Quabbin Harvest Proposal PE-20-14

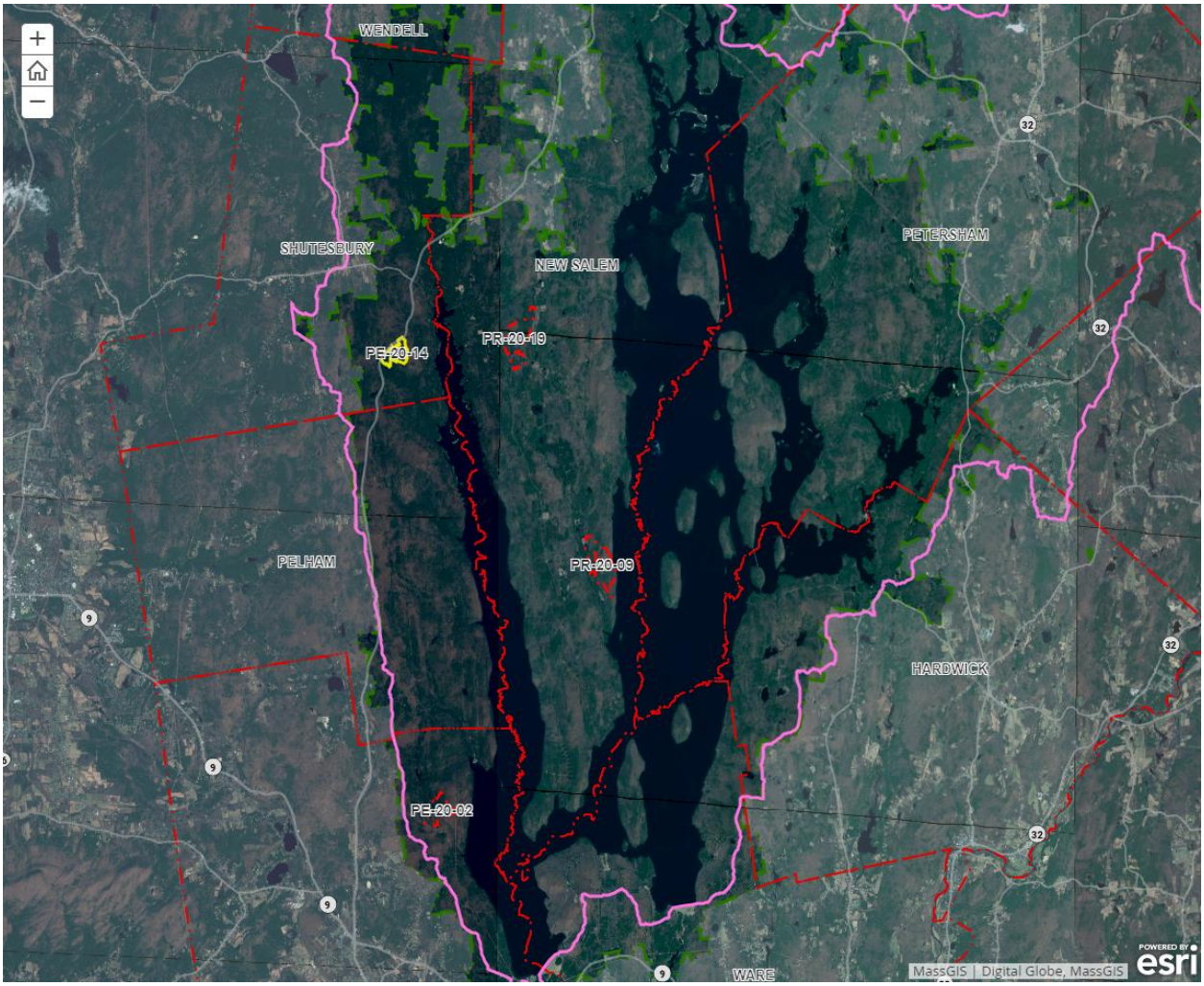
Proposal Goals

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

Proposal Location

This proposal is located along the eastern side of the Daniel Shays Highway (Rte. 202) between Shutesbury Road 2 in Pelham and Prescott Road in Shutesbury.

Total Acres: 69



General Description

	Overstory Type(s)	Acres
Dominant	White pine/hardwood	40
Secondary	White pine/oak	18
Secondary	Oak/hardwood	11

	Understory Type(s)

Dominant	Tree seedlings/saplings dominate the site

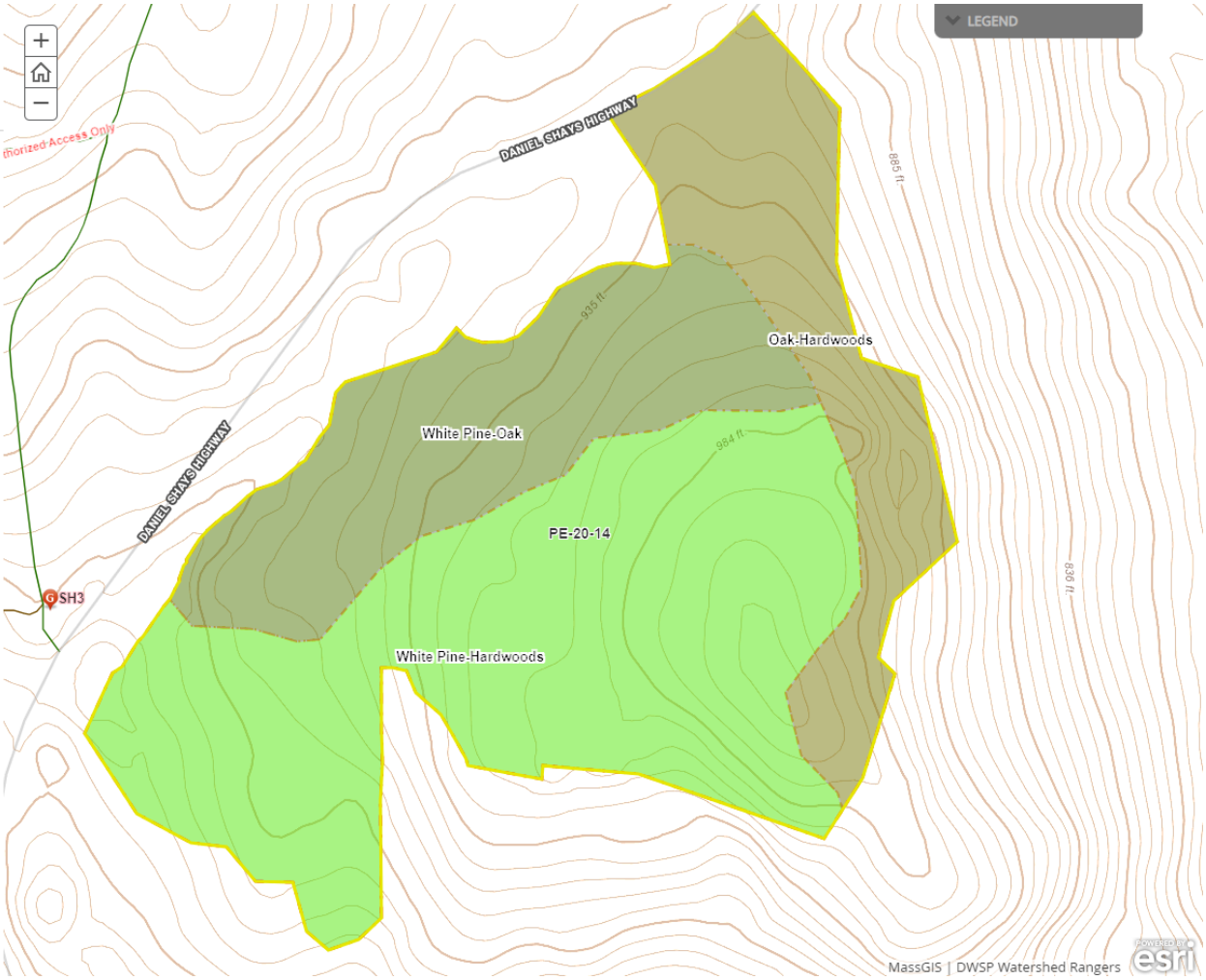
Description of forest composition/condition:

The proposal is dominated by eastern white pine, northern red oak, and eastern hemlock. The white pine is of moderate to good quality and health, with signs of wind and lightning disturbance and quite a few large snapped trees. The overstory white pine is large, mostly >26", with the exception of the hilltop where the site index is lower and all of the canopy trees are shorter and smaller. The eastern hemlock health is very variable, with some pockets of healthy full crowns, and equal amounts of near dead to dead individuals/groups. The northern red oak in the canopy appears to be relatively healthy and likely experienced its first gypsy moth infestation in 2018 (of the 2015-present gypsy moth outbreak). Gypsy moth egg sacks were present in low to moderate numbers on oak throughout the stand. I would expect the site to experience near to full defoliation spring of 2019. Canopy northern red oak is mostly > 18 ", with the exception of the hilltop in the southeast corner of the lot. Stocking ranges through from ~ 60 ft^2 per acre to 100 ft^2 per acre.

The proposed area has two established age classes with the plurality of the area occupied by mature overstory, and a smaller area occupied by 15-20 year old white pine regeneration in smaller (0.1 - 0.2 acre) gaps. This regeneration is the result of two previous harvests. A hardwood harvest was performed in the northern section of the lot in 1982 (Quabbin lot 0296), removing primarily red maple and birch. The western half of this lot also received a hardwood harvest in 1982 (Quabbin Lot 0364) primarily removing red and white oak; this sale overlapped most of the previous. Both harvests appear to have been primarily intermediate thinning but included the mentioned smaller regeneration openings that are now occupied by mostly white pine regeneration, with a minority of the openings also containing black birch regeneration. The other primary location of free-to-grow white pine regeneration is along old skid roads, which are not mapped to be reused for this harvest.

Assessment of Terrestrial Invasive Species:

Japanese barberry and multiflora rose are present in small numbers at the landing, but invasives were not observed in the interior of the lot during a survey.

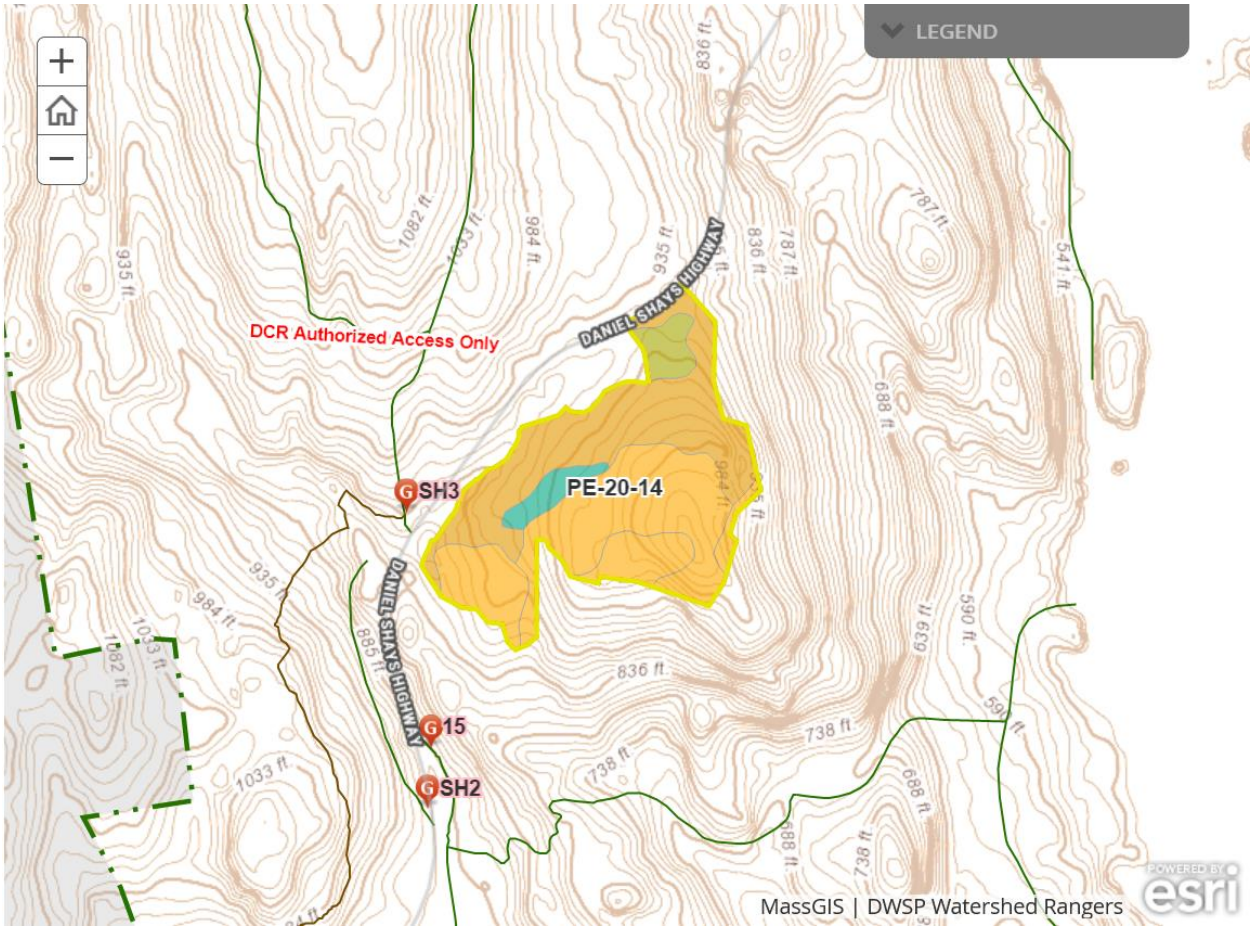


Soils

Drainage Class	%
Excessively Drained	0
Well Drained Thin	35
Well Drained Thick	28
Moderately Well Drained	3

Poorly to Very Poorly Drained	3

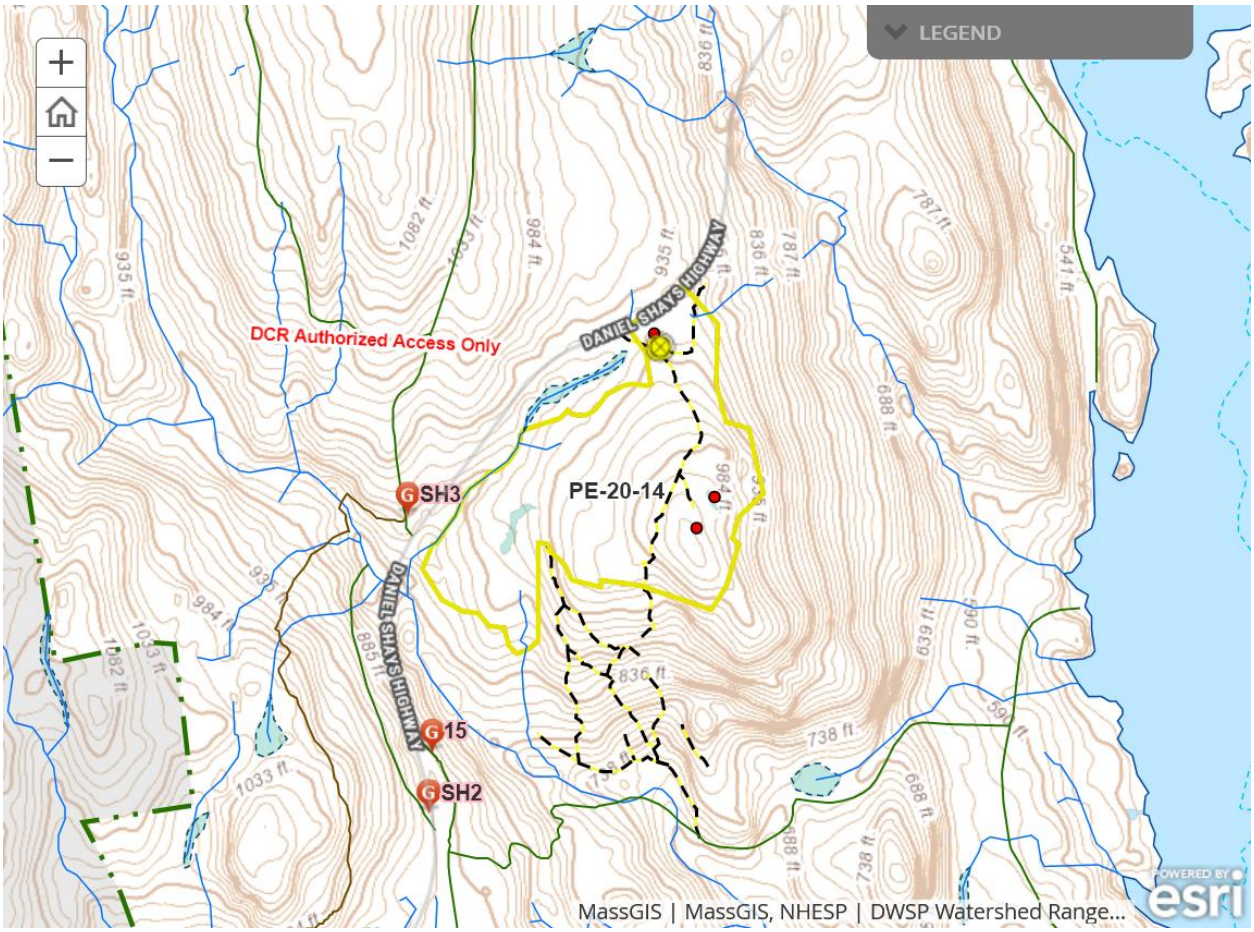
The soils are primarily complexes of Canton, Chatfield, and Hollis soil series coarse loamy to fine loamy soils. These soils are well drained thick to thin. Most of the poorer drained soils are being left out of this proposal due to difficulty in operations and species composition of those soils. Soils within the proposal typically support white pine, mixed oak, and northern hardwoods.



Wetlands

- Wetlands present? - **Yes**
- Streams present? - **Yes**
- Vernal pools present? - **Yes**
- 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**

Wetland to north and west between proposal boundary and 202, will not be treated at this time. The lot's access road passes by a known vernal pool to get to the landing from 202 (the VP is present due to inadequate road drainage). Two vernal pools on the interior of the lot will be buffered by DWSP policy.



Silviculture

Acres in Intermediate cuts: **10**

Acres in prep/establishment cuts: **5**

Acres in Regeneration cuts: **15**

Average regen opening size: **0.75**

Maximum regen opening size: **2**

Description of advance regeneration in proposal area:

Browse of hemlock and non-black birch hardwoods is high, even some of the black birch is being browsed. There are some small (0.25-0.3 acre) openings with viable 15-20 year old white pine regeneration, and similar aged white pine regeneration pockets on old skid roads. Some remnant skid roads are also growing young black birch saplings. These openings would benefit from some further release. There is extensive suppressed, dying or dead white pine regeneration. Little to no hardwood regeneration beyond some black birch. Yellow birch seed sources translating to regeneration may benefit from deliberately increasing downed woody debris.

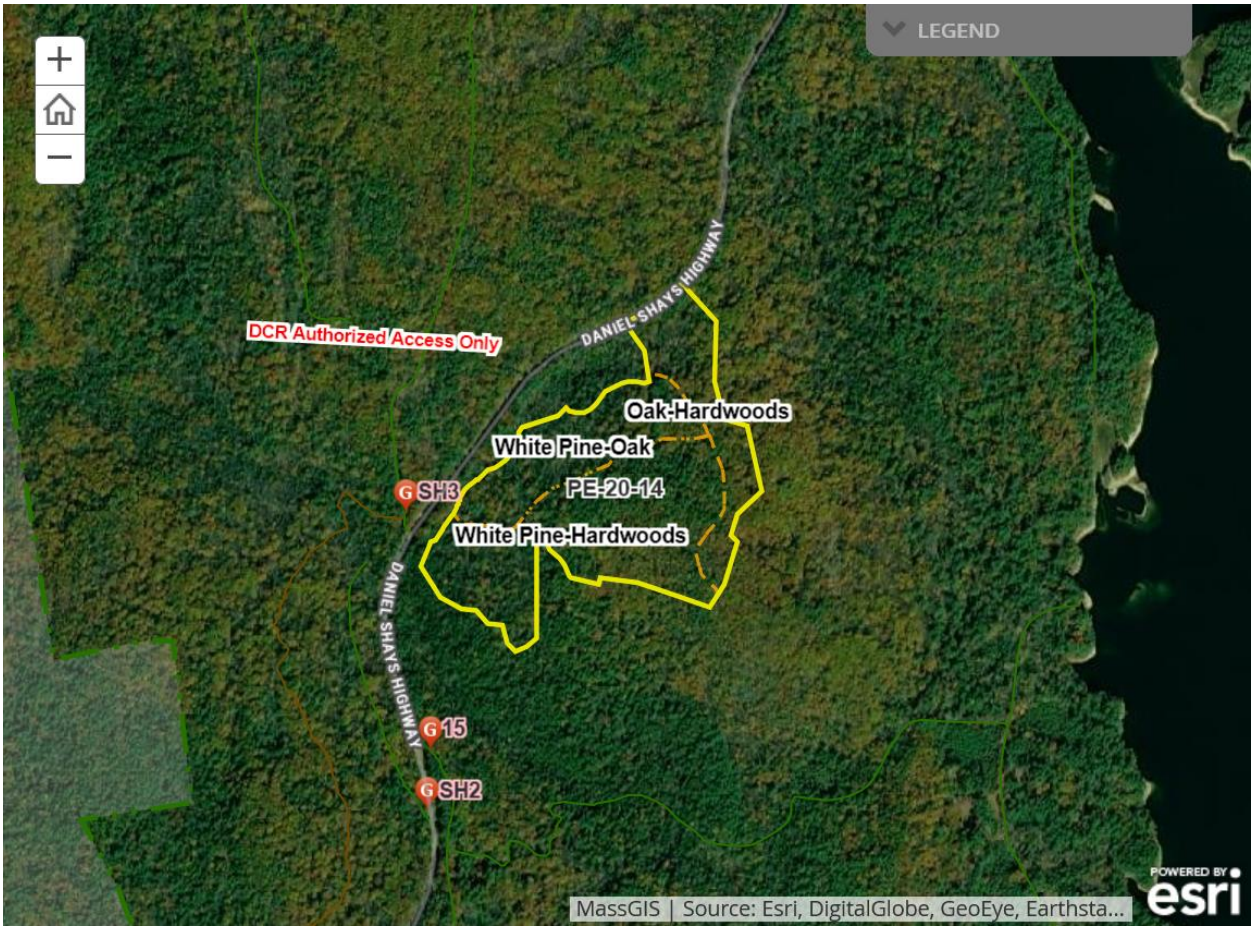
General comments on silviculture proposed:

A majority of the proposal will be treated with intermediate (0.3 acre) to larger (2 acre) regeneration openings with retention. Species retained will favor hardwood species currently present in the canopy but missing in the regeneration (Northern red and white oak, paper and yellow birch, red maple). Openings will be placed to maximize the release of existing viable white pine regeneration. Or, where no viable regeneration is present, oriented to maximize seeding potential of the healthiest canopy seed sources.

Yellow birch is present throughout as codominant or suppressed individuals. The codominant individuals may be serving as a viable seed source but there is little evidence of successful yellow birch regeneration. Codominant and dominant canopy position yellow birch will be preferentially released as part of small (0.25-0.3 acre) regeneration openings and downed woody debris will be increased nearby by culling lower quality stems. Poorer health, lower quality hemlock will be targeted for increasing downed woody debris.

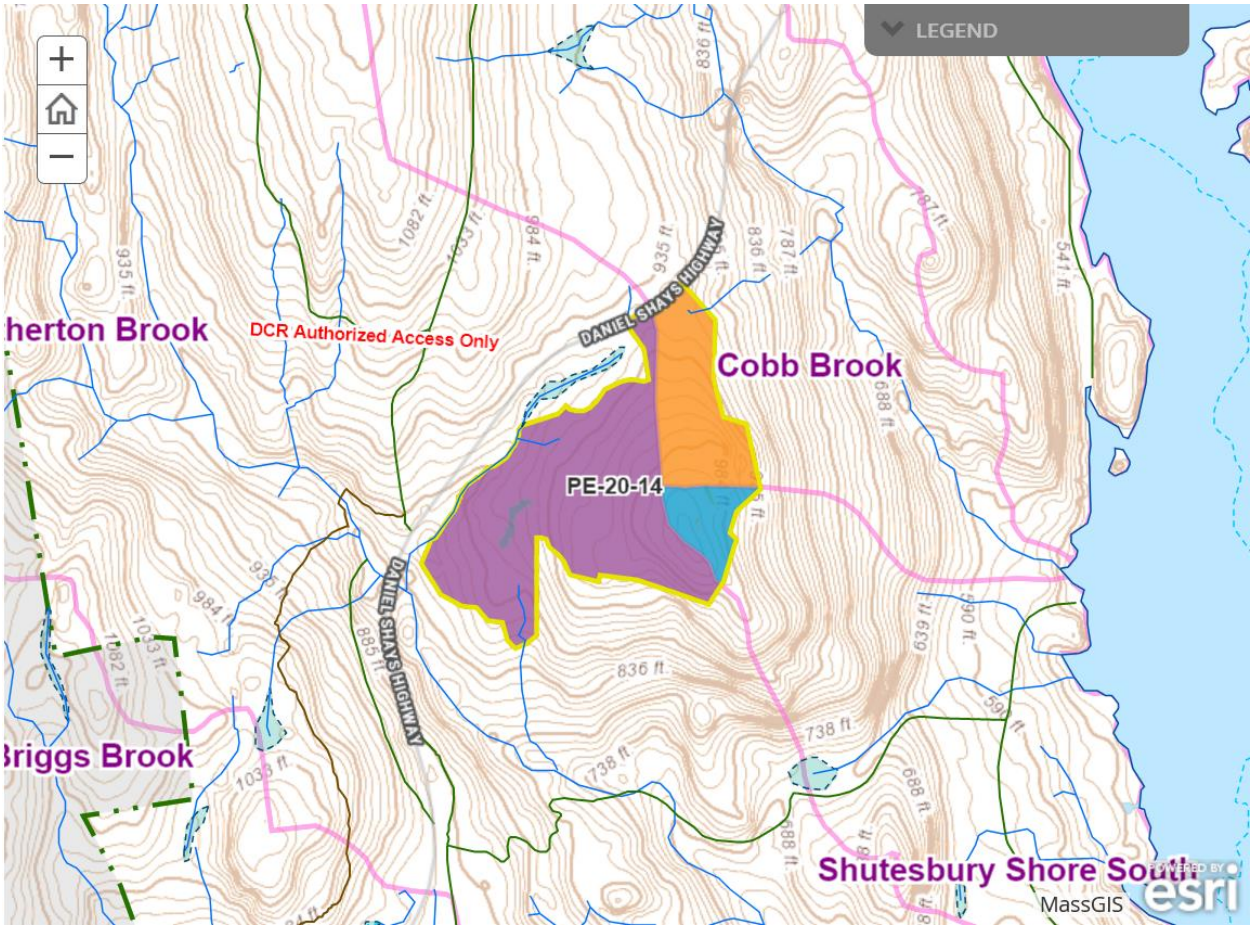
Areas between regeneration openings will be treated with intermediate thinning to improve the vigor of remaining stock for the next harvest. The southeast corner of the lot, at the hilltop where the site index is lowest, will also be primarily treated with improvement thinning since the basal area there is lowest and light is available for regeneration.

Areas of tallest white pine in the central and southwest corner of the proposal are also generally areas with the highest stocking (≥90 ft^2 per acre). These areas will be treated with establishment cuts for irregular shelterwood with reserve to try and recruit a new cohort of regeneration while maximizing retention of tall white pine at the site.



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
47 (Atherton Brook)	1658.1	39.4	414.5	47
46 (Cobb Brook)	535.7	5.8	133.9	16
20 (Shutesbury Shore South)	283.9	21	71	6



Harvesting Limitations

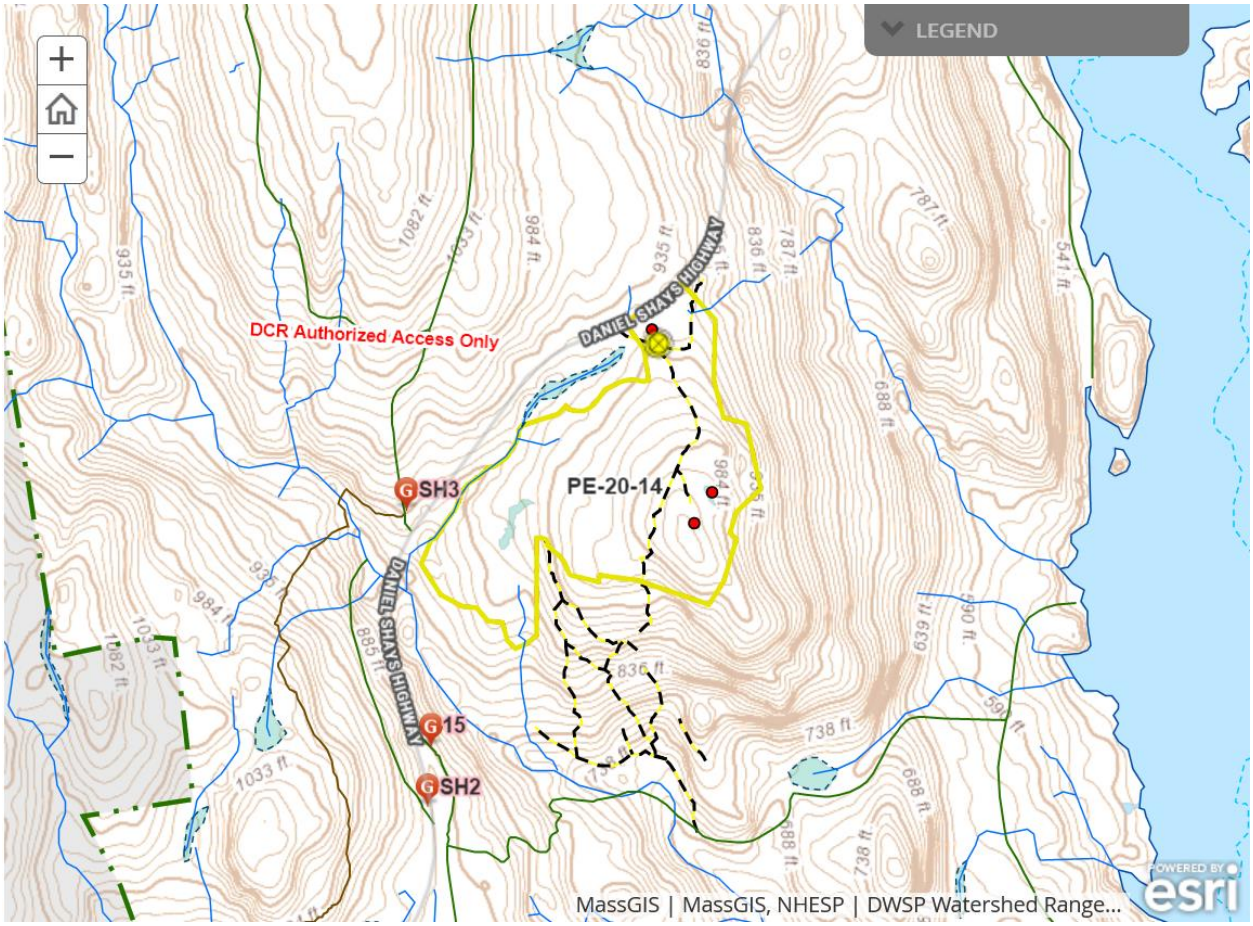
Forwarder required: **No**

Feller/processor required: **No**

Steep slopes present: **No**

Comments on harvesting limitations:

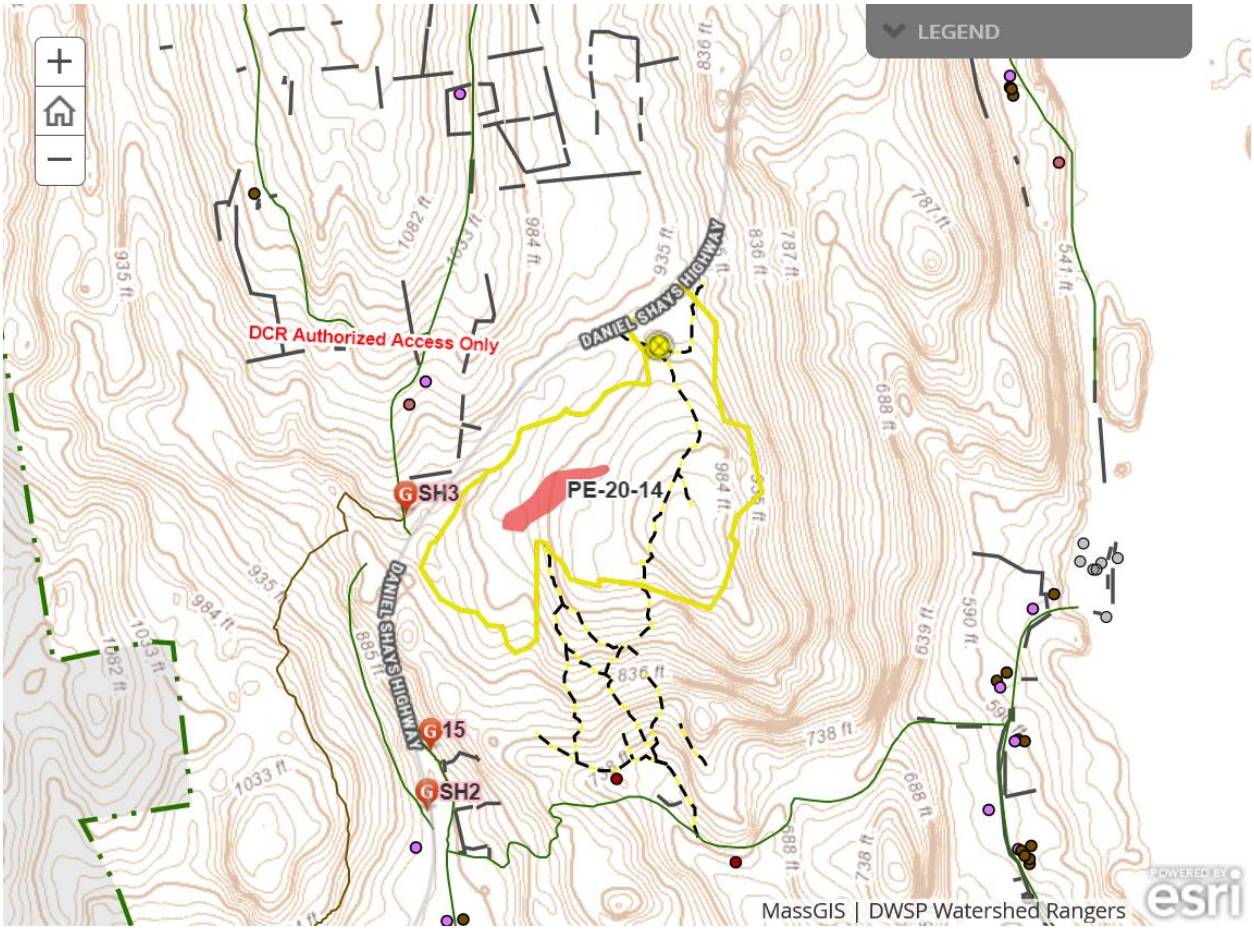
None.



Cultural Resources

Comments on Cultural Resources:

There are no known cultural resources within the proposed harvest area. If any cultural resources are found during subsequent activity on the site they will be mapped, protected and referred to the DCR Archaeologist for further comment.



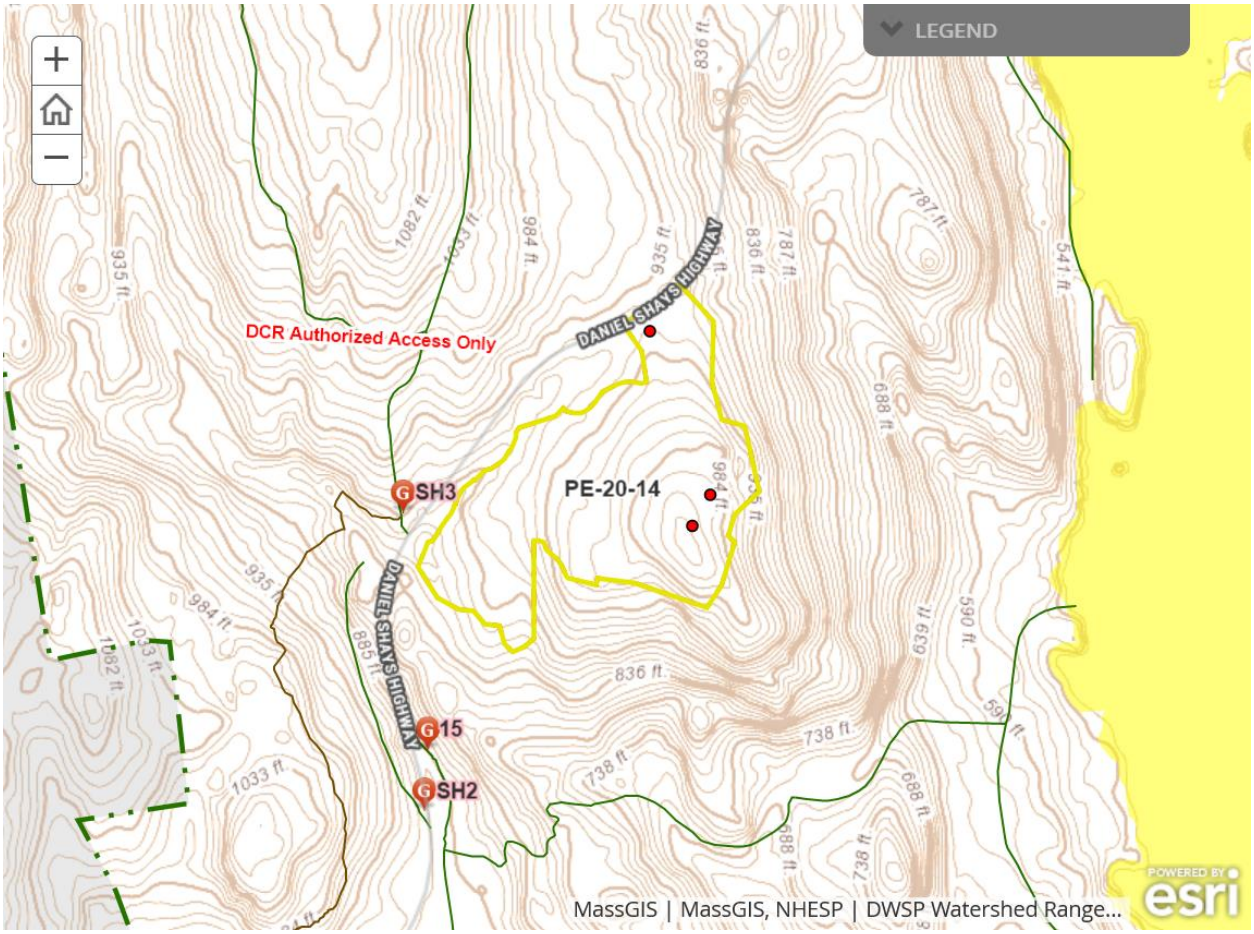
Wildlife Resources & Rare and Endangered Species

General Wildlife Comments:

Sign of deer and moose browsing, and tracks and pellets observed in the snow.

Comments on Rare Species/Habitats:

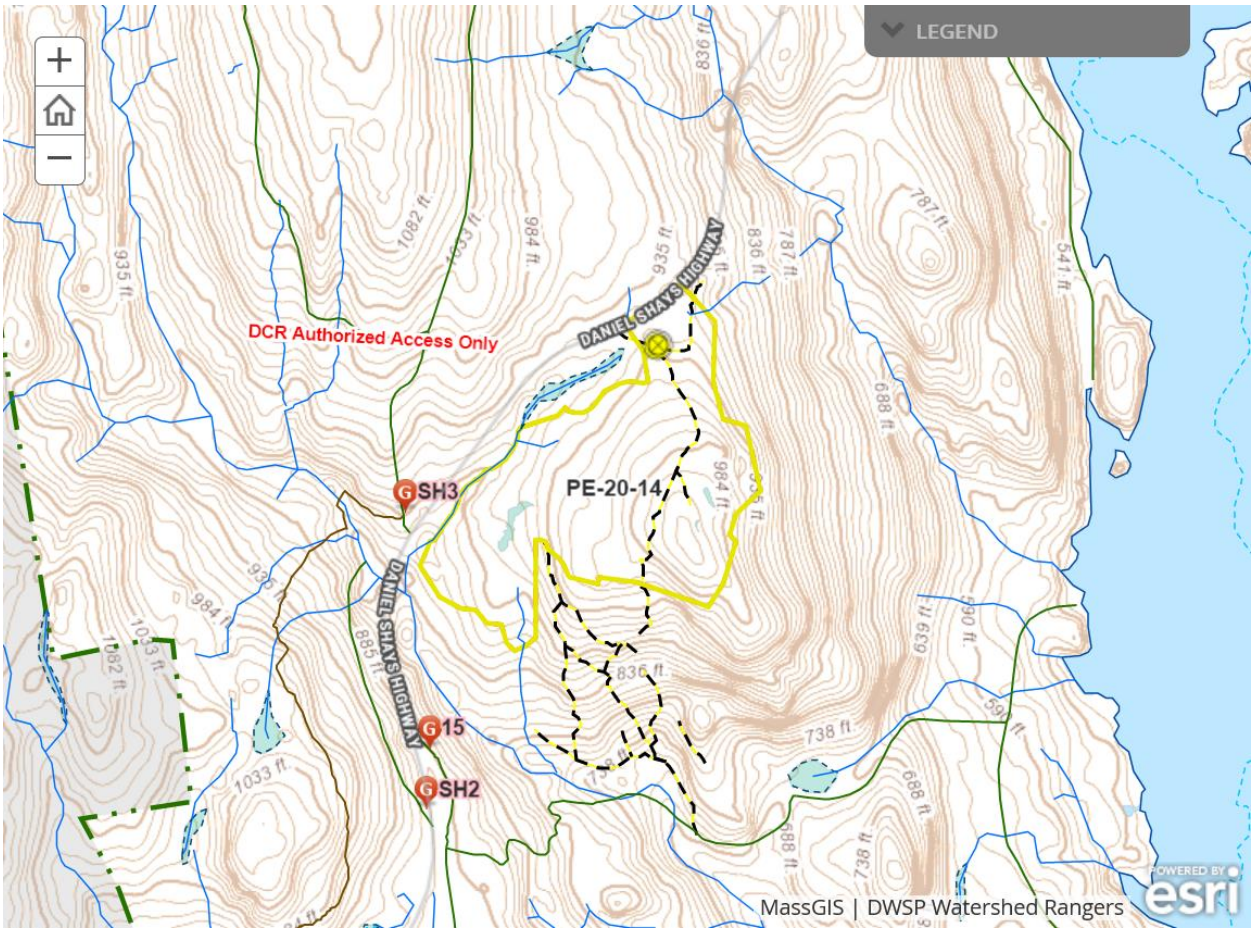
No Rare Species or Habitats are known to be within the proposed area. Should any be found in subsequent activity, DWSP will coordinate with NHESP and follow recommendations to protect these species during the proposed activity.



Environmental Quality Engineering

Comments on EQ Issues:

No crossings of perennial streams are proposed.



Forest Access Engineering

Gravel needed: Yes

Landing work needed: Yes

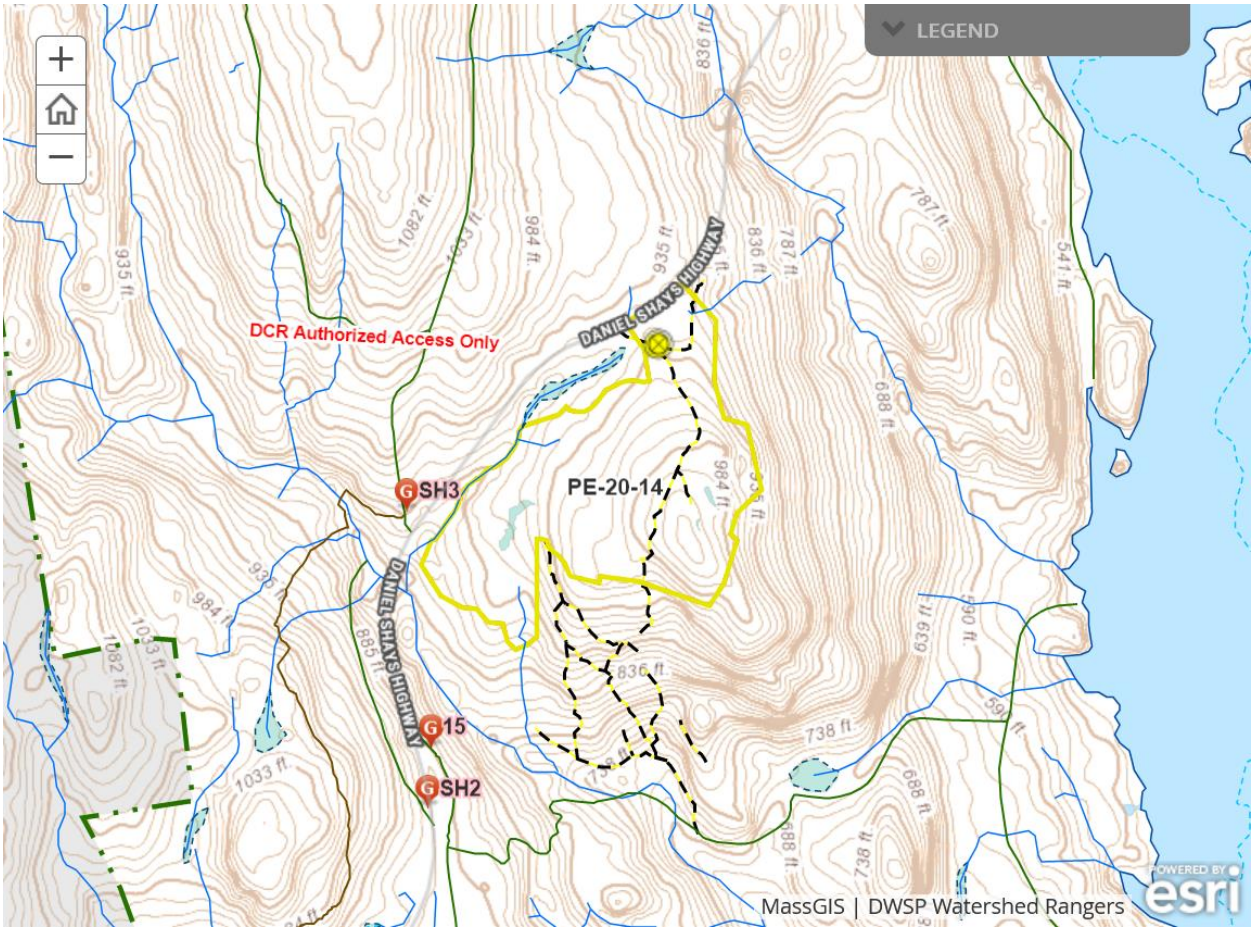
Culverts needed: Yes

Work needed on permanent bridges: No

Beaver issue: No

Further comment on access needs:

The access to the main landing will need gravel, and potentially gravel at the landing. Culvert/drainage work would be helpful on the access road, but must be sensitive to the adjacent vernal pool present.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DWSP FY 2020 Forestry Proposals – Master Legend for story maps