

# FY 2019/2020 Oak Salvage

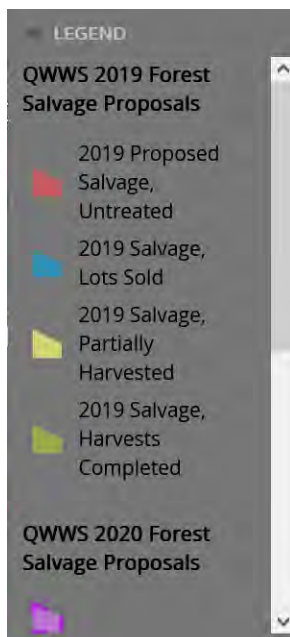
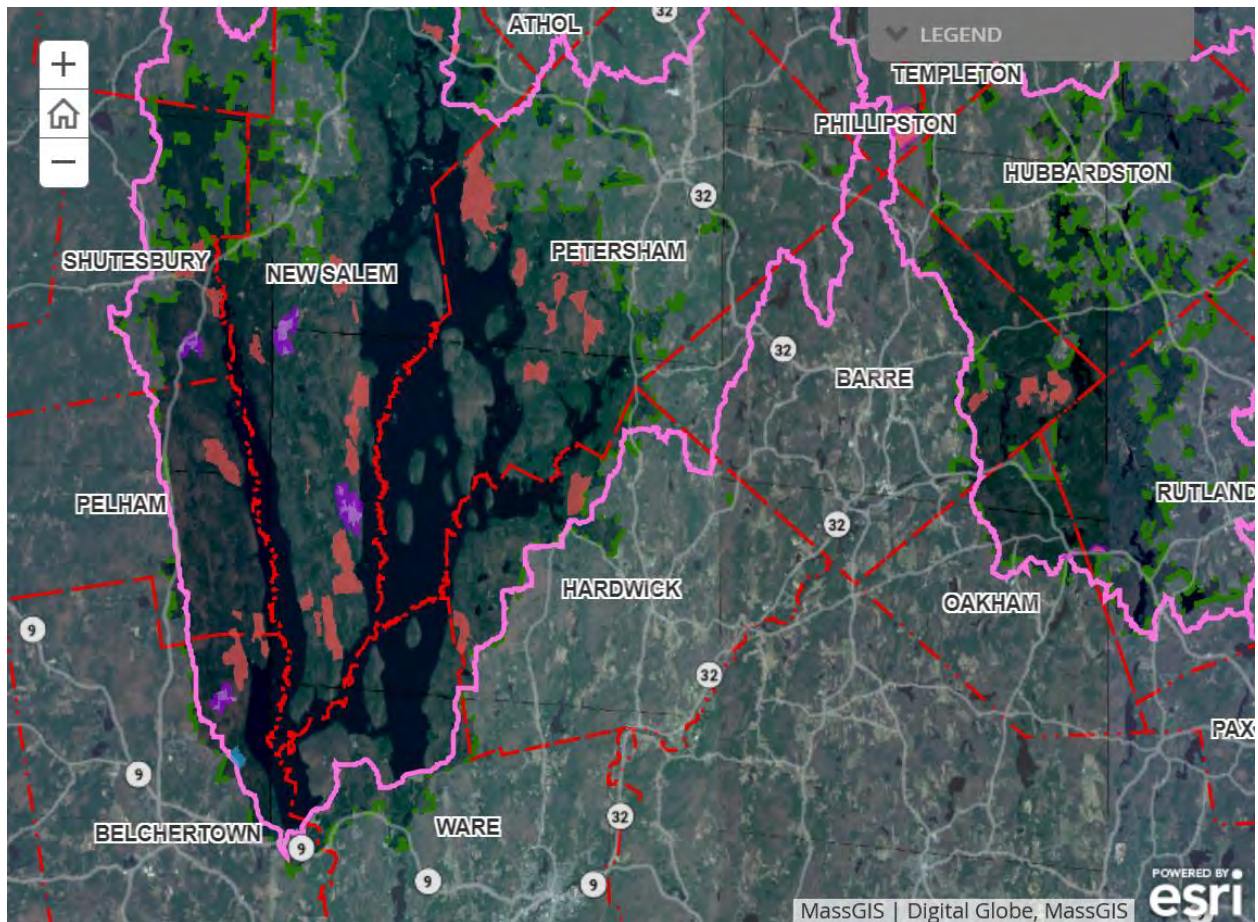
## Gypsy Moth Related Oak Salvage

A combination of stresses from a multi-year drought repeated gypsy moth defoliation events, and outbreaks of native boring beetles has resulted in widespread oak mortality throughout the Quabbin and Ware River forests. The degree of damage varies from place to place, but there are unfortunately some significant areas with near complete mortality. While a large amount of the dead oak will remain in place to add to wildlife habitat and forest structural diversity, DWSP intends to temporarily shift its forest management focus to harvesting in areas of significant oak mortality. These areas would have otherwise been harvested through normal practices many years from now.

This map identifies approximate areas of special concern for oak salvage. Beginning in 2018 (for fiscal year 2019) these areas have been identified through a combination of satellite imagery analysis ([performed by Pasquarella, Bradley, & Woodcock, 2017](#)), and flown and field surveys by DWSP foresters. The locations mapped here do not represent all areas with concentrated oak mortality, but those areas with the best access and operability for the amount of oak present for salvage. With these criteria, DWSP is salvaging the dying oak for the least cost and impact. Ultimately, the full extent of these mapped areas will not be salvaged due to restrictions on operations (terrain, extreme slope, streams, etc.) and limited time before tree decay. It should also be understood that within each of these mapped areas salvage work will reflect the level of mortality; there will likely be scattered removals, similar to a thinning operation, mixed with pockets of near complete removals similar to our typical regeneration patch cutting operations. Some pockets of high mortality and low species diversity may have widely scattered residual trees. DWSP will also salvage affected interior roadside trees to maintain access and address public safety concerns.

This map shows areas identified for fiscal year 2019 which have been: identified but as yet untreated (red), contain at least one lot sold to be salvage but so far unharvested (blue), contain at least one lot which has been partially harvested (yellow), and have had the full all potential salvage harvests completed (green). Areas identified as potential areas of extensive oak mortality for fiscal year 2020 are in purple. Click on any polygon for further information.

All of [DWSP's standard management policies](#) apply to these salvage operations. The DCR Commissioner will need to approve any salvage work that will create openings >5 acres, as is the case for other DWSP silvicultural operations. There will be an accelerated proposal and sale schedule of these areas. Each of the locations mapped here has been reviewed by DWSP Natural Resources and Environmental Quality staff and, is here, undergoing public review prior to sale



# **Ware River Harvest Proposal WR-20-4-1**

## **Proposal Goals**

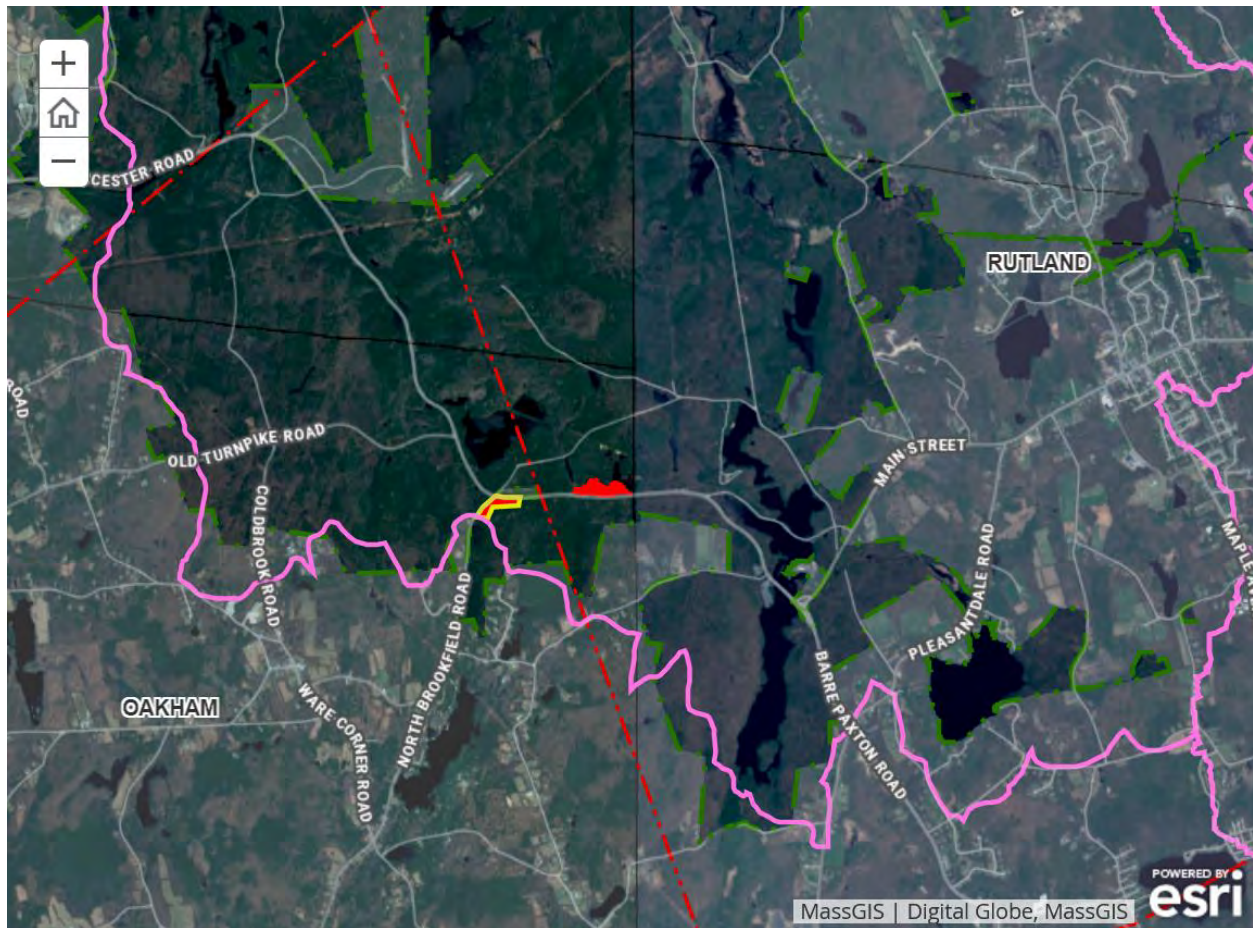
The goal for this proposal is to complete the final removal of red pine plantation overstory from this shelterwood.

## **Proposal Location**

This lot is bound by Route 122 to the north, Route 148 to the west, and completed lot #4390 (WR-16-4-2) to the south and east.

**Total Acres: 8**





## General Description

	Overstory Type(s)	Acres
Dominant	Red Pine	8

## Secondary

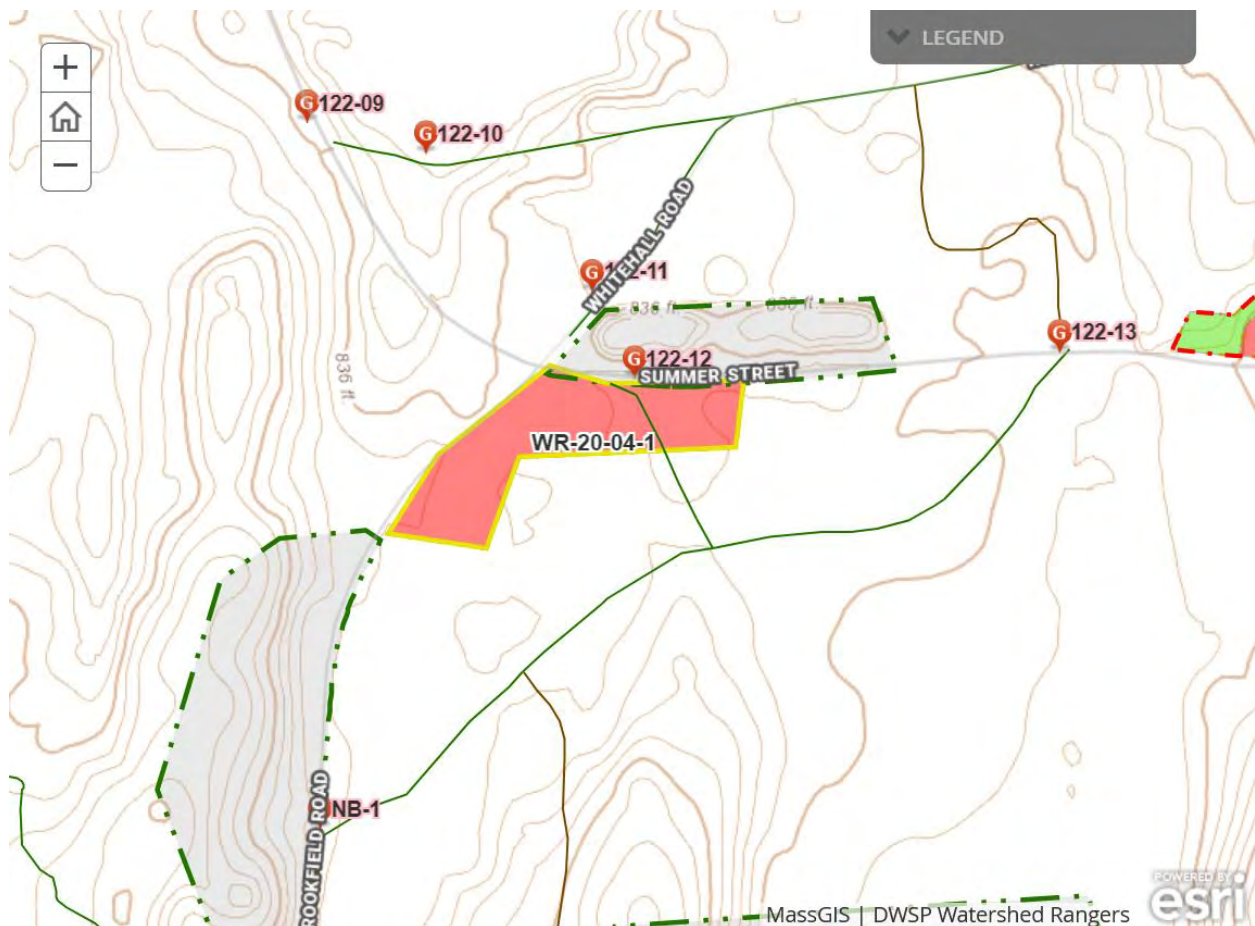
	Understory Type(s)
Dominant	Tree seedlings/saplings dominate site
Secondary	Dry site - blueberry/huckleberry

**Description of forest composition/condition:**

This lot is comprised of a residual red pine plantation that has been thinned twice. The area was left out of lot proposal WR-16-4-2 because of its proximity to Routes 122 and 148. A seed tree cut in the western portion of the red pine plantation along Route 122 was completed in 1998 as part of lot #264. A previous shelterwood harvest was completed in 1991 as part of lot #205. That area has regenerated well to white pine and hardwood up to 20 feet tall. There is approximately 30 square feet of basal area per acre left of overstory red pine trees.

**Assessment of Terrestrial Invasive Species:**

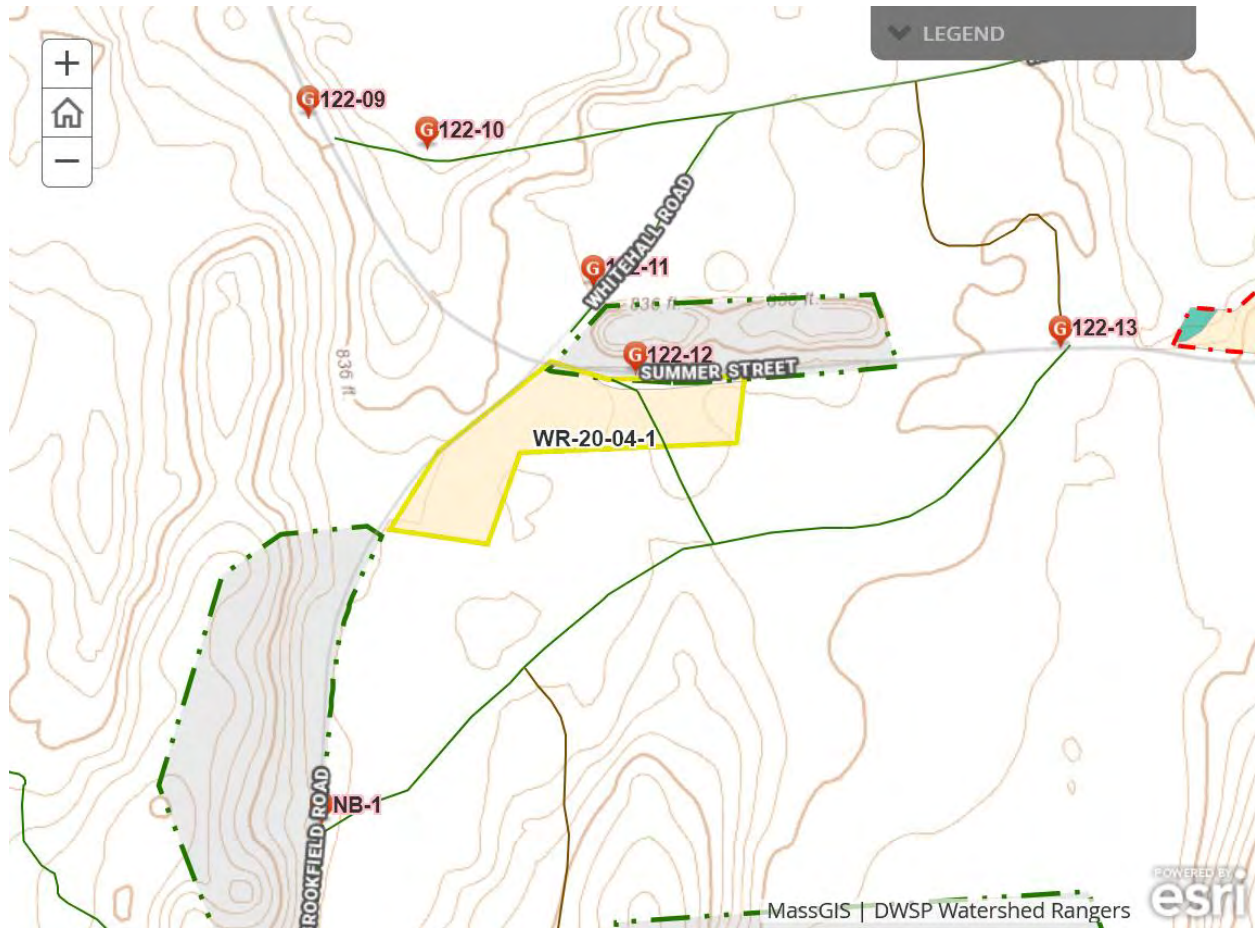
None noted



## Soils

<b>Drainage Class</b>	<b>%</b>
<b>Excessively Drained</b>	100
<b>Well Drained Thin</b>	0
<b>Well Drained Thick</b>	0
<b>Moderately Well Drained</b>	0
<b>Poorly to Very Poorly Drained</b>	0

253B - Hinckley loamy sand, excessively drained.



## Wetlands

- Wetlands present? - **No**
- Streams present? - **No**
- Vernal pools present? - **None known**
- Seeps present? - **None known**
- Are stream crossings required? - **No**
- Are wetland crossings required? - **No**
- Is logging in filter strips planned? - **No**
- Is logging in wetlands planned? - **No**

No wetlands or streams within proposal area.





## Silviculture

Acres in Intermediate cuts: **0**

Acres in prep/establishment cuts: **0**

Acres in Regeneration cuts: **8**

Average regen opening size: **8**

Maximum regen opening size: **8**

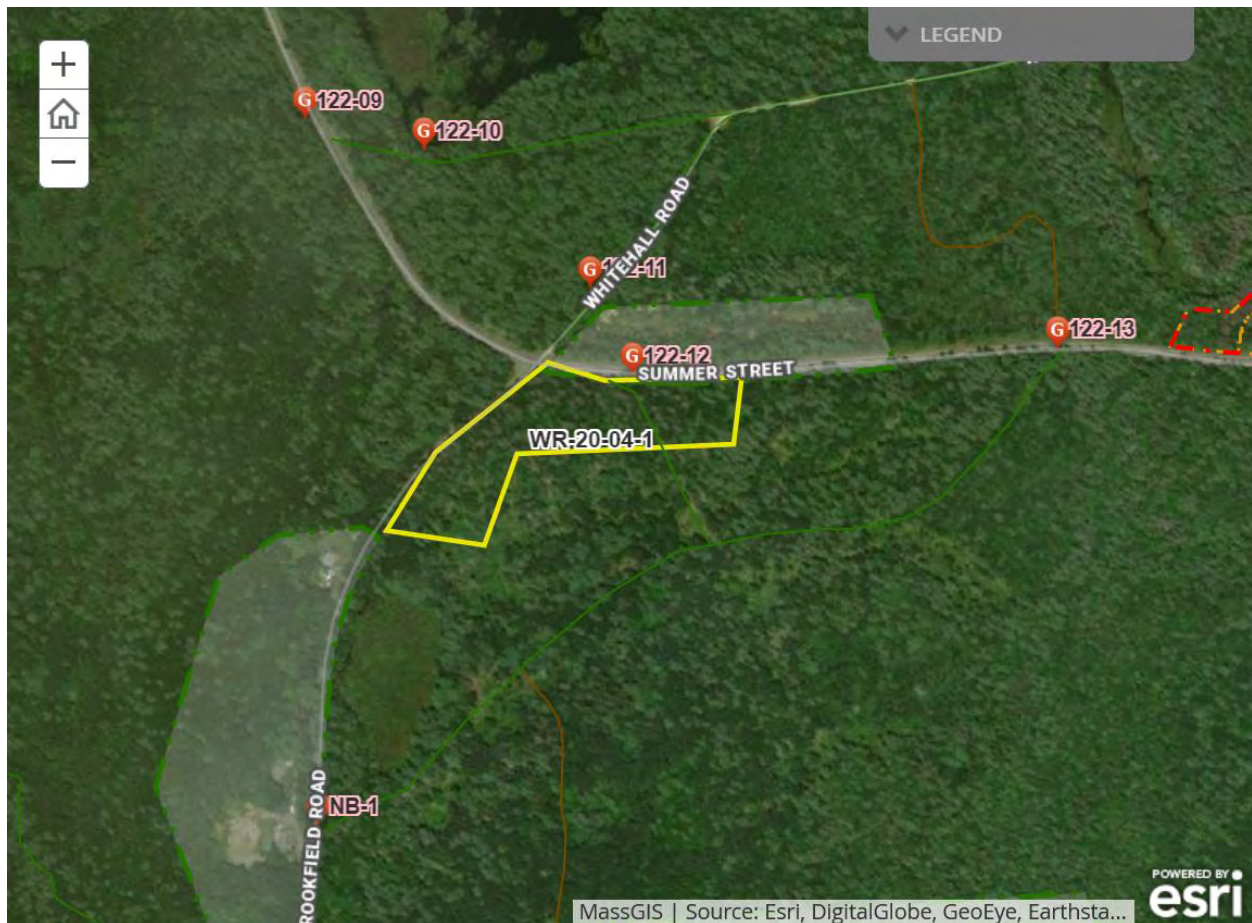
**Description of advance regeneration in proposal area:**



The area has regenerated well to white pine and hardwood up to 20 feet tall.

### General comments on silviculture proposed:

This will be a final removal harvest in an area regenerated using the seed tree method. Skid trails will be spaced as much as possible to protect regeneration. The goal will be to remove all the remaining overstory red pine, which will require permission to exceed the visual buffer threshold along Routes 122 and 148. The presence of roadside power lines and vehicle traffic may lead to some roadside stems being left.

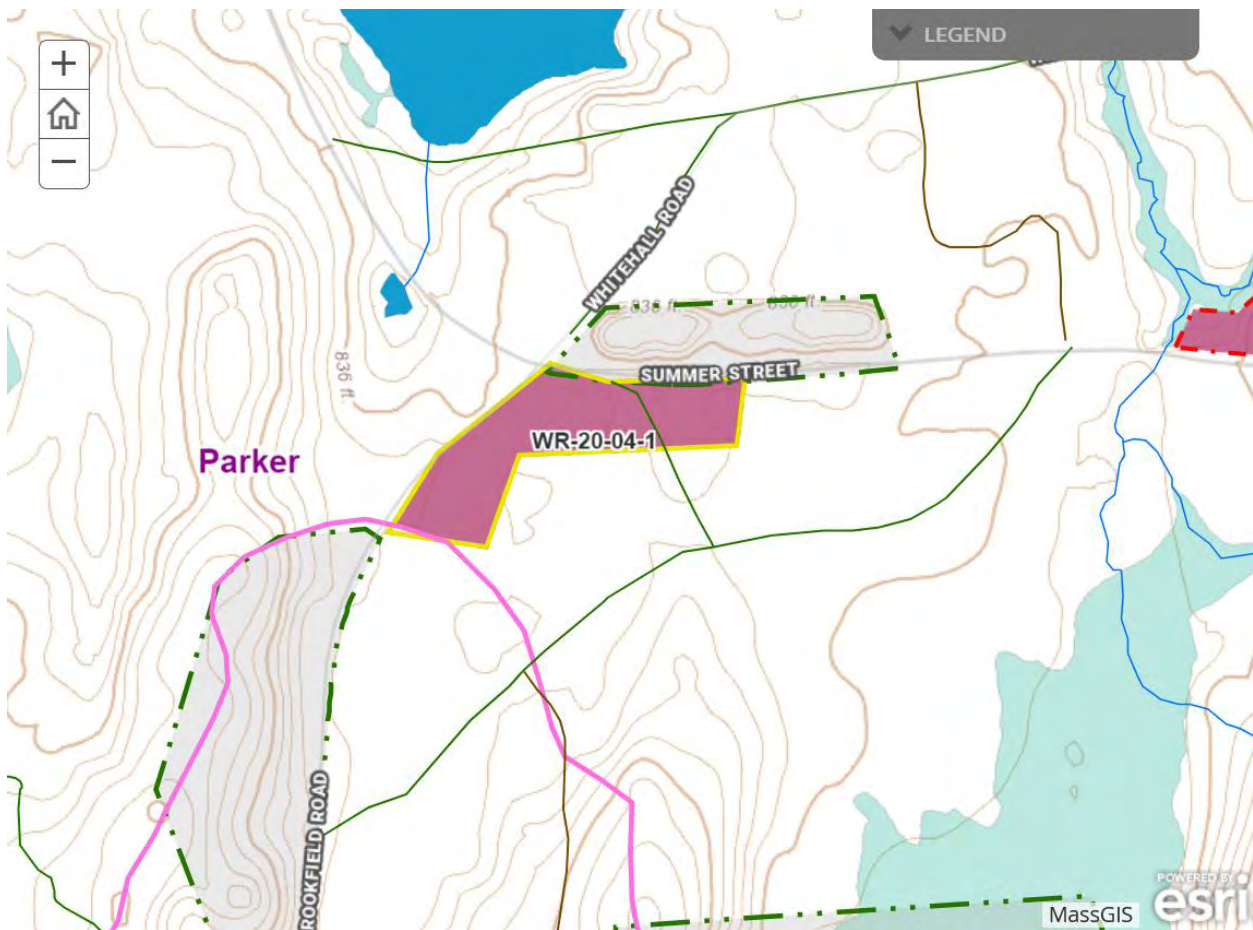


## Subwatershed Analysis

Sub-watershed number	Total DCR-owned Acres	Acres Regenerated on DCR Land in the last 10 years	Acres Remaining for Regenerating Up to the 25% / 10 Year	Acres part of this proposal

8061 (Parker Brook)	2654	36	628	7.4
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8061-Parker Brook- 35.9 acres regenerated on 69.9 acres worked. Lot 4391A, currently sold but not yet harvested, will add 10.6 regenerated acres. Proposal WR-20-8-2 contains an additional 10.6 acres in the subwatershed. Approved proposals WR-16-3-1 (5 acres) and WR-17-7-1 (45.5 acres) are also within the subwatershed and have not been marked yet.



## Harvesting Limitations

Forwarder required: **No**

Feller/processor required: **No**

Steep slopes present: **No**

**Comments on harvesting limitations:**

No limitations.



## Cultural Resources

**Comments on Cultural Resources:**

No known cultural resources on this site. If applicable DWSP will follow any additional recommendations from DCR's Archeologist regarding protection of potentially sensitive sites.





## Wildlife Resources & Rare and Endangered Species

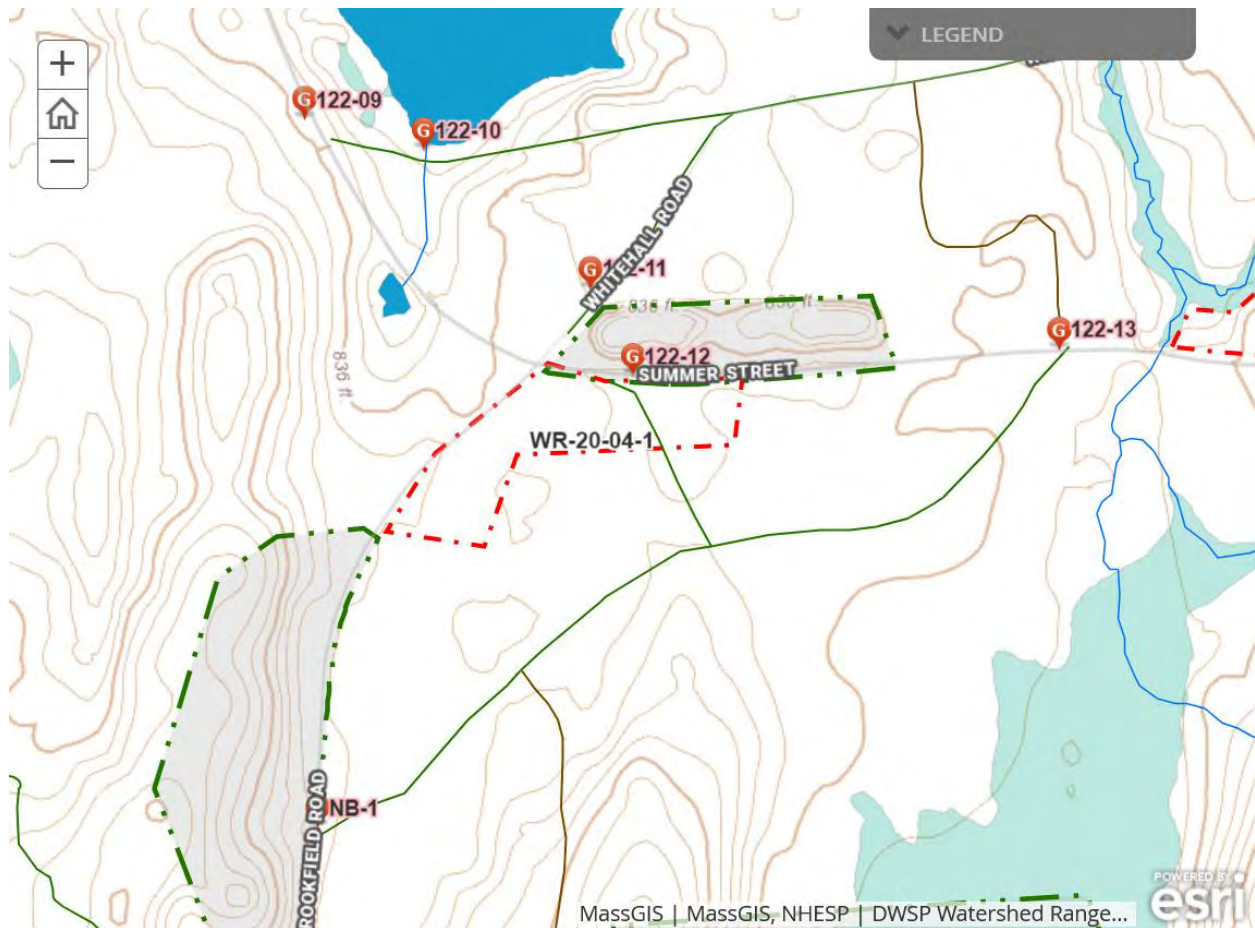
### General Wildlife Comments:

No comments.

### Comments on Rare Species/Habitats:

No known rare species or priority habitats on site.





## Environmental Quality Engineering

### Comments on EQ Issues:

No comments; no stream crossings.



## Forest Access Engineering

**Gravel needed:** No

**Landing work needed:** No

**Culverts needed:** No

**Work needed on permanent bridges:** No

**Beaver issue:** No

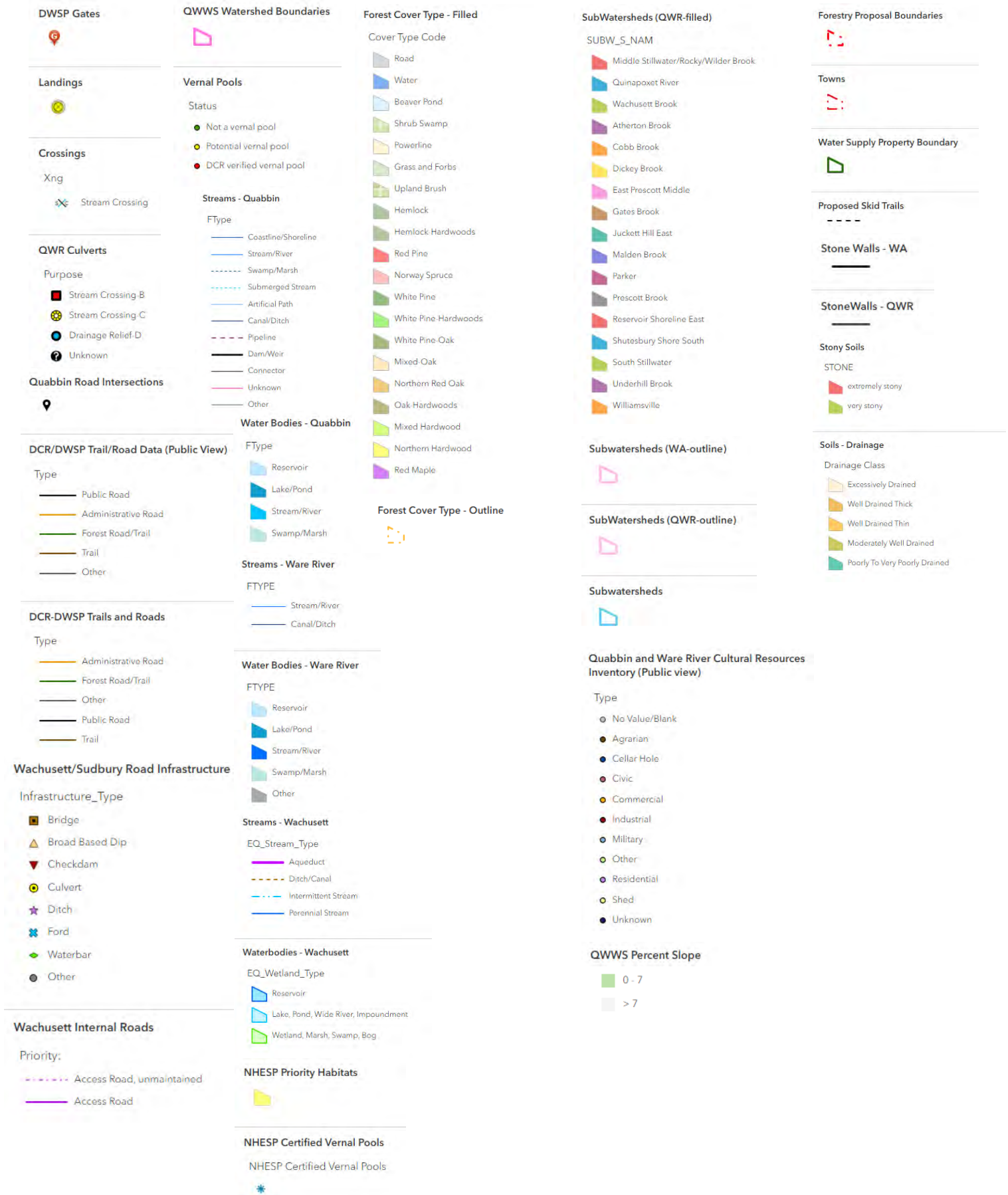
**Further comment on access needs:**

No comments.





## DWSP FY 2020 Forestry Proposals – Master Legend for story maps





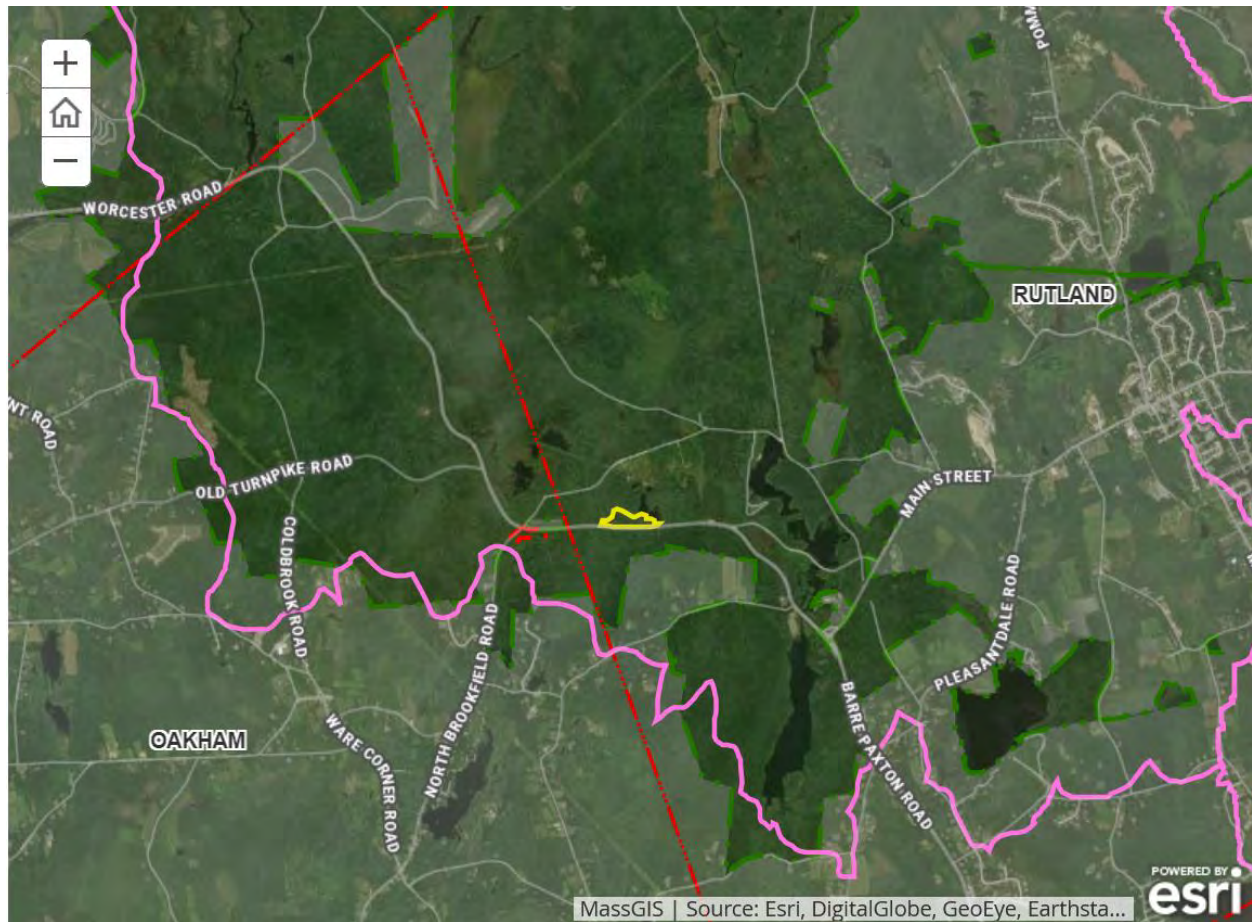
# **Ware River Harvest Proposal WR-20-8-2**

## **Proposal Goals**

## **Proposal Location**

The southern boundary of the lot is Rt 122. The northern, western, and eastern boundaries are Parker Brook and associated wetlands.

**Total Acres: 11**



## General Description

	Overstory Type(s)	Acres
<b>Dominant</b>	Red Pine	4
<b>Secondary</b>	White pine/hardwood	7

	Understory Type(s)
<b>Dominant</b>	Tree seedlings/saplings dominate site
<b>Secondary</b>	Dry site - blueberry/huckleberry

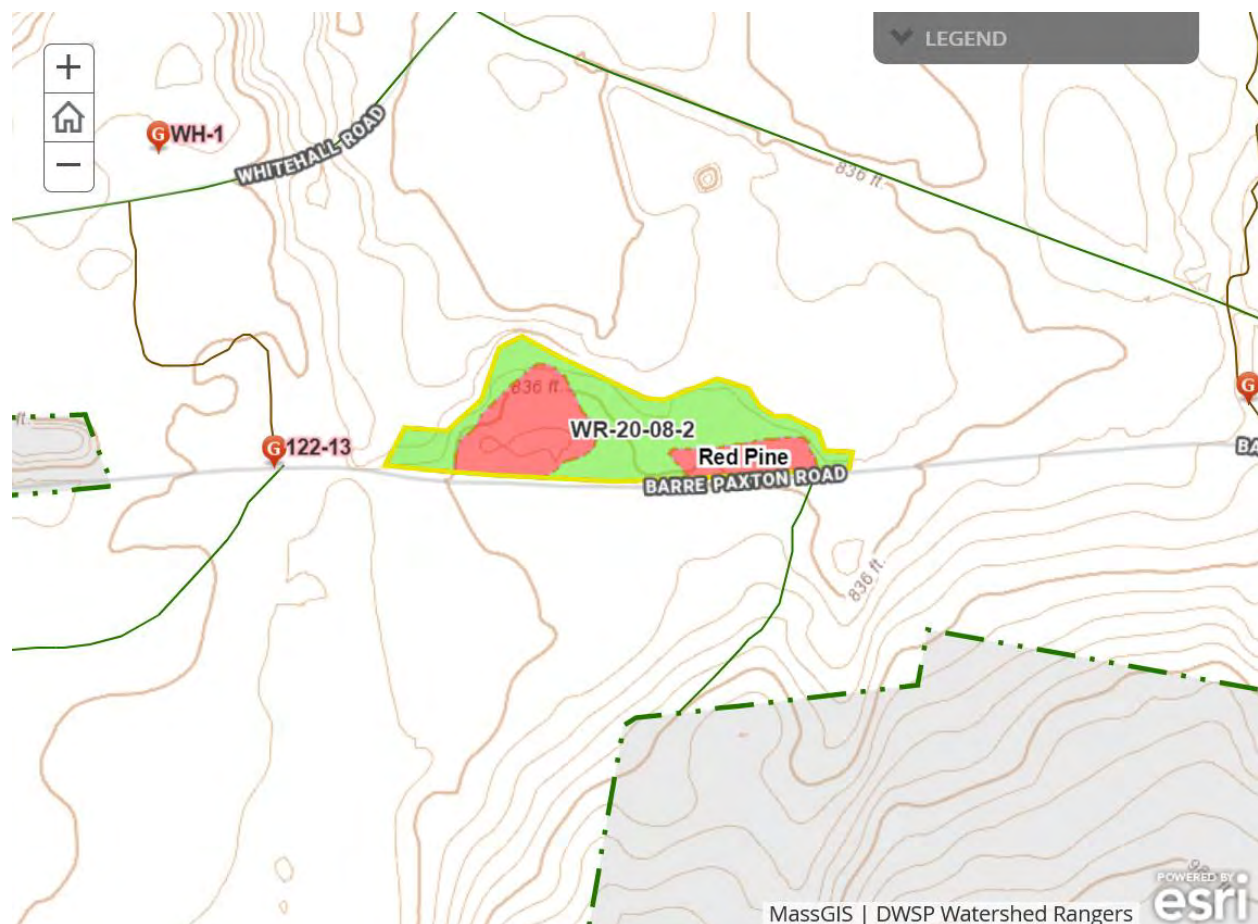
**Description of forest composition/condition:**

The red pine acreage is comprised of 2 stands that are 1.4 and 2.7 acres. The stands average 135 square feet per acre of basal area of good quality, sawlog size red pine. Mortality is present. The red pine stands were part of lot 175A, a shelterwood harvest completed in 1992. The 2.7 acre stand to the west has fewer stems per acre due to heavier past harvesting and heavier mortality, but larger average diameter stems. The regeneration is considerably more advanced as well.

The white pine stand has sawlog and pole sized, low to mid quality white pine and low quality hardwood. White pine, red oak, red maple, black cherry, hemlock, white oak, Scots pine, and pitch pine are present. Heavy beaver activity from the adjacent beaver pond/wetland is affecting the hardwood overstory trees and regeneration.

**Assessment of Terrestrial Invasive Species:**

Gypsy moth eggs were present on red oak stems. No terrestrial invasive plant species noted.

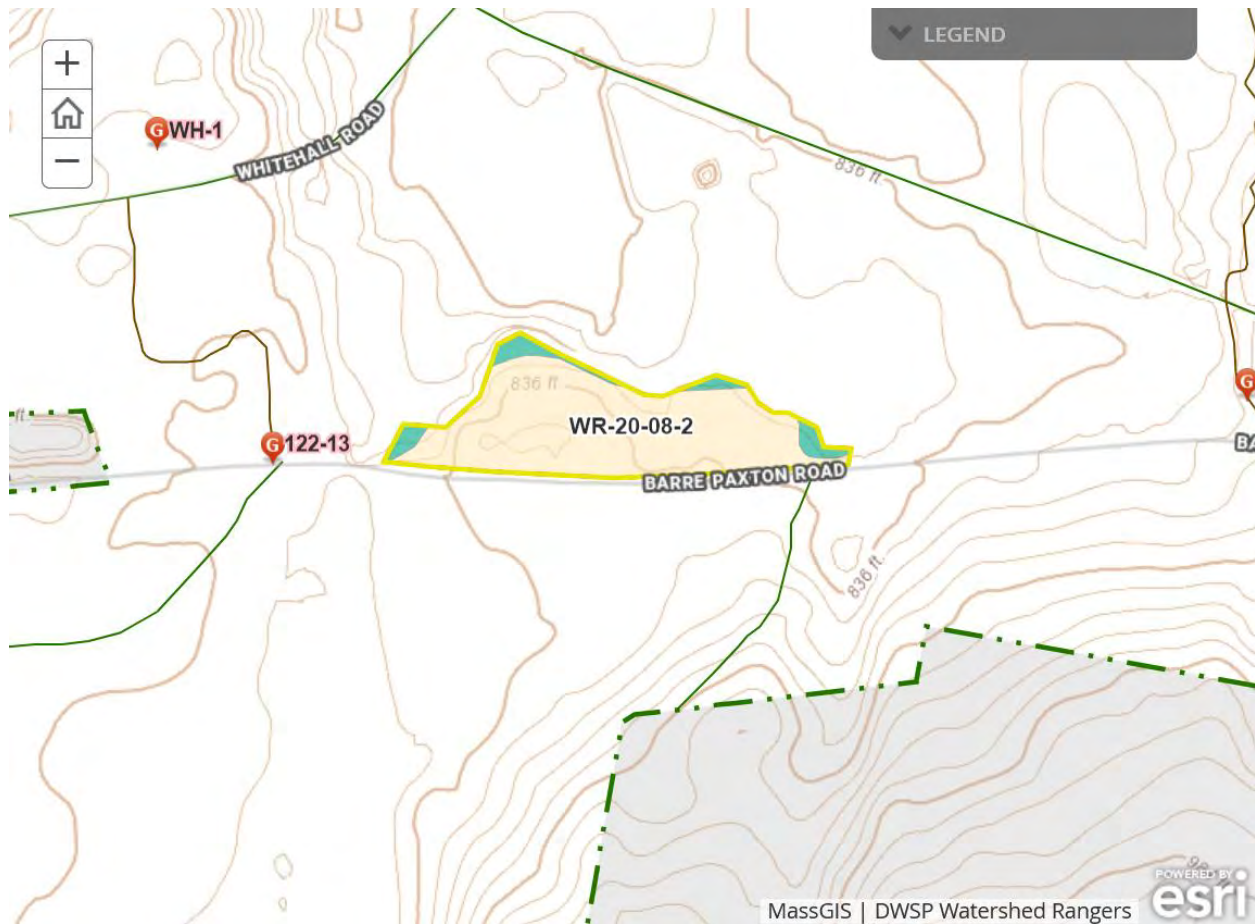


## Soils

<b>Drainage Class</b>	<b>%</b>
<b>Excessively Drained</b>	100
<b>Well Drained Thin</b>	0
<b>Well Drained Thick</b>	0
<b>Moderately Well Drained</b>	0
<b>Poorly to Very Poorly Drained</b>	0

254B - Merrimac fine sandy loam, somewhat excessively drained.

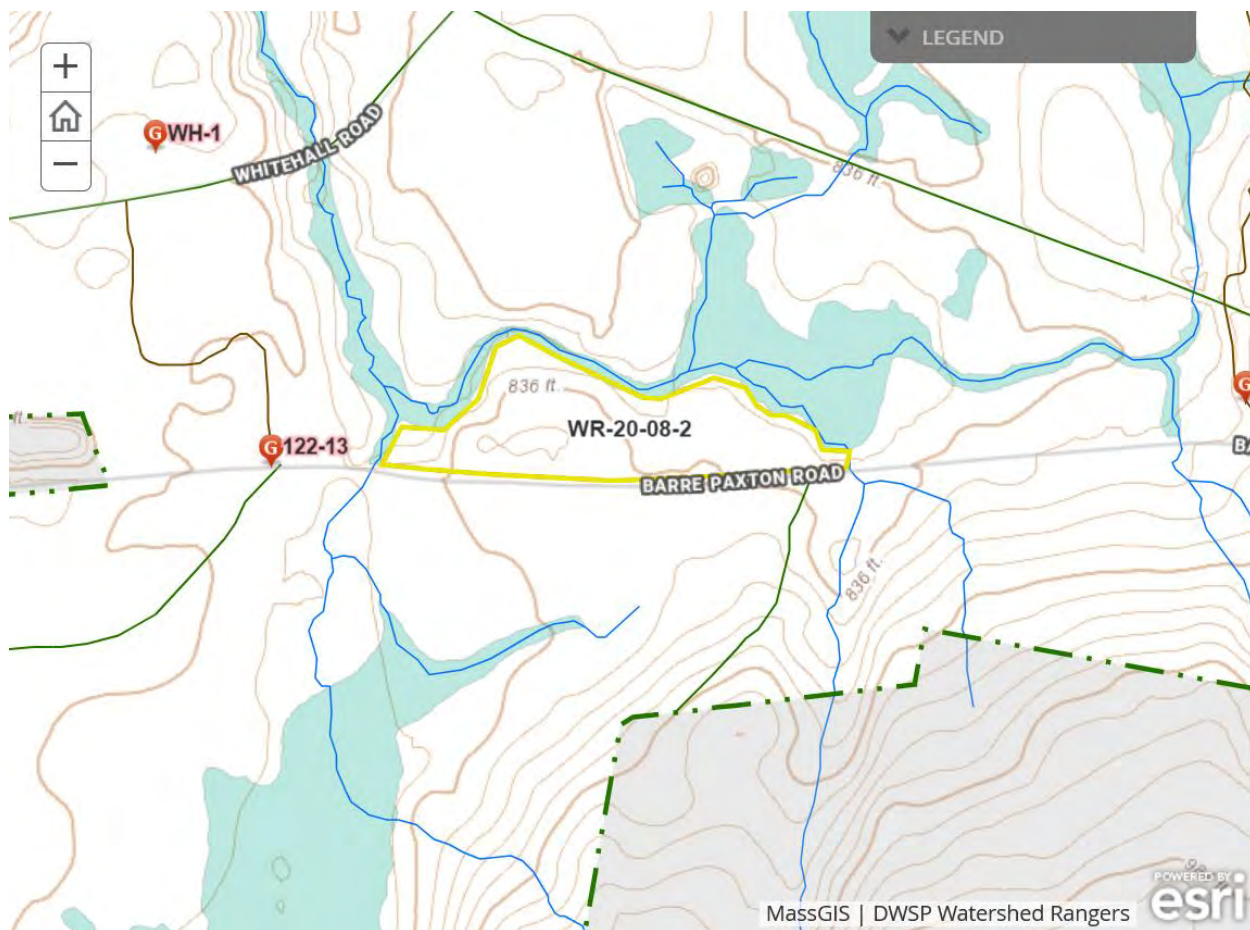




## Wetlands

- Wetlands present? - **Yes**
- Streams present? - **Yes**
- Vernal pools present? - **None known**
- Seeps present? - **None known**
- Are stream crossings required? - **No**
- Are wetland crossings required? - **No**
- Is logging in filter strips planned? - **Yes** ([Riparian Zone Mgt](#))
- Is logging in wetlands planned? - **No**

A variable filter strip will be applied to the stream/wetland to the north per DWSP policy.



## Silviculture

Acres in Intermediate cuts: **4**

Acres in prep/establishment cuts: **0**

Acres in Regeneration cuts: **4.1**

Average regen opening size: **2**

Maximum regen opening size: **2.7**

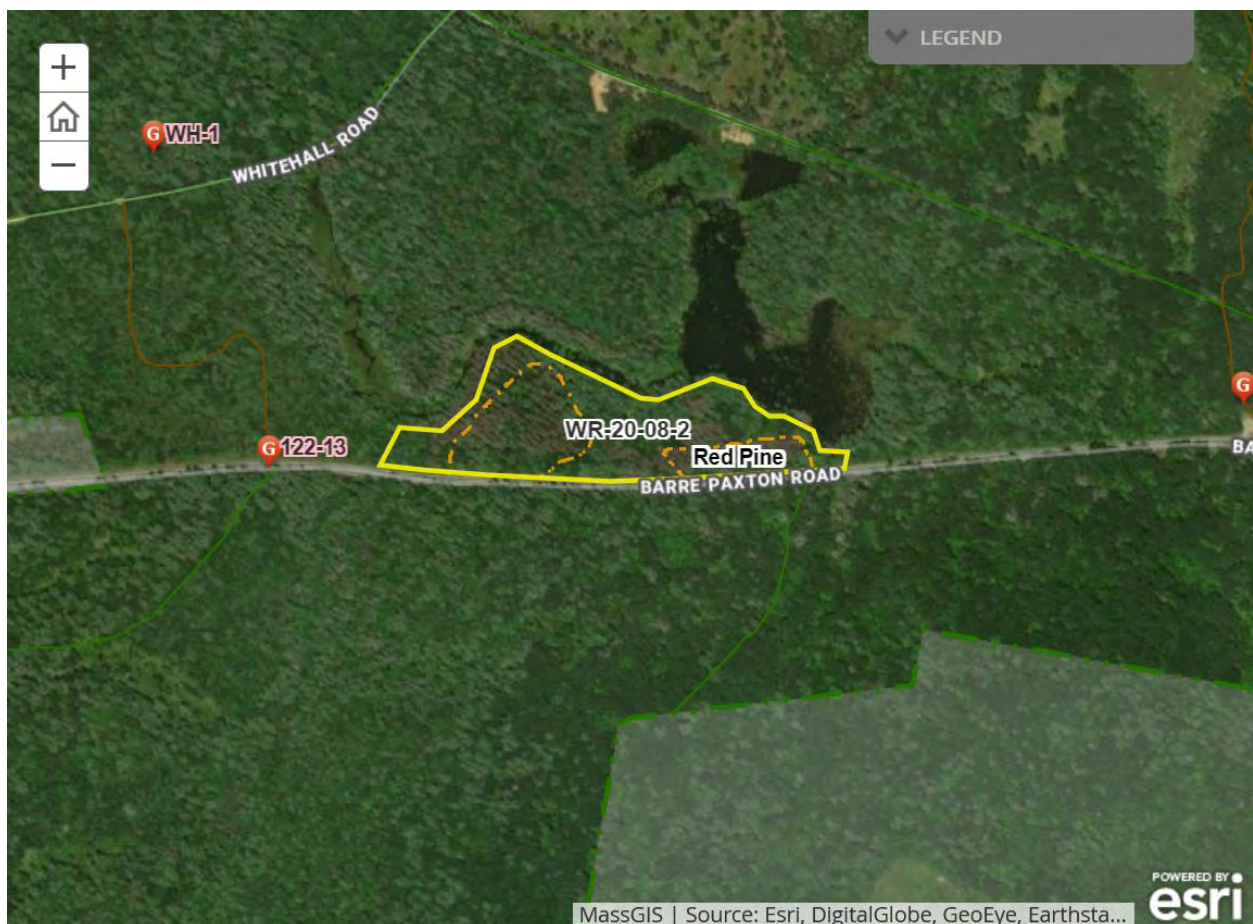
**Description of advance regeneration in proposal area:**

Good quality white pine, red maple, hemlock, red oak, and black birch seedling are present. Heavy beaver activity is reducing the amount of hardwood regeneration.

### General comments on silviculture proposed:

The red pine stands will be removed. The goal will be to remove all the remaining overstory red pine, which will require permission to exceed the visual buffer threshold along Route 122, particularly in the smaller red pine stand which is located directly adjacent to Route 122. Power lines and vehicle traffic also may lead to some roadside stems being left.

Within the white pine-hardwood stand, some thinning may be appropriate to release better formed and more vigorous white pine and hardwood stems. Much of this stand will be subject to filter strip restrictions.

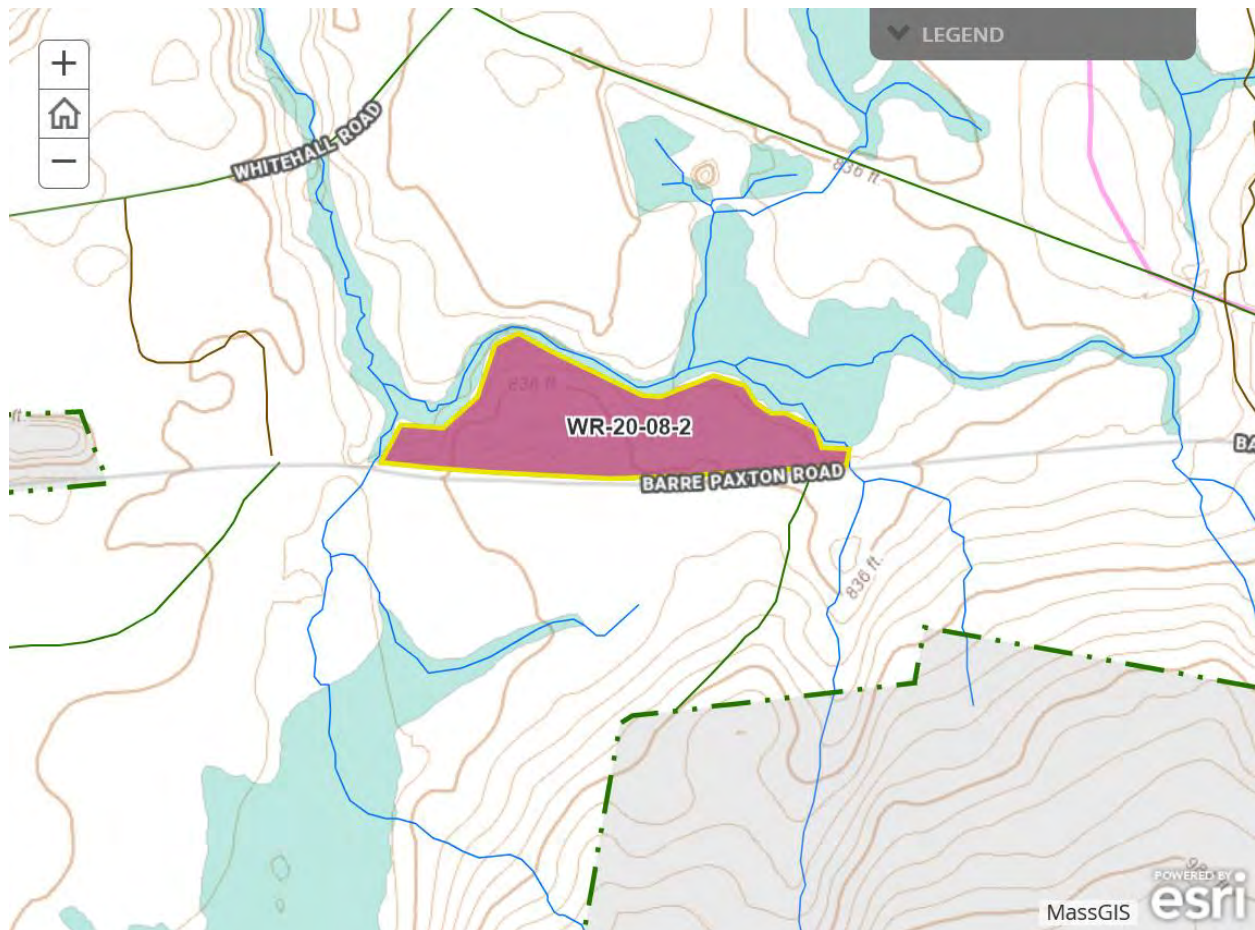


## Subwatershed Analysis

Sub-watershed number	Total DCR-owned Acres	Acres Regenerated on DCR Land in the last 10 years	Acres Remaining for Regenerating Up to the 25% / 10 Year	Acres part of this proposal
8061 (Parker Brook)	2654	36	628	11

8061-Parker Brook- 35.9 acres regenerated on 69.9 acres worked. Lot 4391A, currently sold but not yet harvested, will add 10.6 regenerated acres. Proposal WR-20-4-1 contains an additional 7.4 acres in the subwatershed. Approved proposals WR-16-3-1 (5 acres) and WR-17-7-1 (45.5 acres) are also within the subwatershed and have not been marked yet.





## Harvesting Limitations

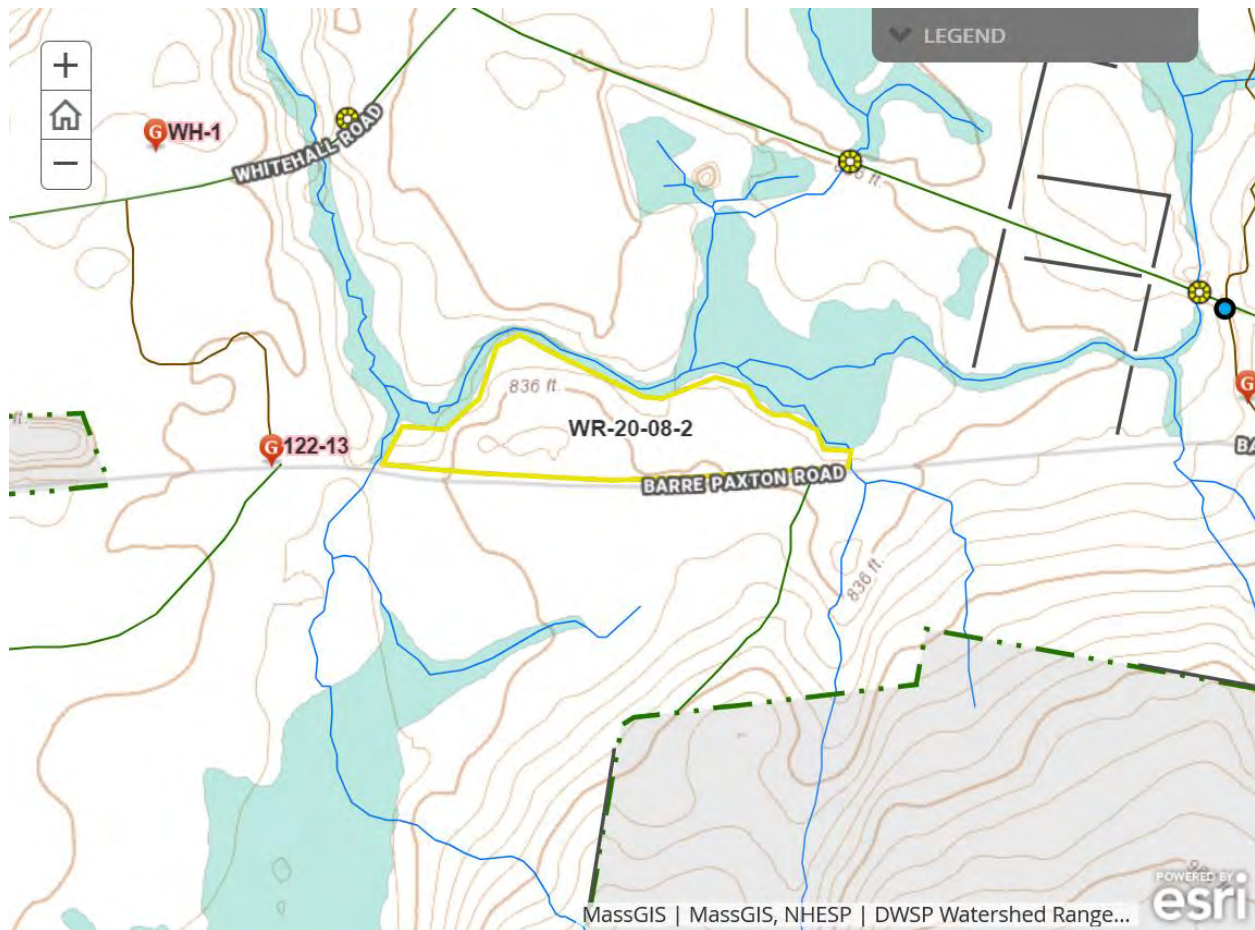
Forwarder required: **No**

Feller/processor required: **No**

Steep slopes present: **No**

### Comments on harvesting limitations:

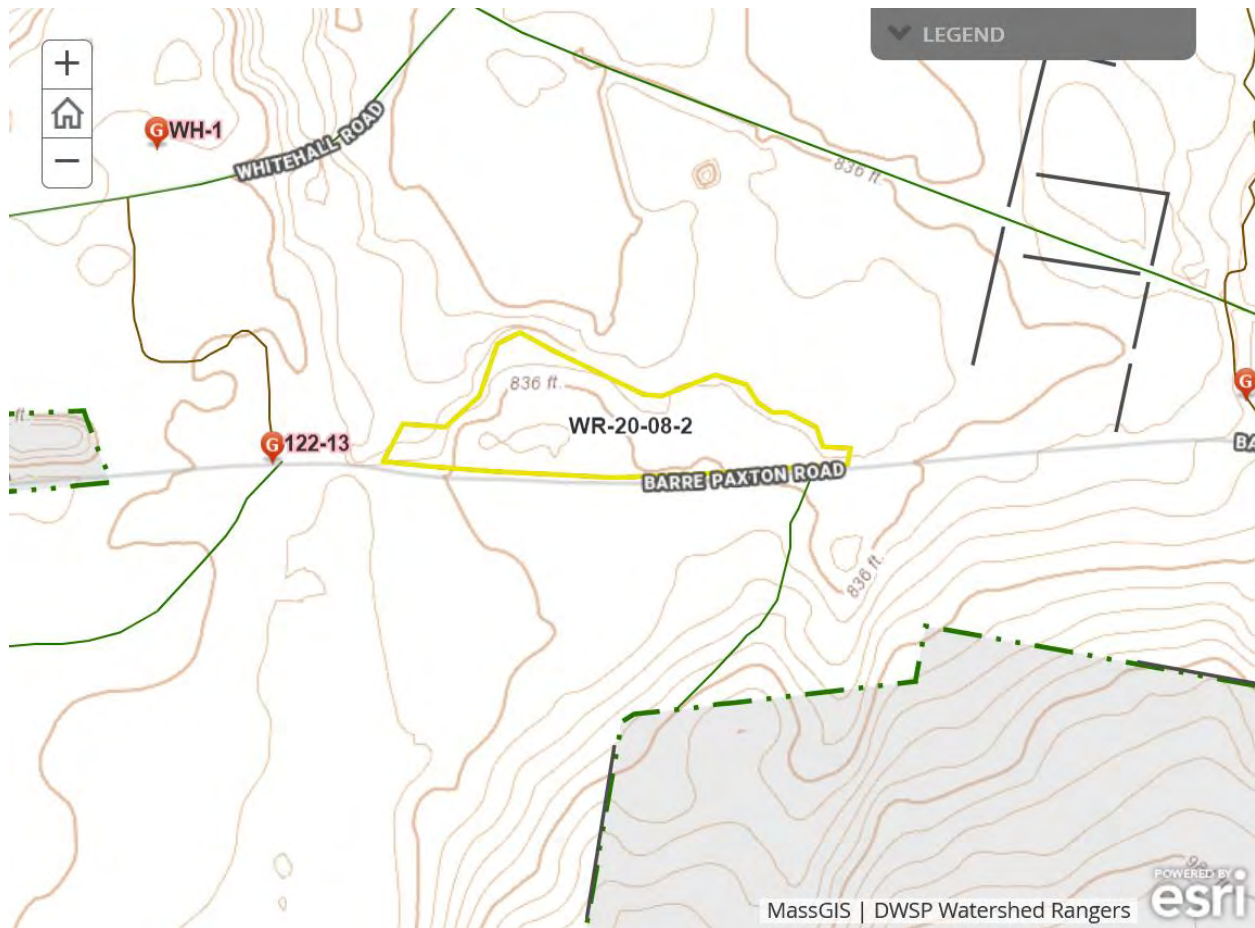
No limitations.



## Cultural Resources

### Comments on Cultural Resources:

No known cultural resources on the site. If applicable DWSP will follow any additional recommendations from DCR's Archeologist regarding protection of sensitive sites.



## Wildlife Resources & Rare and Endangered Species

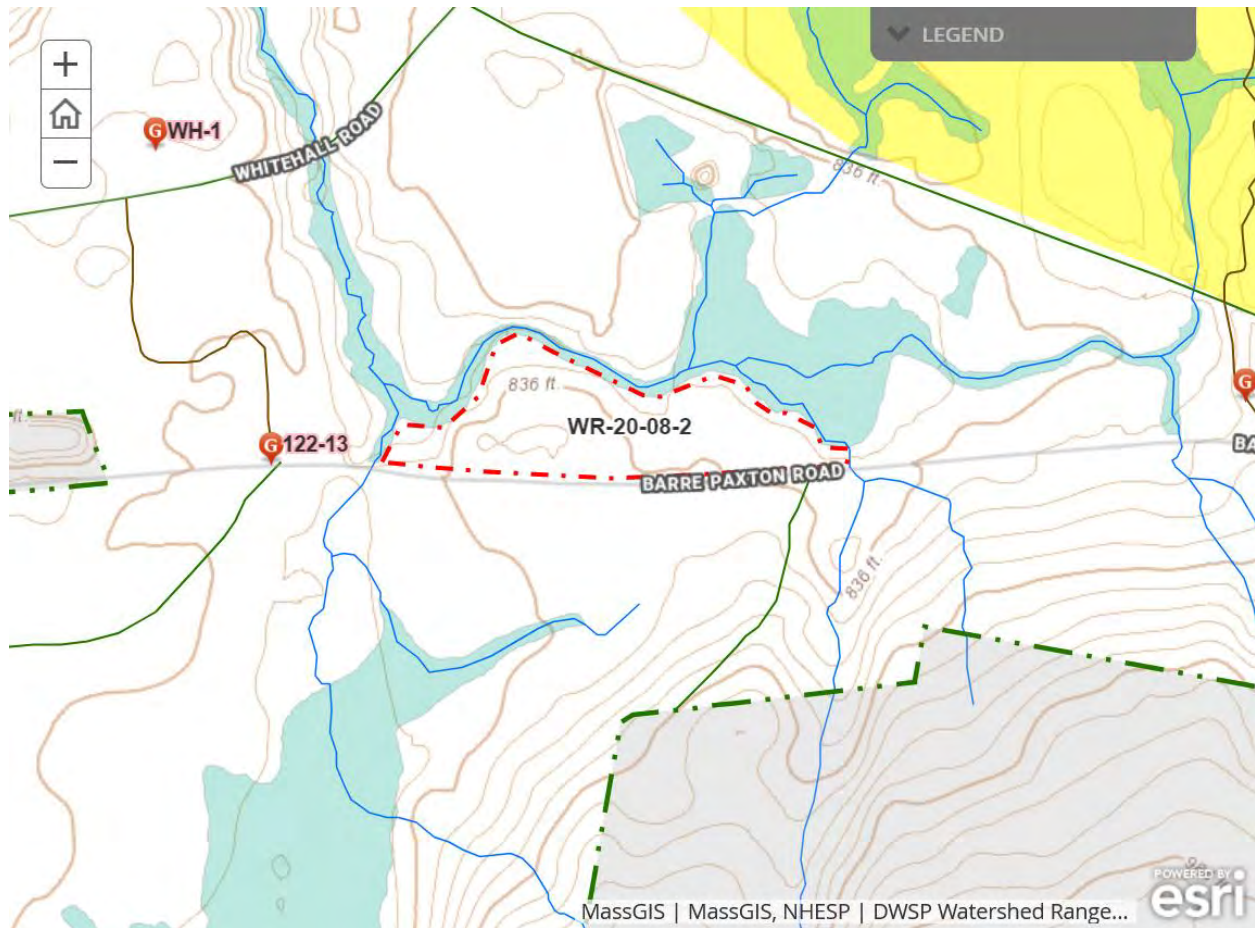
### General Wildlife Comments:

Heavy beaver activity in past years, though no fresh sign within lot. No vernal pools.

### Comments on Rare Species/Habitats:

No rare species or priority habitats on site.



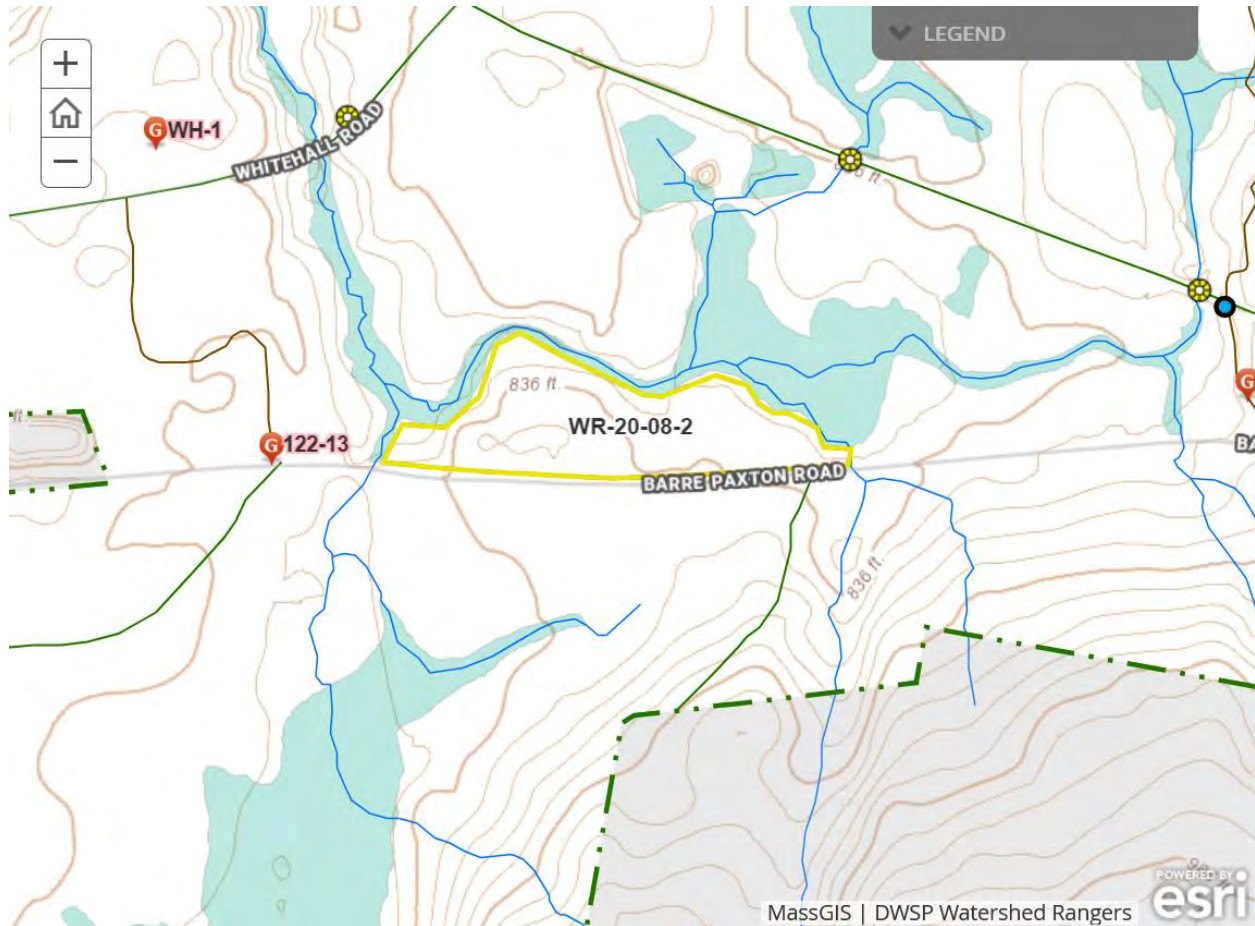


## Environmental Quality Engineering

### Comments on EQ Issues:

No issues or comments. No crossings.





## Forest Access Engineering

**Gravel needed:** No

**Landing work needed:** No

**Culverts needed:** No

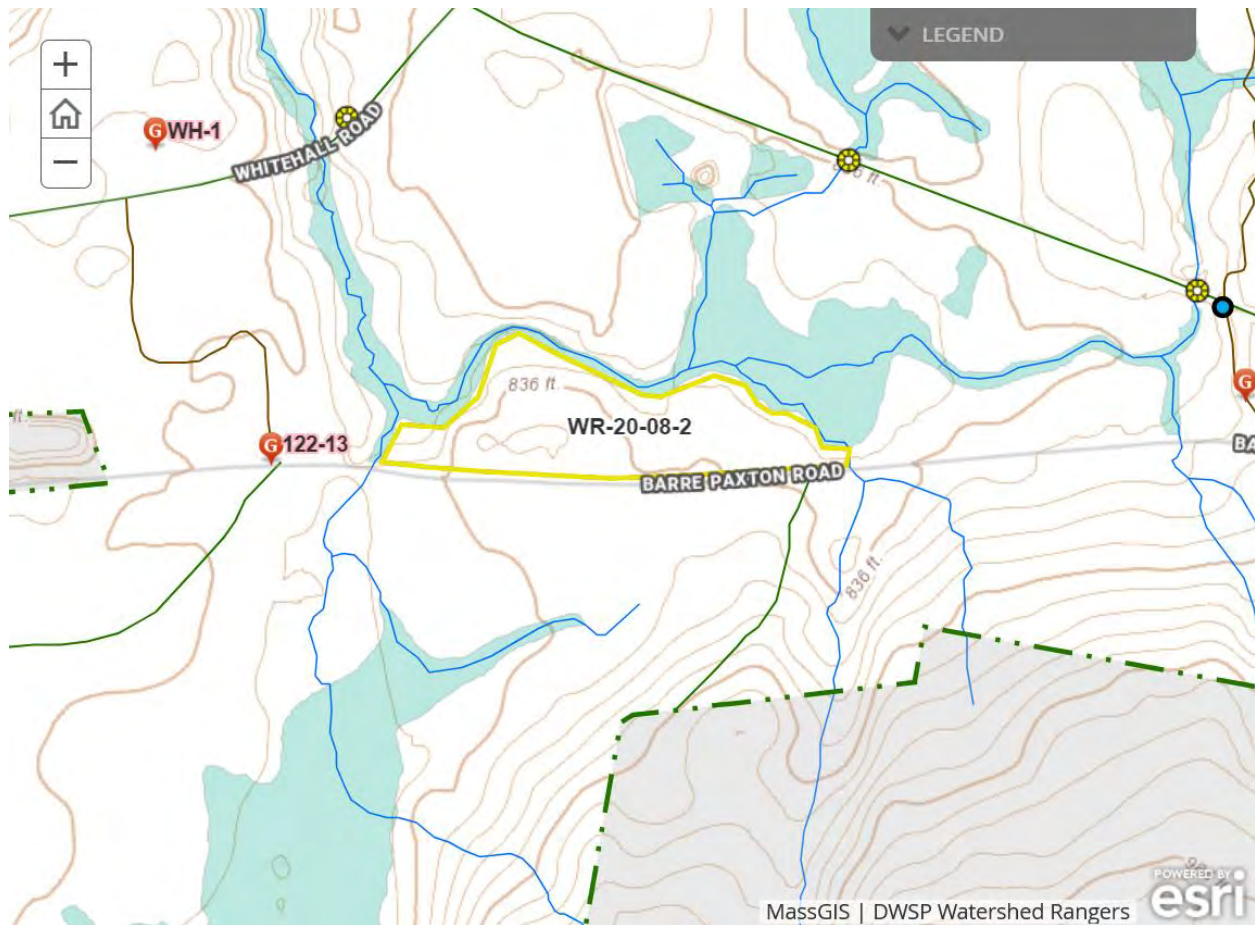
**Work needed on permanent bridges:** No

**Beaver issue:** No

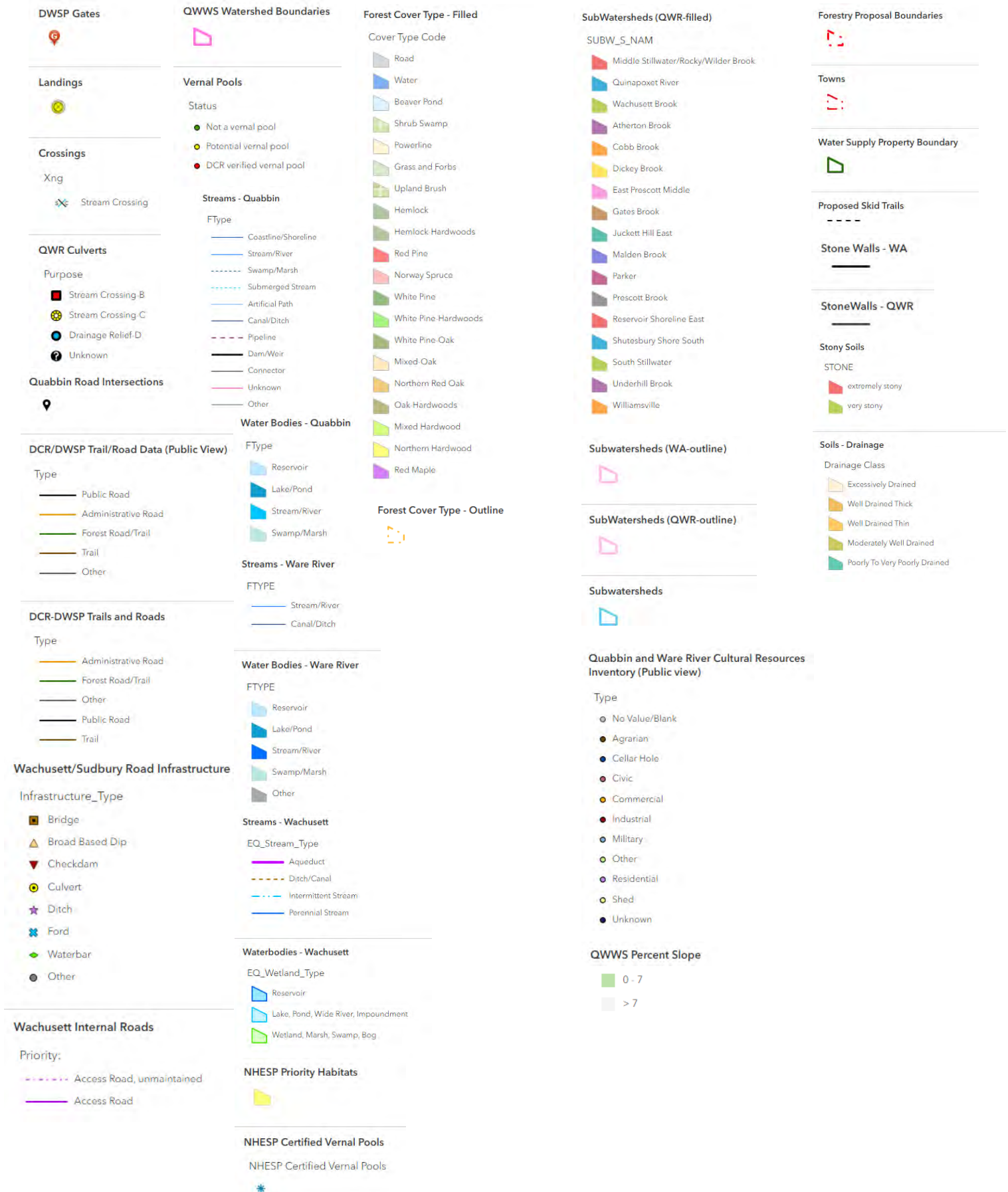
### **Further comment on access needs:**

The landing was last used for lot #175 in 1992. The access to the landing is shown as an old road on the taking sheets that crossed the stream/wetland to the north. There is a rotted log still in

place that was used to block the access after the last harvest. MassDOT has recently redone this stretch of 122 and paved the entrance apron to this access road/landing.



## DWSP FY 2020 Forestry Proposals – Master Legend for story maps



# **Ware River Harvest Proposal WR-20-40-3**

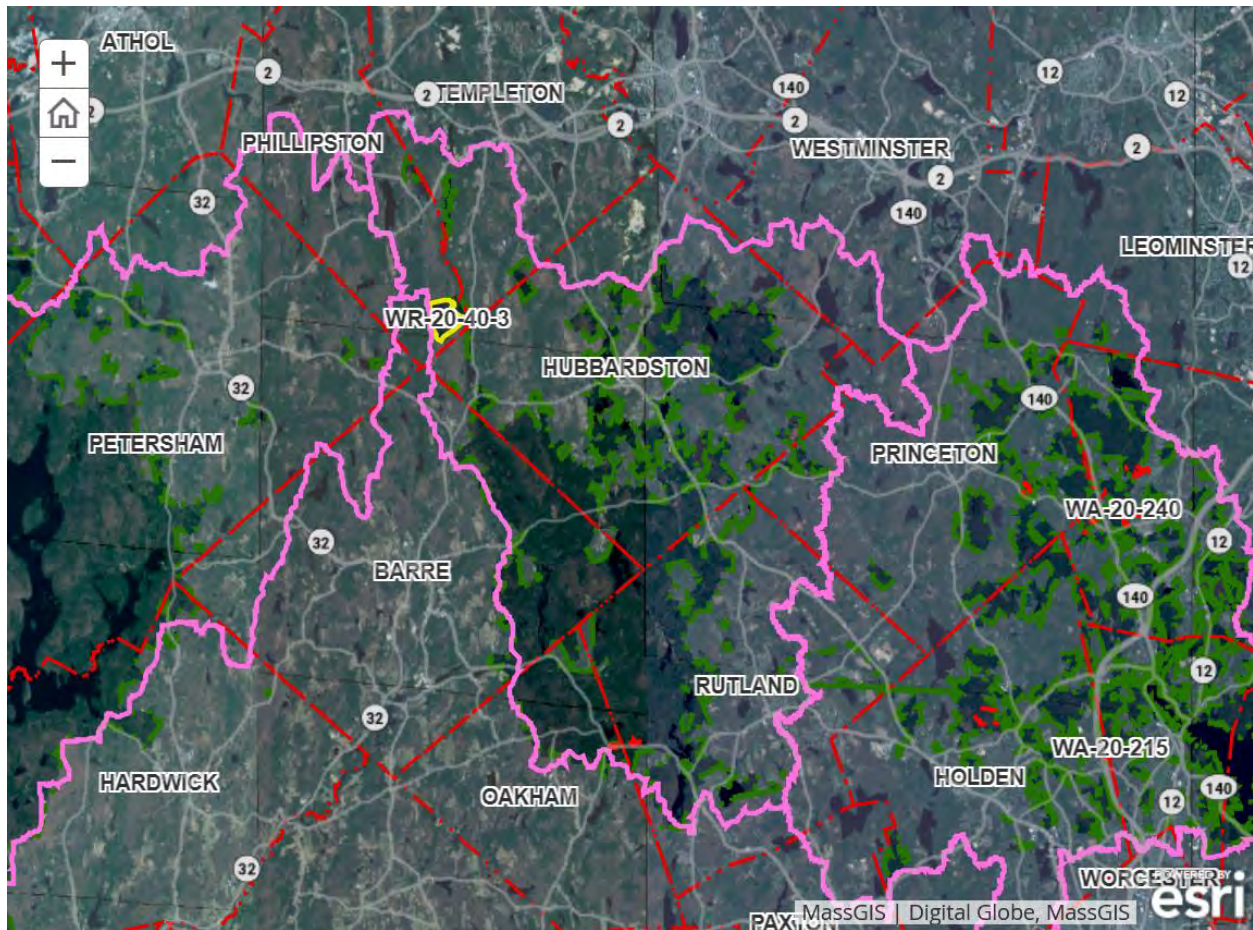
## **Proposal Goals**

## **Proposal Location**

This lot is in Phillipston. It is bound by Williamsville Road to the West (also the property boundary line), property boundary line stone walls to the north and south, and the north/south rail trail and the old "Javenpaw" gravel pit to the east.

**Total Acres: 255**





## General Description

	Overstory Type(s)	Acres
<b>Dominant</b>	Oak/hardwood	125
<b>Secondary</b>	White pine/hardwood	49
<b>Secondary</b>	Mixed hardwoods	40

	Understory Type(s)
<b>Dominant</b>	Tree seedlings/saplings dominate site

**Description of forest composition/condition:**

The oak/hardwood stand is a fully stocked stand dominated by sawlog size red and black oak of medium to good quality. There is approximately 120 square feet of basal area per acre, of which approximately 50 square feet is acceptable growing stock. The overstory consists of red oak, black oak, red maple, black cherry, paper birch, and yellow birch. Much of the stand is difficult to access due to slope, multiple small streams, and boulders.

The white pine hardwood stand is fully stocked and is dominated by mature sawlog size white pine of low to medium quality. There is approximately 140 square feet of basal area per acre, of which 25 square feet is acceptable growing stock. Red maple, red oak, black cherry, paper birch, and hemlock are also present in the overstory. Lot #4368 was completed in 2008 and consisted of a 10 acre regeneration cut and 4 smaller openings 0.5 to 0.9 acres in size. The harvest, located along Williamsville Road, targeted low quality white pine and hardwood. It has resulted in thick, diverse regeneration of tree species.

**Assessment of Terrestrial Invasive Species:**

Gypsy moth eggs are present, heavy in spots, in the oak stand. No obvious areas of mortality, but recon of the area took place after leaves had dropped. The site will be evaluated this summer to see if salvage harvesting is warranted.

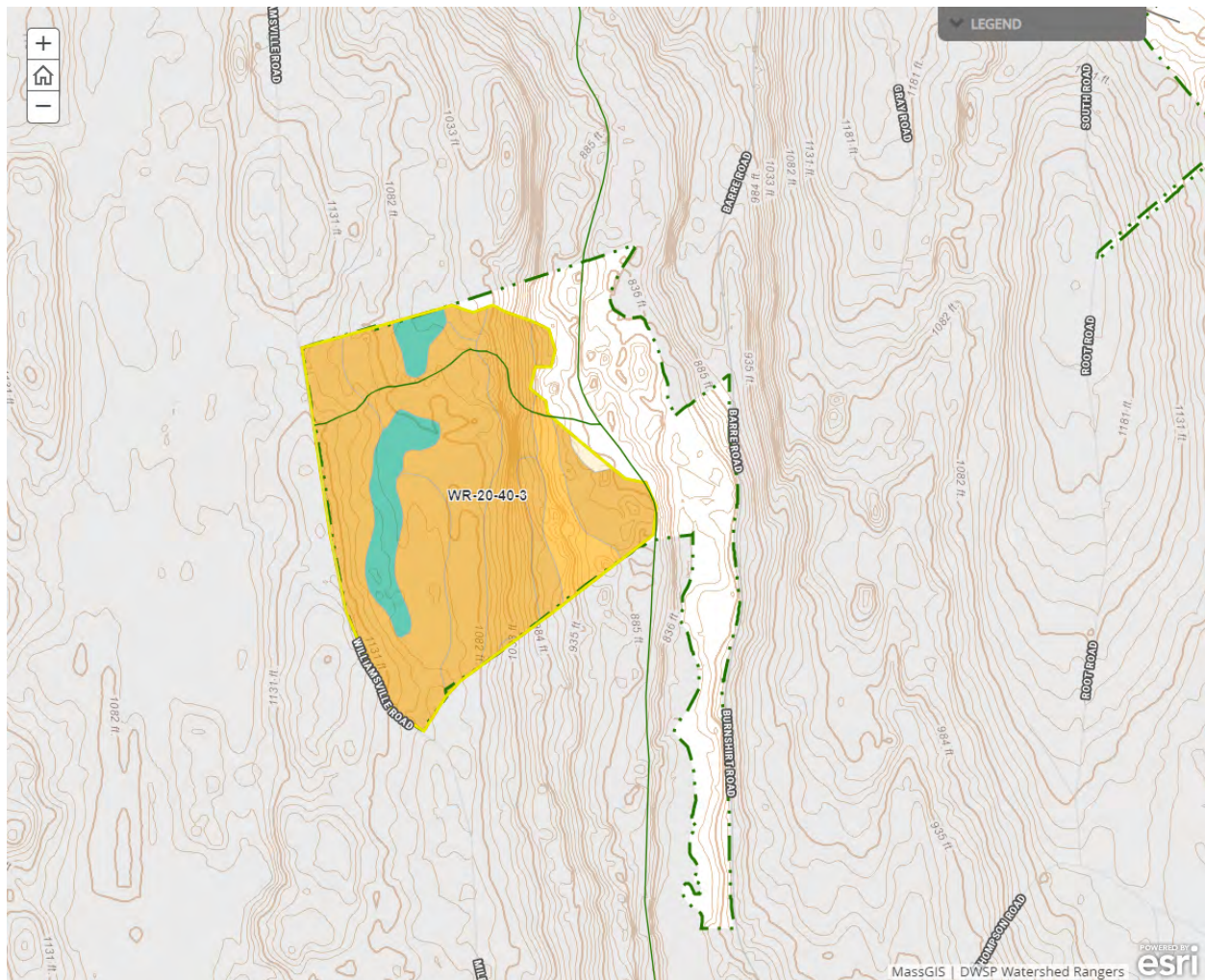


<b>Drainage Class</b>	<b>%</b>
<b>Excessively Drained</b>	0
<b>Well Drained Thin</b>	34
<b>Well Drained Thick</b>	25
<b>Moderately Well Drained</b>	30



Poorly to Very Poorly Drained	11
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908 C -Becket-Skerry association (77 acres) - moderately well drained  
924 C - Tunbridge-Lyman-Berkshire association (64 acres) - well drained  
913 E - Lyman-Turnbridge-Berkshire association (40 acres) - well drained  
926 C - Charlton-Chatfield association (30 acres) - well drained  
917 B - Pillsbury-Peacham association (25 acres) - poorly drained



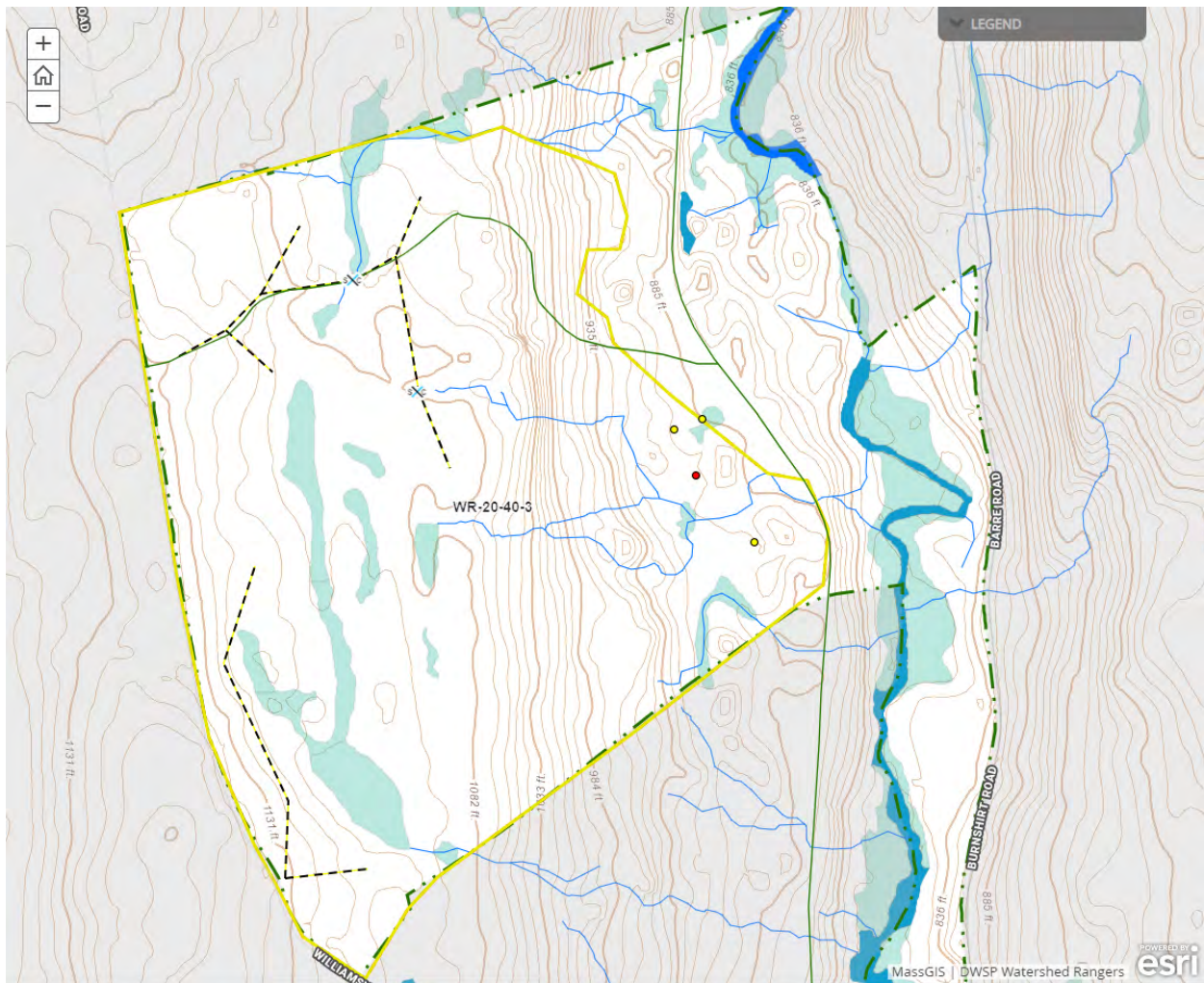
## Wetlands

- Wetlands present? - **Yes**
- Streams present? - **Yes**
- Vernal pools present? - **Yes**
- Seeps present? - **None known**



- Are stream crossings required? - **Yes**
- Are wetland crossings required? - **No**
- Is logging in filter strips planned? - **Yes** ([Riparian Zone Mgt](#))
- Is logging in wetlands planned? - **No**

There is a band of wetlands that bisect the lot north-south. Most of the proposed work will take place west of that band, so that it will not need to be crossed. If extensive salvage in the oak/hardwood stand is needed, a landing may need to be established east of those wetlands and the access road leading to the old gravel pit may need to be upgraded.



## Silviculture

Acres in Intermediate cuts: **0**

Acres in prep/establishment cuts: **0**

Acres in Regeneration cuts: **20**

Average regen opening size: **1.7**

Maximum regen opening size: **5**

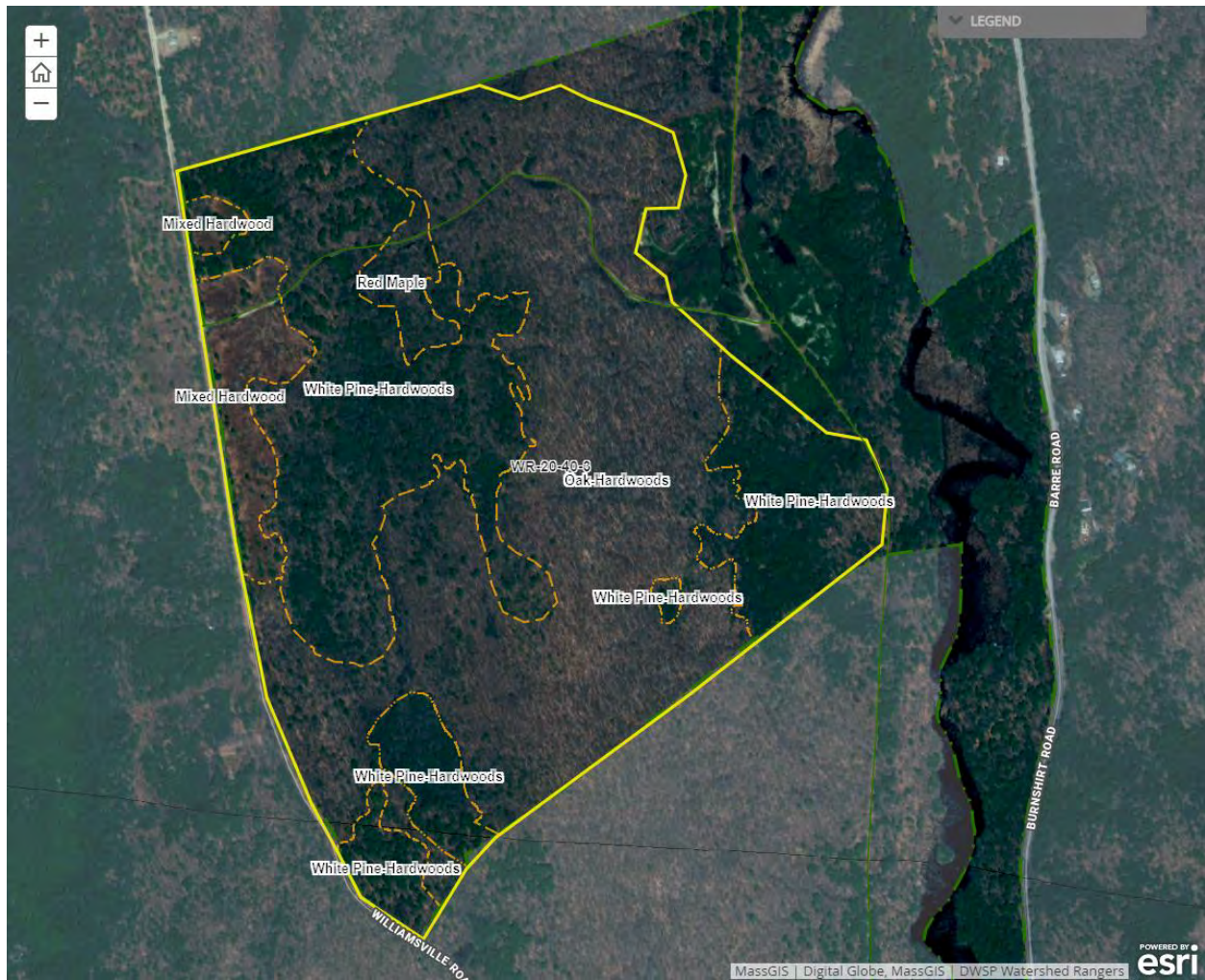
### **Description of advance regeneration in proposal area:**

Within the white pine/hardwood stand sapling size red maple, white pine, red oak, American beech, black cherry, hemlock and paper birch are present. Mountain laurel is present and is heavy in and around the wetlands.

### **General comments on silviculture proposed:**

Within the white pine/hardwood stand the previous openings will be expanded upon wherever possible. The expansion openings will be up to 2 acres, but will probably average closer to 1 acre due to wetlands and the road/property line which limit expansion possibilities. Two new openings of up to 5 acres will be established. One will be located in the northern section of the proposal, east of the smaller openings established by lot #4368. The other will be in the southwest portion of the proposal. Several openings less than 2 acres will also be established.

Most of the oak/hardwoods stand is difficult to access due to steep topography, boulders, and surface drainage features. Gypsy moth eggs were present, but leaves had already dropped when the stand was evaluated, so the level of defoliation/mortality is unknown. The stand will be re-evaluated this summer to determine whether salvage harvesting is warranted.

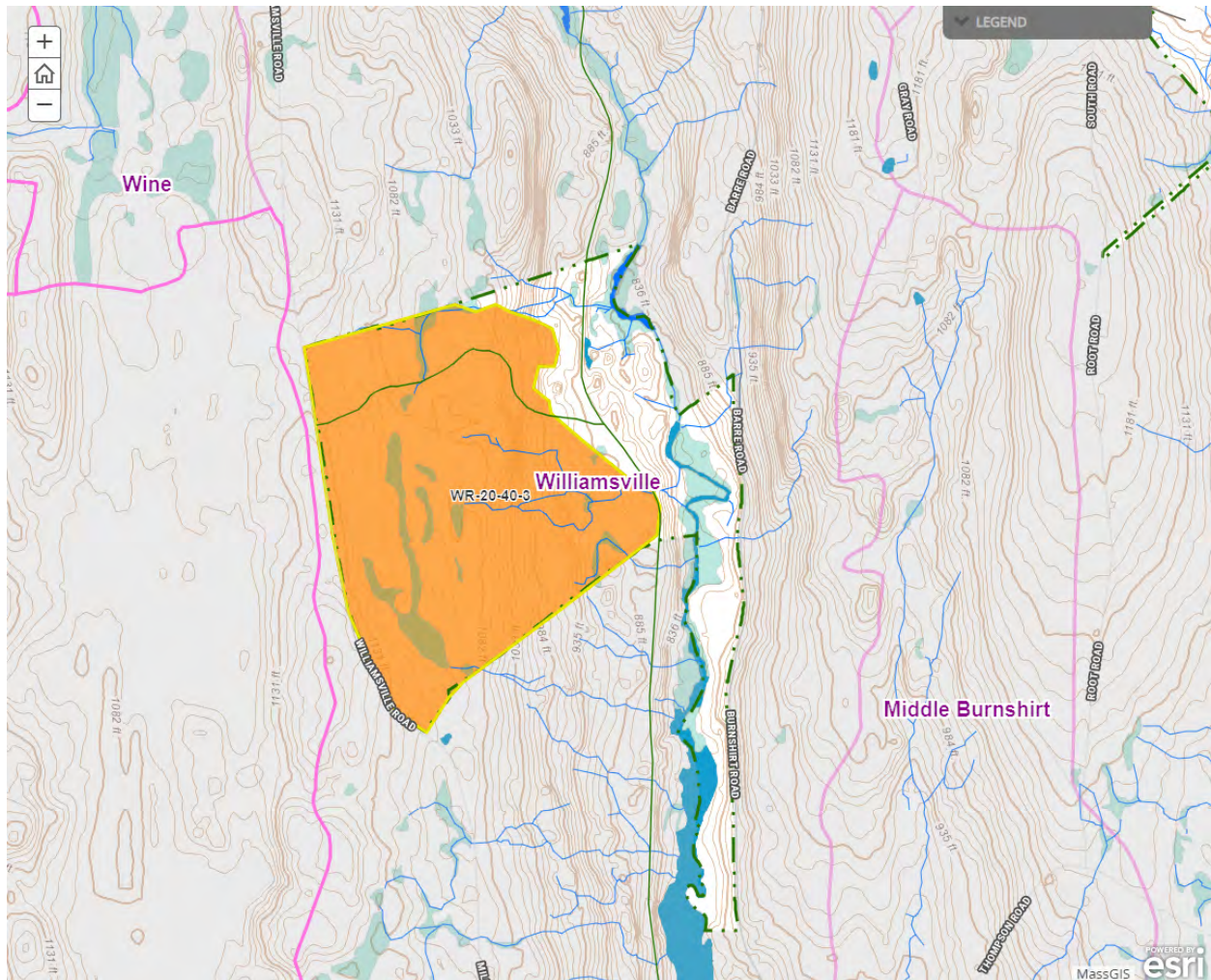


## Subwatershed Analysis

Sub-watershed number	Total DCR-owned Acres	Acres Regenerated on DCR Land in the last 10 years	Acres Remaining for Regenerating Up to the 25% / 10 Year	Acres part of this proposal
8047	346	0	86	244

With only 20 acres of new removals proposed, the 25% threshold will not be exceeded.





## Harvesting Limitations

Forwarder required: **No**

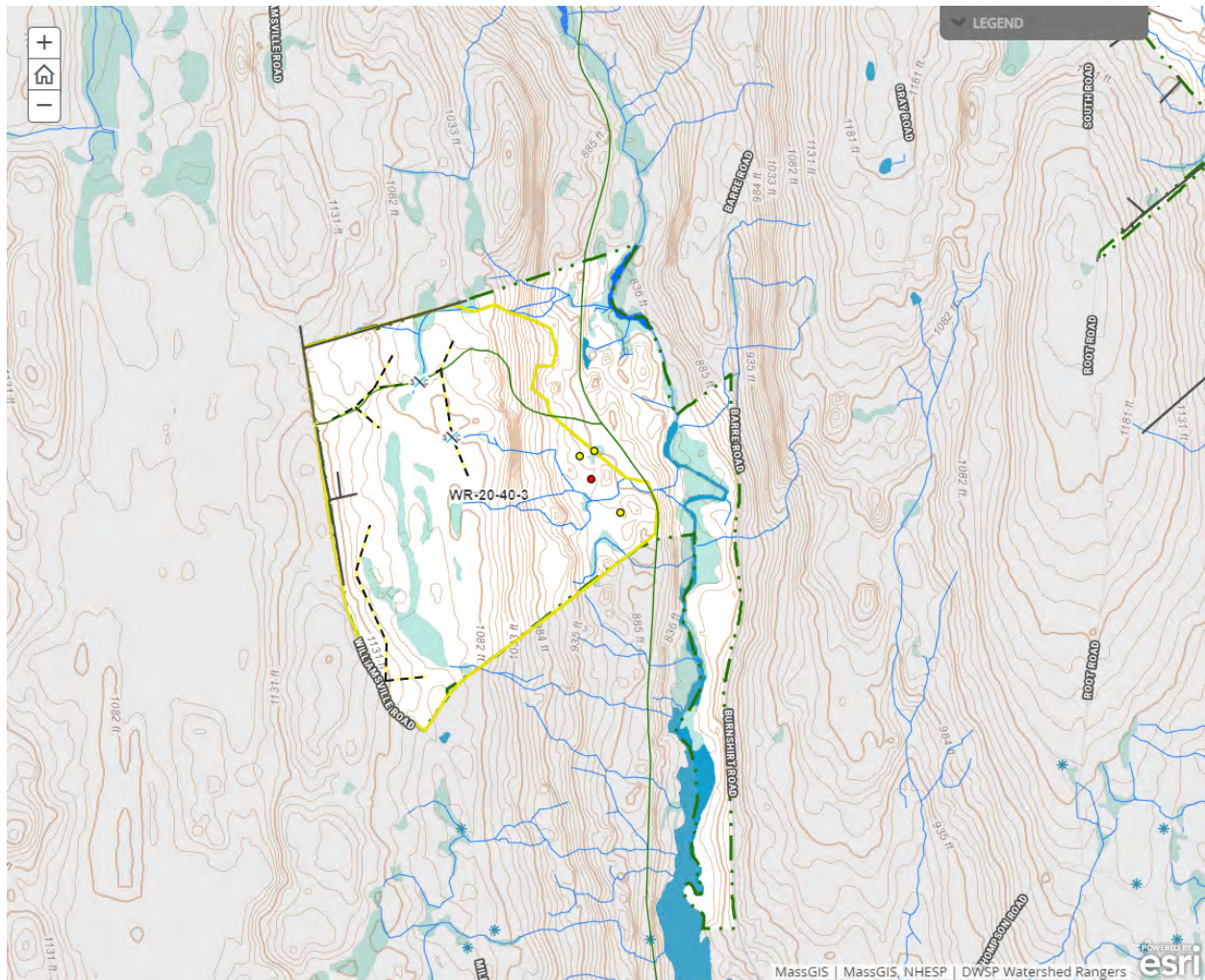
Feller/processor required: **No**

Steep slopes present: **Yes**

### Comments on harvesting limitations:

Some steep slopes are present in the oak hardwood stand and will be avoided.

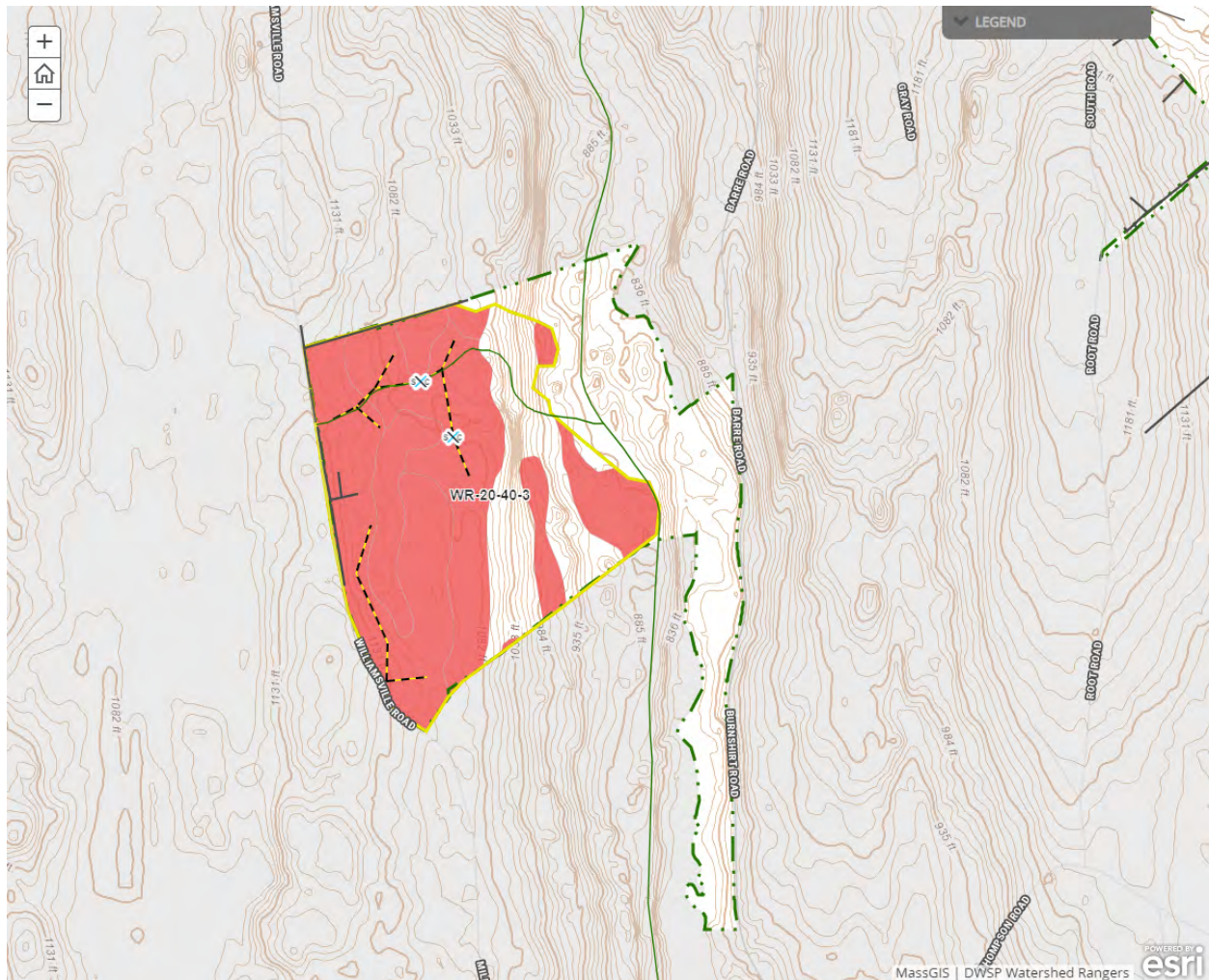




## Cultural Resources

### Comments on Cultural Resources:

No known cultural resources within this proposal area. Stone walls will be flagged and avoided as much as possible. Existing barways will be used where feasible 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 Resources & Rare and Endangered Species

### General Wildlife Comments:

No comments.

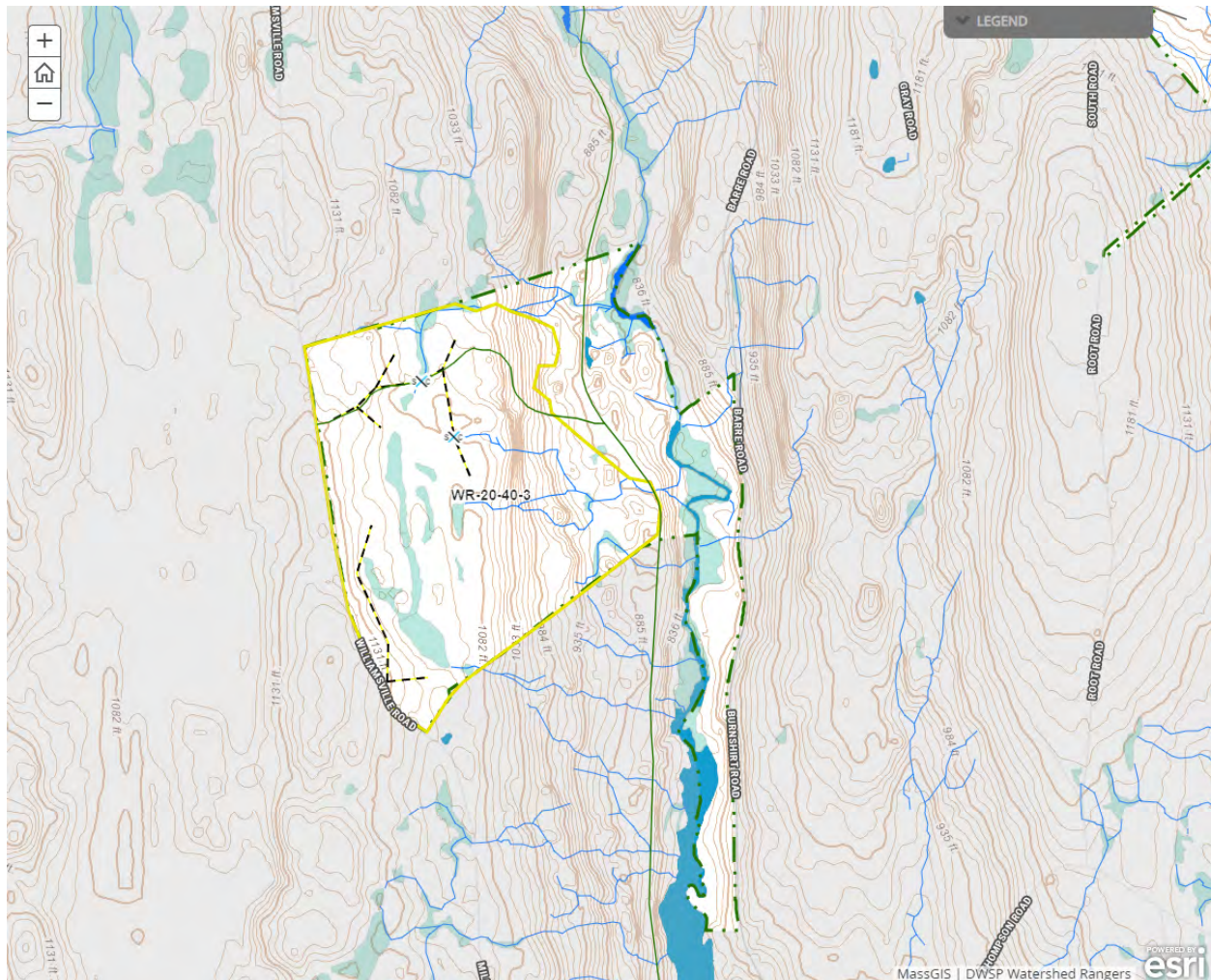
### Comments on Rare Species/Habitats:

One possible vernal pool was surveyed in the center of the lot and determined to NOT be a vernal pool. Three other verified vernal pools are in the very southeastern portion of the lot. Those pools would only be potentially impacted if salvage harvesting in the oak stand is necessary.





One stream will be monitored for any impacts from this operation -- the stream crossing the gravel pit access road in the northern portion of the lot. The other proposed crossing is very rocky and the flow at the location is seasonal.



## Forest Access Engineering

**Gravel needed:** No

**Landing work needed:** No

**Culverts needed:** No

**Work needed on permanent bridges:** No

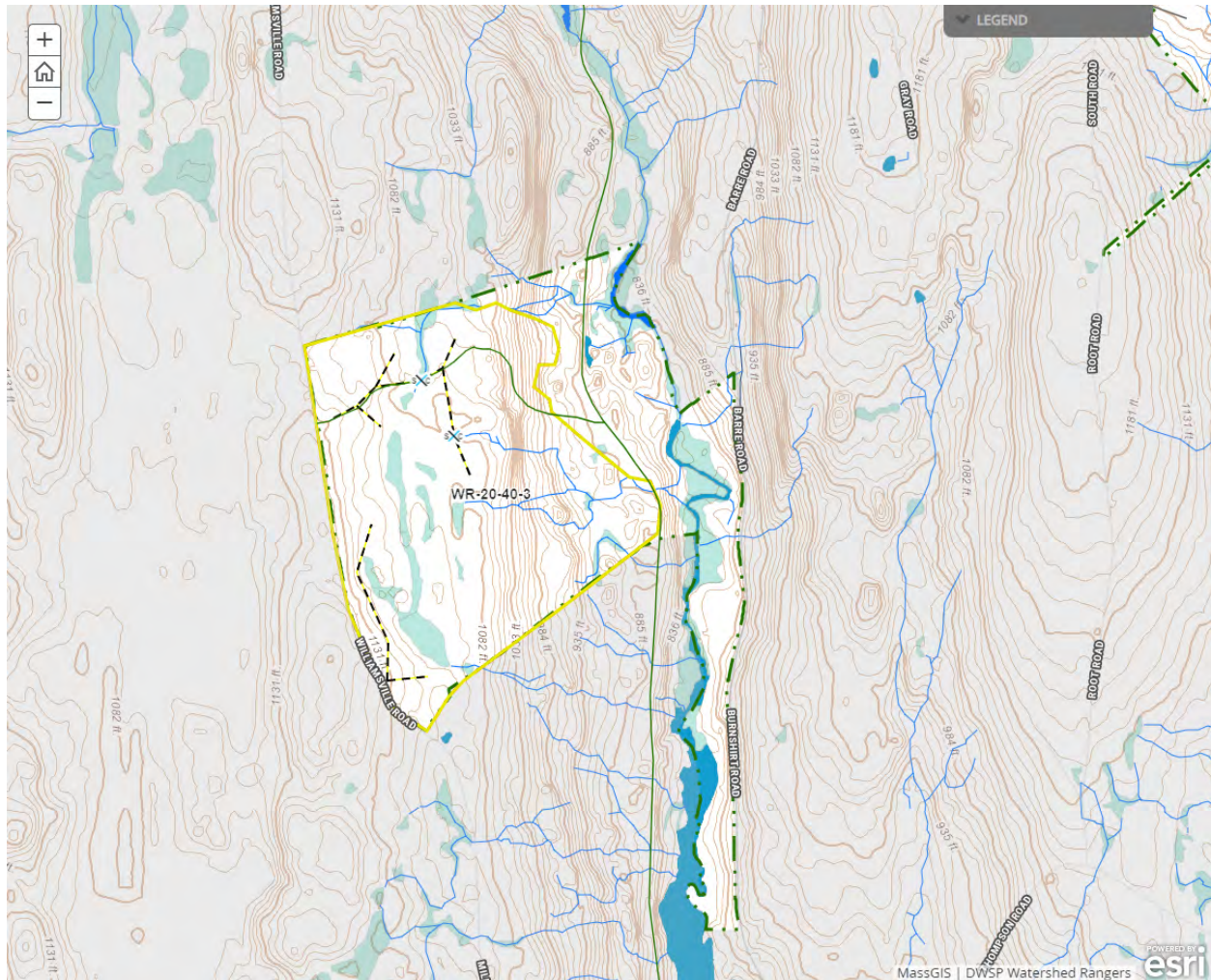
**Beaver issue:** No

**Further comment on access needs:**

Williamsville road may need some work to access the southern landing if necessary.



There is a band of wetlands that bisect the lot north-south. Most of the proposed work will take place west of that band, so that it will not need to be crossed. If extensive salvage in the oak/hardwood stand is needed, a landing may need to be established east of those wetlands and the access road leading to the old gravel pit may need to be upgraded.



## DWSP FY 2020 Forestry Proposals – Master Legend for story maps

