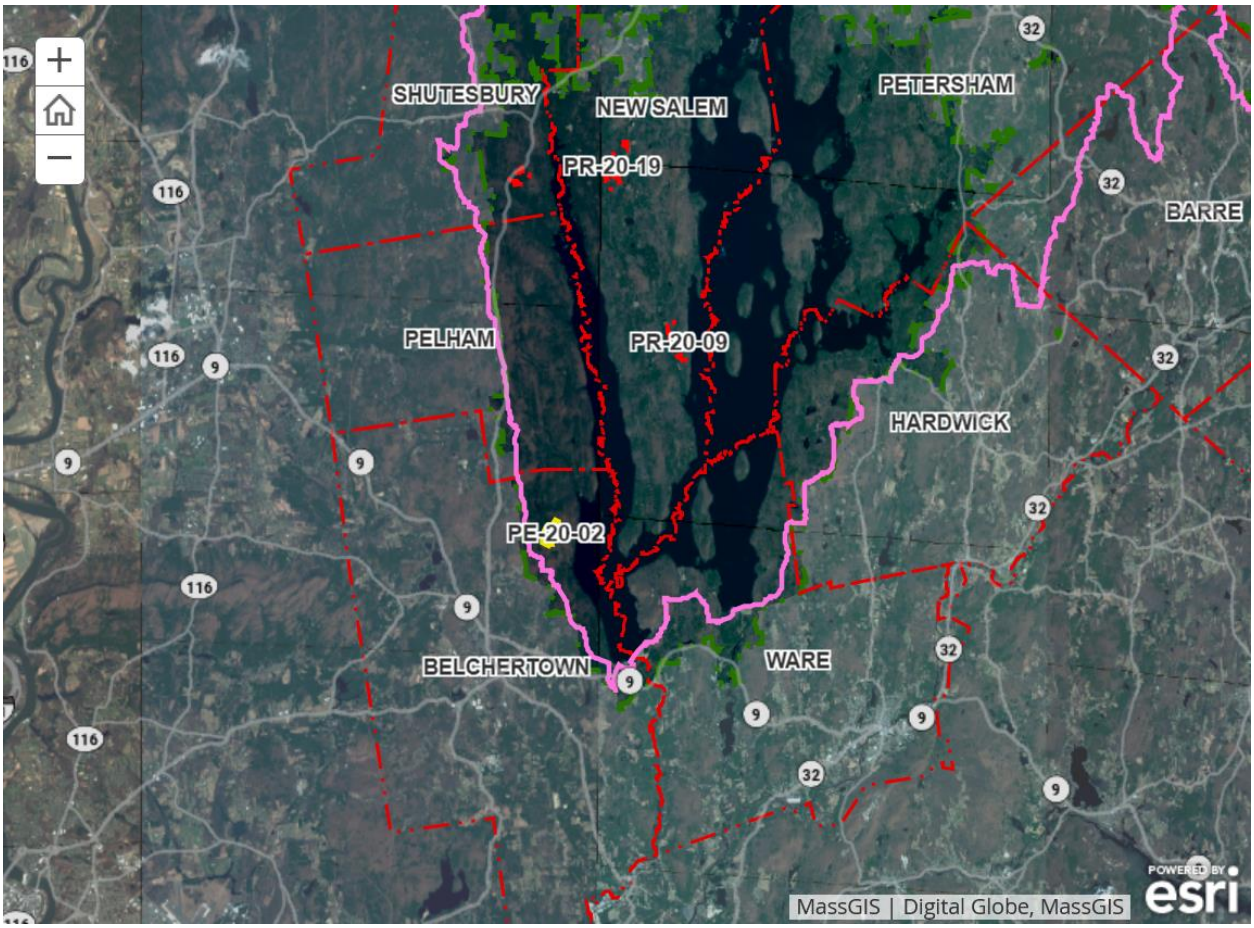
Quabbin Harvest Proposal PE-20-2

Proposal Goals

Proposal Location

From an existing landing on east side of Jucket Road north along road to intersection with a road sometimes referred to as Airplane Road. East along road past old landing, which will be the main landing for this proposal, to a point where forest type changes from WO to RO, head SE, then S then E to power line. Follow power line south to GM salvage proposal PE-19-2-S and follow that proposal boundary W then S then SW to where land drops off steeply to a small brook. Follow the top of this slope generally NW to top of slope of another brook, follow top of that slope N to Jucket Road and follow eastern edge back to starting point, excluding an acre or so that was previously cut has regenerated.

Total Acres: 87



General Description

	Overstory Type(s)	Acres
Dominant	Oak, mixed - dry site	42
Secondary	White pine/oak	28
Secondary	Norway Spruce	9

	Understory Type(s)
Dominant	Dry site - blueberry/huckleberry

Dominant	Tree seedlings/saplings dominate the site

Description of forest composition/condition:

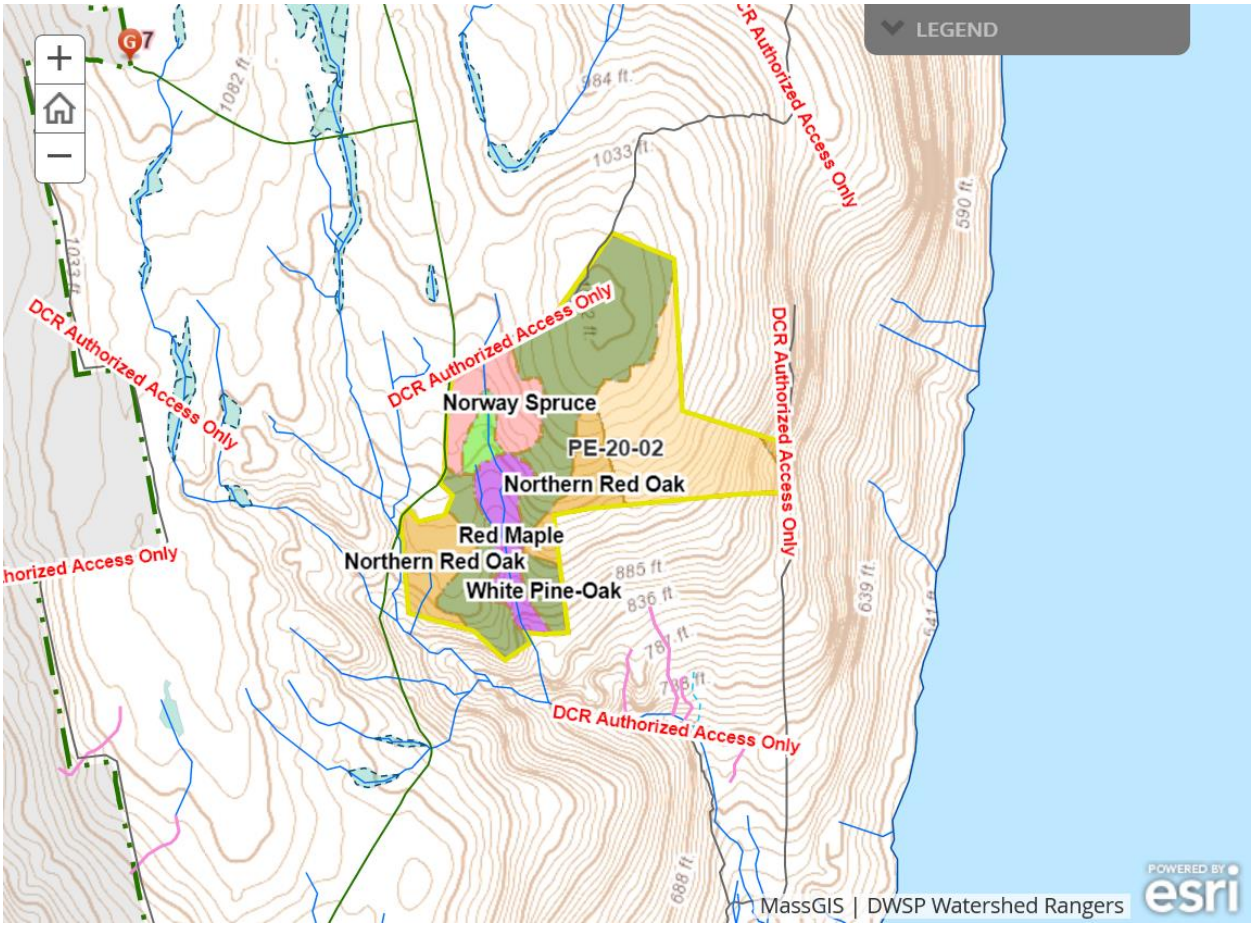
Half of the area is predominately oak, typed as oak-hardwood but now mostly mixed oak, on a dry site. Within this, there are a few pockets of mostly northern red oak generally on better sites with more soil moisture. Species present are red oak and black oak with some scarlet oak, white oak, red maple, white pine, black birch, and white birch. Scattered hickory, black cherry, and ash are also present. Much of this type had some past thinning where mainly firewood was cut. The type still has many poorly formed stems and is not very vigorous. The drought of 2015-16 has had an impact and the stand has been infested with gypsy moth for at least three years now. There are many snags present, and oak mortality seems to be accelerating but so far hasn't been as bad as in the stands to the south (PE 19-2S). It is assumed that wood borers are also building up as is root rot.

The next most common type is white pine/oak much of which is typed WH on the map but due to past harvests and succession is now mainly white pine, red oak, and black oak. Other species present are red maple, black birch, and white birch with scattered hickory and black cherry. The same insect/disease problems mentioned above have impacted this type too. Also, some of the white pine regeneration has died partly due to being stagnant for too long but most likely various needle casts have also had an impact. This type also has many poorly formed stems but is generally more vigorous as the pine is better adapted to growing conditions present here. It is expected that most of the proposal area that is cut will regenerate to white pine/hardwood.

The walled area of white pine/Norway spruce in the north end of the proposal appears to have never been thinned and doesn't have much regeneration under it. This section has some well formed, medium sized White pine with good crowns that would benefit from being released. There are probably a few other pockets of white pine in the other types that would fit this description and all would benefit from a shelterwood seed cut. The dominant species here is Norway spruce probably planted in the '30s with white pine common throughout, especially east of the brook. Much of the spruce is self-thinning but the stand is still overstocked with many trees in various stages of decline or decay. Scattered red maple, black cherry, and oak are also in the overstory. Gypsy moth has also affected the hardwoods here.

Assessment of Terrestrial Invasive Species:

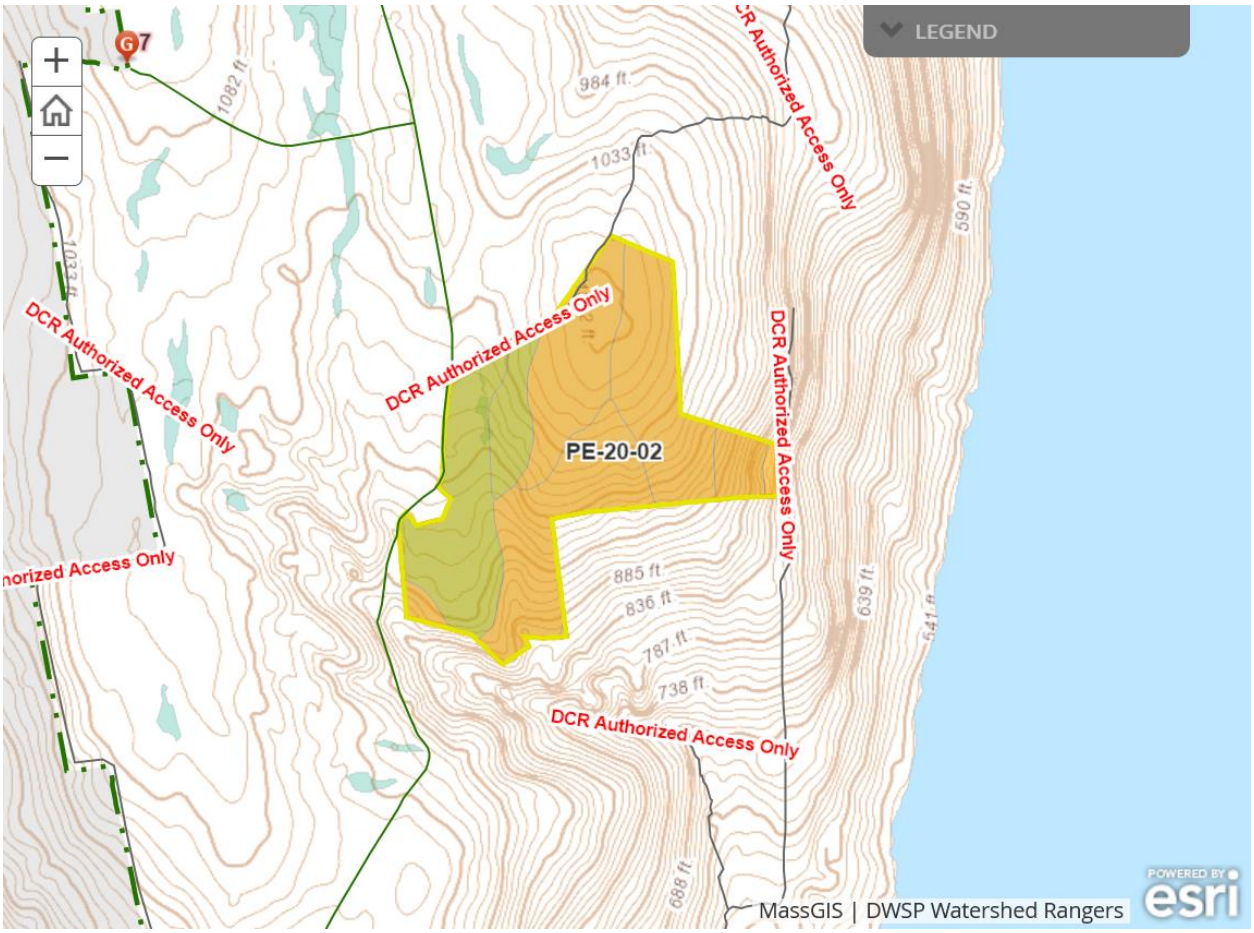
Not many invasives were seen on initial scouting trips, mainly Japanese barberry and some honeysuckle around the old landings and cellar holes.



Soils

Drainage Class	%
Excessively Drained	0
Well Drained Thin	1
Well Drained Thick	69
Moderately Well Drained	30
Poorly to Very Poorly Drained	0

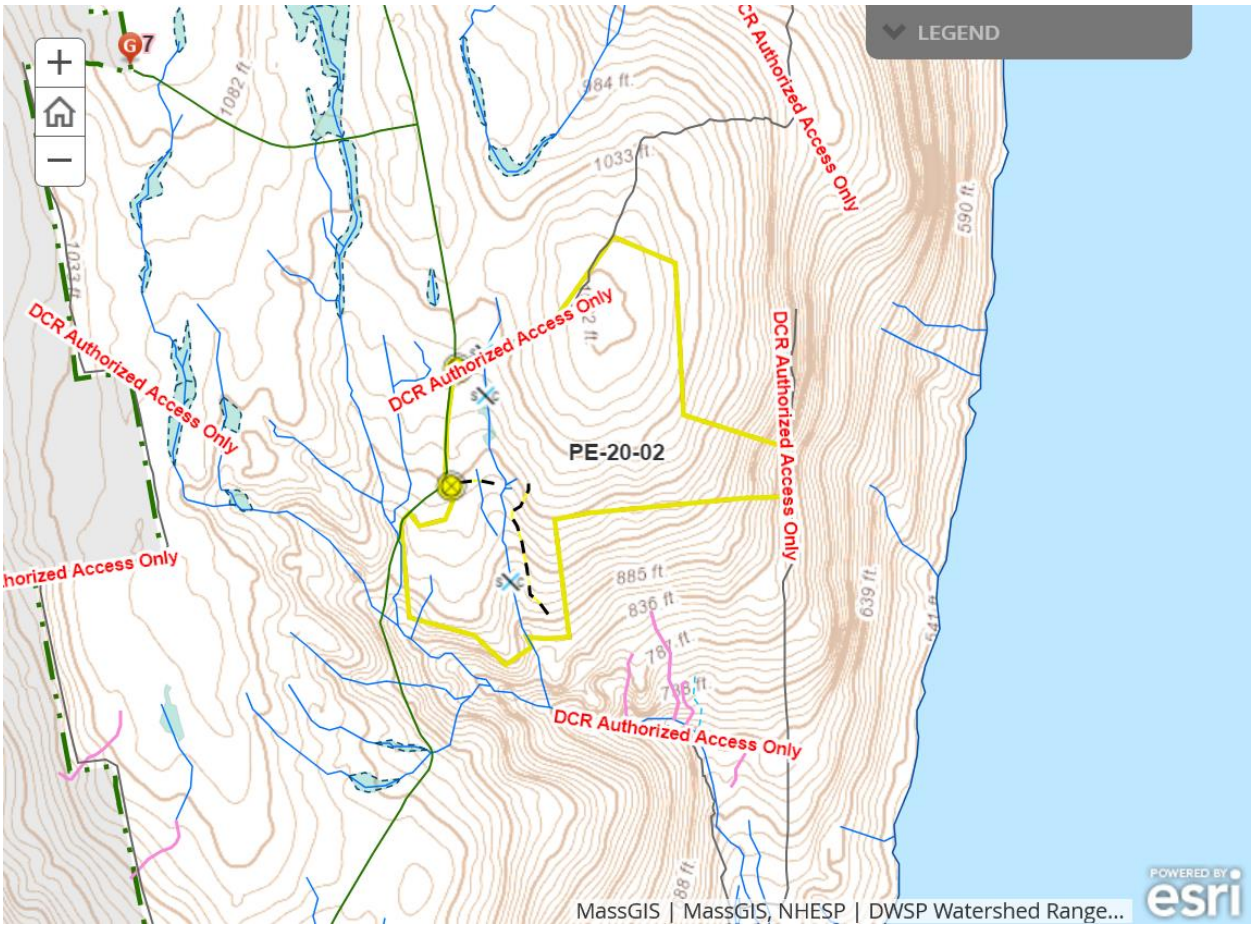
58 acres of Canton fine sandy loam, extremely stony, 26 acres with Scituate fine sandy loam, extremely stony, 1.3 acres with Gloucester gravelly fine sandy loam, extremely stony about 1 acre of Charlton-Hollis-Rock outcrop complex. The moderately drained soils are all on the western 1/3rd of the lot, rest of the area is well drained.



Wetlands

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

One stream present that starts at the north end as an intermittent stream that flows south picking up water from several intermittent feeder streams, seeps and a couple of small associated wetland areas. There are three crossings. The most northern is an existing stone culvert in the old road. Further south is another in an old skid road that has a culvert. The next old crossing location is in the trail from the southern landing and that crossing has degraded. A new trail and crossing will be created to the south. Portable bridges will be required for the southern two crossings. There are some areas that are poorly drained and will be avoided. The largest is the central part of the spruce stand between the two mapped brooks. There is also an unmapped wetland area and intermittent stream in the southwest corner of the lot.



Silviculture

Acres in Intermediate cuts: **5**

Acres in prep/establishment cuts: **4**

Acres in Regeneration cuts: **18**

Average regen opening size: **1**

Maximum regen opening size: **2**

Description of advance regeneration in proposal area:

Advance regeneration is well distributed across the area. Most of the regeneration is less than 10' tall. Most common species is White pine, followed by black birch and red maple. There is also scattered red oak, black oak, white oak, white birch, hickory, hemlock, and ash. Some Norway spruce has also become established in the areas with spruce in the overstory though regeneration is generally sparse here. Other than under the spruce there is generally enough regeneration present to fully stock the stand if overstory was cut. There are smaller areas with very dense pine regeneration.

General comments on silviculture proposed:

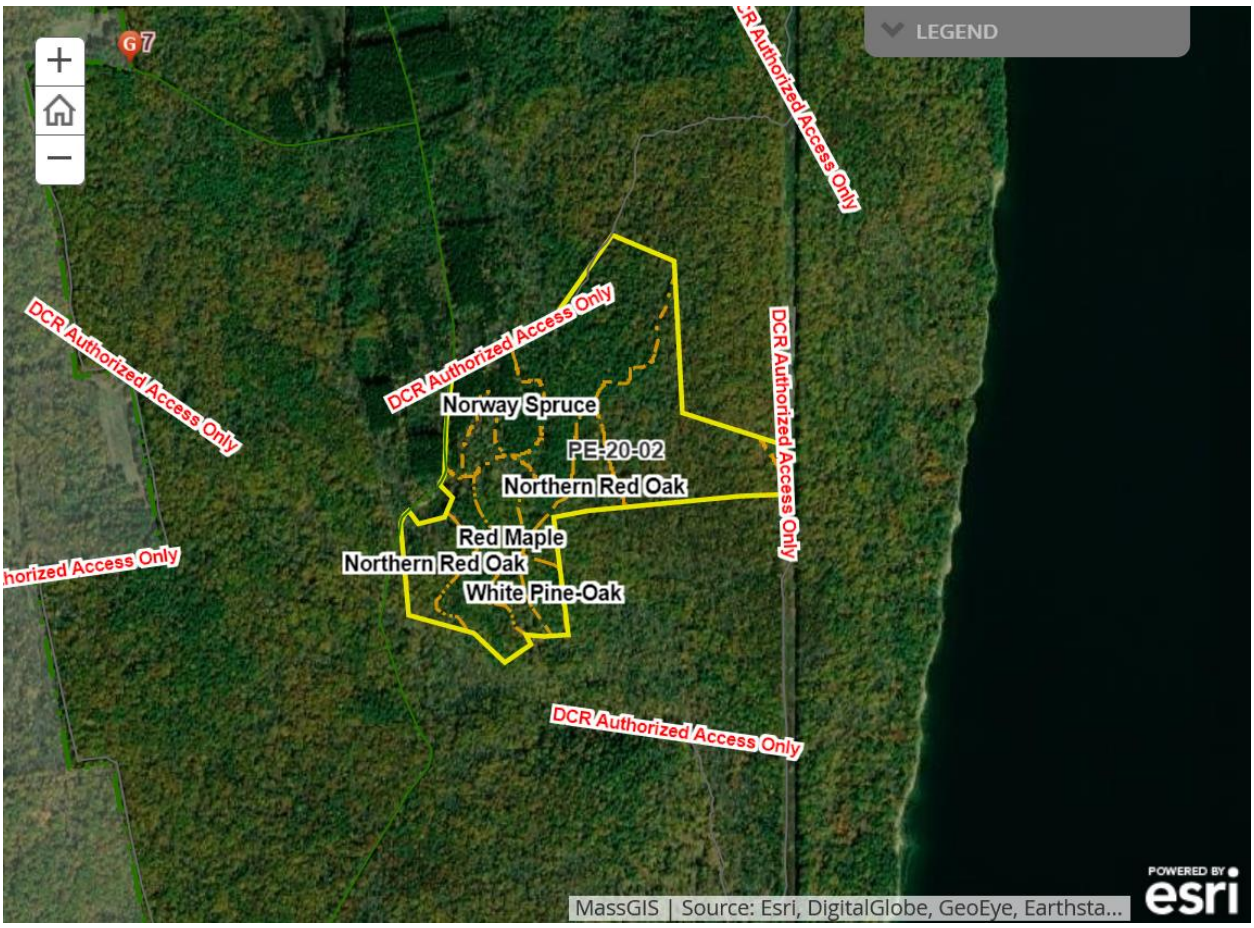
Group selection will be main silviculture used here with openings from around 1/4 - 2 acres in size being created. Openings will be irregular in shape as much as possible and will be spaced at least 100' apart. At least 5 square feet of basal area will be retained in most, if not all openings over 1/2 acre. Edges of openings will be thinned to promote additional regeneration in these areas, further release the opening edge trees and to minimize the amount of potential disturbance to regeneration in future harvests.

The walled area of white pine/Norway spruce will be treated with partial cutting at this time rather than with regeneration openings, based on recent studies suggesting the importance of maintaining a variety of conifer habitats, including Norway spruce, as hemlock declines due to Hemlock Woolly Adelgid and other insects.

Site quality in this proposal area is generally average, with many stagnant and poorly formed trees other than the white pine mentioned above. There are a few other areas with better formed trees and good species composition that could benefit from a thinning. Many of the trees in these areas are younger or at least smaller in diameter and should increase growth rate and carbon uptake quickly so would be worth retaining in the stand. Where these areas are encountered near skid trails or openings they will be thinned.

For all treatments poorly formed, less vigorous trees and/or diseased trees will be targeted for removal. The exception to this would be some stems with active wildlife use seen such as den, stick nest and cavity trees. Better formed individuals will be retained of all species currently present to maintain diversity and hopefully increase it through new regeneration establishment.

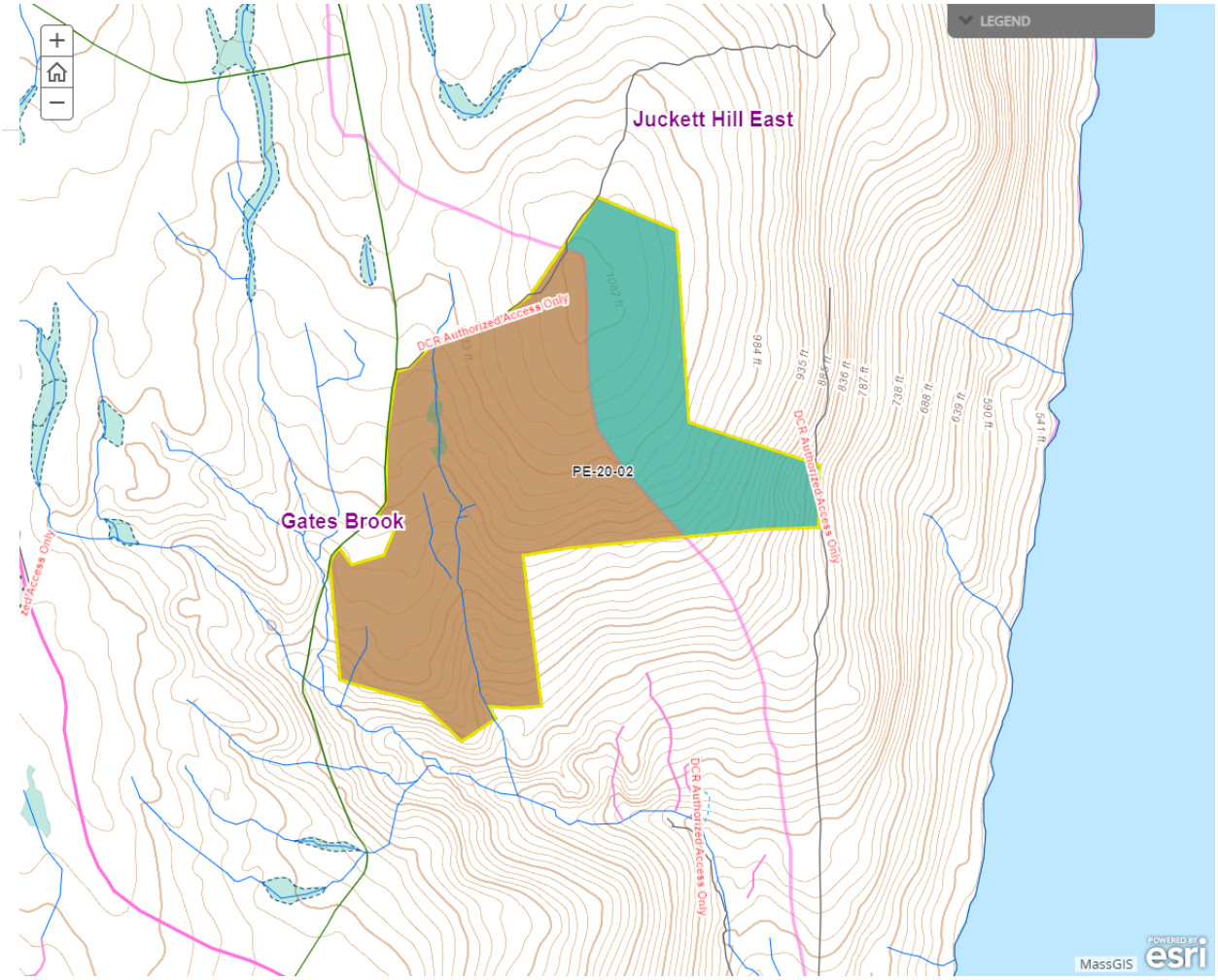
By replacing low health/poorly growing individuals with a new cohort of regeneration the long term carbon sequestration of the site should be increased.



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
61 (Gates Brook)	551	3.25	135	60
17 (Juckett Hill East)	594	0	149	26

Note that gypsy moth salvage proposal PE-19-2S which covers lot S11SQ, which has not yet been sold, is also in these subwatersheds. Since only about 22 acres will be regenerated in this proposal it is unlikely the 25% limit would be exceeded.



Harvesting Limitations

Forwarder required: **No**

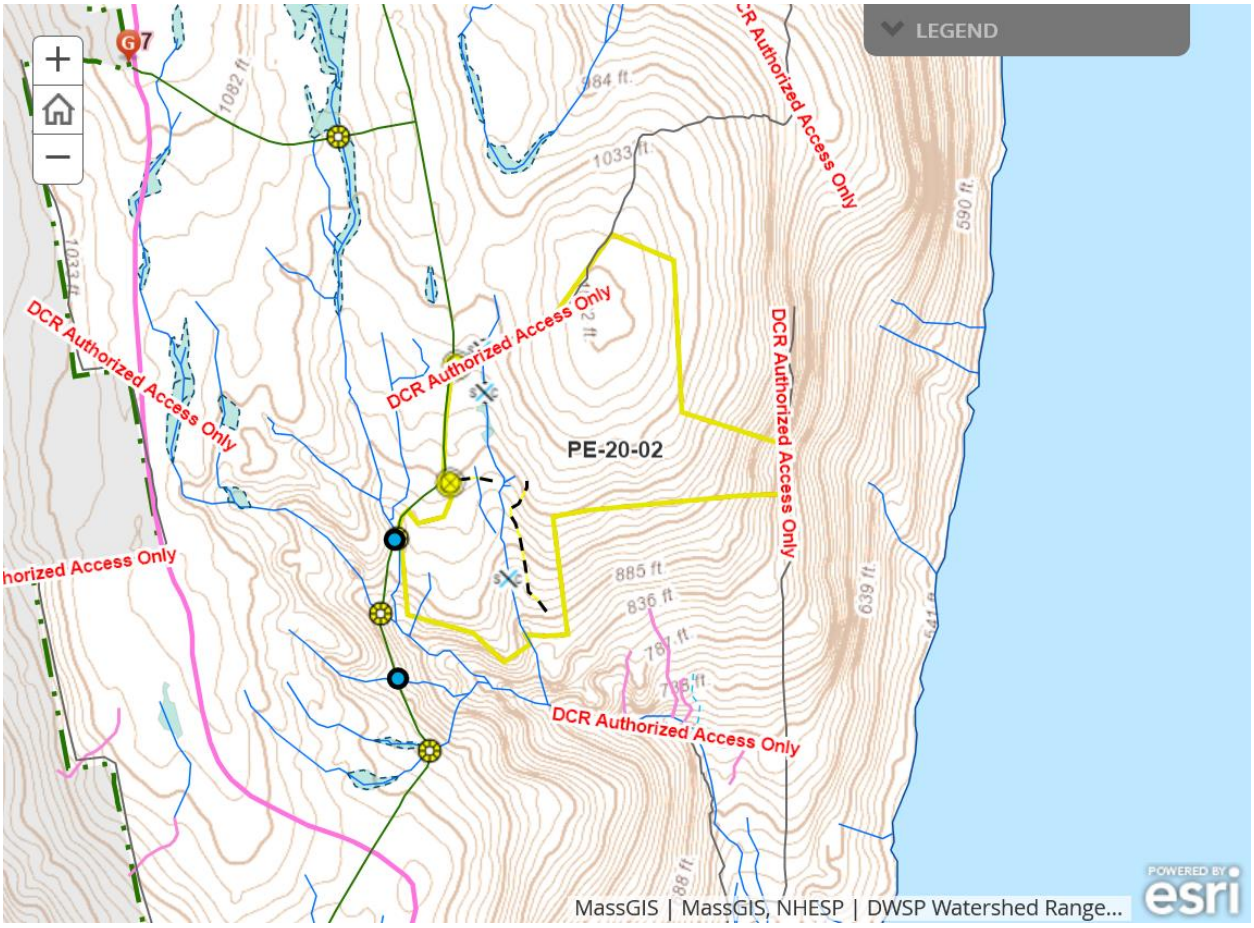
Feller/processor required: **No**

Steep slopes present: **No**

Comments on harvesting limitations:

There are numerous stone walls on the western part of the proposal and depending on the final layout of skid trails a forwarder may be required to navigate them. Due to the amount of low

quality trees an attempt will be made to keep trails straight and otherwise avoid needing to restrict equipment. The northern crossing is a little tricky due to the close proximity to a stone wall. Portable bridges will be required for 2 southern stream crossings.

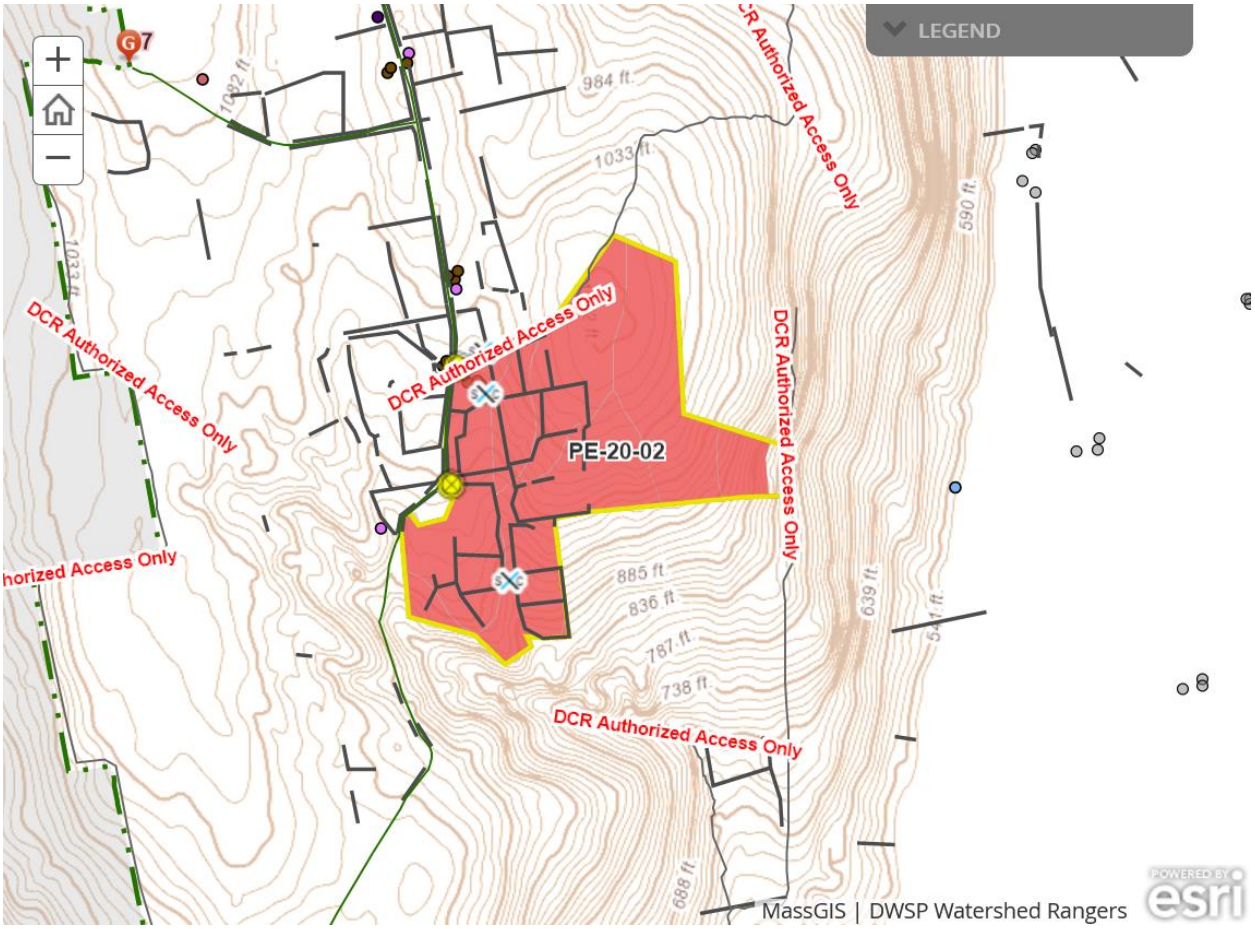


Cultural Resources

Comments on Cultural Resources:

Historic features such as stone walls and cellar holes will be avoided and/or protected as per current DWSP policy. Almost all the proposed area has been logged at least once during the last 30 years and appears there are barways sufficiently wide to allow modern equipment access with minimal disturbance to them. In the event that such a barway doesn't exist, if possible, the wall will be crossed where previously disturbed or at a section that is low and made of tossed stone. Features that may get obscured by snow or vegetation will be flagged. Main skid trails with unstable soils will be armored with slash to avoid excessive rutting. If applicable, DWSP will follow any additional recommendations from DCR's Archaeologist regarding the protection of sensitive sites.

Surface stone is prevalent overall except the southeastern part of the proposal where stone might have been removed for a field back in the 1900's. Microtopography is pronounced over much of the rest of the area. Some of the walled areas are fairly flat as is the northeastern corner.



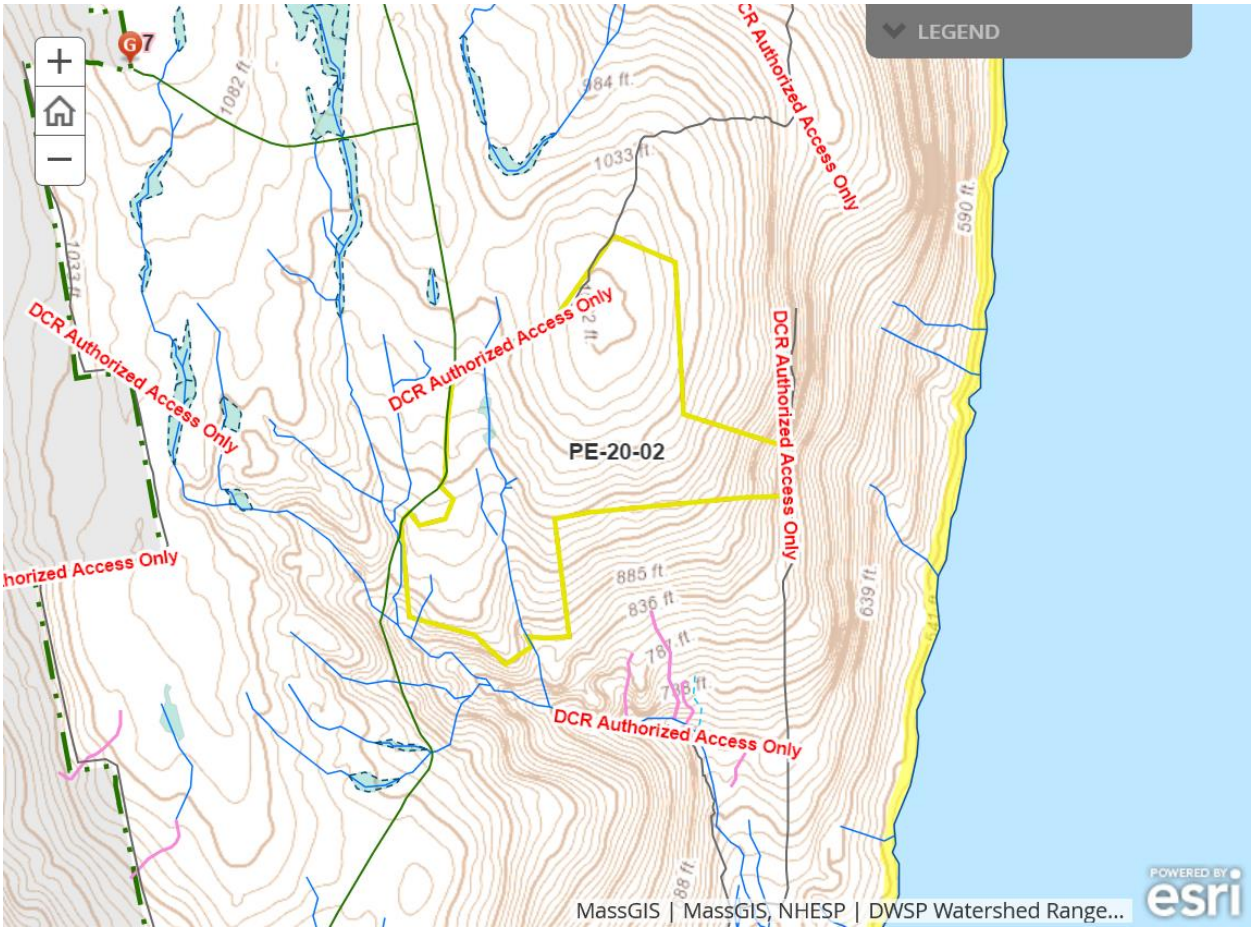
Wildlife Resources & Rare and Endangered Species

General Wildlife Comments:

The usual wildlife species occupy this area. Deer seem fairly abundant and moose signs were also seen so at least moderate browsing is expected. Norway spruce, though non-native, is not an aggressive or invasive species and is providing good conifer habitat for several dependent wildlife species. No vernal pools within this area.

Comments on Rare Species/Habitats:

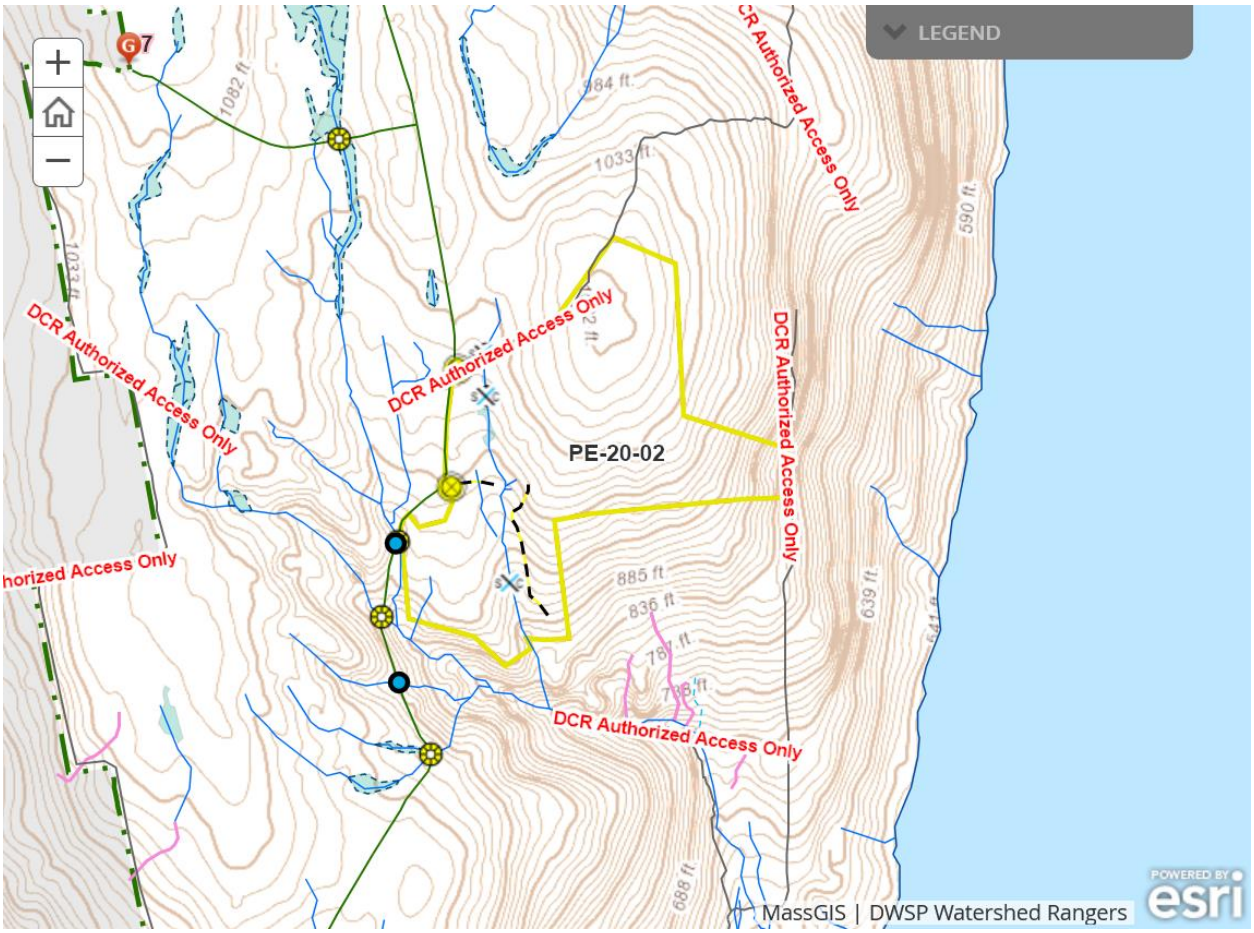
None are known to be present within the proposed area.



Environmental Quality Engineering

Comments on EQ Issues:

There are three known stream crossings which might be needed on this proposal. The northern most crossing is an existing stone culvert in the old road sometimes known as Airplane Road. The middle crossing is further south on the same seasonal stream, below a small pool. There is an existing ductile iron pipe here but it is in poor condition and might need to be replaced. There is probably not enough flow at these first two crossings to be able to sample here most years year round. The third, southern most crossing is a new location to avoid having to use the existing degraded skid trail to the southern landing. A 300' section around the stream on the existing trail is wet and water flows on the west side during wetter parts of the year. There is enough flow during most of the year at this new southern crossing to allow samples to be taken. All these crossings will be needed for the adjoining oak salvage, lot S11SQ (PE-19-2 S).



Forest Access Engineering

Gravel needed: Yes

Landing work needed: Yes

Culverts needed: Yes

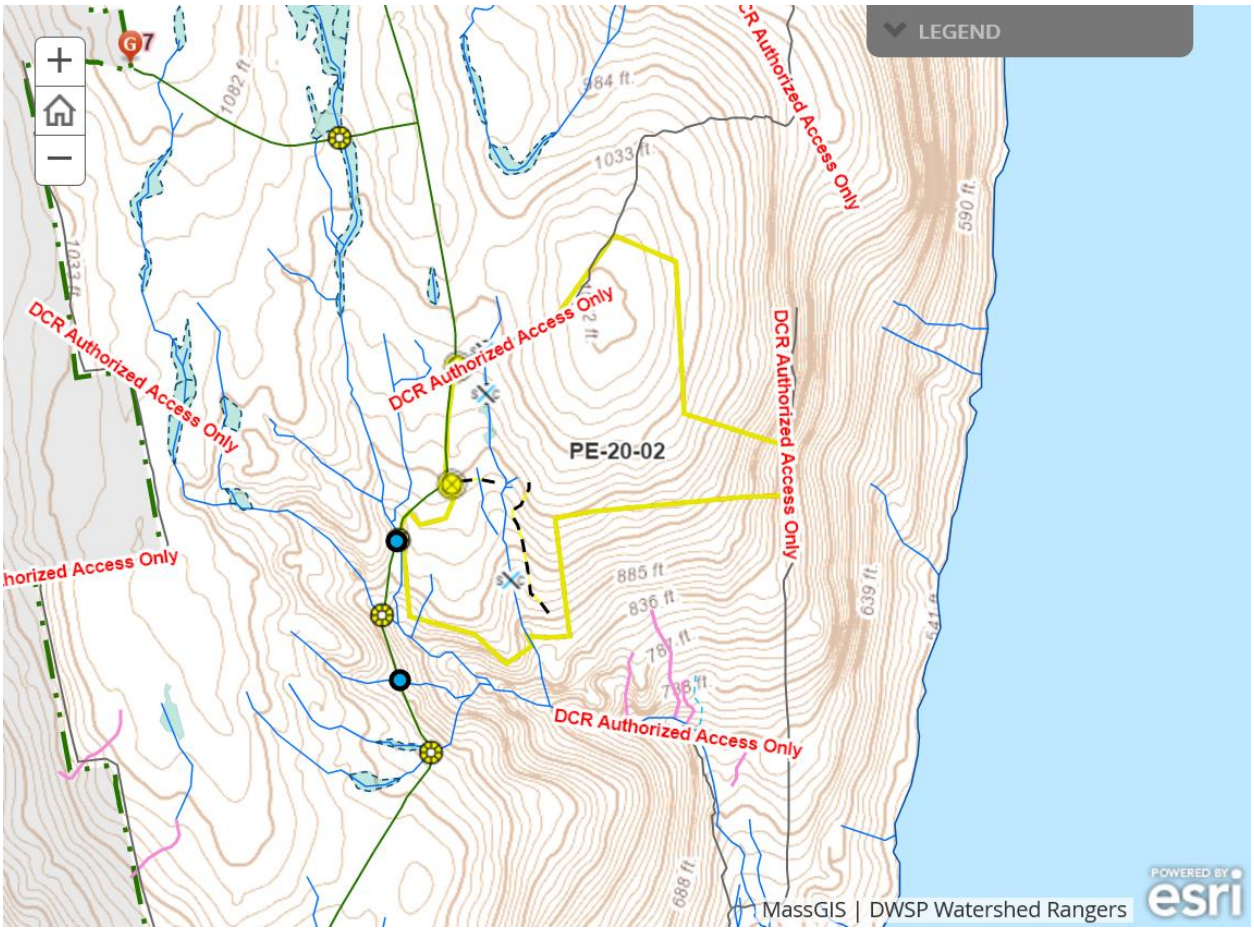
Work needed on permanent bridges: No

Beaver issue: Yes

Further comment on access needs:

Juckett Hill Road from the proposal are north to the gate 8 road will need grading and some gravel to allow trailer access to landings. Both landings will need improvement to allow trailers to turn around. The northern landing will need a 12" culvert installed just past where the access road turns off (Airplane Road) to allow seasonal water to drain. Another 12" culvert installed just

before the intersection in Juckett Hill Road would allow seasonal high water and ditch to drain from west to east. Currently, there is a large rock outcrop that blocks drainage on the west side and water ends up getting in wheel tracks and degrades a long stretch of Juckett Hill Road to the south.



DWSP FY 2020 Forestry Proposals – Master Legend for story maps

DWSP Gates

Landings

Crossings

Xng

Stream Crossing

QWR Culverts

Purpose

Stream Crossing-B

Stream Crossing-C

Drainage Relief-D

Unknown

Quabbin Road Intersections

DCR/DWSP Trail/Road Data (Public View)

Type

Public Road

Administrative Road

Forest Road/Trail

Trail

Other

DCR-DWSP Trails and Roads

Type

Administrative Road

Forest Road/Trail

Other

Public Road

Trail

Wachusett/Sudbury Road Infrastructure

Infrastructure_Type

Bridge

Broad Based Dip

Checkdam

Culvert

Ditch

Ford

Waterbar

Other

Wachusett Internal Roads

Priority:

Access Road, unmaintained

Access Road

QWWS Watershed Boundaries

Vernal Pools

Status

Not a vernal pool

Potential vernal pool

DCR verified vernal pool

Streams - Quabbin

FType

Coastline/Shoreline

Stream/River

Swamp/Marsh

Submerged Stream

Artificial Path

Canal/Ditch

Pipeline

Dam/Weir

Connector

Unknown

Other

Water Bodies - Quabbin

FType

Reservoir

Lake/Pond

Stream/River

Swamp/Marsh

Streams - Ware River

FTYPE

Stream/River

Canal/Ditch

Water Bodies - Ware River

FTYPE

Reservoir

Lake/Pond

Stream/River

Swamp/Marsh

Other

Streams - Wachusett

EQ_Stream_Type

Aqueduct

Ditch/Canal

Intermittent Stream

Perennial Stream

Waterbodies - Wachusett

EQ_Wetland_Type

Reservoir

Lake, Pond, Wide River, Impoundment

Wetland, Marsh, Swamp, Bog

NHESP Priority Habitats

NHESP Certified Vernal Pools

NHESP Certified Vernal Pools

Forest Cover Type - Filled

Cover Type Code

Road

Water

Beaver Pond

Shrub Swamp

Powerline

Grass and Forbs

Upland Brush

Hemlock

Hemlock-Hardwoods

Red Pine

Norway Spruce

White Pine

White Pine-Hardwoods

White Pine-Oak

Mixed-Oak

Northern Red Oak

Oak-Hardwoods

Mixed Hardwood

Northern Hardwood

Red Maple

Forest Cover Type - Outline

SubWatersheds (QWR-filled)

SUBW_S_NAM

Middle Stillwater/Rocky/Wilder Brook

Quinapoxet River

Wachusett Brook

Atherton Brook

Cobb Brook

Dickey Brook

East Prescott Middle

Gates Brook

Juckett Hill East

Malden Brook

Parker

Prescott Brook

Reservoir Shoreline East

Shutesbury Shore South

South Stillwater

Underhill Brook

Williamsville

Subwatersheds (WA-outline)

SubWatersheds (QWR-outline)

Subwatersheds

Quabbin and Ware River Cultural Resources Inventory (Public view)

Type

No Value/Blank

Agrarian

Cellar Hole

Civic

Commercial

Industrial

Military

Other

Residential

Shed

Unknown

QWWS Percent Slope

0 - 7

> 7

Forestry Proposal Boundaries

Towns

Water Supply Property Boundary

Proposed Skid Trails

Stone Walls - WA

StoneWalls - QWR

Stony Soils

STONE

extremely stony

very stony

Soils - Drainage

Drainage Class

Excessively Drained

Well Drained Thick

Well Drained Thin

Moderately Well Drained

Poorly To Very Poorly Drained