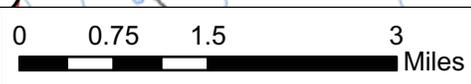
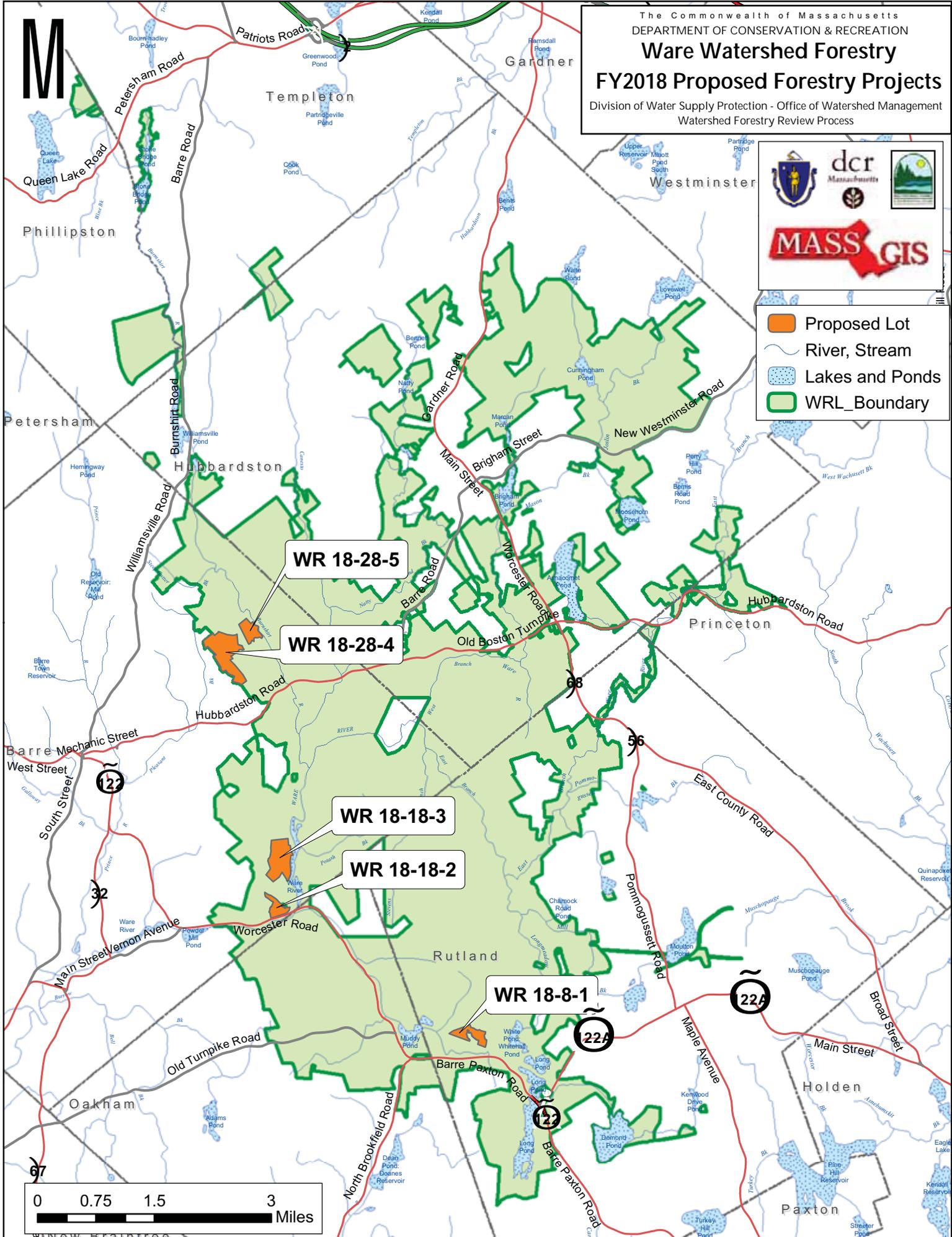




The Commonwealth of Massachusetts  
 DEPARTMENT OF CONSERVATION & RECREATION  
**Ware Watershed Forestry**  
**FY2018 Proposed Forestry Projects**  
 Division of Water Supply Protection - Office of Watershed Management  
 Watershed Forestry Review Process



-  Proposed Lot
-  River, Stream
-  Lakes and Ponds
-  WRL\_Boundary



**Massachusetts Department of Conservation and Recreation**  
**Division of Water Supply Protection, Office of Watershed Management**  
*Forest Management Project Proposal Summary*

<b>DWSP Lot Proposal Number: WR-18-8-1</b>
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**Site Information**

<b>Watershed:</b> Ware River	<b>Town(s):</b> Rutland
<b>Acres:</b> 37	<b>Nearest Road:</b> Whitehall Road
<b>Natural Heritage Atlas overlap?</b> No	
<b>Forest Types:</b> White pine/pitch pine; white pine/hardwood; oak/hardwood	
<b>Soils:</b> 77% Merrimack (excessively drained); 20% Montauk-Scituate-Canton (moderately well drained)	
<b>Wetland Resources:</b> Wetlands are present within and adjacent to the lot but will not be harvested	
<b>Vernal Pools:</b> None	

**NARRATIVES**

**General Description/Forest Composition/History:** The western part of the lot is an 18 acre white pine/pitch pine stand. The overstory is dominated by sawlog size white pine (80% of stand) and pitch pine (10-15% of stand), as well as pole size red oak and red maple. White oak, aspen, sugar maple, hemlock, and scots pine are also present in the overstory. White pine quality is medium, with some good quality stems present. The pitch pine that is present is healthy and is a major component of the stand, although white pine is starting to crowd it. The stand is well stocked, with an average of 144 ft<sup>2</sup> of basal area per acre. Pitch pine constitutes approximately 20 ft<sup>2</sup> per acre across the whole stand, and as high as 40 ft<sup>2</sup> per acre in spots. Regeneration is plentiful and consists of red and white oak, white pine, red maple, and hemlock. The understory of low bush blueberry, presence of pitch pine, dry site, and proximity to the railroad make it very probable that there is a history of fire on the site. The 1938 aerial photos appear to show a young scrub/shrub forest was just getting started. This stand appears to be younger than the stands in the eastern portion of the lot. A shelterwood harvest, part of lot # 175, was completed on this part of the lot in 1992.

The eastern part of the lot is mostly an 11 acre white pine stand. The overstory is dominated by low quality sawlog size white pine. The stand is over stocked, with an average of 160 ft<sup>2</sup> of basal area per acre. Acceptable growing stock basal area averages 10 ft<sup>2</sup> per acre. The stand starts as more of a white pine hardwood stand to the north near Whitehall Rd and transitions to a white pine stand further south and east. Red maple, black cherry, red and white oak, and pitch pine are also present in the overstory but make up a minor component. Regeneration consists of white pine, red oak, red maple, white oak, sugar maple and black birch. Regeneration is plentiful through much of the stand, but is patchy. The northern half of this section, adjacent to lot 4350, was thinned in 1991 as part of lot #181.

There is a 7 acre mixed oak/white pine stand in the southeastern portion of the lot that abuts the rail trail. The stand is dominated by red and white oak, with patches of low quality overstory white pine.

Red maple and hemlock are also present in the overstory. The stand is overstocked with an average of 150 ft<sup>2</sup> of basal area per acre. The dominant red and white oak stems are good quality, with an average basal area of 45 ft<sup>2</sup> per acre in acceptable growing stock. Regeneration is abundant throughout the stand and is comprised of white pine, red and white oak, red maple, and hemlock.

**Site Selection:** The primary goal of the watershed forest management program is to create and maintain a forest that provides high quality drinking water to current users and future generations. DWSP recognizes that wildlife habitat management and restoration of rare habitats are important secondary goals, where they are compatible with maintaining high quality drinking water.

This particular site was chosen because overstory tree species diversity and quality are relatively low. The stands are dominated by large "pasture pine". These trees are more susceptible to windthrow during wind events such as hurricanes. The regeneration that is already established under the overstory is much more diverse. Harvesting in patches now will mimic natural disturbance that will likely occur at some point in the future, and release the more diverse regeneration to begin the next stand of trees.

**Silvicultural Objectives:** White pine/pitch pine stand - This harvest will resemble a shelterwood prep cut. The target will be to retain 30-40 ft<sup>2</sup> of basal area per acre on average. All healthy pitch pine and good growing stock red and white oak will be retained. Where there is not enough pitch pine and oak to meet desired post harvest density, the best white pine stems will be retained. The resulting stand may be patchy, depending on distribution of desirable stems. No openings over 2 acres will be created. Openings over 0.25 acres will be mapped and at least 5 ft<sup>2</sup> per acre of basal area of healthy mature trees will be retained in all openings over 0.5 acres.

White pine stand - At least two, possibly three, up to 2 acre openings will be established within this stand. The openings will be located adjacent to lot 4350 where slope allows in order to expand that opening. Openings will target areas with existing regeneration and poorly formed white pine overstory stems. At least 5 ft<sup>2</sup> basal area per acre of overstory red and white oak and pitch pine stems will be retained where they exist. Other hardwood stems will be retained where those species do not exist.

Mixed oak stand - Three to five 0.25 to 1 acre openings will be established, targeting patches of low quality white pine and low quality/low vigor hardwood.

**Cultural Resources:** A stone lined well and several stone walls are present. The well will be flagged and avoided. Some walls will have to be crossed in order to access the lot, particularly in the southeast section of the lot. Existing barways will be used where possible and harvest layout will protect walls as much as possible. If applicable, DWSP will follow any additional recommendations from DCR's Archeologist regarding protection of sensitive sites.

**Wildlife/Rare or Endangered Species:** Cavity trees and potential/existing nest trees will be retained if possible. No rare species or habitats listed for the proposal area. One potential vernal pool outside the lot area was checked and found not to be a vernal pool.

## **FIGURES**



# FY2018 Proposed Forestry Project WR-18-8-1

Ware River Reservation Proposed Forestry Lot Review

- |                      |   |                                |
|----------------------|---|--------------------------------|
| DCR Gate             | NHESP Priority Habitats of Rare Species | Foundation/Cellar Hole         |
| DCR Barway           | NHESP Certified Vernal Pools            | Cultural Site: Railroad, Canal |
| Landing Site         | Potential Vernal Pool                   | Stone Wall                     |
| WRL_StreamCrossings  | Perennial Stream                        | Major Road                     |
| Proposed Skid Trail  | Intermittent Stream                     | Town Paved & Gravel Road       |
| Proposed Lot         | Open Water                              | All-Weather Access Road        |
| Reservation Boundary | Wetland                                 | Seasonal Access Road           |
| CFI Plot             | Watershed Boundary                      | Cart road; Trail               |
| Vegetation Type      |   | Rail Trail                     |

Locus Map:  
Ware River Reservation



Map Scale - 1:4,000



**Massachusetts Department of Conservation and Recreation**  
**Division of Water Supply Protection, Office of Watershed Management**  
*Forest Management Project Proposal Summary*

<b>DWSP Lot Proposal Number: WR-18-18-2</b>
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**Site Information**

<b>Watershed:</b> Ware River	<b>Town(s):</b> Barre
<b>Acres:</b> 27	<b>Nearest Road:</b> Route 122
<b>Natural Heritage Atlas overlap?</b> Yes	
<b>Forest Types:</b> White pine/hardwood; red pine; Norway spruce	
<b>Soils:</b> 86% Merrimack and Hinckley (excessively drained); 8% Woodbridge-Paxton (moderately well drained)	
<b>Wetland Resources:</b> Wetlands are present within and adjacent to the lot but will not be harvested	
<b>Vernal Pools:</b> None	

**NARRATIVES**

**General Description/Forest Composition/History:** The majority of the lot is a white pine/hardwood stand that is dominated by sawlog size white pine. Red oak, red maple, black birch, pitch pine, and red pine are also present in the overstory. The stand is overstocked with an average of approximately 186 ft<sup>2</sup> of basal area per acre. Overall quality of white pine is low to fair, with pockets of very low quality. The amount of acceptable growing stock is variable (0 to 70 ft<sup>2</sup> per acre) but averages approximately 30 ft<sup>2</sup> per acre. Regeneration is abundant and consists of black birch, red maple, white pine, hemlock, and red and white oak.

There are 3 red pine stands in the northern portion of the lot directly adjacent to Old Worcester Rd. that total 12 acres. All three of the stands were part of a shelterwood harvest, lot # 185, in 1992. The 2.5 acres to the northwest and the 5 acres north of Old Worcester Rd. were part of another shelterwood harvest, lot # 232, in 1996. There is approximately 140 ft<sup>2</sup> of basal area per acre of good quality sawlog size red pine left in that stand. There is approximately 5 ft<sup>2</sup> of basal area per acre of red maple, white pine, and black birch in the overstory. Overall quality of non red pine species is low. Mortality is present in the red pine. Regeneration is abundant and consists of black birch, red maple, red oak, white pine, yellow birch, white ash, and white oak. A shelterwood removal harvest, lot #277, was completed on the 4.5 acres to the east in 1999. That harvest left 20 ft<sup>2</sup> of basal area per acre of good quality red pine sawlogs. The basal area has increased to approximately 25-30 ft<sup>2</sup> per acre since then. The thick regeneration is now 15-20 feet tall and consists of white pine, red and white oak, black birch, and red maple.

A 2-acre red pine stand to the south, in between Route 122 and the Ware River, has been included as well. The location of the stand makes it a priority to remove the red pine before it dies. Dead trees that fall into Route 122 would be a safety hazard, and dead trees that fall into the Ware River would threaten the intake building. The stand is highly visible and will most likely require a police detail to control traffic on Route 122 while the trees are being cut.

There is a 4 acre spruce plantation in the southern section of the lot adjacent to route 122. The plantation was established in 1936. Norway spruce is the most common species, but white spruce,

white pine, European larch, aspen, and red oak are also present in the overstory. Although aspen and oak are present, hardwood species make up <5% of the overstory. The stand is overstocked at approximately 250 ft<sup>2</sup> per acre of basal area of sawlog size trees. The quality of stems of all species is low. Regeneration is sparse throughout much of the stand, although there are a few patches of white pine seedlings.

**Site Selection:** The primary goal of the watershed forest management program is to create and maintain a forest that provides high quality drinking water to current users and future generations. DWSP recognizes that wildlife habitat management and restoration of rare habitats are important secondary goals, where they are compatible with maintaining high quality drinking water.

This particular site was chosen because there are four stands dominated by red pine. Several invasive insects and pathogens are causing high rates of mortality in red pine stands throughout the region. These trees will likely die if they are not harvested soon.

**Silvicultural Objectives:** Regeneration in the white pine/hardwood stand is abundant and consists of black birch, red maple, white pine, hemlock, and red and white oak seedlings and saplings. Regeneration in the higher basal area red pine stand is abundant and consists of black birch, red maple, red oak, white pine, yellow birch, white ash, and white oak seedlings and saplings. In the lower basal area red pine stand, regeneration is abundant and is now 15-20 feet tall. It consists of white pine, red and white oak, black birch, and red maple saplings and poles. Regeneration in the spruce plantation is sparse throughout much of the stand, although there are a few patches of white pine seedlings. Browse level in the area is low.

Within the white pine/hardwood stand, three 1 to 2 acre groups will be harvested. Where possible, the groups will be located adjacent to lot #277, the shelterwood removal harvest from 1999, in order to release the regeneration on the edge of that harvest and to expand that gap. 5 to 10 ft<sup>2</sup> per acre of basal area of overstory trees will be retained within the harvested groups, which will include all pitch pine a selection of the healthiest and best quality white and red oak.

The higher basal area red pine stand to the northwest will be harvested as group. 5 ft<sup>2</sup> per acre of basal area will be retained, of species other than red pine if possible. The remaining overstory red pine in the stand to the east will be harvested to further release the regeneration. Skid trails will be located and spaced far enough so that the regeneration that is present will be well-protected.

DCR is currently engaged in a study of spruce habitat. If at the conclusion of that study harvesting is allowed in the spruce plantation, the stand should be removed. A partial harvest would leave the remaining trees vulnerable to windthrow due to the exposed nature of the stand. 5-10 ft<sup>2</sup> per acre of basal area of native species, preferably hardwood, will be retained. A visual buffer will be left along route 122.

**Cultural Resources:** Some stone walls are present within the lot. Existing barways will be used where possible and harvest layout will protect walls as much as possible.

This lot is directly adjacent to Coldbrook Cemetery and the Coldbrook Train Station site. There appears to have been a house, barn, and garage that belonged to a Joseph J. Seymour adjacent to route 122. I have not located any evidence in the field as of 1/12/17. The site is probably within the visual buffer. The site will be buffered appropriately if located. If applicable, DWSP will follow any additional recommendations from DCR's Archeologist regarding protection of sensitive sites.

**Wildlife/Rare or Endangered Species:** Cavity trees and potential/existing nest trees will be retained if possible. NHESP has determined that certain state-listed sensitive species or habitats may exist within the lot proposal area. To protect them from unnecessary disturbance, detailed information regarding affected species and their locations is not included in this report. DWSP will coordinate with NHESP and follow recommendations to protect these species during the proposed activity.



**Massachusetts Department of Conservation and Recreation**  
**Division of Water Supply Protection, Office of Watershed Management**  
*Forest Management Project Proposal Summary*

<b>DWSP Lot Proposal Number: WR-18-18-3</b>
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**Site Information**

<b>Watershed:</b> Ware River	<b>Town(s):</b> Barre
<b>Acres:</b> 84	<b>Nearest Road:</b> Granger and Old Coldbrook Roads
<b>Natural Heritage Atlas overlap?</b> No	
<b>Forest Types:</b> White pine/hardwood; mixed oak	
<b>Soils:</b> 54% Merrimack and Hinckley (excessively drained); 28% Woodbridge-Paxton (moderately well drained); 17% Charlton-Paxton (well-drained thin soils)	
<b>Wetland Resources:</b> Wetlands and streams are present within and adjacent to the lot. Wetlands will not be harvested but logging will occur within stream filter strips.	
<b>Vernal Pools:</b> None	

**NARRATIVES**

**General Description/Forest Composition/History:** The majority of the lot is a sawlog size white pine/hardwood stand. The amount of white pine in the overstory varies greatly through the stand. Some areas are pure white pine stands. There are a couple of inclusions of small oak dominated stands. White pine, red and white oak, red maple, black cherry, aspen, hemlock, black birch, and hickory are found in the overstory. In general the stand is overstocked to well stocked, with an average of 132 ft<sup>2</sup> of basal area per acre. The quality of all species varies, with generally lower quality stems down by the rail trail and better quality on top of the ridge. Acceptable growing stock averages 33 ft<sup>2</sup> of basal area per acre. Regeneration is abundant and consists of white pine, red and white oak, red maple, hemlock, and black birch.

There is a 13 acre mixed oak stand adjacent to the river. White and red oak dominate the overstory, along with white pine, pitch pine, black cherry, and red maple. The stand is overstocked at 153 ft<sup>2</sup> of basal area per acre. The oak stem quality is fair, with an average of 33 ft<sup>2</sup> of basal area per acre of acceptable growing stock. Regeneration is abundant and consists of white pine, red and white oak, red maple, and chestnut.

Buckthorn is present along the rail trail, and well established in some spots.

**Site Selection:** The primary goal of the watershed forest management program is to create and maintain a forest that provides high quality drinking water to current users and future generations. DWSP recognizes that wildlife habitat management and restoration of rare habitats are important secondary goals, where they are compatible with maintaining high quality drinking water.

This particular site was chosen because overstory tree species diversity and quality are relatively low. The stands are dominated by large "pasture pine". These trees are more susceptible to windthrow during wind events such as hurricanes. The regeneration that is already established under the overstory is much more diverse. Harvesting in patches now will mimic natural disturbance that will likely occur at some point in the future, and release the more diverse regeneration to begin the next stand of trees.

**Silvicultural Objectives:** In the white pine/hardwood stand, six to ten groups will be harvested, targeting patches of low quality pine. One or two groups will be up to five acres in size, the rest will be less than 2 acres. One of the 5 acre groups will be located east of the rail trail in the patch of very low quality pine to the north. 5 to 10 ft<sup>2</sup> of basal area per acre will be retained in all groups over 1/2 acre, preferably consisting of healthy oak. Some thinning along main skid trails in between groups will occur targeting low quality and unhealthy hardwood and white pine.

In the oak stand, two to four groups between 1/2 and 1 acre in size will be harvested, targeting areas with the lowest quality hardwood and best regeneration. 5 to 10 ft<sup>2</sup> of basal area per acre of good quality, healthy red and white oak and pitch pine will be retained within groups.

**Cultural Resources:** Some stone walls are present within the lot. Existing barways will be used where possible and harvest layout will protect walls as much as possible. If applicable, DWSP will follow any additional recommendations from DCR's Archeologist regarding protection of sensitive sites.

**Wildlife/Rare or Endangered Species:** Cavity trees and potential/existing nest trees will be retained if possible. There are no NHESP Estimated or Priority Habitats overlapping this lot. Three potential vernal pools were checked and found to not be vernal pools.

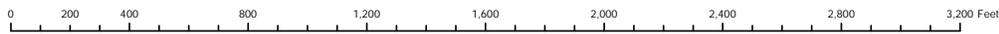


# FY2018 Proposed Forestry Project WR-18-18-3

Ware River Reservation Proposed Forestry Lot Review

- DCR Gate
- DCR Barway
- Landing Site
- WRL\_StreamCrossings
- Proposed Skid Trail
- Proposed Lot
- Reservation Boundary
- CFI Plot
- Vegetation Type
- NHESP Priority Habitats of Rare Species
- NHESP Certified Vernal Pools
- Potential Vernal Pool
- Perennial Stream
- Intermittent Stream
- Open Water
- Wetland
- Watershed Boundary
- Foundation/Cellar Hole
- Cultural Site: Railroad, Canal
- Stone Wall
- Major Road
- Town Paved & Gravel Road
- All-Weather Access Road
- Seasonal Access Road
- Cart road; Trail
- Rail Trail

Locus Map:  
Ware River Reservation



Map Scale - 1:5,000



**Massachusetts Department of Conservation and Recreation**  
**Division of Water Supply Protection, Office of Watershed Management**  
*Forest Management Project Proposal Summary*

<b>DWSP Lot Proposal Number: WR-18-28-4</b>
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**Site Information**

<b>Watershed:</b> Ware River	<b>Town(s):</b> Barre
<b>Acres:</b> 107	<b>Nearest Road:</b> Fisher Road
<b>Natural Heritage Atlas overlap?</b> No	
<b>Forest Types:</b> White pine/hardwood; mixed oak	
<b>Soils:</b> 5% Ridgebury-Whitman (poorly drained); 47% Woodbridge-Paxton (moderately well drained and stony); 45% Charlton-Paxton (well-drained thin stony soils)	
<b>Wetland Resources:</b> Wetlands and streams are present within and adjacent to the lot. Wetlands will not be harvested but logging will occur within stream filter strips. No stream crossings.	
<b>Vernal Pools:</b> At least two	

**NARRATIVES**

**General Description/Forest Composition/History:** Most of this lot (89 acres) is a white pine/hardwood stand dominated by sawlog size, low quality white pine. The stand is overstocked, averaging 194 ft<sup>2</sup> of basal area per acre. The 1938 aerial photos show that most of this lot was a mix of open field, recently logged, or young forest at that time. Acceptable growing stock averages 23 ft<sup>2</sup> of basal area per acre. White pine quality is generally low. Hardwood quality varies; some better quality red and white oak stems are present. Red and white oak, red maple, red pine, hemlock, black birch, black cherry, white ash, and white spruce are also found in the overstory. In general, this stand tends to be pure white pine or white pine/hardwood in the higher elevation, western part of the lot and tends more toward white pine/hardwood/hemlock at the lower elevation eastern edge of the stand near the wetlands. There is a small area (2 - 3 acres) in the northeast corner of this lot adjacent to Fisher Rd that has a significant component of low to medium quality red pine in the overstory. Regeneration is abundant and consists of white pine, red and white oak, red maple, hemlock, black cherry, and American beech.

There is an oak hardwood stand (12 acres) in the northern portion of the lot adjacent to Fisher Road. Sawlog size red oak dominates the stand, with white oak, red maple, and white pine. The stand is well-stocked, averaging 133 ft<sup>2</sup> of basal area per acre. Overall quality of oak stems is fair to good, with an average of 40 ft<sup>2</sup> of basal area per acre. White pine quality in this stand is better than in the white pine/hardwood stand. Regeneration is abundant and consists of white pine, black birch, hemlock, red oak and American beech. A harvest, lot # 235, was completed in this stand in 1996. It appears to have been a light shelterwood cut.

Buckthorn is present through much of the proposal area, particularly the old field white pine stands on the western edge of the lot. Browse level in this area is low to moderate.

**Site Selection:** The primary goal of the watershed forest management program is to create and maintain a forest that provides high quality drinking water to current users and future generations.

DWSP recognizes that wildlife habitat management and restoration of rare habitats are important secondary goals, where they are compatible with maintaining high quality drinking water.

This particular site was chosen because overstory tree species diversity and quality are relatively low. The stands are dominated by large "pasture pine". These trees are more susceptible to windthrow during wind events such as hurricanes. The regeneration that is already established under the overstory is much more diverse. Harvesting in patches now will mimic natural disturbance that will likely occur at some point in the future, and release the more diverse regeneration to begin the next stand of trees. Existing patches created during past harvests that are present in the area will be expanded upon to mimic natural disturbances and enhance diversity to tree species and ages.

**Silvicultural Objectives:** Group selection will be the silviculture that is utilized. 5 to 10 ft<sup>2</sup> of basal area per acre of overstory trees will be retained in all groups, preferably healthy good quality oak if possible. Hardwood in general and good quality healthy white pine will be given preference after that. Some thinning may occur along main trails where appropriate.

In the white pine/hardwood stand eight to twelve groups from 0.5 to 2 acres in size will be established, totaling approximately seventeen acres. The number and locations of groups will be affected by vernal pool location and associated buffers and accessibility due to poorly drained soils, stone walls, and skid distance. In general groups will target patches of poorly formed and unhealthy white pine. A priority will also be put on expanding existing openings from past harvests.

In the oak hardwood stand, three to five 1/4 to 1 acre groups will be harvested, totaling about three acres. Groups will target patches of white pine, red maple, and low quality/vigor oak.

**Cultural Resources:** Stone walls are present within the lot. Existing barways will be used where possible and harvest layout will protect walls as much as possible. Several have already been impacted by illegal ATV activity. If applicable, DWSP will follow any additional recommendations from DCR's Archeologist regarding protection of sensitive sites.

**Wildlife/Rare or Endangered Species:** Cavity trees and potential/existing nest trees will be retained if possible. There are no NHESP Estimated or Priority Habitats overlapping this lot. DWSP has verified the presence of vernal pools within the lot; current recommendations and BMPs will be used to protect the pools and maintain the surrounding forested areas.

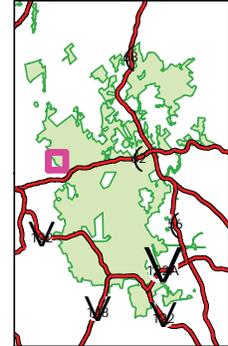


# FY2018 Proposed Forestry Project WR - 18 - 28 - 4

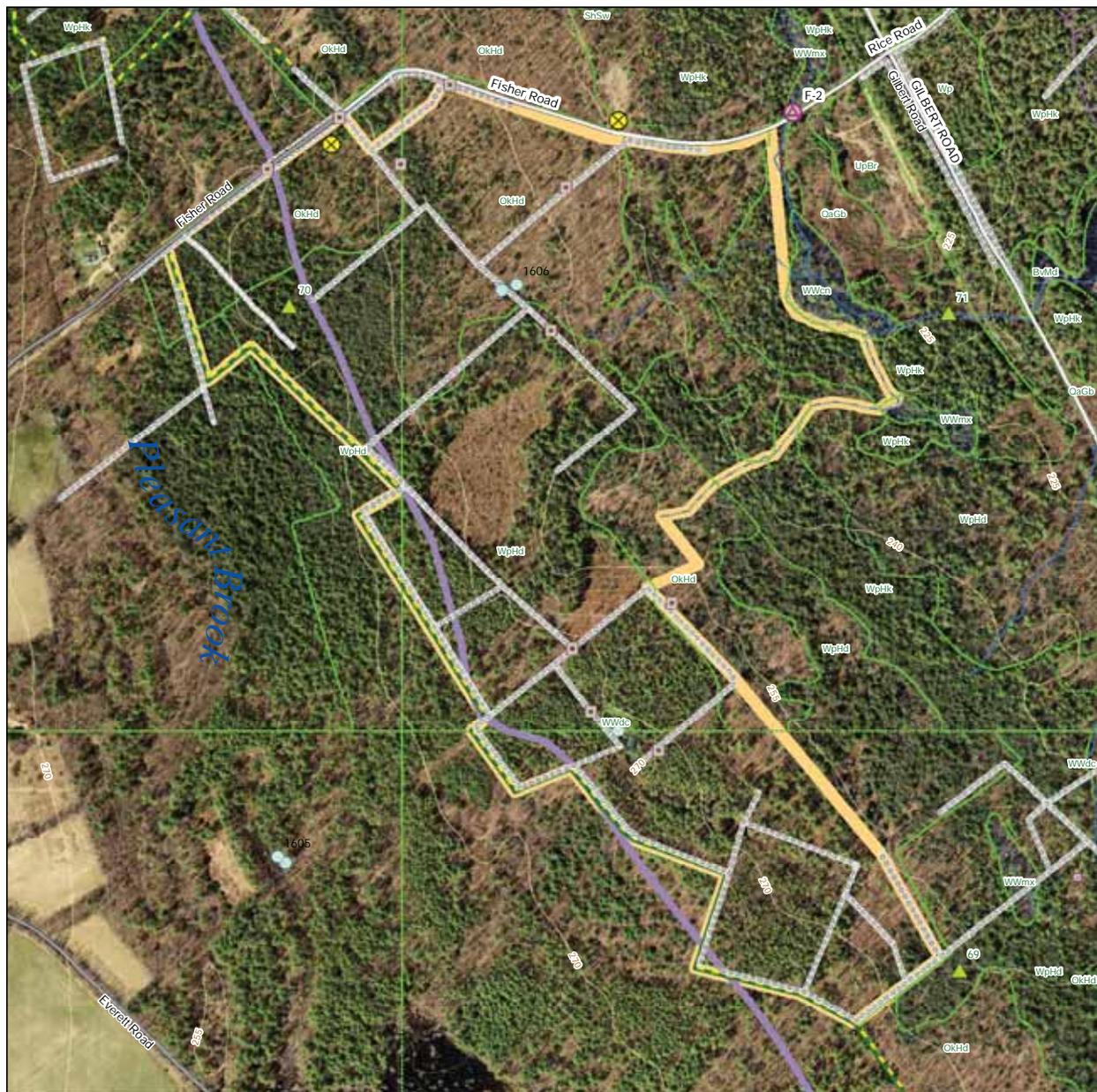
Ware River Reservation Proposed Forestry Lot Review

- DCR Gate
- DCR Barway
- Landing Site
- WRL\_StreamCrossings
- Proposed Skid Trail
- Proposed Lot
- Reservation Boundary
- CFI Plot
- Vegetation Type
- NHESP Priority Habitats of Rare Species
- NHESP Certified Vernal Pools
- Potential Vernal Pool
- Perennial Stream
- Intermittent Stream
- Open Water
- Wetland
- Watershed Boundary
- Foundation/Cellar Hole
- Cultural Site: Railroad, Canal
- Stone Wall
- Major Road
- Town Paved & Gravel Road
- All-Weather Access Road
- Seasonal Access Road
- Cart road; Trail

Locus Map:  
Ware River Reservation



Map Scale - 1:5,000



**Massachusetts Department of Conservation and Recreation**  
**Division of Water Supply Protection, Office of Watershed Management**  
*Forest Management Project Proposal Summary*

<b>DWSP Lot Proposal Number: WR-18-28-5</b>
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**Site Information**

<b>Watershed:</b> Ware River	<b>Town(s):</b> Barre
<b>Acres:</b> 32	<b>Nearest Road:</b> Gilbert Road
<b>Natural Heritage Atlas overlap?</b> Yes	
<b>Forest Types:</b> White pine	
<b>Soils:</b> 11% Walpole (poorly drained); 89% Hinckley (excessively-drained)	
<b>Wetland Resources:</b> Wetlands and streams are present adjacent to the lot. Wetlands will not be harvested but logging will occur within stream filter strips. No stream crossings.	
<b>Vernal Pools:</b> One	

**NARRATIVES**

**General Description/Forest Composition/History:** This is an old field white pine stand. The 1938 aerial photos show 2.5 acres at the intersection of Gilbert Rd and Rice Rd was still open field at that time. The rest of the lot looks to have been young forest reverted from old field. The stand is dominated by sawlog size, low quality white pine trees with small crowns. The stand is fully stocked, averaging 123 ft<sup>2</sup> of basal area per acre, with very little to no acceptable growing stock in the overstory (average of 3 ft<sup>2</sup> of basal area per acre). Black cherry, white oak, red maple, red oak, and hemlock stems are all present but comprise a very small portion the overstory stems. Regeneration is abundant and is comprised of red and white oak, hemlock, red maple, white pine, black birch, and American beech. A 14-acre shelterwood harvest (lot #177) was completed in the stand in 1993.

Glossy buckthorn is present throughout the stand and well established in areas. Browse level in this area is moderate.

**Site Selection:** The primary goal of the watershed forest management program is to create and maintain a forest that provides high quality drinking water to current users and future generations. DWSP recognizes that wildlife habitat management and restoration of rare habitats are important secondary goals, where they are compatible with maintaining high quality drinking water.

This particular site was chosen because overstory tree species diversity and quality are relatively low. The stands are dominated by large "pasture pine". These trees are more susceptible to windthrow during wind events such as hurricanes. The regeneration that is already established under the overstory is much more diverse. Harvesting in patches now will mimic natural disturbance that will likely occur at some point in the future, and release the more diverse regeneration to begin the next stand of trees.

**Silvicultural Objectives:** One up to 5 acre and three to five 1 - 2 acre groups will be harvested. The target for total acreage in groups will be 10 acres. Groups will be placed in areas with good regeneration and the poorest quality overstory white pine. 5 to 10 ft<sup>2</sup> per acre of basal area of overstory trees will be retained in the groups, comprised of oak and other hardwoods where possible and white pine if necessary to meet desired structural goals.

**Cultural Resources:** Stone walls are present within the lot. Existing barways will be used where possible and harvest layout will protect walls as much as possible. If applicable, DWSP will follow any additional recommendations from DCR's Archeologist regarding protection of sensitive sites.

**Wildlife/Rare or Endangered Species:** Cavity trees and potential/existing nest trees will be retained if possible. NHESP has determined that certain state-listed sensitive species or habitats may exist within the lot proposal area. To protect them from unnecessary disturbance, detailed information regarding affected species and their locations is not included in this report. DWSP will coordinate with NHESP and follow recommendations to protect these species during the proposed activity. DWSP has verified the presence of vernal pools within the lot; current recommendations and BMPs will be used to protect the pools and maintain the surrounding forested areas.

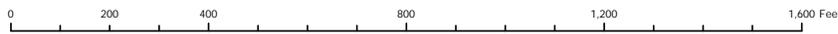


# FY2018 Proposed Forestry Project WR-18-28-5

## Ware River Reservation Proposed Forestry Lot Review

- DCR Gate
- DCR Barway
- Landing Site
- WRL\_StreamCrossings
- Proposed Skid Trail
- Proposed Lot
- Reservation Boundary
- CFI Plot
- Vegetation Type
- NHESP Priority Habitats of Rare Species
- NHESP Certified Vernal Pools
- Potential Vernal Pool
- Perennial Stream
- Intermittent Stream
- Open Water
- Wetland
- Watershed Boundary
- Foundation/Cellar Hole
- Cultural Site: Railroad, Canal
- Stone Wall
- Major Road
- Town Paved & Gravel Road
- All-Weather Access Road
- Seasonal Access Road
- Cart road; Trail

Locus Map:  
Ware River Reservation



Map Scale - 1:3,000

