs 1999a: 1). There are numerous regulations, policies,

and surveys guiding DCR's stewardship of Wachusett, which are summarized in Appendix A as a checklist. Additionally, Massachusetts Environmental Policy Act (MEPA) permitting of WMA's ski area expansion shaped the management of Wachusett. The Secretary of Environmental Affairs imposed oversight and reporting mandates on DCR (then Department of Environmental Management, or DEM) and WMA through their Certificate on the Supplemental Final Environmental Impact Report (SFEIR), Expansion Phases I & II of Ski Area (Executive Office of Environmental Affairs (EOEA) #9690, Secretary of Environmental Affairs 1999a). Preparation of the 1999 RMPP was required in the SFEIR Certificate, and a MEPA Special Review Procedure on the RMPP process was imposed (Certificate on the Special Review Procedure, Wachusett Mountain State Reservation RMPP, EOEA #11974, Massachusetts Secretary of Environmental Affairs 1999b). The SFEIR Certificate's oversight and reporting mandates were carried into the DEM's Section 61 Findings (DEM 1999a) for the expansion and into the 1999 RMPP. Consequently, the 1999 RMPP document should be considered as still in effect, except where this RMP explicitly replaces or updates specific policies or practices. Specific recommendations regarding some of these policies and practices have been provided in this RMP. (See the Threats, Opportunities, and Priority Recommendations portions of the document.)

### **PARK IDENTITY**

Wachusett Mountain State Reservation is an outstanding park that provides diverse and easily accessed four-season alpine recreation opportunities to visitors from across New England and beyond. At the same time, it protects one of the Commonwealth's most identifiable natural landmarks and conserves significant natural resources, habitats, and communities. The Reservation's identity is synonymous with the mountain it encompasses and the recreation opportunities that the mountain affords. All future management activities and improvements should maintain sustainable public recreation and education opportunities consistent with the property's Parkland Landscape Designation and founding legislative intent, while protecting the highly important natural and cultural resources that the Reservation encompasses.

### **DEFINING RESOURCES AND VALUES**

Resources and values that define the Wachusett Mountain State Reservation are related to its natural and human history as a prominent mountain peak in the Commonwealth and New England. These resources and values consist of:

- The mountain summit. The summit lies at the heart of the Reservation both geographically and experientially and figures prominently in the setting of nearly all other defining values, resources, or activities at the property. It hosts important natural resources; infrastructure for recreation, fire control, and telecommunications; and remnants of past site uses.
- Unique and significant natural resources that were conserved and/or are present because of the Reservation's particular climate, topography, and geology.
  - Old growth forest that is "the largest documented site in the state" and that includes the oldest known red oak trees in the world (Epsilon Associates et al. 1999: 2-13; Orwig et al. 2001: 448-449).
  - Natural community types that are "rare", "vulnerable" or "imperiled" and therefore identified by the Massachusetts Natural Heritage & Endangered Species Program (NHESP) as Priority Natural

Community types: Acidic Graminoid Fen, Hickory-Hop Hornbeam Forest/Woodland, Ridgetop Pitch Pine-Scrub Oak (Parker 2004), and Sugar Maple-Oak-Hickory Forest.

- Priority Habitat for 9 species (1 bird, 8 plants) that are protected under the Massachusetts Endangered Species Act (MESA).
- Cultural and historical significance and associated sites extending from the ancient period (12,000–450 years before present) to the present day.
  - The mountain, especially its summit, has been and remains an important landmark and ceremonial site for Indigenous peoples.
  - For non-Indigenous Americans, the mountain became an important tourist destination and holds an important place in the history of Massachusetts’s conservation movement. The mountain was visited by important personages in America's Romantic literary movement (ca. 1820–1865) and concurrent American Renaissance, such as Henry David Thoreau, Ralph Waldo Emerson, and Louisa May Alcott (Sinclair 1996: 6). Its recreational value was the chief consideration in establishing it as a state reservation, as indicated in remarks contained in the first annual report of the Wachusett Mountain State Reservation Commission (Wachusett Mountain State Reservation Commission 1901: 3, 4, 5). Consequently, it contains multiple examples of early- and mid-20<sup>th</sup>-century rustic architecture and landscape planning.
- Alpine recreational assets and opportunities. The Reservation offers the closest all-season mountain recreation, including alpine skiing and snowboarding, to several of southern New England’s major metropolitan areas (over 6.5 million people are within a 1-hour drive). A visitor center, hiking trails, picnic areas, a summit auto road, summit viewing platform (incorporated into the Princeton Fire Tower), and the Wachusett Mountain Ski Area support and enhance the visitor experience and represent core recreational assets for the Reservation.
- An outstanding scenic amenity. Wachusett’s prominent summit rises over 2,006 ft above sea level and projects about 1,000 feet above surrounding hills. The summit is highly visible from numerous vantage points across the region, providing an important natural landmark for visitors and residents. Scenic views extending over 60 miles may be obtained at the summit and certain points on the mountain’s slopes. The mountain and its environs were recognized as “Distinctive” and “Noteworthy” scenic landscapes in the DEM’s Massachusetts Landscape Inventory (DEM 1982: 1551–155) and these scenic characteristics remain today.

### **STATEMENTS OF SIGNIFICANCE**

Statements of Significance describe the importance or distinctiveness of a place and its resources (National Park Service 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 our 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 Wachusett Mountain State Reservation. The sequence of these statements does not reflect their level of significance.

- Wachusett Mountain is the highest point in Massachusetts east of the Connecticut River. The 360-degree view long inspired people to ascend to the summit. This transformed the site into a tourist destination, which led to its acquisition as a state reservation. Between the view and the extensive trail network, the site remains one of the most visited properties in the state park system today.
- Wachusett Mountain is one of a few areas in Massachusetts that have documented old-growth forest and has the largest total area of old growth in the state (Foster et al. 1996). These stands are important not just for their trees, but for the irreplaceable ecological communities that they create.
- To the Nipmuc and other Indigenous peoples of Massachusetts and southern New England, Wachusett Mountain is a place of special importance. Wachusett means "at/on the hill" and was also the name of a Nipmuc village near the base of the mountain. As a central place for the Indigenous peoples, each group recognizes its importance as "a source of traditional power and a place for cultural and logistical fortification" (Epsilon Associates and PAL, Inc. 1999: 3–8).
- Wachusett Mountain is a major "bird of prey" migratory route on the eastern flyway and is one of the premier places for observing bird migrations in New England. The hawk migration has been observed since the late 19<sup>th</sup> century. Statistics have been kept for decades and include a one-day record of 20,000 raptors.
- The diversity of natural resources on Wachusett Mountain has provided a living laboratory. These studies contribute to on-going research about the conservation of wildlife and the ecosystems that make up an old-growth woodland.

### **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 Wachusett Mountain State Reservation is:

The geologic forces that formed Wachusett Mountain created a delicate ecosystem where different interests must coexist.

### **VISITOR EXPERIENCE**

Wachusett provides diverse opportunities for visitor use, including the following:

- **Virtual Experience.** Potential visitors will find information about Wachusett on DCR's web site. The Reservation has its own web page that provides potential visitors information needed to plan a visit (<https://www.mass.gov/locations/wachusett-mountain-state-reservation>). Missing from the web site, however, is information regarding the Reservation's non-contiguous land tracts.

- **Entering the Park.** Wachusett's main entrance at 345 Mountain Road, Princeton, features a paved entry and gateway that is well marked with official DCR signage. From this drive, visitors may choose to proceed to the visitor center, travel a short distance to the contact station parking lot, or continue driving, riding, or walking to the summit on the Summit Road (as described below, the road is closed to vehicles in winter). Parking fees (collected via contactless means) are required for the visitor center, contact station, and Summit Road. In addition to this entrance, visitors desiring to access hiking trails or forest roads may park and enter the park from eight marked trailheads with informal parking for one to five vehicles on the periphery of the property on Westminster Road, West Princeton Road, Bolton Road, Mile Hill Road, and Mountain Road. Visitors accessing the Wachusett Mountain Ski Area (described below) use two dedicated paved driveways located on Bolton Road and Mile Hill Road in Westminster. The ski area's parking lot also contains the Balance Rock trailhead.
- **John H. Hitchcock Visitor Center.** The visitor center is a well-kept building that is open year-round to the public. The facility offers a large exhibit space that features interpretive displays explaining the natural and cultural history of Wachusett, as well as park orientation services and bathroom facilities. DCR offices are housed in the building. A paved parking lot is available and is also used by visitors accessing the Bicentennial Trail. In 1979, the facility was renamed to recognize John H. Hitchcock (1904–1989), who served as chair of the Wachusett Mountain Advisory Council (WMAC) from 1969 until 1983 (DEM 1979: September 6).
- **The Summit.** Wachusett's summit is one of the Reservation's main attractions and may be accessed via the Summit Road and hiking trails. The Wachusett Mountain Ski Area's Polar Express Quad lift also provides summit access (with a short walk at the top) during ski season and WMA special events during the off season. The summit contains a variety of visitor attractions and conveniences including a paved parking lot, wayside interpretive signs describing the natural history of the mountain, an accessible observation platform at the base of the Princeton Fire Tower, the summit pond, and the historic Parker Lodge (which houses telecommunications equipment and is not open to visitors). The summit is intensively used by hawk watchers who visit the site in the fall to observe the birds' seasonal migration.
- **The Summit Road.** This parkway affords motor vehicle and bicycle users three-season access to the summit. (The road is closed from the last full weekend of October to Memorial Day weekend in May to permit ski area operation.) Commencing at the main entrance, the road passes the contact station and then transitions to the one-way Up Summit Road approximately 1,500 feet from the entrance. It winds around the mountain as it ascends past various pull-offs and picnic areas that offer opportunities for visitors to pause to take in views of the scenery. A two-way road spur leads visitors to the parking area at the summit, while the one-way Down Road continues back down to reconnect with the main Summit Road near the contact station.
- **Trail-Based Passive Recreation.** Wachusett's extensive trail and forest road network offers visitors year-round opportunities to hike, ski, and snowshoe in the mountain environment. Trails lead to the summit and access multiple scenic overlooks and attractions such as Balance Rock; the Needham, Machias and Siplas Pools; and High Meadow. Mountain bikers may use a smaller network of forest roads in the Reservation but are excluded from trails.
- **Wachusett Mountain Ski Area.** WMA operates the ski area through lease agreement with DCR and is open for skiing and snowboarding from late fall to early spring (conditions permitting). The skiable

terrain descends 1,000 vertical feet from just below the summit to the base area. Amenities include 8 lifts, 27 trails, a terrain park, snowmaking, lessons, equipment rentals, a ski shop, and assorted dining experiences. The lifts can carry up to 9,200 skiers per hour and night skiing is offered. DCR's Bullock Lodge, completed in 1937 by CCC workers, is within the ski area lease and utilized by WMA.

### **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 44).

#### **Natural Resources**

##### ***Threats***

- Portions of the Reservation require land surveys in order for legal boundaries to be delineated. In particular, the Old Colony Road Tract needs its boundaries confirmed via instrument survey, as there is a possible encroachment in the form of outbuildings or temporary structures on the land. Encroachment may threaten natural communities or species habitat in the Reservation.
- New residential development, particularly around westerly portions of the Reservation, could result in future encroachment.
- The following eight invasive plants have been identified at Wachusett: autumn olive, glossy buckthorn, burningbush, Japanese barberry, multiflora rose, Morrow's honeysuckle, Oriental bittersweet, and purple loosestrife. Additionally, goutweed and reed canary-grass were identified in 1999 at the summit (their continued presence was not determined during this RMP process). Wachusett staff conducted an invasive plant species survey of Wachusett ca. 2000–2005, using an unknown methodology (Williams et al. 2006). Invasive species may negatively impact both the ecological integrity and biodiversity of the Reservation. In some instances at Wachusett (for example, off Thompson Road in Princeton where autumn olive took over a field), habitat restoration projects have been adversely impacted by invasive species taking over project areas.
- Invasive species present a particular threat to six MESA-listed plant species at Wachusett. If invasives establish themselves in rare-species habitat, then NHESP approval for invasive management plans would be required. There may be future opportunities to enhance invasive management activities within Priority Habitat (Schlüter, E. 2024).
- Although the Reservation's natural communities have not been systematically surveyed, four Priority Natural Communities have been identified. These communities, and existing and potential threats to their ecological integrity and continued persistence in the Reservation, are identified below:
  - Acidic Graminoid Fen (S3 – Vulnerable). The Reservation's known example of this community type is located northwest of the summit at the intersection of the Up Summit Road and

Semuhenna Trail. This community type is vulnerable to nutrient enrichment, alterations to hydrology, and trampling (Swain 2020).

- Hickory-Hop Hornbeam Forest/Woodland (S2 – Imperiled). An example of this community type is located southeast of the summit, near the Down Summit Road. This community type is vulnerable to invasive plants, particularly Louise’s swallow-wort and common buckthorn (Swain 2020).
- Sugar Maple-Oak-Hickory Forest (S3 – Vulnerable). Examples of this community type are located between the Down Summit Road and visitor center, and south of summit near Echo Lake. This community type is vulnerable to invasive plants (Swain 2020).
- Ridgetop Pitch Pine-Scrub Oak Community (S2 – Imperiled). The Reservation’s known examples of this community type are located northwest of the summit along the Semuhenna Trail. This community type is susceptible to forest succession, fire suppression, trampling, and litter (Swain 2020).
- Foot traffic of users deviating from the treadway on heavily used trails is impacting Priority Habitat and wetlands in some locations because of trampling, erosion, and sedimentation. There are five MESA-listed species whose habitat is intersected by existing trails and that may be sensitive to trampling and trail maintenance work.
- Visitors occasionally engage in rock climbing or bouldering at off-trail locations in the Reservation. This activity may threaten sensitive natural communities or species habitat.
- There are multiple unapproved geocaches in the Reservation. Inappropriately located geocaches may threaten sensitive natural resources.
- Recreationists appear to have planted species native to Massachusetts that are not endemic to Wachusett within the Reservation, along trails on the ridge above High Meadow: trillium, May apple, and wild leeks. In time, these plants could threaten endemic plants and communities.
- Spotted salamanders are attempting to breed in the Summit Pond, which was likely a breeding site for the species “potentially for many hundreds of years” (Epsilon Associates and PAL, Inc. 1999:3-15). However, an exotic fish population prevents the pond from functioning as a breeding resource and certification of the pond as a vernal pool. Additionally, the design of the historic Summit Pond walls limits salamander access (Epsilon Associates and PAL, Inc. 1999: 3-1–3-6; 3-15–3-16).
- Beech bark disease, in which invasive exotic beech scale insects weaken trees that are further impacted by a fungal infection (*Neonectria*), is present in the Reservation and weakening beech trees.
- Beech leaf disease, associated with the foliar nematode species *Litylenchus crenatae*, is present in the Reservation and weakening and killing beech trees.
- Hemlock trees throughout the Reservation are infested with hemlock woolly adelgid. Three areas of high-density hemlock stands, totaling approximately 6 acres, are being treated for this pest: two areas within the Old Growth area along the Jack Frost Trail, one area along the Administration Road near West Road.
- Biological threats to late successional forest species, as described above, will likely alter the condition of the old growth forest conditions at the Reservation, and how such forest stands will develop into the future.

- Unpaved roads on slopes in the Reservation are subject to washouts, a phenomenon exacerbated by insufficient water bars and culvert size. Washouts result in deposition of sand, gravel, and/or recycled asphalt surfacing materials into sensitive habitats and natural communities such as wetlands.

### **Opportunities**

- There are land protection opportunities that would increase connectivity and provide wildlife corridors between the Main Tract of Wachusett, non-contiguous DCR parcels, and/or Leominster State Forest.
- A few tracts in the southern section of the Reservation directly abut DCR DWSP property. Intra-agency discussions between DWSP and State Parks can determine if it is appropriate to transfer control of specific tracts both to and from DWSP/DCR to ensure optimal water supply protection, recreation, and natural resources management.
- Approximately 135.9 acres of the Reservation has no Landscape Designation (DCR 2012). Assigning Landscape Designations to these areas could help with management of associated natural resources and ensure management consistent with DCR properties statewide.
- An opportunity exists to enhance the aquatic connectivity and climate resilience of the Reservation's coldwater streams (i.e., streams where maximum summer water temperatures generally do not exceed 22° C). One of the Reservation's culverts could be replaced with a structure consistent with the Massachusetts Stream Crossing Handbook (Massachusetts Department of Fish and Game 2018) and the most current Climate Resilience Design Standards (e.g., Commonwealth of Massachusetts 2022). The University of Massachusetts' Critical Linkages Project has identified this culvert (ID no. 1043) as being in the top 10% for restoration potential statewide. See <http://www.umasscaps.org/applications/critical-linkages.html> for additional information on this project.
- Under MEPA and Section 61 permitting review associated with the ski area improvements, DCR and WMA implemented water quality monitoring measures for Wachusett Lake and its tributaries. Wachusett Lake is no longer a primary supply for the City of Fitchburg and is now a backup water supply. There is an opportunity to revisit water supply monitoring measures to ensure that such protocols are appropriate to the current needs of the City.
- Priority Habitat for an endangered plant species is located at the summit. Implementation of temporary fencing and invasive species treatments that are outlined in a Habitat Management Plan will offer a means to protect the plant's habitat from visitor trampling and invasive species.
- Submittal to and approval by the NHESP of a management plan for invasive plant populations within rare species Priority Habitats at the Reservation will allow more efficient removal of invasive plants.
- A ski trail mowing schedule was implemented due to MEPA and Section 61 permitting review associated with the ski area improvements. There is an opportunity to clarify, document, and adjust the ski trail mowing schedule (i.e., program) as it pertains to the protection of MESA-listed plant species Priority Habitat. Moving the mowing to later in the fall could support fall flowering plants and associated insect communities. (Mowing schedule revisions should be made in consultation with NHESP.)
- There is an opportunity to realign a segment of the Semuhenna Trail for protection of a MESA-listed species that is sensitive to dispersed recreation such as hiking.



- There is an opportunity to protect a MESA-listed species that is sensitive to dispersed recreation by reducing the width of the High Meadow Trail, clearly defining the trail treadway, and erecting signage advising recreationists to stay within the treadway.
- There is an opportunity to promote Priority Habitat for a MESA-listed Endangered species through implementation of a fire management plan for one small portion of the Reservation near the Semuhenna Trail.
- Implementation of a fire management plan may benefit the Ridgetop Pitch Pine Communities in the Reservation (Swain 2020).
- Improved application of DCR's Trail Maintenance Best Management Practices (BMPs) and Trails Guidelines and Best Practices Manual, in conjunction with the NHESP's 2022 Guidance Codes for DCR Trail Maintenance Map, could reduce adverse impacts to adjacent native vegetation. Specific practices that may help at Wachusett are confining and upgrading steep trails, controlling runoff, and rerouting of trails away from MESA-listed species habitat.
- Although the Midstate Trail crosses the Reservation, the Midstate Trail Committee of AMC's Worcester Chapter is not currently a Reservation partner. Such a partnership is noted in the 1999 RMP but has since lapsed. Renewal of a partnership would provide an opportunity to ensure that AMC trail maintenance activities are in accordance with the NHESP 2022 Guidance Codes for DCR Trail Maintenance (see discussion in DCR Stewardship Map section, below) (Schlüter 2024).
- There is an opportunity to improve trail conditions by filling unfilled staff positions and enhancing trail material expenditures.
- Increased consultation between DCR's Office of Natural Resources and NHESP staff would provide an opportunity to manage existing habitat and/or increase habitat for endangered plant species. A Habitat Management Plan for areas of the Reservation classified as Priority Habitat would allow for more effective identification and treatment of threats to these species.
- Some of the Reservation's seven potential vernal pools may "support rich communities of vertebrates and invertebrates" (MassWildlife 2009) and serve as important habitat components for other wildlife. Surveying and certifying the following pools (DCR (n.d.) and MassWildlife (2009)), as appropriate, may help better protect these animals.
  - Four NHESP potential vernal pools (numbers 20065, 20066, 20067, and 28300). Documentation was submitted for these four pools in 1999, but the NHESP did not certify them. One of the pools (no. 20065), a bog near the intersection of the Summit Road and the Semuhenna Trail, has been documented to support a spotted salamander population around Wachusett's summit that is a metapopulation unique due to the fact that individuals are, on average, larger than other examples statewide (Booth 2001; Smyers et al. 2004).
  - The "Northeast Pool", also known as the "Lower Summit Pool", (a natural pocket of standing water on the northeast edge of the summit, just east and downgrade of an observation platform) was identified in 1999 as vernal pool breeding habitat for "a large and exemplary population of spotted salamanders for the eastern Massachusetts regions" but is not listed as a NHESP potential vernal pool, nor identified in the Massachusetts Department of Environmental Protection (MassDEP) Wetlands GIS data (Epsilon Associates and PAL, Inc. 1999: 3-1-3-6; 3-15-3-16). This pool, along with the bog referenced in the previous bullet, has been documented to support a spotted salamander population that is a metapopulation unique due to the fact that

individuals are, on average, larger than other examples statewide (Booth 2001; Smyers et al. 2004).

- In addition to Priority Habitat in the Reservation (i.e., Regulatory Habitat), there is also Non-Regulatory habitat for one MESA-protected reptile species in the Reservation. Unlike Regulatory Habitat, which is based on verified records of state-listed species and has associated mapped Priority Habitat, Non-Regulatory Habitat is based on the presence of suitable habitat and there is no associated mapped Priority Habitat. On state lands, both Regulatory and Non-Regulatory Habitat are protected under MESA (321 CMR 10.00). Requesting pre-filing consultation with NHESP for “all works, projects, or activities” in the Reservation, regardless of location in or out of Priority Habitat, will ensure continued protection of this habitat and compliance with the MESA.
- Dr. Robert Bertin, Distinguished Professor of Science Emeritus, Biology, at College of the Holy Cross, has conducted a systematic survey of the flora of Wachusett Mountain. There may be opportunities to integrate his data concerning MESA-protected species, invasives, and other floristic aspects of the Reservation into future management efforts, including any future preparation of an RMPP.
- There may be opportunities to update Priority Natural Community mapping, conduct assessments, and, as appropriate, develop and implement habitat management plans for these communities in coordination with the NHESP (Schlüter 2024).
- The Ridgetop Pitch Pine-Scrub Oak Community type vulnerable to trampling and litter. The examples of this community type at the Reservation are bisected by and in close proximity to the Semuhenna Trail. There is an opportunity to monitor trail and community conditions at these locations to ensure that recreational use of the trail is not negatively impacting the communities.
- The Reservation’s example of an Acidic Graminoid Fen Community is located within 50 feet of the Up Summit Road and the Semuhenna Trail. Because of this community type’s vulnerability to nutrient enrichment from runoff, there may be opportunities to void or minimize road and trail runoff from the road and trail into the community.
- Monitoring and management of invasive plant species may benefit many of the Priority Natural Communities in the Reservation.
- Vegetation growing at the perimeter of the cleared summit can be managed to encourage natural species and habitat while retaining historic views from the summit and screening of utility structures.
- There is an opportunity increase biodiversity (e.g., pollinating insects) and reduce maintenance time and expenses by reducing the scale and frequency of mowing along the Summit Road and (possibly) in other landscaped areas of the Reservation.
- Prescribed burns in High Meadow and some peripheral meadows may provide an opportunity to accomplish habitat management goals, including invasive plant suppression.
- A stand of mature northern red oak stand of trees over 100 years old is designated a Representative Natural Area (RNA) under the DCR’s Massachusetts Wildlands program (304 CMR 7.00; Massachusetts DEM n.d.: 32). At the time this RMP was written, the RNA was lacking the Area Management Summary that is required under 304 CMR 7.04. Preparation of an Area Management Summary would afford opportunities for resource protection and interpretation. (As of June 2025, the RNA designation for this resource is under review.)

- Reservation visitors have created several unauthorized trails. Construction of trails without authorization or applicable regulatory review may threaten MESA-protected species habitat, natural communities, and/or ecosystem functions.
- There is an opportunity to protect important hemlock stands in the Reservation through continued treatment and monitoring of hemlock woolly adelgid infestations.
- In the future, there may be additional opportunities to conduct forest and vegetation management to protect or restore habitat at the Reservation (consistent with the property's Parkland designation). Such opportunities may be detailed in a regional Forest Resource Management Plan (not yet developed at the time of RMP preparation).
- There is an opportunity to protect sensitive habitats and natural communities in wetland areas from filling and/or sedimentation by improving drainage infrastructure on unpaved roads in the Reservation. Such improvements would consist of water bars, larger culverts, and settling basins. These improvements would also increase the longevity of, and reduce maintenance requirements for, the road surfaces.

### **Cultural Resources**

#### ***Threats***

- A cultural resources survey has not been conducted for parcels added to the Reservation since 1999. Lack of knowledge concerning cultural resources may hinder their appropriate management.
- Heavy public visitation and weather events may negatively impact sensitive archaeological resources through erosion, particularly at the summit and on trails.
- Harlow Overlook is a popular target for vandalism, which threatens the resource's integrity, as well as the ability of the public to enjoy it.
- Harlow Overlook's historical view corridor is shrouded by tree growth that falls within the Old Growth Forest. Conflicts between protection of the Old Growth and protection of this cultural resource impede effective management of the overlook's view corridor.
- Although WMA is responsible for annually notifying DCR of proposed work projects, this information has not been consistently reaching all relevant DCR staff. Lack of communication concerning these projects may result in damage to natural, cultural, or recreational resources in the Reservation.
- The masonry of the Summit Pond walls and summit retaining walls is degraded. Continued deterioration would threaten the stability and continued survival of these structures, which are associated with the summit's important history of recreation.
- Natural processes (beaver activity, storm damage, vegetation growth, and erosion) may threaten the integrity of historical dams and associated scenic pools on the Reservation: the Bolton Pond Dam and the Everett, Machias, and Siplas pools' dams. (N.b.: These dams are not included in the Office of Dam Safety database.)
- There are multiple unapproved geocaches in the Reservation. Inappropriately located geocaches may threaten sensitive cultural resources.
- Construction and use of the previously mentioned unauthorized trails may disturb areas of the Reservation that have potential archaeological resources.

### **Opportunities**

- Mount Wachusett has been recognized as a Traditional Cultural Place (TCP, formerly Traditional Cultural Property) of significance to local Indigenous tribes, particularly the Hassanamisco Nipmuc Band. There is an opportunity to work with the Hassanamisco Nipmuc Band and Nipmuc community stakeholders to better understand and protect Indigenous cultural values and sites within the Reservation.
- The designated WMAC seat for Indigenous peoples is vacant (at the time that this RMP was under preparation). Filling this seat would facilitate consultation with the Hassanamisco Nipmuc Band and Nipmuc community stakeholders and non-profits regarding TCPs and other issues of concern to the tribe at Wachusett.
- A cultural resources management plan for Wachusett's historical and archaeological resources could systematize management needs for DCR staff, facilitate coordination between natural and cultural resources staff in DCR, and establish, in conjunction with the Hassanamisco Nipmuc Band, a program for managing TCP consultations.
- Approximately 135.9 acres of the Reservation has no Landscape Designation (DCR 2012). Assigning Landscape Designations to these areas could help with management of associated cultural resources and ensure management consistent with DCR properties statewide.
- Maintenance and repair of historic masonry resources at the summit (i.e., the Summit Pond walls and retaining walls) is needed. Completion of such conservation work would preserve these historic recreation resources for future visitors.
- Implementing preventative measures against graffiti at the Harlow Overlook would help to protect this historic resource and improve visitors' experience of the Reservation. There is an opportunity to work with WMA to increase ski patrol visits to this location during the ski season.
- Trimming trees (following the BMPs for Vista Maintenance (DCR 2015a) and Old Growth Forest management practices) to re-open the view corridor at Harlow Overlook would improve public experience of this amenity and its views.
- Revising the internal DCR communications protocol concerning annual review of WMA's work at the ski area would help to protect cultural resources, as well as natural and recreational resources, at the Reservation.
- The historic Parker Lodge could be rehabilitated to provide visitor amenities and help to preserve this historic building.
- There is an opportunity to ensure continued integrity the Reservation's historical scenic pools and dams, and possibly increase their resilience to climate change, by conducting structural inspections and conducting historically sensitive repairs, if needed (Epsilon Associates et al. 1999).

### **Recreation**

### **Threats**

- The diverse user types, all-season activities, and geographic dispersion of visitors at the Reservation presents challenges to DCR staff for day-to-day operations, such as tracking visitation, managing visitor safety, and identifying and mitigating user impacts on natural and cultural resources.

- Attendance numbers during peak visitation seasons such as fall foliage is exceeding the capacity of trailhead parking (especially at the Echo Lake and Administration Road access point on Westminster Road), leading to incidences of trespass on neighboring private property and the impedance of local road traffic.
- Visitors often underestimate the size of the Reservation and commensurate level of fitness and equipment needed to enjoy the Reservation safely as a hiker. This threatens appropriate visitor use and enjoyment of the property and places an additional burden on Reservation staff (Amaze Design 2014: 6).
- There are accessibility issues, including the lack of an accessible route between the accessible summit parking and the summit, access issues with the wayside interpretive panels at the summit, access issues to ski area amenities, and access issues at picnic areas and benches (Institute for Human Centered Design (IHCD) 2020). These access issues threaten the access to and quality of experiences at the Reservation for people with disabilities.
- Intensive foot traffic is causing excessive widening, erosion, and other damage to some hiking trail segments, as well as to the summit area. The poor condition of the Semuhenna Trail is illustrative of this general trend.
- Reservation users do not always understand and/or follow rules of the Reservation, with off-leash dogs being a major example of this issue. Such behaviors may negatively impact other visitors' experience of the Reservation, as well as natural resources.
- Depreciative and unauthorized behaviors on the Summit Road are increasing. These behaviors include graffiti, vandalism, rudeness to staff, and operating registered and unregistered motorbikes in reckless ways. Such behavior threatens the experience for other visitors.
- The popularity of, and multiple user types (bicyclists, pedestrians, and motor vehicles) on, the Summit Road are leading to conflicts between these user types and an increase in threats to public safety.
- Erosion and other weathering processes are degrading embankments and outcrops along the Summit Road, with some rock outcrops or boulders visibly displaced. This rapid weathering could lead to collapse and road closure and threatens park operations and visitor safety.
- The visitor center is aging and would benefit from architectural and/or mechanical updates to ensure that its appearance and function does not leave visitors with unfavorable impressions or experiences. For example, the electric heating system is inefficient, visitation sometimes overwhelms restroom capacity and there is a persistent roof leak that needs repairing. (A heating system study will be undertaken and a request for roof replacement proposals has been issued.) To resolve occasional sewerage backups, the building's septic system could be upgraded or replaced with a connection to existing off-site sewage treatments systems (Epsilon Associates et al. 1999).
- Ski area staff occasionally limit park visitor access to the Balance Rock trailhead that is in the ski area parking lot, particularly during off-season events. Ski area staff may forbid trail users from parking, or temporary signage may be erected ("No parking for hikers"). The existing ski area lease and existing "Guidelines for the management of Off-Season Public Events at Wachusett Mountain Ski Area" (DEM 1999b) reflect the ability of WMA to use the base area for "purposes compatible with the site and consistent with the right of the public at all times to experience at the mountain the

quiet enjoyment of nature”. Clarification of the lease and Guidelines concerning the rights of the general public to the Balance Rock trailhead could help to avoid future conflicts between general recreation access to the mountain and off-season events in the base area.

- Desire by telecommunications companies to expand use of the communications towers at the summit could threaten the scenic qualities of the Reservation and increase management complexity for DCR staff.
- Out-of-service above-ground utility poles and associated power and telecommunications wires are still in place on the south side of the mountain, commencing at Echo Lake Road. Wires on these poles, which it is Verizon’s responsibility to remove, are falling down, creating a safety hazard and visual blemish for Reservation users.
- Communications towers on the summit, especially those located at the northwesterly edge of the summit, interfere with scenic views.
- An inholding of approximately 11 acres on the mountain’s southwest slope contains the Princeton Municipal Wind Farm. The Town of Princeton has been granted an easement on DCR’s Stage Coach Road for access to this facility (MGC 2006; Secretary of Environmental Affairs 2004; Worcester County Registry of Deeds, Book 44385, page 47 and Plan Book 875, page 50). The terms of the easement are such that access for the general public to Stage Coach Road for recreational purposes is guaranteed. However, signage at the gated entrance to the road does not indicate that DCR owns the road, nor does it indicate that public access is allowed.
- There is an opportunity to enhance recreational experiences and improve fire safety by improving cyclical maintenance and brush cutting along fire roads. Additional equipment may facilitate this work.

### ***Opportunities***

- Increased staffing, especially year-round staff, could expand park operations and interpretive programming, help minimize negative behaviors, and keep recreational facilities such as trails in good condition. Restoring a full-time Visitor Services Supervisor to the Reservation would be especially helpful.
- There is an opportunity to set reasonable expectations for visitors who would like to hike the Reservation, and to ensure that hikers do not undertake trips that exceed their skill and fitness level, by posting information concerning the length, estimated walking time, and difficulty of hikes, as well as recommended equipment, more prominently on the DCR website and at trailheads via Low-Profile Trailhead markers.
- Development of a Reservation-wide Vegetation Management and Operational Management Plan for landscaping and operation needs in MESA-protected species habitat could be helpful for staff and enhance stewardship of natural resources. Such a plan, if appropriate, would be developed with NHESP staff and would be useful for areas where such as ski slopes, the summit, historic viewpoints, and fire breaks where intensive management or visitation coincides with species habitat (Schlüter 2024).
- In general, there may be opportunities to protect sensitive MESA-protected habitats and Priority Natural Communities by implementing monitoring and strategies to discourage off-trail uses such as unauthorized geocaching and unauthorized bouldering (Schlüter 2024).

- Increased funding for trail maintenance would allow for more comprehensive ongoing implementation of trail maintenance BMPs, as well as more comprehensive trail restoration projects such as those currently planned for Bicentennial Trail and Pine Hill Trail.
- Implementation of a streamlined approval process for spending from the Reservation's operational account and Conservation Trust funds (created through the 4<sup>th</sup> WMA lease amendment) could allow staff to more effectively implement operational and infrastructure improvements, such as trail work.
- The popularity of Wachusett during busy seasons (e.g., fall foliage season) and holidays may result in overcrowding, negatively affecting the visitor experience of those seeking a tranquil or solitary experience. There may be opportunities to avoid this issue by using the DCR website to inform visitors of other highland parks and to alert visitors to periods of increased visitation, such as fall foliage season.
- There is an opportunity to increase parking along Westminster Road by constructing a parking lot and trail connection at the former site of the Gates House (now demolished).
- There is an opportunity to expand and improve the experience for people with disabilities at the Reservation by addressing priority recommendations contained in the 2020 Wachusett Mountain State Reservation, Princeton MA: Program Accessibility Assessment (IHCD 2020).
- Amaze Design's Prospectus for Interpretive Planning and Design for Wachusett Mountain State Reservation (hereafter referred to as the Interpretive Prospectus; Amaze Design 2014) identifies Reservation-wide opportunities for improving the visitor experience and increasing visitor awareness of Wachusett's special natural and historical resources. Not all recommendations in the Interpretive Prospectus are appropriate for DCR's specific programming needs or the protection of natural or cultural resources at the Reservation. However, the following action items are appropriate for further consideration:
  - Completing planned interpretive displays at the summit.
  - Adding interpretive displays in other high-use areas of the Reservation such as vista sites along the summit road.
  - Maintaining picnic sites at popular vistas with existing parking along the Summit Road such as the "Thumb" site and the "Ledges".
  - At trailheads on roads: improved park-wide orientation signage with parking regulations and kiosks that include the name of the trailhead, information on natural and cultural resources along the trail, Reservation regulations, and copies of paper trail maps.
  - Increasing staff presence at the visitor center and contact station, possibly through additional Ranger and Interpretive Services personnel (1 each).
  - Adding a school bus drop-off area to the Visitor Center parking lot.
- There is an opportunity to enhance the visitor experience of the summit through a landscape master plan that enhances the site's sense of place and overall visual and programmatic coherence. The plan would address previously noted threats and opportunities in this document (i.e.: accessibility, Habitat Management Plan for MESA-protected species, interpretive signs, screening utilities with vegetation, erosion and stormwater management, historical masonry structures). The plan would also address pedestrian circulation, wayfinding signage, seating, and naturalization of the appearance of existing hardscaping.

- Providing self-guided interpretive tours or programming on the DCR website could improve visitors' experiences and their appreciation of Wachusett's unique natural and cultural heritages. This opportunity has been identified by staff and also in the Interpretive Prospectus (Amaze Design 2014).
- The interpretive displays of the visitor center could be updated to provide expanded interpretation of park history and updated representations of the park's natural history. A portion of the exhibit space could be reserved for rotating exhibits. This opportunity has been identified by staff and also in the Interpretive Prospectus (Amaze Design 2014).
- Adding an electronic visitor counter at the visitor center entrance would improve user statistics.
- Reservation staff maintain meadows for aesthetic, historical preservation, and habitat purposes at Wachusett Mountain and the Old Colony Road Tract. These fields present an opportunity to interpret land use history and forest succession, edge habitat, and habitat management. In particular, the High Meadow on the main Reservation, has been identified as a locale where a discrete interpretive panel would be of value, due to the meadow's popularity (Amaze Design 2014: 18).
- There is an opportunity to interpret Great Depression-era recreational improvements to the Reservation that were undertaken by the CCC and the WPA. Interpretive panels, which are currently in development in partnership with the Student Conservation Association, may be installed in front of the unsightly concrete block that currently fills the window openings of Parker Lodge. This opportunity is consistent with recommendations in the Interpretive Prospectus (Amaze Design 2014) to expand interpretation of CCC and WPA works.
- Occasional access issues at Balance Rock Trailhead present an opportunity to update the existing "Guidelines for the management of Off-Season Public Events at Wachusett Mountain Ski Area" (DEM 1999b) and associated "Event Form – Wachusett Mountain Ski Area" (DEM 1999c).
- Annual review of Reservation regulations by staff would allow proactive identification of new recreational uses and attendant resource threats or visitor impacts and therefore opportunities for more effective management.
- Increased oversight of Reservation leases and permits could increase oversight, clarity, and compliance regarding the terms of these agreements; provide more management insight into use of the park; and result in improved park amenities. For example, ski area visitation for the past few years is unknown, and the Princeton Municipal Light Department, which was supposed to construct a parking lot at the intersection of Stage Coach Road and Westminster Road, has not yet done so (Secretary of Environmental Affairs 2004; Worcester County Registry of Deeds, Book 44385, Page 47 and Plan Book 875, Page 50).
- As noted previously in this RMP, a previous partnership with the Midstate Trail Committee has lapsed. Renewal of this partnership would provide this group an opportunity to assist with trail improvement efforts at Wachusett and reduce agency staff burdens for maintenance of this trail.
- DCR regulations for parkways and parks (302 CMR 11 and 12) do not provide specific guidance for roller sports such as roller skis and skateboards on roads and paved trails. Rules for these types of transportation may be implemented on a property-by-property basis (see 302 CMR 12.12(2)), resulting in inconsistencies across the agency properties. In some locations, such as Mt. Greylock State Reservation, uphill roller sports are permitted on summit roads, while in others, such as Wachusett, this activity is prohibited. There is an opportunity to expand recreational access to the



Summit Road and provide consistency across DCR properties by changing the current policy that prohibits roller sports to a policy that prohibits downhill roller sports. This would have the effect of allowing uphill roller skiing and other training disciplines.

- The Emergency Action Plan for the Echo Lake Dam (Dam No. MA02521), classified as a Significant Hazard Potential structure, provides detailed information on how park operations personnel are to respond to dam safety issues, from minor issues to impending failure (GZA 2018). There is opportunity to increase awareness of this EAP among Reservation staff and local first responders, thereby increasing public safety.
- Wachusett is located within the Freedom's Way National Heritage Area, offering opportunities for agency partnerships, grants, and potentially higher visibility for the Reservation (Freedom's Way Heritage Association 2015).

### **CLIMATE CHANGE**

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

Any discussion of climate change requires a shared understanding of terminology. Because of this, this RMP section adopts commonly accepted terms to the greatest extent possible. In general, climate-related technical terms used in this RMP are as defined in the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC 2021). Exceptions to this are the terms Adaptation, Risk, and Sensitivity, which are used as defined in DCR's Climate Change Vulnerability Assessment (CCVA; Weston and Sampson 2022).

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

Affairs (EEA) 2024). For additional information on the relationship between DCR's forest management practices and climate change, please see pages 77–85 in Massachusetts Forest Action Plan 2020 (DCR 2020) and Managing Our Forests...For Carbon Benefits (DCR 2023).

The Department is actively assessing and addressing the vulnerability of its properties and facilities to the impacts of climate change. In 2022, DCR conducted a 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<sub>2</sub> 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***

Two of the Reservation’s streams have been identified as Coldwater Fish Resources by the Massachusetts Division of Fisheries and Wildlife (MassWildlife). These are Bolton Brook and its unnamed tributary, for the full length of both streams as they fall within the Reservation. Such streams provide important habitat for coldwater species, which are typically more sensitive than other species to alterations in stream flow, water quality, and temperature (Massachusetts Bureau of Geographic Information (MassGIS) 2021). A culvert is also affecting the connectivity of a stream that is not classified by MassWildlife as Coldwater Fish Resources; a changing climate is also likely to worsen the connectivity of this stream.

There is habitat in the core Reservation for two Endangered plant species that are near the southern limit of their range and are protected under the MESA. These plant species may be exposed to changing temperature regimes that will result from climate change.

The Reservation’s Acidic Graminoid Fen Community is vulnerable to hydrologic alteration. Changes in precipitation associated with climate change have the potential to impact these communities.

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 Reservation’s potential vernal pools that function as vernal pools.

Multiple salamander species (i.e., eastern newt, eastern red-backed salamander, northern two-lined salamander, and spotted salamander) have been reported in the Reservation. Populations of these amphibians 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 Wachusett. “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 Wachusett in response to climate change.

### ***Cultural Resources—General Impacts***

Climate change may negatively affect cultural resources, their preservation, and maintenance (EEA 2022a; International Council on Monuments and Sites (ICOMOS) Climate Change and Cultural Heritage Working Group 2019; Rockman et al. 2016: 3, 18; United Nations Educational, Scientific and Cultural

Organization (UNESCO) World Heritage Center 2007). In Massachusetts, cultural resources may be exposed to the following natural phenomena that are correlated with adverse impacts: higher annual average temperature (especially in winter), increased numbers of freeze-thaw cycles, increased precipitation intensity, higher relative humidity, higher wind speeds, an increase in severe storm events, increased numbers and severity of wildfires, more severe seasonal droughts, increase in number and severity of inland flood events, increased coastal flooding and erosion, increased probability of landslides, changes in groundwater levels, shifts in native and invasive species distribution, performance, and phenology; and changes in oceanic and atmospheric chemistry (Rockman et al. 2016; Commonwealth of Massachusetts 2023: 5.1-31–5.1-61).

The phenomena listed above may produce a variety of adverse impacts to Massachusetts' cultural resources. Sensitivity and potential impacts vary based on resource category (i.e., archaeological sites, cultural landscapes, ethnographic landscapes and sites, and buildings and structures). Resource-specific factors such as location, design, materials, condition, etc. will also influence sensitivity and consequent impacts. All categories of cultural resources may be subject to complete or partial destruction through wildfire, inland flooding, sea level rise, storm surge, or landslides. Additionally, these resource categories may be subject to other types of impacts, as follows. Archaeological sites may have site stratigraphy disrupted by changes in hydrography, may suffer accelerated decomposition of artifacts and features, and may be impacted inadvertently during disaster response. Cultural landscapes may lose plantings due to a variety of stressors (e.g., drought or flood, pests, soil salinity), may be infiltrated by invasives, may be eroded by surface runoff, may experience more rapid deterioration of hardscaping and site furnishings, and may be damaged by high wind or heavy snow events. Ethnographic landscapes, traditional cultural places, and associated communities (including Indigenous peoples) may suffer both tangible and intangible impacts such as loss or diminishment of natural species used for food, ceremony, or medicine; alterations in timing of hunts, etc.; increased difficulty of vulnerable subgroups (e.g., the elderly) to perform outdoor tasks; and a loss of cultural knowledge associated with resources and practices. Buildings and structures may be damaged or destroyed by high wind or heavy snow events, suffer accelerated deterioration through a variety of mechanisms (e.g., elevated humidity, chemical reactions, destructive pests and organisms), may be destabilized by hydrological changes, or be damaged by inadequate gutters or drainage systems (ICOMOS Climate Change and Cultural Heritage Working Group 2019: 73–89; Rockman et al. 2016: 20–24). (See Rockman et al. 2016: 19–24 for a detailed assessment of the potential impacts of climate change on cultural resources.)

### ***Cultural Resources—Property-Specific Exposure and Impacts***

Cultural resources such as historic roads, trails, and dams at Wachusett may be exposed to increased annual rainfall and precipitation beyond designed storm events, which may be associated with climate change. For example, according to the existing RMPP, there are 10 documented artificial impoundments or pools located within the Reservation (Epsilon Associates et al. 1999: 2-1). (Only one of these (Echo Lake Dam, National Identification # MA02521) is recorded with the Office of Dam Safety in their MassGIS data set). Additional data collection may be needed to understand the exposure of these resource classes to global warming impacts. (Precipitation changes due to climate change (see EEA 2022b and Weston and Sampson 2022) are not factored into Federal Emergency Management Agency (FEMA) flood plain modeling. Climate change may result in additional exposure to and impacts from flooding for cultural resources in the future. A FEMA-contracted report (AECOM 2013) finds that: “For the riverine environment, the typical 1% annual chance floodplain area nationally is projected to grow by about 45%,

with very large regional variations... approximately 70% of the 45% (or 31.5%) growth in the 1% annual chance floodplain is due solely to climate change” (AECOM 2013: ES6–ES7). Site-specific projections for future floodplain areas were not available at the time this RMP was prepared.)

### ***Recreation—General Impacts***

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

### ***Recreation—Property-Specific Exposure and Impacts***

Recreation activities at the Reservation likely to be negatively impacted by exposure to weather changes resulting from climate change are snow-dependent sports (i.e., downhill skiing, cross-country skiing, and snowshoeing). Warming temperatures associated with climate change may negatively impact operations at Wachusett Mountain Ski Area. One study has predicted that, under multiple combinations of climate change forecasts and economic models, the ski area’s financial viability may be lost by 2039. However, an inability to forecast supply- and demand-side responses to climate change makes it difficult to predict specific ski area outcomes (Dawson and Scott 2013).

Recreational resources such as roads, trails, and dams at Wachusett may be exposed to increased annual rainfall and precipitation beyond designed storm events that may be associated with climate change. (As noted above, precipitation changes due to climate change are not factored into FEMA flood plain models and projections for future floodplain areas were not available at the time this RMP was prepared.)

## **APPLIED LAND STEWARDSHIP ZONING**

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

### **Landscape Designation**

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

DCR's Zoning methodology and nomenclature has changed since the publication of the 1999 Wachusett RMPP and is now augmented with the Landscape Designation system that implements land use guidelines and limitations at the landscape scale. However, the Zoning and Significant Feature Overlays provided below recognize the intent of and level of protections contained in that document and fulfill the requirements imposed through the MEPA Special Review Procedure and Certificate on the SFEIR, Expansion Phases I & II of Ski Area. For purposes of clarity and continuity, explanations are provided in each Zone with respect to how they incorporate the 1999 Zoning.

The following Land Stewardship Zoning is recommended to guide management and any future development. (See Figures 1–3, Land Stewardship Zoning maps, pages 38–40, and the Land Stewardship Zoning layer on DCR's Stewardship Map: <https://dcrsgis-mass-eoeaa.hub.arcgis.com/>.)

#### **Zone 1**

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

- Current known extent of old growth forest. This includes the areas of Old Growth Forest as discussed in the 1999 RMPP and an additional, adjoining area of Old Growth Forest as identified in Orwig (2004).
- Areas that provide habitat for several important NHESP Priority Natural Communities: a Sugar Maple-Oak-Hickory Forest, ranked as “vulnerable in the state due to restricted range and very few occurrences”; a Hickory-Hop Hornbeam Forest/Woodland, ranked as “imperiled in the state due to rarity”; and a Ridgetop Pitch Pine-Scrub Oak Community, that is also “imperiled in the state due to rarity” (Swain 2020: 57, 115–117, 140, Appendix 1).
- Priority Habitat for four MESA-protected plant species that are vulnerable to dispersed recreation including hiking and trail maintenance work. Further guidance for management of these plant species is provided in the Sensitive Rare Species Overlay, below.
- Areas with very steep slopes (>30%) and soils susceptible to erosion (formerly in the Environmental Protection Zone).
- The Acidic Graminoid Fen Community, which is sensitive to trampling.

The geographic area of Zone 1 encompasses Overlays from the 1999 RMPP as follows:

- The entirety of the Old Growth Significance Overlay.

- The entirety of the Interior Forest Habitat Significance Overlay. This overlay was intended to: protect interior forest habitat characteristics to benefit certain species, limit infrastructure work to the maintenance of existing recreational and scenic assets in their current state (including viewsheds), and to prohibit “commercial silviculture” (Epsilon Associates et al. 1999: 6-17). Since 1999, additional Old Growth Forest has been identified on lands contained within this overlay (Orwig 2004, see additional discussion in this section below). Therefore, protection afforded to this area is being increased through re-classification from Conservation Zone under the old zoning system to Zone 1 under the new zoning system, as well as expansion of the Old Growth Forest Significant Feature Overlay to encompass the Interior Forest Habitat Significance Overlay (see Significant Feature Overlay discussion below). The Interior Forest Habitat Significance Overlay is removed because it is obsolete.
- Portions of the Biodiversity Significance Overlay as established in the 1999 RMPP. This overlay was designed to provide additional buffer to the Old Growth Forest, limit infrastructure work to the maintenance of existing recreational and scenic assets in their current state (including viewsheds) and prohibit “commercial silvicultural activities” (Epsilon Associates et al. 1999: 6-17). Where additional Old Growth Forest has been identified (see previous bullet), protection has been increased using Zone 1 status and expansion of the Old Growth Forest Significant Feature Overlay. Other portions of the Biodiversity Significance Overlay, now functionally obsolete, are protected under Zone 2 (see additional discussion below). The Biodiversity Significance Overlay is removed because its protective intent is fulfilled under the combination of zoning and Significant Feature Overlays.

Roads at Wachusett that pass through Zone 1 areas are now categorized as part of Zone 1. These roads were previously placed in the Intensive Use Zone (equivalent to current Zone 3) in the 1999 RMPP.

## **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 Wachusett have been designated Zone 2.

- All areas not identified as Zone 1 or Zone 3, including undeveloped areas, ski trails not in Zone 1, and land parcels added to the Reservation after 1999.

The Zone 2 area encompasses and replaces portions of the 1999 RMPP’s Biodiversity Significance Overlay (at the northerly and southerly ends of the core reservation), which is now removed. As noted in the Zone 1 discussion, this overlay was intended to buffer to the Old Growth Forest, limit infrastructure work, and prohibit “commercial silvicultural activities” (Epsilon Associates et al. 1999: 6-17). Where the Biodiversity Significance Overlay does not contain rare or sensitive natural resources, it has been reclassified as Zone 2 because the intent of the 1999 RMPP is met by DCR’s current management objectives and restrictions for Zone 2 as they apply to Parkland. (The Landscape Designation system and its categories of Reserves, Parklands, and Woodlands had not been developed in 1999.)

Roads at Wachusett that pass through Zone 2 areas are now categorized as part of Zone 2. These roads were previously placed in the Intensive Use Zone (equivalent to current Zone 3) in the 1999 RMPP.

### **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 Wachusett are currently developed, appropriate for potential future development, or intensively used for recreation. They have been designated Zone 3.

- Developed visitor use and administration areas, consisting of the visitor center complex and contact station, the ski area base complex, and the summit (including telecommunications towers). These areas were categorized as Intensive Use Zones of the 1999 RMPP.
- The Superintendent's House and surrounding cleared areas (now leased, see Historic Curatorship Overlay below). Although not included in the Intensive Use Zone of the 1999 RMPP, that document anticipated and recommended redevelopment and intensive use of the Superintendent's House.
- A 0.14-acre existing clearing and parking area on the Up-Summit Road, referred to as the "Thumb" picnic site, intended for future development of a picnic pavilion.
- The structural footprint of the Echo Lake Dam.
- The approximately 1.75-acre site of the Rice-Gates house, for use as a trailhead parking area.

### **Significant Feature Overlays**

Significant Feature Overlays provide precise management guidance in order to maintain or preserve recognized resources features regardless of the zone in which they occur. The following Significant Feature Overlays were developed for Wachusett:

- **Historic Curatorship Overlay.** The Mount Wachusett Superintendent's House and other buildings and land within this overlay are leased under authority of DCR's Historic Curatorship Program legislation (§ 44 of c. 85 of the Acts of 1994, as amended) and according to the terms of the "Ground Lease: DCR Historic Curatorship Program" between Division of Capital Asset Management and Maintenance (DCAMM), in consultation with DCR, and Cork & Windsor LLC (DCR and Cork & Windsor LLC 2018). The land area of the Overlay corresponds to Exhibit A: Lease Boundary Survey of the Lease, as attached to the lease document. Management of this area is in accordance with the terms of the above-referenced documents.
- **Historic Preservation Overlay.** This Overlay continues protections provided in, and expands the geographic area of, the 1999 RMPP's Summit Natural and Cultural Resources Significance Overlay (Epsilon et al. 1999: 6-17–6-18). As described in the RMPP, the summit holds particular historical and cultural significance that should be taken into account during any future physical improvements. Since 1999, additional cultural resources survey and consultation has identified an enlarged potential historic district (MACRIS Nos. PRI.K and WST.D) that encompasses the majority of the core Reservation's land area (Tritsch et al. 2010). Management activities and construction and maintenance projects that may directly or indirectly impact buildings, structures, objects, and archaeological sites within this overlay, including trail work and all ground-disturbing activities, should be reviewed by the DCR Office of Cultural Resources to ensure compliance with M.G.L. c. 9, § 27; applicable DCR BMPs for historic and/or archaeological resources, The Secretary of the Interior's (SOI) Standards for the Treatment of Historic Properties (Grimmer 2017), and the SOI's Guidelines for the Treatment of Cultural Landscapes (Birnbaum n.d.). The Summit Road (including Up and Down



components), which is included in the overlay area, is also subject to management under the DCR's Historic Parkway Preservation Treatment Guidelines (DCR 2007).

The summit and certain other resources within the overlay are sacred to the Nipmuc and qualify as TCPs. As defined by the NPS, a TCP is "a building, structure, object, site, or district that is eligible for inclusion in the National Register for its significance to a living community because of its association with cultural beliefs, customs, or practices that are rooted in the community's history and that are important in maintaining the community's cultural identity" (NPS 2022: 7). According to a draft National Register Nomination for Wachusett, "The Nipmuc people protect the sacredness of certain specific sites and ceremonies [at Wachusett] by not disclosing them outside the tribal circle" (Tritsch et al. 2010). Therefore, management decisions that may impact natural resources not typically considered as cultural properties should be considered in light of their potential impacts to specific sites sacred to the Nipmuc. DCR staff should consult with DCR's Office of Cultural Resources on a project-by-project basis to determine whether consultation with the Hassanamisco Nipmuc Band or other tribal authorities is required under the DCR Cultural Resources Policy and Executive Order No. 126 (1976) (Dukakis 1976).

- **MEPA Special Review Procedure Overlay.** Management of this area proceeds in accordance with the Secretary's Certificate on the Special Review Procedure, Wachusett Mountain State Reservation RMPP (EOEA #11974, Secretary of Environmental Affairs 1999b), in conjunction with the Secretary's Certificate on the SFEIR, Expansion Phases I & II of Ski Area (EOEA #9690, Secretary of Environmental Affairs 1999a), the DEM's Section 61 Findings (DEM 1999a) and related management actions from the 1999 RMPP. In accordance with the RMPP and the Special Review Procedure, proposed capital improvement projects will undergo a review for consistency with the RMPP and to ascertain and mitigate potential impacts to natural, cultural, or recreational resources. The review process would include the WMAC and the Wachusett Mountain Monitoring Board (for construction projects at the ski area; especially those that may impact downgradient water quality). Any such review process will follow all applicable state and federal law and DCR policies, including MEPA. Before any new activities occur on the Reservation that significantly increase environmental impacts, DCR and any proponent must establish that the ecosystem can support the cumulative impacts of all existing and proposed uses. The boundaries of this Overlay correspond to the boundaries of Wachusett as they existed in 1999 at the time of the permitting.
- **National Register Overlay.** One undeveloped Wachusett land parcel on Old Colony Road, Princeton, is contained within, and contributes to the significance of, the Four Corners/Goodnow Farm Historic District, which is listed in the National Register of Historic Places (Forbes and Friedberg 2015). Any contemplated improvements or forestry activities at this parcel should follow all applicable DCR BMPs for historic and archaeological resources, the SOI's Standards for the Treatment of Historic Properties (Grimmer 2017), and the SOI's Guidelines for the Treatment of Cultural Landscapes (Birnbaum n.d.).
- **Old Growth Forest Overlay.** This overlay encompasses forest stands that meet the standards for Old Growth Forest as defined in the DCR's Old Growth Policy. Resources within this Overlay should be managed in accordance with the DCR Old Growth Policy, which includes preparation of a "Site-Specific Management Plan" (DEM 1998). The current Site-Specific Management Plan for Wachusett's Old Growth Forest may be found in the 1999 RMPP in Section 6.1.1.6, pp. 6-11–6-16.

Scientific study identified stands making up the easterly portion of this overlay (approximately 160 acres, termed the “Administrative Limits of Old Growth Forest”) in the 1990s and this acreage was subsequently protected by means of the 1999 RMPP’s Old Growth Significance Overlay (Epsilon Associates et al. 1999: 6-10; Foster et al. 1996). (Bounds of the current RMP overlay will not match those displayed the 1999 RMPP zoning map. This is because, according to a 2000 DCR report, “there was an error and an omission on the [1999] land stewardship zoning map and the text of the plan related to [the Old Growth Forest overlay. The Overlay area is bounded by North Road, Up Summit Road, Administration Road, West Road, and West Princeton Road. The map in the RMPP does not show the overlay area extending all the way to North Road as it should. The text in the RMPP is correct, except that it omits the Administration Road from the description of the overlay area” (DEM 2000: Appendix B).)

This RMP’s Overlay expands the 1999 Overlay to the west by approximately 700 acres to encompass additional oak- and hemlock-dominated stands identified in a 2004 study (“Areas 2, 3, 5, and 8” as described in Orwig 2004), along with buffer areas as required by the DCR’s Old Growth Policy (also recommended in Orwig 2004). The existing Site-Specific Management Plan should be modified to reflect resources and management needs in this new area. (This management need has been included in the Priority Recommendations.)

As noted in the Zone 1 discussion above, this expanded Significant Feature Overlay renders obsolete the 1999 RMPP’s Interior Forest Habitat Significance Overlay. As described in the RMPP, this overlay was intended to protect interior forest habitat characteristics and provide an additional buffer to the Old Growth Forest. Per the SFEIR Certificate on the Ski Area expansion, the intent of zone was to provide a “wilderness” type experience on the back side of the mountain: “The habitat value will be enhanced and infrastructure will be limited within this area, so as to provide a wilderness experience within the Reservation, offsetting the more intensive uses at the ski area.” Only maintenance of existing trails was permitted, and no new recreational facilities were allowed to be developed. The 1999 RMP overlay guidance is replaced with the Zone 1 guidance, in combination with the Site-Specific Management Plan (and required future modifications for the expansion of the Old Growth Area).

- **Surface Water Supply Protection Zone A Overlay.** Land uses and activities within this overlay should be consistent with Massachusetts’ Drinking Water Regulations to protect surface water supplies. Refer to 310 CMR 22.20B and 310 CMR 22.20C for specific guidance.
- **Sensitive Rare Species Overlay.** Portions of the Reservation contain Priority Habitat for four Threatened, Endangered, and Special Concern plant species. This habitat intersects with both Zone 1 and Zone 3 areas. The four plant species are sensitive to foot traffic and dispersed recreational use and may be threatened by trail maintenance activities. Where trails intersect with these plants’ habitat, monitoring of trail widths and trail reconstruction to narrow excessively wide trails is needed. As appropriate, off-trail exploration and trail widening should be discouraged through use of signs, trail markers, physical barriers (such as fencing), or symbolic barriers (such as logs placed along trail edges). Trail work or other physical changes to DCR infrastructure within this overlay should proceed in consultation with NHESP staff and in accordance with the NHESP 2022 Guidance Codes for DCR Trail Maintenance Map. (<https://mass-eoea.maps.arcgis.com/home/item.html?id=cb252e8df40d408c81fe8fcf690e14f6>, see additional

discussion below). At a future date, a Habitat Management Plan may be implemented for this overlay area (see Priority Recommendations table, page 44). The overlay's spatial boundaries conform to the footprint of the NHESP Priority Habitats of Rare Species within the core Reservation. This Overlay replaces and provides equivalent protections to those provided in the 1999 RMPP's Summit Natural and Cultural Resources Significance Overlay (Epsilon 1999: 6-17–6-18). As noted in the 1999 RMPP, the summit of Wachusett presents a particular management challenge where intensive recreational use, historic viewshed management, and any potential facilities improvements must be balanced against the protection of certain endangered species that exist in this location.

- **Wachusett Mountain Ski Area Lease Area Overlay.** This overlay corresponds to the approximately 428-acre lease area held by WMA. Current activities within and management of this area proceed in accordance with the following legislation, lease agreements, trusts, permits, and DCR policies, guidelines, and management recommendations:
  - Chapter 287, Acts of 1977: An Act authorizing the DEM to lease certain premises on Wachusett Mountain State Reservation for the construction and operation of a skiing facility (MGC 1977).
  - Chapter 268, § 249, Acts of 2022: Authorization to extend the lease authorized under Chapter 287 of the Acts of 1977 (MGC 2022).
  - The Indenture of Lease and its Modifications, six amendments, and Annual Lease Payment Process (Massachusetts DEM and successor agencies and WMA 1981, et seq.).
  - Approval Process for All Construction, Maintenance and/or Alterations at Wachusett Mountain Ski Area (Massachusetts DEM 1997).
  - The Land Acquisition Fund Trust Agreement, as amended (WMA and DCR 1998).
  - Certificate of the Secretary of Environmental Affairs on the SFEIR: Expansion Phases I & II of Ski Area (EOEA # 9690) (Secretary of Environmental Affairs 1999a).
  - Section 61 Findings: Wachusett Mountain Ski Area Improvements (EOEA #9690) (Massachusetts DEM 1999a).
  - Guidelines for the management of off-season public events at Wachusett Mountain Ski Area (Massachusetts DEM 1999b).
  - The Wachusett Mountain State Reservation and WMA Operations Calendar and associated ski trail mowing schedule/program (Massachusetts DEM 1999 et seq. See Appendix I of Epsilon Associates et al. 1999.). The mowing schedule was developed by DCR natural resources staff, in cooperation with the NHESP and Mass Audubon, to maintain habitat for MESA-protected species and to protect other natural resources, such as pollinator species.
  - Pertinent sections of the 1999 RMPP (Epsilon Associates et al. 1999: 4-9–4-11; 5-4; 6-11–6-15; 6-24; 6-27–6-29, 6-37–6-38, Appendix A, Appendix I).

Several of these documents ensure the protection of significant natural and cultural resources at Wachusett, as well as recreational access to Wachusett by non-ski area users. When necessary, DCR and WMA coordinate with the Wachusett Mountain Monitoring Board (This group is activated and deactivated by the DCR on an as-needed basis.) and WMAAC regarding future WMA activities that may impact the Reservation's significant resources or its user groups. Any environmental review and associated permit application(s) for proposed projects within the Ground Lease Overlay are a cooperative endeavor between DCR and WMA. Finally, future proposed projects and activities within

this Lease Overlay should be aligned with the requirements of Land Stewardship Zoning and the other pertinent Significant Feature Overlays of this RMP.

- **Watershed Protection Act Overlay.** Land uses and activities within this overlay should be consistent with Massachusetts Watershed Protection Act (WsPA) regulations. Overlay boundaries on map encompass WsPA Primary and Secondary Protection Zones and are approximate, other geographic areas may be regulated under the WsPA. See 313 CMR 11.00 for regulations and the associated guidance document (DCR 2017) for details on the processes used for implementation of the act.
- **Wellhead Protection Area Overlay.** This overlay includes four Zone I Wellhead Protection Areas within the core reservation: two in the developed base area of Wachusett Mountain Ski Area, one at the Visitor's Center, and one at the Superintendent's House. Within this Overlay, activities should be consistent with Wellhead Protection Tips (MassDEP 1995) and MassDEP Guidance (MassDEP 2011).
- **Wildlands Program Overlay.** A northern red oak stand within Wachusett's core reservation is designated an RNA under the Massachusetts Wildlands program (304 CMR 7.00; Massachusetts DEM n.d.: 32). Management of the RNA should be in accordance with program regulations, including preparation of an Area Management Summary (not completed to date). (As of June 2025, the RNA designation for this resource is under review.)

### **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 BMPs for resource stewardship, are located on the Stewardship Map site: <https://dcrsgis-mass-eoea.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-eoea.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 41.)

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**

Forty-one priority management recommendations were developed for this property. They are presented in Table 19, page 44. 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 44) into CAMIS as a separate work order, noting "\*RMP" in the description field. Non-traditional work orders (e.g., volunteer trail work, posting of Department of Public Health (DPH) Fish Consumption Advisory posters, certification of vernal pools) should be closed out by the property manager, once the recommendation has been implemented.



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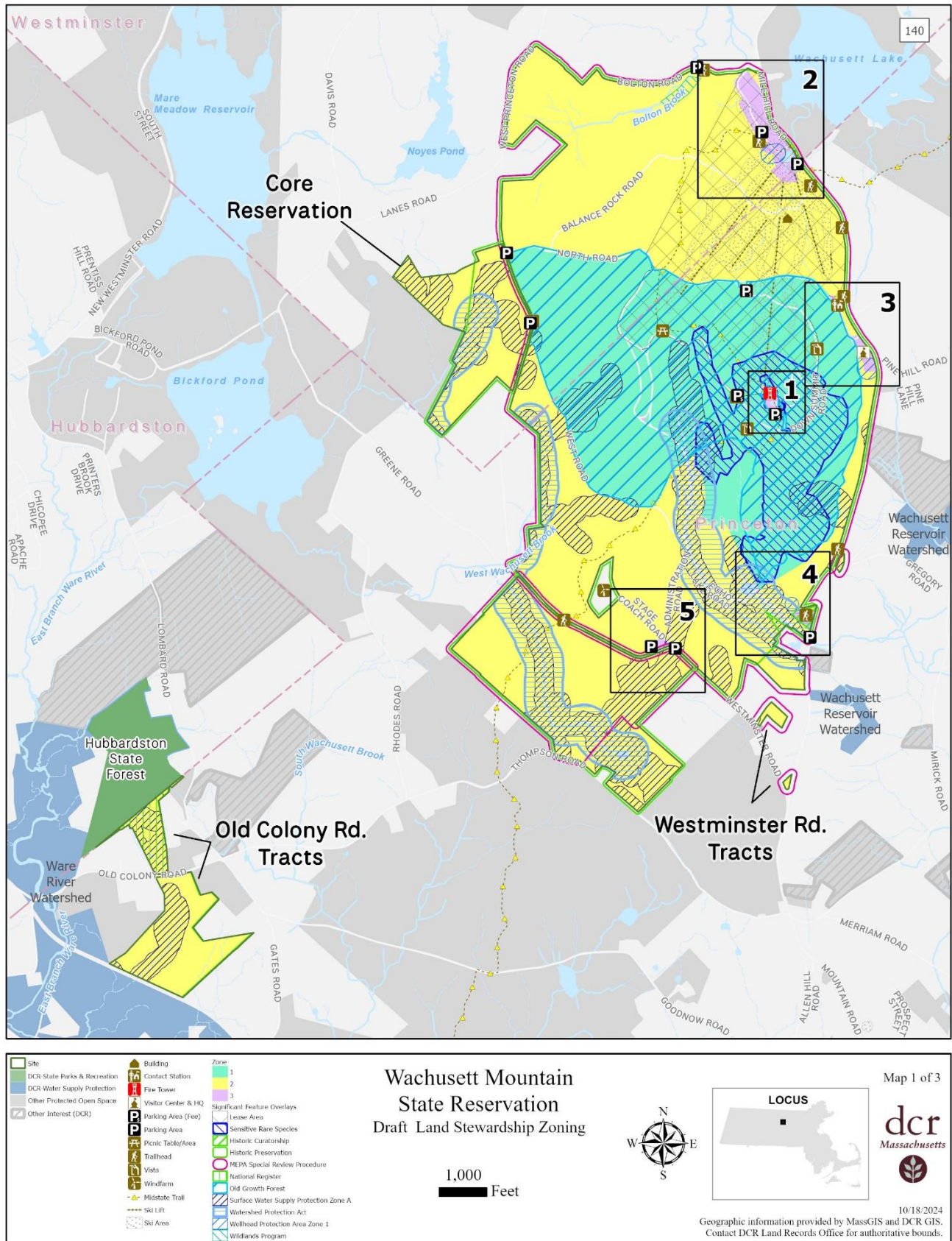


Figure 1. Land Stewardship Zoning Map.



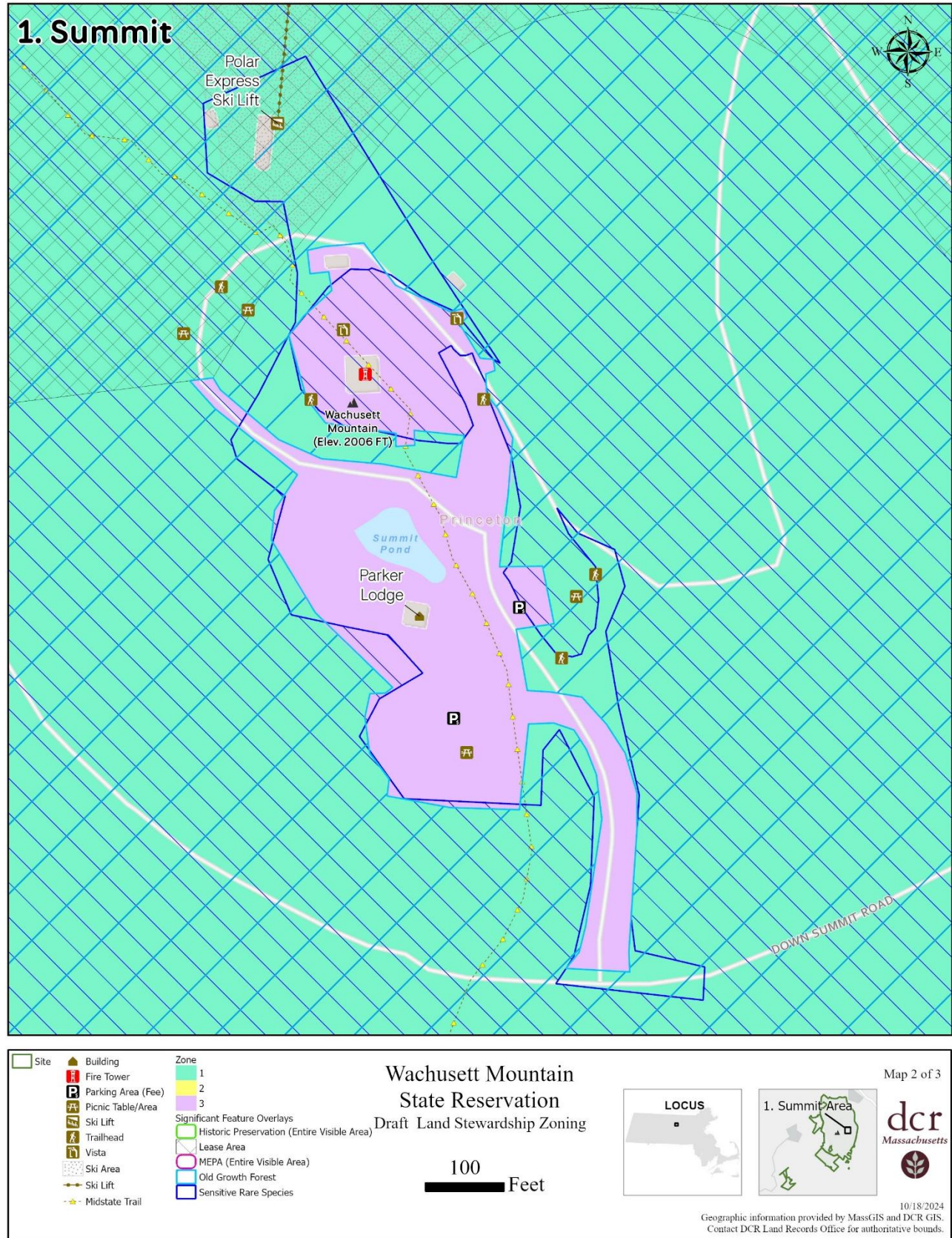


Figure 2. Land Stewardship Zoning Map (continued).



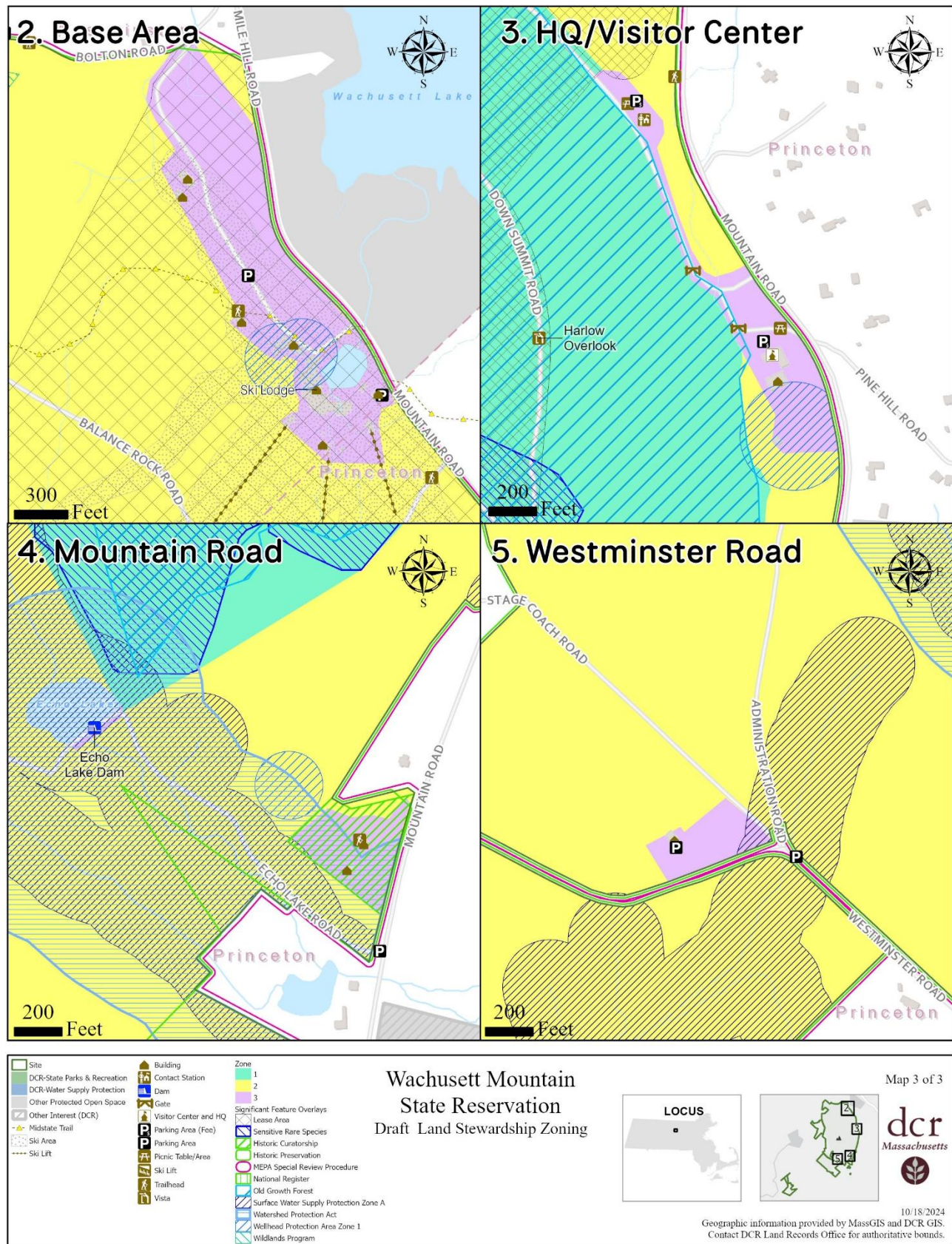


Figure 3. Land Stewardship Zoning Map (continued).



**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.	Yes
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.	N/A
Natural Resources	9. Geocaches, letterboxes, orienteering control locations, and other discovery destinations are located outside sensitive natural resource areas and their locations have been reviewed and approved by park personnel. (As assessed by property manager.)	Yes
Natural Resources	10. Zone I wellhead protection areas are free of vehicle parking, chemical storage, or concentrated recreation.	Yes

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<b>Category</b>	<b>Metric</b>	<b>Status</b>
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.	No
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.	No
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.	Yes
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

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<b>Category</b>	<b>Metric</b>	<b>Status</b>
Recreation	2. Trail density is consistent with the park's Landscape Designation(s). (See Trails Guidelines and Best Practices Manual (DCR 2019a) for density thresholds.)	Yes
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.)	N/A
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.	N/A
Recreation	9. Recreation facilities are located outside of areas subject to flooding, storm surge, or sea-level rise.	Yes
Sustainable Forest Management	1. Forestry activities are consistent with Landscape Designation and associated forestry guidelines.	N/A
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

**Table 19. Priority Recommendations for Wachusett Mountain State Reservation. 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	Through a Notice of Project Change or other appropriate means, consult with the Massachusetts Environmental Policy Act Office regarding the status of the Certificate on the Special Review Procedure, Wachusett Mountain State Reservation RMPP, EOEA #11974 (Massachusetts Secretary of Environmental Affairs 1999b).	Office of Natural Resources
Natural Resources	In partnership with Wachusett Mountain Associates, Inc., conduct review of long-term mitigation efforts required under the Department of Environmental Management's Section 61 Findings for the ski area improvements (Department of Environmental Management 1999a). Include a review of water supply protection protocols associated with Wachusett Lake.	Consultant, Landscape Architecture Section (Lead)
Natural Resources	Apply Landscape Designations to those portions of the Reservation currently lacking such designations.	Management Forestry (Lead), GIS Program
Natural Resources	Work with the Hassanamisco Nipmuc Band and Nipmuc community stakeholders and non-profits to build a reciprocal relationship that provides opportunities for the tribe to connect with land, water, and the natural world, while also supporting DCR's mission through culturally responsive stewardship.	Office of Cultural Resources (Co-Lead), Office of Natural Resources (Co-Lead), Park Operations
Natural Resources	Document and resolve potential encroachment near Old Colony Road in accordance with draft Agency-wide Guidance and Best Management Practices (DCR 2019b).	Contractor, Management Forestry (Lead), Office of the General Counsel, Park Operations

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Category	Recommendation	Implementation
Natural Resources	Assess the one culvert (ID no. 1043) with high restoration potential for replacement (as assessed by the Critical Linkages Project (see <a href="http://www.umasscaps.org/applications/critical-linkages.html">http://www.umasscaps.org/applications/critical-linkages.html</a> ) with a structure consistent with the Massachusetts Stream Crossing Handbook (Massachusetts Department of Fish and Game 2018) and the most recent Climate Resilience Design Standards (e.g., Commonwealth of Massachusetts (2022), as applicable). Where viable, program funds for culvert replacement and replace culvert.	Design and Engineering (Co-Lead), Management Forestry, Office of Climate Resiliency, Office of Cultural Resources, Office of Natural Resources (Co-Lead), Trails and Greenways Program
Natural Resources	<p>Following appropriate review and permitting, implement the Invasive Plant Management Plan: Central Region (BSC Group 2017), including:</p> <ul style="list-style-type: none"> <li>• Conduct further invasive surveys “with a focus on priority BioMap areas, the Old Growth Forest, parking and day use areas, and the alpine forest” (BSC Group 2017: 46).</li> <li>• Incorporate the data from the Wachusett staff’s invasive plant survey (Williams et al. 2006) and from Professor Bertin’s floristic study (when available).</li> <li>• Management of specific invasive plant species populations. Maintain actions as needed.</li> </ul>	Management Forestry, Office of Natural Resources (Lead), Park Operations, Partner

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Category	Recommendation	Implementation
Natural Resources	<p>In accordance with the DCR Old Growth Policy (DEM 1998), update the existing Site-Specific Management Plan for Wachusett's Old Growth Forest (embedded in the 1999 Resource Management and Protection Plan) to incorporate the results and recommendations of post-1999 ecology and forestry studies at Wachusett. The new plan should:</p> <ul style="list-style-type: none"> <li>• Address additional areas of Old Growth on the west side of the mountain, along with management recommendations, identified in the Orwig (2004) study.</li> <li>• Field verify Orwig's Old Growth identification.</li> <li>• Incorporate the threats of hemlock woolly adelgid, beech bark disease, beech leaf disease, and hemlock elongate scale.</li> <li>• Identify and incorporate threats from Climate Change.</li> <li>• Engage experts from Harvard Forest or other agencies, institutions, and subject matter experts with knowledge of Old Growth at Wachusett.</li> <li>• Map current extent of Old Growth.</li> <li>• Carry through the requirements of the Secretary's Certificate on the Supplemental Final Environmental Impact Report (SFEIR), Expansion Phases I &amp; II of Ski Area, and the Certificate on the Special Review Procedure, and the Section 61 Findings.</li> </ul>	Office of Natural Resources, Management Forestry (Lead), Park Operations, Partner

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Category	Recommendation	Implementation
Natural Resources	<p>Work with the Natural Heritage &amp; Endangered Species Program (NHESP) to develop and implement Habitat Management Plans for Reservation areas in Priority Habitat, particularly the core Reservation, and include the following:</p> <ul style="list-style-type: none"> <li>• Specific locations where trails should be relocated or prioritized for restoration.</li> <li>• Impacts of trail restoration on Massachusetts Endangered Species Act-protected species.</li> <li>• Invasive species control, where appropriate.</li> <li>• Within the Sensitive Rare Species Overlay, use of fencing, signs, or symbolic barriers, as warranted, to protect specific habitat areas.</li> <li>• Within the ski area, update and document Wachusett Mountain Associates, Inc. ski trail mowing schedule/program, in conformance with Massachusetts Environmental Policy Act (MEPA) Certificates and the Section 61 Findings.</li> <li>• Consultation with Cultural Resources staff to identify locations where the Habitat Management Plans overlap with archaeologically sensitive areas or identified historic properties (which includes portions of the trail network).</li> </ul>	Office of Natural Resources (Lead), Office of Cultural Resources, Park Operations, Trails and Greenways Section
Natural Resources	In consultation with the Natural Heritage & Endangered Species Program (NHESP), relocate a section of the Semuhenna Trail where it passes through Priority Habitat for a MESA-listed plant species that is extremely sensitive to foot traffic.	Office of Natural Resources, Park Operations, Trails and Greenways Section (Lead)
Natural Resources	Protect Priority Habitat for a Massachusetts Endangered Species Act (MESA)-listed plant species along the High Meadow Trail by reducing tread width, delineating tread boundaries, and posting signs asking users to stay on trail.	Park Operations

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Category	Recommendation	Implementation
Natural Resources	<p>In accordance with DCR (n.d.) and MassWildlife (2009), survey, document, and submit documentation (as appropriate) to certify the potential vernal pools that support a metapopulation of spotted salamanders (Booth 2001; Smyers et al. 2004):</p> <ul style="list-style-type: none"> <li>• The “Northeast Pool”, also known as the Lower Summit Pool, near the summit.</li> <li>• The bog near the intersection of Semuhenna Trail and the Summit Road.</li> </ul> <p>If these pools are certified, take additional steps to protect the spotted salamander population, as follows:</p> <ul style="list-style-type: none"> <li>• Block or remove any remaining informal trails to the “Northeast Pool.”</li> </ul>	Office of Natural Resources (Lead), Park Operations
Natural Resources	<p>Take steps to protect the metapopulation of spotted salamanders (Booth 2001; Smyers et al. 2004) that is attempting to breed in the Summit Pond:</p> <ul style="list-style-type: none"> <li>• Eliminate exotic fish species from the Summit Pond and implement methods to ensure that exotic fish are not able to maintain a year-round population in the pool (for example, a permanent reduction in the depth of the pool or pool drainage infrastructure to be used on a seasonal basis).</li> <li>• When Summit Pond walls are rehabilitated (see Cultural Resources recommendation below), include “bridges” or gaps in walls to promote amphibian access.</li> </ul>	Office of Cultural Resources, Office of Natural Resources (Lead)
Natural Resources	Post signs at trailheads informing the public that the importation of plants and animals into the Reservation violates 302 CMR 12: Parks and Recreation Rules.	Park Operations (Lead)
Natural Resources	Design and implement erosion control measures at the summit in the vicinity of the Princeton Fire Tower. As appropriate, consult with the Hassanamisco Nipmuc Band, other appropriate tribal authorities, and the Massachusetts Historical Commission (MHC) on proposed improvements.	Consultant, Landscape Architecture Section (Lead), Office of Cultural Resources, Partner



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<b>Category</b>	<b>Recommendation</b>	<b>Implementation</b>
Natural Resources	Complete a survey and formal review of the Representative Natural Area (RNA) at Wachusett to determine if it warrants continued designation as a RNA and thus protection under 304 CMR 7.04. If the RNA designation is to be maintained, craft an Area Management Summary (AMS) for the RNA, as required under this regulation. If it does not warrant RNA designation, propose removing from the Wildlands Program (subject to a vote of the Stewardship Council). As appropriate, remove or update the Significant Feature Overlay location in any new Resource Management and Protection Plan (RMPP).	Management Forestry, Office of Natural Resources
Natural Resources	Continue monitoring and implementing Hemlock Woolly Adelgid treatments, as necessary. Where treatments fall within Old Growth Significance Overlay, coordinate treatment program with Site-Specific Management Plan.	Forest Health
Cultural Resources	Prepare a cultural resources management plan for Wachusett that reflects new documentation prepared since the 1999 Resource Management and Protection Plan (RMPP) and incorporates protocols such as tribal consultation for management of Traditional Cultural Places (TCPs).	Consultant, Office of Cultural Resources (Lead)
Cultural Resources	Work with the Hassanamisco Nipmuc Band and Nipmuc community stakeholders to build a reciprocal relationship that provides opportunities for the tribe to connect with traditional cultural resources, places, and practices, while also supporting DCR's mission through culturally responsive stewardship.	Office of Cultural Resources (Lead), Park Operations
Cultural Resources	In partnership with the Hassanamisco Nipmuc Band and appropriate tribal authorities, conduct a historical and archaeological (950 CMR 70) resources reconnaissance survey of land parcels that have been added to the reservation since 1999. Complete appropriate Massachusetts Historical Commission (MHC) archaeological site forms for identified archaeological resources.	Consultant, Office of Cultural Resources (Lead), Partner

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<b>Category</b>	<b>Recommendation</b>	<b>Implementation</b>
Cultural Resources	Revise and distribute the existing "Approval Process for All Construction, maintenance and/or Alterations at Wachusett Mountain Ski Area" (Department of Environmental Management 1997). Ensure that this internal DCR review process includes the Director of Cultural Resources.	Deputy Commissioner for Operations (Lead), Long Term Permits & Leases, Office of Natural Resources, Office of Cultural Resources, Park Operations, Partners
Cultural Resources	Devise and implement a plan to prevent graffiti and vandalism at Harlow Overlook and remove existing graffiti in accordance with the DCR Best Management Practices (BMPs) for Removing Graffiti from Historic Properties (DCR 2015b).	Office of Cultural Resources (Lead), Park Operations
Cultural Resources	Determine whether trees should be trimmed to maintain historic vistas at Harlow Overlook or should be preserved as Old Growth.	Management Forestry (Co-Lead), Office of Cultural Resources (Co-Lead)
Cultural Resources	Assess and rehabilitate the masonry of the Summit Pond wall and retaining wall at the summits. Coordinate with Office of Natural Resources staff to on solutions (described above) that will allow amphibians greater access to the pond.	Consultant, Landscape Architecture Section (Lead), Office of Cultural Resources, Office of Natural Resources,
Cultural Resources	Conduct a structural and historic resources assessment of the Bolton Pond Dam and the Everett, Machias, and Siplas pools' dams. Assess the vulnerability of the dams to impacts from climate change.	Office of Cultural Resources, Office of Dam Safety (Lead)
Cultural Resources	Encourage and assist the Wachusett Mountain Advisory Council (WMAC) to recruit a representative of the Hassanamisco Nipmuc Band for the vacant Indigenous member seat.	Office of Cultural Resources (Lead), Park Operations, Partner
Recreation	Create a landscape master plan for the summit to improve the visitor experience and address the multiple threats and opportunities noted in this RMP.	Consultant, Design and Project Management (Lead), Office of Cultural Resources, Office of Natural Resources, Park Operations, Interpretive Services

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<b>Category</b>	<b>Recommendation</b>	<b>Implementation</b>
Recreation	Design, program funds for, and complete priority studies and updates at the Visitor Center: replacement of electric heating system with air-source heat pump, roof repairs, evaluation of restroom and septic demand and capacity.	Consultant, Facilities Engineering (Co-Lead), Office of Climate Resilience (Co-Lead), Park Operations (Co-Lead)
Recreation	Work with the geocaching community to ensure that caches located in sensitive cultural resources are relocated out of those areas and that any new geocaches are placed outside of sensitive areas and with the approval of the property manager.	Office of Cultural Resources, Park Operations (Lead)
Recreation	Examine ways to increase public safety, reduce conflicts between user groups (cyclists, pedestrians, and motor vehicle users), reduce depreciative behaviors (such as speeding and unregistered motor vehicle use) on the Summit Road, including engineering (for example, road marking) and law enforcement solutions, as well as adding a seat for a municipal police department (of Princeton or Westminster) to the Wachusett Mountain Advisory Council (WMAC).	Park Operations (Co-Lead), Partner, Traffic Engineering (Co-Lead)
Recreation	Conduct a statewide Agency review of passive roller sports such as skateboards and roller skis: types of activities and devices; safety considerations; current park-specific rules; and regulations as they pertain to parkways, summit roads, and other paved trails or ways. Based on the findings of this review, amend rules at Wachusett and, if applicable, regulations at Wachusett and other parks, if warranted.	Bureau of Ranger Services, Deputy Commissioner for Operations (Lead), Office of Cultural Resources, Office of the General Counsel, Traffic Engineering Section
Recreation	Conduct an inspection of upslope embankments and rock outcrops along the Summit Road to identify any short- and intermediate-term safety hazards. Remediate as needed.	Consultant, Facilities Engineering (Lead)

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<b>Category</b>	<b>Recommendation</b>	<b>Implementation</b>
Recreation	<p>Implement trail maintenance strategies to improve trail conditions:</p> <ul style="list-style-type: none"><li>• Apply Best Management Practices (BMPs) to restore and clearly delineate appropriate trail tread widths and to reduce erosion and sedimentation into adjacent native vegetation.</li><li>• Investigate visitor education strategies to encourage appropriate trail use.</li><li>• Where necessary, coordinate implementation of improvements with processes outlined in the Sensitive Rare Species Overlay, recommended Habitat Management Plans (see above) and with the Site-Specific Management Plan for Wachusett's Old Growth Forest (see above).</li><li>• Consult with Cultural Resources staff to identify locations where work may impact archaeologically sensitive areas or identified historic properties (which includes portions of the trail network).</li><li>• Use current agency standard for assessing trail conditions and prioritizing trail work (DCR 2019a).</li></ul>	Office of Cultural Resources, Office of Natural Resources, Park Operations (Lead), Trails and Greenways Section

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<b>Category</b>	<b>Recommendation</b>	<b>Implementation</b>
Recreation	<p>Resolve trail-related threats and opportunities identified in this RMP, in accordance with Trails Guidelines and Best Practices (DCR 2019a, or update), through the following actions:</p> <ul style="list-style-type: none"> <li>• Maintain authorized trails, as identified in the DCR Trail Data Layer provided to the Natural Heritage and Endangered Species Program in 2021, and in accordance with the Recreational Trail Maintenance and Biodiversity Conservation 2021 update.</li> <li>• Evaluate trail segments for discontinuation or active closure, including those that are: unauthorized, unsafe, connecting to privately-owned property, located in environmentally or culturally sensitive areas, or otherwise inconsistent with DCR Trails Guidelines and Best Practices. Provide an updated trail data layer to the Natural Heritage and Endangered Species Program.</li> <li>• Establish new trails, as warranted, following regulatory review. Provide an updated trail data layer to the Natural Heritage and Endangered Species Program.</li> </ul>	Management Forestry, Office of Cultural Resources, Office of Natural Resources, Park Operations (Co-Lead), Partners, Trails and Greenways Section (Co-Lead)
Recreation	Evaluate, and improve where necessary, drainage infrastructure such as water bars, culverts, and settling basins for unpaved roads (e.g. Echo Lake Road, Administration Road, West Road, and North Road).	Park Operations (Co-Lead), Trails and Greenways Section (Co-Lead), Forest Fire Control (Co-Lead)
Recreation	Consult with the Appalachian Mountain Club (AMC) Worcester Chapter's Midstate Trail Committee on expanding the Chapter's existing partnership to encompass work on the Midstate Trail treadway within the Reservation.	Park Operations (Lead), Partner, Trails and Greenways Section

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<b>Category</b>	<b>Recommendation</b>	<b>Implementation</b>
Recreation	Install at all trailheads on roads: improved park-wide orientation signage with parking regulations and kiosks that include the name of the trailhead with distance and destination information, welcome waysides with information on natural and cultural resources along the trail, Reservation regulations, and copies of paper trail maps (Amaze Design 2014). If kiosks are determined to be inappropriate at certain trailheads, ensure that Low Profile Trailhead signs with key trail destinations and distances are installed at these trailheads.	Interpretive Services (Co-Lead), Park Operations (Co-Lead), Sign Shop
Recreation	Complete development of, then fabricate and install in the Parker Lodge window openings, interpretive panels concerning Great Depression-era recreation development of the Reservation.	Interpretive Services, Office of Cultural Resources (Lead), Partner, Sign Shop
Recreation	Implement the 31 “Key Recommendations” listed in the Accessibility Assessment (IHCD 2020).	Contractor, Facilities Engineering (Lead), Office of Cultural Resources, Park Operations, Trade Operations, Trails and Greenways Section, Universal Access Program
Recreation	Working with Verizon, remove the out of service above-ground utility poles and associated power and telecommunications wires on the south side of the mountain (commencing at Echo Lake Road).	Contractor, Facilities Engineering (Lead), Park Operations
Recreation	Increase awareness of the Emergency Action Plan for the Echo Lake Dam (GZA 2018) among Reservation staff and first responders.	Office of Dam Safety, Park Operations (Lead)

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## **WACHUSETT MOUNTAIN STATE RESERVATION RESOURCE MANAGEMENT PLAN**

### **APPENDIX A – CHECKLIST OF WACHUSETT MOUNTAIN STATE RESERVATION ENABLING LEGISLATION, POLICIES, PLANS, PROCEDURES, AND LEASES AND PERMITS**

Law, policy, and plans are arranged topically. Only legislation, policies, and documents specific to Wachusett and its resources are included. Regulations dealing exclusively with project permitting, such as the Massachusetts Environmental Protection Act (MEPA), and not impacting on-going or cyclical operations, planning, or management, are excluded.

#### **Environmental Permits and Findings**

Court findings related to legal actions against the ski area expansion are not listed here, nor are permits or certificates whose obligations were fulfilled by the DCR and its project partners.

- Certificate of the Secretary of Environmental Affairs on the Supplemental Final Environmental Impact Report: Expansion Phases I & II of Ski Area. EOE # 9690. Massachusetts Secretary of Environmental Affairs. February 23, 1999.
- Certificate of the Secretary of Environmental Affairs on the Special Review Procedure: Wachusett Mountain State Reservation Resource Management and Protection Plan. EOE # 11974. Massachusetts Secretary of Environmental Affairs. August 30, 1999.
- Section 61 Findings: Wachusett Mountain Ski Area Improvements (EOE # 9690). Massachusetts Department of Environmental Management. August 6, 1999.

#### **Enabling Legislation for Wachusett Mountain State Reservation**

- Chapter 378, Acts of 1899: An act to establish the Wachusett Mountain State Reservation in the County of Worcester. Massachusetts General Court. 1899.
- Chapter 658, Acts of 1966: An act abolishing the Wachusett Mountain State Reservation Commission and transferring the care and maintenance of the Wachusett State Reservation to the Department of Natural Resources. Massachusetts General Court. 1966.

#### **Resource Management at Wachusett**

##### ***General***

- M.G.L. c. 21, § 2F: Management guidelines for sustainable forestry practices on public and private forest lands. Massachusetts General Court. [Requires management plans for all reservations, parks, and forests.]
- 304 CMR 7.00: Management Plans and Massachusetts Wildlands. Department of Conservation and Recreation. [Implementing regulations for management plans.]
- Landscape designations for DCR parks & forests: Selection criteria and management guidelines. Massachusetts Department of Conservation and Recreation. March 2012. <https://archives.lib.state.ma.us/handle/2452/200210>
- Resource Management and Protection Plan: Wachusett Mountain State Reservation, Princeton/Westminster, MA. Boston, MA. Prepared by Epsilon Associates, Harvard Forest,

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***Natural Resources***

- M.G.L c. 131, § 40. Massachusetts Wetlands Protection Act. Massachusetts General Court.
- 34 CMR 10.00: Massachusetts Endangered Species Act (MESA). Massachusetts General Court.
- 304 CMR 7.00: Management Plans and Massachusetts Wildlands. Massachusetts General Court. [Includes language pertinent to the management of Representative Natural Areas.]
- Invasive Plant Management Plan: Central Region. Prepared by BSC Group. 2017.
- Old Growth Policy. Department of Environmental Management, Division of Forests and Parks, Bureau of Forestry. Final draft dated October 27, 1998.
- Summary of locations and control measures for invasive species, 1999-2005. Electronic Word file, on file, Wachusett Mountain State Reservation. W. Williams and B. Bjorklund, with DCR staff and volunteers. Draft report, December 11, 2006.
- Wachusett Mountain Monitoring Board. Established under the 1980 Secretary's Certificate on the Draft Environmental Impact Report for work at the ski area. This 5-member board convenes on an as-needed basis to oversee downgradient water quality in instances when construction activities at the ski area are proposed that involve erosion control and sedimentation measures.
- Wachusett Mountain State Reservation Site Specific Management Plan for Old Growth. The WMSR management plan for old growth, which is required under the DCR's Old Growth Policy, is contained in the 1999 RMPP, pages 6-11 – 6-16. The Site Specific Management Plan contains stipulations for Wachusett Mountain Associates ski area maintenance activities (see also Commercial Leases and Permits section below, as well as 1999 RMPP, Appendix I).
- Wachusett Mountain State Reservation, fields management / meadow restoration. Electronic file, Wachusett Mountain State Reservation. Draft report, May 12, 2001.
- Wachusett Mountain pteridophyte management. Electronic file, Wachusett Mountain State Reservation. Don Lubin and Ray Abair. Draft report, September 29, 2002.
- Wachusett Mountain State Reservation: West Princeton Road / North Road Forest Management Plan. Electronic file, Wachusett Mountain State Reservation. Doug Williams and David Outman. Draft plan, December 17, 2004.
- Representative Natural Area, Area Management Summary. [Required for the RNA at Wachusett, does not appear to have been prepared.]

***Cultural Resources***

- M.G.L. c. 9, §§ 26–27c. Massachusetts Historical Commission.
- 950 CMR 71.00: Massachusetts Historical Commission. Protection of properties included in the State Register of Historic Places.
- Cultural Resources Policy. Department of Conservation and Recreation. n.d.

- Executive Order No. 128: Massachusetts Native Americans. Michael S. Dukakis. July 8, 1976. <https://www.mass.gov/executive-orders/no-126-massachusetts-native-americans>
- Historic parkway preservation treatment guidelines. Massachusetts Department of Conservation and Recreation, Division of Planning and Engineering. Department of Conservation and Recreation. 2007. <https://archives.lib.state.ma.us/handle/2452/335706>
- The Secretary of the Interior's Standards for the treatment of historic properties with guidelines for the treatment of cultural landscapes. C. A. Birnbaum (n.d.). <https://www.nps.gov/crps/tps/landscape-guidelines/index.htm>
- The Secretary of the Interior's Standards for the treatment of historic properties with guidelines for preserving, rehabilitating, restoring & reconstructing historic buildings. K. D. Weeks and A. E. Grimmer. Revised by Anne E. Grimmer from The Secretary of the Interior's standards for treatment of historic properties with guidelines for preserving, rehabilitating, restoring & reconstruction historic buildings. Kay D. Weeks and Anne E. Grimmer (1995). <https://www.nps.gov/orgs/1739/secretary-standards-treatment-historic-properties.htm>

### **Recreation, Accessibility, and Visitor Regulations**

- 302 CMR 11.00: Parkways, Traffic, and Pedestrian Rules. Department of Conservation and Recreation. [https://www.mass.gov/files/documents/2016/08/wf/3021100\\_0.pdf](https://www.mass.gov/files/documents/2016/08/wf/3021100_0.pdf) (PDF)
- 302 CMR 12.00: Parks and Recreation Rules. Department of Conservation and Recreation. <https://www.mass.gov/doc/302-cmr-1200-parks-and-recreation-rules/download> (PDF).
- Access Permitting Program. DCR Bureau of Planning, Design & Resource Protection, Office of Natural Resources. <https://www.mass.gov/how-to/apply-for-a-research-permit>. Department of Conservation and Recreation, Office of Natural Resources. 2005. [Required for academic studies]
- Program Accessibility Assessment: Wachusett Mountain State Reservation, Princeton MA. Boston, MA. Institute for Human Centered Design. 2020.
- Rapid Trail Assessment System and Assessment Form. Electronic file, Wachusett Mountain State Reservation, Princeton, MA. Sarah Parker. 2002. [Methodology for trail assessment developed at Wachusett.]
- Trails guidelines and best practices manual. DCR Trails and Greenways Program, Boston, MA. July 2019. <https://www.mass.gov/doc/dcr-trails-guidelines-and-best-practices-manual/download> (PDF).
- NHESP 2022 Guidance Codes for DCR Trail Maintenance Map. <https://mass-eoeaa.maps.arcgis.com/home/item.html?id=cb252e8df40d408c81fe8fcf690e14f6> This GIS 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.

### **Dams**

- 302 CMR 10.00: Dam Safety. Department of Conservation and Recreation, Office of Dam Safety. <https://www.mass.gov/files/documents/2017/10/30/302cmr10.pdf> (PDF)
- Emergency Action Plan for Echo Lake Dam, Princeton, Worcester County, Massachusetts. National I.D. Number MA02521. Prepared by GZA in June 2018 for the Massachusetts Department of Conservation and Recreation, Boston, MA.

### **Commercial Leases and Permits**

#### ***Ski Area***

- Chapter 287, Acts of 1977. An act authorizing the Department of Environmental Management to lease certain premises on Wachusett Mountain State Reservation for the construction and operation of a skiing facility. Massachusetts General Court. 1977.
- Massachusetts Department of Environmental Management and successors and Wachusett Mountain Associates, Inc. 1981 et seq. Indenture of Lease. October 1, 1981. Subject to Modification of Lease dated July 15, 1982; First Amendment to Lease dated November 29, 1982 (i.e., Assignment); Second Amendment to Lease dated November 29, 1982 (i.e., Assignment); Annual Lease Payments, Process, dated June 15, 1999; Third Amendment to Lease dated August 5, 1999; 4th Amendment to Lease dated October 17, 2006, 5th Amendment to Lease dated February 6, 2012, and 6th Amendment to Lease dated December 27, 2022. On file, Department of Conservation and Recreation, Boston, MA.
- Wachusett Mountain: plan of land in Princeton and Westminster, Mass. Prepared for Massachusetts Department of Conservation and Recreation by Whitman & Bingham Associates, LLC., Leominster, MA. Whitman & Bingham Associates, LLC. January 25, 2011 [Shows area of amended lease boundary.]
- Land Acquisition Fund Trust Agreement, with Amendment. Worcester County Registry of Deeds, book 2874, page 179. Wachusett Mountain Associates, Inc. and Massachusetts Department of Conservation and Recreation. 1998.
- Approval process for all construction, maintenance and/or alterations at Wachusett Mountain Ski Area. On file, Department of Conservation and Recreation, Wachusett Mountain State Reservation, Princeton, MA. Massachusetts Department of Environmental Management. February 14, 1997.
- Calendar [Wachusett Mountain State Reservation and Wachusett Mountain Associates, Inc. operations]. Updated electronic document, on file, Wachusett Mountain State Reservation. Massachusetts Department of Conservation and Recreation. 1999 et seq.
- Wachusett Mountain State Reservation Site Specific Management Plan for Old Growth. The WMSR management plan for old growth is contained in the 1999 RMPP, pages 6-11 – 6-16. The Site Specific Management Plan contains stipulations for Wachusett Mountain Associates ski area maintenance activities.
- Guidelines for the management of off-season public events at Wachusett Mtn. Ski Area. On file, Department of Conservation and Recreation, Wachusett Mountain State Reservation, Princeton, MA. Massachusetts Department of Environmental Management. 1999.

- Off-season event form-Wachusett Mtn. Ski Area. On file, Department of Conservation and Recreation, Wachusett Mountain State Reservation, Princeton, MA. Massachusetts Department of Environmental Management. 1999.
- Ski trail mowing schedule. On file, Department of Conservation and Recreation, Wachusett Mountain State Reservation, Princeton, MA. Massachusetts Department of Environmental Management.
- Special Use Permit for Wachusett Mountain Associates, Wachusett Mountain State Reservation. Massachusetts Department of Environmental Management. January 26, 1999.

#### ***Superintendent's House***

- Section 44 of Chapter 85, Acts of 1994. an act relative to bond authorizations for certain emergency capital projects of the Commonwealth. Massachusetts General Court. 1994. [Section 44 authorizes the lease of the Superintendent's House at Wachusett.]
- Ground Lease: DCR Historic Curatorship Program, dated November 21, 2018, by and between the Commonwealth of Massachusetts, acting by and through its Department of Conservation and Recreation, as landlord, and, Cork & Windsor LLC, as tenant, for the Wachusett Superintendent's House located at Wachusett Mountain State Reservation, 213 Mountain Road, Princeton, Massachusetts. On file, DCR, Boston, MA.

#### ***Princeton Municipal Light Department – Wind Farm Access over Stage Coach Road***

- Chapter 156, Acts of 2006: An Act Authorizing the Division of Capital Asset Management and Maintenance to grant certain easement to the Town of Princeton over lands held for conservation and recreation purposes.
- Massachusetts Secretary of Environmental Affairs. 2004. Certificate of the Secretary of Environmental Affairs on the Environmental Notification Form: Princeton Wind Farm Infrastructure Improvements. April 23, 2004. EOEA # 13229. Executive Office of Environmental Affairs, Boston, MA.
- Worcester County Registry of Deeds, Book 44385, page 47 and Plan Book 875, page 50. Grant of Easement and Agreement and associated Plan of Land.

#### ***Telecommunications***

- Chapter 205, Acts of 1996. An act providing for an accelerated transportation development and improvement program for the Commonwealth. Massachusetts General Court (MGC). 1996. [Section 2 funded a consolidated telecommunications facility at Wachusett and authorized telecommunications installations on fire towers owned by the DEM.]
- Chapter 88, Acts of 1997. An act making appropriations for the fiscal year 1997 to provide for supplementing certain existing appropriations and for certain other activities and projects. Massachusetts General Court (MGC). 1997. [Section 110 authorized the Commissioner of the DEM to lease antenna sites on properties under control of DEM, with certain stipulations.]
- DEM High Ground telecommunications public/private sector access and use policy. Massachusetts Department of Environmental Management, Boston, MA. Adopted July 28, 1999.

### **Water Supply Protection**

- Massachusetts Department of Environmental Protection. (DEP) 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)

### **DCR Best Management Practices (BMPs)**

BMPs may cross multiple resource categories or DCR programs. Published BMPs currently applicable to resources or programs at Mount Wachusett State Reservation consist of:

- Archaeological Features
- Closing and Restoring Trails
- Compliance with the Massachusetts Endangered Species Act
- Compliance with the Wetlands Protection Act
- Disaster Planning and Response for Cultural Resources
- Graffiti Removal
- Grassland Management
- Historic Building Maintenance
- Historic Landscapes Built Features
- Managing Terrestrial Invasive Plants
- Pollinator Habitats and Gardens
- Records Management in Park Offices
- Stone Walls, Trail Maintenance
- Vernal Pool Certification on DCR Lands
- Vista Maintenance
- Trails Guidelines and Best Practices Manual

All BMPs listed here may be found at <https://www.mass.gov/service-details/best-management-practices-dcr>, except the Trails Guidelines and Best Practices Manual (DCR 2019a), which may be found at <https://www.mass.gov/doc/dcr-trails-guidelines-and-best-practices-manual/download> (PDF).