

Appendix A. Plan Contributors.

Name	Affiliation	Area of Expertise
<i>Department of Conservation and Recreation</i>		
Berkland, Ellen	Office of Cultural Resources	Archaeological resources
Brazeau, Rich	Bureau of Engineering	Infrastructure
Brown, Stephen	Bureau of Planning and Resource Protection	Energy efficiency
Carr, Robert A.	Mount Tom State Reservation	Park operations
Carter, Jesse	Mount Holyoke Complex	Park operations
Cavanagh, Paul	RMP Program	Natural resources planning
Church, Peter	Bureau of Forest Fire Control and Forestry	Forest management
Clark, Doug	Connecticut River Greenway State Park	Connecticut River GSP properties
Fiesinger, Anne	Office of External Affairs and Partnerships	Outreach
Fisher, Sean	Archivist, Office of Cultural Resources	Agency history
Gieryk, Michael	Management Forestry Program	Forest ecology and management
Goodwin, David	Management Forestry Program	GIS
Greene, Judy	Plans Archivist, Office of Cultural Resources	Agency history
Gregory, Paul	Management Forestry Program	CFI data tables
Griffin, Dan	Holyoke Heritage State Park	Park operations
Harris, Jeffrey	Office of Cultural Resources	Historic resources
Howard, Jennifer	Land Protection Program	Land acquisition and protection
Hunt, Daniel	Director of Government Affairs	Legislative relations
Jahnige, Paul	Greenways and Trails Program	Recreation
Lotspeich, Charlie	Holyoke Heritage State Park	Park operations
Lowell, Rob	Bureau of Engineering	Storm water
McCarthy, Tom	Universal Access Program	Universal access
Mellace, Bob	Regional Director	Park operations
Michaels, Peter	Regional Ranger	Park regulations and public safety
Moran, Barbara	External Affairs	Web content
Okula, Judy	Bureau of Engineering	Infrastructure
Orfant, Joe	Bureau of Planning and Resource Protection	Park planning
Plocinski, Loni	GIS Program	GIS and planning
Putnam, Nancy	Ecologist	Rare species
Reynolds, Eric	Forest Health	Control of forest pests
Rogalski, Dave	Joseph Allen Skinner State Park	Park operations
Sacco, Dom	District Manager (acting)	Park operations
Salomaa, William	Dam Safety Program	Dam infrastructure
Soper, Jennifer	Land Protection Program	Land acquisition and protection
Straub, Jim	Lakes and Ponds Program	Bray Lake invasives control
Terruso, Jim	Interpreter (seasonal)	Mt. Tom resources
Thurlow, Matt	Landscape Architect	Playgrounds
Traub, Gini	Central Region	Environmental education
Tucker, Kevin	Bureau of Ranger Services	DCR radio system
Villamaino, Matt	Interpreter (seasonal)	Cultural history
Woodward, Emily	Permits and Lease Program	Special Use permits

Continued on next page.

Appendix A. Plan Contributors. (Continued)

Name	Affiliation	Area of Expertise
<i>Other Affiliations</i>		
Basler, Dave	Mass Wildlife	Fish
Campbell, Elisa	DCR Stewardship Council	Mount Holyoke Range history and stakeholders
Cavanaugh, Elaine	Boys and Girls Club of Greater Holyoke	Mt. Tom Partnership
Chittenden, Kevin M.	Berkshire Scenic Rail Museum	DCR railroad coaches
Curtis, Chris	Pioneer Valley Planning Commission	Connecticut River Scenic Farm Byway
Garrett, Jennifer	Natural Heritage and Endangered Species Program (former)	Invasive species of Mt. Tom
Glorioso, Lauren	Natural Heritage and Endangered Species Program	Rare species, MESA compliance
Green Jr., John	Independent naturalist and photographer	Natural history of Holyoke Range
French, Thomas W.	Natural Heritage and Endangered Species Program	Rare species
Harper, Lynn	Natural Heritage and Endangered Species Program	Rare species, MESA compliance
Knox, Josh	The Trustees of Reservations	Mt. Tom Partnership
Maier, Sarah	Natural Heritage and Endangered Species Program	Rare species
Marold, Misty-Anne	Natural Heritage and Endangered Species Program	Rare species, MESA compliance
Schwobe, Robert	Independent historian, and member of Mount Tom Advisory Committee	Mount Tom history
Searcy, Karen	University of Massachusetts	Plants and plant ecology of the Mount Holyoke Range
Stone, Janice	South Hadley Conservation Commission	Wetlands and open space
Surette, Joshua M.	Appalachian Mountain Club	New England Scenic Trail
Tobin, Jeannemarie	South Hadley Conservation Commission	South Hadley Conservation Commission files
Tyning, Thomas	Berkshire Community College	Herpetofauna
Ziomek, David	Town of Amherst, Conservation and Development	Amherst land use

Appendix B. Public Participation.

In accordance with M.G.L. Chapter 21: Section 2F, this Resource Management Plan (RMP) for the Mount Holyoke Range Planning Unit was developed in conjunction with a public participation process to ensure that interested parties had an opportunity to review the draft RMP and offer input in its development. This appendix identifies the public participation process used to inform and review this RMP.

B.1. THE PUBLIC PARTICIPATION PROCESS

Input into Development of the RMP

Public input into the development of the Mount Holyoke Range RMP began in the spring of 2012. A Notice of a public meeting and of the DCR's intent to prepare an RMP for the Mount Holyoke Range Planning Unit was published in the June 6, 2012 Environmental Monitor (Volume 78, Issue 3). Notices were also posted at the planning unit's parks and mailed to approximately 90 stakeholders.

An initial public meeting was convened at the Notch Visitor Center, Amherst on June 14, 2012. Approximately 26 people attended this meeting, which ran from 6:30 to 8:00 P.M. Public input on this plan was received at the meeting and through U.S. and e-mail received after the meeting.

Public Comment on Draft RMP

Notice of a public meeting on the draft RMP for the Mount Holyoke Range Planning Unit, and of the availability of the plan, was published in the February 6, 2013 Environmental Monitor (Volume 79, Issue 7). The meeting was held on February 21, 2013 at the Notch Visitor Center; approximately 27 people attended.

The public comment period on the draft RMP ran from February 22 through March 24, 2013; 95 sets of written comments were received.

B.2. CHANGES TO THE FINAL DRAFT OF THE MOUNT HOLYOKE RANGE RESOURCE MANAGEMENT PLAN

Editing of this RMP took place during and after the public comment period; formatting and typographic

errors were corrected. Substantive changes to the plan's content were made in response to public comments received and also to incorporate new and updated information. A description of these substantive changes follows, below.

Executive Summary

The listing of municipalities included in the RMP was corrected.

The content of Table ES.1 was updated to reflect revisions to the plan's recommendations.

Information on public participation in developing this RMP was updated to reflect attendance and comments made at the February 21, 2013 public meeting, and comments received during the public comment period.

Section 1. Introduction

No major revisions were made.

Section 2. Existing Conditions

Table 2.1.1. Information in the "Designations" section of this table was significantly expanded. Among the changes are the addition of information on the Connecticut River Scenic Farm Byway and the Connecticut River National Blueway.

Figure 2.2.1. Protected open space, either privately owned or owned by public entities other than the DCR, is now identified in this figure.

2.2.1. Natural Resources. Information on the Connecticut River National Blueway was added.

2.2.2. Cultural Resources. Reference to the Berkshire Transition Association of the Hudson Highlands Ecoregion was removed, as the planning unit occurs entirely within the Connecticut River Valley Ecoregion.

2.2.3. Recreation Resources. Additional information was added to clarify that the New England Trail incorporates those trail segments formerly called the Metacomet-Monadnock Trail.

Appendix B. Public Participation. (Continued)

2.3.1. Natural Resources. The draft RMP erroneously indicated that purple clematis is associated with wetlands. Reference to this plant has been removed from the description of wetland plants.

The footnotes of Table 2.3.3 were revised to include definitions of the terms Infrequent, Occasional, and Rare, as they relate to the frequency of invasive plants of the Mount Holyoke Range.

Metrics for Forest Core Habitat (MassWildlife and TNC 2010) replaced the older, interior forest metrics included in the draft.

2.3.2. Cultural Resources. Information on contemporary municipal boundary markers has been added after the information on historic boundary markers.

2.3.4. Infrastructure. The text was modified to clarify that the land transfer associated with the realignment of Route 116 is still in progress.

Information was added on communications infrastructure associated with the Notch Visitor Center.

2.4.1. Natural Resources. Metrics for Forest Core Habitat (MassWildlife and TNC 2010) replaced the older, interior forest metrics included in the draft.

2.4.2. Cultural Resources. The description of cellar holes and foundations on the summit of Mount Holyoke was revised to reflect uncertainty in the origins of these features.

Text was revised to clarify that the original tramway was powered by a single horse.

Text was revised to reflect that the Halfway Garage and the Halfway Station were two different buildings.

Dates of use for the tramway's steam engine were revised.

2.4.4. Infrastructure. Information was added on communications infrastructure associated with the Summit House.

2.5.1. Natural Resources. Information was added on the City of Chicopee's water quality monitoring program at Berchulski Fisherman Access Point. This

is part of an overall expansion of information on Berchulski Fisherman Access Point that took place between the draft and final versions of this RMP.

Information on the section of the reservation in which peregrine falcons nest was removed at the request of the NHESP.

Metrics for Forest Core Habitat (MassWildlife and TNC 2010) replaced the older, interior forest metrics included in the draft.

2.5.3. Recreation Resources. The number and locations of entrances with contact stations was clarified.

2.5.4. Infrastructure. During the public review period, information came to light that the radio building atop Mount Nonotuck was constructed by Mass Highway (now MassDOT) and that it remains the property of that agency. The text was revised to reflect this new information.

Information was added on communications infrastructure associated with the Reservation Headquarters.

Values for the miles of roads, by condition, were recalculated to reflect paving performed in the spring of 2013.

Information on the infrastructure, road, parking, and signs at Berchulski Fisherman Access Point was added.

2.6. Holyoke Heritage State Park. Information on the history of the Heritage State Park program was revised.

Section 3. Management Resources and Practices

3.2.4. Infrastructure. A sequence for prioritizing trail maintenance and creation has been added. This approach to prioritization was first developed for the Harold Parker Planning Unit and is now being applied on a statewide basis.

3.2.6. Operational Resources. Information on the Bureau of Forest Fire Control and Forestry was revised to clarify that it is the Service Forester who reviews all forest cutting plans, including those for DCR properties.

Appendix B. Public Participation. (Continued)

Information on the organizational structure of the Division of Engineering and its units and programs was updated.

The Massachusetts Environmental Police are now identified as the public safety agency with primary authority over the use of OHVs and snowmobiles.

3.3.1. Natural Resources. The “Hunting, Fishing, and Shellfishing” text was renamed “Hunting, Fishing, and Trapping” to better reflect the resources and activities in the planning unit. This change was also made in Section 3.4.1 and 3.5.1.

3.3.4. Infrastructure. Information was added on an Order of Conditions issued by the South Hadley Conservation Commission on April 17, 2013.

3.5.1. Natural Resources. Information was added on the City of Chicopee’s water quality testing at Berchulski Fisherman Access Point and the City’s NPDES permit.

3.5.4. Infrastructure. Information was added on the findings of a recent energy audit for buildings at Mount Tom State Reservation.

Section 4. Recommendations

4.2. Landscape Designation. At the February 21, 2013 public meeting, numerous questions and comments were expressed on the relationship between a park’s Landscape Designation and allowable recreation uses. Questions were also raised about the Landscape Designation process, especially in relation to the presence of Priority Habitat. These questions and comments highlighted the need to include information on Landscape Designations in the RMP. In response to this need, a new appendix (Appendix N) was created to provide information on how Reserves and Parklands were designated, and the impacts of these designations on public access, recreation, and habitat protection. A reference to this appendix is included at the end of Section 4.2.

4.4. Management Recommendations.

Table 4.4.1. Few comments addressed existing, or offered new, planning unit-wide recommendations. One comment that considered the entire planning unit addressed historic and potential relationships

between the parks and local arts communities. Opportunities exist to tell the stories of the parks through the arts, using approaches such as permanent and rotating displays that focus on the parks, their resources, and visitors; and through interpretive programming that incorporates historic images of, and writings about, the Mount Holyoke Range and adjacent Connecticut River Valley. In order to explore these opportunities, the following recommendation has been added to the RMP.

- Establish and cultivate relationships with local arts communities in order to use the arts as a medium through which connections between the parks, their resources, and the public are strengthened.

The recommendation to “Repair or replace leaking roof on the Notch Visitor Center” was incorrectly included in both Table 4.4.1 and 4.4.2 in the draft; it has been removed from the former.

Table 4.4.2. The majority of comments received on the draft RMP were in regard to the following two trails-related draft recommendations:

- *In association with the NHESP and representatives of trail user groups and other stakeholders, identify trail segments in the Bachelor Street area that are redundant, oriented along fall lines, unauthorized, in poor condition, or incompatible with natural and cultural resource protection, and work with user groups to close incompatible segments in order to protect resources, enhance recreation experiences, and ensure that the trail network is consistent with the park’s Reserve designation.*
- *In association with the NHESP and representatives of trail user groups and other stakeholders, identify trail segments in the Military Road to Mount Hitchcock area that are redundant, oriented along fall lines, unauthorized, in poor condition, or incompatible with natural and cultural resource protection, and work with user groups to close incompatible segments in order to protect resources, enhance recreation experiences, and ensure that the trail network is consistent with the park’s Reserve designation.*

Appendix B. Public Participation. (Continued)

Most comments on these draft recommendations focused on two aspects: trail redundancy; and the potential impact of the park's Reserve designation on trails and trail use. Additional comments included support for a trail-user stakeholder meeting, expansion of the geographic scope of the recommendations, and the need for better trail information (i.e., signs and maps).

Trail Redundancy. Perhaps the most contentious issue regarding the park's trails was the use of the term 'redundant.' The goals to "identify trail segments that are redundant, oriented along fall lines, unauthorized, in poor condition, or incompatible with natural and cultural resources protection" were patterned after recommendation in the final Middlesex Fells and Harold Parker RMPs. The RMP for the Middlesex Fells Planning Unit included a recommendation to "close targeted redundant, confusing, fall-line and poor condition trails" (DCR 2012d), and a similar recommendation, to "close trails that are redundant or eroded fall-line trails or in poor condition" was included in the Harold Parker RMP (DCR 2013). In the case of the Mount Holyoke Range RMP, it appears that the recommendation for the DCR, NHESP, and representatives of trail-user groups to meet and jointly identify problem trail segments led to uncertainty and apprehension about the magnitude of potential closures. As a result, several comments received were in response to the perceived closing of all trails in the Bachelor Street and Earl's Trails area, while others opposed the closure of any trails in these areas.

An additional concern about the term "redundant" was that trails in close physical proximity to each other may appear redundant to the DCR and some trail users, but may not be redundant to cyclists because different trails offer different riding experiences. For example, some trails have topography and surfaces appropriate for beginners, while others have topography and trail surfaces appropriate for more advanced cyclists. Although these trails may be redundant to some recreationists, such as hikers and snowshoers, they may not be to cyclists. This is due to differences in recreation goals and how different user groups interact with trails.

There are currently no data on which trail segments offer which recreation experiences.

Trails in Reserves. The public also expressed concern about the impacts of the park's Reserve designation on its trail system. DCR's guidelines (DCR 2012c) indicate the following about trails in Reserves:

- New trail construction is permitted only after the trail has been reviewed by DCR staff using the guidance and procedures established the *DCR Trails Guidelines and Best Practices Manual* (DCR 2012a).
- Trail density and use levels for existing trails will be evaluated to see how they may affect the values of reserves.
- Trail relocations to reduce adverse impacts to critical resources will be prioritized. DCR will strive to maintain a low density of trails that are not highly developed (class 1-3) within Reserves to protect their ecological and recreational intent. DCR may close trails to achieve the values of Reserves (i.e., biodiversity expansion, carbon sequestration, and the provision of wilderness recreation opportunities).

Recommendations in the draft RMP to identify and close "trail segments...that are redundant, oriented along fall lines, unauthorized, in poor condition, or incompatible with natural and cultural resource protection" were intended to decrease trail density in order to achieve the values of Reserves. These recommendations focused on the Bachelor Street and Military Road areas because these areas of the park have the highest trail densities and greatest concentrations of unauthorized trails. Decreasing trail density, in order to protect the ecological and recreational intent of Reserves, remains an objective of this RMP.

The number and configuration of unauthorized trails also led to comments regarding trail markings and maps. Because unauthorized trails are not part of the approved DCR trail system they do not receive intersection markers or get added to the official trails map, making these trails difficult to navigate.

Appendix B. Public Participation. (Continued)

The DCR recognizes that Mount Holyoke Range State Park has become a regional destination for mountain biking, a recreational activity generally compatible with Reserves (DCR 2012c). It also recognizes that much of this activity is associated with high-density mountain bike trail systems located in the Bachelor Street, Granby and Military Road, Amherst areas. Unofficial trails, constructed without required regulatory review, are common in both sections of the park. Many were in place prior to the park being designated a Reserve. Although the high-density trails at Bachelor Street and Military Road appear inconsistent with the park's Reserve designation, these trails may serve to concentrate cyclists in these areas, thereby enhancing Reserve values elsewhere in the park. Finally, the trails at Mount Holyoke Range State Park are the only mountain biking trails in the planning unit; their continued use may decrease the likelihood of unauthorized trail construction and use elsewhere.

All recreation activities and resources within the Massachusetts state park system must be consistent with a variety of laws, regulations, and agency policies. The DCR is directed by statute (M.G.L. Chapter 21: Section 2F) to "provide for the protection and stewardship of natural and cultural resources" and "ensure consistency between recreation, resource protection, and sustainable forest management." A variety of laws and regulations, referenced throughout this RMP and summarized in Appendix F, regulate both agency and public activities in DCR parks. Agency policies, such as those regarding Landscape Designations, which were developed following extensive public input, further guide activities in parks. The trails system at Mount Holyoke Range State Park must be consistent with all of these laws, regulations, and policies.

Trails-related recommendations were revised to: account for current trail use by mountain bikes; ensure regulatory compliance; and, whenever possible, decrease trail density. The two recommendations, listed above, from the draft RMP have been removed from the document and replaced with the following 10 recommendations.

- Update GIS data to reflect trails, both authorized and unauthorized, on the entire park. Rank trails according to the International Mountain Bicycling Association's Trail Difficulty Rating System (IMBA n.d.).
- Permit trail construction or relocation only after the proposed trail has been reviewed by DCR staff using guidance and procedures established by the *DCR Trail Guidelines and Best Practices Manual* (DCR 2012a).
- Actively discourage the creation of unauthorized trails, and enforce applicable regulations and laws as needed. Close new unauthorized trails as encountered and, if needed, existing trails that contribute to the creation of unauthorized trails.
- With input from the NHESP, DCR Archaeologist, and representatives of trail user groups, identify trail segments incompatible with resource protection and close or relocate incompatible segments as appropriate.
- With input from representatives of trail user groups, use IMBA trail difficulty data to identify opportunities to reduce trail density in areas of high density by identifying those trails, if any, that are redundant from the perspectives of location and recreation experience.
- Solicit input from representatives of trail user groups on which unauthorized trails, if any, should be evaluated for official status. Add intersection markers to trails that are officially recognized.
- In association with representatives of trail user groups, close trail segments located along fall lines; relocate following appropriate review.
- Close dead end trail segments not associated with official destinations (e.g., scenic vistas); work with representatives of trail user groups to identify these segments.
- Close trail segments leading off the park, unless such trail connections are approved in writing by the owner of the adjacent property.

Appendix B. Public Participation. (Continued)

- Prepare an updated trails map to reflect changes brought about by the implementation of trail-related recommendations in this RMP.

A recommendation in the draft RMP to prohibit new trail technical features for mountain bikes, and the removal of such features as encountered, generated a comment on the need to define what constitutes a “technical feature.” As used in this RMP, the term “technical feature” refers to a constructed feature created for the purpose of increasing the technical challenge for mountain bike riders. The draft recommendation has been modified to reflect this definition. Technical features include, but are not limited to, banked or bermed corners, jumps, see-saws, ramps, step-ups, tables, ditches, and mounds. Not included in this definition are features constructed to decrease technical challenges, protect resources, or improve rider safety, provided that these features were subject to all applicable regulatory reviews and approved by the reviewing authorities and the DCR. Also not included in the recommendation are existing technical features, such as the jump and banked corners located along the Roller Coaster trail. For a review of safety, environmental, and management issues related to mountain biking technical features, see Pickering et al. (2010).

The three remaining trail-related recommendations in Table 4.4.2 received no comments. These recommendations were: exploring establishment of a connecting trail between the Notch Visitor Center and the Bachelor Street Area; exploring creation of a trail along the historic trolley car bed east of Route 116; and conducting ecological and cultural assessments of the property at 535 Bay Road, Belchertown, in order to identify areas suitable for potential trail development.

The following three non-trail-related recommendations were added to Table 4.2.2: develop a wildfire response plan; conduct a reconnaissance archaeological survey; and install a radio base station and antenna at the Notch Visitor Center. Recommendations relating to the wildfire response plan and installation of a base station were given High priorities because they both involve public safety. The recommendation for the

archaeological survey was added at the suggestion of the Massachusetts Historical Commission (MHC).

Table 4.4.3. Two recommendations were added to this table. The first, to install a radio base station and antenna at the Summit House was given a High priority because the current lack of communications affects public safety and park operations. The second recommendation added was to conduct a reconnaissance archaeological survey, as suggested by the MHC.

Table 4.4.4. The priority for developing a wildfire response plan was increased from Medium to High. This was done because the plan will include a public safety component. A recommendation was added to implement recommendations contained in the recent energy audit.

Table 4.4.5. A recommendation was added to implement recommendations contained in the recent energy audit.

Appendix C

The contents of this appendix were expanded to identify: the process used by the DCR to evaluate the appropriateness of a recreation activity at a DCR facility; DCR’s obligations under MESA; and how the combination of the evaluation process and MESA obligations resulted in the decision to maintain the existing prohibition of mounting bikes at Mount Tom State Reservation and enhance trail-based recreation activities at Mount Holyoke Range State Park.

This appendix now contains copies of both comment letters submitted by the NHESP.

Appendix F

Three new entries, summaries of 323 CMR 2.00–4.00; Use of Vessels, Use of Recreation and Snow Vehicles, and Operation of Personal Watercraft were added to this appendix.

Appendix G

Multiple formatting changes and corrections were made to Table G.1. Plants of the Mount Holyoke Range Planning Unit.

Appendix B. Public Participation. (Continued)

Appendix H

Additional MHC numbers were added to existing entries, and some additional cultural resources were added to the tables. Also, the format of entries in the “Location and Resource” column was modified to improve consistency in presentation.

Appendix M

Acts of the Massachusetts Legislature regarding county funding of Mount Tom State Reservation were revisited, and “Comments” entries modified, as appropriate. Additional Acts, regarding the Connecticut River Scenic Farm Byway, Holyoke Heritage Park Railroad, Inc., and Volleyball Hall of Fame were added to this appendix.

Appendix N

This appendix was added in response to public comments and questions about the Landscape Designation process and the effects of these designations on park use. It summarizes criteria used to designate Parklands and Reserves, and the impacts of these designations on public access, recreation, and habitat protection.

Appendix O

Additional references were added to this appendix in support of revisions to this RMP.

Appendix C. Overview of Coordination Process with the Massachusetts Natural Heritage and Endangered Species Program (NHESP).

C.1. BACKGROUND

Since its inception, DCR's Resource Management Planning Program has actively sought and applied the expertise of the NHESP. In 2006, the NHESP and DCR established the Biodiversity Stewardship Project. The main purposes of this project were to:

- Develop a process by which the two agencies would work together to facilitate NHESP delivery of biodiversity information and provision of management recommendations for RMPs; and
- Guide DCR land managers in the on-site management of rare species habitat.

Between 2006 and 2008 the NHESP prepared 10 biodiversity assessments covering 17 DCR properties (Table C.1). Information from available biodiversity assessments has informed the Existing Conditions and Recommendations sections of RMPs already adopted by the DCR Stewardship Council and has resulted in appropriate management recommendations for rare species. Information from the remaining biodiversity assessments will be used to inform future RMPs. The NHESP continues to provide guidance to the RMP Program, and in 2009 and 2012 DCR and NHESP worked together to identify the actual and potential impacts of DCR's trails and trail maintenance activities on rare species and their habitats. In addition, the NHESP informs and reviews RMPs on an ongoing basis.

Table C.1. NHESP biodiversity assessments and reports prepared for the Resource Management Planning Program.

Report Title	Date
Biodiversity Stewardship Initiative: biodiversity data products and technical assistance for managing Massachusetts' forests, parks & reservations. Final report of the FY06 pilot project. [Includes Horseneck Beach State Reservation and Mohawk Trail State Forest]	2006
Biodiversity of Blue Hills Reservation	2007
Biodiversity of J. A. Skinner and Holyoke Range state parks	2007
Biodiversity of Mt. Tom State Reservation and adjacent conservation lands	2007
Biodiversity of Mt. Sugarloaf State Reservation	2007
Biodiversity of Myles Standish State Forest	2007
Biodiversity of Lower Spectacle Pond, Sandisfield	2008
Biodiversity of Nickerson State Park and Hawksnest State Park	2008
Biodiversity of Bash Bish Falls State Park, Jug End State Reservation, Mt. Everett State Reservation, and Mt. Washington State Forest	2008
Biodiversity of Gilbert A. Bliss State Forest	2008
Recreational trail maintenance and biodiversity conservation. June 30, 2009	2009
Middlesex Fells Reservation: field surveys 2011. Prepared by the NHESP for Massachusetts Department of Conservation and Recreation. June 30, 2011	2011
Recreational trail maintenance and biodiversity conservation: select DCR urban parks. July 30, 2012	2012

Appendix C. Overview of Coordination Process with the Massachusetts Natural Heritage and Endangered Species Program (NHESP). (Continued)

C.2. ONGOING COORDINATION AND REVIEW

The DCR follows a standard approach to coordinate the preparation and review of RMPs with the NHESP. This approach may be modified in response to the particular circumstances associated with each RMP. This approach includes:

- **Staff Coordination.** The NHESP has designated an official point of contact for RMPs and it is through this contact that all subsequent interaction with NHESP is coordinated.
- **Advance Notice.** DCR provides NHESP with a list of current and upcoming RMPs.
- **Data Request.** Up to date information is formally requested by DCR at the start of the planning process.
- **Consultation.** Informal consultation regarding interpretation of data provided by the NHESP may occur following NHESP's response to data request.
- **Application of Other NHESP Data.** Information and recommendations contained in biodiversity assessments, if applicable, are incorporated into the draft RMP early in the writing process.
- **Submission of Internal Draft RMP to NHESP.** The internal version of the draft RMP is submitted to the NHESP for formal review. This takes place before the draft plan is released to the public, so that the public review draft includes revisions made in response to NHESP comments and recommendations.
- **Response to Comments.** NHESP provides comment letters on the draft RMP that distinguish between what must be done (i.e., actions required for compliance under MESA) and additional actions that may be taken to enhance rare species populations and habitats. As a rule, both types of recommendations are added to the revised draft. (*Note:* because the NHESP's recommendations are incorporated into RMPs, each RMP contains a *de facto* management strategy and guidance for all state-listed species within a planning unit.)
- **Submission of Public Draft RMP to NHESP.** The public draft RMP is submitted to the NHESP for formal review and comment.
- **Response to Comments.** NHESP comments are addressed with all others received during the public comment period.
- **Additional Coordination.** The NHESP is frequently consulted, in their roles as both regulator and subject matter expert, to discuss other (i.e., non-NHESP) rare species-related comments.

C.3. COORDINATION AND REVIEW FOR THIS RMP.

Coordination with the NHESP began prior to the official start of work on the RMP and continued through review of the internal draft RMP.

- **May, 2011.** At this point in time it was known that the Mount Holyoke Range RMP was on the short list for future RMPs, although no start date had been identified. Initial discussions about the rare plants, uncommon natural communities, and invasive species of Mount Tom State Reservation, and adjacent properties, began in August, 2011. Sharing of information continued through January, 2012 when the NHESP employee working to control invasive species at Mount Tom left state employment.

Appendix C. Overview of Coordination Process with the Massachusetts Natural Heritage and Endangered Species Program (NHESP). (Continued)

- **October, 2011.** The NHESP's point of contact for resource management planning was officially notified that the Mount Holyoke Planning Unit was the focus of the next RMP.
- **May, 2012.** DCR officially requested rare species and natural community information from the NHESP on May 2. Subsequent to this, the NHESP and DCR shared spatial data to identify the boundaries of properties included in the RMP so that the NHESP could respond to the data request; NHESP provided DCR the requested data. DCR invited the NHESP point of contact to the internal stakeholder meeting held at the Notch Visitor Center on May 10, 2012. This was the only person invited that was not an employee of the DCR.
- **September, 2012.** The lead RMP planner met with the Assistant Director of the Massachusetts Division of Fisheries and Wildlife for NHESP, Natural Heritage Information Manager, Senior Endangered Species Review Biologist, and the Habitat Protection Specialist that serves as the point of contact for RMPs. The meeting was convened to address the following five topics:
 - a. Whether or not opening all or a portion of Mount Tom State Reservation to mountain bikes, as requested by the public through on-line surveys and other public input, was consistent with protection of the reservation's state-listed species;
 - b. Whether or not current trail uses at Mount Holyoke Range State Park, especially east of Route 116, are consistent with protection of the park's state-listed species;
 - c. Rare species consideration for the recently acquired parcel at 535 Bay Road, Belchertown.
 - d. Additional discussion on the management of the Upland Woodland Management Unit areas at Mount Holyoke Range State Park, Joseph Allen Skinner State Park, and Mount Tom State Reservation.
 - e. Reconciling ongoing management activities at properties within the planning unit with review obligations under MESA, as it relates to the preparation of Habitat Management Plans (HMPs).

It was the opinion of the NHESP that opening all, or portions, of Mount Tom State Reservation to mountain biking was inconsistent with rare species protection at that property; the NHESP would not support such a proposal. The NHESP further indicated that with minor exception, such as trails that pass through or near vernal pools or populations of state-listed plants, current trail use at Mount Holyoke Range State Park is consistent with rare species protection. The difference between parks in the appropriateness of mountain biking is due to differences in the rare species present and the vulnerability of these species to the potential impacts of bicycles. It is also due to the difference between ongoing and new recreational uses.

In evaluating the appropriate role of a recreation activity at a DCR facility, and to ensure consistency with resource protection, the DCR evaluates that activity relative to the following criteria (DCR 2012d):

- a. Public demand for the activity
- b. Susceptibility of important natural and cultural resources, at the facility scale, to damage from the specific recreation activity.
- c. Public safety
- d. Benefits and impacts to recreational experiences
- e. Management considerations

Appendix C. Overview of Coordination Process with the Massachusetts Natural Heritage and Endangered Species Program (NHESP). (Continued)

When evaluating existing, approved recreation activities at a park, the DCR will generally continue, and may promote and enhance, that use. Exceptions are those recreation activities that: actively degrade significant natural or cultural resources; pose a substantial threat to public safety; or require excessive management. In these circumstances, an ongoing activity may be restricted, curtailed, or mitigation or alternative management options may be pursued.

New recreational uses may be permitted and developed only if it can be demonstrated that the added resource impacts or public safety risks are acceptable and the benefits of approving the new recreational use outweigh negative impacts, risks, or management burdens. Based on input from the NHESP, it was determined that opening Mount Tom to mountain biking, a new recreation activity for the reservation, was incompatible with protection of several species of state-listed animals.

Under the MESA, state agencies such as the DCR shall:

- Utilize their authorities in furtherance of the purposes of MESA and 321 CMR 10:00;
- Review, evaluate, and determine the impact on Endangered, Threatened, and Special Concern Species or their habitats of all works, projects, or activities conducted by them; and
- Use all practicable means and measures to avoid or minimize damage to such species and their habitats.

The term “activities” refers to “any acts carried out by a state agency which *could* affect any state listed species or their habitats”.

Because the proposed change in trail use at Mount Tom State Reservation (i.e., opening existing trails to mountain bikes) was identified by the NHESP as incompatible with protection of several species of state-listed animals, it could not be demonstrated that the benefits of this new activity outweigh potential negative impacts. For this reason, this RMP does not recommend opening the trails at Mount Tom State Reservation to a new use (i.e., mountain biking). To do so is consistent with International Mountain Bicycling Association (IMBA) guidance that “many potential impacts to wildlife can be avoided by ensuring that trails avoid the most sensitive or critical wildlife habitats, including those of rare and non-rare species” (Marion and Wimpey 2007). The presence of extensive mountain biking opportunities elsewhere in the planning unit (i.e., at Mount Holyoke Range State Park) further makes potential impacts to MESA-listed species at Mount Tom State Reservation unnecessary.

The NHESP’s assessment that current trail uses at Mount Holyoke Range State Park are largely consistent with rare species protection led to the development of recommendations to correct those trail segments where trail use is incompatible with resource protection, and to enhance trail-based recreation opportunities at this park. At the request of the lead RMP planner, NHESP staff considered areas of Mount Holyoke Range State Park where trails, for mountain bikes and all other authorized activities, might be expanded without negatively affecting state-listed species or their habitats. Areas identified include the Aldrich Lake area and the associated former street car corridor, and some potential areas to the east of Harris Mountain Road. The Aldrich Lake area and associated street car corridor were identified as potentially appropriate. However, additional ecological information is needed before any new trail construction takes place east of Harris Mountain Road, including in the parcel at 535 Bay Road, Belchertown.

Appendix C. Overview of Coordination Process with the Massachusetts Natural Heritage and Endangered Species Program (NHESP). (Continued)

Discussion on the management of the Upland Woodland Management Unit at the mountain parks led the RMP planner to propose a demonstration project at Mount Tom State Reservation. The project area would extend from Mount Nonotuck through Goat Peak and have the following goals: enhancing rare species habitat, as recommended by the NHESP; restoring the historic landscape around the Eyrie House to prevent further degradation to the property due to vegetative growth; and maintaining the viewshed around the Goat Peak Tower to permit the ongoing collection of hawk watch data. It was agreed that such management, if performed correctly, would benefit state-listed species and could be performed under an approved HMP.

The issue of reconciling ongoing management activities with MESA was raised at the meeting, and largely resolved through a series of subsequent e-mails. Activities associated with mowing near the Mount Tom Quarry; at the former equestrian areas at 535 Bay Road, Belchertown; and at the Granby Sand Plain parcel may be performed once an approved HMP has been prepared. Maintenance of the scenic overlooks along Christopher Clark Road at Mount Tom State Reservation requires additional review by the NHESP to determine if maintenance activities can take place under a HMP (Marold 2012).

- **December, 2012.** NHESP was contacted and informed that they should anticipate receiving the internal review draft of the RMP in January, 2013.
- **January, 2013.** On January 8, the lead RMP planner contacted the NHESP point of contact and requested supplemental information on those state-listed species of the Mount Holyoke Range that are highly sensitive to human activities. Information was requested for the following groups of state-listed species: data-sensitive rare animals; mesic forests, palustrine species, sensitive species of the Connecticut River, and vernal pool animals. GIS data were provided by the NHESP, as requested by the DCR. The distribution of highly sensitive state-listed species was used to inform the boundaries of Zone 1 areas for Mount Holyoke Range and Skinner state parks.

On January 18, the NHESP was provided an internal review draft of the RMP.

- **February, 2013.** NHESP provided comments on the draft RMP on February 1. The observations, comments, and recommendations provided therein were incorporated into the public Draft RMP.
- **March, 2013.** On March 22, the NHESP provided comments on the public draft of the RMP; they were incorporated into the final RMP.

Copies of the NHESP's February 1, 2013 and March 22, 2013 comment letters follow, below.



Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

February 1, 2013

Paul M. Cavanagh
Resource Management Planner
Department of Conservation and Recreation
Southeast Region Headquarters
P.O. Box 66
194 Cranberry Road
South Carver, MA 02366

RE: Draft *Mount Holyoke Range Planning Unit Resource Management Plan*

Dear Mr. Cavanagh:

The Massachusetts Natural Heritage & Endangered Species Program (NHESP) is pleased to offer comments on the January, 2013, internal draft of the *Mount Holyoke Range Planning Unit Resource Management Plan*. **The Mt. Tom and Holyoke ranges are among the most important sites for rare species and natural community biodiversity in the Commonwealth** and DCR will play a crucial role in conserving these resources for the future on its properties here. The Resource Management Plan for this DCR planning unit should reflect the importance of the natural resources here and should commit in detail to the continued careful management of the resources.

In general, we support the Resource Management Plan as written and we appreciate DCR's attention to rare species issues. Our comments are noted below, by page number of the draft.

Names of MESA-Listed Species

Throughout the draft RMP, common names for some MESA-listed species are used that are not the common names used in the MESA list. To avoid confusion, NHESP recommends DCR use the common names as given in the MESA list for MESA-listed species (see http://www.mass.gov/dfwele/dfw/nhesp/species_info/mesa_list/mesa_list.htm). Some of the species affected include:

- Puttyroot, *Aplectrum hyemale* – not Adam and Eve
- Purple Clematis, *Clematis occidentalis* – not Western Blue Virginsbower
- Rough Panic-grass, *Dicanthelium sabrisculum* – not Woolly Rosette Grass
- Lily-leaf Twayblade, *Liparis liliifolia* – not Brown Widelip Orchid
- Drooping Speargrass, *Poa saltuensis* ssp. *languida* – not Oldpasture Bluegrass

General Comments

Eastern Whip-poor-will (*Caprimulgus vociferus*, Special Concern) was recently listed under MESA. This species is not, as yet, documented from on or near the planning unit. We expect it to occur on both the Mt. Tom and Holyoke Ranges; DCR should survey for this species and report any observations to NHESP.

www.nhesp.org



Natural Heritage & Endangered Species Program

100 Hartwell Street, Suite 230, West Boylston, MA 01583 Tel: (508) 389-6360 Fax: (508) 389-7890

Help Save Endangered Wildlife!

Contribute to the Natural Heritage & Endangered Species Fund.

Appalachian Fir-moss (*Huperzia appressa*, Endangered) was also just listed under MESA. The only sites known for this species in Massachusetts are on the Holyoke Range, but not on DCR property. It may well occur on DCR property; DCR should survey for this species on its properties here and report any observations to NHESP.

1.1. Mount Holyoke Range Planning Unit

p. 1: The list NHESP provided DCR in May of 2012 has a total of 48 MESA-listed species among all the various properties. A check of our database on January 31, 2013, yields 49 MESA-listed species habitat documented on the entire planning unit (the addition is Frank's Lovegrass, *Eragrostis frankii*, Special Concern). There are an additional two listed species (Appalachian Bristle-fern, *Trichomanes intricatum*, Endangered; American Bittersweet, *Celastrus scandens*, Threatened) for which reports on or very near the planning unit have recently been submitted to and accepted by NHESP, although these reports have not yet made it completely through our data mapping process.

p. 2: The first sentence in the section on Natural Heritage and Endangered Species Program Involvement is unclear. One way to clarify it might be: "The Massachusetts Natural Heritage and Endangered Species Program (NHESP) has regulatory authority for, and has experts on, the plants and animals protected under MESA."

p.3, Management Goals: The Mt. Tom and Holyoke ranges, individually and together, are home to an extraordinary concentration of MESA-listed plants and animals. DCR is to be commended for its part in conserving these rare species through its protection of so much of these landscapes. While additional land protection is needed on both sides of the river (and NHESP is very pleased to see DCR's commitment to continued protection efforts here), to conserve these rare species on these properties will require considerable active management. NHESP strongly supports DCR's Goal 1 for the planning unit and will work in concert with DCR in the coming years to ensure this goal is achieved.

2.2.1. Planning Unit Natural Resources

p. 8: The Mt. Tom and Holyoke ranges are exceptionally rich in MESA-listed plants largely because of the unusual geology of these sites. This section might be an appropriate place to explain why the different bedrocks in this planning unit support such a concentration of rare plants.

p. 8: The Natural Resources section would be an appropriate place to note and explain the various *BioMap2* components present in the planning unit. Note that *BioMap2* Core Habitat and Critical Natural Landscape are of equal importance and should both be discussed.

2.3.1. Mount Holyoke Range State Park

p. 16, Vernal Pools: NHESP data as of January 31, 2013, show 23 Certified Vernal Pools and 32 Potential Vernal Pools on the Mount Holyoke Range State Park and Sweet Alice Conservation Area.

p. 17: Please remove species-specific references to sites; this locality information is too detailed for a public document.

Table 2.3.2:

- NHESP records show one Special Concern data-sensitive plant and one Threatened data-sensitive plant, not two that are Special Concern.

- Appalachian Bristle-fern, *Trichomanes intricatum*, Endangered, and American Bittersweet, *Celastrus scandens*, Threatened, can be added to this table, based on recent reports approved by NHESP.
- Footnote b.: Note that the fact sheet for Sandplain *Euchlaena* is available on the NHESP website.

p. 18: If DCR has records of listed species on this state park that are not in the NHESP database (such as Blackpoll Warbler, Northern Parula, Peregrine Falcon, and Philadelphia Panic-grass), NHESP would appreciate receiving the reports. Note that Oldpasture Bluegrass is the same species as Drooping Speargrass, which is listed in Table 2.3.2 as present at this state park.

p. 21: DCR may want to use *BioMap2* Forest Cores in place of interior forest data, as the Forest Cores were chosen to achieve an ecoregional balance. This also applies to page 33, describing Skinner State Park, and page 48, describing Mount Tom State Reservation.

p. 21, Loss Agents: The acronym CFI is not defined and explained here (or anywhere in the plan?).

p. 21, Reptiles: Table G4 in Appendix G lists five reptiles as confirmed in the Mount Holyoke Range parks and 13 as possibilities, not three and 12 as noted on page 21. Also, one reptile listed in the table (Copperhead) as a possibility has been confirmed, according to the NHESP database; this would mean that Table G4 and page 21 should state six confirmed and 12 possible reptiles on the Holyoke Range.

p. 21, Amphibians: Table G5 in Appendix G lists eight amphibians as confirmed in the Mount Holyoke Range parks and 12 as possibilities, not one and 18 as noted on page 21.

2.4.1. Joseph Allen Skinner State Park

p. 32, Vernal Pools: NHESP data as of January 31, 2013, show 3 Certified Vernal Pools and 6 Potential Vernal Pools on Skinner State Park and the Connecticut River Greenway properties.

p. 32, Table 2.4.2:

- Purple Clematis is listed twice.
- Frank's Lovegrass, *Eragrostis frankii*, Special Concern, can be added to this table; it is located on the Connecticut River Greenway State Park.

p. 33: The sentence "Marbled salamanders, which breed in vernal pools elsewhere in the range, are associated with forested uplands" implies that Marbled Salamanders on Skinner State Park do not breed in vernal pools. Marbled Salamanders are obligate vernal pool breeders wherever they are found in Massachusetts.

p. 33: Purple Clematis is not associated with wetlands at the base of the south slope.

2.5.1. Mount Tom State Reservation

p. 45: Current NHESP data show there are eight Certified Vernal Pools and 12 Potential Vernal Pools on the Reservation. Please remove the location-specific reference to a vernal pool that supports state-listed vernal pool amphibians.

p. 46, Table 2.5.1:

- NHESP data show a Threatened data-sensitive plant on the Reservation, not a Special Concern one.

- American Bittersweet, *Celastrus scandens*, Threatened, can be added to this table, based on reports approved by NHESP.
- Footnote b.: The fact sheet for Spiked False Oats is available on the NHESP website.

p. 46: Please remove the location-specific reference to sites for MESA-listed species.

p. 47: No rare dragonflies or damselflies have been found near Lake Bray.

p. 47: If DCR has records of listed species on this state park that are not in the NHESP database (such as Narrow-leaved Vervain or Sharp-shinned Hawk), NHESP would appreciate receiving the reports.

p. 47: NHESP staff conducted swallowwort control work on the Mount Tom State Reservation in 2012 and intends to continue that work for the foreseeable future.

p. 49, Reptiles: Five MESA-listed reptiles are confirmed on the Mount Tom State Reservation; see Table 2.5.1 and communications from NHESP.

p. 49, Amphibians: Two MESA-listed amphibians are confirmed on the Mount Tom State Reservation; see Table 2.5.1.

3.2.6. Operational Resources

p. 76: The last sentence on this page mentions Fort Phoenix, which is not in this planning unit.

3.3.1. Mount Holyoke Range State Park Natural Resources

p. 81, Rare Species: Please combine the turtle management units and name them Turtle Management Unit for the purposes of this RMP.

3.5.1. Mount Tom State Reservation Natural Resources

p. 88, Rare Species: Please name the turtle management units the Turtle Management Unit for the purposes of this RMP.

4.3.1. Applied Land Stewardship Zoning

In general, NHESP agrees with DCR's proposed Zone and Significant Feature Overlays for the planning unit, with one minor suggestion. For Mount Holyoke Range State Park, we suggest that the Sensitive Aquatic and Vernal Pool Organism overlay be extended to the three DCR parcels in South Hadley south of and a little to the west of Bare Mountain. Also, on p. 98, NHESP considers there to be no great need to prohibit night-time use of trails during the period when young Marbled Salamanders are leaving breeding pools (June-July).

Table 4.4.1. Recommendations for the Planning Unit

p. 104: Goal 1

- While NHESP strongly supports DCR's plan to develop a combined forest and fire management plan for the two ranges, we suggest that DCR develop free-standing sub-plans for different fire management units. These sub-plans should include all the elements of an industry-standard fire management plan (site information; qualified burn leaders; prescribed burn justification, goals, and objectives; emergency assistance information; permits and official notifications; management unit description; burning schedule; burning prescription; smoke management plan; burn duration; pre-burn preparations; burn operations; equipment; personnel; and attachments such as maps,

forms, and checklists). These plans should address public safety by addressing fuels in the wildlands/residential buildings interfaces. The plans should include a wildfire response plan that reduces or eliminates damages to all resources, such as providing guidance to firefighters on sensitive area protocols (snake encounters, for example) and avoiding the use of foam in certain rare species habitats.

- The references to Appendices H and I should probably be to Appendices K and L.
- NHESP would like to see considerably more detail somewhere in the RMP as to how DCR plans to carry out the NHESP recommendations summarized in Appendices K and L. For example, are all of NHESP's recommendations designated at a Medium level of priority for DCR? Does DCR expect that it will take more than five years for funding to become available for any of the recommendations? Does DCR agree to commit to all of these recommendations, assuming funding and other resources do become available? NHESP staff is happy to work with DCR staff on this prioritization, if needed.

p. 105, Footnote b: The meaning of a "2" is unclear. The phrase "...must may become so..." needs editing. This is true throughout Section 4.

Table 4.4.2. Recommendations for Mount Holyoke Range State Park

p. 106: Goal 1

- NHESP strongly supports the efforts of DCR to acquire adjacent unprotected lands and inholdings, so as to conserve the entirety of this landscape.
- NHESP recommends that the highest priority recommendations for this state park, from the NHESP 2007 biodiversity assessment, be listed under Goal 1 and given a High priority in the RMP.

p. 106: Goal 3

- Note that removal of constructed mountain bike features may require review under MESA.

Table 4.4.3. Recommendations for Skinner State Park

p. 109: Goal 1: NHESP recommends that the highest priority recommendations for this state park, from the NHESP 2007 biodiversity assessment, be listed under Goal 1 and given a High priority in the RMP. Skinner State Park has a high concentration of MESA-listed rare species, including some of the most vulnerable, and DCR should do everything in its power to conserve these species on the property. In addition, NHESP recommends that DCR add a recommendation to acquire adjacent unprotected, undeveloped lands within Priority Habitat of Rare Species.

Table 4.4.4. Recommendations for Mount Tom State Reservation

p. 110: Goal 1

- NHESP strongly supports the efforts of DCR to acquire adjacent unprotected lands and inholdings, so as to conserve the entirety of this landscape. Of particular importance to this end are two large parcels to the south of the reservation, around the peak of Mt. Tom itself.
- NHESP recommends that the highest priority recommendations for this state reservation, from the NHESP 2007 biodiversity assessment, be listed under Goal 1 and given a High priority in the RMP. The Mount Tom range, including the State Reservation, other conservation properties, and private lands, has an **extraordinary** concentration of MESA-listed rare species, including some of the most vulnerable, and DCR should do everything in its power to conserve these species on the property.

Appendix G: Flora and Fauna

A number of the species on these lists do not show the correct MESA status. The list below has the most up-to-date listing status.

- Wallrue Spleenwort, *Asplenium ruta-muraria* (all varieties) – Threatened
- Smooth Rock-cress, *Boechera laevigata* – Special Concern
- American Bittersweet, *Celastrus scandens* – Threatened
- Autumn Coralroot, *Corallorhiza odontorhiza* – Special Concern
- Rough Panic-grass, *Dicanthelium sabrisculum* – Threatened
- Grasshopper Sparrow, *Ammodramus savannarum* – Threatened
- Eastern Whip-poor-will, *Caprimulgus vociferus* – special Concern
- Northern Harrier, *Circus cyaneus* – Threatened
- Sedge Wren, *Cistothorus platensis* – Endangered
- Bald Eagle, *Haliaeetus leucocephalus* – Threatened
- Vesper Sparrow, *Pooecetes gramineus* – Threatened

p. 165, Table G.5: NHESP data confirm the presence of Jefferson, Spotted, and Marbled Salamanders at Mt. Tom State Reservation and of Spotted Salamander on the Holyoke Range parks. Note that, in general, NHESP considers all Blue-spot/Jefferson complex salamanders found west of the Connecticut River to be Jeffersons and all found east of the river to be Blue-spots, unless proven otherwise by genetic testing.

Appendix K: Summary of NHESP Management Recommendations for Skinner and Mount Holyoke Range State Parks

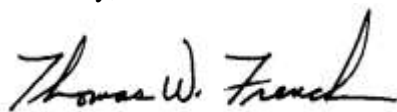
p. 181, Lower Priority Recommendations: Please combine the turtle management units and name them Turtle Management Unit for the purposes of this RMP.

Appendix L: Summary of NHESP Management Recommendations for Mount Tom State Reservation

p. 181, Lower Priority Recommendations: Please name the turtle unit simply the Turtle Management Unit for the purposes of this RMP.

Thank you for allowing NHESP the opportunity to comment on the internal draft of the Resource Management Plan. We intend to comment on the public draft of this RMP, as well. If you have any questions regarding our comments, please contact Lynn Harper, Habitat Protection Specialist, in our West Boylston office at 508-389-6351.

Sincerely,



Thomas W. French, Ph.D.
Assistant Director
Natural Heritage &
Endangered Species Program



Division of Fisheries & Wildlife

Wayne F. MacCallum, *Director*

March 22, 2013

Paul M. Cavanagh
Resource Management Planner
Department of Conservation and Recreation
Southeast Region Headquarters
P.O. Box 66
194 Cranberry Road
South Carver, MA 02366

RE: Draft *Mount Holyoke Range Planning Unit Resource Management Plan*

Dear Mr. Cavanagh:

The Massachusetts Natural Heritage & Endangered Species Program (NHESP) is pleased to offer comments on the February, 2013, public draft of the *Mount Holyoke Range Planning Unit Resource Management Plan*. **The Mt. Tom and Holyoke ranges are among the most important sites for rare species and natural community biodiversity in the Commonwealth** and DCR will play a crucial role in conserving these resources for the future on its properties here. The Resource Management Plan for this DCR planning unit should reflect the importance of the natural resources here and should commit in detail to the continued careful management of the resources.

We appreciated the opportunity to work closely with DCR on the creation of this plan. In general, we support the Resource Management Plan as written and we appreciate DCR's attention and commitment to rare species issues. Our comments are noted below, by page number of the draft.

1.2. Mount Holyoke Range Planning Unit

p. 3, Management Goals: The Mt. Tom and Holyoke ranges, individually and together, are home to an extraordinary concentration of MESA-listed plants and animals. DCR is to be commended for its part in conserving these rare species through its protection of so much of these landscapes. While additional land protection is needed on both sides of the river (and NHESP is very pleased to see DCR's commitment to continued protection efforts here), to conserve these rare species on these properties will require considerable active management. NHESP strongly supports DCR's Goal 1 for the planning unit and will work in concert with DCR in the coming years to ensure this goal is achieved.

2.2.1. Natural Resources

p. 7: The Natural Resources section would be an appropriate place to note and explain the various *BioMap2* components present in the planning unit. Note that *BioMap2* Core Habitat and Critical Natural Landscape are of equal importance and should both be discussed.

www.nhesp.org



Natural Heritage & Endangered Species Program

100 Hartwell Street, Suite 230, West Boylston, MA 01583 Tel: (508) 389-6360 Fax: (508) 389-7890

Help Save Endangered Wildlife!

Contribute to the Natural Heritage & Endangered Species Fund.

2.3.1. Mount Holyoke Range State Park

p. 20: DCR may want to use *BioMap2* Forest Cores in place of interior forest data, as the Forest Cores were chosen to achieve an ecoregional balance. This also applies to page 34, describing Skinner State Park.

2.5.1. Mount Tom State Reservation

p. 46: Please remove the location-specific reference to nesting sites for Peregrine Falcons. Also, please remove the location-specific information in the next paragraph for Wood Turtles.

4.3.1. Applied Land Stewardship Zoning

NHESP agrees with DCR's proposed Zone and Significant Feature Overlays for the planning unit, with one minor suggestion. Also, on p. 102, NHESP considers there to be no great need to prohibit night-time use of trails during the period when young Marbled Salamanders are leaving breeding pools (June-July).

Table 4.4.1. Recommendations for the Planning Unit

p. 104: Goal 1: As a sister state agency, NHESP understands full well the constraints on the resources available to DCR for implementation of the goals in these RMPs. However, we urge DCR to make the resources available in the next 5 years to implement the goal of developing a combined vegetation management and prescribed fire/wildfire response plan for this Planning Unit. Many of the MESA-listed species inhabiting the Mt. Tom and Holyoke Ranges depend on the habitat disturbance from fire (or similar events) for their long-term persistence on these properties; without fire or other active vegetation management, these species will gradually die out entirely. At a minimum, DCR should create an appropriate wildfire response plan as a first step toward full implementation of this goal. NHESP can offer technical assistance in the formulation of such a plan.

p. 104, Goal 3: NHESP will be pleased to participate in meetings to discuss existing and potential trails in the Planning Unit. Several of the MESA-listed species on these properties are particularly susceptible to impacts from inappropriate trail use or placement, and we will work with DCR to determine appropriate placement, usage, and maintenance at specific locations, so as to avert any deleterious and legally prohibited impacts to MESA-listed species.

Table 4.4.2. Recommendations for Mount Holyoke Range State Park

p. 106: Goal 1: NHESP strongly supports the continuing efforts of DCR to acquire adjacent unprotected lands and inholdings, so as to conserve the entirety of this landscape.

Table 4.4.3. Recommendations for Skinner State Park

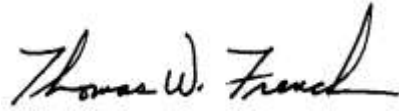
p. 109: Goal 1: NHESP recommends that DCR add a recommendation to acquire adjacent unprotected, undeveloped lands within Priority Habitat of Rare Species.

Table 4.4.4. Recommendations for Mount Tom State Reservation

p. 110: Goal 1: NHESP strongly supports the efforts of DCR to acquire adjacent unprotected lands and inholdings, so as to conserve the entirety of this landscape. Of particular importance to this end are two large parcels to the south of the reservation, around the peak of Mt. Tom itself.

Thank you for allowing NHESP the opportunity to comment on the public draft of the Resource Management Plan. If you have any questions regarding our comments, please contact Lynn Harper, Habitat Protection Specialist, in our West Boylston office at 508-389-6351.

Sincerely,

A handwritten signature in black ink that reads "Thomas W. French". The signature is written in a cursive style with a large, stylized 'T' and 'F'.

Thomas W. French, Ph.D.
Assistant Director
Natural Heritage &
Endangered Species Program

Appendix D. DCR Cultural Resources Policy.

POLICY: The Department of Conservation and Recreation shall provide for the stewardship of all known and potential cultural resources on DCR property through sensitive resource management and planning and compliance with local, state, and federal historic preservation regulations. DCR actions and activities shall promote and foster the preservation, protection, and appreciation of these resources.

APPLICABILITY: All Divisions, Departments, Bureaus, and Staff

PROCEDURES:

I. Definitions

The following definitions explain terms used throughout this policy directive:

Cultural Resource—A district, site, building, structure, landscape, object or ethnographic resource that is at least fifty years old and has important historical, cultural, scientific, or technological associations. Cultural resources also include pre-historic or historic archaeological sites containing physical remains or indications of past human activity and/or any artifacts that have been constructed or manipulated by human influence and holding potential significance for understanding past, present, or future human behavior.

Cultural Resources Inventory (CRI)—A baseline inventory of cultural resources in the DCR system, consisting of location maps, related reports, and individual site inventory forms with background historical information.

National Register—The National Register of Historic Places is the official federal list of districts, sites, buildings, structures and objects significant in American history, architecture, archaeology, engineering and culture.

Project—Any action, activity, program, construction or land modification that is directly undertaken by DCR, receives any financial assistance from DCR, or requires the issuance of a license or permit by DCR.

Project Notification Form—The form that is completed by DCR or a private project proponent in order to notify the Massachusetts Historical Commission of a project requiring review under state or federal historic preservation regulations.

Secretary of the Interior's Standards for the Treatment of Historic Properties—General guidelines for the preservation, rehabilitation, restoration, and reconstruction of historic buildings, established by the National Park Service to encourage consistent preservation practices at the national, state, and local levels.

Site—The location of a significant event, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archaeological value regardless of the value of any existing structure.

Appendix D. DCR Cultural Resources Policy. (Continued)

State Register—The State Register of Historic Places includes the following properties:

- All districts, sites, buildings, or objects listed in the National Register of Historic Places or formally determined eligible for listing in the National Register of Historic Places by the Keeper of the Register, United States Department of the Interior;
- All local historic districts or landmarks designated under local ordinances or by-laws;
- All structures and sites subject to preservation restrictions approved or held by the MHC;
- All historical or archaeological landmarks certified or listed pursuant to MGL Ch. 9, Sec. 26D and 27.

II. Mission Statement—Office of Cultural Resources

The Office of Cultural Resources (OCR) preserves the cultural heritage of Massachusetts through stewardship of DCR's historic buildings, structures, landscapes, archaeological sites, and archival resources; through training, public education, and advocacy; and through the development of innovative tools for protecting historic landscapes.

The OCR staff provides expertise, technical assistance, and project management skills in landscape preservation, historic preservation planning, archaeology, archival records management, and compliance with local, state and federal historic preservation laws. In addition to leading OCR initiatives and programs, OCR staff directly support activities undertaken by other bureaus and divisions within DCR.

III. Implementation

The Commissioner shall designate a staff person to coordinate agency implementation of this policy.

The Commissioner shall ensure that an archaeologist is on staff who meets the professional qualifications and standards for investigation and reporting as outlined in 950 CMR 70.00 and retains DCR's state permit for archaeological investigations on public lands or lands in which the Commonwealth has an interest.

The agency shall provide training on all aspects of this policy to DCR planning, engineering, project management and operations staff.

IV. Regulatory Compliance—Project Planning

During the project planning process DCR shall comply with historic preservation laws at the local, state, and federal levels, listed below. OCR serves as the Department's liaison with local historic district commissions and the Massachusetts Historical Commission (MHC) pertaining to project notifications and requests requiring assistance from and consultation with these commissions. All inquiries from MHC shall be directed to OCR.

A. Local Landmarks and Historic Districts

Many municipalities within the Commonwealth have designated local historic landmarks and historic districts to protect the distinctive characteristics of important sites and districts and to encourage new structural designs that are compatible with their historic setting. Local Historic District Commissions review all applications for exterior changes to landmarks or properties within local districts to ensure that changes to properties will not detract from their historic character. Review criteria are determined by each municipality.

MGL Ch. 40C <http://www.mass.gov/legis/laws/mgl/gl-40c-toc.htm>

Appendix D. DCR Cultural Resources Policy. (Continued)

B. State Register Review

DCR must notify MHC, through filing of a Project Notification Form (PNF) or Environmental Notification Form (ENF), of any projects undertaken, funded, permitted, or licensed in whole or in part by the agency in order that MHC can make a Determination of Effect of the project on historic and archaeological resources listed in the State Register. DCR shall send copies of PNFs or ENFs to the local historical commissions in those communities that have received Certified Local Government status from MHC. It is the responsibility of the MHC to determine whether State Register properties exist within the project's area of potential impact. When MHC determines a proposed project will have an adverse effect on historic properties, DCR must consult with MHC and any interested parties to explore feasible and prudent alternatives that would eliminate, minimize, or mitigate the adverse effects and, following consultation, adopt such alternatives.

DCR may enter into a Programmatic Memorandum of Agreement (PMOA) with the MHC to streamline the state review process, including identifying possible activities that qualify as categorical exemptions. OCR is responsible for the coordination of any PMOA with the MHC and directly oversees implementation.

MGL Ch. 9, Sec. 26-27C <http://www.mass.gov/legis/laws/mgl/9-27c.htm>
950 CMR 71

C. Massachusetts Environmental Policy Act (MEPA)

Some DCR projects may require filing an ENF with MEPA in addition to the State Register Review. MHC reviews all ENFs and comments on those in which there are concerns that the project has the potential to affect significant historic or archaeological properties. MEPA regulations state that an ENF must be filed if a project involves: 1) demolition of all or any exterior part of any Historic Structure listed in or located in any Historic District listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth; or 2) destruction of all or any part of any Archaeological Site listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth unless the project is subject to a Determination of No Adverse Effect by MHC or is consistent with a Memorandum of Agreement with MHC that has been the subject of public notice and comment.

301 CMR 11.00 <http://www.mass.gov/envir/mepa/thirdlevelpages/meparegulations/meparegulations.htm>

D. Section 106 Review

DCR is required to comply with Section 106 of the National Historic Preservation Act when undertaking projects that require a permit, funding, license, or approval from a federal agency. The federal agency (or, in many cases, the recipient of federal assistance or permits) is required to notify MHC of such projects and take into account the effects of the project on historic properties that are listed or eligible for listing in the National Register of Historic Places. When the federal agency, in consultation with the MHC as the Office of the State Historic Preservation Officer, determines that a project will result in an adverse effect to those properties, the federal agency must take prudent and feasible measures to avoid, minimize, or mitigate those effects. Other interested parties such as local historical commissions or Indian Tribes are also consulted as part of the process.

16 USC 470 et seq <http://www.cr.nps.gov/local-law/nhpa1966.htm>
36 CFR 800 <http://www.achp.gov/regs-rev04.pdf>

Appendix D. DCR Cultural Resources Policy. (Continued)

V. Regulatory Compliance—Other (See also *Emergency Scenarios/Procedures below*)

Other DCR activities require compliance with additional state historic preservation laws:

A. Massachusetts Unmarked Burial Law

When human skeletal remains are discovered or if human remains are disturbed through construction or agricultural activity, DCR staff must immediately notify the Office of the Chief Medical Examiner (617-267-6767, ext. 176). The Medical Examiner shall conduct an inquiry to determine whether the remains are suspected of being 100 years old or more, and, if so determined, shall immediately notify the State Archaeologist at MHC. The State Archaeologist conducts an investigation to determine if the skeletal remains are Native American. If the remains are deemed likely to be Native American, the State Archaeologist shall immediately notify the Massachusetts Commission on Indian Affairs, which shall cause a site evaluation to be made to determine if the place where the remains were found is a Native American burial site. Consultation occurs to develop a written agreement to preserve the burials in situ or, if no other feasible alternative exists, to excavate the burials.

MGL Ch. 38, Sec. 6	http://www.mass.gov/legis/laws/mgl/38-6.htm
MGL Ch. 9, Sec. 26A and 27C	http://www.mass.gov/legis/laws/mgl/9-26a.htm
	http://www.mass.gov/legis/laws/mgl/9-27a.htm
MGL Ch. 7, Sec. 38A	http://www.mass.gov/legis/laws/mgl/7-38a.htm

B. Preservation Restrictions

When DCR seeks to acquire a preservation restriction on a property, MHC must review and approve the language of the restriction before it is finalized. A preservation restriction means a right, whether or not stated in the form of a restriction, easement, covenant or condition, in any deed, will or other instrument executed by or on behalf of the owner of the land or in any order of taking, appropriate to preservation of a structure or site historically significant for its architecture, archaeology or associations, to forbid or limit any or all (a) alterations in exterior or interior features of the structure, (b) changes in appearance or condition of the site, (c) uses not historically appropriate, (d) archaeological field investigation without a permit, or (e) other acts or uses detrimental to appropriate preservation of the structure or site. Certain projects on properties with a preservation restriction require MHC approval.

MGL Ch. 184, Sec. 31-33	http://www.mass.gov/legis/laws/mgl/184-31.htm
	http://www.mass.gov/legis/laws/mgl/184-32.htm
	http://www.mass.gov/legis/laws/mgl/184-33.htm

C. Consultation with Massachusetts Native Americans

DCR must consult directly with Wampanoag (Gay Head and Mashpee) Tribal Councils and the Massachusetts Commission on Indian Affairs (MCIA) for management of the reservation in the Fall River-Freetown State Forest. DCR must consult with the Wampanoag and Nipmuc Tribal Councils on matters affecting each of those tribes. DCR must consult with the MCIA and with other tribal and intertribal councils on matters that affect all other tribes.

Executive Order 126	http://www.lawlib.state.ma.us/ExecOrders/eo126.txt
---------------------	---

Appendix D. DCR Cultural Resources Policy. (Continued)

VI. Resource Management and Planning

A. OCR Program of Inventory and Evaluation

One of the primary objectives of OCR is to provide an ongoing program of inventory and evaluation of cultural resources on DCR property. This first and most critical step in cultural resource management entails identifying potentially significant cultural resources and discovering the significance or meaning of each resource within a local, statewide, and national context. To this end, OCR shall develop, maintain and oversee the use of its own statewide baseline inventory of cultural resources, known as the Cultural Resources Inventory (CRI). Information from the CRI shall be available for use by DCR staff, but it shall not be made available to the public without approval from the OCR Director, and particularly, the written approval of the State Archaeologist for requests of disclosure of archaeological site locations.

In order to recognize highly significant cultural resources, OCR shall identify those that appear to meet the criteria for the National Register of Historic Places and, in consultation with MHC, nominate them for listing on the National Register. OCR shall initiate and manage the nomination process in consultation with other DCR staff and the MHC.

OCR shall expand and update the CRI as necessary to supplement historical background and geographical information on currently inventoried cultural resources, add newly discovered cultural resources, and update baseline information on cultural resources on properties acquired or disposed by DCR, and provide information on newly inventoried cultural resources to the MHC to coordinate with MHC's Inventory of Historic and Archaeological Assets of the Commonwealth.

The CRI shall also be supplemented with other cultural resource-oriented data and publications, such as MHC inventory forms, historic structure reports, condition assessments, interpretive materials, maintenance/repair records, and archaeological impact studies.

OCR shall provide CRI information to district, regional and facility supervisors with the understanding that archaeological site locational information is confidential, not a "public record," and must be secured from inadvertent or unauthorized disclosure or from subsequent disclosure without written permission of the State Archaeologist (MGL Ch. 9, Sec 26A and 27C (950 CMR 70.13(7))). The CRI shall be used by DCR to enable informed preservation decisions as part of DCR's resource planning and management activities, including the prioritization of capital projects for stabilization, repair and adaptive reuse.

B. Procedures for Protecting Cultural Resources

1. Acquisition of Land and Conservation/Preservation Restrictions

OCR staff shall sit on the DCR Lands Committee and provide assistance and input into the protection of properties of significance to the state's cultural heritage through acquisition in fee, conservation restrictions, or preservation restrictions. Once an acquisition is complete, the OCR shall determine whether a baseline inventory should be undertaken on the property to identify cultural resources. Preservation restrictions must be reviewed and approved by MHC prior to DCR acquisition.

Appendix D. DCR Cultural Resources Policy. (Continued)

2. Resource Management Plan Development

OCR staff shall provide technical support toward the Resource Management Planning Program to insure that the protection of cultural resources is a core component of Resource Management Plans. Depending on the type of DCR facility and the scope of the RMP, this support may range from data collection and documentation to property analysis and treatment recommendations.

3. Project Planning

DCR shall make every effort to protect cultural resources on DCR property. For projects planned at any Department level, appropriate Department staff shall consult with OCR to consider potential project impacts on cultural resources. Consultation with OCR shall occur as early as possible in the planning process, but no later than the 25% design development phase. When a conflict between a project location and its impact on cultural resources is identified, cultural resource management strategies shall be brought into consideration to determine if the impact to the resource can be avoided, adverse impacts mitigated, or whether additional site investigation is necessary. OCR shall initiate and manage those activities that will minimize or mitigate adverse impacts to cultural resources.

When necessary, OCR shall conduct a coordinated program of basic and applied research to support planning for and management of cultural resources on DCR property. Repairs, rehabilitation, and other preservation activities shall follow the guidelines in the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Adequate research to support planning and compliance with MHC Review will precede any final decisions about the treatment of cultural resources or operational activities which may impact cultural resources.

For each DCR project, a Project Notification Form (PNF), including a project description, a site plan, and photographs, shall be provided to OCR. OCR shall forward the PNF to MHC and, where required, local historic district commissions. If outside consultants are preparing the PNF, then OCR staff shall be given an opportunity to review the draft PNF before it is submitted. The submission of an Environmental Notification Form (ENF) under the Massachusetts Environmental Policy Act (MEPA) satisfies MHC notification, and no PNF is needed for project undergoing MEPA review. Copies of ENFs shall be provided to OCR.

MHC has a maximum of 30 days to make a Determination of Effect on historic resources or request supplemental information in order to make a Determination of Effect. In the event that the MHC makes a determination of “no effect” or “no adverse effect” on historic resources, the project may proceed. If MHC determines that the proposed project will have an “adverse effect” on historic resources, DCR shall consult with MHC to explore options to avoid, minimize, or mitigate the adverse effect. If, after consultation, no feasible or prudent alternative exists that would avoid the adverse effect, a Memorandum of Agreement between DCR, MHC and any other interested parties is required to resolve the adverse effect and complete the consultation process.

Local historic district commission review will vary by municipality.

No physical work for projects shall occur until the review process has been completed with MHC and (if applicable) the local historic district commission.

Appendix D. DCR Cultural Resources Policy. (Continued)

4. Emergency Scenarios/Procedures

In the event an unanticipated site of archaeological or cultural significance is encountered during the project implementation stage, project work shall be halted and OCR shall be notified. OCR shall initiate the review process with MHC and make a recommendation to the Deputy Commissioner of Planning & Engineering whether or not to suspend all aspects of project implementation during consultation with MHC.

If human remains are discovered during project implementation, project work shall be halted, the area must be secured, the State Police must be notified, and the Medical Examiner (617-267-6767 ext, 176) and the DCR staff archaeologist must be contacted to determine if the remains are over 100 years old. No one should touch or remove the remains. If the remains are over 100 years old, the State Archaeologist at MHC must be notified and will consult with DCR (and the Massachusetts Commission on Indian Affairs if the remains are Native American) to avoid or mitigate impacts to the graves. In any such situation, DCR staff shall work with OCR to comply with the state's Unmarked Burial Law.

If DCR must take immediate action to avoid or eliminate an imminent threat to public health or safety or a serious and immediate threat to the environment, OCR shall be notified as soon as possible. OCR shall attempt to seek prior oral approval of the MHC for the project via telephone if written notice is not practicable, provide written notification of the emergency work within ten days, and commence full compliance with MHC review requirements within thirty days, under the terms of 950 CMR 71.10.

5. Day-to-Day Operations

Management of DCR's property shall be carried out with cultural resource protection in mind. Adverse impacts to cultural resources should be avoided and mitigated, where possible, with appropriate protection strategies. Cultural resources shall be adequately maintained, following recommended techniques where formal guidelines are in place. Cultural resource management decisions should be made with input from OCR.

Discovery of artifacts should be reported immediately to OCR, noting the exact location of the find. Be aware of sites that may be exposed or threatened by erosion or visitor impacts. Any vandalism, unauthorized digging, or removal of artifacts should be reported to the appropriate law enforcement personnel and OCR. Archaeological investigations on public lands require a permit from the State Archaeologist at MHC (MGL Ch. 9, Sec 26A and 27C (950 CMR 70)).

6. Lease/Permit Programs

The issuance of leases and permits by DCR for activities involving the physical alteration of a property must undergo MHC review with OCR and MHC, as outlined above.

The proposed issuance of DCR permits to investigate archaeological sites shall be reviewed by OCR. OCR shall coordinate the issuance of a special use permit with the State Archaeologist at MHC, who must also issue a concurrent State Archaeologist permit for any field investigations on DCR property (MGL Ch. 9, Sec 26A and 27C (950 CMR 70)).

Appendix D. DCR Cultural Resources Policy. (Continued)

7. Disposition of Real Property

The protection of cultural resources, including the preservation and continued use of significant historic buildings and structures, shall be accommodated as part of any disposition of DCR property. Under the State Register review regulations (950 CMR 71.05(e)), the transfer or sale of a State Register property without adequate conditions or restrictions regarding preservation, maintenance, or use will result in an “adverse effect” determination from MHC. DCR must consult with MHC and any interested parties to resolve the effect of the proposed transfer or sale of the State Register property.

Appendix E. GIS Supplemental Information.

E.1. METHODOLOGY

The following is a summary of the GIS methodology used by the DCR's GIS Program to generate and present data within the Mount Holyoke Range Planning Unit Resource Management Plan.

Property Boundaries

The digital boundaries for each property within the Mount Holyoke Range Planning Unit can be described, based on the source data, one of three ways: highly accurate, reasonably accurate and less than accurate. Approximately 39% of the digital boundaries are based on highly accurate data, e.g. surveys and/or hydrographic or town boundaries. An additional 27% of the digital boundaries are based on reasonably accurate data, e.g. draft parcel data, georeferenced plans and/or orthophotography. The remaining digital boundaries (34%) are based on less than accurate data, e.g. a digital sketch or an undocumented source.

Demographics

The RMP's demographic information was generated using the following methodology within ArcGIS. First, the centroid of the planning unit was calculated, using the feature to point tool, and then buffered by 10 and 20 miles, using the buffer tool. Next, a DCR GIS Specialist downloaded and joined additional attribute information from the U.S. Census Bureau's 2006-2010 American Community Survey to the Massachusetts and Connecticut 2010 Census Block Group datalayers. Finally, these datalayers were analyzed to determine the characteristics of the population surrounding the planning unit; each Census Block Group that intersected with the 10 or 20 mile buffer was selected, using the select by location tool. The information for the selected Census Block Groups is summarized in Table E.1, below.

Table E.1. Summary of 2010 Census Block Groups within 10 and 20 miles of the Mount Holyoke Range Planning Unit Centroid.

	10 mi	20 mi MA	20 mi CT
2010 Census Data			
100% Population Count	279,623	658,289	42,268
100% Housing Unit Count	114,393	270,548	14,379
Age^a			
Total Children	54,405	143,913	8,068
Total Adults	187,037	423,201	28,497
Total Seniors	38,181	91,175	5,703
Race			
White	233,972	529,517	35,492
Black or African American	10,797	45,946	3,260
American Indian or Alaskan Native	933	2,286	72
Asian	9,060	16,839	697
Native Hawaiian or Other Pacific Islander	133	295	20
Some Other Race (Alone)	17,108	45,435	2,030
Two or More Races	7,620	17,971	697
Ethnicity			
Hispanic	40,813	105,192	3,189
Not Hispanic	238,810	553,097	39,079
2006-2010 American Community Survey Data			
Population Estimate	277,869	655,865	41,500
Household Estimate	107,204	251,123	14,103
Language			
English	82,522	196,165	12,333
Spanish	12,611	29,925	465
European	9,373	19,266	1,073
Asian	2,096	4,163	177
Other	602	1,604	55
Income^b			
Low	28,745	66,779	1,755
Medium	43,657	100,842	5,116
High	34,802	83,502	7,232
Education^c			
Total Population >25	176,427	424,533	30,010
Total < High School	25,418	60,304	3,340
Total High School	50,339	130,559	9,710
Total < Bachelor's	45,232	111,767	8,716
Total Bachelor's	29,884	70,415	5,145
Total > Bachelor's	25,554	51,488	3,099

Appendix E. GIS Supplemental Information. (Continued)

- a. Children = <18; Adults = 18-64; and Seniors = 65 and older.
- b. Annual income, where Low = <\$10K - \$24,999; Medium = \$25K - \$74,999; and High = \$75K - >\$200K.
- c. The highest level of education is identified by the following codes:
<High School = no school, < 11th grade, or 12th grade no diploma;
High School = high school diploma; <Bachelor's = < 1 year of college, > 1 of college without a diploma, or an Associate's Degree;
Bachelor's = Bachelor's Degree; and > Bachelor's = a Master's Degree, professional school degree, or PhD.

It is important to note that by using the select by location tool, an acceptable amount of error was introduced into the demographic information presented in the RMP. Census Block Groups that extended beyond each buffer, similar to what is depicted below in Figure E.1, were included in the analysis. As a result, the demographic information for each buffer likely includes individuals who live farther away from the planning unit centroid than indicated.

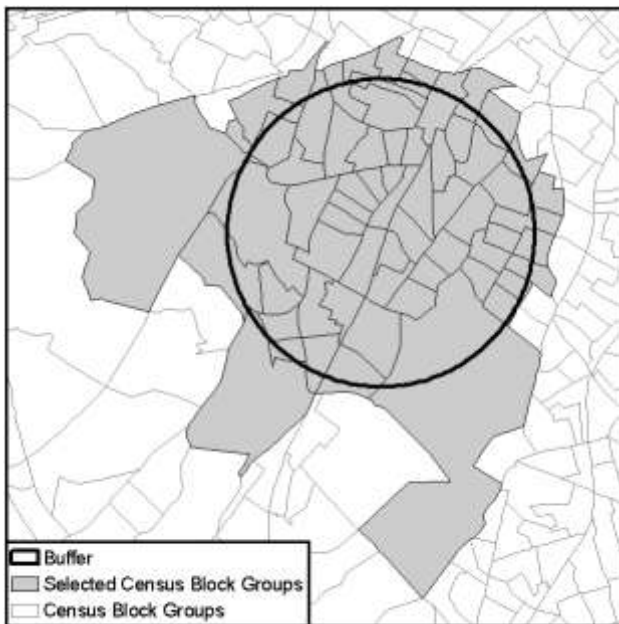


Figure E.1. Selected Census Block Groups.

Report-sized Maps

Figures 2.3.1 Mount Holyoke Range State Park – Notch Visitor Center Area. A DCR GIS Specialist digitized the location of a garage, silo and shed, on Military Road in Amherst, in ArcGIS using the 2008-2009 Color Orthophotography datalayer and

more recent aerial imagery available through Bing Maps as references.

Figures 4.3.1, 4.3.2 and 4.3.3 Recommended Land Stewardship Zoning for Mount Holyoke Range State Park, Joseph Allen Skinner State Park and Mount Tom State Reservation. A DCR GIS Specialist digitized the Zone 1, Zone 2, Zone 3 and Significant Feature Overlay datalayers in ArcGIS.

The 2008-2009 Color Orthophotography and Trail datalayers were used as a guide for defining the Zone 1 and Zone 3 areas within the planning unit. The Public Water Supplies datalayer was buffered in ArcGIS, using the buffer tool, to create the DEP Zone I Wellhead Protection Area overlay. A National Register of Historic Places Registration Form, dated December 30, 1993, was used to delineate the Hockanum Rural Historic District overlay; however, it is important to note that the eastern boundary of the District was adjusted to accommodate the current boundaries of Skinner state park. Finally, information from the Natural Heritage and Endangered Species Program (NHESP), as well as the Trail datalayer, were used to create the Sensitive Aquatic and Vernal Pool Organisms overlay.

Every attempt was made to use “on the ground features,” such as trails or streams, as the boundary for each zone and/or significant feature overlay in an effort to make the areas easily identifiable for DCR field staff.

E.2. DATALAYERS

A summary of the GIS datalayers used by the DCR GIS Program to generate and display data within the Mount Holyoke Range Planning Unit RMP is presented below, in Table E.2.

Appendix E. GIS Supplemental Information. (Continued)

Table E.2. Summary of datalayers used to create the Mount Holyoke Range Planning Unit RMP.

Datalayer Name	Source	Additional Information
100-Year Flood Zone	MassGIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/q3.html
2008–2009 Color Orthophotography	MassGIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/colororthos2008.html
2010 Census Block Groups (Connecticut)	University of CT	http://magic.lib.uconn.edu/connecticut_data.html
2010 Census Block Groups (Massachusetts)	MassGIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/census2010.html
500-Year Flood Zone	MassGIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/q3.html
Aquifers	MassGIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/aquifers-.html
Dams	MassGIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/dams.html
Hydrography	MassGIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/depwetlands112000.html
Interior Forest	MassGIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/intforest.html
Mount Holyoke Range Planning Unit	MassGIS and DCR GIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/osp.html
Mount Holyoke Range Demographic Area	DCR GIS	
NHESP BioMap2 Core Habitat	MassGIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/biomap2.html
NHESP Certified Vernal Pool	MassGIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/cvp.html
NHESP Potential Vernal Pool	MassGIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/pvp.html
NHESP Priority Habitat of Rare Species	MassGIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/prihab.html
Outstanding Resource Waters	MassGIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/orw.html
Public Water Supplies	MassGIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/pws.html
Roads	MassGIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/eotroads.html
Significant Feature Overlay	DCR GIS	
State Boundary (Massachusetts)	MassGIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/townsurvey.html
Town Boundary (Massachusetts)	MassGIS	http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis/datalayers/townsurvey.html
Trail	DCR GIS	
Zone 1, Zone 2 and Zone 3	DCR GIS	

Appendix F. Select Regulations Applicable to the Mount Holyoke Range Planning Unit.^a

CMR ^b	Title	Comments
301 CMR 11.00	Massachusetts Environmental Policy Act (MEPA)	Requires the systematic review of any work or activity undertaken by an agency (e.g., the DCR); involving state permitting or financial assistance; or a transfer of state land.
302 CMR 10.00	Dam Safety	Includes information on the size and hazard classification of dams, as well as dam inspection, repair, alteration, and removal.
304 CMR 7.00	Management Plans and Massachusetts Wildlands	Requires a management plan for each state reservation, park, and forest under the control of the Department of Environmental Management. This regulation was superseded by MGL Chapter 21: Section 2F, which requires management plans for all DCR “reservations, parks, and forests.”
304 CMR 11.00	Forest Cutting Practices Act	Regulates cutting on “all land devoted to forest growth owned or administrated by private persons, corporations or organizations” or governmental agency. A forest cutting plan is required for the cutting of more than 50 cords or 25,000 board-feet of wood.
304 CMR 12.00	Forests and Parks Rules	Extensive regulations governing all aspects of park operations including, but not limited to: hours of operation; public behavior; consumption of alcohol; the presence of pets; fires; special use permits; hunting, fishing, and trapping; traffic rules and parking; campsites; trail use; and wind and board surfing. These regulations closed Holyoke Heritage State Park to fishing, and Joseph Allen Skinner State Park and Mount Tom State Reservation to hunting, trapping, and the possession of bows and arrows.
310 CMR 9.00	Waterways	These regulations protect and promote the public’s interest in tidelands, Great Ponds, and non-tidal rivers; preserve and protect the public’s rights in tidelands; protect the public health, safety, and general welfare as it may be affected by any project in tidelands, Great Ponds, or non-tidal rivers; support efforts to revitalize unproductive property along urban waterfronts; and foster the rights of the people to values identified in Article XCVII of the Massachusetts Constitution. For the purpose of these regulations, all lands lying below the high water mark of the Connecticut River, such as those at the Connecticut River Boat Ramp, are considered to be “trust lands.”
310 CMR 10.00	Wetlands Protection Act	Regulates many activities within 100 feet of wetlands and certified vernal pools, and within 200 feet of perennial streams and rivers. This Act (310 CMR 10.58) specifies that there is no riverfront area associated with the manmade canals in Holyoke.
310 CMR 15.00	Title 5: State Environmental Code	Standard requirements for the siting, construction, inspection, upgrade and expansion of on-site sewage treatment and disposal systems for the transport and disposal of septage.
310 CMR 19.00	Solid Waste Management	Regulates the storage, transfer, processing, treatment, disposal, use and reuse of solid waste; including requirements specific to the closure of landfills.
310 CMR 22.00	Drinking Water	Includes regulations for Transient Non-community Water Systems, which provide water to 25 or more persons at least 60 days/year.

Continued on next page.

Appendix F. Select Regulations Applicable to the Mount Holyoke Range Planning Unit.^a (Continued)

CMR ^b	Title	Comments
314 CMR 4.00	Massachusetts Surface Water Quality Standards	These standards “secure to the Commonwealth the benefits of the Clean Water Act”. They designate the most sensitive uses for which the waters of the Commonwealth shall be enhanced, maintained and protected; prescribe minimum water quality criteria; and contain regulations necessary to achieve designated uses and maintain water quality. These standards include the identification and regulation of Outstanding Resource Waters.
320 CMR 2.00	Public Access Facilities	Regulates use of Office of Fish and Boating Access (formerly Public Access Board (PAB)) boat ramps. These facilities may only be used for “the launching and retrieval of any trailered or cartop watercraft and parking of the vehicle used to launch and retrieve watercraft in a properly marked parking area.”
321 CMR 2.00	Miscellaneous Regulations Relating to Division of Fisheries and Wildlife	Addresses a variety of fish and wildlife issues, including scientific collecting permits and the importation, liberation, and transportation of fish, amphibians, reptiles, birds, and mammals.
321 CMR 3.00	Hunting	Regulates hunting and trapping in Massachusetts. Additional hunting and trapping regulations, specific to DCR parks, are identified in 304 CMR 12.00.
321 CMR 4.00	Fishing	Regulates the taking of freshwater fish in Massachusetts. Additional fishing regulations, specific to DCR parks, are identified in 304 CMR 12.00.
321 CMR 10.00	Massachusetts Endangered Species Act (MESA)	MESA protects rare species and their habitats by prohibiting the “Take” of any plant or animal species listed as Endangered, Threatened, or Special Concern. Activities that may alter rare species habitat (e.g., trail maintenance, vista pruning) are subject to regulatory review. On state-owned land, “all practicable means and measures shall be taken to resolve conflicts between the protection, conservation, and restoration of state-listed species...and other uses of such lands in favor of the listed species.”
323 CMR 2.00	The Use of Vessels	Regulates the operation of motorboats, canoes, and kayaks. Includes special regulations for a portion of the Connecticut River north of the planning unit.
323 CMR 3.00	The Use of Recreation Vehicles and Snow Vehicles	These regulations specify that no person shall operate a snow or recreation vehicle on publicly-owned property except on trails marked and designated for such use; or in a manner that causes damage to...lands owned or managed by the Department of Conservation and Recreation. They also specify a minimum average depth of four inches of packed snow, or such other depth as is determined by the person in charge of said land, for the operation of snow machines.
323 CMR 4.00	The Operation of Personal Watercraft	These regulations “protect the public safety by establishing rules of conduct governing the operation of personal watercraft.”
333 CMR 10.00	Certification and Licensing of Pesticide Applicators	Requires that anyone applying herbicides, insecticides, or other pesticides on non-residential property (i.e., all DCR properties) must be certified and licensed.
521 CMR 19.00	Architectural Access Board; Recreational Facilities	Accessibility standards for rinks, pools, beaches, playgrounds, picnic areas, campsites, and other indoor and outdoor facilities. Requires that 5% of picnic facilities be accessible.
521 CMR 23.00	Architectural Access Board; Parking and Passenger Loading Zones	Specifies dimensional, pavement marking, and sign requirements for accessible parking spaces and passenger loading zones.

Continued on next page.

Appendix F. Select Regulations Applicable to the Mount Holyoke Range Planning Unit.^a (Continued)

CMR ^b	Title	Comments
801 CMR 4.02	Fees for Licenses, Permits, and Services to be Charged by State Agencies	Specifies fees for camping; parking; use of picnic pavilions, athletic fields, ice rinks, golf courses; special use permits; timber harvests, forester licensing, well digging, dam safety permits, and other miscellaneous activities.
950 CMR 70.00	Massachusetts Historical Commission	Standardizes procedures for conducting archaeological investigations in Massachusetts by controlling activities that will disturb archaeological properties. Requires a permit from the State Archaeologist for conducting “field investigation activities on any land owned or controlled by the Commonwealth.”
950 CMR 71.00	Protection of Properties Included in the State Register of Historic Places	Requires Massachusetts Historical Commission notification of projects undertaken, funded, or licensed by a state body.

- a. A variety of state regulations apply to both the operation of state parks and the behavior of visitors to these parks. This table includes only those regulations directly related to topics addressed in the main body of this RMP.
- b. The Code of Massachusetts Regulations, or CMR, “contains regulations promulgated by state agencies” (Massachusetts Trial Court Law Libraries 2012). These regulations “have the force and effect of law like statutes.”

Appendix G. Flora and Fauna.

Table G.1. Plants of the Mount Holyoke Range Planning Unit. Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
FERNS AND FERN ALLIES								
Aspleniaceae Spleenwort Family	Ebony spleenwort	<i>Asplenium platyneuron</i>	-	-	-	X	X	1, 3
	Walking fern	<i>Asplenium rhizophyllum</i>	-	-	-	X	-	3
	Wallrue	<i>Asplenium ruta-muraria</i> var. <i>cryptolepis</i>	T	-	-	X	-	3
	Maidenhair spleenwort	<i>Asplenium trichomanes</i>	-	-	-	X	X	1, 3
Dennstaedtiaceae Bracken Fern Family	Eastern hayscented fern	<i>Dennstaedtia punctilobula</i>	-	-	-	X	X	1, 3
	Western brackenfern	<i>Pteridium aquilinum</i> var. <i>latiusculum</i>	-	-	-	X	X	1, 3
Dryopteridaceae Wood Fern Family	Subarctic ladyfern	<i>Athyrium filix-femina</i> var. <i>angustum</i>	-	-	-	X	X	1, 3
	Brittle bladderfern	<i>Cystopteris fragilis</i>	-	-	-	X	-	3
	Upland brittle bladderfern	<i>Cystopteris tenuis</i>	-	-	-	-	X	1
	Silver false spleenwort	<i>Deparia acrostichoides</i>	-	-	-	X	X	1, 3
	Spinulose woodfern	<i>Dryopteris carthusiana</i>	-	-	-	X	X	1, 3
	Crested woodfern	<i>Dryopteris cristata</i>	-	-	-	-	X	1
	Goldie's woodfern	<i>Dryopteris goldiana</i>	-	-	-	X	-	3
	Intermediate woodfern	<i>Dryopteris intermedia</i>	-	-	-	-	X	1
	Marginal woodfern	<i>Dryopteris marginalis</i>	-	-	-	X	X	1, 3
	Western oakfern	<i>Gymnocarpium dryopteris</i>	-	-	-	-	X	1
	Ostrich fern	<i>Matteuccia struthiopteris</i> var. <i>pennsylvanica</i>	-	-	-	X	X	1, 3
	Sensitive fern	<i>Onoclea sensibilis</i>	-	-	-	X	X	1, 3
	Christmas fern	<i>Polystichum acrostichoides</i>	-	-	-	X	X	1, 3
	Rusty woodsia	<i>Woodsia ilvensis</i>	-	-	-	X	X	1, 3
	Bluntlobe cliff fern	<i>Woodsia obtusa</i>	-	-	-	X	X	1, 3
Equisetaceae Horsetail Family	Field horsetail	<i>Equisetum arvense</i>	-	-	-	X	X	1, 3
	Scouringrush horsetail	<i>Equisetum hyemale</i> var. <i>affine</i>	-	-	-	X	X	1, 3
	Horsetail	<i>Equisetum</i> sp.	-	-	-	X	-	3
	Woodland horsetail	<i>Equisetum sylvaticum</i>	-	-	-	-	X	1
	Variegated scouringrush	<i>Equisetum variegatum</i> var. <i>variegatum</i>	WL	-	-	-	X	1
Isoetaceae Quillwort Family	Spiny-spore quillwort	<i>Isoetes tenella</i>	-	-	-	-	X	1
Lycopodiaceae Club-moss Family	Appalachian clubmoss	<i>Huperzia appalachiana</i>	-	-	-	-	X	1
	-	<i>Huperzia appalachiana</i> x <i>H. lucidula</i>	-	-	-	-	X	1
	Shining clubmoss	<i>Huperzia lucidula</i>	-	-	-	X	X	1, 3
	Inundated clubmoss	<i>Lycopodiella inundata</i>	-	-	-	X	X	1, 3
	Running clubmoss	<i>Lycopodium clavatum</i>	-	-	-	X	X	1, 3
	Groundcedar	<i>Lycopodium complanatum</i>	-	-	-	X	-	3
	Tree groundpine	<i>Lycopodium dendroideum</i>	-	-	-	-	X	1
	Fan clubmoss	<i>Lycopodium digitatum</i>	-	-	-	-	X	1
	Pennsylvania clubmoss	<i>Lycopodium hickeyi</i>	-	-	-	-	X	1
	Rare clubmoss	<i>Lycopodium obscurum</i>	-	-	-	X	X	1, 3
	Deeproot clubmoss	<i>Lycopodium tristachyum</i>	-	-	-	-	X	1

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Ophioglossaceae	Cutleaf grapefern	<i>Botrychium dissectum</i>	-	-	-	X	X	1, 3
Adder's-tongue Family	Lanceleaf grapefern	<i>Botrychium lanceolatum</i> var. <i>angustisegmentum</i>	WL	-	-	-	X	1
	Matricary grapefern	<i>Botrychium matricariifolium</i>	WL	-	-	-	X	1
	Leathery grapefern	<i>Botrychium multifidum</i>	-	-	-	X	-	3
	Bluntlobe grapefern	<i>Botrychium oneidense</i>	WL	-	-	-	X	1
	Rattlesnake fern	<i>Botrychium virginianum</i>	-	-	-	X	X	1, 3
Osmundaceae	Cinnamon Fern	<i>Osmunda cinnamomea</i>	-	-	-	X	X	1, 3
Royal Fern Family	Interrupted fern	<i>Osmunda claytonia</i>	-	-	-	X	X	1, 3
	Royal fern	<i>Osmunda regalis</i>	-	-	-	X	X	1, 3
Polypodiaceae	Rock polypody	<i>Polypodium virginianum</i>	-	-	-	X	X	1, 3
Polypody Family								
Pteridaceae	Northern maidenhair	<i>Adiantum pedatum</i>	-	-	-	X	X	1, 3
Maidenhair Fern Family	Purple cliffbreak	<i>Pellaea atropurpurea</i>	WL	-	-	X	X	1, 3
Selaginellaceae	Meadow spikemoss	<i>Selaginella apoda</i>	-	-	-	-	X	1
Spike-moss Family	Northern selaginella	<i>Selaginella rupestris</i>	WL	-	-	X	X	1, 3
Thelypteridaceae	Long beechfern	<i>Phegopteris connectilis</i>	-	-	-	-	X	1
Marsh Fern Family	Broad beechfern	<i>Phegopteris hexagonoptera</i>	-	-	-	X	X	1, 3
	New York Fern	<i>Thelypteris noveboracensis</i>	-	-	-	X	X	1, 3
	Eastern Marsh Fern	<i>Thelypteris palustris</i> var. <i>pubescens</i>	-	-	-	X	X	1, 3
CONIFERS								
Cupressaceae	Sargent juniper	<i>Juniperus chinensis</i> var. <i>sargentii</i>	-	-	X	-	-	5
Cypress Family	Common juniper	<i>Juniperus communis</i>	-	-	-	X	X	1, 3
	Eastern redcedar	<i>Juniperus virginiana</i>	-	-	-	X	X	1, 3
	Arborvitae	<i>Thuja</i> sp.	-	-	X	-	-	5
Pinaceae	Balsam fir	<i>Abies balsamea</i>	-	-	-	-	X	1
Pine Family	White fir	<i>Abies concolor</i>	-	-	-	X	-	3
	Norway spruce	<i>Picea abies</i>	-	-	-	X	-	3
	White spruce	<i>Picea glauca</i>	-	-	-	-	X	1
	Austrian pine	<i>Pinus nigra</i>	-	-	X	-	-	5
	Red pine	<i>Pinus resinosa</i>	WL	-	-	X	X	1, 3
	Pitch pine	<i>Pinus rigida</i>	-	-	-	X	X	1, 3
	Eastern white pine	<i>Pinus strobus</i>	-	-	-	X	X	1, 3
	Scots pine	<i>Pinus sylvestris</i>	-	-	-	X	-	3
	Eastern hemlock	<i>Tsuga canadensis</i>	-	-	X	X	X	1, 3, 5
Taxaceae	Canada yew	<i>Taxus canadensis</i>	-	-	-	X	X	1, 2
Yew Family	Japanese yew	<i>Taxus cuspidata</i>	-	-	-	-	X	1
FLOWERING PLANTS – DICOTS								
Aceraceae	Boxelder	<i>Acer negundo</i>	-	-	-	X	X	1, 3
Maple Family	Striped maple	<i>Acer pensylvanicum</i>	-	-	-	X	X	1, 3
	Norway maple	<i>Acer platanoides</i>	-	I	-	X	X	1, 3
	Red maple	<i>Acer rubrum</i>	-	-	X	X	X	1, 3, 5
	Silver maple	<i>Acer saccharinum</i>	-	-	-	-	X	1
	Sugar maple	<i>Acer saccharum</i>	-	-	-	X	X	1, 3
	Mountain maple	<i>Acer spicatum</i>	-	-	-	X	X	1, 3

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Amaranthaceae Amaranth Family	Slender snakecotton	<i>Froelichia gracilis</i>	-	-	-	X	X	1
Anacardiaceae Sumac Family	Winged sumac	<i>Rhus copallinum</i>	-	-	-	X	X	1, 3
	Smooth sumac	<i>Rhus glabra</i>	-	-	-	X	X	1, 3
	Staghorn sumac	<i>Rhus typhina</i>	-	-	-	X	X	1, 3
	Eastern Poison Ivy	<i>Toxicodendron radicans</i>	-	-	-	X	X	1, 3
	Poison sumac	<i>Toxicodendron vernix</i>	-	-	-	-	X	1
Apiaceae Carrot Family	Bulblet-bearing water hemlock	<i>Cicuta bulbifera</i>	-	-	-	-	X	1
	Spotted water hemlock	<i>Cicuta maculata</i>	-	-	-	X	X	1, 3
	Canadian honewort	<i>Cryptotaenia canadensis</i>	-	-	-	X	X	1, 3
	Queen Anne's lace	<i>Daucus carota</i>	-	-	-	X	X	1
	American marshpennywort	<i>Hydrocotyle americana</i>	-	-	-	-	X	1
	Clayton's sweetroot	<i>Osmorhiza claytonii</i>	-	-	-	X	-	3
	Maryland sanicle	<i>Sanicula marilandica</i>	-	-	-	X	X	1, 2
	Hemlock waterparsnip	<i>Sium suave</i>	-	-	-	X	X	1, 3
	Golden zizia	<i>Zizia aurea</i>	-	-	-	X	X	1, 3
Apocynaceae Dogbane Family	Spreading dogbane	<i>Apocynum androsaemifolium</i>	-	-	-	X	X	1, 3
	Indianhemp	<i>Apocynum cannabinum</i>	-	-	-	-	X	1
	Dogbane	<i>Apocynum</i> sp.	-	-	-	X	-	3
	Common periwinkle	<i>Vinca minor</i>	-	-	-	-	X	1
Aquifoliaceae Holly Family	Inkberry	<i>Ilex glabra</i>	-	-	X	-	-	5
	Catberry	<i>Ilex mucronata</i>	-	-	-	-	X	1
	Holly	<i>Ilex</i> sp.	-	-	X	X	-	3, 5
	Common winterberry	<i>Ilex verticillata</i>	-	-	-	-	X	1
Araliaceae Ginseng Family	Bristly sarsaparilla	<i>Aralia hispida</i>	-	-	-	-	X	1
	Wild sarsaparilla	<i>Aralia nudicaulis</i>	-	-	-	X	X	1, 3
	American spikenard	<i>Aralia racemosa</i>	-	-	-	X	X	1, 3
	Devil's walkingstick	<i>Aralia spinosa</i>	-	-	-	X	-	3
	English ivy	<i>Hedera helix</i>	-	-	X	-	-	5
	American ginseng	<i>Panax quinquefolius</i>	SC	-	-	-	X	1
	Dwarf ginseng	<i>Panax trifolius</i>	-	-	-	X	X	1, 3
Aristolochiaceae Birthwort Family	Canadian wildginger	<i>Asarum canadense</i>	-	-	-	X	X	1, 3
Asclepiadaceae Milkweed Family	Poke Milkweed	<i>Asclepias exaltata</i>	-	-	-	X	-	3
	Swamp milkweed	<i>Asclepias incarnata</i>	-	-	-	-	X	1
	Purple milkweed	<i>Asclepias purpurascens</i>	E	-	-	-	-	2
	Fourleaf milkweed	<i>Asclepias quadrifolia</i>	-	-	-	X	X	1, 3
	Common milkweed	<i>Asclepias syriaca</i>	-	-	-	X	X	1, 3
	Whorled (Linear-leaved) milkweed	<i>Asclepias verticillata</i>	T	-	-	X	X	1, 2, 3
	Louise's swallow-wort	<i>Cyanthum louiseae</i>	-	I	-	X	-	3
	European swallow-wort	<i>Cyanthum rossicum</i>	-	L	-	-	X	1

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Asteraceae	Common yarrow	<i>Achillea millefolium</i>	-	-	-	X	X	1, 3
Aster Family	White snakeroot	<i>Ageratina altissima</i> var. <i>altissima</i>	-	-	-	X	X	1, 3
	Annual ragweed	<i>Ambrosia artemisiifolia</i>	-	-	-	X	X	1
	Great ragweed	<i>Ambrosia trifida</i>	-	-	-	-	X	1
	Western pearly everlasting	<i>Anaphalis margaritacea</i>	-	-	-	X	X	1, 3
	Howell's pussytoes	<i>Antennaria howellii</i>	-	-	-	-	X	1
	Field pussytoes	<i>Antennaria neglecta</i>	-	-	-	X	-	3
	Parlin's pussytoes	<i>Antennaria parlinii</i>	-	-	-	-	X	1
	Woman's tobacco	<i>Antennaria plantaginifolia</i>	-	-	-	X	X	1, 3
	Greater burdock	<i>Arctium lappa</i>	-	-	-	X	-	3
	Lesser burdock	<i>Arctium minus</i>	-	-	-	-	X	1
	Burdock	<i>Arctium</i> sp.	-	-	-	X	-	3
	Common wormwood	<i>Artemisia vulgaris</i>	-	-	-	-	X	1
	Nodding beggartick	<i>Bidens cernua</i>	-	-	-	-	X	1
	Purplestem beggarticks	<i>Bidens connata</i>	-	-	-	-	X	1
	Small beggarticks	<i>Bidens discoidea</i>	-	-	-	-	X	1
	Devil's beggartick	<i>Bidens frondosa</i>	-	-	-	X	X	1, 3
	Beggartick	<i>Bidens</i> sp.	-	-	-	X	-	3
	Spotted knapweed	<i>Centaurea stoebe</i> ssp. <i>micranthos</i>	-	L	-	X	X	1, 3
	Chicory	<i>Cichorium intybus</i>	-	-	-	X	X	1, 3
	Swamp thistle	<i>Cirsium muticum</i>	-	-	-	-	X	1
	Bull thistle	<i>Cirsium vulgare</i>	-	-	-	X	X	1, 3
	Canadian horseweed	<i>Conyza canadensis</i>	-	-	-	X	X	1, 3
	Smooth hawksbeard	<i>Crepis capillaris</i>	-	-	-	X	-	3
	Narrowleaf hawksbeard	<i>Crepis tectorum</i>	-	-	-	-	X	1
	Parasol whitetop	<i>Doellingeria umbellata</i>	-	-	-	-	X	1
	American burnweed	<i>Erechtites hieraciifolia</i> var. <i>hieraciifolia</i>	-	-	-	X	X	1, 3
	Eastern daisy fleabane	<i>Erigeron annuus</i>	-	-	-	X	X	1, 3
	Robin's plantain	<i>Erigeron pulchellus</i>	-	-	-	X	X	1, 3
	Prairie fleabane	<i>Erigeron strigosus</i>	-	-	-	X	X	1, 3
	Trumpetweed	<i>Eupatoriadelphus fistulosus</i>	-	-	-	-	X	1
	Spotted Joe Pye weed	<i>Eupatoriadelphus maculatus</i> var. <i>maculatus</i>	-	-	-	-	X	1
	Common boneset	<i>Eupatorium perfoliatum</i>	-	-	-	X	X	1, 3
	Sweetscented Joe Pye weed	<i>Eupatorium purpureum</i>	-	-	-	X	X	1, 3
	Upland boneset	<i>Eupatorium sessilifolium</i>	-	-	-	-	X	1
	White wood aster	<i>Eurybia divaricata</i>	-	-	-	X	X	1, 3
	Bigleaf aster	<i>Eurybia macrophylla</i>	-	-	-	X	X	1, 3
	Flat-top goldentop	<i>Euthamia graminifolia</i>	-	-	-	X	X	1, 3
	Shaggy soldier	<i>Galinsoga quadriradiata</i>	-	-	-	-	X	1
	Slender cudweed	<i>Gnaphalium exilifolium</i>	-	-	-	-	X	1
	Purplehead sneezeweed	<i>Helenium flexuosum</i>	-	-	-	-	X	1
	Woodland sunflower	<i>Helianthus divaricatus</i>	-	-	-	X	X	1, 3
	Orange hawkweed	<i>Hieracium aurantiacum</i>	-	-	-	X	X	1, 3
	Meadow hawkweed	<i>Hieracium caespitosum</i>	-	-	-	X	X	1, 3
	Allegheny hawkweed	<i>Hieracium paniculatum</i>	-	-	-	X	X	1, 3
	Tall hawkweed	<i>Hieracium piloselloides</i>	-	-	-	X	X	1, 3
	Rough hawkweed	<i>Hieracium scabrum</i>	-	-	-	X	X	1, 3
	Rattlesnakeweed	<i>Hieracium venosum</i>	-	-	-	X	X	1, 3

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Asteraceae (continued) Aster Family	Flaxleaf whitetop aster	<i>Ionactis linariifolius</i>	-	-	-	-	X	1
	Virginia dwarf dandelion	<i>Krigia virginica</i>	-	-	-	X	X	1, 3
	Canada lettuce	<i>Lactuca canadensis</i>	-	-	-	X	X	1, 3
	Prickly lettuce	<i>Lactuca serriola</i>	-	-	-	X	X	1, 3
	Fall dandelion	<i>Leontodon autumnalis</i>	-	-	-	-	X	1
	Oxeye daisy	<i>Leucanthemum vulgare</i>	-	-	-	X	X	1, 3
	New England blazing star	<i>Liatris scariosa</i> var. <i>novae-angliae</i>	SC	-	-	X	X	2, 3
	Flaxleaf whitetop aster	<i>Lonactis linariifolius</i>	-	-	-	X	-	3
	Disc mayweed	<i>Matricaria discoidea</i>	-	-	-	-	X	1
	Whorled wood aster	<i>Oclemena acuminata</i>	-	-	-	X	X	1, 3
	Golden ragwort	<i>Packera aurea</i>	-	-	-	X	X	1, 3
	Roundleaf ragwort	<i>Packera obovata</i>	-	-	-	X	X	1, 3
	Balsam groundsel	<i>Packera paupercula</i>	-	-	-	X	X	1, 3
	Tall rattlesnakeroot	<i>Prenanthes altissima</i>	-	-	-	-	X	1
	Rattlesnakeroot	<i>Prenanthes</i> sp.	-	-	-	X	-	3
	Gall of the Earth	<i>Prenanthes trifoliata</i>	-	-	-	X	X	1, 3
	Macoun's cudweed	<i>Pseudognaphalium macounii</i>	WL	-	-	-	X	1
	Rabbit-tobacco	<i>Pseudognaphalium obtusifolium</i>	-	-	-	X	X	1, 3
	Blackeyed Susan	<i>Rudbeckia hirta</i>	-	-	-	-	X	1
	Toothed whitetop aster	<i>Sericocarpus asteroides</i>	-	-	-	X	X	1, 3
	Narrowleaf whitetop aster	<i>Sericocarpus linifolius</i>	-	-	-	X	-	3
	Canada goldenrod	<i>Solidago altissima</i>	-	-	-	X	X	1, 3
	Atlantic goldenrod	<i>Solidago arguta</i> var. <i>arguta</i>	-	-	-	X	X	1, 3
	White goldenrod	<i>Solidago bicolor</i>	-	-	-	X	X	1, 3
	Wreath goldenrod	<i>Solidago caesia</i>	-	-	-	X	X	1, 3
	Canada goldenrod	<i>Solidago canadensis</i> var. <i>canadensis</i>	-	-	-	X	X	1, 3
	Zigzag goldenrod	<i>Solidago flexicaulis</i>	-	-	-	X	X	1, 3
	Giant goldenrod	<i>Solidago gigantea</i>	-	-	-	-	X	1
	Early goldenrod	<i>Solidago juncea</i>	-	-	-	X	X	1, 3
	Gray goldenrod	<i>Solidago nemoralis</i> var. <i>nemoralis</i>	-	-	-	X	X	1, 3
	Aniscented goldenrod	<i>Solidago odora</i>	-	-	-	X	1	3
	Roundleaf goldenrod	<i>Solidago patula</i> var. <i>patula</i>	-	-	-	X	X	1, 3
	Downy goldenrod	<i>Solidago puberula</i>	-	-	-	-	X	1
	Wrinkleleaf goldenrod	<i>Solidago rugosa</i>	-	-	-	X	X	1, 3
	Stout goldenrod	<i>Solidago squarrosa</i>	-	-	-	X	X	1, 3
	Elmleaf goldenrod	<i>Solidago ulmifolia</i> var. <i>ulmifolia</i>	-	-	-	-	X	1
	Common blue wood aster	<i>Symphotrichum cordifolium</i>	-	-	-	X	X	1, 3
	White heath aster	<i>Symphotrichum ericoides</i> var. <i>ericoides</i>	-	-	-	-	X	1
	Smooth blue aster	<i>Symphotrichum laeve</i> var. <i>laeve</i>	-	-	-	X	X	1, 3
	White panicle aster	<i>Symphotrichum lanceolatum</i> var. <i>lanceolatum</i>	-	-	-	X	X	1, 3
	Calico aster	<i>Symphotrichum lateriflorum</i> var. <i>lateriflorum</i>	-	-	-	X	X	1, 3
	New England aster	<i>Symphotrichum novae-angliae</i>	-	-	-	X	X	1, 3
	Late purple aster	<i>Symphotrichum patens</i> var. <i>patens</i>	-	-	-	X	X	1, 3
	Hairy white oldfield aster	<i>Symphotrichum pilosum</i> var. <i>pilosum</i>	-	-	-	X	-	3
	Pringle's aster	<i>Symphotrichum pilosum</i> var. <i>pringlei</i>	-	-	-	-	X	1

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Asteraceae (continued) Aster Family	Purplestem aster	<i>Symphotrichum puniceum</i> var. <i>puniceum</i>	-	-	-	-	X	1
	Smooth white oldfield aster	<i>Symphotrichum racemosum</i>	-	-	-	-	X	1
	Wavyleaf aster	<i>Symphotrichum undulatum</i>	-	-	-	X	X	1, 3
	Common tansy	<i>Tanacetum vulgare</i>	-	-	-	X	-	3
	Common dandelion	<i>Taraxacum officinale</i>	-	-	-	X	X	1, 3
	Yellow salsify	<i>Tragopogon dubius</i>	-	-	-	-	X	1
	Jack-go-to-bed-at-noon	<i>Tragopogon lamottei</i>	-	-	-	X	-	3
	Coltsfoot	<i>Tussilago farfara</i>	-	L	-	X	X	1, 3
	New York ironweed	<i>Vernonia noveboracensis</i>	-	-	-	-	X	1
Balsaminaceae Touch-me-not Family	Jewelweed	<i>Impatiens capensis</i>	-	-	-	X	X	1, 3
	Pale touch-me-not	<i>Impatiens pallida</i>	-	-	-	-	X	1
	Touch-me-not	<i>Impatiens</i> sp.	-	-	-	X	-	3
Berberidaceae Barberry Family	Japanese barberry	<i>Berberis thunbergii</i>	-	L	-	X	X	1, 3
	Common barberry	<i>Berberis vulgaris</i>	-	-	-	X	X	1, 3
	Blue cohosh	<i>Caulophyllum thalictroides</i>	-	-	-	X	X	1, 3
	Mayapple	<i>Podophyllum peltatum</i>	WL	-	-	-	X	1
Betulaceae Birch Family	Gray alder	<i>Alnus incana</i>	-	-	-	-	X	1
	Hazel alder	<i>Alnus serrulata</i>	-	-	-	X	X	1, 3
	Yellow birch	<i>Betula alleghaniensis</i>	-	-	-	-	X	1
	Yellow birch	<i>Betula alleghaniensis</i> var. <i>alleghaniensis</i>	-	-	-	X	-	3
	Sweet birch	<i>Betula lenta</i>	-	-	-	X	X	1, 3
	Paper birch	<i>Betula papyrifera</i>	-	-	-	X	X	1, 3
	European white birch	<i>Betula pendula</i>	-	-	X	-	-	5
	Gray birch	<i>Betula populifolia</i>	-	-	-	X	X	1, 3
	American hophornbeam	<i>Carpinus caroliniana</i>	-	-	-	X	X	1, 3
	American hazelnut	<i>Corylus americana</i>	-	-	-	X	X	1, 3
	Beaked hazelnut	<i>Corylus cornuta</i>	-	-	-	X	-	3
	Beaked hazelnut	<i>Corylus cornuta</i> var. <i>cornuta</i>	-	-	-	-	X	1
	Hophornbeam	<i>Ostrya virginiana</i>	-	-	-	X	X	1, 3
Bignoniaceae Trumpet-creeper Family	Northern catalpa	<i>Catalpa speciosa</i>	-	-	-	-	X	1
Boraginaceae Borage Family	Beggarslice	<i>Hackelia virginia</i>	-	-	-	-	X	1
	Bay forget-me-not	<i>Myosotis laxa</i>	-	-	-	-	X	1
	True forget-me-not	<i>Myosotis scorpiodes</i>	-	L	-	-	X	1
	Strict forget-me-not	<i>Myosotis stricta</i>	-	-	-	-	X	1
	Woodland forget-me-not	<i>Myosotis sylvatica</i>	-	-	-	-	X	1
	Spring forget-me-not	<i>Myosotis verna</i>	-	-	-	X	X	1, 3

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Brassicaceae Mustard Family	Garlic mustard	<i>Alliaria petiolata</i>	-	I	-	-	X	1
	Mouseear cress	<i>Arabidopsis thaliana</i>	-	-	-	-	X	1
	Sicklepod	<i>Arabis canadensis</i>	-	-	-	X	X	1, 3
	Drummond's rock cress	<i>Arabis drummondii</i>	-	-	-	-	X	1
	Tower rockcress	<i>Arabis glabra</i>	-	-	-	X	X	1, 3
	Hairy rockcress	<i>Arabis hirsuta</i>	-	-	-	X	-	3
	Smooth rockcress	<i>Arabis (Boechea) laevigata</i>	SC	-	-	X	-	2
	Green rockcress	<i>Arabis (Boechea) missouriensis</i>	T	-	-	X	X	1, 2, 3
	Garden yellowrocket	<i>Barbarea vulgaris</i>	-	-	-	X	X	1, 3
	Hoary alyssum	<i>Berteroa incana</i>	-	-	-	-	X	1
	Shepherd's purse	<i>Capsella bursa-pastoris</i>	-	-	-	-	X	1
	Bulbous bittercress	<i>Cardamine bulbosa</i>	WL	-	-	-	X	1
	Cutleaf toothwort	<i>Cardamine concatenata</i>	-	-	-	-	X	1
	Crinkleroot	<i>Cardamine diphylla</i>	-	-	-	X	X	1, 3
	Sand bittercress	<i>Cardamine parviflora</i> var. <i>arenicola</i>	-	-	-	-	X	1
	Pennsylvania bittercress	<i>Cardamine pensylvanica</i>	-	-	-	X	X	1, 3
	Spring draba	<i>Draba verna</i>	-	-	-	-	X	1
	Wormseed wallflower	<i>Erysimum cheiranthoides</i>	-	-	-	-	X	1
	Field pepperweed	<i>Lepidium campestre</i>	-	-	-	X	-	3
	Virginia pepperweed	<i>Lepidium virginicum</i>	-	-	-	X	X	1, 3
	Watercress	<i>Nasturtium officinale</i>	-	-	-	X	X	1, 3
Buxaceae Boxwood Family	Japanese pachysandra	<i>Pachysandra terminalis</i>	-	-	-	-	X	1
Cabombaceae Water-shield Family	Watershield	<i>Brasenia schreiberi</i>	-	-	-	-	X	1
Callitrichaceae Water-starwort Family	Twoheaded waterer-starwort	<i>Callitriche heterophylla</i>	-	-	-	-	X	1
Calycanthaceae Strawberry-shrub Family	Eastern sweetshrub	<i>Calycanthus floridus</i>	-	-	X	-	-	5
Campanulaceae Bellflower Family	Marsh bellflower	<i>Campanula aparinoides</i>	-	-	-	-	X	1
	Bluebell bellflower	<i>Campanula rotundifolia</i>	-	-	-	X	X	1, 3
	Cardinalflower	<i>Lobelia cardinalis</i>	-	-	-	-	X	1
	Indian-tobacco	<i>Lobelia inflata</i>	-	-	-	X	X	1, 3
	Palespike lobelia	<i>Lobelia spicata</i> var. <i>spicata</i>	-	-	-	-	X	1
	Clasping Venus' looking-glass	<i>Triodanis perfoliata</i>	-	-	-	X	X	1, 3

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Caprifoliaceae	Northern bush honeysuckle	<i>Diervilla lonicera</i>	-	-	-	X	X	1, 3
Honeysuckle Family	American fly honeysuckle	<i>Lonicera canadensis</i>	-	-	-	-	X	1
	Limber honeysuckle	<i>Lonicera dioica</i>	-	-	-	X	X	1, 3
	Morrow's honeysuckle	<i>Lonicera morrowii</i>	-	I	-	X	X	1, 3
	Tatarian honeysuckle	<i>Lonicera tatarica</i>	-	L	-	X	-	3
	Showy fly honeysuckle	<i>Lonicera x bella</i>	-	I	-	-	X	1
	Mountain fly honeysuckle	<i>Lonicera villosa</i>	-	-	-	-	X	1
	American black elderberry	<i>Sambucus nigra</i> ssp. <i>canadensis</i>	-	-	-	X	X	1, 3
	Red elderberry	<i>Sambucus racemosa</i> var. <i>racemosa</i>	-	-	-	X	X	1, 3
	Mapleleaf viburnum	<i>Viburnum acerifolium</i>	-	-	-	X	X	1, 3
	Nannyberry	<i>Viburnum lentago</i>	-	-	-	-	X	1
	Withe-rod	<i>Viburnum nudum</i> var. <i>cassinoides</i>	-	-	-	X	X	1, 3
	Japanese snowball	<i>Viburnum plicatum</i>	-	-	X	-	-	5
	Southern arrowwood	<i>Viburnum recognitum</i>	-	-	-	X	X	1, 3
Caryophyllaceae	Thymeleaf sandwort	<i>Arenaria serpyllifolia</i>	-	-	-	X	-	3
Pink Family	Big chickweed	<i>Cerastium fontanum</i> ssp. <i>vulgare</i>	-	-	-	X	X	1, 3
	Nodding chickweed	<i>Cerastium nutans</i>	E	-	-	-	X	1, 2
	Fivestamen chickweed	<i>Cerastium semidecandrum</i>	-	-	-	-	X	1
	Deptford pink	<i>Dianthus armeria</i>	-	-	-	X	X	1
	Low baby's breath	<i>Gypsophila muralis</i>	-	-	-	-	X	1
	Ragged robin	<i>Lychnis flos-cuculi</i>	-	-	-	-	X	1
	Bluntleaf sandwort	<i>Moehringia lateriflora</i>	-	-	-	-	X	1
	Giantchickweed	<i>Myosoton aquaticum</i>	-	-	-	-	X	1
	Smooth forked nailwort	<i>Paronychia canadensis</i>	-	-	-	X	X	1, 2
	Birdeye pearlwort	<i>Sagina procumbens</i>	-	-	-	-	X	1
	Bouncingbet	<i>Saponaria officinalis</i>	-	-	-	X	X	1, 3
	German knotgrass	<i>Scleranthus annuus</i>	-	-	-	-	X	1
	Sleepy silene	<i>Silene antirrhina</i>	-	-	-	X	X	1
	Bladder campion	<i>Silene latifolia</i>	-	-	-	-	X	1
	Bladder campion	<i>Silene latifolia</i> ssp. <i>alba</i>	-	-	-	X	-	3
	Corn spurrey	<i>Spergula arvensis</i>	-	-	-	-	X	1
	Red sandspurrey	<i>Spergularia rubra</i>	-	-	-	-	X	1
	Grass-like starwort	<i>Stellaria graminea</i>	-	-	-	X	X	1, 3
	Common chickweed	<i>Stellaria media</i>	-	-	-	-	X	1
Celastraceae	Oriental bittersweet	<i>Celastrus orbiculatus</i>	-	I	-	-	X	1
Bittersweet Family	American bittersweet	<i>Celastrus scandens</i>	T	-	-	X	X	1, 3, 8
	Burningbush	<i>Euonymus alatus</i>	-	I	X	-	X	1, 6
Ceratophyllaceae	Coon's tail	<i>Ceratophyllum demersum</i>	-	-	-	X	-	4
Hornwort Family								
Cercidiphyllaceae	Katsura tree	<i>Cercidiphyllum japonicum</i>	-	-	X	-	-	5
Katsura-tree Family								
Chenopodiaceae	Lambsquarters	<i>Chenopodium album</i>	-	-	-	X	X	1, 3
Goosefoot Family	Mapleleaf goosefoot	<i>Chenopodium simplex</i>	WL	-	-	-	X	1

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Cistaceae Rock-rose Family	Hoary frostweed	<i>Helianthemum bicknellii</i>	-	-	-	X	X	1
	Longbranch frostweed	<i>Helianthemum canadense</i>	-	-	-	X	X	1, 3
	Frostweed	<i>Helianthemum</i> sp.	-	-	-	X	-	3
	Largepod pinweed	<i>Lechea intermedia</i>	-	-	-	X	X	1, 3
	Hairy pinweed	<i>Lechea mucronata</i>	-	-	-	-	X	1
	Narrowleaf pinweed	<i>Lechea tenuifolia</i>	-	-	-	X	X	1, 3
Clusiaceae Mangosteen Family	Northern St. Johnswort	<i>Hypericum boreale</i>	-	-	-	-	X	1
	Lesser Canadian St. Johnswort	<i>Hypericum canadense</i>	-	-	-	X	X	1, 3
	Orangegrass	<i>Hypericum gentianoides</i>	-	-	-	X	X	1, 3
	Dwarf St. Johnswort	<i>Hypericum mutilum</i>	-	-	-	-	X	1
	Common St. Johnswort	<i>Hypericum perforatum</i>	-	-	-	X	X	1, 3
	Spotted St. Johnswort	<i>Hypericum punctatum</i>	-	-	-	X	X	1, 3
	Virginia marsh St. Johnswort	<i>Triadenum virginicum</i>	-	-	-	X	X	1, 3
Convolvulaceae Morning-glory Family	Hedge false bindweed	<i>Calystegia sepium</i>	-	-	-	-	X	1
Cornaceae Dogwood Family	Alternatleaf dogwood	<i>Cornus alternifolia</i>	-	-	-	X	X	1, 3
	Silky dogwood	<i>Cornus amomum</i>	-	-	-	X	X	1, 3
	Bunchberry dogwood	<i>Cornus canadensis</i>	-	-	-	-	X	1
	Flowering dogwood	<i>Cornus florida</i>	-	-	-	X	X	1, 3
	Cornelian cherry	<i>Cornus mas</i>	-	-	X	-	-	5
	Gray dogwood	<i>Cornus racemosa</i>	-	-	-	X	X	1, 3
	Roundleaf dogwood	<i>Cornus rugosa</i>	-	-	-	X	X	1, 3
	Dogwood	<i>Cornus</i> sp.	-	-	-	X	-	3
	Blackgum	<i>Nyssa sylvatica</i>	-	-	-	X	X	1, 3
Crassulaceae Stonecrop Family	Witch's moneybags	<i>Hylotelephium telphium</i> ssp. <i>telephium</i>	-	-	-	-	X	1
	Ditch stonecrop	<i>Penthorum sedoides</i>	-	-	-	-	X	1
	Goldmoss stonecrop	<i>Sedum acre</i>	-	-	-	X	-	3
Cucurbitaceae Cucumber Family	Wild cucumber	<i>Echinocystis lobata</i>	-	-	-	-	X	1
	Oneseed bur cucumber	<i>Sicyos angulatus</i>	-	-	-	-	X	1
Cuscutaceae Dodder Family	Scaldweed	<i>Cuscuta gronovii</i>	-	-	-	X	X	1, 3
Droseraceae Sundew Family	Roundleaf sundew	<i>Drosera rotundifolia</i>	-	-	-	X	X	1, 3
Elaeagnaceae Oleaster Family	Autumn olive	<i>Elaeagnus umbellata</i>	-	I	-	X	X	1, 3

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Ericaceae	Kinnikinnick	<i>Arctostaphylos uva-ursi</i>	-	-	-	X		3
Heath Family	Trailing arbutus	<i>Epigaea repens</i>	-	-	-	X	X	1, 3
	Eastern teaberry	<i>Gaultheria procumbens</i>	-	-	-	X	X	1, 3
	Black huckleberry	<i>Gaylussacia baccata</i>	-	-	-	X	X	1, 3
	Sheep laurel	<i>Kalmia angustifolia</i>	-	-	-	X	X	1, 3
	Mountain laurel	<i>Kalmia latifolia</i>	-	-	-	X	X	1, 3
	Maleberry	<i>Lyonia ligustrina</i>	-	-	-	X	X	1, 3
	Pink azalea	<i>Rhododendron periclymenoides</i>	-	-	-	X	-	3
	Early azalea	<i>Rhododendron prinophyllum</i>	-	-	-	X	X	1, 3
	Rhododendron	<i>Rhododendron</i> sp.	-	-	X	-	-	5
	Lowbush blueberry	<i>Vaccinium angustifolium</i>	-	-	-	X	X	1, 3
	Highbush blueberry	<i>Vaccinium corymbosum</i>	-	-	-	X	X	1, 3
	Blue Ridge blueberry	<i>Vaccinium pallidum</i>	-	-	-	X	X	1, 3
	Deerberry	<i>Vaccinium stamineum</i>	-	-	-	X	X	1, 3
Euphorbiaceae	Slender threeseed mercury	<i>Acalypha gracilens</i>	-	-	-	-	X	1
Spurge Family	Common threeseed mercury	<i>Acalypha rhomboidea</i>	-	-	-	-	X	1
	Virginia threeseed mercury	<i>Acalypha virginica</i>	WL	-	-	-	X	1
	Spotted sandmat	<i>Chamaesyce maculata</i>	-	-	-	X	-	3
	Cypress spurge	<i>Euphorbia cyparissias</i>	-	L	-	-	X	1
Fabaceae	American hogpeanut	<i>Amphicarpaea bracteata</i>	-	-	-	X	X	1, 3
Pea Family	Groundnut	<i>Apios americana</i>	-	-	-	X	X	1, 3
	Horseflyweed	<i>Baptisia tinctoria</i>	-	-	-	X	X	1, 3
	Eastern redbud	<i>Cercis canadensis</i>	-	-	X	-	-	5
	Sensitive partridge pea	<i>Chamaecrista nictans</i>	-	-	-	X	X	1, 3
	Arrowhead rattlebox	<i>Crotalaria sagittalis</i>	-	-	-	-	X	1
	Showy ticktrefoil	<i>Desmodium canadense</i>	-	-	-	-	X	1
	Largebract (large-bracted) ticktrefoil	<i>Desmodium cuspidatum</i>	T	-	-	X	X	1, 2, 3
	Dillenius' ticktrefoil	<i>Desmodium glabellum</i>	-	-	-	-	X	1
	Pointedleaf ticktrefoil	<i>Desmodium glutinosum</i>	-	-	-	X	X	1, 3
	Eastern trailing ticktrefoil	<i>Desmodium humifusum</i>	-	-	-	-	X	1
	Nakedflower ticktrefoil	<i>Desmodium nudiflorum</i>	-	-	-	X	X	1, 3
	Panicledleaf ticktrefoil	<i>Desmodium paniculatum</i>	-	-	-	X	X	1, 3
	Perplexed ticktrefoil	<i>Desmodium perplexum</i>	-	-	-	X	-	3
	Prostrate ticktrefoil	<i>Desmodium rotundifolium</i>	-	-	-	X	X	1, 3
	Honeylocust	<i>Gleditsia triacanthos</i>	-	-	-	X	-	3
	Kentucky coffeetree	<i>Gymnocladus dioicus</i>	-	-	-	X	-	3
	Roundhead lespedeza	<i>Lespedeza capitata</i>	-	-	-	X	X	1, 3
	Shrubby lespedeza	<i>Lespedeza frutescens</i>	WL	-	-	X	X	1, 3
	Hairy lespedeza	<i>Lespedeza hirta</i>	-	-	-	X	X	1, 3
	Trailing lespedeza	<i>Lespedeza procumbens</i>	-	-	-	-	X	1
	Violet lespedeza	<i>Lespedeza violacea</i>	-	-	-	-	X	1
	Slender lespedeza	<i>Lespedeza virginica</i>	-	-	-	X	X	1, 3
	Bird's-foot trefoil	<i>Lotus corniculatus</i>	-	-	-	X	X	1, 3
	Black medick	<i>Medicago lupulina</i>	-	-	-	X	X	1, 3
	Sweetclover	<i>Melilotus officinalis</i>	-	-	-	X	X	1, 3
	Black locust	<i>Robinia pseudoacacia</i>	-	I	-	X	X	1, 3
	Crownvetch	<i>Securigera varia</i>	-	-	-	-	X	1

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Fabaceae (continued) Pea Family	Virginia tephrosia	<i>Tephrosia virginiana</i>	-	-	-	X	-	3
	Rabbitfoot clover	<i>Trifolium arvense</i>	-	-	-	X	X	1, 3
	Golden clover	<i>Trifolium aureum</i>	-	-	-	X	X	1, 3
	Field clover	<i>Trifolium campestre</i>	-	-	-	X	-	3
	Red clover	<i>Trifolium pratense</i>	-	-	-	X	X	1, 3
	White clover	<i>Trifolium repens</i>	-	-	-	X	X	1, 3
	Bird vetch	<i>Vicia cracca</i>	-	-	-	X	X	1, 3
	Vetch	<i>Vicia</i> sp.	-	-	-	X	-	3
	Lentil vetch	<i>Vicia tetrasperma</i>	-	-	-	-	X	1
Fagaceae Beech Family	American chestnut	<i>Castanea dentata</i>	-	-	-	X	X	1, 3
	American beech	<i>Fagus grandifolia</i>	-	-	-	X	X	1, 3
	European beech	<i>Fagus sylvatica</i>	-	-	X	-	-	5
	White oak	<i>Quercus alba</i>	-	-	-	X	X	1, 3
	Swamp white oak	<i>Quercus bicolor</i>	-	-	-	-	X	1
	Scarlet oak	<i>Quercus coccinea</i>	-	-	-	-	X	1
	Bear oak	<i>Quercus ilicifolia</i>	-	-	-	X	X	1
	Pin oak	<i>Quercus palustris</i>	-	-	X	-	X	1, 5
	Dwarf chinkapin oak	<i>Quercus prinoides</i>	-	-	-	X	X	1, 3
	Chestnut oak	<i>Quercus prinus</i>	-	-	-	X	X	1, 3
	Northern red oak	<i>Quercus rubra</i>	-	-	-	-	X	1
	Oak	<i>Quercus</i> sp.	-	-	-	X	-	3
	Black oak	<i>Quercus velutina</i>	-	-	-	-	X	1
Fumariaceae Fumitory Family	Allegheny vine (Climbing fumitory)	<i>Adlumia fungosa</i>	SC	-	-	-	X	1, 2
	Rock harlequin	<i>Corydalis sempervirens</i>	-	-	-	X	X	1, 3
	Squirrel corn	<i>Dicentra canadensis</i>	-	-	-	-	X	1
Gentianaceae Gentian Family	Yellow screwstem	<i>Bartonia virginica</i>	-	-	-	-	X	1
	Bottle gentian	<i>Gentiana clausa</i>	-	-	-	-	X	1
	Greater fringed gentian	<i>Gentianopsis crinita</i>	-	-	-	X	X	1, 3
Geraniaceae Geranium Family	Bicknell's cranesbill	<i>Geranium bicknellii</i>	WL	-	-	X	X	1, 3
	Carolina geranium	<i>Geranium carolinianum</i>	-	-	-	X	-	3
	Spotted geranium	<i>Geranium maculatum</i>	-	-	-	X	X	1, 3
	Robert geranium	<i>Geranium robertianum</i>	-	-	-	X	X	1, 3
	Geranium	<i>Geranium</i> sp.	-	-	-	X	-	3
Grossulariaceae Currant Family	Hairystem gooseberry	<i>Ribes hirtellum</i>	-	-	-	-	X	1
	Cultivated currant	<i>Ribes rubrum</i>	-	-	-	-	X	1
	Currant	<i>Ribes</i> sp.	-	-	-	X	-	3
Haloragaceae Water Milfoil Family	Marsh mermaidweed	<i>Proserpinaca palustris</i>	-	-	-	-	X	1
Hamamelidaceae Witch-hazel Family	American witchhazel	<i>Hamamelis virginiana</i>	-	-	-	X	X	1, 3
Hydrangeaceae Hydrangea Family	Hydrangea	<i>Hydrangea</i> sp.	-	-	X	-	-	5

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Juglandaceae Walnut Family	Mockernut hickory	<i>Carya alba</i>	-	-	-	-	X	1
	Bitternut hickory	<i>Carya cordiformis</i>	-	-	-	-	X	1
	Pignut hickory	<i>Carya glabra</i>	-	-	-	-	X	1
	Red hickory	<i>Carya ovalis</i>	-	-	-	X	-	3
	Shagbark hickory	<i>Carya ovata</i>	-	-	-	X	X	1, 3
	Hickory	<i>Carya</i> sp.	-	-	-	X	-	3
	Butternut	<i>Juglans cinerea</i>	WL	-	-	X	X	1, 3
Lamiaceae Mint Family	Wild basil	<i>Clinopodium vulgare</i>	-	-	-	X	X	1, 3
	Richweed	<i>Collinsonia canadensis</i>	-	-	-	X	X	1, 3
	Ground ivy	<i>Glechoma hederacea</i>	-	-	-	X	X	1, 3
	American false pennyroyal	<i>Hedeoma pulegioides</i>	-	-	-	X	X	1, 3
	American water horehound	<i>Lycopus americanus</i>	-	-	-	X	X	1, 3
	Northern bugleweed	<i>Lycopus uniflorus</i>	-	-	-	-	X	1
	Virginia water horehound	<i>Lycopus virginicus</i>	-	-	-	X	X	1, 3
	Wild mint	<i>Mentha arvensis</i>	-	-	-	-	X	1
	Peppermint	<i>Mentha x piperita</i>	-	-	-	-	X	1
	Catnip	<i>Nepeta cataria</i>	-	-	-	X	-	3
	Common selfheal	<i>Prunella vulgaris</i>	-	-	-	X	-	3
	Lance selfheal	<i>Prunella vulgaris</i> ssp. <i>lanceolata</i>	-	-	-	-	X	1
	Hoary mountainmint	<i>Pycnanthemum incanum</i>	-	-	-	X	X	1, 3
	Clustered mountainmint	<i>Pycnanthemum muticum</i>	-	-	-	X	X	1, 3
	Narrowleaf mountainmint	<i>Pycnanthemum tenuifolium</i>	-	-	-	-	X	1
	Virgnina mountainmint	<i>Pycnanthemum virginianum</i>	-	-	-	X	X	1, 3
	Blue skullcap	<i>Scutellaria lateriflora</i>	-	-	-	X	X	1, 3
	Forked bluecurls	<i>Trichostema dichotomum</i>	-	-	-	X	X	1, 3
Lauraceae Laurel Family	Northern spicebush	<i>Lindera benzoin</i>	-	-	-	X	X	1, 3
	Sassafras	<i>Sassafras albidum</i>	-	-	-	X	X	1, 3
Lentibulariaceae Bladderwort Family	Lesser bladderwort	<i>Utricularia minor</i>	WL	-	-	-	X	1
Linaceae Flax Family	Woodland flax	<i>Linum virginianum</i>	-	-	-	X	X	1, 3
Lythraceae Loosestrife Family	Purple loosestrife	<i>Lythrum salicaria</i>	-	I	-	X	X	1, 3
Malvaceae Mallow Family	Musk mallow	<i>Malva moschata</i>	-	-	-	-	X	1
Molluginaceae Carpet-weed Family	Green carpetweed	<i>Mollugo verticillata</i>	-	-	-	-	X	1
Monotropaceae Indian Pipe Family	Pinesap	<i>Monotropa hypopithys</i>	-	-	-	X	X	1, 3
	Indianpipe	<i>Monotropa uniflora</i>	-	-	-	X	X	1, 3
Moraceae Mulberry Family	Red mulberry	<i>Morus rubra</i>	E	-	-	-	X	1, 2
Myricaceae Bayberry Family	Sweet fern	<i>Comptonia peregrina</i>	-	-	-	X	X	1, 3
	Sweetgale	<i>Myrica gale</i>	-	-	-	-	X	1

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Nymphaeaceae Water-lily Family	Variegated yellow pond-lily	<i>Nuphar lutea</i> ssp. <i>variegata</i>	-	-	-	-	X	1
	American white waterlily	<i>Nymphaea odorata</i>	-	-	-	-	X	1
Oleaceae Olive Family	Weeping forsythia	<i>Forsythia suspensa</i>	-	-	-	-	X	1
	White ash	<i>Fraxinus americana</i>	-	-	-	X	X	1, 3
	Black ash	<i>Fraxinus nigra</i>	-	-	-	-	X	1
	Green ash	<i>Fraxinus pennsylvanica</i>	-	-	-	-	X	1
	Ash	<i>Fraxinus</i> sp.	-	-	-	X	-	3
	Border privet	<i>Ligustrum obtusifolium</i>	-	L	-	-	X	1
	European privet	<i>Ligustrum vulgare</i>	-	-	-	X	-	3
	Common lilac	<i>Syringa vulgaris</i>	-	-	-	X	-	3
Onagraceae Evening Primrose Family	Fireweed	<i>Chamerion angustifolium</i> ssp. <i>angustifolium</i>	-	-	-	-	X	1
	Small enchanter's nightshade	<i>Circaea alpina</i>	-	-	-	-	X	1
	Broadleaf enchanter's nightshade	<i>Circaea lutea</i> ssp. <i>canadensis</i>	-	-	-	X	X	1, 3
	Fringed willowherb	<i>Epilobium ciliatum</i>	-	-	-	-	X	1
	Purpleleaf willowherb	<i>Epilobium coloratum</i>	-	-	-	-	X	1
	Willowherb	<i>Epilobium</i> sp.	-	-	-	X	-	3
	Seedbox	<i>Ludwigia alternifolia</i>	-	-	-	-	X	1
	Marsh seedbox	<i>Ludwigia palustris</i>	-	-	-	-	X	1
	Common evening primrose	<i>Oenothera biennis</i>	-	-	-	X	X	1, 3
	Little evening primrose	<i>Oenothera perennis</i>	-	-	-	-	X	1
Orobanchaceae Broom-rape Family	American cancer-root	<i>Conopholis americana</i>	-	-	-	X	X	1, 3
	Beechdrops	<i>Epifagus virginiana</i>	-	-	-	X	X	1, 3
	Oneflowered broomrape	<i>Orobanche uniflora</i>	-	-	-	-	X	1
Oxalidaceae Wood-sorrel Family	Slender yellow woodsorrel	<i>Oxalis dillenii</i>	-	-	-	-	X	1
	Woodsorrel	<i>Oxalis</i> spp.	-	-	-	X	-	3
	Common yellow oxalis	<i>Oxalis stricta</i>	-	-	-	X	X	1, 3
	Violet woodsorrel	<i>Oxalis violacea</i>	T	-	-	X	X	1, 2
Papaveraceae Poppy Family	Bloodroot	<i>Sanguinaria canadensis</i>	-	-	-	X	X	1, 3
Phytolaccaceae Pokeweed Family	American pokeweed	<i>Phytolacca americana</i>	-	-	-	X	X	1, 3
Plantaginaceae Plantain Family	Largebracted plantain	<i>Plantago aristata</i>	-	-	-	-	X	1
	Narrowleaf plantain	<i>Plantago lanceolata</i>	-	-	-	-	X	1
	Common plantain	<i>Plantago major</i>	-	-	-	X	X	1, 3
	Blackseed plantain	<i>Plantago rugelii</i>	-	-	-	-	X	1
Platanaceae Plane-tree Family	London planetree	<i>Platanus hybrida</i>	-	-	X	-	-	5
	American sycamore	<i>Platanus occidentalis</i>	-	-	-	X	X	1, 3
Polygalaceae Milkwort Family	Gaywings	<i>Polygala paucifolia</i>	-	-	-	X	X	1, 3
	Racemed milkwort	<i>Polygala polygama</i>	-	-	-	X	X	1, 3
	Purple milkwort	<i>Polygala sanguinea</i>	-	-	-	X	X	1, 3

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Polygonaceae	Halberdleaf tearthumb	<i>Polygonum arifolium</i>	-	-	-	-	X	1
Buckwheat Family	Prostrate knotweed	<i>Polygonum aviculare</i>	-	-	-	X	X	1
	Carey's smartweed	<i>Polygonum careyi</i>	-	-	-	-	X	1
	Oriental lady's thumb	<i>Polygonum cespitosum</i> var. <i>longisetum</i>	-	-	-	X	X	1, 3
	Fringed black bindweed	<i>Polygonum cilinode</i>	-	-	-	-	X	1
	Black bindweed	<i>Polygonum convolvulus</i> var. <i>convolvulus</i>	-	-	-	-	X	1
	Japanese knotweed	<i>Polygonum cuspidatum</i>	-	I	-	-	X	1
	Marshpepper knotweed	<i>Polygonum hydropiper</i>	-	-	-	-	X	1
	Swamp smartweed	<i>Polygonum hydropiperoides</i>	-	-	-	X	X	1, 3
	Spotted ladythumb	<i>Polygonum persicaria</i>	-	-	-	-	X	1
	Pennsylvania smartweed	<i>Polygonum pennsylvanicum</i>	-	-	-	X	X	1, 3
	Dotted smartweed	<i>Polygonum punctatum</i> var. <i>punctatum</i>	-	-	-	-	X	1
	Arrowleaf tearthumb	<i>Polygonum sagittatum</i>	-	-	-	-	X	1
	Climbing false buckwheat	<i>Polygonum scandens</i>	-	-	-	X	-	3
	Climbing false buckwheat	<i>Polygonum scandens</i> var. <i>scandens</i>	-	-	-	-	X	1
	Knotweed	<i>Polygonum</i> sp.	-	-	-	X	-	3
	Pleatleaf (Rock) knotweed	<i>Polygonum tenue</i>	WL	-	-	-	X	1
	Jumpseed	<i>Polygonum virginianum</i>	-	-	-	X	X	1, 3
	Common sheep sorrel	<i>Rumex acetosella</i>	-	-	-	X	X	1, 3
	Curly dock	<i>Rumex crispus</i>	-	-	-	X	X	1, 3
	Bitter dock	<i>Rumex obtusifolius</i>	-	-	-	-	X	1
	Patience dock	<i>Rumex patientia</i>	-	-	-	-	X	1
Portulacaceae	Carolina springbeauty	<i>Claytonia caroliniana</i>	-	-	-	-	X	1
Purslane Family								
Primulaceae	Fringed loosestrife	<i>Lysimachia ciliata</i>	-	-	-	X	X	1, 3
Primrose Family	Creeping Jenny	<i>Lysimachia nummularia</i>	-	I	-	-	X	1
	Whorled yellow loosestrife	<i>Lysimachia quadrifolia</i>	-	-	-	X	X	1, 3
	Earth loosestrife	<i>Lysimachia terrestris</i>	-	-	-	-	X	1
	Starflower	<i>Trientalis borealis</i>	-	-	-	X	X	1, 3
Pyrolaceae	Striped prince's pine	<i>Chimaphila maculata</i>	-	-	-	X	X	1, 3
Shinleaf Family	Pipsissewa	<i>Chimaphila umbellata</i>	-	-	-	X	X	1, 3
	Sidebells wintergreen	<i>Orthilia secunda</i>	-	-	-	-	X	1
	American wintergreen	<i>Pyrola americana</i>	-	-	-	-	X	1
	Greenflowered wintergreen	<i>Pyrola chlorantha</i>	-	-	-	-	X	1
	Waxflower shinleaf	<i>Pyrola elliptica</i>	-	-	-	X	X	1, 3
	Wintergreen	<i>Pyrola</i> sp.	-	-	-	X	-	3
Ranunculaceae	White baneberry	<i>Actaea pachypoda</i>	-	-	-	X	X	1, 3
Buttercup Family	Red baneberry	<i>Actaea rubra</i>	-	-	-	X	X	1, 3
	Canadian anemone	<i>Anemone canadensis</i>	-	-	-	X	-	3
	Wood anemone	<i>Anemone quinquefolia</i>	-	-	-	X	-	3
	Nightcaps	<i>Anemone quinquefolia</i> var. <i>quinquefolia</i>	-	-	-	-	X	1
	Tall thimbleweed	<i>Anemone virginiana</i>	-	-	-	X	X	1, 3
	Red columbine	<i>Aquilegia canadensis</i>	-	-	-	X	X	1, 3
	Yellow marsh marigold	<i>Caltha palustris</i>	-	-	-	X	X	1, 3

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Ranunculaceae (continued)	Western blue virginsbower (Purple clematis)	<i>Clematis occidentalis</i> var. <i>occidentalis</i>	SC	-	-	X	X	1, 2, 3
Buttercup Family	Leather flower	<i>Clematis</i> sp.	-	-	-	X	-	3
	Devil's darning needles	<i>Clematis virginiana</i>	-	-	-	-	X	1
	Threelobe goldthread	<i>Coptis trifolia</i>	-	-	-	X	X	1, 3
	Roundlobe hepatica	<i>Hepatica nobilis</i> var. <i>obtus</i>	-	-	-	X	X	1, 3
	Littleleaf buttercup	<i>Ranunculus abortivus</i>	-	-	-	X	X	1, 3
	Tall buttercup	<i>Ranunculus acris</i>	-	-	-	X	X	1, 3
	Allegheny Mountain buttercup	<i>Ranunculus allegheniensis</i>	WL	-	-	-	X	1
	St. Anthony's turnip	<i>Ranunculus bulbosus</i>	-	-	-	X	-	3
	Early buttercup	<i>Ranunculus fascicularis</i>	WL	-	-	X	X	1, 3
	Yellow water buttercup	<i>Ranunculus flabellaris</i>	-	-	-	X	X	1, 3
	Bristly buttercup	<i>Ranunculus hispidus</i> var. <i>nitidus</i>	-	-	-	X	-	3
	Blisterwort	<i>Ranunculus recurvatus</i>	-	-	-	X	-	3
	Blisterwort	<i>Ranunculus recurvatus</i> var. <i>recurvatus</i>	-	-	-	-	X	1
	Creeping buttercup	<i>Ranunculus repens</i>	-	L	-	-	X	1
	Early meadow-rue	<i>Thalictrum dioicum</i>	-	-	-	X	X	1, 3
	King of the meadow	<i>Thalictrum pubescens</i>	-	-	-	-	X	1
	Waxyleaf meadow-rue	<i>Thalictrum revolutum</i>	-	-	-	X	X	1, 3
	Rue anemone	<i>Thalictrum thalictroides</i>	-	-	-	X	X	1, 3
Rhamnaceae	New Jersey tea	<i>Ceanothus americanus</i>	-	-	-	X	X	1, 3
Buckthorn Family	Glossy buckthorn	<i>Frangula alnus</i>	-	I	-	X	X	1, 3
	Common buckthorn	<i>Rhamnus cathartica</i>	-	I	-	X	X	1, 3
Rosaceae	Tall hairy agrimony	<i>Agrimonia gryposepala</i>	-	-	-	X	X	1, 3
Rose Family	Soft (hairy) agrimony	<i>Agrimonia pubescens</i>	T	-	-	-	X	1, 2
	Common serviceberry	<i>Amelanchier arborea</i>	-	-	-	-	X	1
	Canadian serviceberry	<i>Amelanchier canadensis</i>	-	-	-	-	X	1
	Allegheny serviceberry	<i>Amelanchier laevis</i>	-	-	-	X	X	1, 3
	Running serviceberry	<i>Amelanchier stolonifera</i>	WL	-	-	X	X	1, 3
	Spreading cotoneaster	<i>Cotoneaster divaricatus</i>	-	-	-	-	X	1
	Red haw	<i>Crataegus chrysocarpa</i> var. <i>chrysocarpa</i>	-	-	-	-	X	1
	Copenhagen hawthorn	<i>Crataegus intricata</i>	-	-	-	-	X	1
	Bigfruit hawthorn	<i>Crataegus macrosperma</i>	-	-	-	-	X	1
	Waxyfruit hawthorn	<i>Crataegus pruinosa</i>	-	-	-	-	X	1
	Hawthorn	<i>Crataegus</i> sp.	-	-	-	X	-	3
	Strawberry	<i>Fragaria</i> sp.	-	-	-	X	-	3
	Woodland strawberry	<i>Fragaria vesca</i>	-	-	-	X	-	3
	Woodland strawberry	<i>Fragaria vesca</i> ssp. <i>americana</i>	-	-	-	-	X	1
	Virginia strawberry	<i>Fragaria virginiana</i>	-	-	-	X	X	1, 3
	Yellow avens	<i>Geum aleppicum</i>	-	-	-	-	X	1
	White avens	<i>Geum canadense</i>	-	-	-	X	X	1, 3
	Rough avens	<i>Geum laciniatum</i>	-	-	-	-	X	1
	Purple avens	<i>Geum rivale</i>	-	-	-	-	X	1
	Avens	<i>Geum</i> sp.	-	-	-	X	-	3
	Siberian crab apple	<i>Malus baccata</i>	-	-	X	-	-	5
	Sargent's crab apple	<i>Malus sargentii</i>	-	-	X	-	-	5
	Crab apple	<i>Malus</i> sp.	-	-	X	-	-	5
	European crab apple	<i>Malus sylvestris</i>	-	-	-	-	X	1

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Rosaceae (continued)	Purple chokeberry	<i>Photinia floribunda</i>	-	-	-	-	X	1
Rose Family	Black chokeberry	<i>Photinia melanocarpa</i>	-	-	-	X	X	1, 3
	Red chokeberry	<i>Photinia pyrifolia</i>	-	-	-	-	X	1
	Silver cinquefoil	<i>Potentilla argentea</i>	-	-	-	X	X	1, 3
	Tall cinquefoil	<i>Potentilla arguta</i>	-	-	-	X	X	1, 3
	Dwarf cinquefoil	<i>Potentilla canadensis</i>	-	-	-	-	X	1
	Downy cinquefoil	<i>Potentilla intermedia</i>	-	-	-	-	X	1
	Norwegian cinquefoil	<i>Potentilla norvegica</i>	-	-	-	X	X	1, 3
	Sulphur cinquefoil	<i>Potentilla recta</i>	-	-	-	X	X	1, 3
	Common cinquefoil	<i>Potentilla simplex</i>	-	-	-	X	X	1, 3
	Pin cherry	<i>Prunus pensylvanica</i>	-	-	-	X	X	1, 3
	Sandcherry	<i>Prunus pumila</i>	-	-	-	-	X	1
	Blackcherry	<i>Prunus serotina</i>	-	-	-	X	X	1, 3
	Sesquehanna sandcherry	<i>Prunus susquehannae</i>	-	-	-	X	-	3
	Chokecherry	<i>Prunus virginiana</i>	-	-	-	X	X	1, 3
	Common pear	<i>Pyrus communis</i>	-	-	-	X	-	3
	European crab apple	<i>Pyrus malus</i>	-	-	-	X	-	3
	Smooth rose	<i>Rosa blanda</i>	WL	-	-	-	X	1
	Carolina rose	<i>Rosa carolina</i>	-	-	-	-	X	1
	Multiflora rose	<i>Rosa multiflora</i>	-	I	-	X	X	1, 3
	Swamp rose	<i>Rosa palustris</i>	-	-	-	X	X	1, 3
	Rose	<i>Rosa</i> sp.	-	-	-	X	-	3
	Virginia rose	<i>Rosa virginiana</i>	-	-	-	-	X	1
	Allegheny blackberry	<i>Rubus allegheniensis</i>	-	-	-	X	X	1, 3
	Northern dewberry	<i>Rubus flagellaris</i>	-	-	-	X	X	1, 3
	Bristly dewberry	<i>Rubus hispidus</i>	-	-	-	X	X	1, 3
	Grayleaf red raspberry	<i>Rubus idaeus</i> ssp. <i>strigosus</i>	-	-	-	X	X	1, 3
	Black raspberry	<i>Rubus occidentalis</i>	-	-	-	X	X	1, 3
	Purpleflowering raspberry	<i>Rubus odoratus</i>	-	-	-	X	X	1, 3
	Pennsylvania blackberry	<i>Rubus pensilvanicus</i>	-	-	-	-	X	1
	Dwarf red blackberry	<i>Rubus pubescens</i>	-	-	-	-	X	1
	Shrubby fivefingers	<i>Sibbaldiopsis tridentata</i>	-	-	-	-	X	1
	American mountain ash	<i>Sorbus americana</i>	-	-	-	X	X	1, 3
	White meadowsweet	<i>Spiraea alba</i> var. <i>latifolia</i>	-	-	-	X	X	1, 3
	Steeplebush	<i>Spiraea tomentosa</i>	-	-	-	X	X	1, 3
Rubiaceae	Common buttonbush	<i>Cephalanthus occidentalis</i>	-	-	-	X	X	1, 3
Madder Family	Stickywilly	<i>Galium aparine</i>	-	-	-	-	X	1
	Rough bedstraw	<i>Galium asprellum</i>	-	-	-	-	X	1
	Licorice bedstraw	<i>Galium circaeazans</i> var. <i>circaeazans</i>	-	-	-	X	X	1, 3
	Lanceleaf wild licorice	<i>Galium lanceolatum</i>	-	-	-	X	X	1, 3
	False baby's breath	<i>Galium mollugo</i>	-	-	-	X	X	1, 3
	Bluntleaf bedstraw	<i>Galium obtusum</i>	-	-	-	-	X	1
	Hairy bedstraw	<i>Galium pilosum</i>	-	-	-	X	X	1, 3
	Threepetal bedstraw	<i>Galium trifidum</i> ssp. <i>trifidum</i>	-	-	-	-	X	1
	Fragrant bedstraw	<i>Galium triflorum</i>	-	-	-	X	X	1, 3
	Azure bluet	<i>Houstonia caerulea</i>	-	-	-	X	X	1, 3
	Partridgeberry	<i>Mitchella repens</i>	-	-	-	X	X	1, 3
Rutaceae	Amur corktree	<i>Phellodendron amurense</i>	-	L	-	X	X	1
Rue Family	Corktree	<i>Phellodendron</i> sp.	-	-	-	X	-	3

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Salicaceae	Eastern cottonwood	<i>Populus deltoides</i>	-	-	-	-	X	1
Willow Family	Bigtooth aspen	<i>Populus grandidentata</i>	-	-	-	X	X	1, 3
	Swamp cottonwood	<i>Populus heterophylla</i>	E	-	-	-	X	1, 2
	Cottonwood	<i>Populus</i> sp.	-	-	-	X	-	3
	Quaking aspen	<i>Populus tremuloides</i>	-	-	-	X	X	1, 3
	Large gray willow	<i>Salix atrocinerea</i>	-	-	-	-	X	1
	Bebb willow	<i>Salix bebbiana</i>	-	-	-	-	X	1
	Pussy willow	<i>Salix discolor</i>	-	-	-	X	X	1, 3
	Missouri River willow	<i>Salix eriocephala</i>	-	-	-	-	X	1
	Prairie willow	<i>Salix humilis</i>	-	-	-	X	X	1, 3
	Shining willow	<i>Salix lucida</i>	-	-	-	-	X	1
	Black willow	<i>Salix nigra</i>	-	-	-	-	X	1
	Laurel willow	<i>Salix pentandra</i>	-	-	-	X	-	3
	Silky willow	<i>Salix sericea</i>	-	-	-	-	X	1
	Willow	<i>Salix</i> sp.	-	-	-	X	-	3
Santalaceae	Bastard toadflax	<i>Comandra umbellata</i>	-	-	-	X	X	1, 3
Sandalwood Family								
Saxifragaceae	American golden saxifrage	<i>Chrysosplenium americanum</i>	-	-	-	X	X	1, 3
Saxifrage Family	Twoleaf miterwort	<i>Mitella diphylla</i>	-	-	-	X	X	1, 3
	Naked mitrewort	<i>Mitella nuda</i>	-	-	-	-	X	1
	Eastern swamp saxifrage	<i>Saxifraga pensylvanica</i>	-	-	-	-	X	1
	Early saxifrage	<i>Saxifraga virginensis</i>	-	-	-	X	X	1, 3
	Heartleaf foamflower	<i>Tiarella cordifolia</i>	-	-	-	-	X	1
Scrophulariaceae	Smallflower false foxglove	<i>Agalinis paupercula</i> var. <i>borealis</i>	-	-	-	-	X	1
Figwort Family	Slenderleaf fox foxglove	<i>Agalinis tenuifolia</i>	-	-	-	X	X	1, 3
	Smooth yellow false foxglove	<i>Aureolaria flava</i> var. <i>flava</i>	-	-	-	X	X	1, 3
	Fernleaf yellow false foxglove	<i>Aureolaria pedicularia</i>	-	-	-	X	X	1, 3
	Downy yellow false foxglove	<i>Aureolaria virginica</i>	-	-	-	X	X	1, 3
	Dwarf snapdragon	<i>Chaenorhinum minus</i>	-	-	-	-	X	1
	White turtlehead	<i>Chelone glabra</i>	-	-	-	X	X	1, 3
	Clammy hedgehyssop	<i>Gratiola neglecta</i>	-	-	-	-	X	1
	Canada toadflax	<i>Nuttallanthus canadensis</i>	-	-	-	X	X	1, 3
	Butter and eggs	<i>Linaria vulgaris</i>	-	-	-	X	X	1, 3
	Yellowseed false pimpernel	<i>Lindernia dubia</i>	-	-	-	-	X	1
	Narrowleaf cowwheat	<i>Melampyrum lineare</i> var. <i>lineare</i>	-	-	-	X	X	1, 3
	Allegheny monkeyflower	<i>Mimulus ringens</i>	-	-	-	-	X	1
	Canadian lousewort	<i>Pedicularis canadensis</i>	-	-	-	X	X	1, 3
	Common mullein	<i>Verbascum thapsus</i>	-	-	-	X	X	1, 3
	Common gypsyweed	<i>Veronica officinalis</i>	-	-	-	X	X	1, 3
	Hairy purslane speedwell	<i>Veronica peregrine</i> ssp. <i>xalapensis</i>	-	-	-	-	X	1
	Skullcap speedwell	<i>Veronica scutellata</i>	-	-	-	-	X	1
	Thymeleaf speedwell	<i>Veronica serpyllifolia</i> ssp. <i>serpyllifolia</i>	-	-	-	-	X	1
Solanaceae	American black nightshade	<i>Solanum americanum</i>	-	-	-	X	-	3 ^d
Potato Family	Carolina horsenettle	<i>Solanum carolinense</i>	-	-	-	-	X	1
	Climbing nightshade	<i>Solanum dulcamara</i>	-	-	-	X	X	1, 3
Staphyleaceae	American bladdernut	<i>Staphylea trifolia</i>	-	-	-	X	X	1, 3
Bladdernut Family								

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Thymelaeaceae Mezereum Family	Eastern leatherwood	<i>Dirca palustris</i>	-	-	-	X	X	1, 3
Tiliaceae Linden Family	American basswood	<i>Tilia americana</i>	-	-	-	X	X	1, 3
Ulmaceae Elm Family	Common hackberry	<i>Celtis occidentalis</i>	-	-	-	-	X	1
	American elm	<i>Ulmus americana</i>	-	-	-	X	X	1
	Slippery elm	<i>Ulmus rubra</i>	-	-	-	X	X	1
	Japanese zelkova	<i>Zelkova serrata</i>	-	-	X	-	-	5
Urticaceae Nettle Family	Smallspike false nettle	<i>Boehmeria cylindrica</i>	-	-	-	X	X	1, 3
	Canadian woodnettle	<i>Laportea canadensis</i>	-	-	-	-	X	1
	Lesser clearweed	<i>Pilea fontana</i>	-	-	-	-	X	1
	Canadian clearweed	<i>Pilea pumila</i>	-	-	-	X	X	1, 3
	California nettle	<i>Urtica dioica</i> ssp. <i>gracilis</i>	-	-	-	X	X	1, 3
Verbenaceae Verbena Family	American lopseed	<i>Phryma leptostachya</i>	-	-	-	-	X	1
	Swamp verbena	<i>Verbena hastata</i>	-	-	-	X	X	1, 3
	Narrowleaf (Narrow-leaved) vervain	<i>Verbena simplex</i>	E	-	-	X	X	1, 2, 3
	White vervain	<i>Verbena urticifolia</i>	-	-	-	X	X	1, 3
Violaceae Violet Family	Sweet white violet	<i>Viola blanda</i>	-	-	-	X	X	1, 3
	Canadian white violet	<i>Viola canadensis</i>	-	-	-	-	X	1
	Marsh blue violet	<i>Viola cucullata</i>	-	-	-	X	X	1, 3
	Alpine violet	<i>Viola labradorica</i>	-	-	-	X	X	1, 3
	Bog white violet	<i>Viola lanceolata</i>	-	-	-	-	X	1
	Small white violet	<i>Viola macloskeyi</i>	-	-	-	-	X	1
	Birdfoot violet	<i>Viola pedata</i>	-	-	-	X	X	1, 3
	Downy yellow violet	<i>Viola pubescens</i> var. <i>pubescens</i>	-	-	-	X	X	1, 3
	Downy yellow violet	<i>Viola pubescens</i> var. <i>scabriuscula</i>	-	-	-	-	X	1
	Roundleaf yellow violet	<i>Viola rotundifolia</i>	-	-	-	X	X	1, 3
	Arrowleaf violet	<i>Viola sagittata</i>	-	-	-	X	X	1, 3
	Northern woodland violet	<i>Viola septentrionalis</i>	-	-	-	X	-	3
	Common blue violet	<i>Viola sororia</i>	-	-	-	X	X	1, 3
	Three-lobed violet	<i>Viola triloba</i>	-	-	-	X	-	3
	Violet	<i>Viola x bernardii</i>	-	-	-	-	X	1
	Early blue violet	<i>Viola x palmata</i>	-	-	-	-	X	1
Vitaceae Grape Family	Virginia creeper	<i>Parthenocissus quinquefolia</i>	-	-	-	-	X	1
	Creeper	<i>Parthenocissus</i> sp.	-	-	-	X	-	3
	Summer grape	<i>Vitis aestivalis</i> var. <i>bicolor</i>	-	-	-	-	X	1
	Fox grape	<i>Vitis labrusca</i>	-	-	-	-	X	1
	Riverbank grape	<i>Vitis riparia</i>	-	-	-	-	X	1
	Grape	<i>Vitis</i> sp.	-	-	-	X	-	3
FLOWERING PLANTS – MONOCOTS								
Agavaceae Century-plant Family	Adam's Needle	<i>Yucca filamentosa</i>	-	-	-	-	X	1
Alismataceae Water-plantain Family	American water plantain	<i>Alisma subcordatum</i>	-	-	-	-	X	1
	Broadleaf arrowhead	<i>Sagittaria latifolia</i>	-	-	-	-	X	1

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Aracaceae	Jack in the pulpit	<i>Arisaema triphyllum</i>	-	-	-	X	X	1, 3
Arum Family	Skunk cabbage	<i>Symplocarpus foetidus</i>	-	-	-	X	X	1, 3
Commelinaceae	Asiatic dayflower	<i>Commelina communis</i>	-	-	-	X	X	1, 3
Spiderwort Family								
Cyperaceae	Densetuft hairsedge	<i>Bulbostylis capillaris</i>	-	-	-	X	X	1, 3
Sedge Family	Whitetinge sedge	<i>Carex albicans</i>	-	-	-	-	X	1
	Whitetinge sedge	<i>Carex albicans</i> var. <i>albicans</i>	-	-	-	X	-	3
	Eastern narrowleaf sedge	<i>Carex amphibola</i>	-	-	-	-	X	1
	Appalachian sedge	<i>Carex appalachica</i>	-	-	-	-	X	1
	Drooping woodland sedge	<i>Carex arctata</i>	-	-	-	-	X	1
	Hay sedge	<i>Carex argyrantha</i>	-	-	-	-	X	1
	Prickly bog sedge	<i>Carex atlantica</i> ssp. <i>atlantica</i>	-	-	-	-	X	1
	Back's sedge	<i>Carex backii</i>	E	-	-	-	X	1, 2
	Bicknell's sedge	<i>Carex bicknellii</i>	WL	-	-	-	X	1
	Shortbeak sedge	<i>Carex brevior</i>	-	-	-	-	X	1
	Brome-like sedge	<i>Carex bromoides</i>	-	-	-	X	X	1, 3
	Oval-leaf sedge	<i>Carex cephalophora</i>	-	-	-	X	X	1, 3
	Fibrousroot sedge	<i>Carex communis</i>	-	-	-	X	-	3
	Fibrousroot sedge	<i>Carex communis</i> var. <i>communis</i>	-	-	-	-	X	1
	Longhair sedge	<i>Carex comosa</i>	-	-	-	-	X	1
	Crawford's sedge	<i>Carex crawfordii</i>	-	-	-	-	X	1
	Fringed sedge	<i>Carex crinata</i> var. <i>crinita</i>	-	-	-	-	X	1
	White edge sedge	<i>Carex debilis</i> var. <i>rudgei</i>	-	-	-	-	X	1
	Dewey sedge	<i>Carex deweyana</i> var. <i>deweyana</i>	-	-	-	-	X	1
	Slender woodland sedge	<i>Carex digitalis</i> var. <i>digitalis</i>	-	-	-	-	X	1
	Fescue sedge	<i>Carex festucacea</i>	-	-	-	-	X	1
	Northern long sedge	<i>Carex folliculata</i>	-	-	-	-	X	1
	Blue (glaucouscent) sedge	<i>Carex glaucoidea</i>	E	-	-	X	X	1, 2, 3
	Slender sedge	<i>Carex gracillima</i>	-	-	-	X	X	1, 3
	Nodding sedge	<i>Carex gynandra</i>	-	-	-	-	X	1
	Fuzzy wuzzy sedge	<i>Carex hirsutella</i>	-	-	-	X	X	1, 3
	Greater bladder sedge	<i>Carex intumescens</i>	-	-	-	-	X	1
	Spreading sedge	<i>Carex laxiculmis</i>	-	-	-	X	X	1, 3
	Broad looseflower sedge	<i>Carex laxiflora</i>	-	-	-	X	X	1, 3
	Bristlystalked sedge	<i>Carex leptalea</i>	-	-	-	-	X	1
	Blue Ridge sedge	<i>Carex lucorum</i>	-	-	-	-	X	1
	False hop sedge	<i>Carex lupuliformis</i>	E	-	-	-	X	1, 2
	Hop sedge	<i>Carex lupulina</i>	-	-	-	-	X	1
	Shallow sedge	<i>Carex lurida</i>	-	-	-	-	X	1
	Fernald's sedge	<i>Carex merritt-fernaldii</i>	-	-	-	-	X	1
	Troublesome sedge	<i>Carex molesta</i>	WL	-	-	-	X	1
	Muhlenberg's sedge	<i>Carex muehlenbergii</i> var. <i>muehlenbergii</i>	-	-	-	-	X	1
	Greater straw sedge	<i>Carex normalis</i>	-	-	-	-	X	1
	Necklace spike sedge	<i>Carex ormostachya</i>	-	-	-	-	X	1
	Pale sedge	<i>Carex pallescens</i>	-	-	-	-	X	1
	Longstalk sedge	<i>Carex pedunculata</i>	-	-	-	-	X	1
	Pennsylvania sedge	<i>Carex pennsylvanica</i>	-	-	-	X	X	1, 3
	Broadleaf sedge	<i>Carex platyphylla</i>	-	-	-	X	X	1, 3
	Drooping sedge	<i>Carex prasina</i>	-	-	-	X	X	1, 3

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Cyperaceae (continued)	Eastern star sedge	<i>Carex radiata</i>	-	-	-	-	X	1
Sedge Family	Reflexed sedge	<i>Carex retroflexa</i>	-	-	-	-	X	1
	Rosy sedge	<i>Carex rosea</i>	-	-	-	-	X	1
	Eastern rough sedge	<i>Carex scabrata</i>	-	-	-	-	X	1
	Broom sedge	<i>Carex scoparia</i> var. <i>scoparia</i>	-	-	-	-	X	1
	Bur-reed sedge	<i>Carex sparganioides</i>	WL	-	-	-	X	1
	Sedge	<i>Carex</i> spp.	-	-	-	X	-	3
	Sprengel's sedge	<i>Carex sprengelii</i>	-	-	-	-	X	1
	Awlfruit sedge	<i>Carex stipata</i> var. <i>stipata</i>	-	-	-	-	X	1
	Upright sedge	<i>Carex stricta</i>	-	-	-	X	X	1, 3
	Swan's sedge	<i>Carex swanii</i>	-	-	-	-	X	1
	Quill sedge	<i>Carex tenera</i>	-	-	-	-	X	1
	Parachute sedge	<i>Carex tonsa</i> var. <i>rugosperma</i>	-	-	-	-	X	1
	Blunt broom sedge	<i>Carex tribuloides</i> var. <i>tribuloides</i>	-	-	-	-	X	1
	Threeseeded sedge	<i>Carex trisperma</i>	-	-	-	-	X	1
	Parasol sedge	<i>Carex umbellata</i>	-	-	-	-	X	1
	Blister sedge	<i>Carex vesicaria</i>	-	-	-	-	X	1
	Velvet sedge	<i>Carex vestita</i>	-	-	-	-	X	1
	Ribbed sedge	<i>Carex virescens</i>	-	-	-	-	X	1
	Fox sedge	<i>Carex vulpinoidea</i>	-	-	-	-	X	1
	Slender flatsedge	<i>Cyperus bipartitus</i>	-	-	-	-	X	1
	Great Plains flatsedge	<i>Cyperus lupulinus</i> ssp. <i>macilentus</i>	-	-	-	-	X	1
	Strawcolored flatsedge	<i>Cyperus strigosus</i>	-	-	-	-	X	1
	Threeway sedge	<i>Dulichium arundinaceum</i>	-	-	-	-	X	1
	Needle spikerush	<i>Eleocharis acicularis</i>	-	-	-	-	X	1
	Blunt spikerush	<i>Eleocharis obtusa</i>	-	-	-	-	X	1
	Common spikerush	<i>Eleocharis palustris</i>	-	-	-	-	X	1
	Spikerush	<i>Eleocharis</i> sp.	-	-	-	X	X	3
	Slender fimbry	<i>Fimbristylis autumnalis</i>	-	-	-	-	X	1
	Brownish beaksedge	<i>Rhynchospora capitellata</i>	-	-	-	-	X	1
	Smith's bulrush	<i>Schoenoplectus smithii</i>	-	-	-	-	X	1
	Softstem bulrush	<i>Schoenoplectus tabernaemontani</i>	-	-	-	-	X	1
	Green bulrush	<i>Scirpus atrovirens</i>	-	-	-	-	X	1
	Woolgrass	<i>Scirpus cyperinus</i>	-	-	-	X	X	1, 3
	Woodland bulrush	<i>Scirpus expansus</i>	-	-	-	-	X	1
	Mosquito bulrush	<i>Scirpus hattorianus</i>	-	-	-	-	X	1
	Leafy bulrush	<i>Scirpus polyphyllus</i>	WL	-	-	-	X	1
	Bashful bulrush	<i>Trichophorum planifolium</i>	-	-	-	X	X	1, 3
Hydrocharitaceae	Canadian waterweed	<i>Elodea canadensis</i>	-	-	-	X	-	4
Tape-grass Family	Western waterweed	<i>Elodea nuttallii</i>	-	-	-	-	X	1
Iridaceae	Iris	<i>Iris</i> sp.	-	-	-	X	-	3
Iris Family	Harlequin blueflag	<i>Iris versicolor</i>	-	-	-	-	X	1
	Narrowleaf blue-eyed grass	<i>Sisyrinchium angustifolium</i>	-	-	-	-	X	1
	Strict blue-eyed grass	<i>Sisyrinchium montanum</i>	-	-	-	X	X	1, 3
	Blue-eyed grass	<i>Sisyrinchium</i> sp.	-	-	-	X	-	3

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Juncaceae								
Rush Family	Tapertip rush	<i>Juncus acuminatus</i>	-	-	-	-	X	1
	Jointleaf rush	<i>Juncus articulatus</i>	-	-	-	-	X	1
	Narrowpanicle rush	<i>Juncus brevicaudatus</i>	-	-	-	-	X	1
	Toad rush	<i>Juncus bufonius</i>	-	-	-	-	X	1
	Common rush	<i>Juncus effusus</i>	-	-	-	X	X	1, 3
	Grassleaf rush	<i>Juncus marginatus</i>	-	-	-	-	X	1
	Brownfruit rush	<i>Juncus pelocarpus</i>	-	-	-	-	X	1
	Lopsided rush	<i>Juncus secundus</i>	-	-	-	-	X	1
	Rush	<i>Juncus</i> sp.	-	-	-	X	-	3
	Woodland rush	<i>Juncus subcaudatus</i>	-	-	-	-	X	1
	Poverty rush	<i>Juncus tenuis</i>	-	-	-	-	X	1
	Common woodrush	<i>Luzula multiflora</i>	-	-	-	X	X	1, 3
Lemnaceae								
Duckweed Family	Common duckweed	<i>Lemna minor</i>	-	-	-	X	X	1, 3, 4
Liliaceae								
Lily Family	Meadow garlic	<i>Allium canadense</i> var. <i>canadense</i>	-	-	-	-	X	1
	Ramp	<i>Allium tricoccum</i>	-	-	-	-	X	1
	Garden asparagus	<i>Asparagus officinalis</i>	-	-	-	-	X	1
	Bluebead	<i>Clintonia borealis</i>	-	-	-	-	X	1
	European lily-of-the-valley	<i>Convallaria majalis</i>	-	-	-	X	X	1, 3
	Dogtooth violet	<i>Erytronium americanum</i>	-	-	-	X	-	3
	Dogtooth violet	<i>Erytronium americanum</i> ssp. <i>americanum</i>	-	-	-	-	X	1
	Orange daylily	<i>Hemerocallis fulva</i>	-	-	-	-	X	1
	Common goldstar	<i>Hypoxis hirsuta</i>	-	-	-	X	X	1, 3
	Canada lily	<i>Lilium canadense</i>	-	-	-	X	X	1, 3
	Wood lily	<i>Lilium philadelphicum</i>	-	-	-	X	X	1, 3
	Canada mayflower	<i>Maianthemum canadense</i>	-	-	-	X	X	1, 3
	Feathery false lily of the valley	<i>Maianthemum racemosum</i> ssp. <i>racemosum</i>	-	-	-	X	X	1, 3
	Indian cucumber	<i>Medeola virginiana</i>	-	-	-	X	X	1, 3
	Hairy Solomon's seal	<i>Polygonatum pubescens</i>	-	-	-	X	X	1, 3
	Twisted stalk	<i>Streptopus lanceolatus</i>	-	-	-	-	X	1
	Whip-poor-will flower	<i>Trilium cernuum</i>	-	-	-	-	X	1
	Red trillium	<i>Trillium erectum</i>	-	-	-	X	X	1, 3
	Perfoliate bellwort	<i>Uvularia perfoliata</i>	-	-	-	X	X	1, 3
	Sessileleaf bellwort	<i>Uvularia sessilifolia</i>	-	-	-	X	X	1, 3
	Green false hellebore	<i>Veratrum viride</i>	-	-	-	X	X	1, 3
Najadaceae								
Water-nymph Family	Slender waternymph	<i>Najas gracillima</i>	-	-	-	-	X	1
Orchidaceae								
Orchid Family	Adam and Eve (Putty root)	<i>Aplectrum hyemale</i>	E	-	-	-	X	1, 2
	Summer coralroot	<i>Corallorhiza maculata</i>	-	-	-	X	X	1, 3
	Autumn coralroot	<i>Corallorhiza odontorhiza</i>	SC	-	-	X	-	3
	Moccasin flower	<i>Cypripedium acaule</i>	-	-	-	X	X	1, 3
	Greater yellow lady's slipper	<i>Cypripedium parviflorum</i> var. <i>pubescens</i>	WL	-	-	-	X	1
	Broadleaf helleborine	<i>Epipactis helleborine</i>	-	-	-	X	X	1, 3
	Showy orchid	<i>Galearis spectabilis</i>	WL	-	-	-	X	1
	Downy rattlesnake plantain	<i>Goodyera pubescens</i>	-	-	-	X	X	1, 3
	Checkered rattlesnake plantain	<i>Goodyera tessellata</i>	-	-	-	-	X	1

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Orchidaceae (continued) Orchid Family	Large whorled pogonia	<i>Isotria verticillata</i>	WL	-	-	-	X	1
	Brown widelip orchid (Lily-leaf twayblade)	<i>Liparis liliifolia</i>	T	-	-	-	X	1
	Northern green orchid	<i>Platanthera aquilonis</i>	-	-	-	X	-	3
	Huron green orchid	<i>Platanthera huronensis</i>	WL	-	-	-	X	1
	Green fringed orchid	<i>Platanthera lacera</i>	-	-	-	-	X	1
	Lesser purple fringed orchid	<i>Platanthera psycodes</i>	-	-	-	-	X	1
	Nodding lady's tresses	<i>Spiranthes cernua</i>	-	-	-	-	X	1
	Yellow nodding lady's tresses	<i>Spiranthes ochroleuca</i>	-	-	-	X	-	3
	Lady's tresses	<i>Spiranthes</i> sp.	-	-	-	X	-	3
Poaceae Grass Family	Colonial bentgrass	<i>Agrostis capillaris</i>	-	-	-	-	X	1
	Redtop	<i>Agrostis gigantea</i>	-	-	-	X	X	1, 3
	Winter bentgrass	<i>Agrostis hyemalis</i>	-	-	-	-	X	1
	Upland bentgrass	<i>Agrostis perennans</i>	-	-	-	X	X	1, 3
	Rough bentgrass	<i>Agrostis scabra</i>	-	-	-	X	-	3
	Big bluestem	<i>Andropogon gerardii</i>	-	-	-	X	X	1, 3
	Sweet vernalgrass	<i>Anthoxanthum odoratum</i>	-	-	-	X	X	1, 3
	Churchmouse threeawn	<i>Aristida dichotoma</i>	-	-	-	X	X	1, 3
	Tall oatgrass	<i>Arrhenatherum elatius</i> var. <i>elatius</i>	-	-	-	X	-	3
	Bearded shorthusk	<i>Brachyelytrum erectum</i>	-	-	-	X	X	1, 3
	Field brome	<i>Bromus arvensis</i>	-	-	-	-	X	1
		(includes <i>Bromus japonicus</i>)						
	Fringed brome	<i>Bromus ciliatus</i>	-	-	-	X		3
	Arctic brome	<i>Bromus kalmii</i>	-	-	-	X	X	1, 3
	Hairy woodland brome	<i>Bromus pubescens</i>	-	-	-	-	X	1
	Cheatgrass	<i>Bromus tectorum</i>	-	-	-	X	-	3
	Bluejoint	<i>Calamagrostis canadensis</i>	-	-	-	-	X	1
	Artic reedgrass	<i>Calamagrostis coarctata</i>	-	-	-	X	-	3
	Sweet woodreed	<i>Cinna arundinacea</i>	-	-	-	X	X	1, 3
	Orchardgrass	<i>Dactylis glomerata</i>	-	-	-	X	X	1, 3
	Flattened oatgrass	<i>Danthonia compressa</i>	-	-	-	X	X	1, 3
	Poverty oatgrass	<i>Danthonia spicata</i>	-	-	-	X	X	1, 3
	Tufted hairgrass	<i>Deschampsia cespitosa</i>	-	-	-	-	X	1
		(includes ssp. <i>cespitosa</i>)						
	Western panicgrass	<i>Dicanthelium acuminatum</i> var. <i>fasciculatum</i>	-	-	-	-	X	1
	Deertongue	<i>Dicanthelium clandestinum</i>	-	-	-	X	X	1, 3
	Starved panicgrass	<i>Dichantherium depauperatum</i>	-	-	-	X	X	1, 3
	Cypress panicgrass	<i>Dichantherium dichotomum</i> var. <i>dichotomum</i>	-	-	-	X	X	1, 3
	Broadleaf panicgrass	<i>Dichantherium latifolium</i>	-	-	-	-	X	1
	Slimleaf panicgrass	<i>Dichantherium linearifolium</i>	-	-	-	X	X	1, 3
	Matting rosette grass	<i>Dichantherium meridionale</i>	-	-	-	X	-	3
	Scribner's rosette grass	<i>Dichantherium oligosanthos</i> var. <i>scribnerianum</i>	-	-	-	-	X	1
	Hemlock rosette grass	<i>Dichantherium sabulorum</i> var. <i>thinium</i> (<i>Dichantherium acuminatum</i> ssp. <i>columbianum</i>)	-	-	-	-	X	1

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Poaceae (continued)	Woolly rosette grass	<i>Dichanthelium scabriusculum</i>	T	-	-	X	-	3
Grass Family	(Rough panic grass)							
	Roundseed panicgrass	<i>Dichanthelium sphaerocarpon</i>	-	-	-	-	X	1
	Slender crabgrass	<i>Digitaria filiformis</i>	-	-	-	-	X	1
	Smooth crabgrass	<i>Digitaria ischaemum</i>	-	-	-	X	X	1, 3
	Hairy crabgrass	<i>Digitaria sanguinalis</i>	-	-	-	X	X	1, 3
	Barnyardgrass	<i>Echinochloa crus-galli</i>	-	-	-	X	-	3
	Rough barnyardgrass	<i>Echinochloa muricata</i> var. <i>muricata</i>	-	-	-	-	X	1
	Canada wildrye	<i>Elymus canadensis</i>	-	-	-	X	-	3
	Eastern bottlebrush grass	<i>Elymus hystrix</i>	-	-	-	-	X	1
	Eastern bottlebrush grass	<i>Elymus hystrix</i> var. <i>hystrix</i>	-	-	-	X	-	3
	Quackgrass	<i>Elymus repens</i>	-	-	-	X	X	1, 3
	Riverbank wildrye	<i>Elymus riparius</i>	-	-	-	-	X	1
	Slender wheatgrass	<i>Elymus trachycaulus</i>	-	-	-	-	X	1
	Slender wheatgrass	<i>Elymus trachycaulus</i> ssp. <i>subsecundus</i>	-	-	-	X	-	3
	Lace grass	<i>Eragrostis capillaris</i>	WL	-	-	-	X	1
	Indian lovegrass	<i>Eragrostis pilosa</i> (includes var. <i>pilosa</i>)	-	-	-	-	X	1
	Purple lovegrass	<i>Eragrostis spectabilis</i>	-	-	-	X	X	1, 3
	Fineleaf sheep fescue	<i>Festuca filiformis</i>	-	L	-	-	X	1
	Red fescue	<i>Festuca rubra</i> ssp. <i>rubra</i>	-	-	-	-	X	1
	Nodding fescue	<i>Festuca subverticillata</i>	-	-	-	X	X	1, 3
	Rattlesnake mannagrass	<i>Glyceria canadensis</i>	-	-	-	-	X	1
	Limp mannagrass	<i>Glyceria laxa</i>	-	-	-	X	-	3
	Melic mannagrass	<i>Glyceria melicaria</i>	-	-	-	-	X	1
	Floating mannagrass	<i>Glyceria septentrionalis</i>	-	-	-	X	X	1, 3
	Fowl mannagrass	<i>Glyceria striata</i>	-	-	-	X	X	1, 3
	Common velvetgrass	<i>Holcus lanatus</i>	-	-	-	-	X	1
	Rice cutgrass	<i>Leersia oryzoides</i>	-	-	-	X	X	1, 3
	Whitegrass	<i>Leersia virginica</i>	-	-	-	X	X	1, 3
	Wirestem muhly	<i>Muhlenbergia frondosa</i>	-	-	-	-	X	1
	Spiked muhly	<i>Muhlenbergia glomerata</i>	-	-	-	X	X	1, 3
	Mexican muhly	<i>Muhlenbergia mexicana</i>	-	-	-	X	-	3
	Rock muhly	<i>Muhlenbergia sobolifera</i>	-	-	-	X	X	1, 3
	Woodland muhly	<i>Muhlenbergia sylvatica</i>	-	-	-	-	X	1
	Slimflower muhly	<i>Muhlenbergia tenuiflora</i>	-	-	-	X	X	1, 3
	Bog muhly	<i>Muhlenbergia uniflora</i>	-	-	-	-	X	1
	Roughleaf ricegrass	<i>Oryzopsis asperifolia</i>	-	-	-	X	X	1, 3
	Witchgrass	<i>Panicum capillare</i>	-	-	-	X	X	1, 3
	Fall panicgrass	<i>Panicum dichotomiflorum</i>	-	-	-	X	-	3
	Fall panicgrass	<i>Panicum dichotomiflorum</i> var. <i>dichotomiflorum</i>	-	-	-	-	X	1
	Philadelphia panicgrass	<i>Panicum philadelphicum</i>	SC	-	-	-	X	1
	Redtop panicgrass	<i>Panicum rigidulum</i> var. <i>rigidulum</i>	-	-	-	-	X	1
	Switchgrass	<i>Panicum virgatum</i>	-	-	-	X	-	3
	Switchgrass	<i>Panicum virgatum</i> var. <i>virgatum</i>	-	-	-	-	X	1
	Reed canarygrass	<i>Phalaris arundinacea</i>	-	I	-	-	X	1
	Timothy	<i>Phleum pratense</i>	-	-	-	X	X	1, 3
	Common reed	<i>Phragmites australis</i>	-	I	-	X	X	1, 3
	Mountain ricegrass	<i>Piptatherum pungens</i>	-	-	-	-	X	1
	Blackseed ricegrass	<i>Piptatherum racemosum</i>	-	-	-	-	X	1

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.1. Plants of the Mount Holyoke Range Planning Unit. (Continued) Taxonomy follows USDA (2012).

Family	Common Name	Scientific Name	MESA ^a	Invasive ^b	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Poaceae (continued) Grass Family	Grove bluegrass	<i>Poa alsodes</i>	-	-	-	X	X	1, 3
	Annual bluegrass	<i>Poa annua</i>	-	-	-	X	X	1, 3
	Bulbous bluegrass	<i>Poa bulbosa</i>	-	-	-	-	X	1
	Canada bluegrass	<i>Poa compressa</i>	-	-	-	X	X	1, 3
	Kentucky bluegrass	<i>Poa pratensis</i>	-	-	-	X	X	1, 3
	Oldpasture bluegrass (Drooping speargrass)	<i>Poa saltuensis (languida)</i>	E	-	-	-	X	1, 2
	Meadowfescue	<i>Schedonorus pratensis</i>	-	-	-	X	X	1, 3
	Little bluestem	<i>Schizachyrium scoparium</i> var. <i>scoparium</i>	-	-	-	X	X	1, 3
	Yellow foxtail	<i>Setaria pumila</i> ssp. <i>pumila</i>	-	-	-	X	X	1, 3
	Indiangrass	<i>Sorghastrum nutans</i>	-	-	-	X	X	1, 3
	Shiny wedgescale (Shining wedgegrass)	<i>Sphenopholis nitida</i>	T	-	-	-	X	1, 2
	Prairie wedgegrass	<i>Sphenopholis obtusata</i>	-	-	-	-	X	1
	Poverty dropseed	<i>Sporobolus vaginiflorus</i> var. <i>vaginiflorus</i>	-	-	-	X	X	1, 3
	Purpletop tridens	<i>Tridens flavus</i>	-	-	-	-	X	1
	Sixweeks fescue	<i>Vulpia octoflora</i>	-	-	-	X	X	1, 3
Pontederiaceae Water-Hyacinth Family	Pickernelweed	<i>Pontederia cordata</i>	-	-	-	-	X	1
Potamogetonaceae Ponweed Family	Largeleaf pondweed	<i>Potamogeton amplifolius</i>	-	-	-	X	X	1, 4
	Curly pondweed	<i>Potamogeton crispus</i>	-	I	-	-	X	1
	Ribbonleaf pondweed	<i>Potamogeton epihydrus</i>	-	-	-	-	X	1
	Floating pondweed	<i>Potamogeton natans</i>	-	-	-	X	X	1, 4
	Small pondweed	<i>Potamogeton pusilus</i> ssp. <i>tenuissimus</i>	-	-	-	-	X	1
	Robbins' pondweed	<i>Potamogeton robbinsii</i>	-	-	-	X	-	4
Smilacaceae Catbrier Family	Smooth carrionflower	<i>Smilax herbacea</i>	-	-	-	X	X	1, 3
	Roundleaf greenbrier	<i>Smilax rotundifolia</i>	-	-	-	X	X	1, 3
Sparganiaceae Bur-reed Family	American bur-reed	<i>Sparganium americanum</i>	-	-	-	-	X	1
	European bur-reed	<i>Sparganium emersum</i>	-	-	-	-	X	1
Typhaceae Cat-tail Family	Broadleaf cattail	<i>Typha latifolia</i>	-	-	-	X	X	1, 3
	Cattail	<i>Typha</i> sp.	-	-	-	X	-	4
	-	<i>Typha x glauca</i> (<i>T. angustifolia</i> x <i>T. latifolia</i>)	-	-	-	-	X	1

- a. Status of plants listed under the Massachusetts Endangered Species Act (MESA): E = Endangered; T = Threatened; and SC = Species of Special Concern.
- b. These species have been evaluated by the Massachusetts Invasive Plant Advisory Group (MIPAG 2009) and determined to be invasive (I) or likely invasive (L).
- c. Information contained in this table was obtained from the following sources:
1. Searcy (2008); with additions.
 2. Maier (2012).
 3. Williams (c. 1990).
 4. Aquatic Control Technology, Inc. (2011).
 5. City Design Collaborative, Inc. (1982).
 6. Lotspeich (2012).
 7. Cavanagh (2012).
 8. Harper (2013).
- d. Although reported for Mount Tom, this species does not occur in New England.

Appendix G. Flora and Fauna. (Continued)

Table G.2. Birds of the Mount Holyoke Range Planning Unit. Family, common, and scientific names and the sequence in which they are presented follow American Ornithologists' Union (2011).

Family	Common Name	Scientific Name	MESA ^a	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^b	BBA ^c
Anatidae								
Geese, Swans, and Ducks	Snow goose	<i>Chen caerulescens</i>	-	-	X	-	20	-
	Ross's goose	<i>Chen rossii</i>	-	-	X	-	3, 13	-
	Canada goose	<i>Branta canadensis</i>	-	-	X	-	1, 8, 20	X
	Mute swan	<i>Cygnus olor</i>	-	-	-	-	-	X
	Wood duck	<i>Aix sponsa</i>	-	-	X	-	1, 20	X
	American black duck ^d	<i>Anas rubripes</i>	-	-	X	-	1	X
	Mallard	<i>Anas platyrhynchos</i>	-	-	X	-	1, 20	X
	Blue-winged teal	<i>Anas discors</i>	-	-	-	-	-	X
	Hooded merganser	<i>Lophodytes cucullatus</i>	-	-	-	-	-	X
	Common merganser	<i>Mergus merganser</i>	-	-	X	-	13	X
Phasianidae								
Partridges, Grouse, Turkey, and Old World Quail	Ring-necked pheasant	<i>Phasianus colchicus</i>	-	-	-	-	-	X
	Ruffed grouse	<i>Bonasa umbellus</i>	-	-	X	-	20	X
	Wild turkey	<i>Meleagris gallopavo</i>	-	-	X	-	20	X
Gaviidae								
Loons	Common loon	<i>Gavia immer</i>	-	-	X	-	3, 14, 20	-
Podicipedidae								
Grebes	Pied-billed grebe	<i>Podilymbus podiceps</i>	-	-	-	-	-	X
Phalacrocoracidae								
Cormorants	Double-crested cormorant	<i>Phalacrocorax auritus</i>	-	-	X	-	3, 12, 14, 20	X
Ardeidae								
Bitterns and Herons	American bittern	<i>Botaurus lentiginosus</i>	E	-	-	-	-	X
	Great blue heron	<i>Ardea herodias</i>	-	-	X	-	20	X
	Great egret	<i>Ardea alba</i>	-	-	-	X	6	-
	Green heron ^d	<i>Butorides virescens</i>	-	-	X	-	20	X
Cathartidae								
American Vultures	Black vulture	<i>Coragyps atratus</i>	-	-	X	-	10	X
	Turkey vulture	<i>Cathartes aura</i>	-	-	X	X	3, 7, 8, 9, 13, 14, 15, 16, 17, 20	X
Pandionidae								
Ospreys	Osprey	<i>Pandion haliaetus</i>	-	-	X	X	1, 3, 5, 6, 12, 14, 15, 16, 17, 20	X
Accipitridae								
Kites, Eagles, and Hawks	Golden eagle	<i>Aquila chrysaetos</i>	-	-	X	-	12	-
	Bald eagle	<i>Haliaeetus leucocephalus</i>	T	-	X	X	1, 6, 11, 12, 14, 15, 16, 17	X
	Northern harrier	<i>Circus cyaneus</i>	T	-	X	-	3, 6, 14, 15, 17, 20	-
	Sharp-shinned hawk ^d	<i>Accipiter striatus</i>	SC	-	X	-	1, 3, 6, 12, 13, 14, 15, 16, 17, 20	X
	Cooper's hawk	<i>Accipiter cooperii</i>	-	X	X	-	1, 3, 12, 14, 15, 16, 17, 20, 22	X
	Northern goshawk	<i>Accipiter gentilis</i>	-	-	X	-	1, 6, 15, 20	-
	Red-shouldered hawk	<i>Buteo lineatus</i>	-	-	X	-	1, 13, 16, 20	X
	Broad-winged hawk	<i>Buteo platypterus</i>	-	-	X	X	1, 3, 4, 6, 8, 12, 14, 15, 16, 17, 20	X
	Red-tailed hawk	<i>Buteo jamaicensis</i>	-	X	X	-	1, 12, 13, 13, 15, 16, 20, 22	X
Falconidae								
Falcons	American kestrel ^d	<i>Falco sparverius</i>	-	-	X	-	1, 3, 5, 12, 14, 15, 17, 20	-
	Merlin	<i>Falco columbarius</i>	-	-	X	-	1, 6, 12, 17	-
	Pergerine falcon ^d	<i>Falco peregrinus</i>	E	-	X	X	1, 6, 8	-

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.2. Birds of the Mount Holyoke Range Planning Unit. (Continued) Family, common, and scientific names and the sequence in which they are presented follow American Ornithologists' Union (2011).

Family	Common Name	Scientific Name	MESA ^a	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^b	BBA ^c
Rallidae	Virginia rail	<i>Rallus limicola</i>	-	-	-	-	-	X
Rails	Sora	<i>Porzana carolina</i>	-	-	-	-	-	X
Charadriidae	Killdeer	<i>Charadrius vociferus</i>	-	-	X	-	13	X
Plovers and Lapwings								
Scolopacidae	Spotted sandpiper	<i>Actitis macularia</i>	-	-	-	-	-	X
Sandpipers and Allies	American woodcock ^d	<i>Scolopax minor</i>	-	-	X	-	20	X
Laridae	Ring-billed gull	<i>Larus delawarensis</i>	-	-	-	-	-	X
Jaegers, Gulls, Terns, and Skimmers	Herring gull	<i>Larus argentatus</i>	-	-	-	-	-	X
	Great black-backed gull	<i>Larus marinus</i>	-	-	-	-	-	X
	Common tern ^d	<i>Sterna hirundo</i>	SC	-	-	-	-	X
Columbidae	Rock pigeon	<i>Columba livia</i>	-	X	X	-	20, 22	X
Pigeons and Doves	Mourning dove	<i>Zenaidura macroura</i>	-	-	X	X	8, 19, 20	X
Cuculidae	Yellow-billed cuckoo	<i>Coccyzus americanus</i>	-	-	X	X	20, 21	X
Cuckoos and Allies	Black-billed cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	X	X	4, 20	X
Strigidae	Eastern screech-owl	<i>Megascops asio</i>	-	-	-	-	-	X
Typical Owls	Great horned owl	<i>Bubo virginianus</i>	-	-	X	-	20	X
	Barred owl	<i>Strix varia</i>	-	-	X	-	1, 20	X
	Northern saw-whet owl	<i>Aegolius acadicus</i>	-	-	-	-	-	X
Caprimulgidae	Common nighthawk	<i>Chordeiles minor</i>	-	-	X	-	20	X
Goatsuckers and Allies	Eastern whip-poor-will	<i>Caprimulgus vociferus</i>	SC	-	-	-	-	X
Apodidae	Chimney swift	<i>Chaetura pelagica</i>	-	-	X	X	6, 7, 8, 12, 16, 17, 20	X
Swifts								
Trochilidae	Ruby-throated hummingbird	<i>Archilochus colubris</i>	-	-	X	X	6, 7, 8, 16, 17, 19, 20	X
Hummingbirds								
Alcedinidae	Belted kingfisher	<i>Ceryle alcyon</i>	-	-	X	-	1, 20	X
Kingfishers								
Picidae	Red-bellied woodpecker	<i>Melanerpes carolinus</i>	-	-	X	-	8	X
Woodpeckers	Yellow-bellied sapsucker	<i>Sphyrapicus varius</i>	-	-	X	-	18, 20	X
	Downy woodpecker	<i>Picoides pubescens</i>	-	-	X	X	1, 7, 8, 9, 20	X
	Hairy woodpecker	<i>Picoides villosus</i>	-	-	X	X	1, 2, 8, 9, 19, 20, 21	X
	Black-backed woodpecker	<i>Picoides arcticus</i>	-	-	X	-	1	-
	Northern flicker	<i>Colaptes auratus</i>	-	-	X	X	1, 9, 20	X
	Pileated woodpecker	<i>Dryocopus pileatus</i>	-	-	X	X	1, 2, 3, 13, 14, 20, 21	X
Tyrannidae	Olive-sided flycatcher	<i>Contopus cooperi</i>	-	-	X	X	4, 20	-
Tyrant Flycatchers	Eastern wood-pewee	<i>Contopus virens</i>	-	-	X	X	1, 9, 19, 20, 21	X
	Yellow-bellied flycatcher	<i>Empidonax flaviventris</i>	-	-	X	-	20	-
	Acadian flycatcher	<i>Empidonax virens</i>	-	-	X	-	4	-
	Alder flycatcher	<i>Empidonax alnorum</i>	-	-	-	-	-	X
	Willow flycatcher ^d	<i>Empidonax trailii</i>	-	-	X	-	1	X
	Least flycatcher	<i>Empidonax minimus</i>	-	-	X	-	8	X
	Eastern phoebe	<i>Sayornis phoebe</i>	-	-	X	X	8, 9, 20, 21	X
	Great-crested flycatcher	<i>Miarchus crinitus</i>	-	-	X	X	1, 2, 5, 8, 20, 21	X
	Eastern kingbird	<i>Tyrannus tyrannus</i>	-	-	X	-	20	X

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.2. Birds of the Mount Holyoke Range Planning Unit. (Continued) Family, common, and scientific names and the sequence in which they are presented follow American Ornithologists' Union (2011).

Family	Common Name	Scientific Name	MESA ^a	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^b	BBA ^c
Vireonidae	Yellow-throated vireo	<i>Vireo flavifrons</i>	-	-	X	X	1, 7, 9	X
Vireos	Blue-headed vireo	<i>Vireo solitarius</i>	-	-	X	X	3, 8, 9, 10, 14, 15, 19, 20, 21	X
	Warbling vireo	<i>Vireo gilvus</i>	-	-	X	X	2, 8	X
	Red-eyed vireo	<i>Vireo olivaceus</i>	-	-	X	X	1, 2, 7, 9, 19, 20, 21	X
Corvidae	Blue jay	<i>Cyanocitta cristata</i>	-	-	X	X	1, 2, 8, 9, 20, 21	X
Jays, Magpies, and Crows	American crow	<i>Corvus brachyrhynchos</i>	-	-	X	-	1, 8, 20	X
	Fish crow	<i>Corvus ossifragus</i>	-	-	-	-	-	X
	Common raven	<i>Corvus corax</i>	-	-	X	X	1, 6, 12, 15, 16, 17, 20	X
Alaudidae	Horned lark	<i>Eremophila alpestris</i>	-	-	-	-	-	X
Larks								
Hirundinidae	Tree swallow	<i>Tachycineta bicolor</i>	-	-	X	-	17, 20	X
Swallows	Northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>	-	-	-	-	-	X
	Bank swallow	<i>Riparia riparia</i>	-	-	X	-	15	X
	Barn swallow	<i>Hirundo rustica</i>	-	-	X	-	20	X
Paridae	Black-capped chickadee	<i>Poecile atricapilla</i>	-	-	X	X	1, 7, 8, 9, 19, 20, 21	X
Titmice	Tufted titmouse	<i>Baeolophus bicolor</i>	-	-	X	X	1, 8, 9, 19, 20, 21	X
Sittidae	Red-breasted nuthatch	<i>Sitta canadensis</i>	-	-	X	-	1, 8, 20	X
Nuthatches	White-breasted nuthatch	<i>Sitta carolinensis</i>	-	-	X	X	1, 7, 8, 9, 19, 20	X
Certhiidae	Brown creeper	<i>Certhia americana</i>	-	-	X	-	8, 20	X
Creepers								
Troglodytidae	Carolina wren	<i>Thryothorus ludovicianus</i>	-	-	-	-	-	X
Wrens	House wren	<i>Troglodytes aedon</i>	-	-	X	-	20	X
	Winter wren	<i>Troglodytes hiemalis</i>	-	-	X	X	9, 10, 15, 20	X
	Sedge wren	<i>Cistothorus platensis</i>	E	-	X	-	1	X
	Marsh wren	<i>Cistothorus palustris</i>	-	-	-	-	-	X
Regulidae	Golden-crowned kinglet	<i>Regulus satrapa</i>	-	-	X	-	8, 20	-
Kinglets	Ruby-crowned kinglet	<i>Regulus calendula</i>	-	-	X	-	10, 14, 20	-
Silviidae	Blue-gray gnatcatcher	<i>Poliophtila caerulea</i>	-	-	X	X	8, 20, 21	X
Gnatcatchers								
Turdidae	Eastern bluebird	<i>Sialis sialis</i>	-	-	X	-	20	X
Bluebirds and Thrushes	Veery	<i>Catharus fuscescens</i>	-	-	X	X	1, 2, 8, 9, 19, 20	X
	Swainson's thrush	<i>Catharus ustulatus</i>	-	-	X	X	1, 4, 5, 17, 20	X
	Hermit thrush	<i>Catharus guttatus</i>	-	-	X	X	1, 8, 9, 15, 20, 21	X
	Wood thrush ^d	<i>Hylocichla mustelina</i>	-	-	X	X	1, 2, 7, 9, 19, 20, 21	X
	American robin	<i>Turdus migratorius</i>	-	-	X	X	1, 2, 7, 8, 9, 19, 20, 21	X
Mimidae	Gray catbird	<i>Dumetella carolinensis</i>	-	-	X	X	2, 7, 9, 19, 20	X
Mimic Thrushes	Northern mockingbird	<i>Mimus polyglottos</i>	-	-	-	-	-	X
	Brown thrasher ^d	<i>Toxostoma rufum</i>	-	-	-	-	-	X
Sturnidae	European starling	<i>Sturnis vulgaris</i>	-	-	X	-	20	X
Starlings								
Bombycillidae	Cedar waxwing	<i>Bombycilla cedrorum</i>	-	-	X	X	8, 9, 19, 20, 21	X
Waxwings								

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.2. Birds of the Mount Holyoke Range Planning Unit. (Continued) Family, common, and scientific names and the sequence in which they are presented follow American Ornithologists' Union (2011).

Family	Common Name	Scientific Name	MESA ^a	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^b	BBA ^c
Parulidae	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	X	X	2, 8, 9, 10, 20, 21	X
Wood Warblers	Worm-eating warbler	<i>Helminthos vermivorum</i>	-	-	X	X	1, 2, 4, 5, 7, 9, 20, 21	X
	Louisiana waterthrush	<i>Parkesia motacilla</i>	-	-	X	-	1, 3, 10, 20	X
	Northern waterthrush	<i>Parkesia noveboracensis</i>	-	-	X	-	20	X
	Blue-winged warbler ^d	<i>Vermivora pinus</i>	-	-	X	-	8	X
	Black-and-white warbler	<i>Mniotilta varia</i>	-	-	X	X	2, 7, 8, 9, 10, 16, 20, 21	X
	Tennessee warbler	<i>Oreothlypis peregrina</i>	-	-	X	-	20	-
	Nashville warbler	<i>Oreothlypis ruficapilla</i>	-	-	-	-	-	X
	Mourning warbler	<i>Geothlypis philadelphia</i>	-	-	X	-	4, 20	-
	Common yellowthroat	<i>Geothlypis trichas</i>	-	-	X	-	20	X
	American redstart	<i>Setophaga ruticilla</i>	-	-	X	X	2, 7, 9, 19, 20, 21	X
	Cape May warbler	<i>Setophaga tigrina</i>	-	-	X	-	20	-
	Cerulean warbler	<i>Setophaga cerulea</i>	-	-	X	X	2, 4, 5, 7, 8, 9, 11, 21	X
	Northern parula ^d	<i>Setophaga americana</i>	T	-	X	-	8, 20	X
	Magnolia warbler	<i>Setophaga magnolia</i>	-	-	X	-	16, 20	X
	Bay-breasted warbler	<i>Setophaga castanea</i>	-	-	X	-	6, 20	-
	Blackburnian warbler	<i>Setophaga fusca</i>	-	-	X	-	1, 8, 20	X
	Yellow warbler	<i>Setophaga petechia</i>	-	-	-	-	-	X
	Chestnut-sided warbler	<i>Setophaga pensylvanica</i>	-	-	X	-	1, 8, 20	X
	Blackpoll warbler ^d	<i>Dendroica striata</i>	SC	-	X	-	6, 20	-
	Black-throated blue warbler	<i>Setophaga caerulescens</i>	-	-	X	X	1, 8, 10, 19, 20	X
	Palm warbler	<i>Setophaga palmarum</i>	-	-	X	-	20	-
	Pine warbler	<i>Dendroica pinus</i>	-	-	X	X	8, 9	X
	Yellow-rumped warbler	<i>Setophaga coronata</i>	-	-	X	-	1, 8, 20	X
	Prairie warbler ^d	<i>Dendroica discolor</i>	-	-	X	-	1, 8	X
	Black-throated green warbler	<i>Setophaga virens</i>	-	-	X	X	1, 2, 8, 10, 16, 19, 20, 21	X
	Canada warbler	<i>Cardellina canadensis</i>	-	-	X	-	20	-
	Wilson's warbler	<i>Cardellina pusilla</i>	-	-	X	-	20	-
Emberizidae	Eastern towhee ^d	<i>Pipilo erythrophthalmus</i>	-	-	X	X	3, 8, 9, 10, 19, 20	X
Towhees, Sparrows, and Allies	American tree sparrow	<i>Spizella arborea</i>	-	-	X	-	20	-
	Chipping sparrow	<i>Spizella passerina</i>	-	-	X	X	2, 7, 8, 9, 19, 21	X
	Field sparrow ^d	<i>Spizella pusilla</i>	-	-	-	-	-	X
	Vesper sparrow	<i>Poocetes gramineus</i>	T	-	-	-	-	X
	Savannah sparrow	<i>Passerculus sandwichensis</i>	-	-	-	-	-	X
	Grasshopper sparrow	<i>Ammodramus savannarum</i>	T	-	-	-	-	X
	Fox sparrow	<i>Passerella iliaca</i>	-	-	X	-	20	-
	Song sparrow	<i>Melospiza melodia</i>	-	-	X	-	1, 20	X
	Lincoln's sparrow	<i>Melospiza lincolni</i>	-	-	X	-	20	-
	Swamp sparrow	<i>Melospiza georgiana</i>	-	-	X	-	20	X
	White-throated sparrow ^d	<i>Zonotrichia albicollis</i>	-	-	X	-	1, 8, 20	X
	White-crowned sparrow	<i>Zonotrichia leucophrys</i>	-	-	X	-	20	-
	Dark eyed junco	<i>Junco hyemalis</i>	-	-	X	X	1, 5, 7, 8, 9, 20	X
Cardinalidae	Scarlet tanager	<i>Piranga olivacea</i>	-	-	X	X	1, 2, 5, 7, 8, 9, 19, 20, 21	X
Tanagers, Grosbeaks, and Buntings	Northern cardinal	<i>Cardinalis cardinalis</i>	-	-	X	X	1, 7, 9, 19, 20, 21	X
	Rose-breasted grosbeak	<i>Pheucticus ludovicianus</i>	-	-	X	X	1, 2, 9, 20, 21	X
	Indigo bunting	<i>Passerina cyanea</i>	-	-	X	X	9, 19, 20, 21	X

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.2. Birds of the Mount Holyoke Range Planning Unit. (Continued) Family, common, and scientific names and the sequence in which they are presented follow American Ornithologists' Union (2011).

Family	Common Name	Scientific Name	MESA ^a	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^b	BBA ^c
Icteridae	Bobolink	<i>Dolichonyx oryzivorus</i>	-	-	-	-	-	X
Blackbirds, Orioles, and Allies	Red-winged blackbird	<i>Agelaius phoeniceus</i>	-	-	X	-	1, 8, 20	X
	Eastern meadowlark	<i>Sturnella magna</i>	-	-	-	-	-	X
	Rusty blackbird	<i>Euphagus cyanocephalus</i>	-	-	X	-	-	-
	Common grackle	<i>Quiscalus quiscula</i>	-	-	X	X	1, 8, 9, 20, 21	X
	Brown-headed cowbird	<i>Molothrus ater</i>	-	-	X	X	14, 20, 21	X
	Orchard oriole	<i>Icterus spurius</i>	-	-	-	-	-	X
	Baltimore oriole	<i>Icterus galbula</i>	-	-	X	X	1, 2, 20, 21	X
Fringillidae	Pine grosbeak	<i>Pinicola enucleator</i>	-	-	X	-	20	-
Fringilline Finches	Purple finch	<i>Carpodacus purpureus</i>	-	-	X	-	20	X
	House finch	<i>Carpodacus mexicanus</i>	-	-	X	-	20	X
	Red crossbill	<i>Loxia curvirostra</i>	-	-	X	-	20	-
	White-winged crossbill	<i>Loxia leucoptera</i>	-	-	X	-	20	-
	Common redpoll	<i>Acanthis flammea</i>	-	-	X	-	20	-
	Pine siskin	<i>Spinus pinus</i>	-	-	X	-	20	X
	American goldfinch	<i>Carduelis tristis</i>	-	-	X	X	8, 19, 20	X
	Evening grosbeak	<i>Coccothraustes vespertinus</i>	-	-	X	-	20	-
Passeridae	House sparrow	<i>Passer domesticus</i>	-	-	X	-	20	X
Old World Finches								

- a. Status of birds listed under the Massachusetts Endangered Species Act (MESA): E = Endangered; T = Threatened; and SC = Species of Special Concern.
- b. Information contained in this table was obtained from the following sources:
 1. Tougas (2003).
 2. Allen Bird Club (2011).
 3. Bird News of Western Massachusetts (2009a).
 4. Bird News of Western Massachusetts (2007).
 5. Bird News of Western Massachusetts (2009b).
 6. Bird News of Western Massachusetts (2009c).
 7. Dysart (2010a).
 8. Paulson (2010).
 9. Heil (2009).
 10. Rutman (2011).
 11. Young (2009).
 12. Gagnon (2008).
 13. Gagnon (2009a).
 14. Gagnon (2009b).
 15. Gagnon. (2010a)
 16. Gagnon (2010b).
 17. Gagnon (2010c).
 18. Gagnon (2012).
 19. Green (2012a).
 20. Kellog (1985). This source includes both resident and migratory birds found in, or seen from, Mount Tom State Reservation.
 21. Green (2012b).
 22. Lotspeich (2013).
- c. Breeding Bird Atlas (BBA) data for Mount Holyoke Range and Joseph Allen Skinner state parks (blocks 0792, 0793, 0795, 0796, 0802, and 0803), Mount Tom State Reservation (blocks 0786, 0793, 1004, and 1011), and Holyoke Heritage State Park (block 0803) for the years 2007- 2011 (Breeding Bird Atlas Explorer 2012). These data include some birds associated with habitats (e.g., grasslands) that do not occur on properties in the planning unit. Species reported from planning unit, but not recorded in the BBA, typically occur as migrants.
- d. This species has been designated a Species in Greatest Need of Conservation (MassWildlife 2006, Table 4).

Appendix G. Flora and Fauna. (Continued)

Table G.3. Mammals of the Mount Holyoke Range Planning Unit. The following mammals occur, or may occur, on the properties that constitute the Mount Holyoke Range Planning Unit. Family, common, and scientific names and the sequence in which they are presented follow Cardoza et al. (2009).

Family	Common Name	Scientific Name	MESA ^a	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Didelphidae New World Opossums	Virginia opossum	<i>Didelphis virginiana</i>	-	P	P	P	-
Sciuridae Tree Squirrels and Marmots	Eastern gray squirrel	<i>Sciurus carolinensis</i>	-	C	C	P	1
	Red squirrel	<i>Tamiasciurus hudsonicus</i>	-	U	P	P	-
	Northern flying squirrel	<i>Glaucomys sabrinus</i>	-	U	P	P	-
	Southern flying squirrel	<i>Glaucomys volans</i>	-	U	P	P	-
	Woodchuck	<i>Marmota monax</i>	-	U	P	P	-
	Eastern chipmunk	<i>Tamias striatus</i>	-	P	C	C	1
Castoridae American Beaver	American beaver	<i>Castor canadensis</i>	-	U	C	P	1
Dipodidae Jumping Mice	Woodland jumping mouse	<i>Napaeozapus insignis</i>	-	U	P	P	-
	Meadow jumping mouse	<i>Zapus hudsonius</i>	-	U	P	P	-
Cricetidae Mice, Voles, and Lemmings	Meadow vole	<i>Microtus pennsylvanicus</i>	-	U	P	P	-
	Woodland vole	<i>Microtus pinetorum</i>	-	U	P	P	-
	Southern red-backed vole	<i>Myodes gapperi</i>	-	U	P	P	-
	Common muskrat	<i>Ondatra zibethicus</i>	-	P	P	P	-
	White-footed deer mouse	<i>Peromyscus leucopus</i>	-	U	P	P	-
	North American deer mouse	<i>Peromyscus maniculatus</i>	-	U	P	P	-
Muridae Old World Rats and Mice	House mouse	<i>Mus musculus</i>	-	P	P	P	-
	Brown rat	<i>Rattus norvegicus</i>	-	P	P	P	-
Erethizontidae New World Porcupines	North American porcupine	<i>Erethizon dorsatum</i>	-	U	P	P	-
Leporidae Hares and Rabbits	Snowshoe hare	<i>Lepus americanus</i>	-	U	P	P	-
	Eastern cottontail	<i>Sylvilagus floridanus</i>	-	U	P	P	-
	New England cottontail ^d	<i>Sylvilagus transitionalis</i>	-	U	U	U	-
Soricidae Shrews	Northern short-tailed shrew	<i>Blarina brevicauda</i>	-	U	P	P	-
	Cinereus shrew	<i>Sorex cinereus</i>	-	U	P	P	-
	Smoky shrew	<i>Sorex fumeus</i>	-	U	P	P	-
	American water shrew ^d	<i>Sorex palustris</i>	SC	U	P	P	-
Talpidae Moles and Shrew-moles	Star-nosed mole	<i>Condylura cristata</i>	-	U	P	P	-
	Hairy-tailed mole	<i>Parascalops breweri</i>	-	U	P	P	-
	Eastern mole	<i>Scalopus aquaticus</i>	-	U	P	P	-
Vespertilionidae Vesper Bats	Big brown bat	<i>Eptesicus fuscus</i>	-	P	P	P	-
	Eastern red bat ^d	<i>Lasiurus borealis</i>	-	P	P	P	-
	Hoary bat ^d	<i>Lasiurus cinereus</i>	-	P	P	P	-
	Tricolored bat	<i>Perimyotis subflavus</i>	E	P	P	P	-
	Silver-haired bat ^d	<i>Lasionycteris noctivagans</i>	-	P	P	P	-
	Eastern small-footed myotis ^d	<i>Myotis leibii</i>	E	P	P	P	-
	Little brown myotis	<i>Myotis lucifugus</i>	E	P	P	P	-
	Northern myotis	<i>Myotis septentrionalis</i>	E	P	P	P	-
	Indiana myotis ^{d,e}	<i>Myotis sodalis</i>	E	U	U	U	-

Continued on next page.

Appendix G. Flora and Fauna. (Continued)

Table G.3. Mammals of the Mount Holyoke Range Planning Unit. (Continued) The following mammals occur, or may occur, on the properties that constitute the Mount Holyoke Range Planning Unit. Family, common, and scientific names and the sequence in which they are presented follow Cardoza et al. (2009).

Family	Common Name	Scientific Name	MESA ^a	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Felidae	Domestic cat (feral)	<i>Felis catus</i>	-	P	P	P	-
Cats	Bobcat ^d	<i>Lynx rufus</i>	-	U	P	P	-
Canidae	Coyote	<i>Canis latrans</i>	-	P	P	P	-
Dogs, Foxes, and Wolves	Domestic dog (feral)	<i>Canis lupus familiaris</i>	-	P	P	P	-
	Gray fox	<i>Urocyon cinereoargenteus</i>	-	U	P	P	-
	Red fox	<i>Vulpes vulpes</i>	-	U	P	P	-
Ursidae	American black bear ^d	<i>Ursus americanus</i>	-	U	P	P	-
Bears							
Mustelidae	North American river otter	<i>Lontra canadensis</i>	-	P	P	P	-
Weasels, Minks, Martens, and Otters	Fisher	<i>Martes pennanti</i>	-	U	P	P	-
	Ermine	<i>Mustela erminea</i>	-	U	P	P	-
	Long-tailed weasel	<i>Mustela frenata</i>	-	U	P	P	-
	American mink	<i>Neovison vison</i>	-	U	P	P	-
Mephitidae	Striped skunk	<i>Mephitis mephitis</i>	-	P	P	P	-
Skunks							
Procyonidae	Raccoon	<i>Procyon lotor</i>	-	P	P	P	-
Raccoons, Coatis, and Ringtails							
Cervidae	Moose ^d	<i>Alces americanus</i>	-	U	P	P	-
Deer, Elk, and Moose	White-tailed deer	<i>Odocoileus virginianus</i>	-	U	P	P	-

- Status of mammals listed under the Massachusetts Endangered Species Act (MESA): E = Endangered; T = Threatened; and SC = Species of Special Concern.
- Occurrence of species is classified as follows: C = Confirmed – species has been recorded on the property; P = Possible – species is known to occur in western Massachusetts (Cardoza et al. 2009) and may occur on the property; and U = Unlikely – species is known to occur in western Massachusetts, but appropriate habitat is absent from the property.
- Information contained in this table was obtained from the following source:
 - Animals, or signs of animals, incidentally observed by RMP planner during site visits.
- This species has been designated a Species in Greatest Need of Conservation (MassWildlife 2006, Table 4).
- Historic occurrence in Massachusetts.

Appendix G. Flora and Fauna. (Continued)

Table G.4. Reptiles of the Mount Holyoke Range Planning Unit. The following reptiles occur, or may occur, on the properties within the Mount Holyoke Range Planning Unit. Family, common, and scientific names follow NatureServe (2012); the sequence in which they are presented follows Cardoza and Mirick (2009).

Family	Common Name	Scientific Name	MESA ^a	Holyoke Heritage SP ^b	Mt. Tom SR ^b	Mount Holyoke Range parks ^b	Source ^c
Chelydridae Snapping Turtles	Snapping turtle	<i>Chelydra serpentina</i>	-	P	C ^e	P	3
Kinosternidae American Mud and Musk Turtles	Common musk turtle	<i>Sternotherus odoratus</i>	-	U	P	C	2
Emyididae Pond Turtles	Northern painted turtle	<i>Chrysemys picta</i>	-	U	C ^e	P	2
	Spotted turtle ^d	<i>Clemmys guttata</i>	-	U	P	P	
	Wood turtle ^d	<i>Glyptemys insculpta</i>	SC	U	P ^e	C	1
	Eastern box turtle ^{d, e}	<i>Terrapene carolina</i>	SC	U	P ^e	C	1
Colubridae Harmless Snakes	Eastern wormsneak ^d	<i>Carphophis amoenus</i>	T	U	U	U	-
	Racer ^d	<i>Coluber constrictor</i>	-	U	P ^e	P	-
	Ring-necked snake	<i>Diadophis punctatus</i>	-	U	P ^e	P	-
	Eastern ratsnake ^d	<i>Pantherophis allegheniensis</i>	E	U	C ^e	P	-
	Eastern hog-nosed snake ^d	<i>Heterodon platirhinos</i>	-	U	P ^e	P	-
	Milksnake	<i>Lampropeltis triangulum</i>	-	U	P ^e	P	-
	Northern watersnake	<i>Nerodia sipedon</i>	-	P	P ^e	P	-
	Smooth greensnake	<i>Ophedrys vernalis</i>	-	U	P ^e	U	-
	Brownsnake	<i>Storeria dekayi</i>	-	U	P ^e	P	-
	Red-bellied snake	<i>Storeria occipitomaculata</i>	-	U	P ^e	P	-
	Eastern ribbonsnake ^d	<i>Thamnophis sauritus</i>	-	U	P ^e	P	-
	Common gartersnake	<i>Thamnophis sirtalis</i>	-	U	C ^e	C	2, 4
Viperidae Vipers and Pit Vipers	Copperhead ^d	<i>Agkistrodon contortrix</i>	E	U	C ^e	C	-
	Timber rattlesnake ^d	<i>Crotalus horridus</i>	E	U	C ^e	P	-

- Status of reptiles listed under the Massachusetts Endangered Species Act (MESA): E = Endangered; T = Threatened; and SC = Species of Special Concern.
- Species are classified as follows: C = Confirmed – species has been recorded on the property; P = Possible – species is known to occur in Hampden and/or Hampshire counties (Cardoza and Mirick 2009) and may occur on the property; and U = Unlikely – species is known to occur in Hampden and/or Hampshire counties, but appropriate habitat is absent from the property.
- Information contained in this table was obtained from the following sources.
 - Maier (2012).
 - Incidentally observed by RMP planner.
 - Model (2006a).
 - Tyning (2012).
- This species has been designated a Species in Greatest Need of Conservation (MassWildlife 2006, Table 4).
- Historic record for this species at Mount Tom (Tyning 1985).

Appendix G. Flora and Fauna. (Continued)

Table G.5. Amphibians of the Mount Holyoke Range Planning Unit. The following amphibians occur, or may occur, on the properties within the Mount Holyoke Range Planning Unit. Family, common, and scientific names follow NatureServe (2012); the sequence in which they are presented follows Cardoza and Mirick (2009).

Family	Common Name	Scientific Name	MESA ^a	Holyoke Heritage Sp ^b	Mt. Tom SR ^b	Mount Holyoke Range Sp ^b	Source ^c
Necturidae Mudpuppies and Waterdogs	Mudpuppy	<i>Necturus maculosus</i>	-	U	U	U	-
Ambystomatidae Mole Salamanders	Jefferson salamander ^d	<i>Ambystoma jeffersonianum</i>	SC	U	C ^e	C	1, 5, 6
	Blue-spotted salamander ^{d, f}	<i>Ambystoma laterale</i>	SC	U	U	C	1
	Spotted salamander	<i>Ambystoma maculatum</i>	-	U	P ^e	C	6
	Marbled salamander ^d	<i>Ambystoma opacum</i>	T	U	C ^e	C	1, 2, 6
Salamandridae Newts	Eastern newt	<i>Notophthalmus viridescens</i>	-	U	C ^e	C	3, 5
Plethodontidae Lungless Salamanders	Northern dusky salamander	<i>Desmognathus fuscus</i>	-	U	P ^e	P	-
	Redback salamander	<i>Plethodon cinereus</i>	-	U	P ^e	P	-
	Four-toed salamander ^d	<i>Hemidactylum scutatum</i>	-	U	P ^e	P	-
	Spring salamander ^d	<i>Gyrinophilus porphyriticus</i>	-	U	P ^e	P	-
	Northern two-lined salamander	<i>Eurycea bislineata</i>	-	U	P ^e	P	-
Pelobatidae Spadefoot Toads	Eastern spadefoot ^d	<i>Scaphiopus holbrookii</i>	T	U	U	P	-
Bufonidae True Toads	American toad	<i>Anaxyrus americanus</i>	-	P	P ^e	C	5
	Fowler's toad	<i>Anaxyrus fowleri</i>	-	U	P ^e	P	-
Hylidae True Tree Frogs	Spring peeper	<i>Pseudacris crucifer</i>	-	U	P ^e	P	-
	Gray treefrog	<i>Hyla versicolor</i>	-	U	P ^e	P	-
Ranidae True Frogs	American bullfrog	<i>Lithobates catesbeianus</i>	-	U	P ^e	P	-
	Green frog	<i>Lithobates clamitans</i>	-	U	P ^e	C	5
	Pickering frog	<i>Lithobates palustris</i>	-	U	P ^e	C	5
	Northern leopard frog ^d	<i>Lithobates pipiens</i>	-	U	P ^e	P	-
	Wood frog	<i>Lithobates sylvaticus</i>	-	U	C ^e	C	4, 5

- a. Status of reptiles listed under the Massachusetts Endangered Species Act (MESA): E = Endangered; T = Threatened; and SC = Species of Special Concern.
- b. Species are classified as follows: C = Confirmed – species has been recorded on the property; P = Possible – species is known to occur in Hampden and/or Hampshire counties (Cardoza and Mirick 2009) and may occur on the property; and U = Unlikely – species is known to occur in Hampden and/or Hampshire counties, but appropriate habitat is absent from the property.
- c. Information contained in this table was obtained from the following sources:
 1. Maier (2012).
 2. Jenkins et al. (2006).
 3. Incidentally observed by RMP planner.
 4. Model (2010).
 5. Tyning (2012).
 6. Harper (2013).
- d. This species has been designated a Species in Greatest Need of Conservation (MassWildlife 2006, Table 4).
- e. Historic record for this species at Mount Tom (Tyning 1985).
- f. In general, the NHESP considers all blue-spotted/Jefferson complex salamanders west of the Connecticut River to be Jefferson salamanders and all those east of the Connecticut River to be blue-spotted salamanders (Harper 2013).

Appendix G. Flora and Fauna. (Continued)

Table G.6. Butterflies of the Mount Holyoke Range Planning Unit. The following species have been recorded in the Mount Holyoke Range Planning Unit. Taxonomy and common names follow Opler et al. (2012).

Family	Common Name	Scientific Name	MESA ^a	Holyoke Heritage SP	Mt. Tom SR	Mt. Holyoke Range parks	Source ^c
Hesperiidae Skippers	Juvenal's duskywing	<i>Erynnis juvenal</i>	-	X	-	-	1
	Peck's skipper	<i>Polites peckius</i>	-	-	-	X	3
Papilionidae Parnassians and Swallowtails	Black swallowtail	<i>Papilio polyxenes</i>	-	X	X	X	2, 4, 7
	Eastern tiger swallowtail	<i>Papilio glaucus</i>	-	X	X	X	1, 3, 4
	Spicebush swallowtail	<i>Papilio troilus</i>	-	-	-	X	2
Pieridae Whites and Sulphurs	Cabbage white	<i>Pieris rapae</i>	-	X	-	-	1
Lycaenidae Gossamer-wing butterflies	Juniper hairstreak	<i>Callophrys gryneus</i>	-	-	-	X	2
	Banded hairstreak	<i>Satyrion calanus</i>	-	-	-	X	5
	Eastern tailed-blue	<i>Cupido comyntas</i>	-	X	-	-	1
	Spring azure	<i>Celastrina ladon</i>	-	X	X	X	7, 8
	Monarch	<i>Danaus plexippus</i>	-	X	-	-	10
Nymphalidae Brush-footed Butterflies	White admiral	<i>Limenitis arthemis arthemis</i>	-	-	-	X	3
	Red-spotted admiral	<i>Limenitis arthemis astyanax</i>	-	-	-	X	4
	Tawny emperor	<i>Asterocampa clyton</i>	-	-	-	X	6
	Pearl crescent	<i>Phyciodes tharos</i>	-	-	-	X	2
	Eastern comma	<i>Polygonia comma</i>	-	X	-	-	9
	Compton tortoiseshell	<i>Nymphalis vaualbum</i>	-	X	-	-	9
	Mourning cloak	<i>Nymphalis antiopa</i>	-	X	X	X	1, 2, 4, 7, 8, 9
	Red admiral	<i>Vanessa atalanta</i>	-	X	X	X	1, 3
	American lady	<i>Vanessa virginiensis</i>	-	-	-	X	2

a. Status of butterflies listed under the Massachusetts Endangered Species Act (MESA): E = Endangered; T = Threatened; and SC = Species of Special Concern.

b. Information contained in this table was obtained from the following sources:

1. Moore (2012).
2. Benner (2006).
3. Dysart (2010b).
4. Dysart (2011).
5. Gagnon (2009c).
6. Gagnon (2009d).
7. Model (2006a).
8. Model (2006b).
9. Model (2007).
10. Rose (2010).

Appendix H. Cultural Resources and Major Infrastructure.

Table H.1. Cultural resources and major infrastructure^a of Mount Holyoke Range State Park.

Location and Resource	Type ^a	Condition ^b	Date ^c	MHC # ^d
Mount Holyoke Range State Park	LA	-	-	HAD.W, SOH.E
Route 116 Native American find spot	SI	-	-	19-HS-353
Military Road, Amherst				
Moore House	BU	3	-	-
Garage	BU	1	2008	-
Silo	ST	1	2008	-
Shed, metal (flammables locker)	BU	3	-	-
Shed, wood	BU	2	-	-
Shed, masonry block	BU	3	-	-
Notch Visitor Center Area, Amherst				
Notch Visitor Center	BU	3	1981	-
Wellhead; Transient Non-Community Water Supply	OB	2	c. 1981	-
Shed, masonry block	BU	3	c. 1981	-
Buczala workshop	SI	-	-	19-HS-109
Lithia Springs Reservoir, South Hadley				
Dam	ST	3	-	-
Gate house	BU	5	-	-
Bachelor Street Area, Granby				
Garage	BU	5	-	-
Aldrich Dam	ST	-	-	-
Harris Mountain Road, Granby				
Town boundary marker	OB	-	-	-
Aldrich Lake, Granby				
Aldrich Lake Dam	ST	4	1917–1918	-
Camp Aldrich ruins (Boy Scout camp)	LA	-	-	-
YMCA camp ruins	LA	-	-	-
Granby Sand Plain				
Foundations; buildings 9200, 9201, and 9202	BU	-	c. 1957	-
Septic system debris	ST	-	c. 1957	-
Culverts (3)	ST	4	c. 1957	-
194 West State Street, Granby				
Dinosaur Museum (former)	BU	3	1949	-
Residence (former)	BU	5	1971	-
535 Bay Road, Belchertown				
Stable	BU	5	c. 1982	-
Cabin	BU	5	-	-

a. Unless otherwise noted, major infrastructure does not include roads, gates, trail bridges, kiosks, signs, non-public wells, septic systems, etc.

b. Resource types include the following: BU = Building; LA = Landscape; OB = Object; SI = Site; and ST = Structure.

c. Preliminary condition assessment using the building system and equipment condition codes as used in the Massachusetts Capital Asset Management Information System (CAMIS). The following codes are used: 1 = Excellent – easily restorable to like new condition; 2 = Good – routine maintenance required; 3 = Adequate – some corrective and preventative maintenance required; 4 = Fair – excessive corrective maintenance and repair required; 5 = Poor – renovation needed; and 6 = Fail.

d. Date provided, when available.

e. Massachusetts Historical Commission inventory form number; included only for those resources for which an inventory form currently exists. The existence of an inventory form does not convey any particular status regarding the significance of a resource, nor should it be interpreted that the lack of an inventory form means that the resource is not historic.

Appendix H. Cultural Resources and Major Infrastructure. (Continued)

Table H.2. Cultural resources and major infrastructure^a of Joseph Allen Skinner State Park.

Location and Resource	Type ^b	Condition ^c	Date ^d	MHC # ^e
Joseph Allen Skinner State Park	LA	-	-	HAD.I, HAD.922
Summit				
Summit House	BU	4	1861	HAD.398
“E.S. Fiske 1861” rock carving (Summit House)	OB	-	1861	-
“P” rock carving (Summit House)	OB	-	-	-
Wellhead; Transient Non-Community Water Supply	OB	2	-	-
Massachusetts State Police building	BU	3	-	-
Stone retaining wall	ST	3	-	-
Stone foundation of early summit building	ST	-	c. 1822	-
Stone foundation of Pease House	ST	-	1869	HAD.W
Picnic pavilion (north)	ST	2	-	-
Picnic pavilion (south)	ST	2	-	-
Skinner plaque	OB	2	1940	-
Granite town boundary marker	OB	-	-	-
Rock carvings	OB	-	-	-
B-24 J memorial	OB	-	1989	-
Concrete retaining wall (south of Summit House)	ST	1	-	-
Concrete retaining wall (west of Summit House)	ST	2	-	-
Metacomet and Monadnock Trail	SI	-	1945	HAD.923
Halfway Area				
Halfway House (John Wooten French House)	BU	3	c. 1852	-
Storage shed	BU	4	-	-
Halfway Garage	BU	3	1890	HAD.397
Water tank (12-foot radius)	ST	3	-	-
Water tank (18-foot radius)	ST	3	-	-
Pump house	BU	5	-	-
Pump cove	ST	3	-	-
Steam engine and cover	ST	3	-	HAD.W
Skinner State Park tramway	LA	6	1854–1942	HAD.932
Retaining walls	ST	3	-	-
Dam	ST	3	-	-
Skinner Park Road				
Skinner Park Road	ST	3	1908–1927	HAD.W/SOH.E
Mount Holyoke College cabin ruins	BU	-	1929	-
Route 47 – Hockanum Road				
Campsite	SI	-	-	19-HS-146
Hockanum Rural Historic District	LA	-	-	HAD.U
Tobacco barn	BU	5	c. 1870	HAD.U
Hockanum area	SI	-	Pre-Contact	19-HS-1
Hockanum Road	SI	-	-	19-HS-74
Dwight Avenue Woodlands	ST	-	-	HAD.924

- Unless otherwise noted, major infrastructure does not include roads, gates, trail bridges, kiosks, signs, non-public wells, septic systems, etc.
- Resource types include the following: BU = Building; LA = Landscape; OB = Object; SI = Site; and ST = Structure.
- Preliminary condition assessment using the building system and equipment condition codes as used in the Massachusetts Capital Asset Management Information System (CAMIS). The following codes are used: 1 = Excellent – easily restorable to like new condition; 2 = Good – routine maintenance required; 3 = Adequate – some corrective and preventative maintenance required; 4 = Fair – excessive corrective maintenance and repair required; 5 = Poor – renovation needed; and 6 = Fail.
- Date provided, when available.
- Massachusetts Historical Commission inventory form number; included only for those resources for which an inventory form currently exists. The existence of an inventory form does not convey any particular status regarding the significance of a resource, nor should it be interpreted that the lack of an inventory form means that the resource is not historic.

Appendix H. Cultural Resources and Major Infrastructure. (Continued)

Table H.3. Cultural resources and major infrastructure^a of Mount Tom State Reservation.

Location and Resource	Type ^b	Condition ^c	Date ^d	MHC # ^e
Mount Tom State Reservation	LA	-	1903	EAH.R, HLY.AC
Visitor Center Area				EAH.Q, HLY.Y
Visitor Center (Stone House)	BU	3	1935–36	HLY.1408
Bronze plaque	OB	-	1915	-
Visitor Center - West				
Bray Tower	ST	2	1929	-
Roy E. Goodreau Memorial	OB	-	1994	-
Privy foundation	ST	-	1936	-
Entrance gates (East Street, Easthampton)	ST	4	1929	-
<i>Off reservation</i>				
Visitor Center - North				
Traffic rotary	LA	2	1935	-
Dynamite bunker	ST	-	-	HLY.8
Stage coach trace	SI	-	19 th century	EAH.4
Goat Peak tower	ST	3	1928	-
Goat Peak concrete steps	OB	5	-	-
Town boundary marker (Goat Peak)	OB	-	c. 1785	-
Dryknoll Vista/parking lot	SI	-	1935	-
Eyrie House ruins complex (Mount Nonotuck)	SI	-	c. 1861	HLY.3
Radio building; MassDOT (Mount Nonotuck)	BU	5	-	-
Radio tower (Mount Nonotuck)	ST	3	1944	-
Schwobe projectile point find spot	SI	-	Pre-Contact	19-HD-305
Rodimon Quarry Native American site	SI	-	Pre-Contact	19-HD-303
Rodimons (sic) Quarry site	SI	-	Pre-Contact	19-HD-308
CCC gravel pit and shovel dump	SI	-	c. 1935–41	HLY.17
Visitor Center - East				
Garage foundation	ST	-	1934	-
Playground (Elder Field)	SI	-	1936–2013	-
Pavilion (Elder Field)	BU	2	2001	HLY.940
Free Orchard Quarry	SI	-	19 th century	HLY.14
Parson's Free Orchard Farm	SI	-	c. 1773–80	HLY.11
Stairway	ST	-	-	-
Robert S. Cole Museum (Trailside Museum)	BU	4	c. 1940–42	HLY.1410
Wellhead; Transient Non-Community Water Supply	OB	2	1999	-
CCC Amphitheater	SI	-	c. 1935-41	HLY.16
CCC Blacksmith Shop site	SI	-	c. 1935-41	HLY.18
Nature Trails Quarry	SI	-	19 th century	HLY.12
Beau Bridge Trail Native American Site	SI	-	Pre-Contact	19-HD-304
Beau Bridge Trail Quarry	SI	-	19 th century	HLY.15

Continued on next page.

Appendix H. Cultural Resources and Infrastructure. (Continued)

Table H.3. Cultural resources and major infrastructure of Mount Tom State Reservation. (Continued)

Location and Resource	Type ^b	Condition ^c	Date ^d	MHC # ^e
Visitor Center - South				
Maintenance shop (Wood Yard)	BU	4	c. 1936–41	HLY.1409
Salt shed (Wood Yard)	BU	3	1980	HLY.943
Scenic Overlook A	SI	-	-	EAH.926
Stone crusher remains and chutes	OB	6	1928	EAH.902
Scenic Overlook B	SI	-	-	EAH.927
Scenic Overlook C	SI	-	-	EAH.928
Scenic Overlook D	SI	-	-	EAH.929
Christopher Clark Road Quarry site	SI	-	19 th century	EAH.6
Talus railroad	SI	-	19 th -20 th century	EAH.5
Concrete dam	ST	-	1946	-
Contact station	BU	3	c. 1982	-
Entrance gates (Route 141; Easthampton)	ST	4	1928	-
Triangular antenna (Private; Easement 1)	ST	-	-	-
Antenna building 1 (Private; Easement 1)	BU	-	-	-
Antenna building 2 (Private; Easement 1)	BU	-	-	-
Antenna building 3 (Private; Easement 1)	BU	-	-	-
Antennae (Private; Easement 2)	ST	-	-	-
Antenna building 1 (Private; Easement 2)	BU	-	-	-
Antenna building 2 (Private; Easement 2)	BU	-	-	-
Antenna building 3 (Private; Easement 2)	BU	-	-	-
Ski area shed 1	BU	-	-	-
Lake Bray Area				
Warming Hut	BU	3	1969	HLY.1420
Pump house	BU	3	1980	-
Accessible fishing platform	ST	2	1998	-
Cascade Brook auto bridge (to parking lot)	ST	3	-	-
Culverts (3)	ST	2	1956	-
Lake Bray Dam and road (historic)	SI	-	1912–57	HLY.4
Dam/spillway (modern)	ST	2	2002	-
Lake Bray - West				
Cascade Brook concrete culvert	ST	2	1934	-
CCC ski trails	SI	-	-	-
Lake Bray - North				
Bray Brook sawmill site	SI	-	18 th –19 th century	HLY.10
Lyman's Inn site	SI	-	18 th century	HLY.9
Bray Brook marsh roadbed and bridge abutments	SI	-	19 th –20 th century	HLY.5
Steam sawmill site	SI	-	1919	HLY.6
Site 9	SI	-	Pre-Contact	19-HD-13
Boat ramp – Connecticut River Boat Ramp <i>Off reservation</i>	ST	2	c. 1967	-
Dock – Connecticut River Boat Ramp <i>Off reservation</i>	OB	2	-	-

Continued on next page.

Appendix H. Cultural Resources and Major Infrastructure. (Continued)

Table H.3. Cultural resources and major infrastructure^a of Mount Tom State Reservation. (Continued)

Location and Resource	Type ^b	Condition ^c	Date ^d	MHC # ^e
Lake Bray - East				
Park Headquarters	BU	3	1995	HL.Y.1421
Road grader remains	OB	-	1925	-
Contact station	BU	3	2008	-
Entrance Gates (Route 5, Holyoke)	ST	5	1935	-
<i>Off reservation</i>				
Lake Bray - South				
Bray Brook foot bridge	ST	1	2012	-
Lost Boulder Quarry and Quarry Road Trace	SI	-	19 th century	HL.Y.13
Mt Tom Ski Area sign (Little Mt. Tom)	ST	3	20 th century	-
Mountain Park dump site	SI	-	19 th -20 th century	HL.Y.7
Mountain Park incinerator site	SI	-	-	-
Incinerator	ST	6	-	-
Mountain Park, north entrance gate	ST	4	1928	-
Mountain Park, south entrance gate	ST	4	1928	-
Concrete trestles (Mt. Tom Railroad Company)	ST	4	-	-
Boat ramp – Berchulski Fisherman Access Point	ST	2	-	-
<i>Off Reservation</i>				

a. Unless otherwise noted, major infrastructure does not include roads, gates, trail bridges, kiosks, signs, non-public wells, septic systems, etc.

b. Resource types include the following: BU = Building; LA = Landscape; OB = Object; SI = Site; and ST = Structure.

c. Preliminary condition assessment using the building system and equipment condition codes as used in the Massachusetts Capital Asset Management Information System (CAMIS). The following codes are used: 1 = Excellent – easily restorable to like new condition; 2 = Good – routine maintenance required; 3 = Adequate – some corrective and preventative maintenance required; 4 = Fair – excessive corrective maintenance and repair required; 5 = Poor – renovation needed; and 6 = Fail.

d. Date provided, when available. Information obtained from MHC documents, when available or from Schwobe collection located in the reservation's Headquarters (dates in italics).

e. Massachusetts Historical Commission inventory form number; included only for those resources for which an inventory form currently exists. The existence of an inventory form does not convey any particular status regarding the significance of a resource, nor should it be interpreted that the lack of an inventory form means that the resource is not historic.

Appendix H. Cultural Resources and Major Infrastructure. (Continued)

Table H.4. Cultural resources and major infrastructure^a of Holyoke Heritage State Park.

Resource	Type ^b	Condition ^c	Date ^d	MHC # ^e
Visitor Center	BU	4	1984	-
Fountain	ST	4	c. 1984	-
Carousel Building	BU	3	1993	-
Carousel	ST	2	1929	-
Boarding platform/storage shed	BU	3	1985	-
Pullman-Standard coach #3204 ^f	OB	3	1925	-
Pullman-Standard coach #3224 ^f	OB	5	1925	-
Pullman-Standard coach #4301 ^f	OB	3	1911	-
Industrial flywheel display	OB	2	-	-
Holyoke Police Memorial (DiNapoli Plaza)	OB	1	2002	-
Heritage park dump	SI	-	19 th century	HL.Y.2

a. Unless otherwise noted, major infrastructure does not include roads, gates, trail bridges, kiosks, signs, non-public wells, septic systems, etc.

b. Resource types include the following: BU = Building; LA = Landscape; OB = Object; SI = Site; and ST = Structure.

c. Preliminary condition assessment using the building system and equipment condition codes as used in the Massachusetts Capital Asset Management Information System (CAMIS). The following codes are used: 1 = Excellent – easily restorable to like new condition; 2 = Good – routine maintenance required; 3 = Adequate – some corrective and preventative maintenance required; 4 = Fair – excessive corrective maintenance and repair required; 5 = Poor – renovation needed; and 6 = Fail.

d. Date provided, when available.

e. Massachusetts Historical Commission inventory form number; included only for those resources for which an inventory form currently exists. The existence of an inventory form does not convey any particular status regarding the significance of a resource, nor should it be interpreted that the lack of an inventory form means that the resource is not historic.

f. This resource is currently located at the Berkshire Scenic Railway Museum in Lenox.

Appendix I. Elements of the Amherst Police Department Ropes Course at Mount Holyoke Range State Park.

High Ropes Elements

Catwalk. This is a great activity for balance and self confidence. Participants walk along the suspended beam to the other side. This event shows how fear affects our perception. Participants who easily cross a log at ground level suddenly are hesitant and nervous, or even paralyzed when the log is 30 feet higher. Excellent as a team activity.

Burma Bridge. The Burma Bridge provides hand lines and a foot cable to help you cross. With plenty of stability and support, fear and self motivation are the chief obstacles to overcome. This element provides a variety of options to increase the challenge level for one or two participants. Safety netting can be used to provide safe access for non-harnessed guests, children's events, and public structures (sic).

Giant Ladder. A great team relationship event. Done in pairs or groups of three, the Giant Ladder is a powerful tool. Imagine a ladder eight feet wide with logs for rungs. Each step gets progressively bigger, from three to six feet apart. Participants find out quickly how important it is to help each other and that their success depends on the success of their teammate(s).

Ships Crossing. This unique element challenges participants to use only the hanging ropes for support and cross the foot cable. They must meet and switch places in the center. The switch requires trading of support ropes.

Multi-Vine. Using only the 'vines' hanging down, participant must cross on the foot cable to the other side. Vines have varying lengths and spacing, making each step a challenging adventure.

Zip-Line. A zip line can be one of the most exciting elements of a ropes course. Screaming through the trees or over the ground at up to 45 miles per hour is exhilarating and builds self-esteem and confidence. The participant climbs to a platform. After being hooked into the zip line safety system, they jump off! Once they catch their breath, they find the earth hurling by.

Vertical Playground. A two-person vertical challenge that requires participants to traverse ropes, tires, and other obstacles to reach a goal at the top of the element.

Pamper Plank. Participants use a harness that allows for a rear attachment. Individuals then climb a tree to a platform 15–20 feet above the ground. From that point they leap outward, hands first in an attempt to reach a trapeze bar. This is the ultimate in mind over matter.

Low Ropes Elements

The Wall. The Wall is just that, a smooth 10–14 foot wall over which each team member must go. This takes planning, especially to figure out how to get the last person up and over.

Trust Fall. The Trust Fall demonstrates the importance of trusting one another. It is a platform about four feet off the ground. From a standing position on the platform, a team member falls into the arms of teammates. It sounds simple, but it is one of the most mentally challenging elements.

Trolleys. The objective of this element is to cross an area about 20–40 feet, using four 8-foot-long by 4-inch-wide by 4-inch-high beams, without falling off. The beams are equipped with rope loops to be used as handles.

Mohawk Walk. A cable is installed between 4–6 zigzagging trees 12–18 inches above the ground. The objective of this element is for the group, or parts of the group, to join hands, forming a human chain, and attempt to walk from one end of the cable to the other.

Wild Woozy. Cables are installed between three trees in a narrowing "V" about 12 inches from the ground. The objective is for two people, each on a separate cable, starting at the narrow end of the "V", to stand facing each other. They must support each other as they walk towards the wide end of the "V" without falling.

Appendix I. Elements of the Amherst Police Department Ropes Course at Mount Holyoke Range State Park. (Continued)

T/P Shuffle. The T/P Shuffle is a 20 foot horizontal log laying on supports on the ground (it may also be suspended by cables). The top may only be about 18" above the ground, yet it is a real challenge when the group has to balance on the log and then half must switch ends with the other half. Who knows what kind of restrictions the facilitator might impose on the group, or on those who end up touching the ground?

Swinging Tires. This is a grueling element where participants cross via swinging tires; great for younger participants and fit people.

Lord of the Rings. Cables are stretched between six trees (about 18 inches off the ground) converging on a ring in the center. Participants start at the trees in pairs or singles. The object is to get everyone to relocate (on the cables) to the tree opposite their starting location. The obstacle is the ultimate in planning and teamwork.

Appendix J. Management Objectives Identified in the Holyoke Range State Park GOALS Plan (DEM 1989).

In 1989 the DEM issued a *Guidelines for Operations and Land Stewardship* (GOALS) plan for Holyoke Range State Park. This plan included information on both Mount Holyoke Range and Joseph Allen Skinner state parks. It established 84 management objectives under the headings of Resource Management, Public Access, and Operational Resources. Several objectives address management actions no longer appropriate in light of the parks' landscape designations, or no longer possible given current funding and staffing. However, the majority of objectives remain relevant. These were considered while developing the specific management recommendations presented in Section 4 of this RMP.

The following management topics and objectives were identified in the GOALS plan for Holyoke Range State Park (DEM 1989).

1. Resource Management

Forest Lands

- To locate and mark boundaries of all state owned lands within the park boundaries. Areas where protection and management needs are of greatest concern will be given priority treatment.
- To minimize the public misuse and deterioration of roads which afford access to the range for forest management. An effective program to control off-road vehicle use in the park is required.
- To develop and maintain a permanent, low maintenance transportation system throughout the lower slopes of the range. Although intended primarily for timber harvesting, the system would add to the existing trail network and aid forest fire protection efforts.
- To acquire access to all land parcels where such access is needed for forest management. Several tracts of land in state ownership are isolated and accessible only through private or town property.
- To silviculturally regenerate and improve forest stands in the order of highest silvicultural need and in the most administratively efficient and cost effective manner, consistent with land use zoning specified in this plan. Exceptions, however, will be allowed to meet wildlife and other resource objectives.
- To maintain a current inventory of information for all forest stands owned by the state and available for timber management on the Holyoke Range.

Water Resources

- To increase or maintain the amount of water available for domestic use through watershed and aquifer management and protection.
- To minimize the amount of sediment, erosion, and stream/wetland/pond siltation.
- To reduce peak flows for flood control.
- To maintain or improve surface and ground water quality through watershed and aquifer management and protection.

Appendix J. Management objectives identified in the Holyoke Range State Park GOALS plan (DEM 1989). (Continued)

Plant and Animal Habitats

- To maintain or increase the diversity of plant and animal habitats that have historically occurred on the range.
- To provide cover and food for wildlife in connection with the layout of timber sales, treatment of forest roads and log landings, and the selection of trees to be cut or left in the residual stand following silviculture.
- To perform small scale habitat improvements which cannot be reasonably achieved through timber or fuel wood sales, but can be done by the park staff and/or interested public service groups.
- To protect endangered, threatened or unique plant and animal species through a program of habitat preservation and management.

Visual Resources

- To lead and support efforts to preserve agricultural lands and open space within the viewshed of the Holyoke range.
- To preserve the integrity of natural systems and cultural resources that contribute to scenic beauty.
- To improve the number and quality of scenic vistas.
- To increase landscape variety by maintaining open fields and forests of different species, age, and structure.
- To preserve some older, mature forests on the range.
- To sensitively manage the visual corridors along major trails and roads.
- To restrict the placement of harsh, incongruous visual elements on the range, especially in its mountain peaks and ridgelines.
- To design, construct and restore park facilities and architecture to harmonize with existing historical features and the natural landscape of the range.

Archaeological and Historical Resources.

- To protect and preserve the cultural and archaeological resources of the range.
- To increase the public knowledge of these resources, through interpretation, in a manner that is consistent with preservation.

Pest Management and Control.

- To prevent or minimize the development of pest problems and control destruction to valuable forest and shade trees using integrated pest management methods. The solution(s) which provide the most beneficial effects based on effectiveness, safety, environmental protection and cost will be selected.
- To control pest populations that threaten the scenic value, human comfort and human safety at developed recreation areas.
- To detect pest outbreaks, determine the extent and severity of the problem and to assess pest impacts and management options for preventing, mitigating or controlling the responsible agents.
- To support research aimed at pest management and control problems.
- To assist and support appropriate municipal pest control programs in the vicinity of the Holyoke range.
- To inform local governments and the general public of ongoing preventative and remedial pest control efforts.

Appendix J. Management objectives identified in the Holyoke Range State Park GOALS plan (DEM 1989). (Continued)

Fire Management and Control.

- To reduce the occurrence of human-caused fires threatening the resources of the range through public education programs and enforcement of applicable laws related to recreational use, open burning, forest cutting, and similar activities.
- To restrict unauthorized vehicle access to remote locations within the range.
- To create and maintain access for fire suppression, consistent with zoning and other resource objectives.
- To augment resource management efforts such as prescribed burning for wildlife habitat improvement.
- To aid local communities in fighting wildfires.
- To suppress all fires threatening resources and property in the range.
- To train park staff and local fire departments in wildland fire fighting techniques.
- To predict and monitor conditions of high fire danger.
- To minimize fire hazards in public buildings, developed recreation sites, and undeveloped areas of the range.
- To improve water supplies, and access to them, for fire suppression.

2. Public Access

Recreational Uses

- To provide for limited recreational users on the range consistent with the Land Use Zoning and the Management Objectives set forth elsewhere in this plan.
- To provide for those recreational uses which relate most directly to the enjoyment and appreciation of the natural and scenic resources of the range.
- To evaluate all proposed recreational access by its relative intrusion upon the environmental quality of the range.

Trails and Road Systems.

- To develop and maintain a minimal system of trails and access roads in a manner which protects the range.
- To limit the intrusion of roads and trails into the area's most environmentally sensitive areas, i.e., Unique Resource Zone.
- To establish and maintain all trails where possible on publically owned land.
- To foster public awareness and respect for private property where crossed by roads or trails.
- To develop a well-marked trail system originating from the Notch Visitor Center.
- To implement a well marked trail system throughout the range.
- To seek to acquire trail easements where present trails cross private property where rerouting is not practical.

Appendix J. Management objectives identified in the Holyoke Range State Park GOALS plan (DEM 1989). (Continued)

Parking.

- Parking areas should be well marked and easily patrolled.
- Parking areas, other than at the Notch Visitor Center, should be constructed of gravel borrow eight to ten inches in depth.
- Additional parking areas should be established at both the eastern and western areas of the range.
- Public parking at the Summit House should eventually be limited to handicapped access during peak weekends (when the shuttle service is in operation) or once the tramway is reconstructed and in regular operation.

River Access.

- To preserve the visual qualities of the Connecticut River and its environs as viewed from the Holyoke range.
- To provide for a more direct recreational link between the river and the Holyoke range.
- To explore the feasibility of providing a means of access to the Summit House for persons arriving at the base of the range via the Connecticut River.

Facility Access.

- To provide, as practically as possible, full access to the Holyoke range regardless of race, age, income, or physical disability.
- To provide a diverse range of recreational opportunities to embrace as wide a segment of the population as the natural features of the range may permit.
- To develop outreach programs that target groups which have, for reasons related to age, income, etc., traditionally not had access to the range.

3. Operational Resources

Personnel

- To provide trained, knowledgeable employees to enhance the user's visit.
- To provide a clean safe area where the public can enjoy the historical and recreational aspects of the park.
- To ensure that sufficient personnel are available each day to run the park in a manner consistent with the maintenance, recreation, and interpretive policies of the park.
- To provide supervisory personnel for each day the park is open.

Equipment

- To procure equipment to assist with maintenance of the park and its trail systems.
- To maintain park equipment at peak efficiency and condition.

Appendix J. Management objectives identified in the Holyoke Range State Park GOALS plan (DEM 1989). (Continued)

Buildings and Other Structures

- To maintain a high level of safety and enjoyment to the public using the range.
- To remove any structures that impair the scenic quality of the range, or pose as safety hazards to the public.
- To repair and maintain existing structures.
- To restore and maintain the Summit House to its highest and best use in keeping with its character.
- To add structures where necessary to control or provide access.

Interpretive Programs

- To increase public knowledge of the many resources of the range.
- To use this knowledge to foster a caring and responsible attitude toward the park by visitors.
- To enhance the visitor's experience while in the park.
- To become a "clearinghouse" for information on the range.
- To continue cooperative efforts with local environmental centers to offer quality programming designed to meet the needs of the local and visiting public.
- To continue to publicize interpretive programs and recreational opportunities at the park.

Friends of the Holyoke Range

- To continue to aid recreational, educational, and management programs in the park.
- To provide a repository for donations to the park.
- To provide a corps of volunteers who will assist with maintenance, trail work, visitor information, and other duties.
- To increase public awareness of and involvement with the state park.
- To provide volunteer staff at the Summit House and Visitor Center; volunteers can assist with the maintenance, trail work, programming, and visitor information.

Land Acquisition Plan

- To acquire interest in such lands necessary for the scenic, historical, recreational, open space and ecological protection of the Holyoke Range. DEM will give preference to outright acquisition of land in fee simple interest. However, other land protection mechanisms such as easements and deed restrictions will be used where appropriate.
- To involve the public in the timely review of the Department's land acquisition and protection policies and actions via the Holyoke Range Advisory Committee.

Appendix K. Summary of NHESP Management Recommendations for Joseph Allen Skinner and Mount Holyoke Range State Parks (NHESP 2007).

Highest Priority Recommendations

Upland Open Woodland Management Unit

- **Wildfire Response Plan.** Develop a detailed plan for response to natural and accidental fires.
- **Prescribed Fire Plan.** Develop a detailed plan for prescribed burns.
- **Rare Species Surveys and Monitoring.** Establish a regular survey and monitoring program for rare plants and moth.
- **Invasive Species Surveys and Monitoring.** Establish a regular monitoring and response program for invasive species.

Data Sensitive Rare Animal Management Unit

- **Staff Training.** Educate all staff about data sensitive rare animals and appropriate responses.
- **Habitat Survey.** Search for (winter habitat) on DCR property and monitor (winter habitat) annually.

Medium Priority Recommendations

Mesic Forest Management Unit

- **Rare Species Surveys and Monitoring.** Establish a regular survey and monitoring program for rare plants.
- **Invasive Species Surveys and Monitoring.** Establish a regular monitoring and response program for invasive species.

Palustrine Management Unit

- **Rare Species Surveys and Monitoring.** Establish a regular survey and monitoring program for rare plants.
- **Invasive Species Surveys and Monitoring.** Establish a regular monitoring and response program for invasive species.

Lower Priority Recommendations

Wood Turtle Management Unit^a

- Create nesting sites.
- Use guidelines for forestry and mowing. [**Note:** Commercial harvest and salvage operations are prohibited in Reserves and commercial production of wood for wood products or energy is not an objective of Parklands.]

Box Turtle Management Unit^a

- Create nesting sites.
- Use guidelines for forestry and mowing. [**Note:** Commercial harvest and salvage operations are prohibited in Reserves and commercial production of wood for wood products or energy is not an objective of Parklands.]

Connecticut River Management Unit

- Monitor water quality and flow regime. [**Note:** A multi-partner effort involving the Connecticut River Watershed Council, University of Massachusetts Water Resources Center, and Pioneer Valley Planning Commission already monitors water quality along the Connecticut River, including in the planning unit.]

Vernal Pool Animals Management Unit

- Use guidelines for forestry.
[**Note:** Commercial harvest and salvage operations are prohibited in Reserves and commercial production of wood for wood products or energy is not an objective of Parklands.]
- Certify all significant vernal pools.
- Survey vernal pools for MESA-listed species.

a. The NHESP recently indicated that the Wood Turtle Management Unit and Box Turtle Management Unit should be combined into a single management unit and referred to as the Turtle Management Unit for the purposes of this RMP (Harper 2013).

Appendix L. Summary of NHESP Management Recommendations for Mount Tom State Reservation (NHESP 2007).

Highest Priority Recommendations

Upland Open Woodland Management Unit

- **Wildfire Response Plan.** Develop a detailed plan for response to natural and accidental fires.
- **Prescribed Fire and Vegetation Management Plan.** Develop a detailed plan for prescribed burns and vegetation management to maintain a mosaic of habitats.
- **Rare Species Surveys, Monitoring, and Management.** Establish a regular survey and monitoring program for rare plants and moth and undertake population-specific recommendations where identified.
- **Invasive Species Surveys and Monitoring.** Establish a regular monitoring and response program for invasive species.

Data Sensitive Rare Animal Management Unit

- **Staff Training.** Educate all staff about data sensitive rare animals and appropriate responses.
- **Habitat Survey.** Search for (winter habitat) on DCR property and monitor (winter habitat) annually.

Medium Priority Recommendations

Falcon Management Unit

- **Cliff Closure.** Prohibit rock climbing during the nesting seasons.
- **Trail Closure.** Close trail immediately above nest in nesting season.

Mesic Forest Management Unit

- **Habitat Preservation.** Exclude logging, burning, roads, trail construction, and ATVs. [*Note:* Commercial production of wood for wood products or energy is not an objective of Parklands, such as Mount Tom State Reservation.]
- **Rare Species Surveys and Monitoring.** Establish a regular survey and monitoring program for rare plants.
- **Invasive Species Surveys and Monitoring.** Establish a regular monitoring and response program for invasive species.

Riverside Rocky Shoreline Management Unit

[*Note:* This Management Unit does not occur on DCR-owned or managed property, but on adjacent property owned by The Trustees of Reservations.]

- **Rare Species Surveys and Monitoring.** Establish a regular survey and monitoring program for rare plants and evaluate the effects of trampling.
- **Invasive Species Surveys and Monitoring.** Establish a regular monitoring and response program for invasive species.

Lower Priority Recommendations

Wood Turtle and Box Turtle Management Unit^a

[*Note:* The NHESP has recently indicated that Wood Turtle and Box Turtle Management Unit should be referred to as the Turtle Management Unit (Harper 2013).]

- Create nesting sites.
- Use guidelines for forestry and mowing. [*Note:* Commercial production of wood for wood products or energy is not an objective of Parklands, such as Mount Tom State Reservation.]
- Educate the public.

Connecticut River Management Unit

- Monitor water quality and flow regime. [*Note:* A multi-partner effort involving the Connecticut River Watershed Council, University of Massachusetts Water Resources Center, and Pioneer Valley Planning Commission already monitors water quality along the Connecticut River, including in the planning unit.]

Appendix L. Summary of NHESP Management Recommendations for Mount Tom State Reservation (NHESP 2007). (Continued)

Vernal Pool Animals Management Unit

- Use guidelines for forestry. [**Note:** Commercial production of wood for wood products or energy is not an objective of Parklands, such as Mount Tom State Reservation.]
- Certify all significant vernal pools.
- Survey vernal pools for MESA-listed species.
- Close the entrance to Christopher Clark Road (to night traffic) in the spring and fall. [**Note:** Park gates are closed at night on a year-round basis.]

Appendix M. Acts of the Massachusetts Legislature that Directly Address the Mount Holyoke Planning Unit.

Year	Chapter	Title	Comments
1867	84	An Act to supply the Town of Easthampton with pure water.	Established the Easthampton Aqueduct Company and allowed the company to “take, hold and convey into said town the waters of Rum Brook and Brandy Brook, so called, rising from springs near the foot of Mount Tom, in said town and the waters which flow into and from the same, and may take and hold, by purchase or otherwise, such land on and around the margin of said brooks...”.
1891	252	An Act to supply the Town of Easthampton with water.	“The said town ...may take by purchase or otherwise and hold the waters of all springs, ponds and streams located and described as follows: - First. Those located in Northampton on or near the top of Mount Tom, at a place known as the Old Orchard... Second. Springs and streams located partly in Northampton and partly in Easthampton...on the westerly slope of Mount Tom, and flowing northwesterly and emptying into Williston Pond. Third. Springs and streams known as Brandy Brook and Rum Brook located in the town of Easthampton on the westerly slope of Mount Tom...Fourth. Springs and streams located in the Town of Easthampton on the westerly slope of Mount Tom.”
1902	545	An Act in further addition to an Act making appropriations for sundry miscellaneous expenses authorized during the present year and for certain other expenses authorized by law.	Allowed “a sum not exceeding two thousand dollars” for “a survey and estimate by the Board of Harbor and Land Commissioners to determine the cost of acquiring a part of Mount Tom and Mount Nonotuck as a state reservation...”
1903	264	An Act to establish the Mount Tom State Reservation in the County of Hampshire.	<p>Directed the county commissioners of the counties of Hampshire and Hampden “to take or acquire by purchase, gift or otherwise, land not exceeding fifteen hundred acres in extent, situated on or about Mount Tom and Mount Tom Range...”</p> <p>This Act also:</p> <ul style="list-style-type: none"> • Identified the name of the property as Mount Tom State Reservation. • Indicated that “the title to the land shall be and remain in the Commonwealth of Massachusetts.” • Established the Mount Tom State Reservation Commission and required the Commission to annually estimate “necessary expense for the care and maintenance of said reservation”, the estimate of which shall be annually submitted to the General Court, and “shall be assessed upon said counties according to their assessed valuations, and collected in the same manner in which county taxes are collected.” • Indicated that the county treasurer of Hampshire County “shall receive and hold ... all sums raised by taxation ... for the purpose of the reservation.” • Allowed \$35,000 “to carry out the purposes of this act”; and • Required the acceptance of this Act by the legal voters of Hampshire and Hampden counties.

Continued on next page.

Appendix M. Acts of the Massachusetts Legislature that Directly Address the Mount Holyoke Planning Unit. (Continued)

Year	Chapter	Title	Comments
1903	427	An Act making appropriations for sundry miscellaneous expenses authorized during the present year, and for certain other expenses authorized by law.	Allotted \$35,000 for “the purchase of land for the establishment of the Mount Tom State Reservation.”
1904	351	An Act relative to the Mount Tom State Reservation.	Amended Chapter 264 of the Acts of 1903 to allow the County Commissioners of Hampshire and Hampden counties to acquire up to 1,800 acres by April 1, 1905.
1905	146	An Act to provide for supplying a part of the Town of Hadley with water and for establishing the Hadley Water Supply District.	Established the Hadley Water Supply District and allowed the district to “take by purchase or otherwise, and hold the waters of Harts Brook and its tributaries, the waters of Sheep Pasture Brook, and any and all of the springs and streams flowing from the northerly slope of the Mount Holyoke Range ... together with such contiguous territory as may be necessary for the conservation of the watershed of said springs and streams...”
1905	413	An Act relative to the Mount Tom State Reservation.	Amended Chapter 264 of the Acts of 1903 and Chapter 351 of the Acts of 1904 to allow for land acquisition through April 1, 1906. This Act also authorized an additional \$10,000 for land acquisition.
1905	480	An Act in further addition to an Act making appropriations for sundry and miscellaneous expenses authorized during the present year.	Appropriated the \$10,000 for additional land acquisition referenced in Chapter 413 of the Acts of 1905.
1906	514	An Act to provide for enlarging the Mount Tom State Reservation.	Authorized the Mount Tom State Reservation Commission to “expend, for the purpose of acquiring, by purchase or otherwise, such lands adjoining the present Mount Tom State Reservation or enclosed by it... a sum not exceeding fifteen thousand dollars” during 1906–1908. This Act also authorized the commission “to acquire, hold and care for such additional lands as is given to it by” Chapter 264 of the Acts of 1903.
1907	12	An Act making an appropriation for enlarging the Mount Tom State Reservation.	Appropriated \$5,000 “for the purpose of acquiring such lands adjoining the present Mount Tom State Reservation...” as authorized by Chapter 514 of the Acts of 1906.
1908	15	An Act making an appropriation for enlarging the Mount Tom State Reservation.	Appropriated \$5,000 “for the purpose of acquiring such lands adjoining the present Mount Tom State Reservation...” as authorized by Chapter 514 of the Acts of 1906.
1909	480	An Act to establish the boundary line between the cities of Holyoke and Northampton.	This Act includes references to boundary markers on the Mount Tom Range.
1916	367	An Act in further addition to the several acts making appropriations for sundry miscellaneous expenses authorized during the present year and for sundry other expenses authorized by law.	Authorized a sum “not exceeding two hundred dollars” for an investigation by the state forester “as to the advisability of taking Mount Holyoke as a state reservation.
1917	195	An Act to provide for enlarging the Mount Tom State Reservation.	Authorized the Mount Tom State Reservation Commission “to acquire by purchase, or by right of eminent domain, such land adjoining the reservation as the commission may deem expedient to acquire; and may expend... a sum not exceeding one thousand dollars.”
1917	336	An Act in further addition to the several acts making appropriations for sundry and miscellaneous expenses authorized by law.	Appropriated \$1,000 for enlarging the Mount Tom State Reservation as authorized by Chapter 195 of the Acts of 1917.

Continued on next page.

Appendix M. Acts of the Massachusetts Legislature that Directly Address the Mount Holyoke Planning Unit. (Continued)

Year	Chapter	Title	Comments
1918	167	An Act to authorize an exchange of land by the Mount Tom State Reservation Commission.	Authorized the commission to “sell to Patrick J. Kennedy, Junior, of Holyoke, for such price as the commission shall determine... a certain tract of land situated in Holyoke on the Highway leading from Holyoke to Northampton.
1919	211	An Act in addition to the general appropriations Act making appropriations to supplement certain items contained therein, for certain permanent improvements and for certain new activities and projects.	Authorized payment of \$1,850 “to John H. Montgomery, administrator of the estate of William Street, late of Holyoke... for the taking by the Mount Tom State Reservation Commission, of certain land, and rights connected therewith, belonging to said William Street.”
1921	381	An Act making appropriations for the maintenance of certain counties, for interest, sinking fund and serial bond requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated \$4,500 for Mount Tom State Reservation for Hampden County and \$800 for Hampshire County.
1922	418	An Act making appropriations for the maintenance of certain counties, for interest, sinking fund and serial bond requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$7,500 for Mount Tom State Reservation for Hampden County and \$1,500 for Hampshire County.
1923	342	An Act making appropriations for the maintenance of certain counties, for interest, sinking fund and serial bond requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$6,500 for Mount Tom State Reservation for Hampden County and \$1,500 for Hampshire County.
1923	447	An Act authorizing the retirement of Henry B. Spencer, warden of the Mount Tom Reservation.	This Act accepted the retirement of the reservation’s longtime warden and authorized an annual pension, for the remainder of his life, equal to one-half the annual compensation paid to him at the time of his retirement.
1924	348	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$6,500 for Mount Tom State Reservation for Hampden County and \$1,500 for Hampshire County.
1925	191	An Act to provide for further enlarging the Mount Tom State Reservation.	Authorized a sum not exceeding \$700 for enlarging the Mount Tom State Reservation.
1925	252	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$10,500 for Mount Tom State Reservation for Hampden County and \$2,200 for Hampshire County.
1926	354	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$10,500 for Mount Tom State Reservation for Hampden County and \$2,000 for Hampshire County.

Continued on next page.

Appendix M. Acts of the Massachusetts Legislature that Directly Address the Mount Holyoke Planning Unit. (Continued)

Year	Chapter	Title	Comments
1927	250	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$10,500 for Mount Tom State Reservation for Hampden County and \$2,300 for Hampshire County.
1928	312	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$10,500 for Mount Tom State Reservation for Hampden County and \$2,000 for Hampshire County.
1929	325	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$9,000 for Mount Tom State Reservation for Hampden County and \$2,000 for Hampshire County.
1930	245	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$9,000 for Mount Tom State Reservation for Hampden County and \$2,000 for Hampshire County.
1931	396	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$12,000 for Mount Tom State Reservation for Hampden County and \$2,000 for Hampshire County.
1932	151	An Act to provide for further enlarging the Mount Tom State Reservation.	Authorized a sum not to exceed \$500 to acquire by purchase or eminent domain, land adjoining Mount Tom Reservation.
1932	228	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$11,500 for Mount Tom State Reservation for Hampden County and \$2,000 for Hampshire County.
1932	307	An Act in addition to the general appropriation Act making appropriations to supplement certain items contained therein, and for certain new activities and projects.	Appropriated \$500 for the purchase of land for the Mount Tom State Reservation, as authorized by Chapter 151 of the Acts of 1932.
1933	322	An Act making appropriations for maintenance of certain counties, for interest and debt requirements and for certain permanent improvements, granting a county tax for said counties, and making certain adjustments relative to compensation and travel allowances of certain county officials and employees.	Appropriated a sum not to exceed \$10,563.67 for Mount Tom State Reservation for Hampden County and \$1,450 for Hampshire County.
1934	279	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$14,563.67 for Mount Tom State Reservation for Hampden County and \$2,320 for Hampshire County.

Continued on next page.

Appendix M. Acts of the Massachusetts Legislature that Directly Address the Mount Holyoke Planning Unit. (Continued)

Year	Chapter	Title	Comments
1935	299	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$12,797.93 for Mount Tom State Reservation for Hampden County and \$2,244.70 for “state reservations” in Hampshire County.
1935	375	An Act authorizing the Department of Public Works to acquire and use for highway purposes a certain portion of cemetery property of the City of Holyoke.	Authorized the construction of a highway in the City of Holyoke on a parcel bounded southwesterly by the northeasterly boundary of the Mount Tom State Reservation.
1936	350	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$12,656.62 for Mount Tom State Reservation for Hampden County and \$2,300 for “state reservations” in Hampshire County.
1937	320	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$12,656.62 for Mount Tom State Reservation for Hampden County and \$2,300 for “state reservations including purchase of land” in Hampshire County.
1938	437	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$12,656.62 for Mount Tom State Reservation for Hampden County and \$2,300 for “state reservations” in Hampshire County.
1939	452	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$12,656.62 for Mount Tom State Reservation and \$2,225 for “state reservations” in Hampshire County, per year in both 1939 and 1940.
1941	528	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$12,553.86 for Mount Tom State Reservation in 1941 and \$13,000 in 1942; and \$2,500 per year for “state reservations” in Hampshire County in 1941 and 1942.
1943	465	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$13,212.14 for Mount Tom State Reservation in 1943 and \$13,912.14 in 1944; and \$2,450 for “state reservations” in Hampshire County in 1943 and \$2,550 in 1944.
1945	550	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$13,912.14 for Mount Tom State Reservation for Hampden County and \$2,550 for “state reservations” in Hampshire County.
1946	348	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties, and further regulating the salaries of certain county officers and employees.	Appropriated a sum not to exceed \$13,500 for Mount Tom State Reservation for Hampden County and \$2,550 for “state reservations” in Hampshire County.

Continued on next page.

Appendix M. Acts of the Massachusetts Legislature that Directly Address the Mount Holyoke Planning Unit. (Continued)

Year	Chapter	Title	Comments
1947	301	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$16,334.55 for Mount Tom State Reservation for Hampden County and \$3,050 for “state reservations” in Hampshire County.
1948	523	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$18,053.98 for Mount Tom State Reservation for Hampden County and \$3,350 for “state reservations” in Hampshire County.
1949	756	An Act making appropriations for the maintenance of certain counties, for interest and debt requirements, for certain permanent improvements, and granting a county tax for said counties.	Appropriated a sum not to exceed \$18,053.98 for Mount Tom State Reservation for Hampden County and \$3,350 for “state reservations” in Hampshire County.
1949	790	An Act to provide for a special capital outlay program for the Commonwealth.	Authorized \$25,000 for “certain repairs to the tramway... at Skinner State Park.”
1953	519	An Act making appropriations for the maintenance of certain counties, their departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said counties.	Appropriated \$29,235.78 for the maintenance and operation of Mount Tom State Reservation for Hampden County and \$5,114.22 for the maintenance and operation of “state reservation” in Hampshire County.
1954	471	An Act to provide for a special capital outlay program for the Commonwealth.	Authorized \$92,000 “for the further development of the Mount Tom State Reservation in accordance with recommendations contained in the report made by the Department of Natural Resources pursuant to Chapter Seventy of the Resolves of Nineteen Hundred and Fifty-three (Resolve providing for an investigation and study by the Department of Conservation of certain recreational facilities). This Resolve directed the Department of Conservation to make an investigation and study of several park-related projects, including the feasibility of building swimming pools and constructing recreation areas in Mount Tom State Reservation.
1954	603	An Act making appropriations for the maintenance of certain counties, their departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said counties.	Appropriated \$30,998.07 for the maintenance and operation of Mount Tom State Reservation for Hampden County and \$5,401.40 for Hampshire County.

Continued on next page.

Appendix M. Acts of the Massachusetts Legislature that Directly Address the Mount Holyoke Planning Unit. (Continued)

Year	Chapter	Title	Comments
1955	765	An Act making appropriations for the maintenance of certain counties, their departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said counties.	Appropriated \$25,673.04 for the maintenance and operation of Mount Tom State Reservation for Hampden County and \$4,738.96 for Hampshire County.
1956	705	An Act making appropriations for the maintenance of certain counties, their departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said counties.	Appropriated \$27,416.03 for “state reservation maintenance and operation” in Hampden County and \$4,483.97 for the maintenance and operation of Mount Tom in Hampshire County.
1957	499	An Act making appropriations for the maintenance of certain counties, their departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said counties.	Appropriated \$36,589.33 for “state reservation maintenance and operation” in Hampden County and \$5,971.67 for the maintenance and operation of Mount Tom in Hampshire County.
1957	667	An Act authorizing the Commissioner of Natural Resources to develop, improve and operate recreation facilities at the Joseph Allen Skinner State Park in the towns of Hadley and South Hadley.	Authorized and directed the Commissioner of Natural Resources to “develop, improve and operate recreation facilities...” including reconstruction and renovation of the Summit House, reconstruction of the trestle and roof of the tramway, reconstruction and renovation of the engine house, installation of the tramway, repair and improvement of the Halfway House, constructing parking areas, and providing “other related recreation facilities.”
1957	763	An Act to provide for a special capital outlay program for the Commonwealth.	Provided \$50,000 for the “further development of the Joseph Allen Skinner State Park.”
1958	648	An Act making appropriations for the maintenance of certain counties, their departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said counties.	Appropriated \$31,642.01 for “state reservation maintenance and operation” in Hampden County and \$5,156.33 for the maintenance and operation of Mount Tom in Hampshire County.
1959	289	An Act making appropriations for the maintenance of Hampshire County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$5,964.89 for the maintenance and operation of Mount Tom State Reservation.

Continued on next page.

Appendix M. Acts of the Massachusetts Legislature that Directly Address the Mount Holyoke Planning Unit. (Continued)

Year	Chapter	Title	Comments
1959	363	An Act making appropriations for the maintenance of Hampden County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$36, 174.70 for the maintenance and operation of Mount Tom State Reservation.
1959	597	An Act making supplemental appropriations for the maintenance of certain counties, their departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said counties.	Appropriated \$237.33 for the maintenance and operation of Mount Tom State Reservation for Hampden County and \$36.87 for Hampshire County.
1960	381	An Act making appropriations for the maintenance of Hampshire County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$6,824.37 for the maintenance and operation of Mount Tom State Reservation.
1960	496	An Act making appropriations for the maintenance of Hampden County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$32, 319.58 for the maintenance and operation of Mount Tom State Reservation.
1961	478	An Act making appropriations for the maintenance of certain counties, their departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said counties.	Appropriated \$34,361.20 for the maintenance and operation of Mount Tom State Reservation for Hampden County and \$5,599.44 for Hampshire County.
1962	683	An Act making supplemental appropriations for the maintenance of certain counties, their departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said counties.	Appropriated \$36,408.14 for the maintenance and operation of Mount Tom State Reservation for Hampden County and \$5,933.01 for Hampshire County.

Continued on next page.

Appendix M. Acts of the Massachusetts Legislature that Directly Address the Mount Holyoke Planning Unit. (Continued)

Year	Chapter	Title	Comments
1963	631	An Act making appropriations for the maintenance of certain counties, their departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said counties.	Appropriated \$37,810.31 for the maintenance and operation of Mount Tom State Reservation for Hampden County and \$6,161.51 for Hampshire County.
1964	529	An Act making appropriations for the maintenance of certain counties, their departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said counties.	Appropriated \$38,649.03 for the maintenance and operation of Mount Tom State Reservation for Hampden County and \$6,298.18 for Hampshire County.
1964	665	An Act in addition to the general appropriation act making appropriations to supplement certain items contained therein, and for certain new activities and projects.	Appropriated \$25,000 for “the further development of the Mount Tom State Reservation.”
1965	760	An Act making appropriations for the maintenance of certain counties, their departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said counties.	Appropriated \$47,762.68 for the maintenance and operation of Mount Tom State Reservation for Hampden County and \$9,356.14 for Hampshire County.
1966	462	An Act making appropriations for the maintenance of certain counties, their departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said counties.	Appropriated \$38,381.28 for the maintenance and operation of Mount Tom State Reservation for Hampden County and \$7,518.43 for Hampshire County.
1967	414	An Act making appropriations for the fiscal year nineteen hundred and sixty-eight, for the maintenance of departments, boards, commissions, institutions and certain activities of the Commonwealth for interest, sinking, fund and serial bond requirements.	Provided \$700,000 to the Department of Natural Resource’s Public Access Board for “the acquisition of land and the construction of public access and related facilities in and to the waters of the Commonwealth.” This Act is referenced in the plans entitled “Proposed Access Ramp and Facilities, Manhan River, Easthampton; Contract No. 36 (Public Access).”
1967	632	An Act making appropriations for the maintenance of certain counties, their departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said counties.	Appropriated \$41,746.47 for the maintenance and operation of Mount Tom State Reservation for Hampden County and \$8,177.63 for Hampshire County.

Continued on next page.

Appendix M. Acts of the Massachusetts Legislature that Directly Address the Mount Holyoke Planning Unit. (Continued)

Year	Chapter	Title	Comments
1968	148	An Act making appropriations for the maintenance of Hampshire County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$10,978.67 for the maintenance and operation of Mount Tom State Reservation.
1968	175	An Act making appropriations for the maintenance of Hampden County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$56,045.68 for the maintenance and operation of Mount Tom State Reservation.
1968	771	An Act in addition to the general appropriation act making appropriations to supplement certain items contained therein, and for certain new activities and projects.	Appropriated \$90,000 for “the further development of the Mount Tom State Reservation.”
1969	595	An Act making appropriations for the maintenance of Hampshire County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$10,312.50 for the maintenance and operation of Mount Tom State Reservation.
1969	616	An Act designating the swimming pool under construction in the Town of South Hadley as the Buttery Brook Memorial Swimming Pool.	Designated the swimming pool then under construction in South Hadley as the Buttery Brook Memorial Swimming Pool and required that “a suitable marker bearing such designation shall be attached thereto.”
1969	662	An Act making appropriations for the maintenance of Hampden County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$52,644.89 for the maintenance and operation of Mount Tom State Reservation.
1969	704	An Act establishing a Governor’s cabinet.	Identifies the Mount Tom, Deer Hill, Mount Sugar Loaf, Mount Everett, Purgatory Chasm, and Walden Pond state reservation commissions as organizationally under the Executive Office of Environmental Affairs.
1970	410	An Act making appropriations for the maintenance of Hampshire County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$13,032.18 for the maintenance and operation of Mount Tom State Reservation.

Continued on next page.

Appendix M. Acts of the Massachusetts Legislature that Directly Address the Mount Holyoke Planning Unit. (Continued)

Year	Chapter	Title	Comments
1970	610	An Act making appropriations for the maintenance of Hampden County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$66,528.71 for the maintenance and operation of Mount Tom State Reservation.
1971	469	An Act making appropriations for the maintenance of Hampden County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$74,120.54 for the maintenance and operation of Mount Tom State Reservation.
1971	488	An Act making appropriations for the maintenance of Hampshire County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$14,519.32 for the maintenance and operation of Mount Tom State Reservation.
1972	210	An Act making appropriations for the maintenance of Hampshire County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$20,948.91 for the maintenance and operation of Mount Tom State Reservation.
1972	270	An Act making appropriations for the maintenance of Hampden County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$106,943.31 for the maintenance and operation of Mount Tom State Reservation.
1973	309	An Act making appropriations for the Fiscal period from January first, Nineteen Hundred and Seventy-three, to June Thirtieth, Nineteen Hundred and Seventy-four, for the maintenance of Hampshire County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$22,265.58 for the maintenance and operation of Mount Tom State Reservation.

Continued on next page.

Appendix M. Acts of the Massachusetts Legislature that Directly Address the Mount Holyoke Planning Unit. (Continued)

Year	Chapter	Title	Comments
1973	444	An Act making appropriations for the fiscal period from January first, Nineteen Hundred and Seventy-three, to June Thirtieth, Nineteen Hundred and Seventy-four, for the maintenance of Hampden County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$113,664.84 for the maintenance and operation of Mount Tom State Reservation.
1974	450	An Act making appropriations for the Fiscal Year Nineteen Hundred and Seventy-five for the maintenance of Hampden County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$105,217.19 for the maintenance and operation of Mount Tom State Reservation.
1974	512	An Act making appropriations for the Fiscal Year Nineteen Hundred and Seventy-five for the maintenance of Hampshire County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$20,610.79 for the maintenance and operation of Mount Tom State Reservation.
1974	806	An Act establishing an Executive Office of Environmental Affairs.	Transferred the “powers and duties” of the Mount Tom, Deer Hill, Mount Sugar Loaf, Mount Everett, Purgatory Chasm, and Walden Pond state reservations to the Department of Environmental Management. This Act took Mount Tom State Reservation out of county control and placed it under the control of the DEM.
1975	380	An Act transferring the powers and duties of the Mount Tom State Reservation from the Department of Environmental Management of the Executive Office of Environmental Affairs to the Mount Tom State Reservation Commission.	This Act struck out the words “the Mount Tom State Reservation” from Chapter 806 of the Acts of 1974, returning control of the reservation to Hampshire and Hampden counties and re-establishing the Mount Tom State Reservation Commission as of July 1, 1975.
1975	470	An Act making appropriations for the Fiscal Year Nineteen Hundred and Seventy-six for the maintenance of Hampshire County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$25,533.24 for the maintenance and operation of Mount Tom State Reservation.

Continued on next page.

Appendix M. Acts of the Massachusetts Legislature that Directly Address the Mount Holyoke Planning Unit. (Continued)

Year	Chapter	Title	Comments
1975	474	An Act making appropriations for the Fiscal Year Nineteen Hundred and Seventy-six for the maintenance of Hampden County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$89,272.90 for the maintenance and operation of Mount Tom State Reservation.
1976	265	An Act making appropriations for the Fiscal Year Nineteen Hundred and Seventy-seven for the maintenance of Hampshire County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$25,531.90 for the maintenance and operation of Mount Tom State Reservation.
1976	340	An Act making appropriations for the Fiscal Year Nineteen Hundred and Seventy-seven for the maintenance of Hampden County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$78,778.63 for the maintenance and operation of Mount Tom State Reservation.
1977	485	An Act making appropriations for the Fiscal Year Nineteen Hundred and Seventy-eight for the maintenance of Hampshire County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$24,096.81 for the maintenance and operation of Mount Tom State Reservation.
1977	803	An Act making appropriations for the Fiscal Year Nineteen Hundred and Seventy-eight for the maintenance of Hampden County, its departments, boards, commissions and institutions, of sundry other services, for certain permanent improvements, for interest and debt requirements, and to meet certain requirements of law and granting a county tax for said county.	Appropriated \$75,824.61 for the maintenance and operation of Mount Tom State Reservation.
1978	355	An Act making appropriations for the Fiscal Year Nineteen Hundred and Seventy-nine for the maintenance of Hampden County.	Appropriated \$104,559.30 for the maintenance and operation of Mount Tom State Reservation.
1978	513	An Act providing for a capital outlay program for the Commonwealth.	Provided that \$600,000 be spent for "the rehabilitation of the Summit House on Mount Holyoke and for the reconstruction of a building or the construction of a new building for a visitor center, including furnishings and equipment for both facilities, including related costs."
1979	365	An Act making appropriations for the Fiscal Year Nineteen Hundred and Seventy-nine for the maintenance of Hampshire County.	Appropriated \$33,228.59 for the maintenance and operation of Mount Tom State Reservation.

Continued on next page.

Appendix M. Acts of the Massachusetts Legislature that Directly Address the Mount Holyoke Planning Unit. (Continued)

Year	Chapter	Title	Comments
1979	457	An Act making appropriations for the Fiscal Year Nineteen Hundred and Eighty for the maintenance of Hampden County.	Appropriated \$109,418.20 for the maintenance and operation of Mount Tom State Reservation.
1979	541	An Act making appropriations for the Fiscal Year Nineteen Hundred and Eighty for the maintenance of Hampshire County.	Appropriated \$35,013.89 for the maintenance and operation of Mount Tom State Reservation.
1979	798	An Act providing for a capital outlay program for the Commonwealth.	This Act included \$23,500,000 for “acquisition and development and associated costs in connection with the establishment of Urban Heritage State Parks in the cities of North Adams, Gardner, Holyoke, Lawrence, Lynn, Springfield and in the Dorchester and Allston-Brighton districts of the city of Boston, including the costs of furnishings and equipment.”
1980	224	An Act making appropriations for the Fiscal Year Nineteen Hundred and Eighty-one for the maintenance of Hampden County.	Appropriated \$34,378.83 for the maintenance and operation of Mount Tom State Reservation.
1980	432	An Act making appropriations for the Fiscal Year Nineteen Hundred and Eighty-one for the maintenance of Hampden County.	Appropriated \$107,436.89 for the maintenance and operation of Mount Tom State Reservation.
1980	512	An Act relative to the establishment of Urban Heritage State Parks.	This Act amended Chapter 798 of the Acts of 1979 to allow for the entering into agreements with municipalities and redevelopment authorities for the purposes of acquisition, development, and associated costs in connection with the establishment of Urban Heritage State Parks.
1981	475	An Act making appropriations for the Fiscal Year Nineteen Hundred and Eighty-two for the maintenance of Hampshire County.	This Act appropriated \$36,563.05 for Mount Tom State Reservation.
1981	671	An Act making appropriations for the Fiscal Year Nineteen Hundred and Eighty-two for the maintenance of Hampden County.	This Act appropriated \$115,589.44 for “Mt. Tom State Reservation Hampden and Hampshire.”
1981	808	An Act making appropriations for the Fiscal Year ending June Thirtieth Nineteen Hundred and Eighty-two to provide for supplementing certain existing appropriations and for certain new activities and projects.	This Act further amended Chapter 798 of the Acts of 1979 to include an Urban Heritage State Park in the Town of Marlborough.
1983	289	An Act making appropriations for the Fiscal Year ending June Thirtieth Nineteen Hundred and Eighty-four for the maintenance of departments, boards, commissions, institutions and certain activities of the commonwealth, for interest, sinking fund and serial bond requirements and for certain permanent improvements.	Included in this Act is a \$742,000 reserve to meet the expenses of the Bureau of Urban Services for the administration of the Urban Heritage Parks Program through grants or service contracts.
1983	723	An Act providing for a capital outlay program for the Commonwealth.	Included in this Act is \$50,000 “for a study, and the preparation of plans, if necessary, for a tramway to the summit of Mount Holyoke Range State Park.” This Act further amended Chapter 798 of the Acts of 1979 to include an Urban Heritage State Park in Fall River, Roxbury, and Blackstone River Canal Heritage State Park.

Continued on next page.

Appendix M. Acts of the Massachusetts Legislature that Directly Address the Mount Holyoke Planning Unit. (Continued)

Year	Chapter	Title	Comments
1985	140	An Act making appropriations for the Fiscal Year Nineteen Hundred and Eight-six for the maintenance of the departments, boards, commissions, institutions and certain activities of the Commonwealth, for interest, sinking fund, and serial bond requirements for certain permanent improvements.	This Act funded administration of “the Urban Heritage Park Program” including “that not less than twenty thousand dollars be expended for the Holyoke Heritage Park Railroad, Incorporated.”
1986	206	An Act making appropriations for the Fiscal Year Nineteen Hundred and Eight-seven for the maintenance of the departments, boards, commissions, institutions and certain activities of the Commonwealth, for interest, sinking fund, and serial bond requirements for certain permanent improvements.	This Act funded administration of “the Urban Heritage Park Program” including “that not less than twenty thousand dollars be expended for the Holyoke Heritage Park Railroad, Incorporated.”
1987	199	An Act making appropriations for the Fiscal Year Nineteen Hundred and Eight-eight for the maintenance of the departments, boards, commissions, institutions and certain activities of the Commonwealth, for interest, sinking fund, and serial bond requirements for certain permanent improvements.	This Act funded administration of “the Urban Heritage Park Program” including “that not less than twenty thousand dollars be expended for the Holyoke Heritage Park Railroad, Incorporated.”
1987	564	An Act providing for an environmental enhancement and protection program for the Commonwealth.	<p>This Act authorized the DEM commissioner to grant up to \$210,000 to Hampshire and Hampden counties “for the purpose of conducting a management plan and boundary survey of” Mount Tom State Reservation.</p> <p>It also authorized \$38,000,000 for the Urban Heritage State Park Program, which included “North Adams, New Bedford, Fall River, Gardner, Holyoke, Lawrence, Lynn, Lowell, Springfield, in the Turners Falls District of the town of Montague, in the Dorchester and Roxbury districts in the City of Boston, in the Town of Milton, and in the Blackstone River and Canal Heritage State Park.”</p> <p>This Act also established a requirement that the DEM “file biannual progress reports detailing the status of each park, expenditures to date, types of expenditures and projected costs” with the House and Senate committees on Ways and Means beginning in calendar year 1988.</p>
1988	238	An Act providing a charter of Hampshire County.	This Act specifies that the consent of the county commissioners is required to confirm appointments to a variety of boards, including the “Mount Tom Citizens (sic) Advisory Committee.”

Continued on next page.

Appendix M. Acts of the Massachusetts Legislature that Directly Address the Mount Holyoke Planning Unit. (Continued)

Year	Chapter	Title	Comments
1990	150	An Act making appropriations for the Fiscal Year Nineteen Hundred and Ninety-one for the maintenance of the departments, boards, commissions, institutions and certain activities of the Commonwealth for interest, sinking fund and serial bond requirements and for certain permanent improvements.	This Act abolished the Mount Tom State Reservation Commission and transferred the “care and maintenance ... including all of its facilities and equipment” to the Department of Environmental Management. It also: transferred all full-time permanent employees at the park to the DEM; established a 19 member advisory committee; substituted “Department of Environmental Management” for all uses of the term “Mount Tom State Reservation Commission” in any general or special law; and allows Hampden County to petition for control of the reservation in the event that that the DEM “fails to keep the reservation open on a year-round basis.”
1990	420	An Act authorizing the Division of Capital Planning and Operations to convey a certain parcel of land in the City of Holyoke.	Section 3 of this Act identifies that “obligations to the retirees of the Mount Tom State Reservation Commission which were incurred prior to July first, Nineteen Hundred and Ninety, shall continue to be paid by Hampden and Hampshire counties in proportion to their assessed valuations for as long as such obligations exist.”
1994	85	An Act relative to bond authorizations for certain emergency capital projects of the Commonwealth.	Allows the leasing of historic properties, including the summit house at Skinner state park, if such a lease will adequately ensure the preservation and maintenance of the property.
1995	38	An Act making appropriations for the Fiscal Year Nineteen Hundred and Ninety-six for the maintenance of the departments, boards, commissions, institutions and certain activities of the Commonwealth, for interest, sinking fund, and serial bond requirements for certain permanent improvements.	This Act included \$20,000 for “a feasibility study for the design and improvement of the Volleyball Hall of Fame... provided, that no expenditures shall be made from funds appropriated herein until private matching funds are obtained by the Volleyball Hall of Fame, Inc.”
1996	15	An Act providing for an environmental enhancement and protection program for the Commonwealth.	Included in this Act is a directive to the DEM commissioner to “expend an amount not to exceed two hundred and ten thousand dollars for improvements to the Mount Tom State Reservation, including improvements to the Stone House pavilion, the field surrounding said pavilion, the digging of new wells and installation of sanitary facilities at the main pavilion, and surveying the metes and bounds of said reservation.”
1997	152	An Act relative to the construction and financing of convention and exhibition centers in the Commonwealth.	This Act directed “that \$233,000 shall be expended for predevelopment activities associated with the Volleyball Hall of Fame.”
1997	173	An Act authorizing the Department of Environmental Management to authorize the expenditure of certain interest or other income for Urban Heritage State Parks.	Allowed for the expenditure of “interest accumulated or income earned on funds transferred to and on deposit with said municipalities, redevelopment authorities or economic development and industrial corporations.”
1998	289	An Act making appropriations for the Fiscal Year 1998 to provide for certain capital and supplemental appropriations.	Provided that “\$40,000 shall be expended for repairs and improvements to the pavilion, so-called, at the Mount Tom State Reservation.”
1999	55	An Act making certain supplemental appropriations for Fiscal Year 1999 and relative to certain capital spending and bonded debt of the Commonwealth.	Obligated \$40,000 for Holyoke Heritage Park Railroad, Inc.

Continued on next page.

Appendix M. Acts of the Massachusetts Legislature that Directly Address the Mount Holyoke Planning Unit. (Continued)

Year	Chapter	Title	Comments
2000	235	An Act providing for an accelerated transportation development and improvement program for the Commonwealth.	Section 92 of this Act established the Connecticut River Scenic Farm Byway, which extended from Northfield through Sunderland. The purposes of this Act were to “recognize the unique scenic, cultural and recreational resources,” preserve the rural scenic character of the corridor, improve highway safety features, expand economic opportunities for farm-related businesses, and develop a balanced tourism program.
2002	175	An Act designating a portion of the Holyoke Heritage State Park as DiNapoli Plaza.	Designated “a certain parcel of land within the Holyoke Heritage State Park” as DiNapoli Plaza in “honor of the heroic service of Holyoke police officer John DiNapoli, who was killed in the line of duty on December 22, 1999.” This Act requires that “suitable markers bearing the designation shall be erected” and that the Department of Environmental Management and the City of Holyoke “shall enter into a Memorandum of Agreement to facilitate the purpose of this Act.”
2002	236	An Act providing for the preservation and improvement of the environmental assets of the Commonwealth.	Provided that “\$250,000 shall be expended for the restoration of the main access road in the Mount Tom State Reservation in the City of Holyoke” and “not less than \$80,000 shall be expended for improvements to the Holyoke Heritage State Park railroad.”
2004	64	An Act relative to the designation of a scenic byway in the towns of Hadley and South Hadley.	This Act expanded the Connecticut River Scenic Farm Byway to include the towns of Hadley and South Hadley.
2007	061	An Act making appropriations for the Fiscal Year 2008 for the maintenance of departments, boards, commissions, institutions and certain activities of the Commonwealth, for interest, sinking fund, and serial bonds requirements and for certain permanent improvements.	This Act provided “that not less than \$50,000 shall be expended for the Holyoke Merry-Go-Round at Heritage State Park.”
2007	183	An Act relative to volunteers at state parks.	This Act allows the Department of Conservation and Recreation to enter into agreements with nonprofit organizations regarding volunteers participating in stewardship on DCR property and directed the DCR to “establish guidelines, requirements and standards” for the use of volunteers.
2008	312	An Act providing for the preservation and improvement of land, parks, and clean energy in the Commonwealth.	Provided “that not more than \$2,000,000 be expended for the construction and associated costs of a town wading pool at Buttery Brook Park in South Hadley in consideration of the Department of Conservation and Recreation’s demolition of the state pool formerly located in the park” and that “not less than \$200,000 shall be expended for parking and access improvements to Mount Tom Reservation (sic) from newly acquired land on East Street in the City of Easthampton.”
2011	184	An Act authorizing the Massachusetts Department of Transportation to acquire certain parcels of land in the Town of Amherst.	This Act allows MassDOT to “acquire by purchase, or otherwise” portions of Mount Holyoke Range State Park and Town of Amherst conservation lands in order to modify Route 116. In return, MassDOT “may convey to the Department of Conservation and Recreation and the Town of Amherst certain parcels of land sufficient to equal no net loss of conservation land along State Highway Route 116.”

Appendix N. Selection Criteria, Recreation and Public Access Guidelines, and Habitat Protection Guidelines for DCR Properties Designated as Reserve or Parkland.

In 2012, the DCR released *Landscape Designations for DCR Parks & Forests: Selection Criteria and Management Guidelines* (DCR 2012c). This report described a new land use system structured around the designation of DCR lands as Reserves, Parklands, or Woodlands; designations based on primary land use characteristics and suitability. This system has been implemented by the DCR and applied to its forests, parks, and reserves, including those in this RMP.

During the public comment period on the draft RMP, questions were raised about the landscape designation process and the potential impacts of landscape designations on recreation activities and infrastructure in the Mount Holyoke Range Planning Unit. This Appendix includes information on selection criteria, recreation and public access guidelines, and habitat protection guidelines for Reserves and Parklands. Information on Woodlands is not provided, as there are no properties with this designation in the planning unit. Other management guidelines (i.e., Silviculture and Vegetation; Water and Soil; Forest Health and Protection; Cultural Resources; Facilities, Transportation, and Boundary; Interpretation, Public Information, and Outreach; Monitoring, Enforcement, and Research; and Special Use) are not included here because questions regarding these guidelines were not raised by the public during the comment period.

Those seeking complete information on selection criteria and management guidelines for all Landscape Designations are directed to *Landscape Designations for DCR Parks & Forests: Selection Criteria and Management Guidelines* (DCR 2012c).

N.1. RESERVES

Reserves are large areas of forest, often several thousand acres in size, that are set aside to allow: forest development relatively unimpeded by human disturbance; natural disturbance regimes to play out indefinitely, development of late successional habitats; and opportunities for visitors to experience these unique conditions.

Dominant ecosystem service objectives in Reserves are: biodiversity expansion, including the development of complex forest systems; carbon sequestration; and provision of wilderness recreation opportunities.

Once land is designated as a Reserve, there are some significant threats that may impede natural processes. These include:

- fragmentation and destruction of adjacent forests due to residential or commercial development
- disruption of ecological processes from invasive species and climate change
- inconsistent enforcement of management policies
- unregulated recreational use such as off-highway vehicle (OHV) trespass
- human-caused wildfires
- development of dense trail systems or heavy use of trails and potential habitat fragmentation, soil compaction, and wildlife disturbance

N. 1.1. Selection Criteria

Approximately 40,000 acres of state park and forest lands were designated as “Large Reserves” in 2006 through a process involving DCR’s Divisions of State Parks and Water Supply Protection and the Massachusetts Division of Fisheries and Wildlife (DFW), which was coordinated by the Executive Office of Energy and Environmental Affairs. GIS models based upon a continuum using the best available data were used to guide the selection of additional Reserves. The most favorable units of land for designation as additional Reserves are those:

- with least fragmented tracts of land
- with the highest amount of forest interior
- that are well buffered from development
- that are contiguous with other protected land
- that represent a major ecological setting in the Commonwealth

Appendix N. Selection Criteria, Recreation and Public Access Guidelines, and Habitat Protection Guidelines for DCR Properties Designated as Reserve or Parkland. (Continued)

- that conserve ecological and evolutionary processes
- that are large enough at a regional scale to capture a range of ecological processes
- that provide redundancy within each ecological land unit
- that contain special attributes, such as old growth or continuously forested sites
- with limited recreation infrastructure
- with a low density of officially designated trails

N.1.2. Recreation and Public Access Guidelines

- A. Recreation activities compatible with Reserves include dispersed, non-motorized activities, including hiking, hunting, fishing, cross-country skiing, snowshoeing, mountain biking, and horseback riding. Management needed to maintain those activities (e.g., trail maintenance) will be permitted, subject to agency guidelines and policies, and existing property-specific regulations.
- B. Off-Highway Vehicles, other than snowmobiles, are prohibited. However, where currently designated as an approved use prior to Reserve designation, OHV use may be continued if consistent with DCR's Motorized Trail Recreation Facility Assessment Policy and managed to minimize natural resource impacts and use conflicts.
- C. Snowmobile use shall be limited to designated trails and forest roads that are not maintained for vehicle use. Existing use regulations and policies apply.
- D. Development of new intensive-use recreation sites (e.g., campgrounds, picnic areas, visitor centers, administrative offices, parking lots, etc.) is not permitted.
- E. New trail construction is permitted only after the trail has been reviewed by DCR staff using the guidance and procedures established by the DCR *Trails Guidelines and Best Practices*

Manual (DCR 2012a). Trail density and use levels will be evaluated to see how they may affect the values of the Reserve.

- F. Trail relocations to reduce adverse impacts to critical resources will be prioritized. DCR will strive to maintain a low density of trails that are not highly developed (class 1–3) within Reserves to protect their ecological and recreational intent. DCR may close trails to achieve the values of Reserves.
- G. DCR will work with local fire and safety officials where Reserves are located to balance the need for fire and rescue access with the above goals for trail access in Reserves.
- H. DCR will examine vehicle use on public roads that cross Reserves to determine whether fire and public safety access could be maintained and Reserve qualities enhanced by gating these roads. Any closing of public roads to vehicles would not negatively impact access to camping areas or other facilities and would require close communication with the local towns and public safety officials.

N. 1.3. Habitat Protection Guidelines

- A. Identification, documentation and protection of rare species occurrences and important habitats will be addressed using the following tools:
 - a. Review of the NHESP GIS database, which includes datalayers from statewide databases such as BioMap 2, Priority Habitats of rare species, Estimated Habitats of rare wildlife, Certified or Potential Vernal Pools, and Natural Communities.
 - b. Review of and consultation with other sources of natural resource information, where appropriate and available (e.g., Mass Audubon, New England Wild Flower Society, Vernal Pool Association, other NGOs, local naturalists, etc.).

Appendix N. Selection Criteria, Recreation and Public Access Guidelines, and Habitat Protection Guidelines for DCR Properties Designated as Reserve or Parkland. (Continued)

- c. Surveys and monitoring, by trained DCR staff and/or outside consultants, to document and map rare species and important habitats when necessary for project specific purposes or long-term documentation.
 - d. If any state listed species are listed pursuant to the U.S. Endangered Species Act (16 U.S.C.A. §§ 1531–1544), the US Fish & Wildlife Service must approve the project and the appropriate species Recovery Plan shall be consulted.
 - e. Consult and work with NHESP to identify and develop appropriate conservation practices for Natural Communities.
 - f. Consider certifying potential vernal pools if applicable; apply accepted Massachusetts and federal protection guidelines around all certified or potential vernal pools (304 CMR 11.00).
- B. Work closely with DFW, and consult the *2005 Massachusetts Comprehensive Wildlife Conservation Strategy* (CWCS; MassWildlife 2005) for guidance in protecting rare species and their habitats, and the Forestry Conservation Management Practices for Rare Species, where appropriate.
- C. Using the resources noted in section A, Habitat Restoration Plans should be generated to improve degraded habitats important to rare species and/or state/regional biodiversity.
- D. Consult with DFW and DEP prior to conducting any work adjacent to Coldwater Fisheries Habitats; apply protection guidelines recommended.
- E. Form partnerships with friends groups, local naturalists, environmental organizations, etc., to assist in the identification, protection and monitoring of important habitats or rare species population where appropriate.

N.2. PARKLANDS

Parklands offer a diverse mix of recreational opportunities consistent with the DCR's goals for public safety, resource protection and management, public health, and visitor education and enjoyment. As interests and recreation technologies change, the range of activities in Parklands is expected to change.

Dominant ecosystem service objectives in Parklands are: protection of ecologically significant sites; protection of cultural resources; and provision of public outdoor recreation and environmental education opportunities. Wood production is not a utilized ecosystem service and any cutting would be limited to what is necessary to support recreational assets and uses, including public safety.

N.2.1. Selection Criteria

GIS models based upon a continuum using the best available data were used to guide the selection of Parklands. The most favorable units of land for designation as Parklands are those that have:

- a high surrounding population density
- forested areas with high recreational values
- a high density of officially designated trails
- established recreational areas, such as campgrounds, golf courses, etc.
- water access points for recreation
- active day use areas
- high recreational use/visitation
- easily accessible unique natural features: views, water features, chasms, unusual forest types
- unique historic/cultural features
- unique settings in comparison to the surrounding landscape
- suitable natural forested boundaries between active use areas and woodland areas

Appendix N. Selection Criteria, Recreation and Public Access Guidelines, and Habitat Protection Guidelines for DCR Properties Designated as Reserve or Parkland. (Continued)

For these criteria, several existing internal and external data sets were used, including U.S. Census Bureau data, DCR Roads and Trails data set, orthophotos, as well as internally developed intensive use area and cultural resource inventory data.

N.2.2. Recreation and Public Access Guidelines

- A. A diverse mix of recreational activities will be allowed in the wide range of Parklands properties. While not every activity will be appropriate in every location, the range across the system could include athletic field uses such as baseball and soccer, intensive uses such as swimming pools, downhill ski areas and golf courses and dispersed recreational activities such as motorized and non-motorized trail uses. Agency policies, resource protection, public safety, and recreational goals will continue to determine activities that are encouraged and/or allowed in individual properties.
- B. Recreational uses should be consistent with DCR's determination for recreational demands and opportunities as assessed through planning efforts and tools.
- C. Development of new intensive-use sites within Parklands (e.g., campgrounds, athletic fields, playgrounds, picnic areas, visitor centers, administrative offices, parking lots, etc.) are allowed when consistent with public access, resource protection, public safety, and management goals.
- D. DCR will strive to maintain a density and diversity of trails within Parklands that protects the natural and cultural resources of each property and meets the recreational intent for the property. Proposals for new trail development need to follow the existing process established through the DCR Trails Guidelines and Best Practices Manual. Creating loop trails that enhance recreational experiences while supporting the other values of the Parklands will

be encouraged. DCR may close trails to achieve the values of Parklands.

N.2.3. Habitat Protection Guidelines

- A. Vegetation management necessary to comply with NHESP recommendations for the restoration, maintenance or enhancement of habitats for rare and endangered species and exemplary natural or rare communities may be allowed.
- B. Vegetation management to support species of greatest conservation need (SGCN) as described in the CWCS (MassWildlife 2005) may be allowed if a particular SGCN is historically and or culturally associated with a specific Parkland.
- C. Identification, documentation and protection of rare species occurrences and important habitats will be addressed using the following tools:
 - a. Review of the NHESP GIS database, which includes datalayers from statewide databases such as BioMap 2, Living Waters, Priority Habitats of rare species, Estimated Habitats of rare wildlife, Certified or Potential Vernal Pools, and Natural Communities.
 - b. Review of and consultation with other sources of natural resource information, where appropriate and available (e.g., Mass Audubon, New England Wildflower Society, Vernal Pool Association and other NGOs, local naturalists, etc.).
 - c. Surveys and monitoring (for project specific purposes or long-term documentation), by trained DCR staff and/or outside consultants, to document and map rare species and important habitats when necessary.
 - d. If any state listed species are listed pursuant to the U.S. Endangered Species Act (16 U.S.C.A. §§ 1531–1544) the US Fish & Wildlife Service must approve the project and the appropriate species Recovery Plan shall be consulted.

**Appendix N. Selection Criteria, Recreation and Public Access Guidelines, and Habitat Protection Guidelines for DCR Properties Designated as Reserve or Parkland.
(Continued)**

- e. Consider certifying potential vernal pools if applicable; apply accepted Massachusetts and federal protection guidelines around all certified or potential vernal pools (304 CMR 11.00).
- D. DCR will work closely with DFW, and consult the CWCS (MassWildlife 2005) for guidance in protecting rare species and their habitats, and the Forestry Conservation Management Practices for Rare Species, where appropriate.
- E. DCR will work closely with DFW to resolve conflicts between wildlife and park facilities (such as beaver flooding problems).
- F. Using the resources available from NHESP, Habitat Restoration Plans should be generated to improve degraded habitats important to rare species and/or state/regional biodiversity.
- G. DCR will consult with DFW and DEP prior to conducting any work adjacent to coldwater fisheries habitats; apply protection guidelines recommended.
- H. Partnerships with friends groups, local naturalists, environmental organizations, etc., will be formed to assist in the identification, protection and monitoring of important habitats or rare species population, where appropriate.

Appendix O. References

- Allen Bird Club. 2011.** Recent trip highlights. <<http://www.massbird.org/allen/recent2.htm>>.
- Aquatic Control Technology, Inc. 2011.** RE: Proposal for Lake Bray weed management plan/drawdown permit, Mt. Tom State Reservation, Holyoke, Massachusetts.
- Aquatic Control Technology, Inc. 2012.** Year end report - aquatic management program at Lake Bray, Holyoke, Massachusetts - 2012. Report to the Massachusetts Department of Conservation and Recreation. Sutton, MA.
- Basler, D. 2012.** RE: Data request. E-mail to P. Cavanagh; June 25, 2012.
- Bavinton, N. 2007.** From obstacle to opportunity: Parkour, leisure, and the reinterpretation of constraints. *Annals of Leisure Research* 10(3&4):391–412.
- Benner, B. 2006.** Quabbin Park, 5/26/2006. Posting on MassLep Google Group. May 26, 2006.
- Berkshire Scenic Railway Museum. 2012.** Delaware, Lackawanna & Western Coaches. <http://www.berkshirescenicrailroad.org/aboutus_coaches_dlw.php>; accessed October 16, 2012.
- Binzen, T., J. Wendt, F. T. Barker, M. Mulholland, and C. Donta. 2006.** Cultural resources inventory report: Mt. Tom State Reservation, Easthampton and Holyoke, Massachusetts. UM-510. April 2006. University of Massachusetts, Archaeological Services. Amherst, MA.
- Binzen, T., J. Wendt, and M. T. Mulholland. 2005.** Mt. Tom State Reservation. MHC Form A – Area. June 2005 draft.
- Bird News of Western Massachusetts. 2007.** May–June 2007 report.
- Bird News of Western Massachusetts. 2009a.** March–April 2009 report.
- Bird News of Western Massachusetts. 2009b.** May–June 2009 report.
- Bird News of Western Massachusetts. 2009c.** September–October 2009 report.
- Boston Affiliates, Inc. 1981.** Historical documentation report: The City of Holyoke. June 1981. Report submitted to the Massachusetts Department of Environmental Management.
- Breeding Bird Atlas Explorer. 2012.** U.S. Geological Survey, Patuxent Wildlife Research Center & National Biological Information Infrastructure. <<http://www.pwrc.usgs.gov/bba>>
- Burk, C. J. 1985.** Rare flora of Mt. Tom. Chapter 11 in *The ecological value of Mt. Tom: Proceedings of a symposium*, November, 1985. Pioneer Valley Group of the Sierra Club. Holyoke Community College, November 21, 1985.
- Carr, E. 2009.** Preserving Mt. Holyoke. Chapter 15 in *Cultivating a past: Essays on the history of Hadley, Massachusetts*. M. R. Miller, Editor. University of Massachusetts Press, Amherst.
- Carr, R. A. 2012.** Visitors. E-mail to P. Cavanagh; October 2, 2012.
- Cavanagh, P.M. 2012.** Field notes. Mount Tom: Mountain Park; October 18, 2012.
- Cheah, C., M. E. Montgomery, S. Salom, B. L. Parker, S. Costa, and M. Skinner. 2004.** Biological control of hemlock woolly adelgid. FHTET-2004-4. Forest Health Technical Enterprise Team, USDA Forest Service. Morgantown, WV.
- Chittenden, K. M. 2012.** RE: BSRM contact to info (sic). E-mail to P. Cavanagh; October 16, 2012.
- City Design Collaborative, Inc. 1982.** Planting plan, PL1; Holyoke Heritage State Park. Job 81104.
- City of Chicopee. 2008.** 2007 annual report; Phase II, stormwater management. Submitted by Thomas Hamel, Chief Operator. May 1, 2008. Department of Public Works - Water Pollution Control, Chicopee, Massachusetts.
- Clough, T. R. 1975.** The wildlife of Mt. Tom State Reservation. Pages 47-74 in Braiterman, M., T. R. Clough, P. S. Foote, and T. A. Rump. *The Mt. Tom State Reservation master plan, part II: Priorities for resource planning and management*. Hampden and Hampshire Counties, Massachusetts. December, 1975. Amherst, MA.
- D’Amato, A. W., D. A. Orwig, and D. R. Foster. 2006.** New estimates of Massachusetts old-growth forests: Useful data for regional conservation planning and forest reserve planning. *Northeastern Naturalist* 13(4):495-506.
- Davis, M. B. 2005.** Old growth in the east: A survey (Online Ed.). www.primalnature.org.
- Demas, L. 2013.** RE: Mt. Tom site. E-mail to K. Tucker and P. Cavanagh; March 13, 2013.

- Division of Watershed Management. 2010.** Massachusetts year 2010 integrated list of waters. Proposed listing of the condition of Massachusetts' waters pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act. April, 2010. Division of Watershed Management, Watershed Planning Program, Worcester, MA.
- Dysart, G. 2010a.** Skinner state park, Hadley. Posting on MassBird Google Group. May 29, 2010.
- Dysart, G. 2010b.** White admiral - Skinner state park. Posting on MassLep Google Group. May 28, 2010.
- Dysart, G. 2011.** Red-spotted admiral_white admiral form (sic) Skinner state park, Hadley. Posting on MassLep Google Group. June 6, 2011.
- Energy Engineering & Design, Inc. 2012.** Mount Tom reservation: Holyoke, MA. Quick fix energy audit report. May 14, 2012. Framingham, MA.
- Farmer, G., M. Hepler, B. Parsons, and B. Friedberg. 1992.** National Register of Historic Places nomination form: Hockanum Rural Historic District, Hadley and South Hadley, MA.
- Federal Highway Administration (FHA). 2009.** Manual on uniform traffic control devices for streets and highways; 2009 edition. U.S. Department of Transportation, Federal Highway Administration.
- Finn, B. 2012.** Lake Bray bridge project, Mt. Tom. E-mail to K. Lowry (and others); September 4, 2012.
- Foote, P. S. 1975.** Lake Bray fisheries survey. Pages 128-136 in Braiterman, M., T. R. Clough, P. S. Foote, and T. A. Rump. The Mt. Tom State Reservation master plan, part II: Priorities for resource planning and management. Hampden and Hampshire Counties, Massachusetts. December, 1975. Amherst, MA.
- Gagnon, T. 2008.** Mt. Tom hawk watch. Posting on MassBird Google Group. September 16, 2008.
- Gagnon, T. 2009a.** Ross's geese---Easthampton. Posting on MassLep Google Group. March 18, 2009.
- Gagnon, T. 2009b.** Broad-wings & ospreys over Mt. Tom. Posting on MassBird Google Group. April 22, 2009.
- Gagnon, T. 2009c.** Mt. Greylock plus. Posting on MassLep Google Group. July 16, 2010.
- Gagnon, T. 2009d.** Out counting and no more counts. Posting on MassLep Google Group. July 19, 2009.
- Gagnon, T. 2010a.** Mt. Tom - over 500 hawks. Posting on MassBird Google Group. April 22, 2009.
- Gagnon, T. 2010b.** Hawks at Mt. Tom State Reservation. Posting on MassBird Google Group. September 16, 2010.
- Gagnon, T. 2010c.** River of hawks/Mt. Tom. Posting on MassBird Google Group. September 18, 2010.
- Gagnon, T. 2012.** Upland sandpiper - Westfield. Posting on MassBird Google Group. April 7, 2012.
- Garrett, J. 2011.** Control of satellite populations of pale swallowwort on Mount Tom State Reservation. July 29, 2011. Massachusetts Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program. Westborough, MA.
- Granby Police Department. 2012.** History of the Granby Police Department. <<http://www.granbypdblog.org/420/>>; accessed January 23, 2013.
- Green, J. 2012a.** Field notes; 6/29/12 bird hike.
- Green, J. 2012b.** Field notes; 5/27/12 bird hike.
- Hansen, H. C., III, S. E. Lynch, K. P. Carr, B. A. Frary, J. S. Servheen, T. J. Harackzkiewicz, W. C. Sears, W. G. Hoover, C. Creighton, L. S. Robichau, D. Kennedy, S. Rahuba, and B. Guillermin. 1982.** Mt. Tom State Reservation maintenance plan. Department of Leisure Services and Resources, University of Massachusetts, Amherst, MA.
- Harper, L. 2013.** RE: Follow-up information. E-mail to P. Cavanagh; February 4, 2013
- Heil, R. 2009.** Skinner state park, Hadley; Tues., 30 June 2009. Posting on MassBird Google Group. June 30, 2009.
- Huber, R. M., and W. F. Newbold. 1975.** Mount Tom State Reservation master plan: Hampden and Hampshire counties, Massachusetts. Citizen's Advisory Service, Department of Landscape Architecture and Regional Planning, University of Massachusetts, Amherst.
- International Mountain Bicycling Association (IMBA). n.d.** Trail difficulty ratings and signs. <<http://www.imba.com/resources/maps/trail-difficulty-ratings>>; accessed April 1, 2013.
- Kellogg, S. 1985.** Birds of Mt. Tom Reservation. Chapter 12 in The ecological value of Mt. Tom: Proceedings of a symposium; November, 1985. Pioneer Valley Group of the Sierra Club. Holyoke Community College, November 21, 1985.
- Laprade, D. 2012.** Subject: Museum well at Mt Tom. E-mail to R. Brazeau; October 19, 2012.
- Lenard Engineering, Inc. 2006.** Lake Bray Dam; Phase I inspection/evaluation report. Auburn, MA.
- Lenart, D. M., and R. A. Michalski. 2007.** RE: Proposed engineering services, final design, Aldrich Lake Dam, Granby, Massachusetts. Letter to J. Benoit; April 27, 2007.

Leverett, R. T. 2010. New England's champion hemlock. Posting on The Native Tree Society BBS. December 19, 2010. < <http://www.nativetreesociety.org/>>; accessed January 24, 2013.

Loomis, D. K., B. D. Poole, S. K. Paterson, and S. E. Young. 2009. A survey of Mount Holyoke State Park visitors. Human Dimensions of Natural Resource Management Research Unit, Department of Natural Resources Conservation, University of Massachusetts, Amherst.

Lotspeich, C. 2012. Personal communication to P. Cavanagh.

Lotspeich, C. 2013. Comments on draft RMP. E-mail to P. Cavanagh; February 14, 2013.

Maier, S. 2012. RE: Rare species information request. E-mail (with three attachments) to P. Cavanagh. May 22, 2012.

Manomet Center for Conservation Sciences and the Commonwealth of Massachusetts Division of Fisheries and Wildlife (Manomet and MassWildlife). 2010. Climate change and Massachusetts fish and wildlife: Volume 2; habitat and species vulnerability. April 2010.

Marion, J., and J. Wimpey. 2007. Environmental impacts of mountain biking: Science review and best practices. Pages 94-111 *in* Managing mountain biking: IMBA's guide to providing great bike riding. P. Webber, Editor. International Mountain Bicycling Association.

Marrold, M.-A. 2012. RE: HMPs and the Mount Holyoke Range Resource Management Plan. E-mail to P. Cavanagh; December 13, 2012.

Massachusetts Department of Conservation and Recreation (DCR). 2006. Historic parkway preservation treatment guidelines. November 2006. Massachusetts Department of Conservation and Recreation, Division of Planning and Engineering. Boston, MA.

Massachusetts Department of Conservation and Recreation (DCR). 2007. NPDES Storm Water Management Plan for coverage under the National Pollutant Discharge Elimination System (NPDES) General Permit for storm water charges from Small Municipal Separate Storm Sewer Systems (MS4s). Revision 3: July 17, 2007. Boston, MA. <<http://www.mass.gov/dcr/stewardship/stormwater/downloads/swmp.pdf>>; accessed September 21, 2012.

Massachusetts Department of Conservation and Recreation (DCR). 2009. A strategic approach to resource management planning: The DCR statewide survey. June 2009. Massachusetts Department of Conservation and Recreation, Bureau of Planning and Resource Protection, Resource Management Planning Program. Boston, MA.

Massachusetts Department of Conservation and Recreation (DCR). 2012a. Trails guidelines and best practices manual. Updated March 2012. <http://www.mass.gov/dcr/stewardship/greenway/docs/DCR_guidelines.pdf>; accessed September 21, 2012.

Massachusetts Department of Conservation and Recreation (DCR). 2012b. Patrick-Murray administration announces award of \$1 million in partnership matching funds. Press release dated June 19, 2012. <<http://www.mass.gov/dcr/news/2012/6-19PRb.pdf>>; accessed October 16, 2012.

Massachusetts Department of Conservation and Recreation (DCR). 2012c. Landscape designations for DCR parks & forests: Selection criteria and management guidelines. March 2012.

Massachusetts Department of Conservation and Recreation (DCR). 2012d. Middlesex Fells Planning Unit Resource Management Plan: Including Middlesex Fells Reservation. January 2012. Massachusetts Department of Conservation and Recreation, Bureau of Planning and Resource Protection, Resource Management Planning Program. Boston, MA

Massachusetts Department of Conservation and Recreation (DCR). 2013. Harold Parker Planning Unit Resource Management Plan: Including Harold Parker State Forest and Boxford State Forest. March 2013. Massachusetts Department of Conservation and Recreation, Bureau of Planning and Resource Protection, Resource Management Planning Program. Boston, MA

Massachusetts Department of Conservation and Recreation (DCR). n.d. Graphics standards manual

Massachusetts Department of Environmental Management (DEM). 1979. Urban Heritage State Parks in Massachusetts: Off and running. November, 1979.

Massachusetts Department of Environmental Management (DEM). 1989. Guidelines for Operations and Land Stewardship: Holyoke Range State Park.

Massachusetts Department of Environmental Management (DEM). 1991. Tom State Reservation facility assessment. August 1991. Bureau of Project Management. Division of Resource Conservation.

Massachusetts Department of Environmental Management (DEM). 2002. Application for federal surplus property for public park or recreation purposes. Property: Former off-base transmitter site (YTRN), Granby, MA. Location: Off Route 202, Granby, MA. GSA Control Number: 1-D-MA-0856. Acreage: 99.5. Boston, MA.

Massachusetts Department of Environmental Protection (DEP). 2001. Developing a local wellhead protection plan. Bureau of Resource Protection, Drinking Water Program. November, 2001. <<http://www.mass.gov/dep/water/drinking/whplan.doc>>; accessed January 29, 2013.

Massachusetts Division of Fisheries and Wildlife (MassWildlife) 2005. 2005 Massachusetts comprehensive wildlife conservation strategy. Westborough, MA. <http://www.mass.gov/dfwele/dfw/habitat/cwcs/pdf/mass_cwcs_final.pdf>; accessed January 29, 2013.

Massachusetts Division of Fisheries and Wildlife and The Nature Conservancy (MassWildlife and TNC). 2010. BioMap 2: Conserving the biodiversity of Massachusetts in a changing world. Produced by the Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries and Wildlife and the Massachusetts Program of The Nature Conservancy. <http://www.mass.gov/dfwele/dfw/nhesp/land_protection/biomap/biomap2_summary_report.pdf>; accessed March 29, 2013.

Massachusetts Division of Fisheries and Wildlife and The Nature Conservancy (MassWildlife and TNC). 2011. BioMap 2 Technical Report - building a better BioMap. A supplement to BioMap 2: Conserving the biodiversity of Massachusetts in a changing world. Produced by the Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries and Wildlife and the Massachusetts Program of The Nature Conservancy. November 2011. <http://www.mass.gov/dfwele/dfw/nhesp/land_protection/biomap/pdf/biomap2_tech_report_full.pdf>; accessed March 29, 2013.

Massachusetts Invasive Plant Atlas Group. (MIPAG) 2005. The evaluation of non-native plant species for invasiveness in Massachusetts (with annotated list). Update: April 1, 2005. <http://www.massnrc.org/MIPAG/docs/MIPAG_FINDING_FINAL_042005.pdf>; accessed October 30, 2012.

Massachusetts Natural Heritage & Endangered Species Program (NHESP). 2006. Biodiversity Stewardship Initiative: Final report of the FY06 pilot project. Prepared for the Massachusetts Department of Conservation and Recreation, June 30, 2006. Westborough, MA.

Massachusetts Natural Heritage & Endangered Species Program (NHESP). 2007a. Biodiversity of J. A. Skinner and Mount Holyoke Range state parks. Prepared for the Massachusetts Department of Conservation and Recreation, June 30, 2007. Westborough, MA.

Massachusetts Natural Heritage & Endangered Species Program (NHESP). 2007b. Biodiversity of Mount Tom State Reservation and adjacent conservation lands. Prepared for the Massachusetts Department of Conservation and Recreation, June 30, 2007. Westborough, MA.

Massachusetts Natural Heritage & Endangered Species Program (NHESP). 2007c. Blue-spotted salamander: *Ambystoma laterale*. <http://www.mass.gov/dfwele/dfw/nhesp/species_info/nh_facts/ambystoma_laterale.pdf>; accessed January 10, 2013.

Massachusetts Natural Heritage & Endangered Species Program (NHESP). 2009. Recreational trail maintenance and biodiversity conservation. Prepared for the Massachusetts Department of Conservation and Recreation, June 30, 2009. Westborough, MA.

Massachusetts Natural Heritage & Endangered Species Program (NHESP). 2011. NHESP priority types of natural communities. August 3, 2011 update.

Massachusetts Office of Fishing and Boating Access. 2013. Site name: Connecticut River; OFBA-ID: 189. <http://maps.massgis.state.ma.us/dfg/OFBA_GMAP.htm?OFBA_ID=189>; accessed February 4, 2013.

Massachusetts Trial Court Law Libraries. 2012. Code of Massachusetts Regulations FAQ. May 29, 2012. <<http://www.lawlib.state.ma.us/source/mass/cmr/cmrfaq.html>>; accessed April 17, 2013.

MassAudubon. 2006. Massachusetts conservation restriction stewardship manual: A handbook for land trusts and conservation commissions. March 2006. <<http://www.massaudubon.org/PDF/land/CRManualFinal.pdf>>; accessed February 5, 2013.

MassGIS. 2012. MassGIS data-dams. February 2012. <http://maps.massgis.state.ma.us/map_ol/oliver.php>; accessed January 23, 2013.

- McArdle, A. 1981.** Phase II archaeological survey of the Holyoke Heritage Park, Holyoke, Massachusetts. ICA 193. Institute for Conservation Archaeology, Peabody Museum, Harvard University, Cambridge, MA.
- McGarigal, K. 2008.** Marbled salamander (*Ambystoma opacum*) conservation plan for Massachusetts. <<http://www.umass.edu/landeco/research/vernal/amop.conservation.plan.pdf>>; accessed January 9, 2013.
- Model, F. 2006a.** Mount Tom. Posting on MassLep Google Group. April 18, 2006.
- Model, F. 2006b.** Auspicious start. Posting on MassLep Google Group. April 11, 2006.
- Model, F. 2007.** Mount Tom. Posting on MassLep Google Group. April 20, 2007.
- Model, F. 2010.** Sightings and sets. Posting on MassLep Google Group. March 19, 2010.
- Moore, S. 2012.** Weekend butterflies. Posting on MassLep Google Group. May 13, 2012.
- Morin, P. 2012.** RE: RMP update and information needs. E-mail to D. Sacco and others; November 30, 2012.
- NXEGEN. 2012.** Energy audit site report. Site # HHSP4-Holyoke Heritage State Park. Draft Report to DCR.
- Opler, P. A., K. Lotts, and T. Naberhaus. (Coordinators). 2012.** Butterflies and moths of North America. <<http://www.butterfliesandmoths.org>>; accessed December 20, 2012.
- Paulson, N. 2010.** 15 warbler sp. Mt. Tom and Upton - 5/1/. Posting on MassBird Google Group. May 1, 2010.
- PES Associates. 2011.** Phase 1 Environmental Site Assessment, PES Project #11-8442. 60, 62 & 100 Lamson Avenue, Belchertown, MA 01007. Prepared for: The Trust for Public Land. Dedham, MA.
- Petranka, J. W. 1998.** Salamanders of the United States and Canada. Smithsonian Institution Press, Washington, DC.
- Pickering, C., J. G. Castley, W. Hill, and D. Newsome. 2010.** Environmental, safety and management issues of unauthorized trail technical features for mountain bicycling. *Landscape and Urban Planning* 97(2010):58–67.
- Pioneer Valley Group of the Sierra Club. 1985.** The ecological value of Mt. Tom: Proceedings of a symposium; November, 1985. Holyoke Community College, November 21, 1985. Pioneer Valley Group of the Sierra Club. Holyoke Community College, November 21, 1985.
- Rose, J. 2010.** 3 Swallowtail (sic) day. Posting on MassLep Google Group. September 17, 2010.
- Rutman, E. 2011.** Mt. Tom, 4/29/11. Posting on MassBird Google Group. April 29, 2011.
- Sacco, D. 2005.** Stewardship report: Granby Sand Plain - former off-base transmitter site (YTRN). Granby, MA. Biannual report to National Park Service.
- Searcy, K. 2006.** Plant communities of the Mount Holyoke Range, Hampshire County Massachusetts. Presentation given at *Natural communities: From classification to conservation*. Stonehill College, Easton, MA. April 2006.
- Searcy, K. 2008.** Vascular flora of the Greater Mount Holyoke Range, Hampshire County, Massachusetts. Special publication of the New England Botanical Club. Boston, MA.
- Searcy, K., B. F. Wilson, and J. H. Fownes. 2003.** Influence of bedrock and aspect on soils and plant distribution in the Holyoke Range, Massachusetts. *Journal of the Torrey Botanical Society*. 130(3):158–169.
- Skehan, J. W. 2001.** Roadside geology of Massachusetts. Mountain Press Publishing Company. Missoula, MT.
- Smyth, M., J. O’Kula, and R. Brazeau. 2004.** Inspection report: Tobacco barn condition. Rte 47, Hadley, MA. Located at Joseph Allen Skinner State Park. December 8, 2004.
- Somers, P., T. Simmons, and J. Scanlon. 2000.** Ecological summary and management recommendations for the Granby grassland site. Massachusetts Division of Fisheries and Wildlife, Natural Heritage and Endangered Species Program, Westboro, MA.
- Sorrie, B. A. 1985.** Rare flora of Mt. Tom. Chapter 7 in *The ecological value of Mt. Tom: Proceedings of a symposium*, November, 1985. Pioneer Valley Chapter of the Sierra Club. Holyoke Community College, November 21, 1985.
- Spencer, D. M. 2013.** Understanding local versus tourist visitors to recreation areas. *Managing Leisure* 18(1):1–15.
- Sullivan, R. K., Jr. 2009.** Amended Dam Safety Order. Letter to P. Geigis; March 13, 2009.
- Swain, P. 2013.** RE: Holyoke Range RMP, draft comments. E-mail to N. Putnam; March 27, 2013.
- Tighe & Bond. 2011a.** Lithia Springs Dam: Phase I inspection/evaluation report. Dates of inspection: January 11, 2011. Worcester, MA.
- Tighe & Bond. 2011b.** Lake Bray Dam: Phase I inspection/evaluation report. Dates of inspection: June 2, 2011. Worcester, MA.
- Tighe & Bond. 2012.** Aldrich Lake Dam; follow-up inspection. May 14 & June 29, 2012. Worcester, MA.

Tougias, R. 2003. Birding western Massachusetts: A habitat guide to 26 great birding sites from the Berkshires to the Quabbin. New England Cartographics, North Amherst, MA.

Town of Amherst. 2009. Open Space and Recreation Plan - 2009 update. <<http://www.amherstma.gov/DocumentCenter/Home/View/2256>>; accessed January 18, 2013.

Town of South Hadley. 2009. The range and the river: An Open Space and Recreation Plan for South Hadley, Massachusetts: 2007–2012. <<http://www.southhadley.org/Pages/SouthHadleyMAPlanning/2007RecPlan.pdf>>; accessed January 18, 2013.

Trailwrights. 2012. Trailwrights trail work reports: 2010. October 30/31, Saturday/Sunday – Mount Tom State Reservation, Holyoke, MA. Updated 10/31/2012. <http://www.trailwrights.org/trailwork_reports.htm>; accessed February 6, 2013.

Tyning, T. 1985. Amphibians and reptiles of Mt. Tom. Chapter 5 in *The ecological value of Mt. Tom: Proceedings of a symposium*; November, 1985. Pioneer Valley Group of the Sierra Club. Holyoke Community College, November 21, 1985.

Tyning, T. 2012. RE: Draft herp list. E-mail to P. Cavanagh; December 21, 2012.

United States Department of Agriculture, Natural Resources Conservation Service. (USDA) 2012. The PLANTS Database, National Plant Data Team, Greensboro, NC. <<http://plants.usda.gov>>; accessed on multiple occasions.

University of Massachusetts Outing Club. 2012. Tuesday night hikes. Updated April 21, 2012. <<http://people.umass.edu/~verts/umoc/tnh.html>>; accessed January 28, 2013.

Vlasak, J., and K. Vlasakova. 2002. Records of Cerambycidae (Coleoptera) in Massachusetts, with notes on larval hosts. *The Coleopterists Bulletin* 56(2):203–219.

Weston & Sampson Engineers, Inc. and ATC Associates, Inc. 1998. Environmental audit report. Mt. Tom State Reservation. Holyoke, Massachusetts. December 30, 1998. Peabody, MA.

Williams, A. H. c. 1991. Plants seen by Andrew Williams on Mount Tom. Unpublished manuscript.

Wyman, K. 2010. Chapter News: Pioneer Valley. *Single Tracks* 111:32.

Young, J. 2009. Big week 5/30 to 6/3. Posting on MassBird Google Group. June 9, 2009.

Zimmerman, S., N. DePaoli, A. J. Krim, P. Stott, J. W. Bradley, and D. Brady. 1984. Historic & archaeological resources of the Connecticut River Valley: A framework for preservation decisions. The Massachusetts Historical Commission. February, 1984; reprinted May, 1988; PDF version 2007.

Recommended citation for this document:

Department of Conservation and Recreation. 2013. Mount Holyoke Range Planning Unit Resource Management Plan: Including Mount Holyoke Range State Park, Joseph Allen Skinner State Park, Mount Tom State Reservation and Holyoke Heritage State Park. Massachusetts Department of Conservation and Recreation, Bureau of Planning and Resource Protection, Resource Management Planning Program; Boston, MA.