

Quabbin Harvest Proposal NS-22-24-BFA2

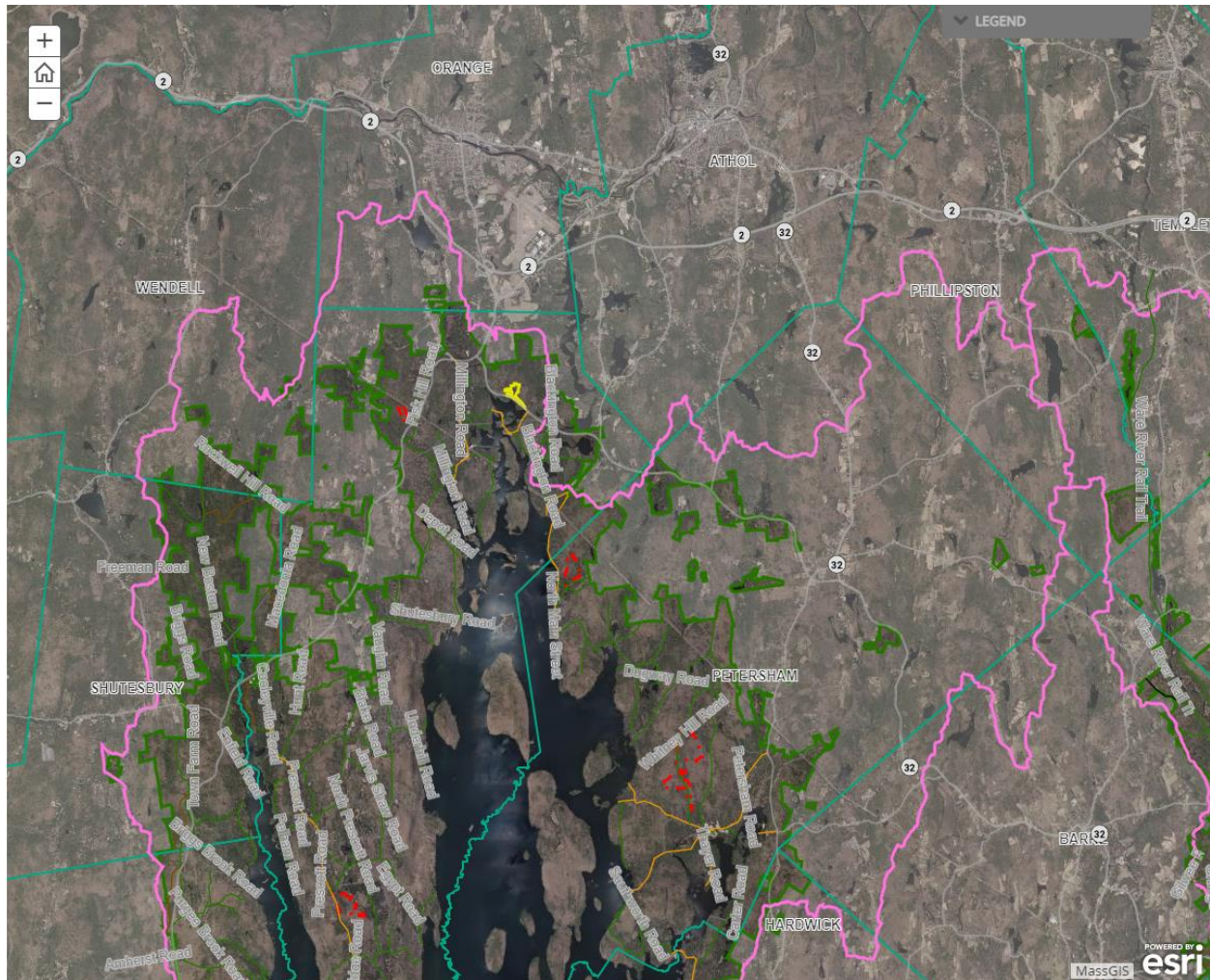
Proposal Goals

The main goal for this proposal is to expand the pitch pine - oak barren restoration by extending the area restored in 2019 east to the base of Gays Hill in New Salem.

Proposal Location

The core of this proposal is bounded by Blackington Swamp to the north, the base of Gays Hill to the east, Route 122 to the south, and the prior Barrens Focus Area (BFA) harvest to the west (Lot 3159, completed in 2019). This section also includes about 1.5 acres of white pine located north and northeast of the old gravel pit, which was within the footprint of the prior BFA harvest but was not cut due to the focus for that entry on removing red pine plantations. An additional 200 foot wide strip extends east along Route 122 to a perennial stream, and west to the access road to the old gravel pit.

Total Acres: 22



General Description

	Overstory Type(s)	Acres
Dominant	White pine - oak	13
Secondary	White Pine	5
Other	Oak, mixed	4

	Understory Type(s)
Dominant	Tree seedlings/saplings dominate site
Secondary	Dry site - blueberry/huckleberry

Description of forest composition/condition:

Mixed red, white and pitch pine dominate the core harvest area, sometimes in nearly equal proportions, with mixed oaks as primary associates. Species diversity is especially high near Route 122, where Hemlock and red maple become more common, along with occasional paper birch, black birch, black cherry, hickory, white ash, beech and poplar.

The red pine is mature sawtimber with good form, as is typical for this species. It was planted within the existing stand as reclamation after a wildfire burned through this area in the mid-1900s, and hence is mixed with other species. Red pine scale is in the early stages of infestation, as evidenced by browning needles in the lower crowns, particularly along the highway. This invasive insect can be expected to spread throughout the site in the near term, causing cause 100% mortality of red pine within a few years.

White pine has generally good form and vigor, and is present in all size classes, from seedlings to large sawtimber. Pockets of sapling- and pole-sized white pine attest to prior openings, caused by past harvests, the aforementioned wildfire, and/or other natural disturbances. Along Route 122 the white pine is often emergent, towering above other species.

The pitch pine is mostly pole- to small sawtimber-sized with fair to good form and vigor. It's common in the core of the harvest area, sometimes comprising almost half of the overall basal area, but uncommon along Route 122, dropping out completely as one approaches the stream on the easternmost border or the proposal.

The oak species mix is extremely diverse, including red, black, scarlet, white and chestnut oaks. Red and black oak are most common in the core of the harvest area; white oak becomes more common near the highway. Chestnut oaks are rare within the harvest area but a significant presence on the nearby slopes of Gays Hill. Oaks of all species are mostly pole-sized, with a few larger trees near the highway. Oak form ranges from poor to average; vigor is generally good, despite a small amount of gypsy moth related mortality.

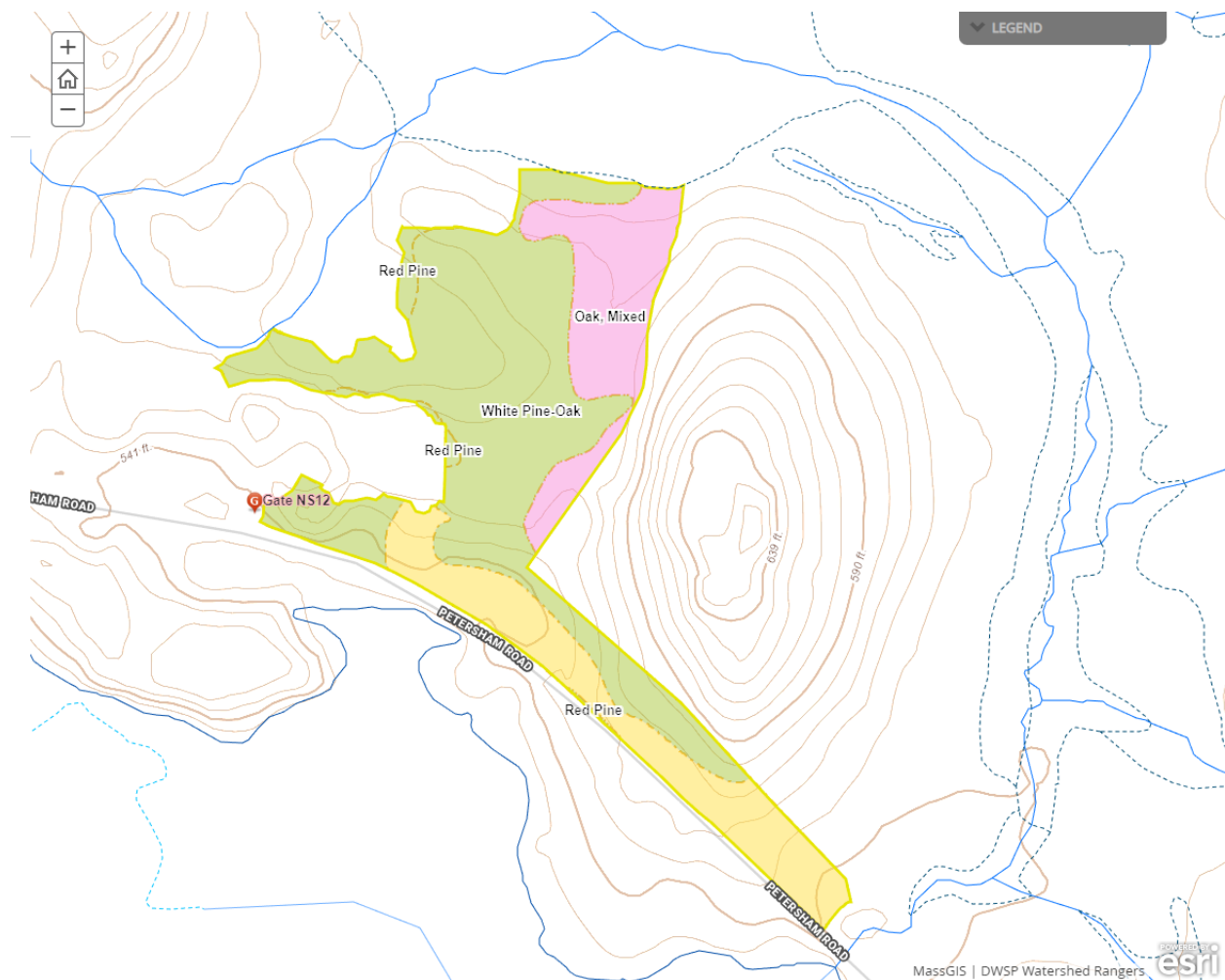
Most of the understory is dominated by white pine seedlings and saplings. Oak seedlings are also common in areas with more sunlight, such as along Route 122. Blueberry is dominant near Blackington Swamp, interspersed with scattered young pines. Wintergreen, partridgeberry and

club moss are present throughout the proposal area. Hay scented fern is present but not dominant.

Past harvests include the first Barrens Focus Area entry, Lot 3159, which was completed in 2019 and focused on removal of red pine plantations totaling 14.4 acres. Prior to that, single tree selection harvests were completed in 2001 (Lot 3004, 6.8 acres overlapping the west central part of this proposal), 1998 (Lot 773, 9.2 acres along Route 122), and 1994 (Lot 663, 5.9 acres covering the same area as Lot 3004). About 13 acres of the proposal area have never been harvested by DCR.

Assessment of Terrestrial Invasive Species:

A small amount of asiatic bittersweet was found near Route 122. Ideally, this should be treated before the harvest to prevent spread.

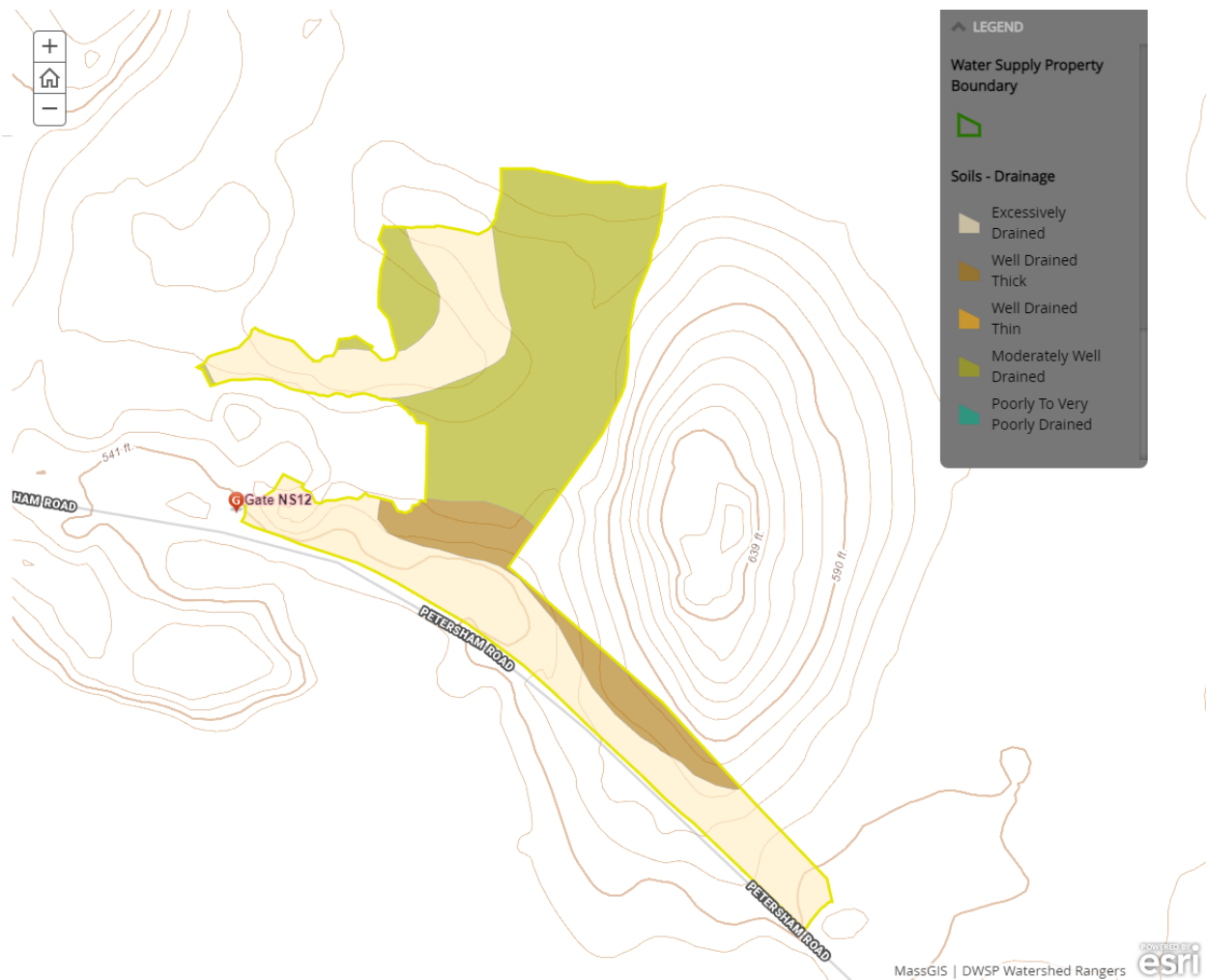


Soils

Drainage Class	%
Excessively Drained	44
Well Drained Thin	0
Well Drained Thick	11
Moderately Well Drained	45
Poorly to Very Poorly Drained	0

Soil types: Hinckley sandy loam and Windsor loamy sand, both 8 to 15 percent slopes and excessively drained; Canton fine sandy loam, 8 to 15 percent slopes, very stony, well drained thick; Deerfield loamy sand and Sudbury sandy loam, both 0 to 3% slope and moderately well drained.

Sudbury sandy loam has a high wind throw risk, due to low soil cohesion and a high water table (~20 cm). This soil type also underlies the northern and central portions of the previous BFA entry, where a few retained pines uprooted in high winds. This is not a problem for barrens habitat per se, but could make future habitat maintenance more difficult.

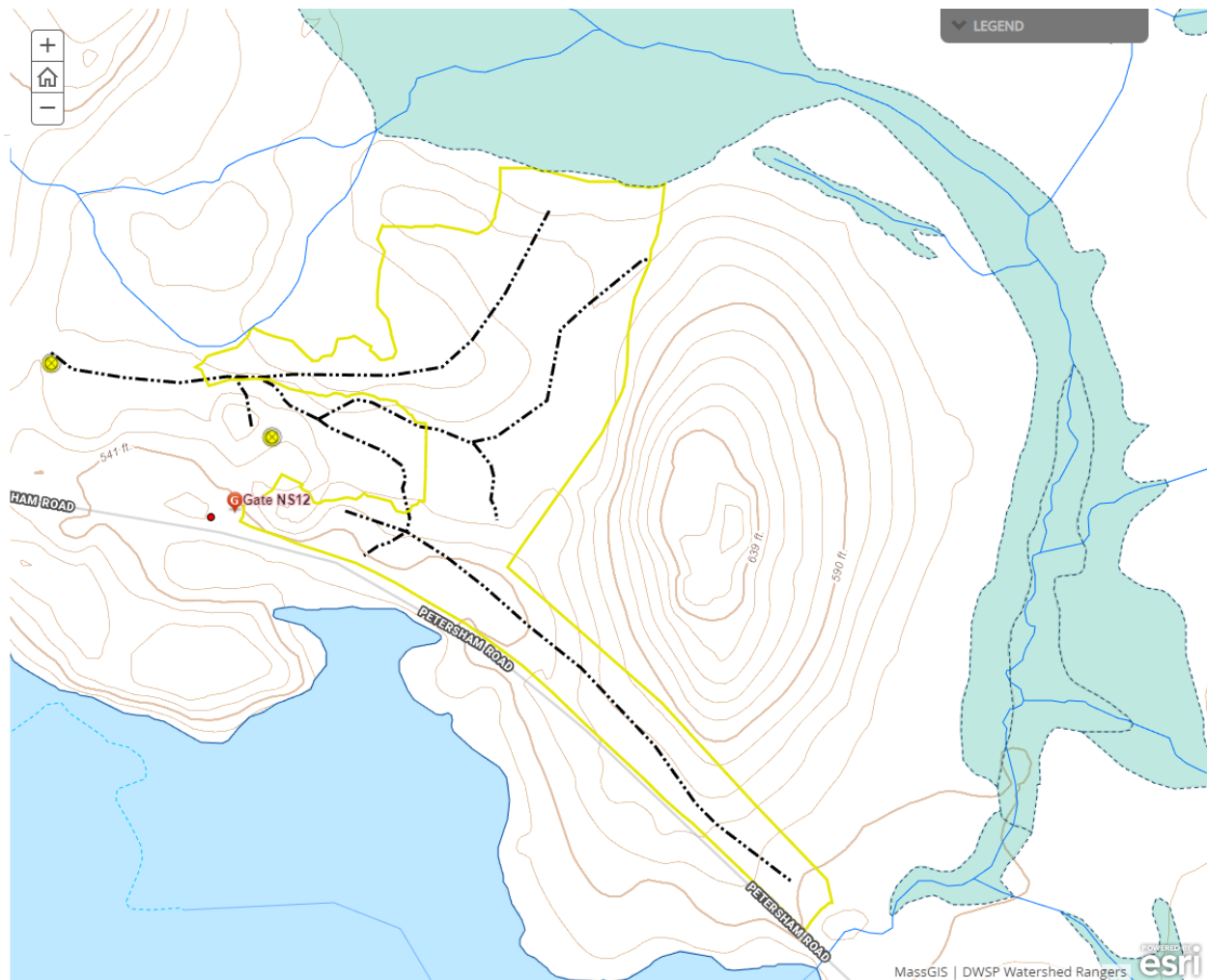


Wetlands

- 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** ([Riparian Zone Mgt](#))
- Is logging in wetlands planned? - **No**

This area is very dry, which is one of the reasons it is suitable for barrens restoration. Wetland features outside the perimeter of the proposal include Blackington Swamp to the north; a perennial stream and associated wetlands draining from Blackington Swamp to the east; and to the southwest, a verified vernal pool on the far side of the access road to the old gravel pit. All of

these have been excluded from the harvest area. The 0.4 acres in the southwest corner of the proposal area that are within 200 feet of the vernal pool will be protected according to the policy set out in the DWSP 2017 Land Management Plan.



Silviculture

Acres in Intermediate cuts: **7**

Acres in prep/establishment cuts: **10**

Acres in Regeneration cuts: **5**

Average regen opening size: **2**

Maximum regen opening size: **2**

Description of advance regeneration in proposal area:

White pine seedlings and saplings dominate most of the understory. Regeneration near the highway is more diverse, with white pine, hemlock, red maple, black birch and mixed oak seedlings and saplings.

General comments on silviculture proposed:

Silvicultural treatment #1: barrens restoration

Location: central and northern portions of the proposal area

Size: 15 acres

This is the second step in the process of barrens restoration, as described on pages 11-127 of the 2017 DCR-DWSP Land Management Plan. It builds on the red pine plantation removal that took place in the first step, completed in 2019 (Lot 3159), expanding that area to the east.

As in the first entry, healthy pitch pine and oaks of all species will be retained, while red pine, white pine, and hardwoods other than oak will be removed. Basal area retention will be much higher than in the first entry, however, because of the higher stocking of pitch pine. Where they compete with one another, pitch pine will be prioritized over oak. Total basal area will be reduced to 80 ft²/acre or less.

Within the same area, openings up to two acres may be created in places where there are few or no oaks or pitch pine, and/or where all of the oaks and pitch pine have poor health, low vigor, or unstable structure.

Blueberries are common in the northern portion of the proposal area and will be protected as much as possible as an important element of barrens habitat.

For the purposes of this proposal the areas with retained pitch pine and oaks are referred to as prep/establishment cuts, because post-harvest stocking levels will be similar to that of a shelterwood prep cut, and openings are referred to as regeneration cuts. However, this barrens

restoration treatment would be more accurately described as being for habitat rather than regeneration, and having variable retention ranging from 0 to 80 ft²/acre. The overall result will be a savannah-like forest with spacious, somewhat patchy stocking of pitch pine and oak, contiguous with the openings already created by red pine plantation removal.

Silvicultural treatment #2: sanitation/improvement

Location: a strip up to 200 feet wide on the north side of Route 122

Size: 7 acres

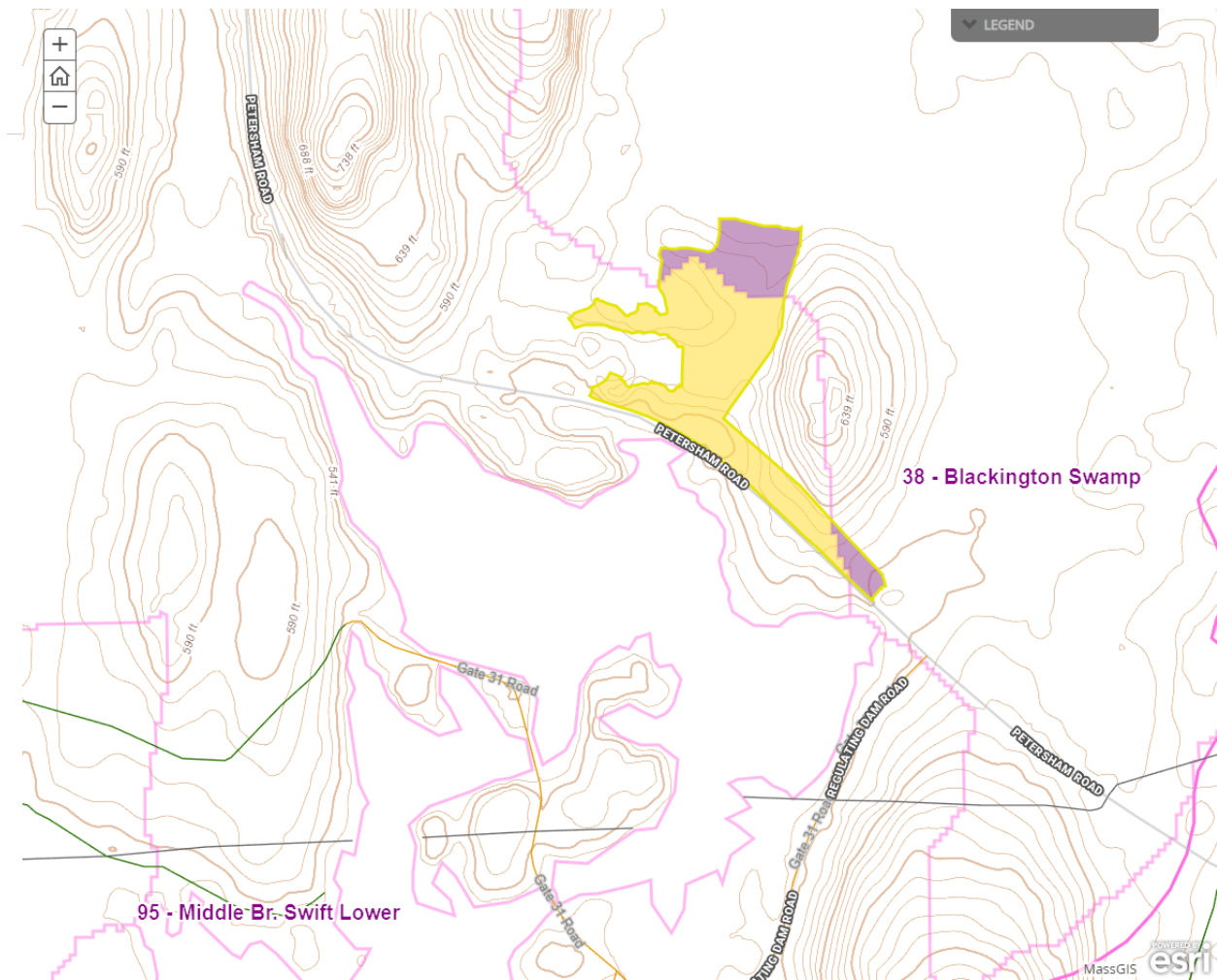
The primary objective in this area will be improving stand health and vigor by removing red pine before it dies due to red pine scale. Unhealthy and poorly formed white pine and hardwoods will also be cut. Stand diversity will be maintained by retaining healthy trees of all species other than red pine. This harvest will meet, and in most places exceed the roadside buffer requirement of retaining at least 50% of well distributed basal 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
95 (Middle Branch Swift)	1177	30	264	17
38 (Blackington Swamp)	447	28	83	6

Proposed harvesting will not exceed the 25% threshold.



Harvesting Limitations

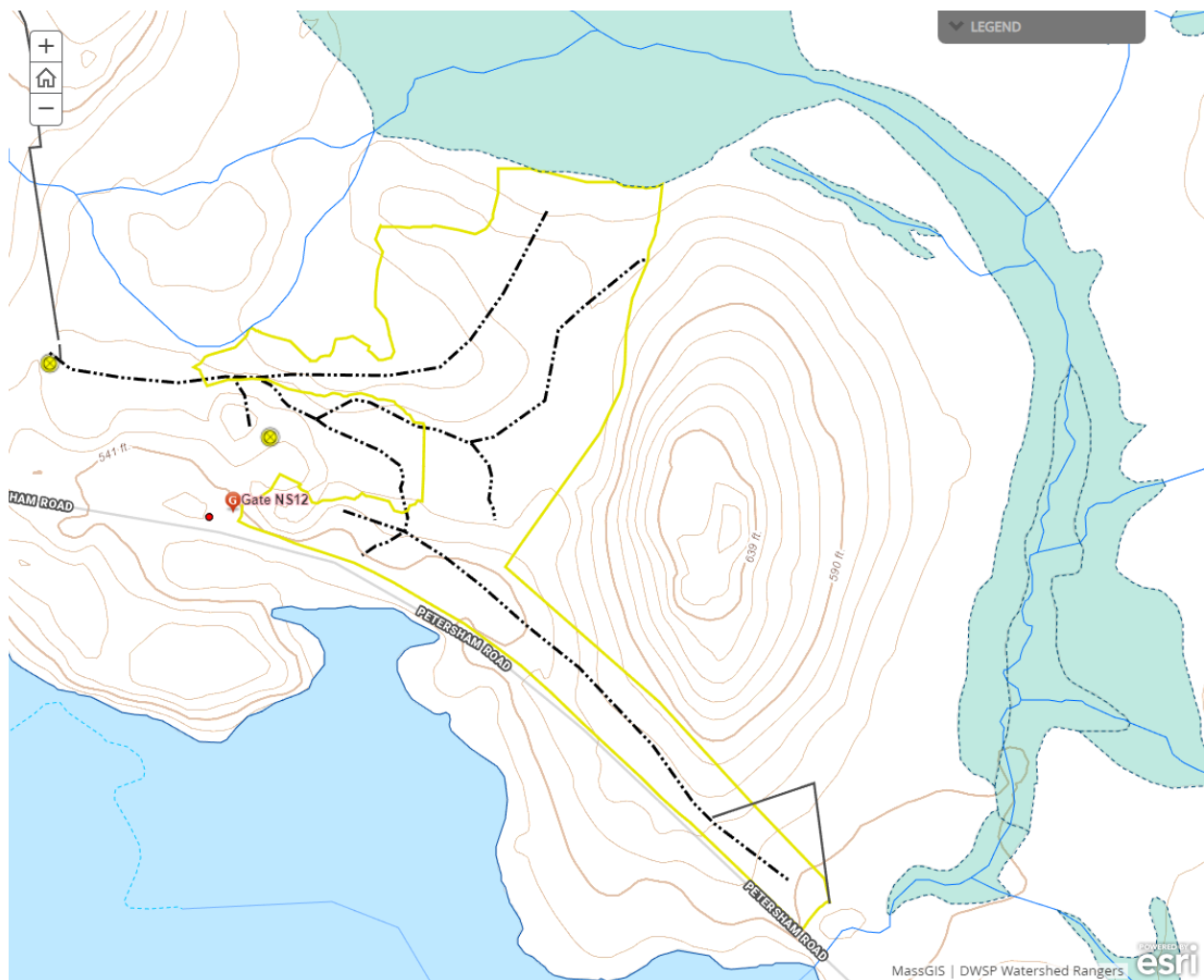
Forwarder required: **No**

Feller/processor required: **No**

Steep slopes present: **No**

Comments on harvesting limitations:

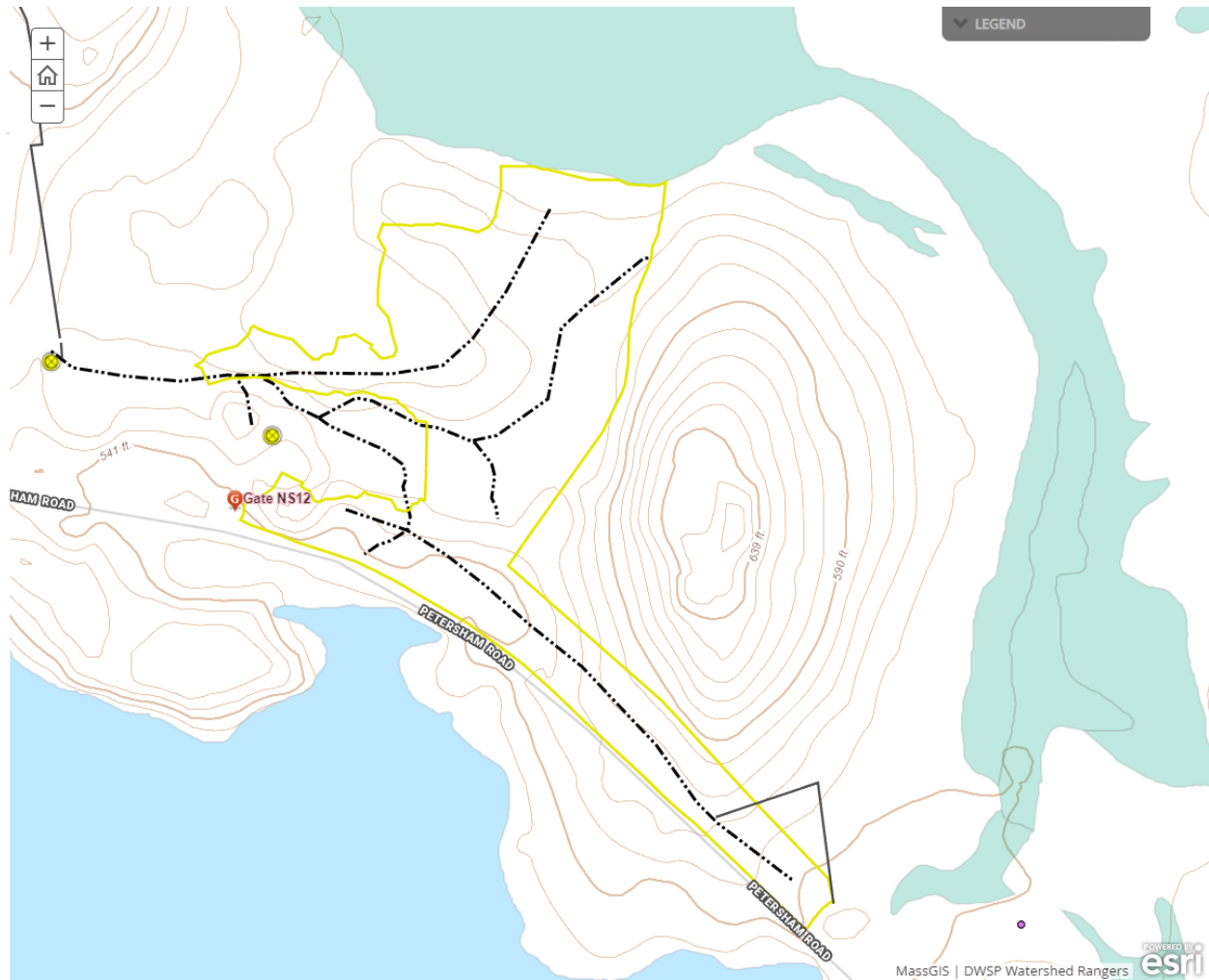
None.



Cultural Resources

Comments on Cultural Resources:

There are two cellar holes and a short, V-shaped section of stone wall at the far east end of the proposal area. These will be flagged, protected, and avoided as much as possible, as will any other cultural features that are found in the course of the harvest. The terrain may necessitate crossing the stone wall; if so, this will be done where the wall is already falling down.



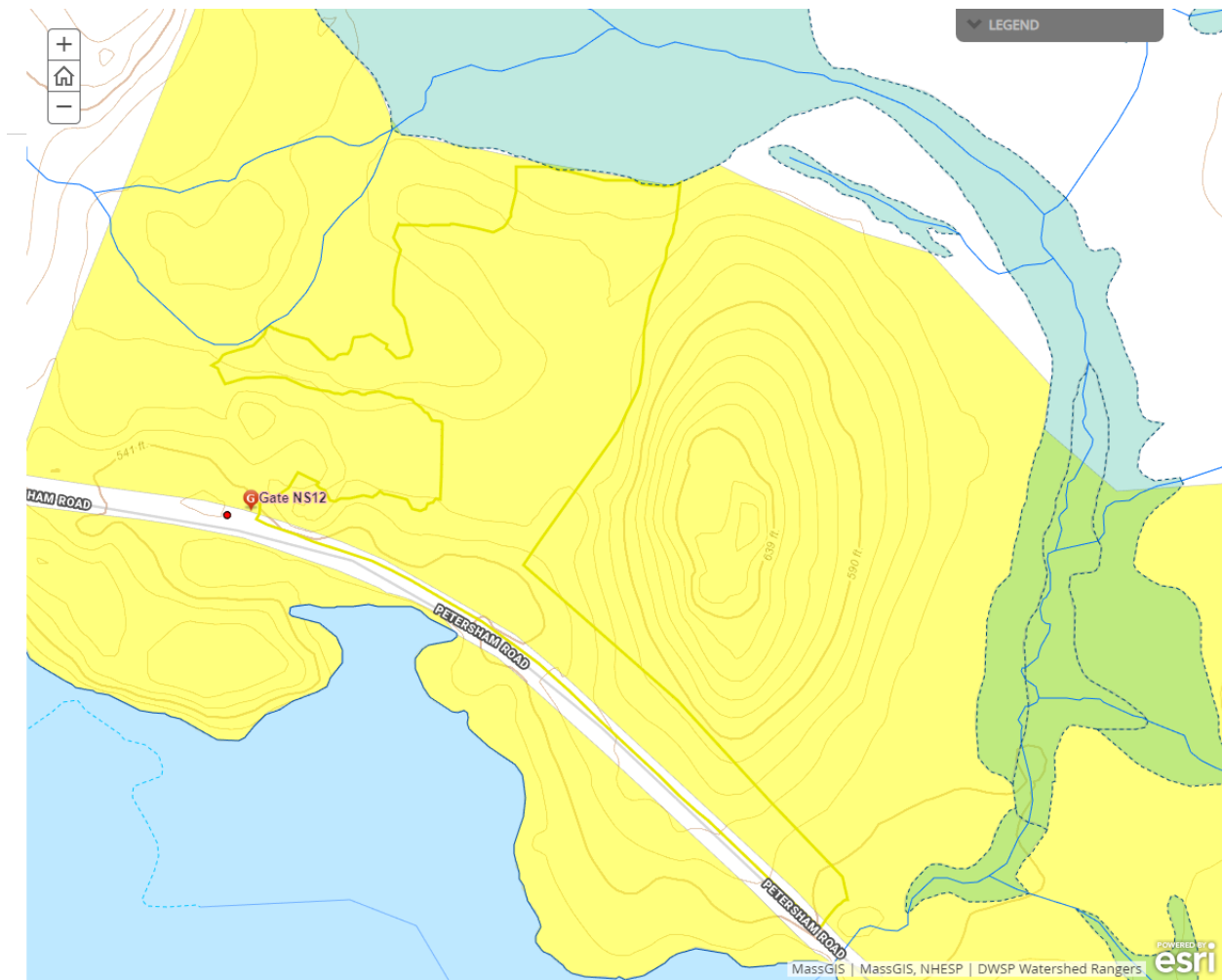
Wildlife Resources & Rare and Endangered Species

General Wildlife Comments:

The purpose of this harvest is to create barrens habitat for wildlife. Wildlife habitat features that are consistent with barrens will be protected wherever possible, including large diameter living trees, snags and logs, and current and potential nest trees and den trees.

Comments on Rare Species/Habitats:

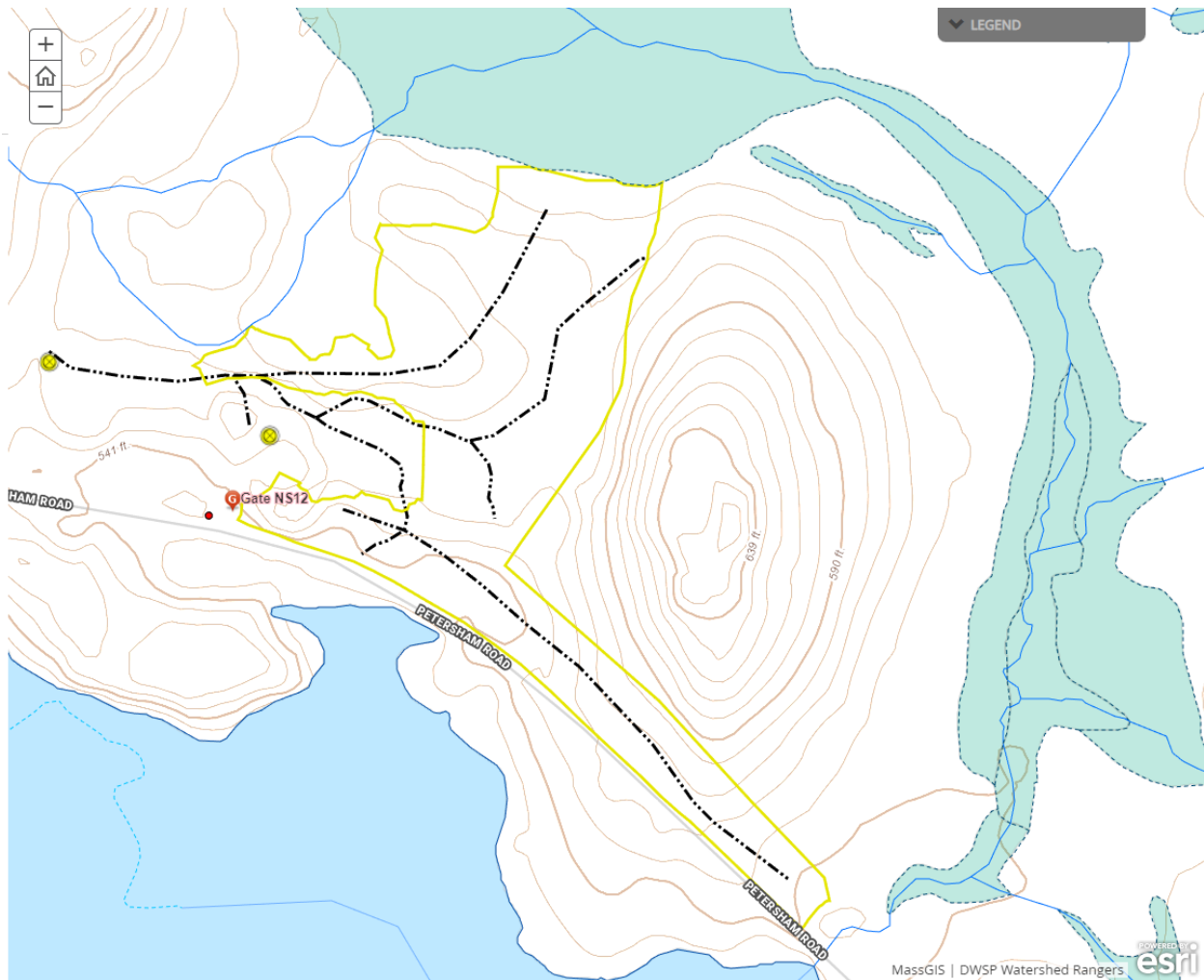
NHESP has determined that certain state-listed sensitive species or habitats may exist within the lot proposal area. To protect them from any necessary disturbance, detailed information regarding affected species and their locations is not included in this report. DWSP will coordinate with NHESP and follow recommendations to protect these species during the proposed activity.



Environmental Quality Engineering

Comments on EQ Issues:

There are no perennial streams on this lot.



Forest Access Engineering

Gravel needed: No

Landing work needed: No

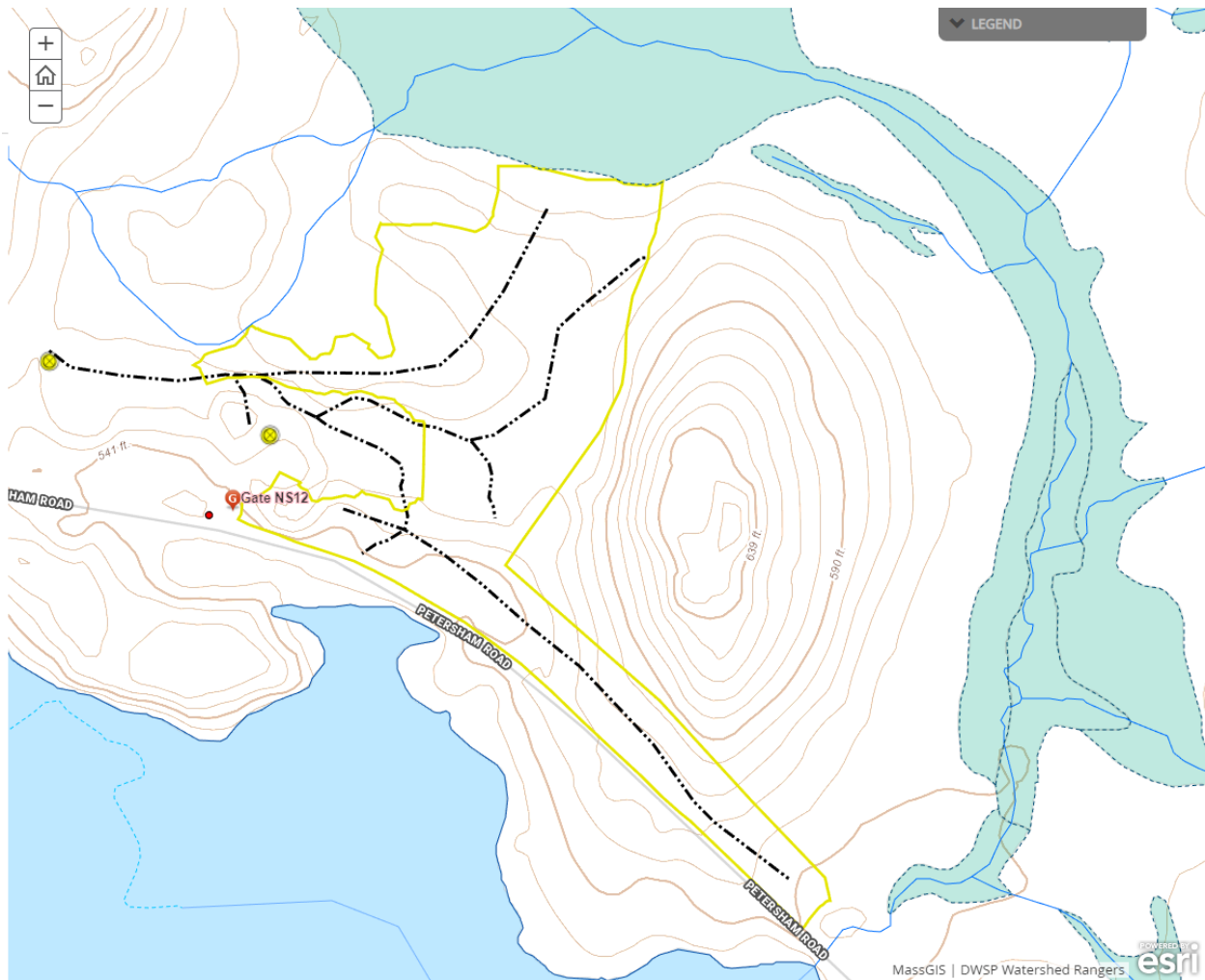
Culverts needed: No

Work needed on permanent bridges: No

Beaver issue: No

Further comment on access needs:

Most likely the landing will be in either the old or the new gravel pit, in which case little or no work or gravel will be needed.



DWSP FY 2022 Forestry Proposals – Master Legend for story maps

