Quabbin Harvest Proposal PR-19-20A

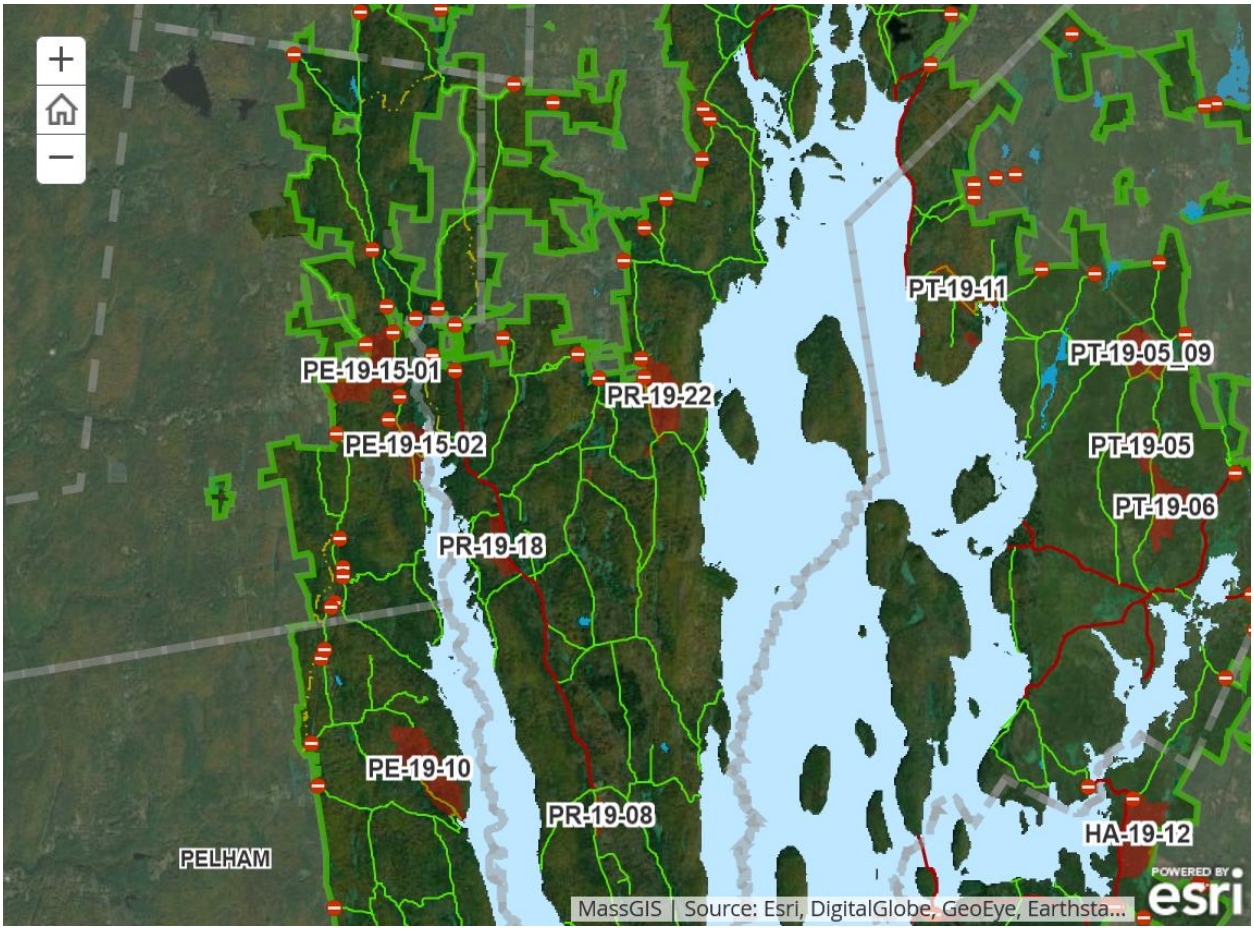
Proposal Goals

The purpose of this proposed project is to increase native forest diversity and resilience. The area is a red pine plantation. The preceding decade has been witness to substantial red pine mortality from both insect and disease infestation on the Quabbin watershed. Removing the surviving trees will stem mortality and hasten development of a native suite of forest regeneration.

Proposal Location

The proposal area is located on the west side of Vaughn Rd. (gate 21) south of the west branch of Underhill Brook.

Total Acres: 4



General Description

	Overstory Type(s)	Acres
Dominant	Red pine	3
Dominant	White pine	1

	Understory Type(s)
Dominant	Tree seedlings/saplings dominate the site

Description of forest composition/condition:

Planted Red Pine and naturally seeded White Pine cover this area of the watershed. Prior to state ownership, the site was used for crops (arable) and/or improved pasture. Specifically, at time of taking, it was the farmstead belonging to Agnes V. Latham and Ruth V. Smith.

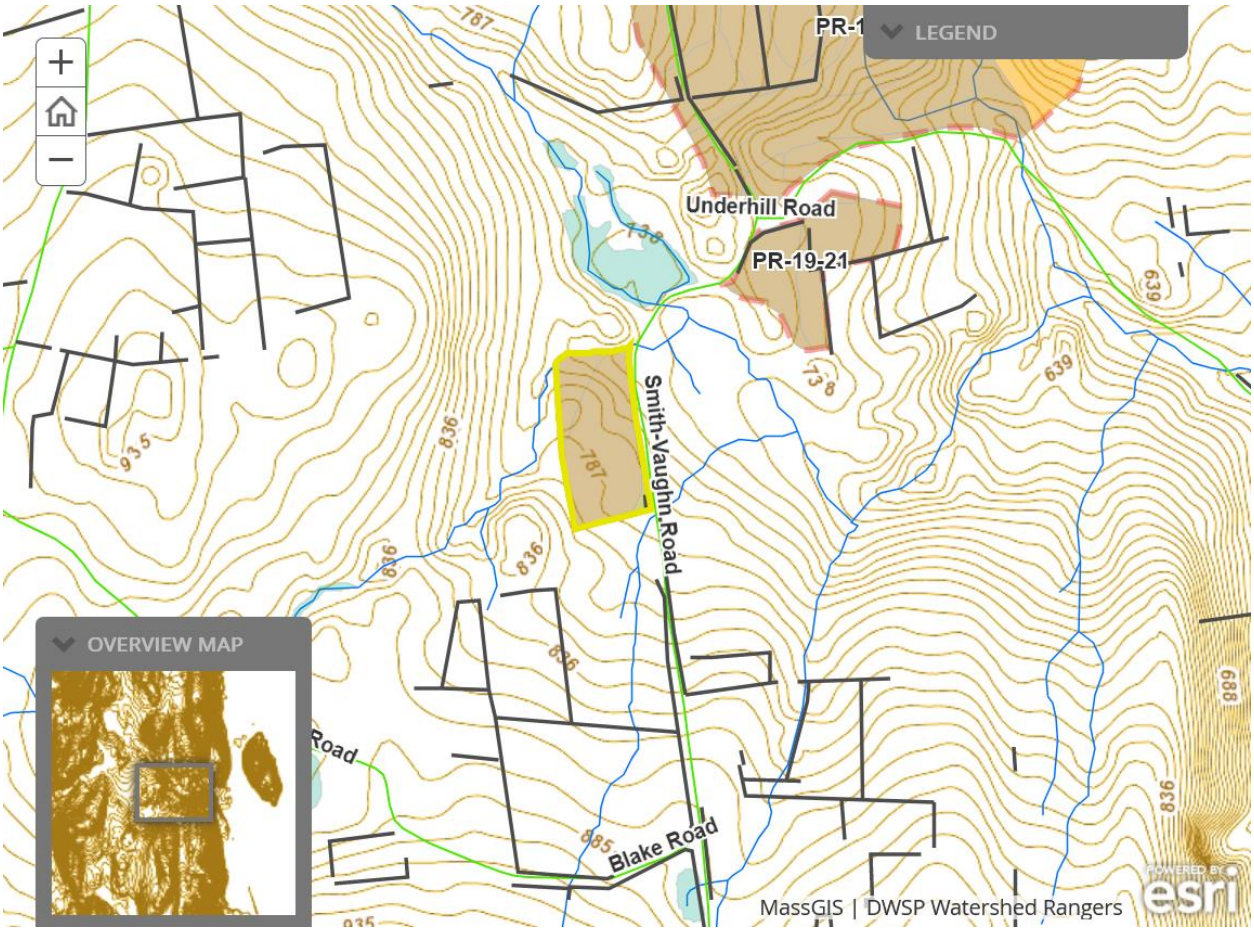
Believing that forest cover is the best filter and conservator of water, early watershed managers were quick to reforest these open areas with a monoculture of mainly Red Pine, White Pine or a combination of the two. Most of these watershed plantations were seeded in the late 1930s through the early 1940s (CCC era).

Forest composition is planted sawtimber red pine and naturally seeded sawtimber white pine overstory along with an understory of black birch saplings triggered from a 1986 commercial thinning. Currently, there is little sign of red pine scale or annosum root rot; but the two pathogens have been found 1000 feet north in red pine plantations along the east branch of Underhill Brook.

Soils

Drainage Class	%
Excessively Drained	0
Well Drained Thin	0
Well Drained Thick	0
Moderately Well Drained	100
Poorly to Very Poorly Drained	0

Montauk Fine Sandy Loam: Stony, well drained soil derived from gneiss. Canton fine sandy loam: Upland rocky well drained soil derived from gneiss and schist loam over a rock till.

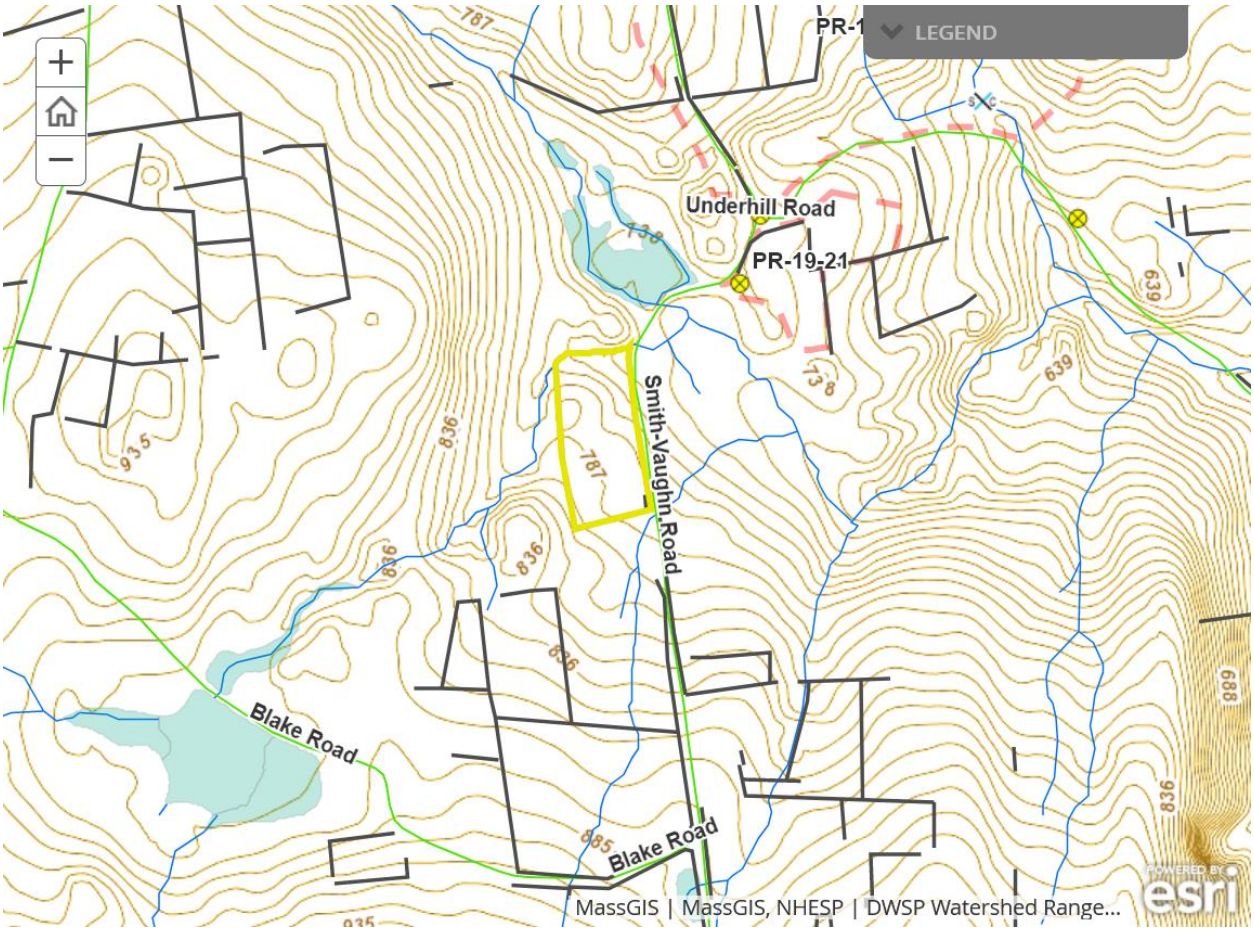


Wetlands

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

Further comments on wetlands:

The streams form the bounds of the proposal area. None flow through. The northwesterly stream is perennial resulting from an upstream beaver impoundment. A small seep flows northeasterly through the very southern part of the proposal area.



Silviculture

Acres in Intermediate cuts: **0**

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

Acres in Regeneration cuts: **4**

Average regen opening size: **4**

Maximum regen opening size: **4**

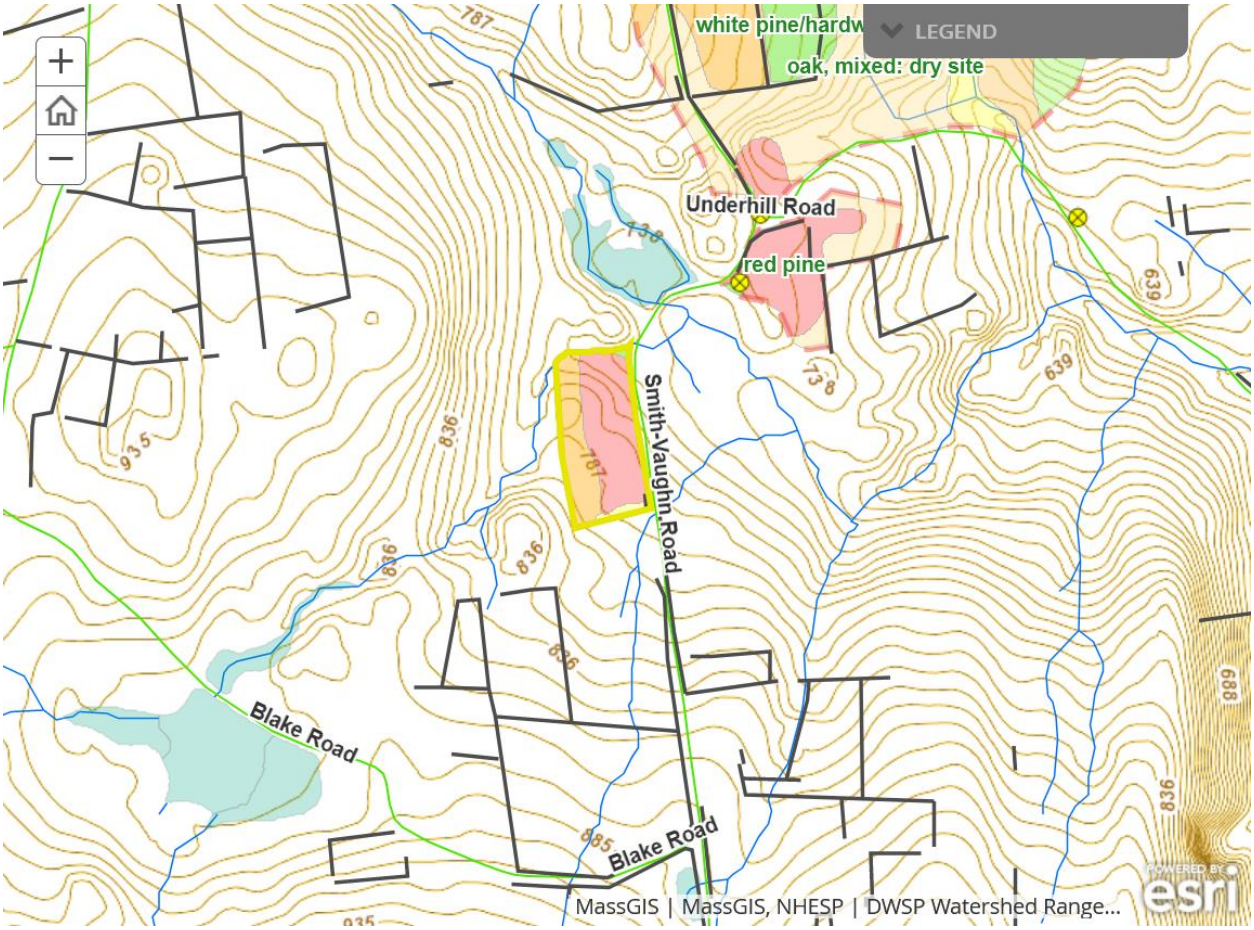
Description of advance regeneration in proposal area:

Black birch saplings in small clusters or serpentine pattern (seeded in old skid roads).

General comments on silviculture proposed:

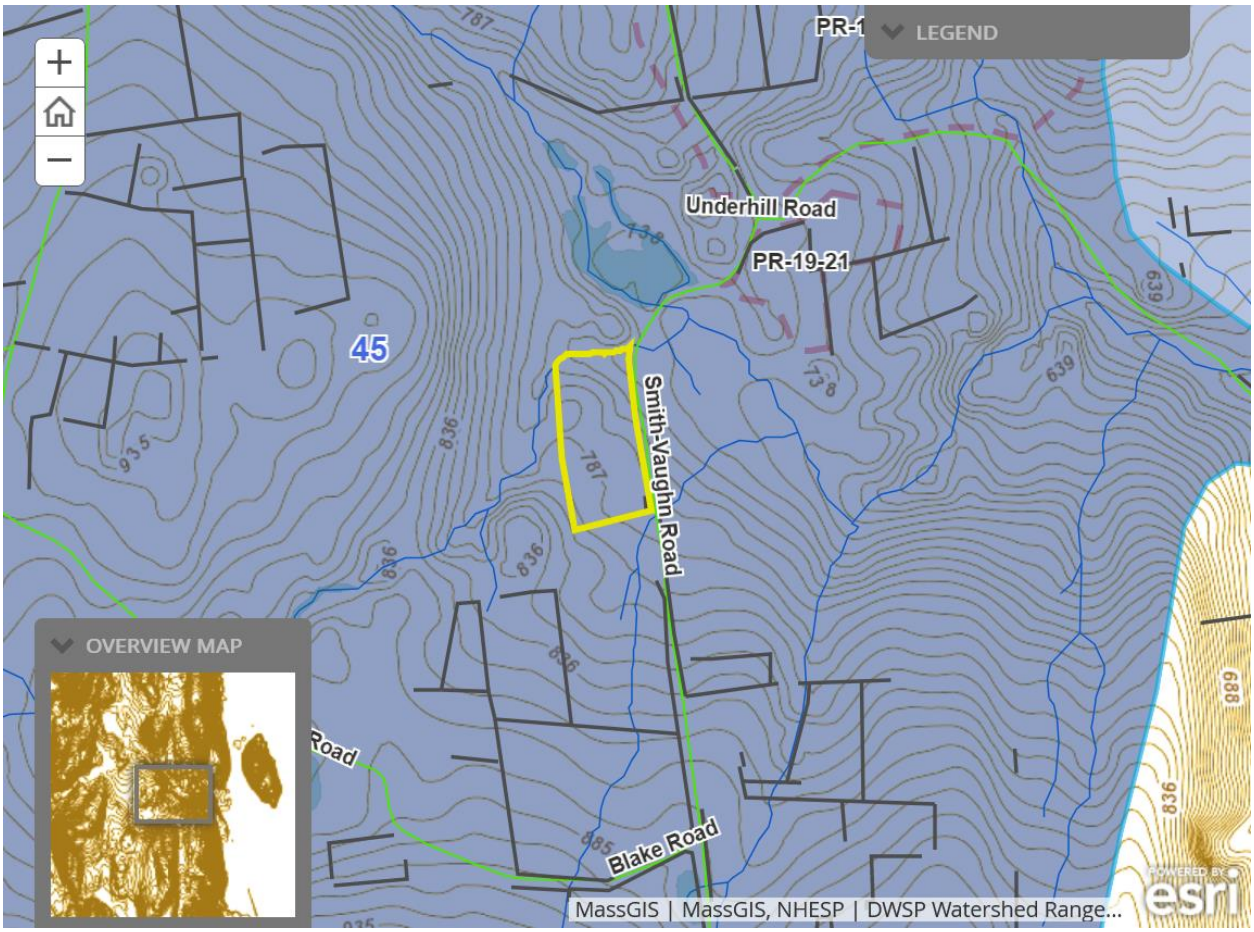
Removing red pine, the primary host of the Red Pine scale is the main silvicultural objective. The insect, originally found in Connecticut in the 1940s, has steadily moved northward and infested many red pine plantations throughout Massachusetts and southern New Hampshire. The microscopic beast completes two breeding cycles annually of both flight and flightless offspring. During their life cycle they burrow under the tree's scaly bark to insert their stylus and feed upon nutrients flowing through the cambium. A sure sign of infestation is gradual browning of needles from a healthy green to a rust brown. Mature red pine plantations can succumb to intense infestation in as little as two to three years.

The opening will be amid the red pine which will all be harvested. Ranging outward from the red pine, poor quality/diseased white pine will be removed. A residual basal area of no less than 5 sqr. ft. per acre will mostly be composed of well formed white pine, but could include live and dead snags. Significantly dropping the basal area will allow for a dramatic increase in direct to forest floor sunlight and a higher level of scarification. Both factors will aid in germination and vigorous development of young forest. Removing the red pine and poor quality white pine will hopefully allow a greater diversity of native tree species to colonize the area.



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
45	1119	32	248	4



Harvesting Limitations

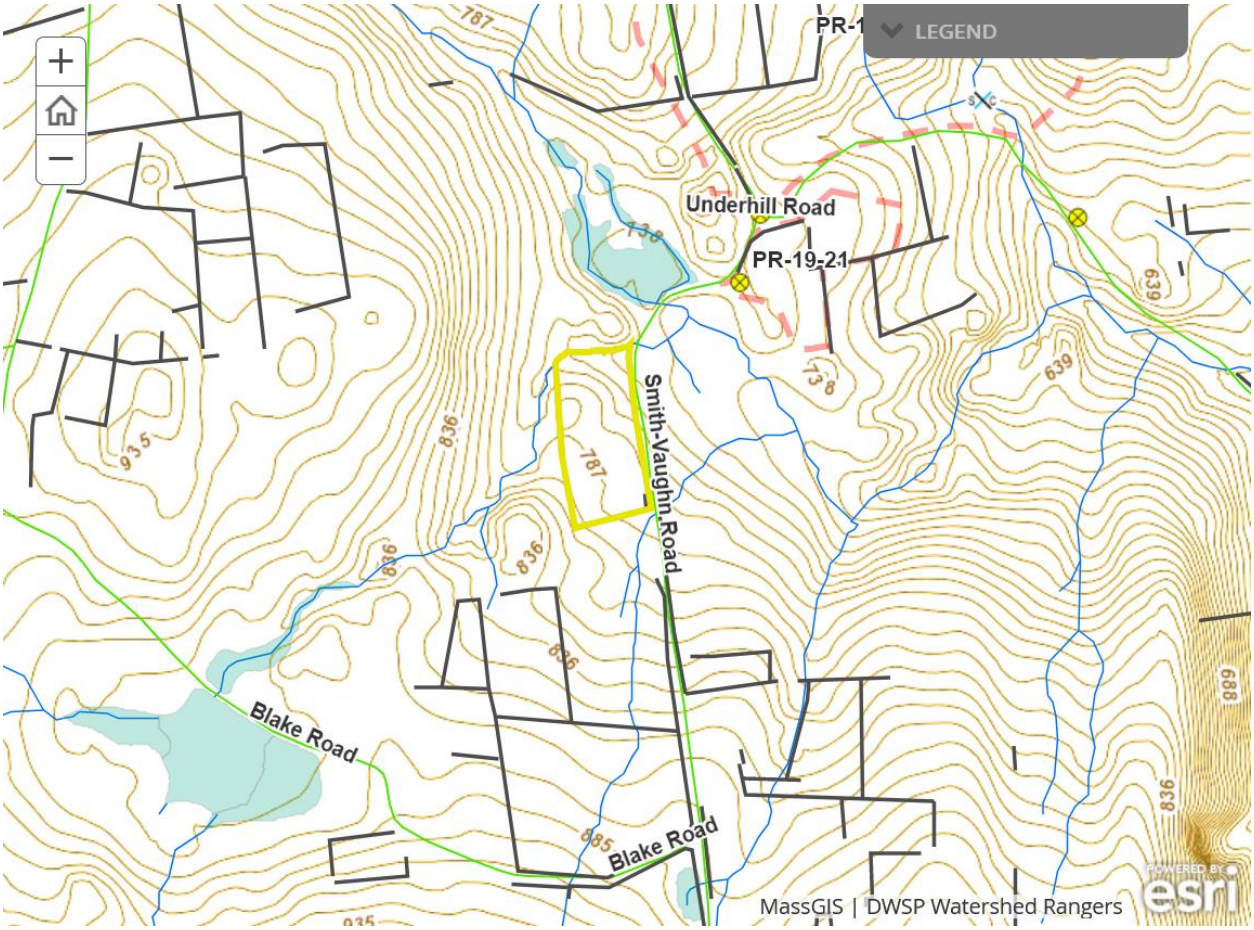
Forwarder required: **Yes**

Feller/processor required: **Yes**

Steep slopes present: **No**

Comments on harvesting limitations:

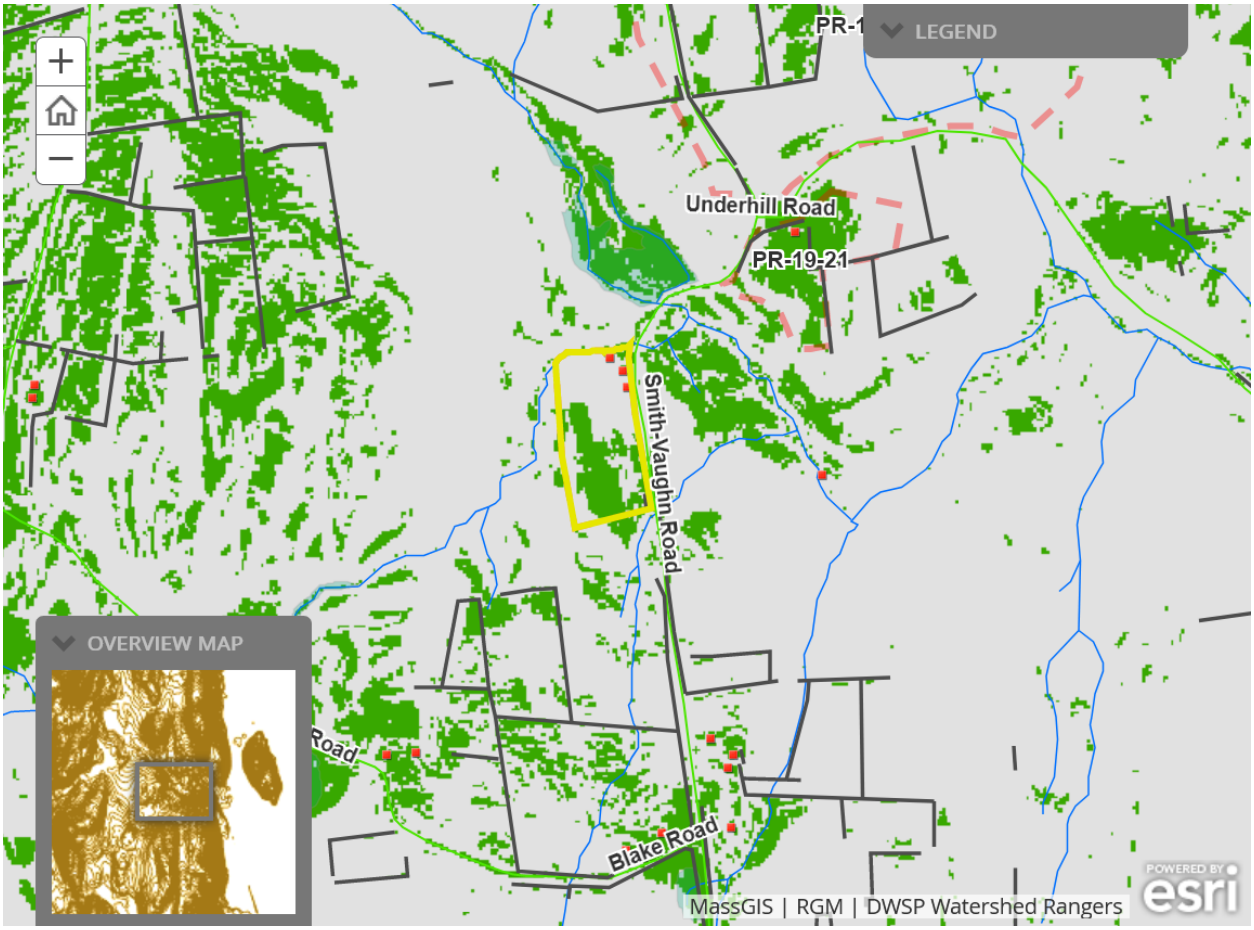
Cut-to-Length harvesting is the ideal system for red pine; the primary forest product of this proposed project.



Cultural Resources

Comments on Cultural Resources:

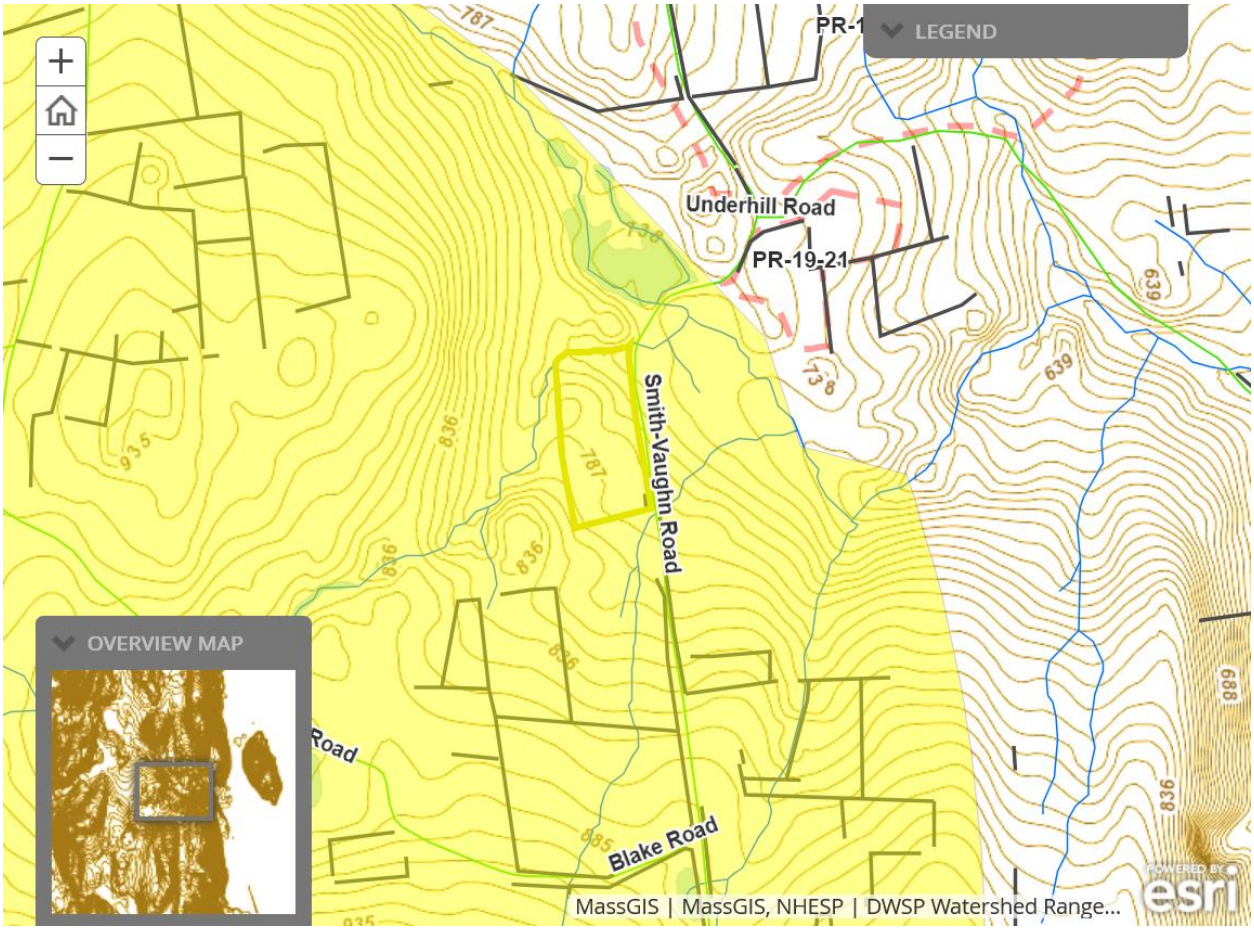
Foundations of two homes are present within the proposal area. Existing barways will be used where feasible and harvest layout will protect walls as much as possible. Foundations will be flagged and avoided. If applicable DWSP will follow any additional recommendations from DCR's Archeologist regarding protection of sensitive sites.



Wildlife Resources & Rare and Endangered Species

Comments on Rare Species/Habitats:

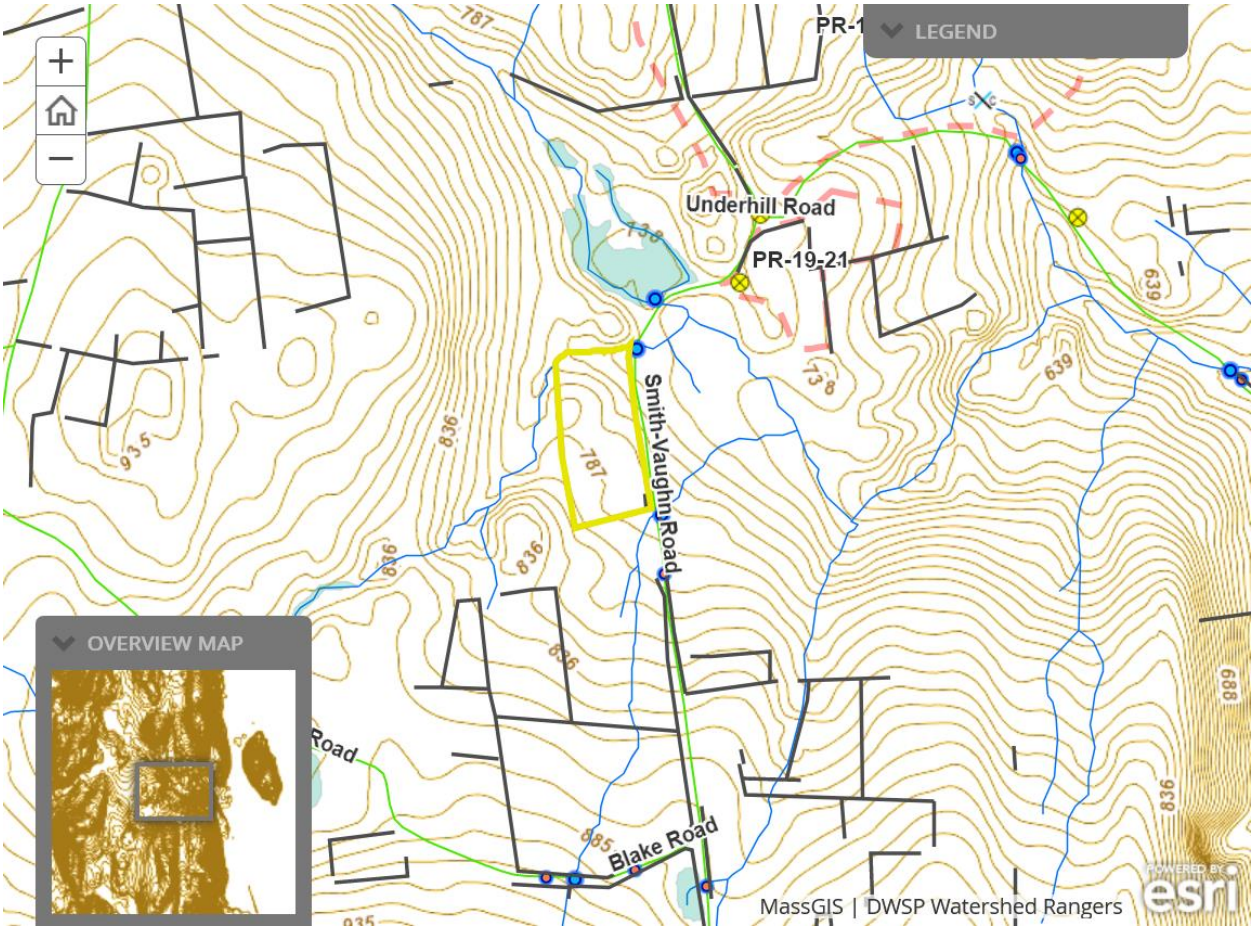
Cavity trees and potential/existing nest trees will be retained if possible. NHESP has determined that certain state-listed sensitive species or habitats may exist within the northern section of the lot proposal area. To protect them from unnecessary disturbance, detailed information regarding affected 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 harvest.



Environmental Quality Engineering

Comments on EQ Issues:

There is possible monitoring opportunities at culverts under the west branch of Underhill Brook along Smith Vaughn Road



Forest Access Engineering

Gravel needed: No

Landing work needed: No

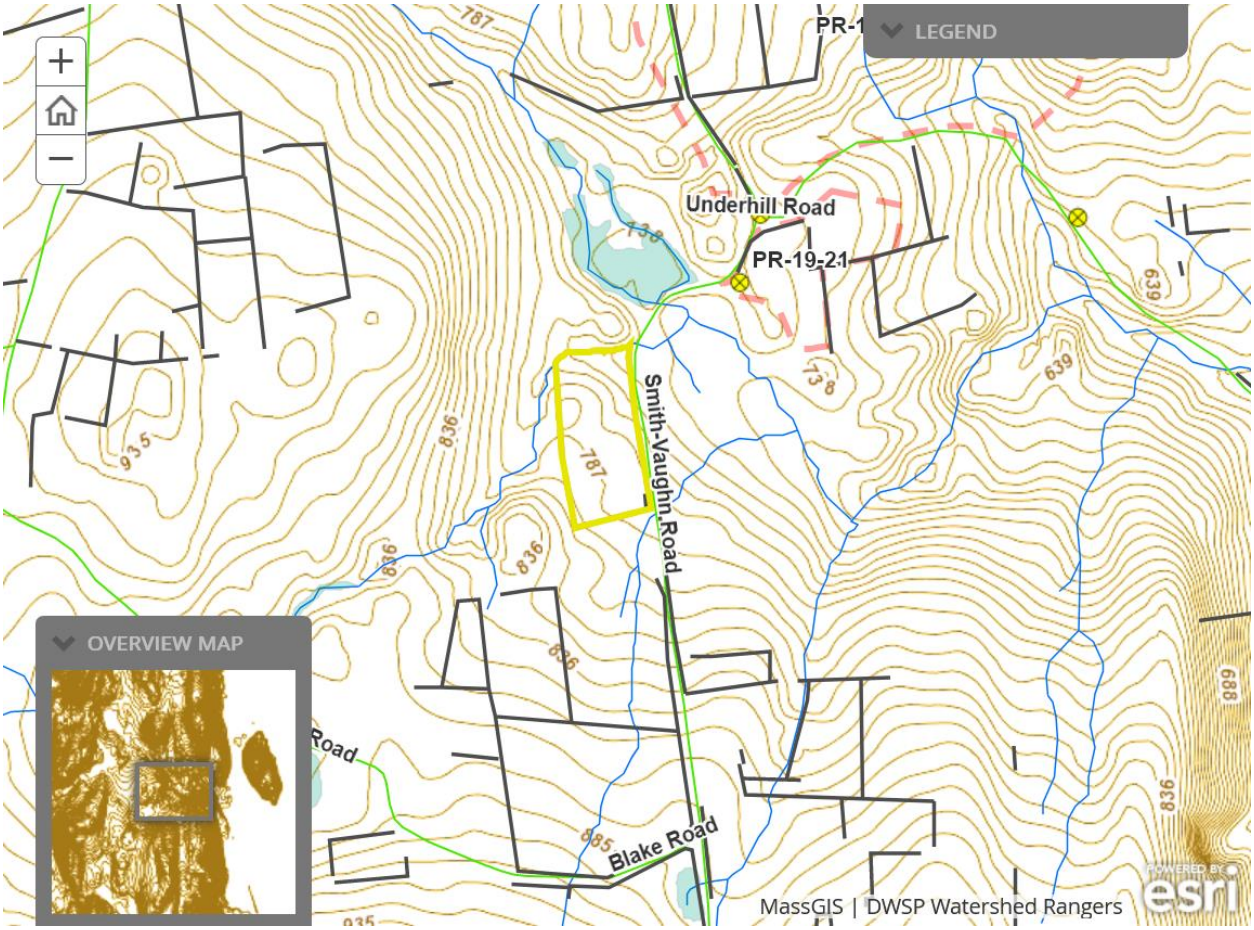
Culverts needed: No

Work needed on permanent bridges: No

Beaver issue: No

Further comment on access needs:

May need to re-establish side ditches on portion of Smith-Vaughn Road. Section south of Underhill Brook heading up the hill.


LEGEND
PR-1
Underhill Road
PR-19-21
Smith-Vaughn Road
Blake Road
OVERVIEW MAP
MassGIS | DWSP Watershed Rangers
esri

DWSP FY 2019 Quabbin and Ware River Forestry Proposals – Master Legend for story maps