Quabbin Harvest Proposal PE-19-10

Proposal Update, May 2024:

This forestry proposal was originally approved through the public process in 2018. The project was 'paused' along with most other state lands forestry projects as part of the EEA Forests as Climate Solutions Initiative. Following the close of the work of the Climate Forestry Committee, DWSP determined the activities in this proposal align with EEA climate considerations developed from the recommendations in the CFC report. The proposal language and mapping below are preserved unchanged from that presented to the public in 2018 in ArcGIS Online Story Map format.

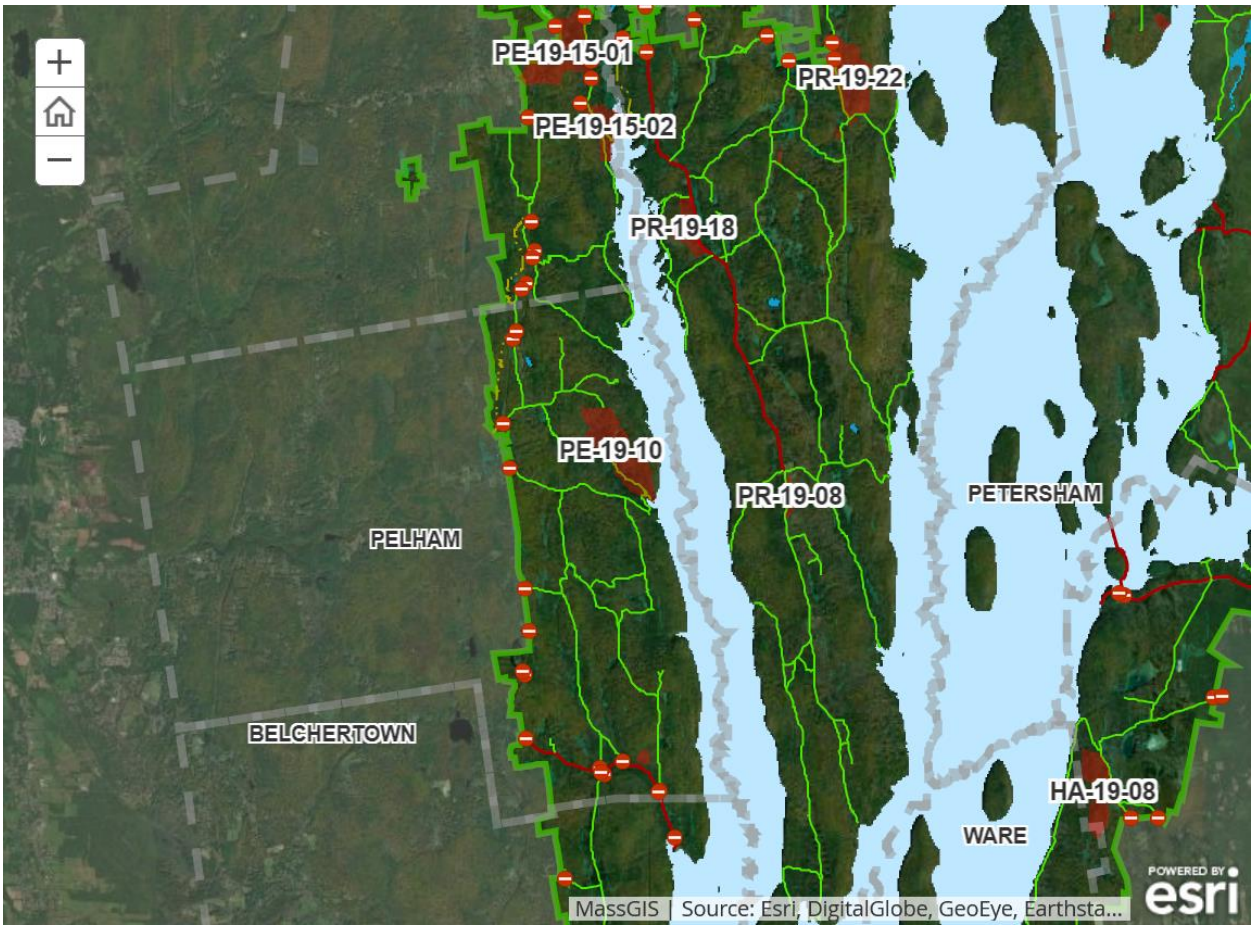
Proposal Goals

This proposal seeks to accomplish DWSP Forestry's broader goals of forest resistance and resilience through age and species diversity by treating areas with abundant dying hemlock (hemlock wooly adelgid), poorly formed white pine, low diversity regeneration, and few age classes.

Proposal Location

This proposal is located along the southern end of Purgee Brook Rd. located inside DCR Gate 12.

Total Acres: 213



General Description

	Overstory Type(s)	**Acres**
Dominant	Mixed Hardwoods	82
Secondary	White pine/hardwood	40
Other	Oak/hardwood	33

	Understory Type(s)
Dominant	Mountain laurel prevalent

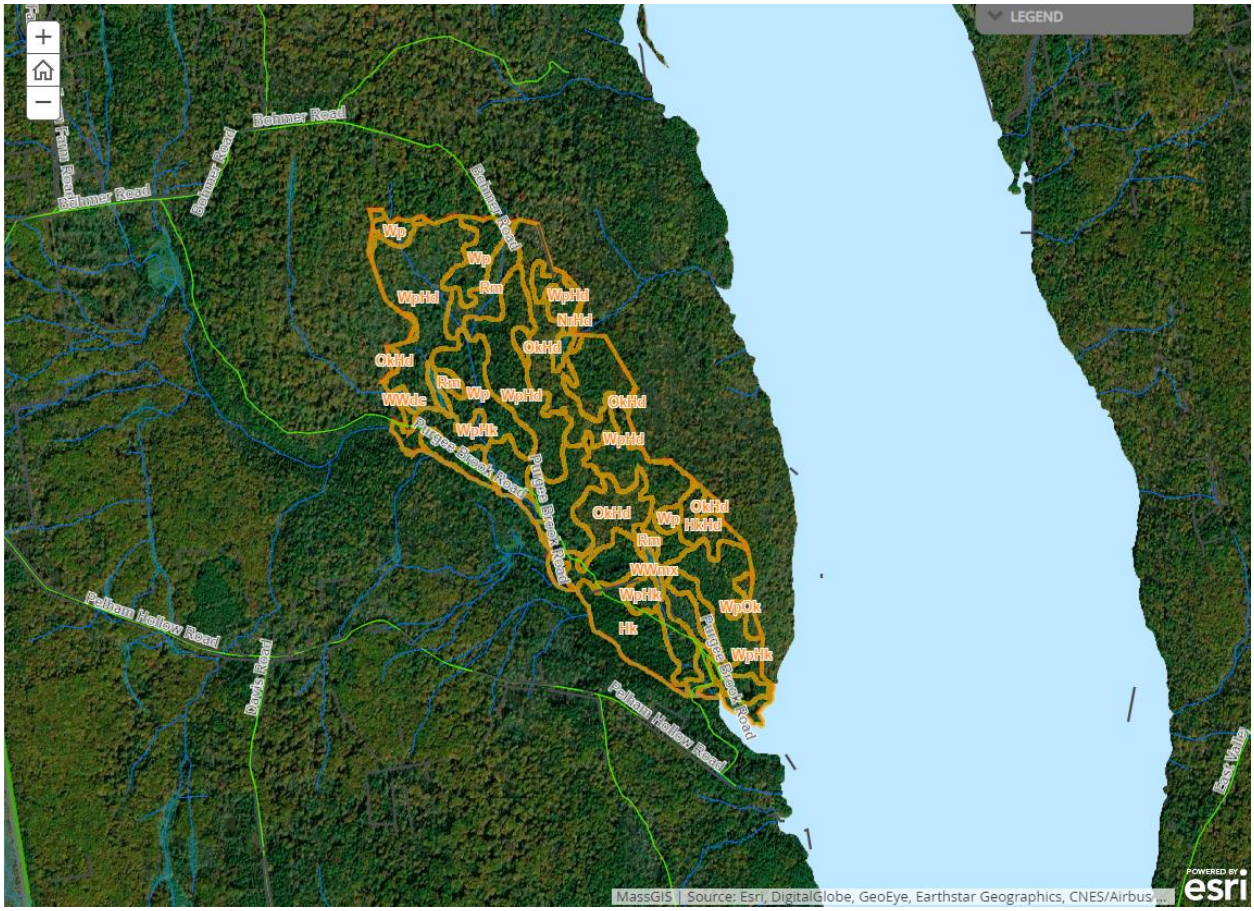
Secondary	Tree seedlings/saplings dominate site

Description of forest composition/condition:

The proposed area can be divided into five sections: The ridgeline running the eastern edge oriented NW to SE, a cirque in the northwestern corner, the slopes occupying the middle of the lot, the bottom to the north of Purgee Brook Rd, and the area between Purgee Brook Rd and Purgee Brook to the south.

The ridgeline is primarily pine/oak to pine/hardwood or oak/hardwood to mixed hardwood forest cover except for a white pine/hemlock cover in the far south. Stocking ranges from 120-170 ft^2 BA / acre. What hemlock is on the ridgeline is very unhealthy and a significant portion has already died. Beneath the ridgeline overstory, dense mountain laurel pockets are present under each cover type, and where it is present beneath dying hemlock it is dense enough to impede new regeneration. In the oak/hardwood/mixed hardwood stands regeneration is poor and tends to black birch. Hemlock regeneration even at the top of the ridgeline is usually heavily browsed. An oak salvage occurred at the northern end of the ridgeline in 1985 (lot 0451, 42 ac.).

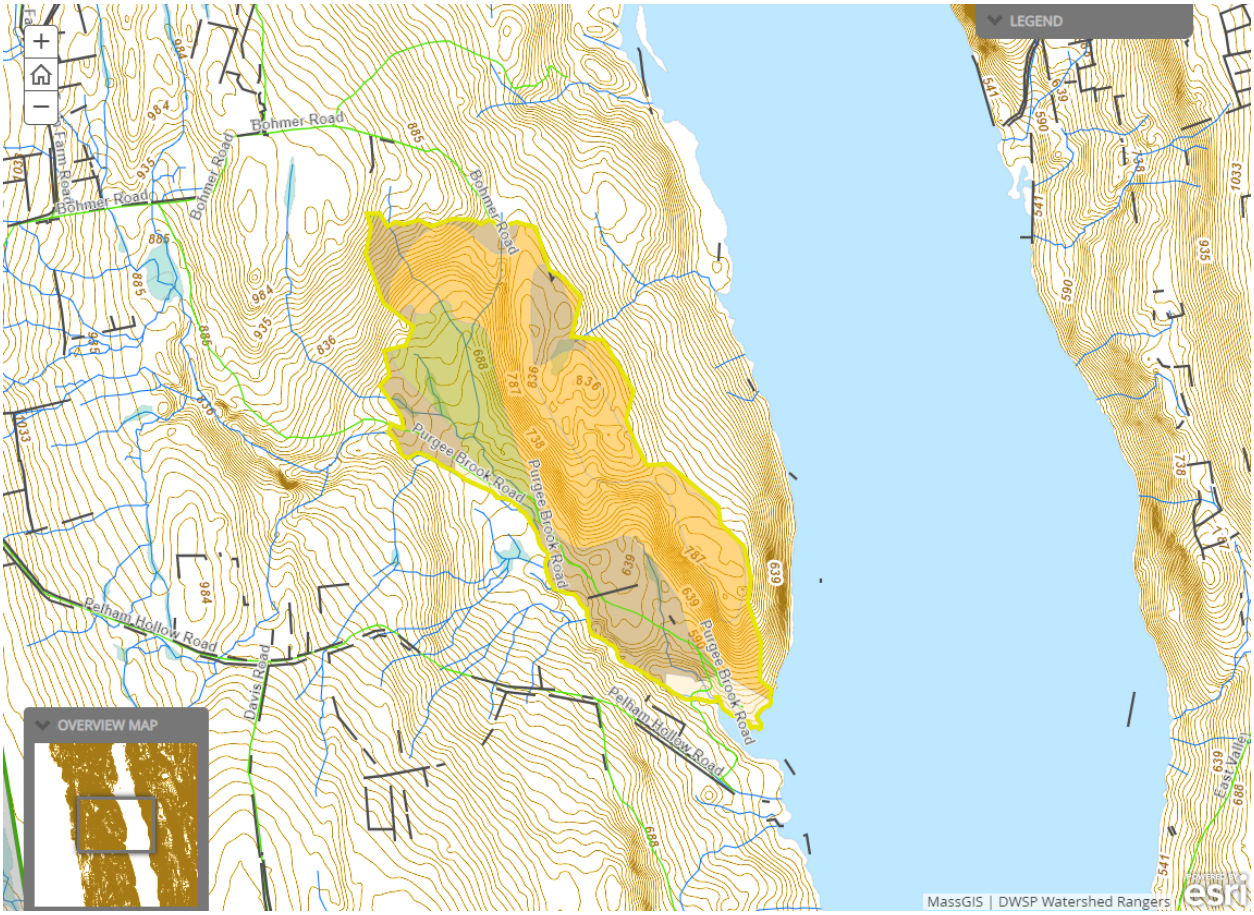
The cirque in the northwestern corner was treated with an oak thinning and then salvage in 1975 (lot 0125, 50 ac.) and 1985 (lot 0438A, 41 ac.) harvests. The stand stocking ranges from 60 - 100 ft^2 BA/ acre and has a large black birch sawlog component joining the remnant mixed oak overstory. Black birch in the area show a history of canker and is often poorly formed. The few remnant white pine are large (>25" dbh) and likely were kept (and would continue to be kept) as emergent legacy trees. Mountain laurel is well established in this area and of low to moderate density throughout.



Soils

Drainage Class	%
Excessively Drained	4
Well Drained Thin	55
Well Drained Thick	27
Moderately Well Drained	14
Poorly to Very Poorly Drained	0

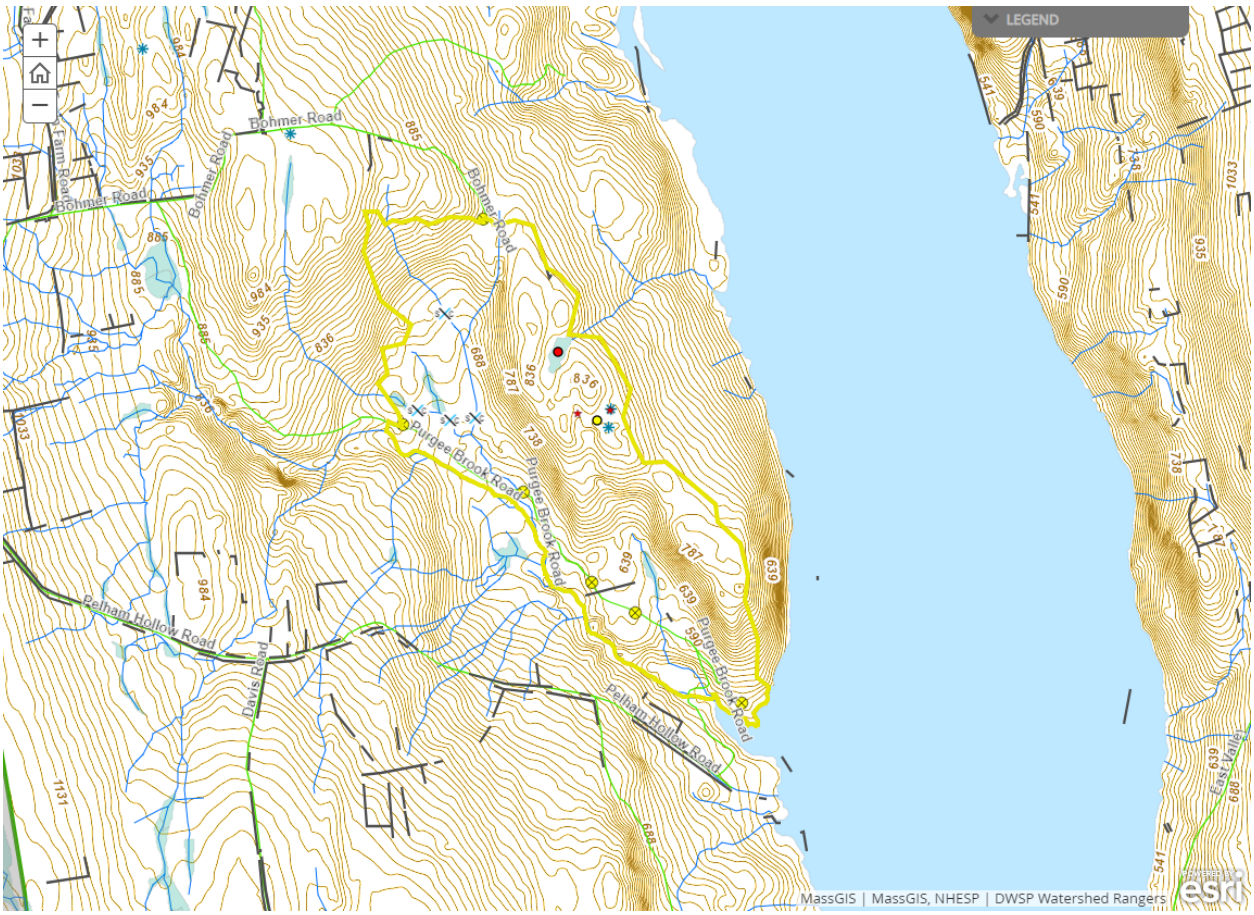
Soils are primarily Charlton Hollis Rock outcrop, with Scituate and Canton fine sandy loam on the western side of the ridge. Fine sandy loams are also classified as extremely stony.



Wetlands

- Wetlands present? - **Yes**
- Streams present? - **Yes**
- Vernal pools present? - **Yes**
- Seeps present? - **Yes**
- Are stream crossings required? - **Yes**
- Are wetland crossings required? - **Yes**
- Is logging in filter strips planned? - **Yes**
- Is logging in wetlands planned? - **No**

Wetland crossings will be necessary where historic skid road stream crossing involves streamside wetlands.



Silviculture

Acres in Intermediate cuts: **15**

Acres in prep/establishment cuts: **15**

Acres in Regeneration cuts: **33**

Average regen opening size: **1**

Maximum regen opening size: **2**

Description of advance regeneration in proposal area:

Mountain laurel dense enough to impede regeneration is present in pockets in all areas of the proposal. In areas not impeded by mountain laurel white pine is the most common advanced regeneration. Under the dying hemlock, where mountain laurel impeding, the most common regeneration is white pine and black birch. In the northern cirque black birch is the most common regeneration and dominates size classes from saplings to small sawlogs. White pine regeneration in the understory is vigorous, but midstory white pine is slowing and dropping out.

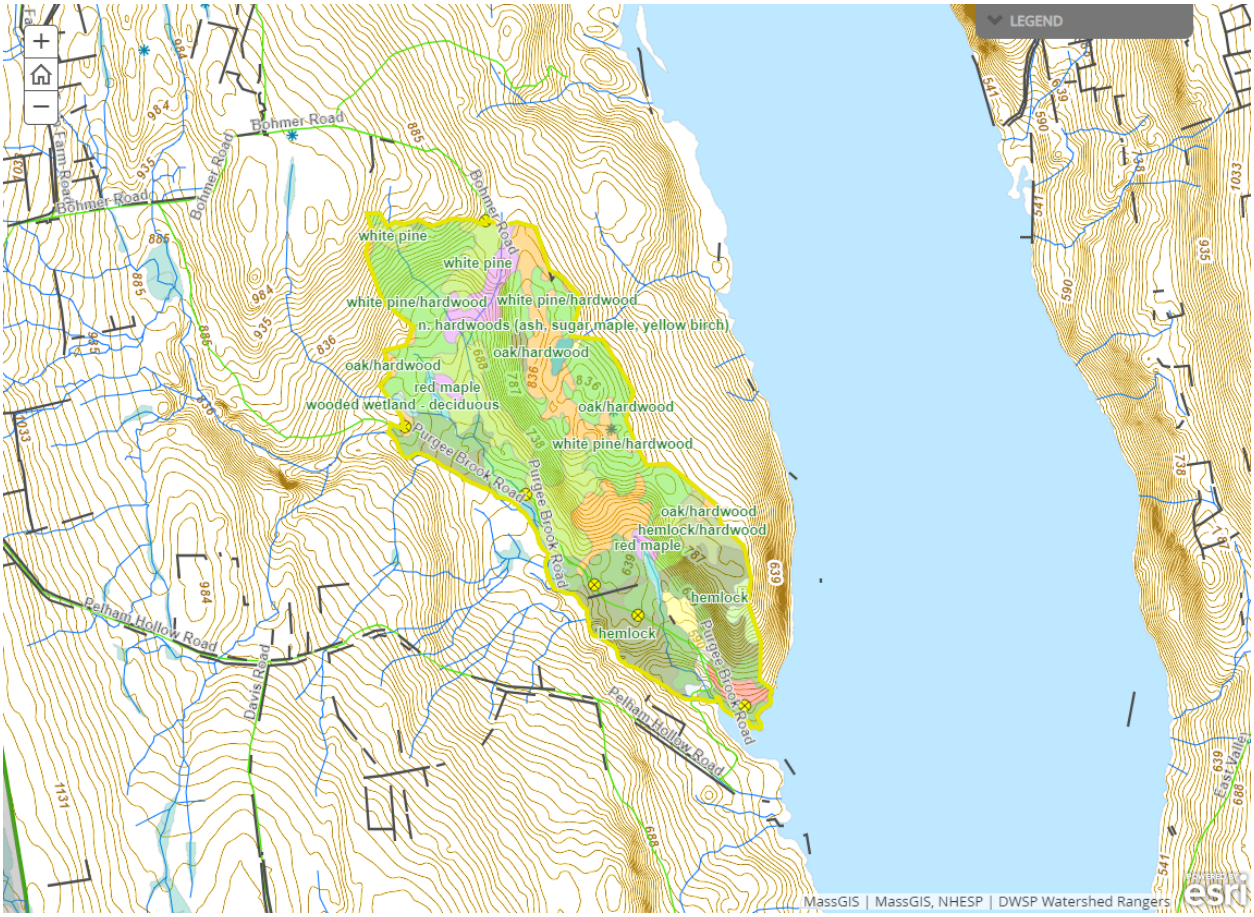
General comments on silviculture proposed:

Along the ridgeline and the northern cirque, the silvicultural goals will be to improve regeneration where mountain laurel is dense, and to improve stand quality by targeting unhealthy and poorly formed individuals. Regeneration openings will be placed where mountain laurel is most impeding regeneration with scarification requirements considered where conditions allow. Oak and hickory will be prioritized as edge and retention species, within the larger goals of increasing stand species diversity. Where mountain laurel is not impeding diversity stands will be treated with irregular shelterwood, removing poorly formed and unhealthy individuals, especially black birch (e.g. past evidence of canker, twisted understory development). In these areas, 20-40 ft^2 BA/ ac will be maintained. If road repair is possible, timber harvested along the ridge top and in the northern cirque will be forwarded/skidded to the existing landing on Bohmer Rd (Gate 12 Rd). Otherwise, a series of existing roadside landings on Purgee Brook Rd will be utilized for all wood.

Silviculture of the slopes will be limited by operability. Where the slope is inoperable the top and bottom will be treated to the extent possible. Silviculture of the slopes will focus on the areas of dying hemlock where mountain laurel is beginning to impede regeneration. Basal area will be reduced to low levels (10-30 ft^2 BA / ac) to allow shade intolerant regeneration a chance of competing with the established shade tolerant mountain laurel. In the middle section where there is little understory or midstory shelterwood prep will reduce overstory basal area to 30 - 50 ft^2 BA / ac to encourage increased regeneration. Regeneration prompted by the shelterwood prep cut can be released in the future with small group silviculture.

In the bottom along Purgee Brook Rd. a combination of regeneration openings and thinning will be used to target unhealthy hemlock and release existing white pine/hardwood regeneration and increase light availability to remaining healthy hemlock. Openings will be collocated with areas of diverse retention. Areas harvested in 1997 and 2001 will receive TSI and minor improvement cutting. Beyond these areas, regeneration openings will target unhealthy and dying hemlock and areas with existing hickory available to provide seed.

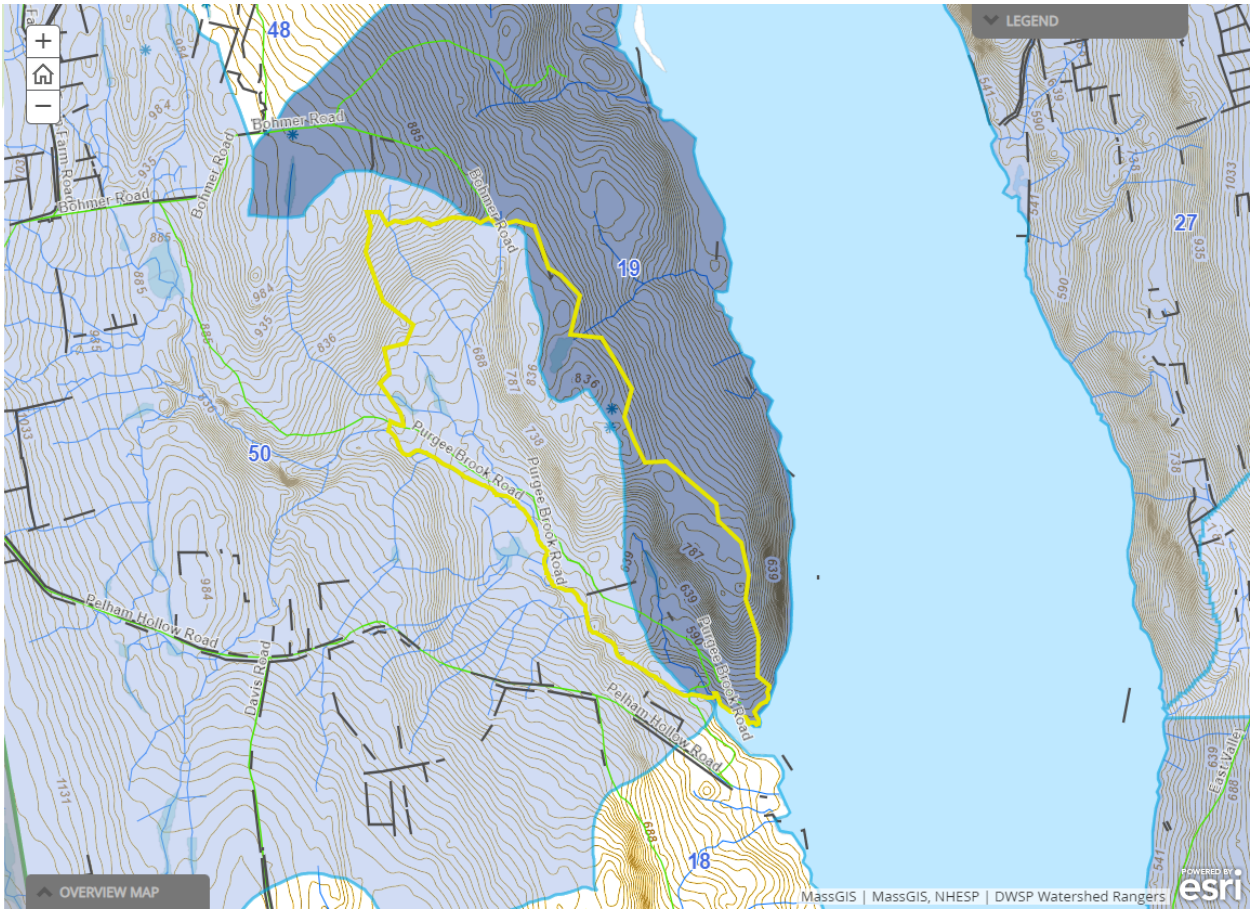
The space between Purgee Brook Rd. and Purgee Brook will likely be mostly covered by variable width filter strip and silviculture will target unhealthy hemlock, and poorly formed individuals (e.g. weevil damaged white pine) with thinning, especially where existing white pine and hemlock regeneration can be released. Basal area will not be reduced below 50 % of current levels where filter strips apply.



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
19	437	23.7	89.3	87.6
50	1697	94.9	329.3	150.9

In subwatershed 67 where the area included in the proposal exceeds the DCR owned acres remaining for regeneration, the actual treated acreage will be closer to 20 total acres of combined regeneration/shelterwood/intermediate thinning treatment. The full area was included to prevent isolating a stand between Shutesbury Rd., Cooleyville Rd., and treated acreage which would have made future treatment more difficult.



Harvesting Limitations

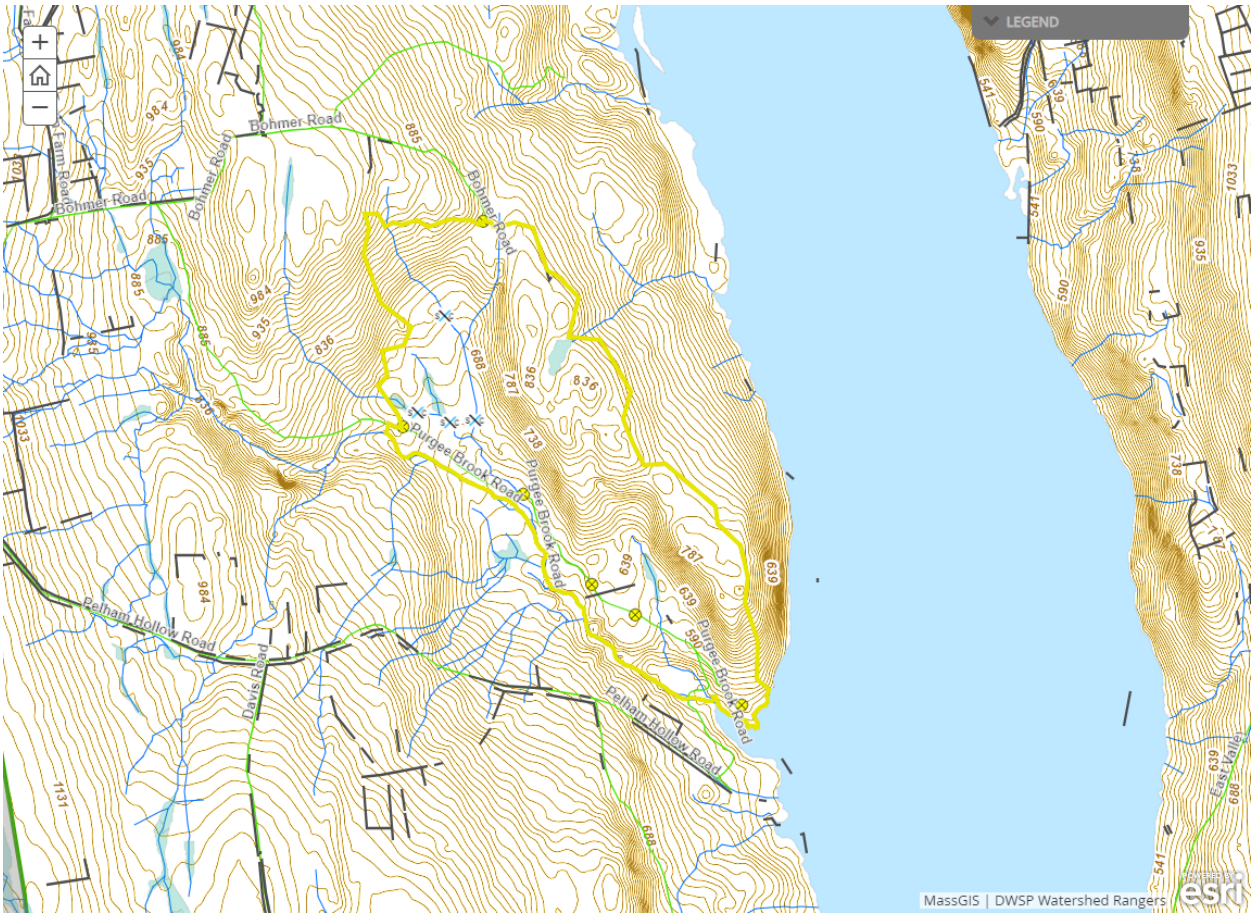
Forwarder required: **No**

Feller/processor required: **No**

Steep slopes present: **Yes**

Comments on harvesting limitations:

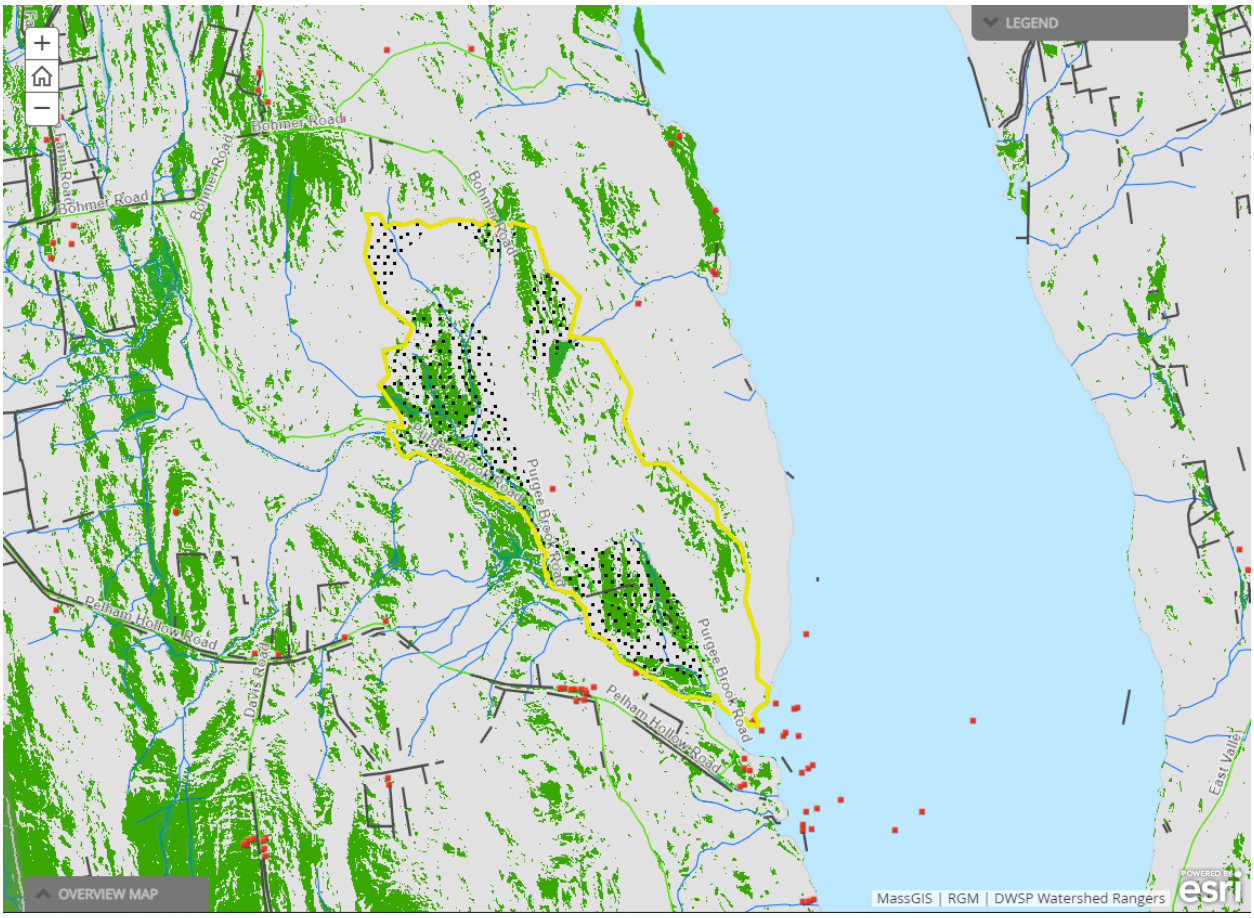
Treating areas of steep slope to any degree may require a cable skidder. A steep slope skid road would be located at the southern end of the ridge leading to the existing landing of the 2001 red pine harvest. This skid road may be avoided by sending the road north to the existing landing of lot 2038 on Bohmer Rd. Use of that landing would be contingent on repair of Bohmer Rd.



Cultural Resources

Comments on Cultural Resources:

The proposed area includes foundations for the residence, barn, and outbuilding for Daniel Murowsky (15.02). Stone walls are present, primarily along Purgee Brook Rd. and the end of Bohmer Rd. Surface stone is prevalent along the slope. 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

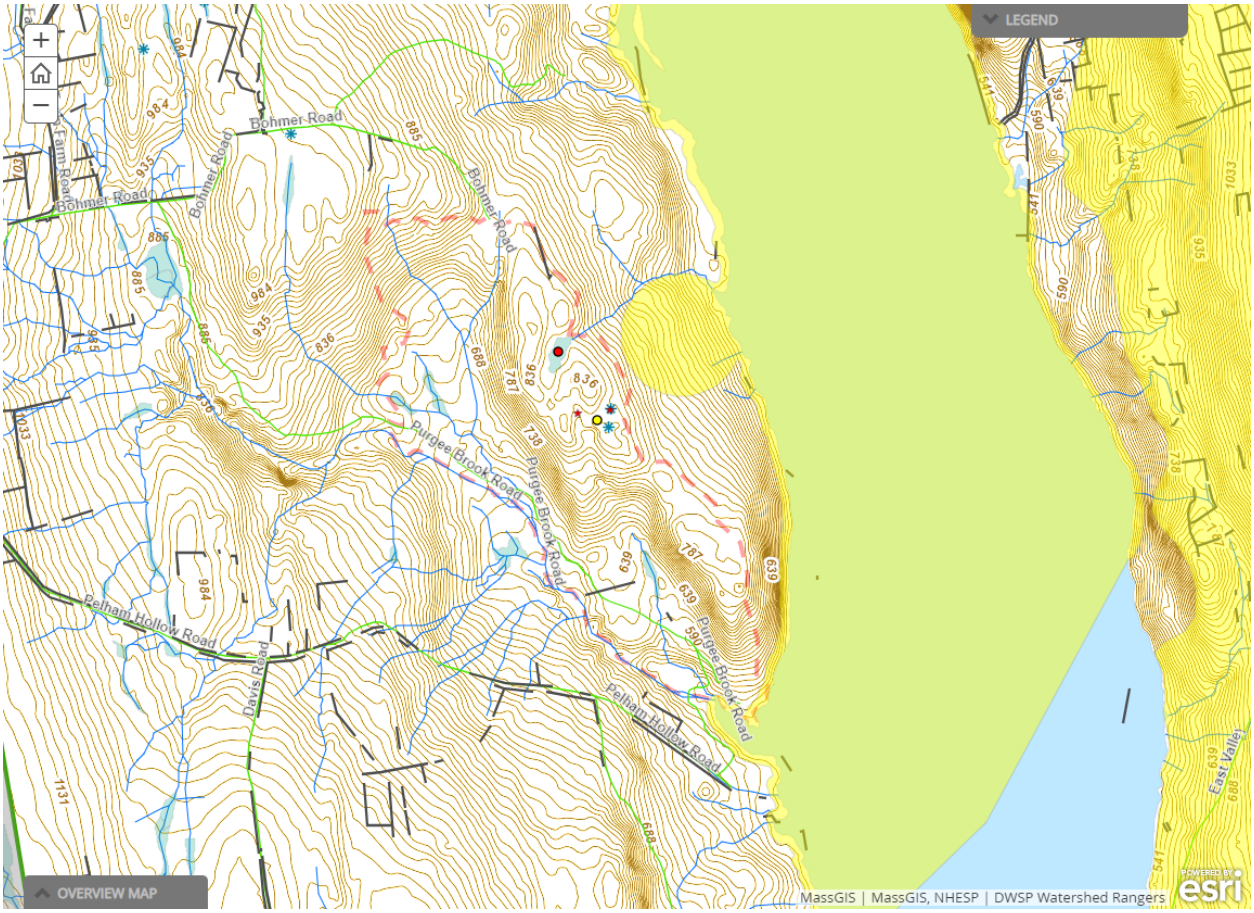
Comments on any unique or unusual sites or habitats on the lot:

There is a beaver pond on top of the ridgeline that feeds directly into the reservoir. The pond is at 810 ' elevation and the flow path is 1,800 ' to the reservoir. There are two NHESP certified vernal pools present.

General wildlife comments:
Moose sign is prevalent. Most hemlock regeneration has been heavily browsed, moose scat is abundant in the lower sections, but still noticeably present on the ridgeline. Barred owl was heard during scouting, several grouse flushed.

Comments on Rare Species/Habitats:

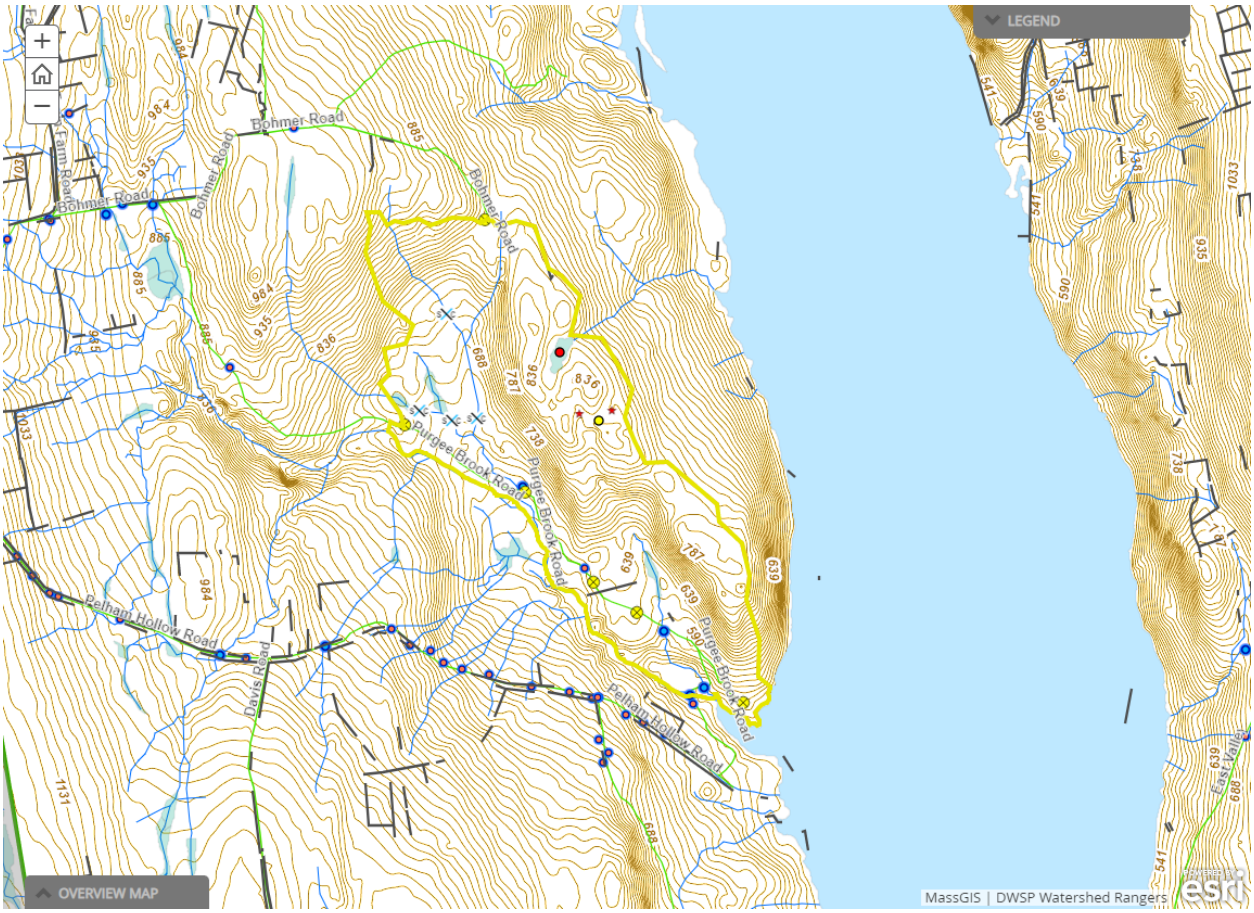
Cavity trees and potential/existing nest trees will be retained if possible. NHESP has determined that certain state-listed sensitive species or habitats may exist with the lot proposal area where Purgee Brook empties into the reservoir. To protect them from unnecessary disturbance, detailed information 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. Two DCR Quabbin Potential vernal pools are present on private property across Cooleyville Rd.



Environmental Quality Engineering

Comments on EQ Issues:

Timber will cross Purgee Brook several times on Purgee Brook Rd and Bohmer Rd on its way back to gate 12. Several stream crossings of intermittent streams will be necessary, stream crossing of perennial streams will be limited to the existing roads and Purgee Brook itself will not be crossed beyond established road crossings.



Forest Access Engineering

Gravel needed: Yes

Landing work needed: No

Culverts needed: No

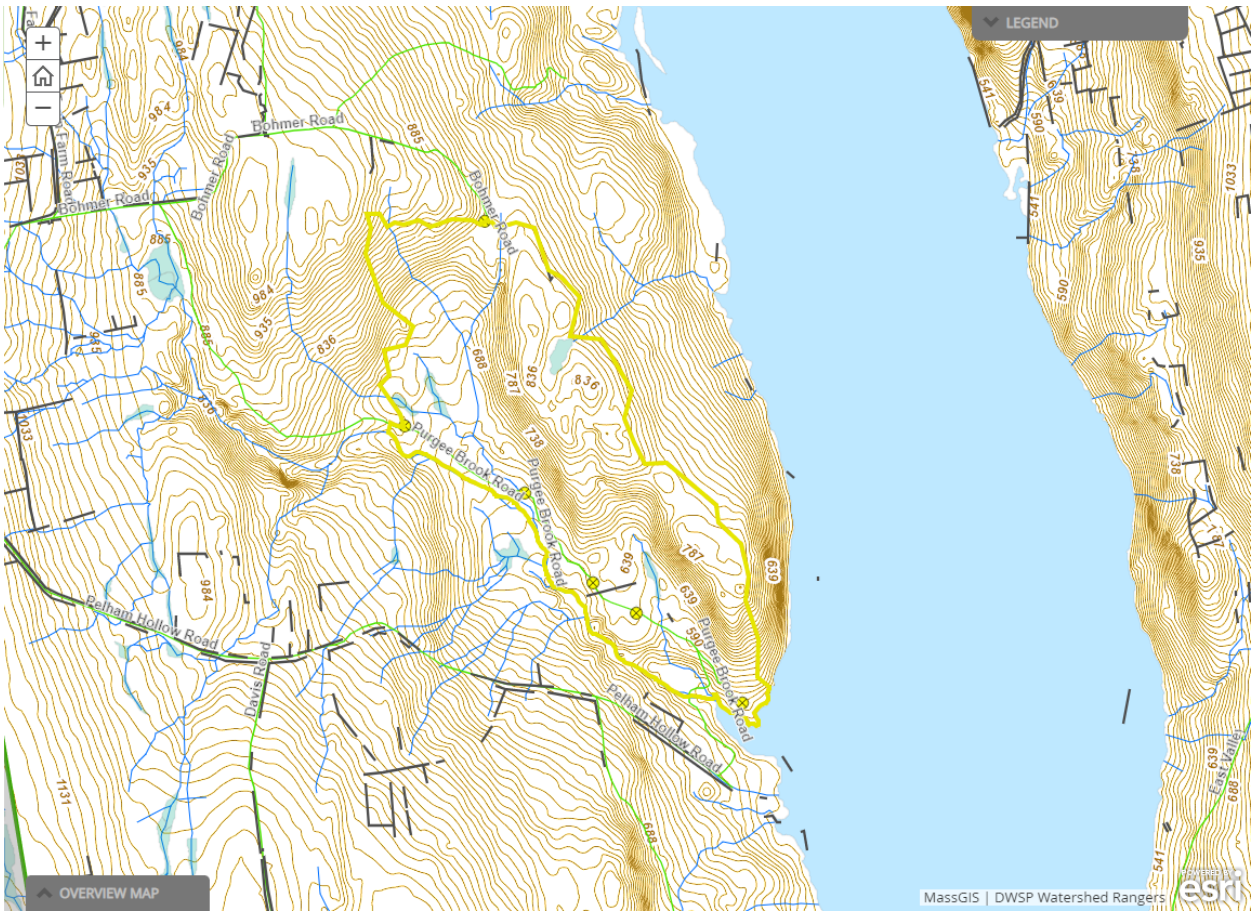
Work needed on permanent bridges: No

Beaver issue: No

Further comment on access needs:

Bohmer Rd (Gate 12 Rd) past intersection 12-3 is badly rutted/washed and the northern end of the lot is currently inaccessible. This road would provide access to existing landings from lot

2038. Spot gravel and drainage work is needed along Purgee Brook road to prevent similar damage.



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