

DCR-BOFF Forest Management Proposal

Project Name: Chicopee – Fire Adapted

Ecosystems

Property Name: Chicopee State Park

Acres: 121.9

Forestry District: 5

Forester: Keith DiNardo

Date Proposed: August 2025

Town(s): Chicopee

Landscape Designation: Parklands

Rec Complex/District: Hampton Ponds Complex

FOTL/F&P Supervisor: Sean Gaffney

GENERAL PROJECT DESCRIPTION

Acres	Overstory Forest Type	Understory Forest Type	Stand Description
53.3	Overstory: Red Pine	Understory: Areas of dense regeneration are scattered throughout, species include predominately oak and hardwoods with some pine, hemlock, and assorted hardwoods	Red pine plantation resulting from C.C.C. planting efforts in the 1930's. This stand is predominantly even, single aged, with some variation occurring where overstory mortality has occurred. Red pine scale is present throughout; complete mortality is expected within approximately 5 years.
21.3	Overstory: Scots Pine	Understory: Areas of dense regeneration are scattered throughout, species include predominately oak and hardwoods with some pine, hemlock, and assorted hardwoods	Scots pine plantation resulting from C.C.C. planting efforts in the 1930's. This stand is predominantly even, single aged, with some variation occurring where overstory mortality has occurred.
27.0	Overstory: Pitch Pine - Oak	Understory: Dominated by oak and heath species, some assorted pines also present	Overstory is dominated by a mix of pitch pine and oak species, including black oak, scarlet oak, white oak, and red oak. Even aged structure, with well distributed understory vegetation consisting of oak, pine, and species belonging to the Ericaceae family.
4.2	Overstory: Pitch Pine	Understory: Dominated by oak and heath species, some assorted pines also present	Overstory predominantly consists of even aged pitch pine with occurrences oak and white pine scattered throughout.
16.1	Overstory: Administrative	Understory: N/A	Administrative areas such as parking lots, access road, and recreational infrastructure.

Project Summary, Goals and Objectives: This project is aimed at restoring fire adapted ecosystems, improving fire mitigation infrastructure such as fire breaks, etc., mitigating hazards associated with failing red pine plantations, and plantation conversion to naturally occurring vegetative communities. Current vegetative conditions and soil types are indicative of a fire adapted ecosystem, specifically pitch pine oak forest, heathlands, and inland barrens. This work will focus on plantation removal and ecological restoration of several stands within the project area, along with active management strategies employed to restore inland barren characteristics. All prescribed work will be closely coordinated with Natural Heritage and Endangered Species Program staff.

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MASSACHUSETTS FOREST ACTION PLAN GOALS

The goals listed below are sourced from *DCR (Department of Conservation and Recreation) Bureau of Forest Fire Control and Forestry. 2020. MASSACHUSETTS STATE FOREST ACTION PLAN 2020*

- **Increase resistance and resilience of trees and forests to mitigate and adapt to the effects of climate change**
- **Manage forest ecosystem health and biodiversity**
- **Support the role and use of prescribed fire in the landscape**

CLIMATE CHANGE ADAPTATION STRATEGIES AND APPROACHES

The strategies and approaches listed below are sourced from the Response to the Report of the Climate Change Committee, 2024 and the Report of the Climate Forestry Committee: Recommendations for Climate-Oriented Forest Management Guidelines, 2024.

- **1: Sustain fundamental ecological functions.**
- **5: Maintain and enhance species and structural diversity.**

CLIMATE ADAPTATION

Action Type	Identified Issue	Action Description
Resilience	Plantations of native and non-native species result in limited vegetative diversity and structural complexity.	Restore native sandplain heathlands and pitch pine – scrub oak barrens habitats through the removal of existing non-native conifer plantations and subsequent application of prescribed fire. Restoring these fire dependent natural communities will provide habitat for a diversity of rare species.

Adaptive Management Strategies:

- Maintain or restore a diversity of native tree and understory plant species.
- Use prescribed fire and mechanical treatments to manipulate structure and composition to reduce the risk of wildfire.
- Increase fuel reduction treatments in the wildland-urban interface.
- Restore fire-adapted ecosystems using fire-tolerant and drought-adapted native species that are expected to be resilient to future climate and fire regimes.

CLIMATE CHANGE CONSIDERATIONS

The Department of Conservation and Recreation, Division of State Parks and Recreation has determined that the decision to implement this project is consistent with EEA climate goals and guidelines and agency land management objectives.

Activities proposed	Carbon and climate change considerations
Full overstory removal, plantation conversion to native species.	Long considered a critical practice on agency lands to improve biodiversity and forest resilience, the conversion of single-species conifer plantations to more diverse mixes of native species has recently been encouraged as a climate-smart practice by NIACS and other climate adaptation experts. Tree monocultures, intensively managed throughout the world to produce much of the

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	wood we all use, are highly vulnerable to the kinds of pest and disease impacts that are likely to worsen as climate changes. Conversion of monoculture plantations aligns with many climate-smart forestry practices highlighted in the CFC report, including but not limited to: • Improving resistance to pests and pathogens. • Increasing resiliency by promoting diversity of plant species. • Providing age class/structural diversity. • Improving conditions for a wide variety of local wildlife through the creation of temporary young forest habitat. • Promoting future-adapted tree species in the regeneration mix.
Habitat restoration and maintenance prescribed fires -- heath, shrubland, woodland, or grassland	Prescribed Fire is the planned use of fire in a particular place and time, under established conditions and safety requirements to accomplish resource management goals. • Prescribed fire improves habitat for a variety of wildlife and native plants and restores natural communities dependent on fire. • In fire-influenced natural communities, fragmentation of the landscape and the suppression of fires (prescribed or natural) leads to accumulation of volatile surface, mid-story, and canopy vegetation hazardous fuels. • Excessive fuel buildup negatively impacts the habitat quality of the natural community and may eventually lead to an unplanned, catastrophic wildfire. • Prescribed fires that reflect natural return intervals increase below-ground carbon storage and sequestration. The consequences of catastrophic wildfires include: • The release of large amounts of carbon. • Kills trees. • Causes severe soil, duff, and below ground vegetation impacts. • May alter soil chemistry. • Threaten firefighter safety, human communities, and property damage. • May volatilize and release soil carbon. • Cause severe smoke impacts within a large airshed.
Diffuse overstory removal, partial cut, habitat modification/maintenance. Examples: Thinning to low residual density to restore open woodland/barrens/heath conditions.	Open woodlands, savanna's, barrens, and heathlands are low tree-density, fire-dependent forests with diverse understory vegetation critical for conserving many state-listed rare species. They are imperiled across Massachusetts due to development and negative ecological alterations resulting from a lack of management

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	primarily decades of fire exclusion. Climate experts recommend prioritizing and maintaining sensitive or at-risk species and habitat, with the expectation that pressure on these will only increase with changing climate. This practice is for ecological restoration to ensure continued habitat function and to reduce climatic vulnerability: • Reducing tree density reduces vulnerability to pests like southern pine beetle and to drought stress. • Restoring native species that are best adapted to the site promotes resilience to future drought, wildfire, and harmful insects. • Reintroducing low-intensity fire promotes resilient native vegetation. • Removing heavy fuel loads reduces vulnerability to wildfire. • Restoration better positions these sites to adapt to climate change. • Restored sites are more reliable carbon sinks in the long term than highly vulnerable dense fire excluded forests. The agency recognizes that this site may store less carbon than denser forests in the short term. But climate models predict an increase in disturbance on these sites including drought, wildfire and range expansion of harmful insects that puts a dense fire suppressed forest at greater risk of becoming a carbon source in the long term. Projects like this are undertaken on Federal, state agency, and other conservation lands across the Commonwealth, under the guidance of collaborative teams consisting of biologists, restoration ecologists, foresters, and fire management professionals.
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SOILS AND TOPOGRAPHIC FEATURES

Acres	Soil Type	Drainage Characteristic
<u>89.5</u>	Windsor loamy sand	Excessively drained
<u>24.9</u>	Hinckley loamy sand	Excessively drained
<u>2.4</u>	Scarboro mucky fine sandy loam	Very poorly drained
<u>0.4</u>	Terraced escarpments	N/A
<u>1.9</u>	Pits, gravel	N/A; Assumed excessively drained
<u>2.7</u>	Urban land	N/A

Average Slope Percent:0-5%
General Aspect: West

Terrain Consistency: Variable
Terrain Position: Flatland

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Description of Soils and Topographic Features: Dominant soils present within the project area include Windsor loamy sand and Hinckley loamy sand, both of which are outwash soils exhibiting excessively drained characteristics. The muck soil types are located along the edge of Cooley Brook and are typical wetland soils. The topography of the project is fairly flat, with moderate slopes located along the eastern bank of Cooley Brook and associated vegetated bordering wetlands.

WETLAND FEATURES

	Present	Crossing	Work within Filter/Buffer
Wetlands:	Yes	No	Possible
Regulated Streams:	Yes	Possible	Possible
Non-Regulated Streams:	Possible	Possible	Possible
Vernal Pools:	Possible	No	No
Seeps:	Possible	Possible	Possible

Description of Wetland Features: Perennial stream named Cooley Brook, which feeds into the Chicopee Reservoir is located along the western edge of the project area, along with several bordering vegetated wetlands. At least one isolated vegetated wetland is indicated by DEP wetlands data.

CULTURAL RESOURCES

	Present	At Risk	Work Within Buffer
Stone Walls:	Possible	Possible	Possible
Foundation / Cellar Hole:	Possible	Possible	Possible
Well:	Possible	Possible	Possible
Structures:	Possible	Possible	Possible
Cemetery:	No	N/A	N/A
Other: N/A	Choose an item.	Choose an item.	Choose an item.

Description of Cultural Resources: No significant cultural resources have been identified at this time. Internal review and coordination with DCR – Office of Cultural Resources (DCR-OCR) will occur prior to active operations. Any cultural resources identified during field work will be mapped and Best Management Practices (BMP's) as defined by DCR-OCR will be applied. Any possible deviation from BMP's will only occur in close coordination with DCR-OCR staff.

NATURAL HERITAGE / WILDLIFE-HABITAT MANAGEMENT / OTHER RESOURCES

Natural Heritage Polygon: Yes

Natural Heritage Restrictions: Yes

Restrictions on Harvest Description: Possible restrictions to operations are expected and are to be determined upon further review by NHESP. This project will be conducted in close coordination with NHESP ecologists.

Wildlife Specific Management: Yes

Targeted Species: Inland barren dependent species

Goals: Restore and improve inland barren conditions, where applicable, in close coordination with NHESP staff.

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Additional Habitat Management: Yes

Habitat Type: Inland barrens restoration

Goals: Restore and improve inland barren conditions, where applicable, in close coordination with NHESP staff.

State Forest Action Plan: Yes

ACEC: No

BIO Map2: Yes

State Wildlife Action Plan: Yes

Public Water Supply: No

Current Resource Management Plan: No

Additional Detail: [Click or tap here to enter text.](#)

FOREST HEALTH / INVASIVE SPECIES

Forest Health Concern: Yes

Species Affected: Red Pine, Pitch Pine

Management Considerations: Red pine removal in plantations to mitigate hazard tree conditions as well as promote naturally occurring vegetative communities. Thinning in areas where pitch pine is the dominant overstory species to establish more resilient conditions and to minimize threats associated with southern pine beetle.

Plant Invasive Species Present: Yes

Species Present: Multiple

Management Considerations: Several invasive plant species were identified during preliminary field work. A more comprehensive list and management strategy will be developed as work continues.

Insect Invasive Species Present: Yes

Species Present: Multiple

Management Considerations: N/A

INFRASTRUCTURE / RECREATION/ AESTHETICS

Access Road: Burnett Road

Condition: Good

Existing Landing: No

Project Access and Landing Site: Multiple landing locations located within the state park. Existing infrastructure will be utilized where possible.

Ownership: N/A

Road Repair/Upgrade: Yes

Landing Repair/Upgrade: Possible

Existing Skid Trail Network: Yes

Pre-Harvest Repair/Upgrade: Yes

Skid Trail Network Description: Several forest roads and trails are present within the project proposal area. Existing infrastructure will be used where present, upgrades are expected to occur as an attempt to bolster fire suppression infrastructure in the form of access roads and fire breaks.

Shared Infrastructure: Yes

Road/Trail Names: [Click or tap here to enter text.](#)

Management Considerations: City of Chicopee water mains run through a portion of the state forest and currently function as a primary access road.

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Infrastructure Present

Infrastructure	Present	Condition
Official Trail	Yes	Adequate
Illegal Trail	Yes	Extensive
Existing Trail Head	Possible	N/A
Recreation Facility	Yes	N/A

Recreation and Aesthetic Concerns/Opportunities: This is a heavily recreated facility and is designated as a Parkland per the 2012 DCR Landscape Designations. Several red pine plantations are located within close proximity to recreational infrastructure including parking lots and buildings. Work will be conducted to remove red pine and mitigate future hazards imposed by these failing plantations.

SILVICULTURE

Acres	Silviculture Type	Silviculture Description
90.6	Overstory Removal	The primary intent of this silvicultural recommendation is to focus on the removal of existing red pine and scots pine plantations. Overstory retention within these stands will focus on naturally native species such as pitch pine and oak. Minimal retention standards as stated in the Landscape Designations and Management Guidelines document will be adhered to as much as possible but some deviation may occur where native overstory trees are not present.
31.2	Thinning	Reduction in basal area to an average of 60-80 ft ² /acre in stands where pitch pine is a dominant component of the overstory. This recommendation is to improve overall resiliency considering potential threats associated with Southern pine beetle

General Comments on Silviculture Proposed: The intent of this project is to promote and restore fire adapted ecosystems within Chicopee State Park while addressing monocultural plantations.

PERMIT REQUIREMENTS / OPPORTUNITIES

Restrictions	Description
Seasonal Restrictions: Possible	NHESP Primary Habitat
Equipment Restrictions: No	Click or tap here to enter text.
Recreation Restrictions: Possible	Heavily recreated year round, with increased use during summer months. Close coordination with DCR Operations to minimize impacts on recreational use.
Green Docket: No	Click or tap here to enter text.
In-kind Services: Possible	Click or tap here to enter text.

Potential Local Economic Benefits: 8% of stumpage to paid to the City of Chicopee. Improvement in fire suppression and mitigation infrastructure, including access roads and fire breaks.

Attachments:

Locus Map
Project Map

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2025 Eastern Connecticut Valley District Proposal

Project Name:

Chicopee - Fire Adapted Ecosystems

Facility: Chicopee Memorial State Park

Forester: Keith DiNardo

Area : +/- 121.86 acres

Designation: Parkland

