Quabbin Harvest Proposal PR-19-08

Proposal Goals

The purpose of this proposed project is to increase native forest diversity and resilience. The area is a red and white 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 east side of the Prescott Rd. (gate 17) south of the former UMASS observatory site.

Total Acres: 15

Previously Reviewed as PR-13-08

General Description

	Overstory Type(s)	Acres
Dominant	White pine/red pine	15

	Understory Type(s)
Dominant	Hayscented fern prevalent
Dominant	Black birch/white ash

Description of forest composition/condition:

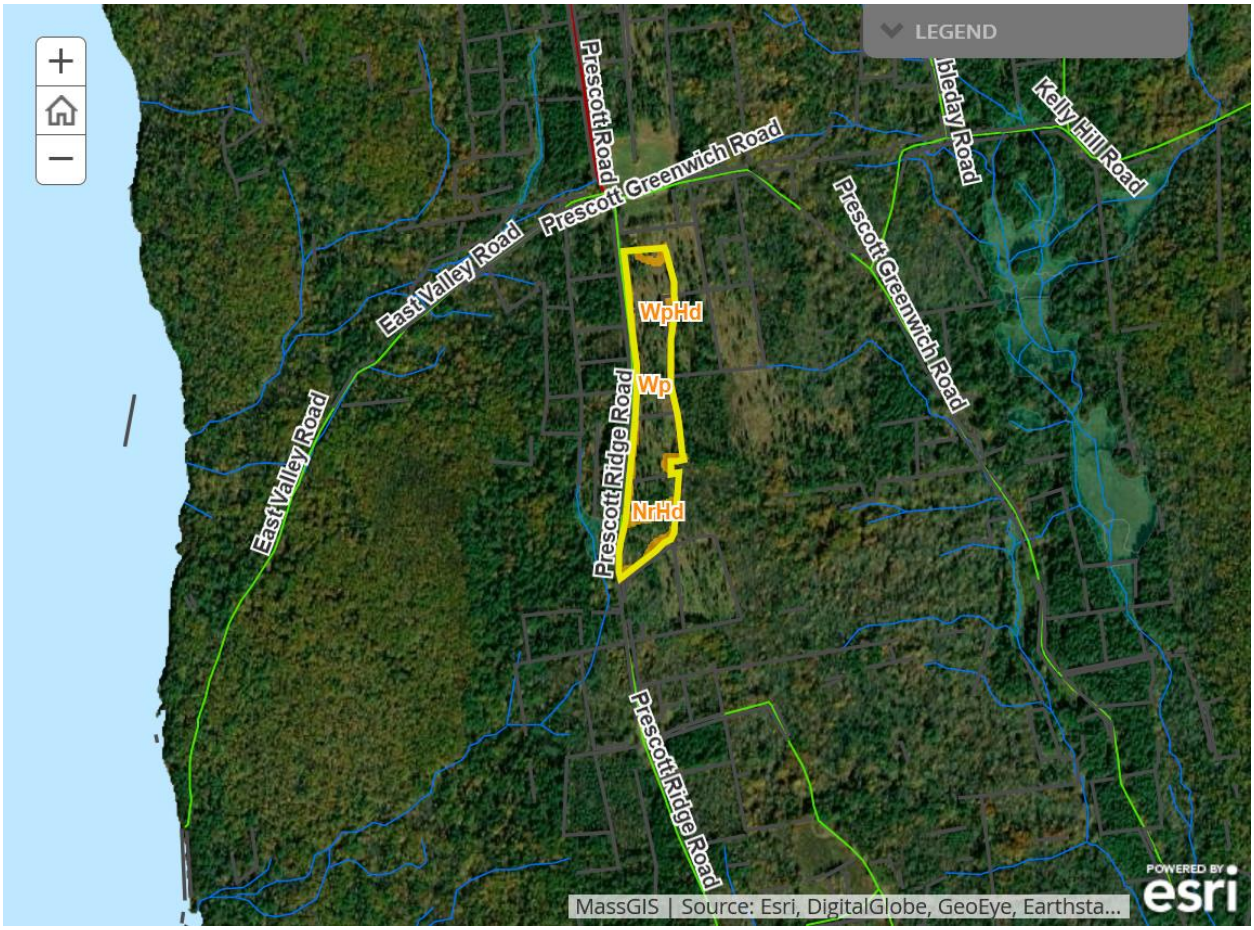
Planted Red Pine and White Pine cover this area of the watershed. Prior to state ownership, the site was used for crops (arable) and/or improved pasture. Believing that forest cover is the best filter and conservator of water, early watershed managers were quick to reforest these open areas with a monoculture 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).

Excepting the northern 1/3, the area, proposed in FY 13, became the first timber harvest (restart) on the Prescott Peninsula since the temporary cessation of the DWSP forestry program in July 2010. The project, executed September 2015, removed just under 50% of the total average basal area per acre (170 sqr. ft.) in a random arrangement of small patches. Preceding the aforementioned harvest was a commercial thinning completed in 1991. The northern 1/3 was not part of the FY 13 proposal because the area is part of the Daniel Shays Brook subwatershed which is a component of a broad paired watershed study. Subsequently, The Shays Brook watershed has performed its function in the watershed study and is now generally available for silvicultural work.

Omitted from the 2015 harvest, the northern third has the identical composition of the southern 2/3s pre-2015 harvest; dense small and medium-size sawtimber white and red pine. Both species show health decline from Annosum Root Rot (fungus) and additionally in the case of red pine the scale insect. The understory consists of scattered patches of sapling black birch, sparse naturally regenerated white ash and sparse under planted red oak. Ground cover is mainly dense Hay Scented (typical of highly modified soils).

The southern 2/3, harvested in 2015, has an average residual basal area of 90 sqr. ft. per acre that is slightly greater representation of red pine then white pine sawtimber. With an understory of the residual is black birch saplings. However, in the small patches much of the sapling black birch was cut to try and spur a greater diversity of regeneration. Most of the openings are dominated by a carpet of hay scented fern; but rubus, white ash, maple, birch, and cherry are slowly infiltrating the fern cover.

The northern half of the lot appears to have been a forest study area. Once fenced milacre plots now with sapling/pole size Black Birch along with numerous ground flags were observed.

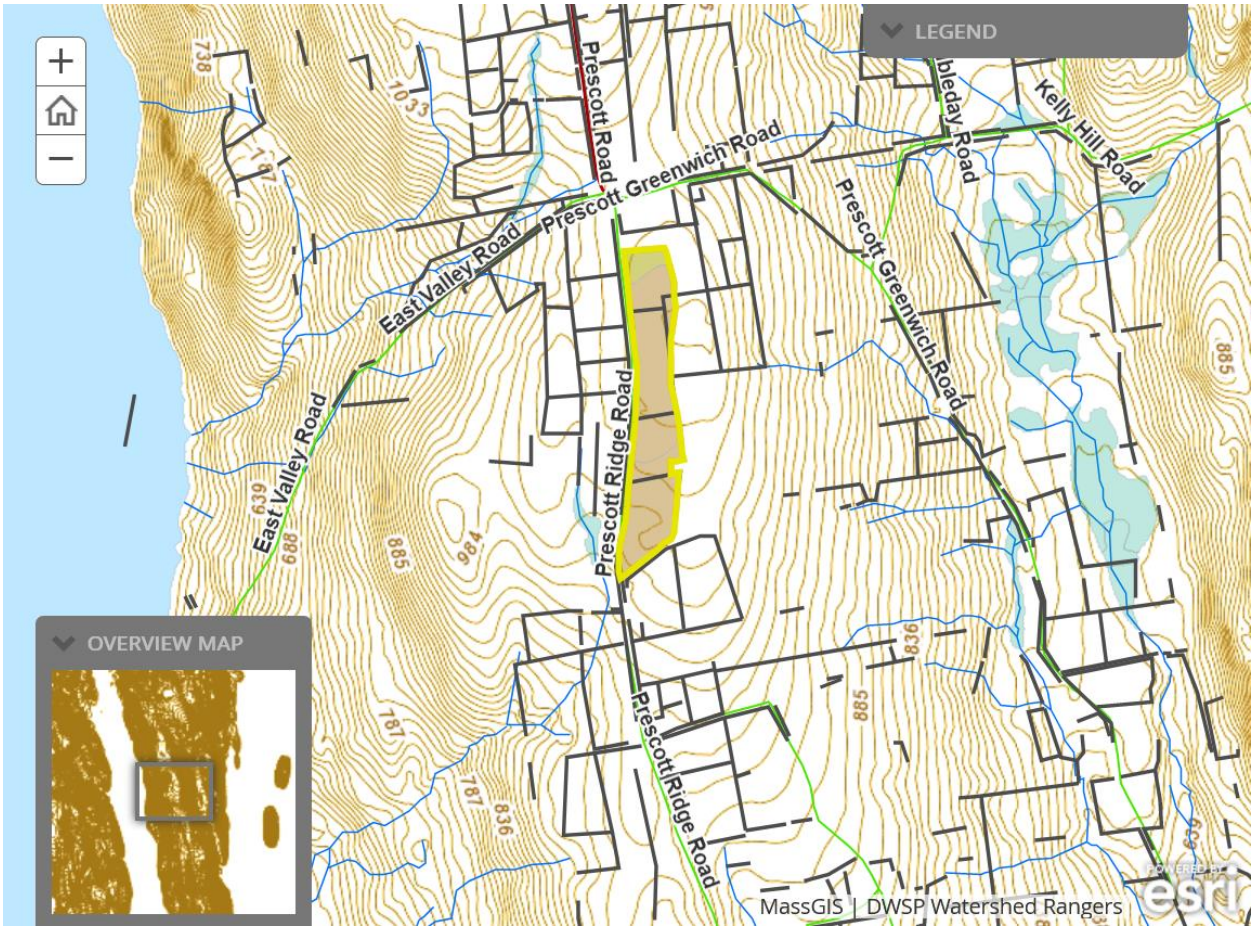


Soils

Drainage Class	%
Excessively Drained	0
Well Drained Thin	15
Well Drained Thick	85
Moderately Well Drained	0

Poorly to Very Poorly Drained	0

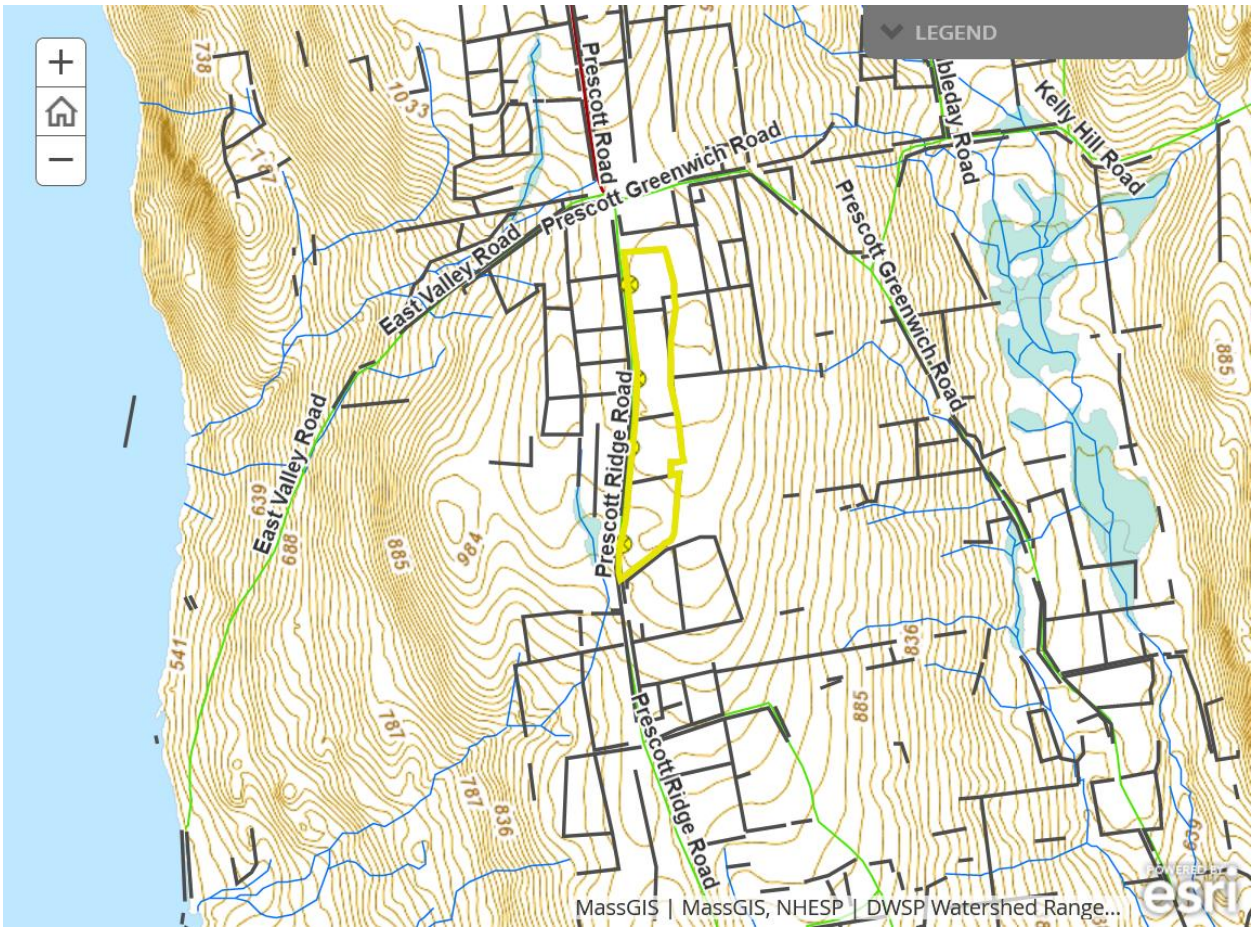
The USDA Natural Resources Conservation Service's 2012 Franklin county soil survey indicates Montauk, Henniker and Metacomet sandy loam soils cover the proposed harvest area. These soils do not pond or flood, but can exhibit a sub-surface saturation layer during the winter and spring.



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**



Silviculture

Acres in Intermediate cuts: **0**

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

Acres in Regeneration cuts: **15**

Average regen opening size: **0**

Maximum regen opening size: **15**

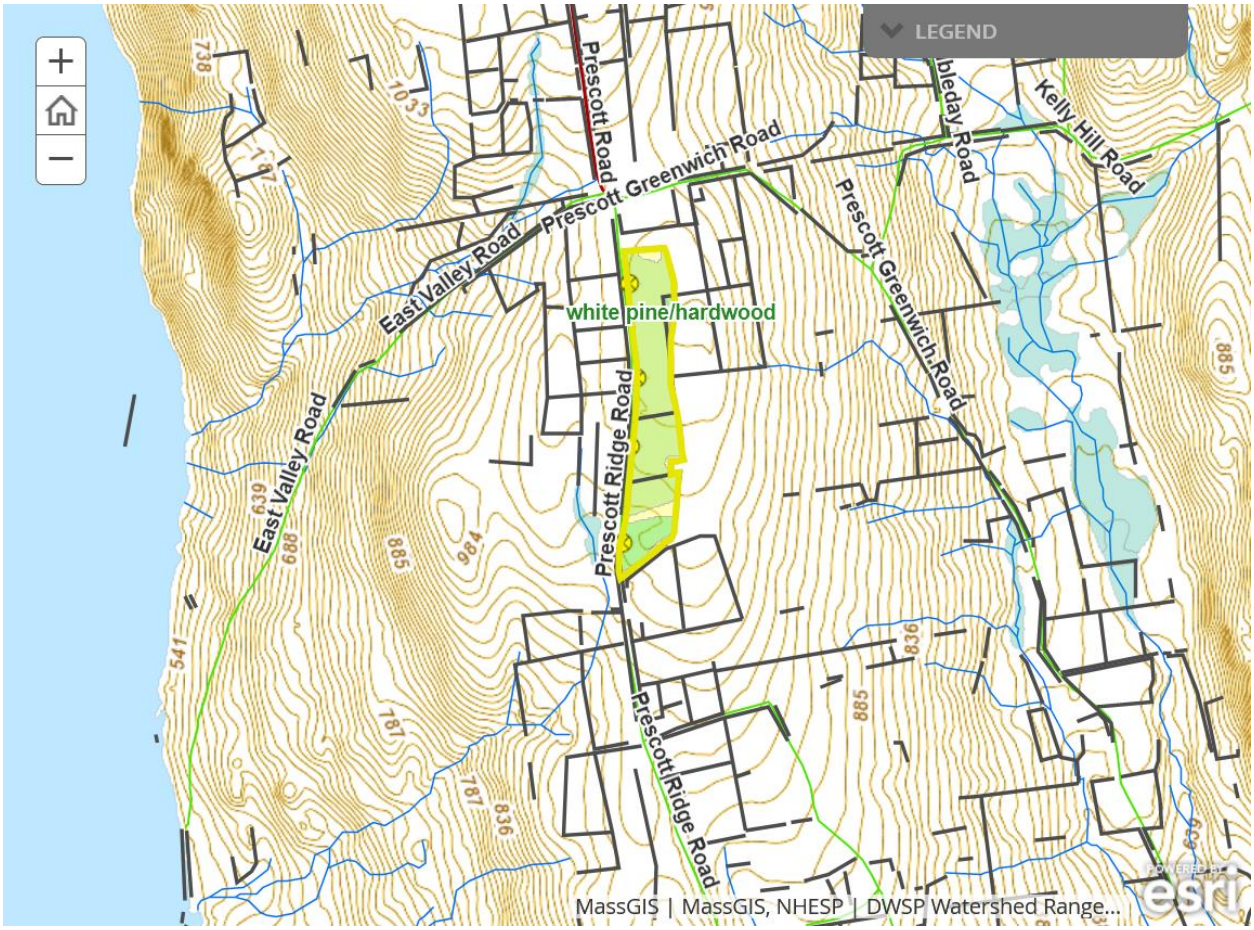
Description of advance regeneration in proposal area:

Regeneration development is severely limited due to a carpet of hay scented fern. The '91 thinning spurred sapling black birch that is growing in the residual basal area of the 2015 harvest and the uncut northern 1/3. Due to the hay scented fern, regeneration in the small openings created in 2015 is limited to scattered seedling/sapling white ash, red maple, birch and cherry. Rubus, also infiltrating the openings, should slowly breakup the dense fern ground cover.

General comments on silviculture proposed:

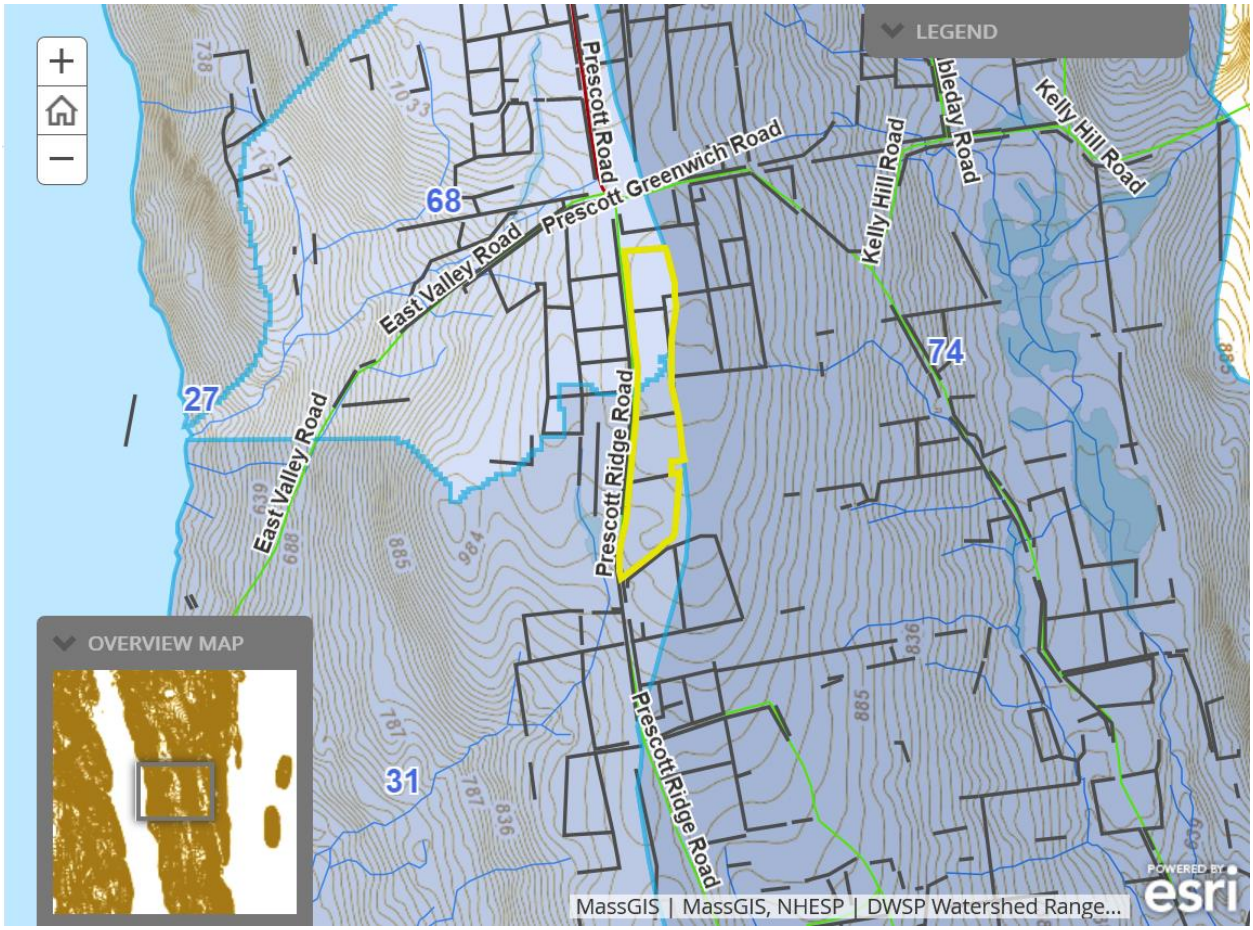
Removing red pine, the primary host of the red pine scale is the main silvicultural objective. The insect, originally found in Connecticut in the 1940s, has steadily moved northward and infested many red pine plantations throughout Massachusetts and southern New Hampshire. The microscopic beast completes 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. Some sign of scale has been seen since the 2015 harvest (south end; dead and dying trees). The harvest's secondary goal will be to remove low quality and/or diseased white pine.

Specifically, the harvest will expand upon the 2015 openings and create an opening in the northern 1/3 not treated in 2015. A residual basal 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
31	854	24	190	8
68	219	0	55	7



Harvesting Limitations

Forwarder required: **Yes**

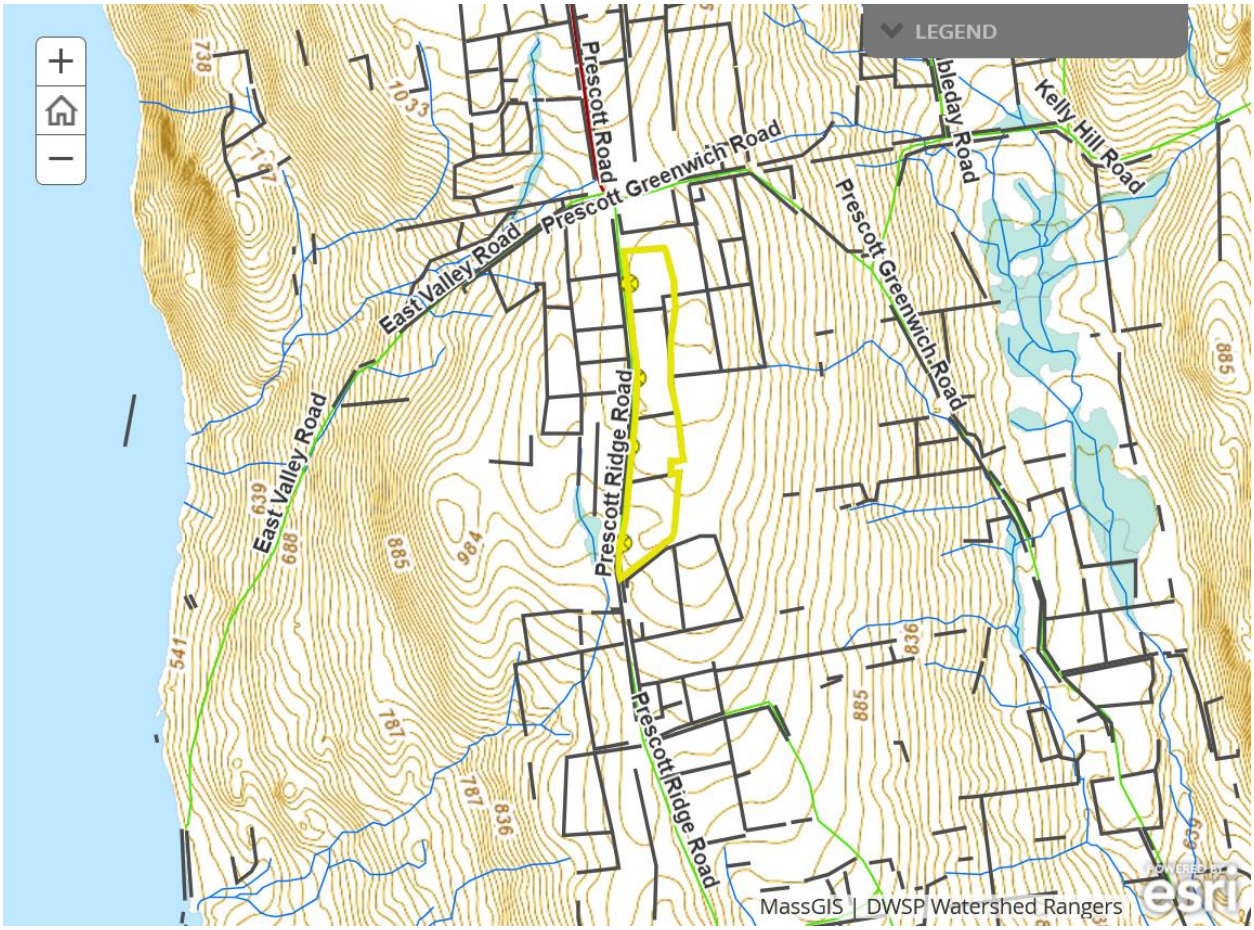
Feller/processor required: **Yes**

Steep slopes present: **No**

Comments on harvesting limitations:

A myriad of cultural resources require the maneuverability of short wood logging system.

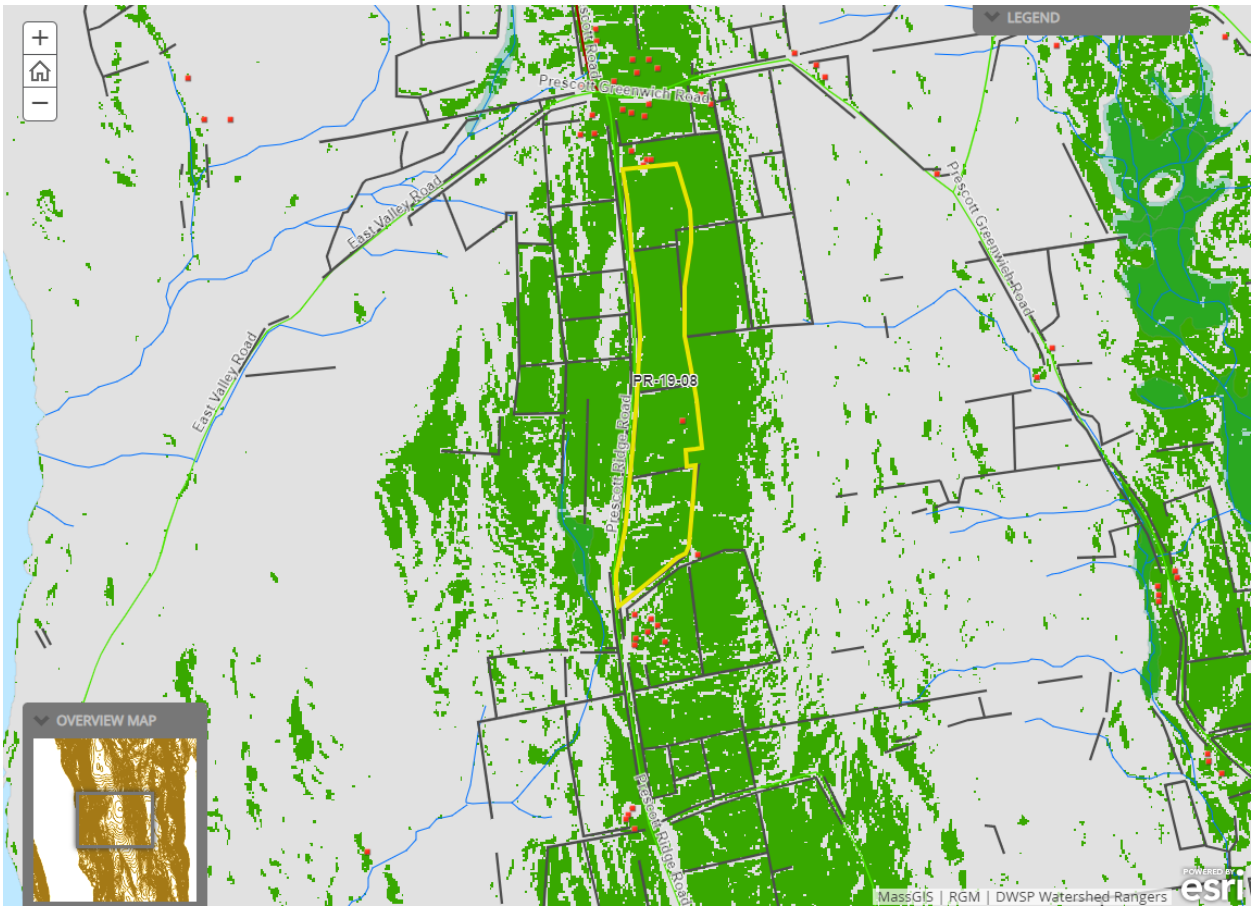
Harvesting should occur during reasonably dry non-frozen ground conditions and the equipment should be chained to maximize scarification or duff layer disturbance. In this particular case its disturbance of the dense fern layer.



Cultural Resources

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.



Wildlife Resources & Rare and Endangered Species

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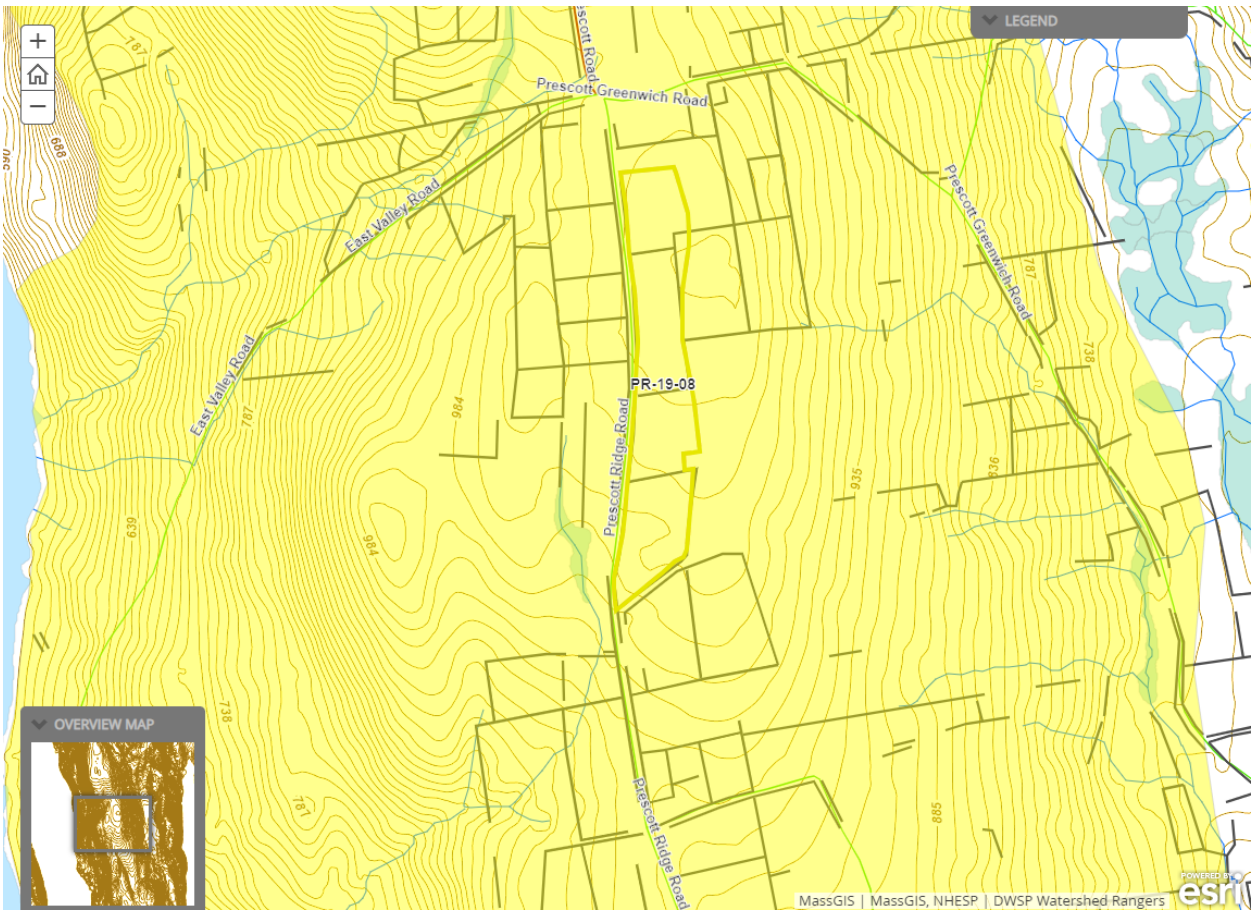
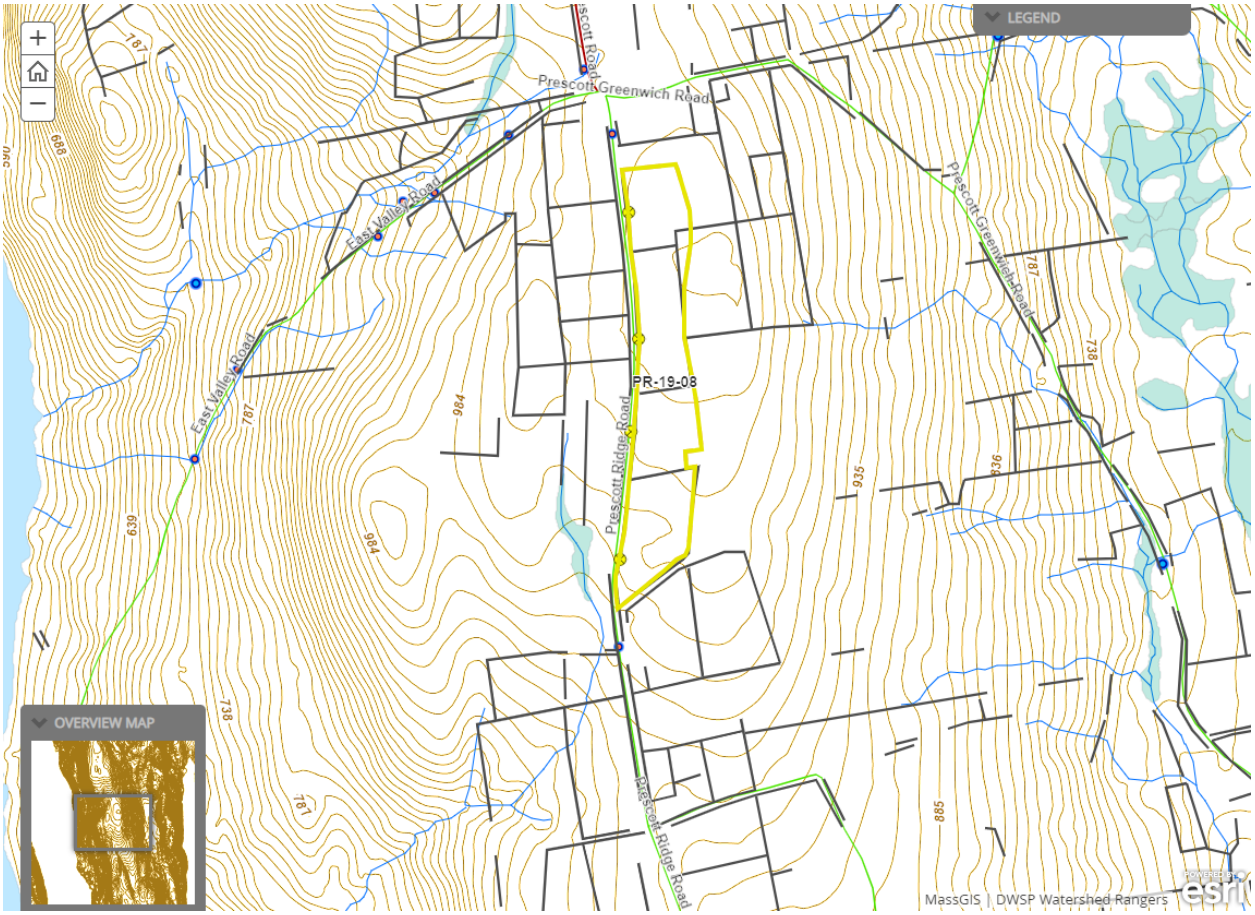


Environmental Quality Engineering

Comments on EQ Issues:

No perennial stream crossings.



Forest Access Engineering

Gravel needed: No

Landing work needed: No

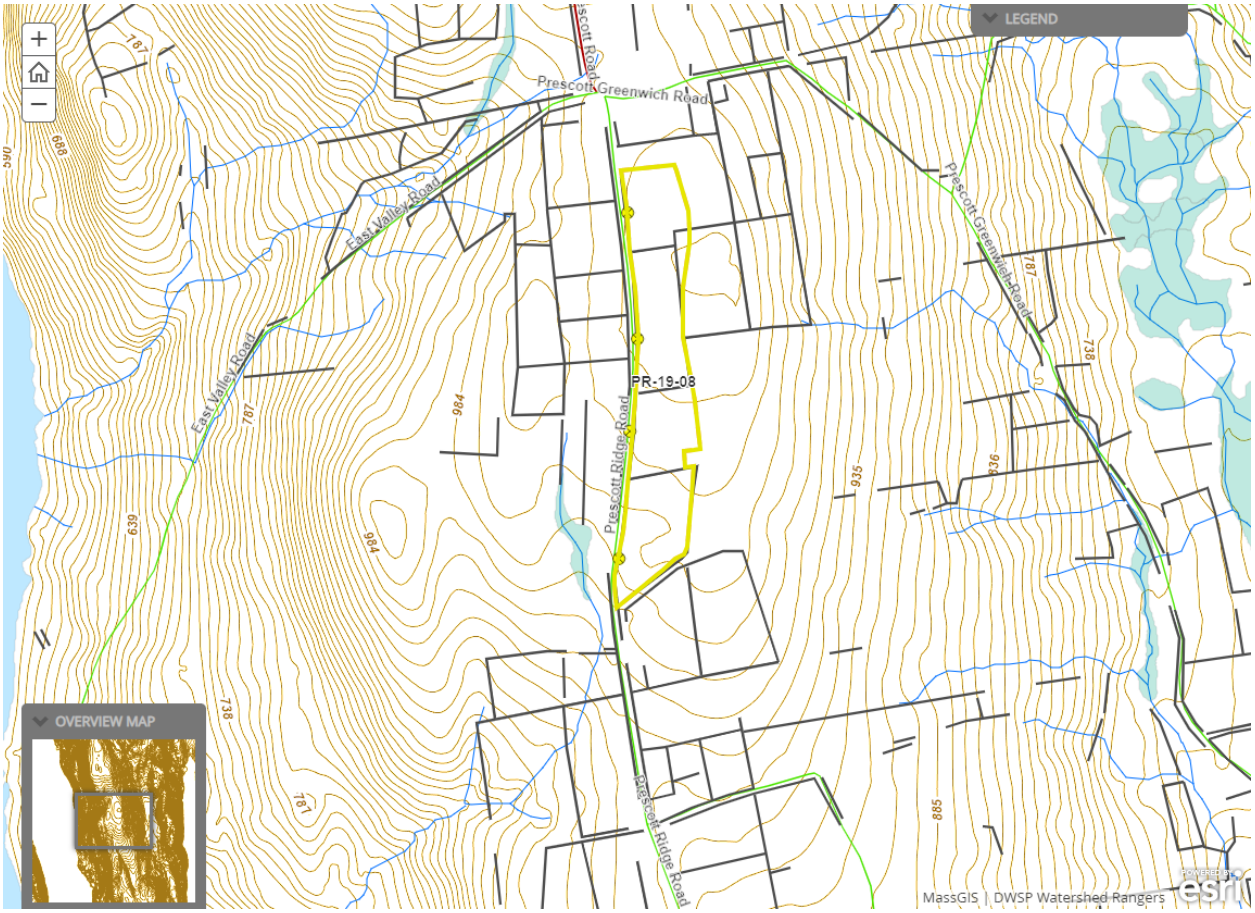
Culverts needed: No

Work needed on permanent bridges: No

Beaver issue: No

Further comment on access needs:

None.


LEGEND
OVERVIEW MAP
PR-19-08
Prescott Greenwich Road
East Valley Road
Prescott Ridge Road
MassGIS | DWSP Watershed Rangers
esri

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