

Quabbin Harvest Proposal NS-23-20

Proposal Update, May 2024:

*This forestry proposal was originally approved through the public process in 2022. 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 is **continuing the pause on this project** pending further development of EEA-wide policy related to recommendations in the report issued from the CFC. The proposal language and mapping below are preserved unchanged from that presented to the public in 2022 in ArcGIS Online story map format.*

Proposal Goals

Fairview Hill was historically a barrens, as evidenced by the abundance of pitch pine, oak, blueberries and other fire adapted plants. This harvest is the first step in restoration of this crucial habitat for rare and declining wildlife. The location was designated as a Barrens Focus Area in the [2017 DCR-DWSP Land Management Plan](#).

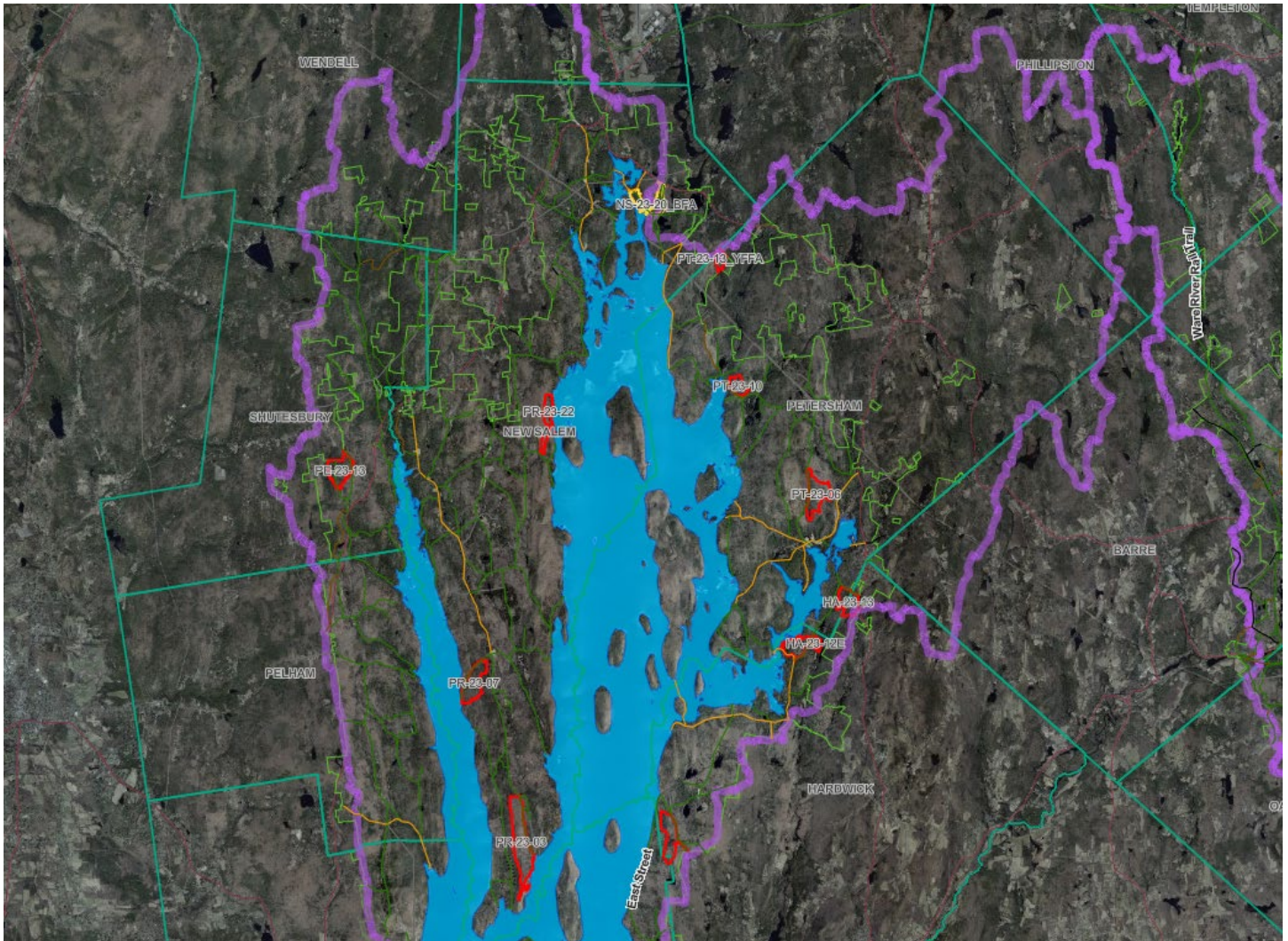
Proposal Location

(Yellow highlighted polygon in the map) This proposal matches the Barrens Focus Area (BFA) shown in Figure 4-10 on page 125 of the DWSP 2017 Land Management Plan (top image), with boundaries corrected for wetland features and adjusted for access. The area is shaped like a horseshoe, and is bordered to the northwest by the DCR access road connecting Gate 31 to Fishing Area 2, to the southwest by Quabbin Reservoir, to the south by Hagar Road, to the east by South Spectacle Pond, to the northeast by Route 122, and in the interior by Fairview Hill.

For purposes of discussion this proposal is split roughly in half based on frequency of past harvests, with the east portion having seen frequent, geographically extensive treatments, and the west portion having had fewer harvests covering less of the proposal area. The dividing point between the two is a north-south oriented stone wall between Hagar Road and Fairview Hill, located east of a similarly oriented stream entering the Reservoir from Fairview Hill.

Total Acres: 95

Figure 1. Watershed Locus, NS-23-20.



General Description

Overstory Type(s)	Acres
White pine - oak	46
White pine	36
Mixed oak	13
Red pine	10

	Understory Type(s)
Dominant	Tree seedlings/saplings dominate site
Secondary	Mesic site - cinnamon fern, mixed hardwood

Description of forest composition/condition:

The western part of the proposal area is predominantly white pine of all size classes mixed with red, black and white oak poles and small sawlogs. Pitch pine occurs throughout the area, often scattered but sometimes clumped. Localized spots near the fishing area are dominated by pitch pine, with few oaks and very little white pine. Other associates include red maple, black cherry and black birch. Form and vigor is mostly fair to good across species, except for pitch pine, which typically has fair form, and red maple, which generally has poor to fair form, even in trees with good vigor. White pine form is most variable in areas that have not been harvested, with some having many large branches and multiple stems.

In the eastern portion of the proposal area white pine is dominant everywhere except on a knoll in the center, where oaks are more prevalent. Pitch pine is uncommon in these areas, but still present. There are also occasional stems of red pine, left behind by recent red pine removal harvests. Mixed oak stands are found mostly on the lower slopes of Fairview Hill, on the inside edge of the horseshoe-shaped proposal area.

Throughout, the understory is dominated either by saplings, most of them white pine but some oak and other hardwoods, or by blueberries, clubmoss and wintergreen.

Past harvests:

The western portion of the proposal area was thinned in 1984-1985 (Lots 436 and 365, 32 acres); 2 acres of this area was re-treated with single tree selection in 2001 (Lot CP-FR-109-00). About 20 acres adjacent to Quabbin Reservoir near Fishing Area 2 have never been harvested by DCR.

The eastern portion of the proposal area has been harvested much more frequently and extensively. Nine acres adjacent to Route 122 have been harvested four times over the last four decades, including:

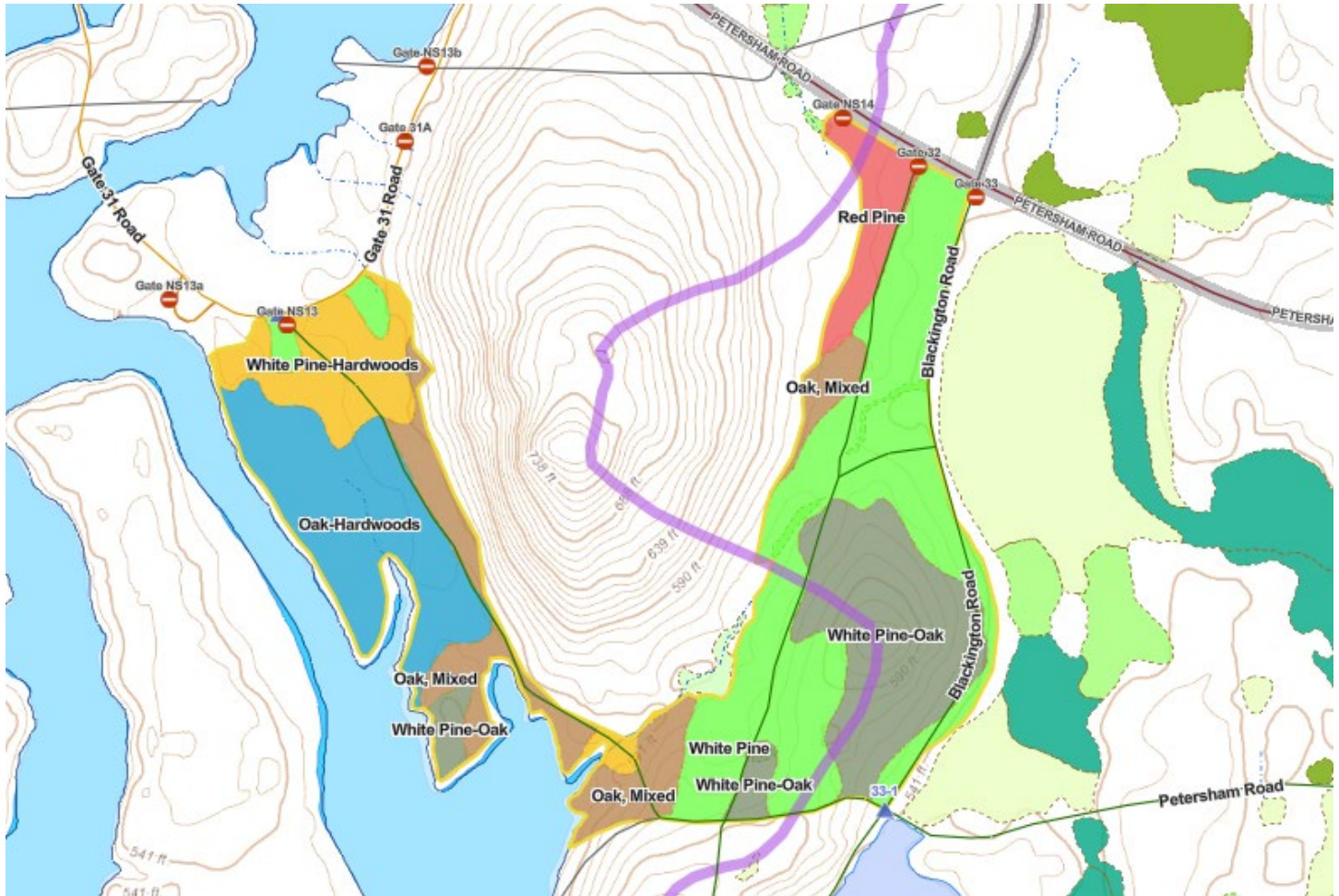
- 2019: 5.5 acre red pine salvage and 1.0 acre group selection (Lot 3157)
- 2007: 8.6 acre seed tree harvest (Lot 3110)
- 1995: 4.1 acre single tree selection (Lot 703)
- 1986: 2.8 acres of thinning (Lot 500).

Immediately to the south, 9.5 acres of group selection and 1.2 acres of shelterwood prep spread over 45 acres were completed in 2008. Prior to that there were three non-contiguous harvests in the same general area:

- 1997: 34.6 acre single tree selection (Lot 712)
- 1992: 25.5 acre thinning (Lot 607)
- 1979: 20.6 acre shelterwood prep (Lot 183).

Assessment of Terrestrial Invasive Species: None noted.

Figure 2. Forest cover types, NS-23-20.



Soils

Drainage Class	%
Excessively Drained	33
Well Drained Thin	9
Well Drained Thick	37
Moderately Well Drained	14
Poorly to Very Poorly Drained	7

The primary soils in the proposal area are:

- Canton fine sandy loam, 0 to 15% slopes, with the steeper slopes being very stony (35.7 acres, 37% of proposal area, well drained thick)
- Windsor loamy sand, 3 to 8 percent slopes (24.5 acres, 26% of proposal area, excessively drained)
- Deerfield loamy fine sand, 0 to 8% slopes (12.2 acres, 14% of proposal area, moderately well drained)
- Chatfield-Hollis complex, rocky, 8 to 25% slopes (8.5 acres, 9% of proposal area, well drained thin)
- Hinckley loamy sand, 3 to 8% slopes (6.9 acres, 7% of proposal area, excessively drained)

These are moderately to extremely dry soils: Canton fine sandy loam is well drained thick, Chatfield-Hollis complex is well drained thin; Windsor loamy sand and Hinckley loamy sand are excessively drained; and Deerfield loamy fine sand is moderately well drained.

Poorly drained soils in the proposal area include: at the base of the east side of Fairview Hill, Walpole sandy loam, 0 to 3% slope (6.4 acres, 7% of proposal area), and on the southwest side of the knoll near South Spectacle Pond, Ridgebury sandy loam, 3 to 8% slope (1.4 acres, 1% of proposal area). These areas will be ground checked during marking for wetland indicators, and will be avoided if they meet the criteria in the Wetlands Protection Act (M.G.L. Chapter 131).

Figure 3. Soil classes, NS-23-20.



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**

There are three VVPs (617, 618 and 976) within the lot. There are five listed as Not a Vernal (923, 924, 925, 926, and 927) within the lot. Just outside the along the southwestern and south-central side of lot are five listed as Not a Vernal (975, 977, 978, 616 and 802) and one listed as a re-visit/potential pool (801).

Verified vernal pools 617 and 618 are inside Gate 32, very close to Blackington Road, which gets a lot of use even when there is no harvest in the area. Harvesting will be avoided near these pools, and truck traffic will be avoided as much as possible. However it may not be possible to avoid this stretch of road entirely, because access through Gate 31 is not feasible for large trucks. All other verified vernal pools will be fully protected in accordance with the 2017 Land Management Plan.

Figure 4. Wetland resources, NS-23-20.



Silviculture

Acres in Intermediate cuts: **5**

Acres in prep/establishment cuts: **60**

Acres in Regeneration cuts: **30**

Average regen opening size: **10**

Maximum regen opening size: **15**

Description of advance regeneration in proposal area:

Most of the area has dense white pine seedlings and saplings. Oak, red maple, and black cherry regeneration are present but limited.

General comments on silviculture proposed:

This harvest will be the first step in the process of barrens restoration, as described on pages 124-127 of the 2017 DCR-DWSP Land Management Plan.

Healthy pitch pine and oaks of all species will be retained, while white pine, red pine, and hardwoods other than oak will be removed. Basal area retention will be variable, with a general target of 80 ft²/acre, but possibly as little as 5 ft²/acre where there are few or no oaks or pitch pine. Blueberries will be protected as much as possible as an important element of barrens habitat.

Residual stocking will be highest in the western part of the proposal, where the harvest will be similar to a shelterwood prep cut, resulting in a savannah-like forest with spacious, patchy stocking of pitch pine and oak. As pitch pine and oak become less common to the east, the harvest will be more like a seed tree prep cut, or group selection with 5-10 ft²/acre of residual basal area in 0.5 to 15 acre openings. Cutting and harvest operations will be restricted as needed to comply with DWSP and NHESP restrictions for vernal pools and protected species.

The purpose of this treatment is barrens habitat restoration rather than regeneration, but for the purposes of this proposal the areas that resemble shelterwood or seed tree harvests have been classified as prep/establishment cutting, and the heavier cuts as regeneration openings. The areas with the densest pitch pine and oak have been classified as Intermediate treatments.

Climate Change considerations:

Building ecosystem redundancy through creation of additional occurrences of inland barrens habitat. Providing refugium for at-risk species and natural communities (pitch pine – oak barrens).

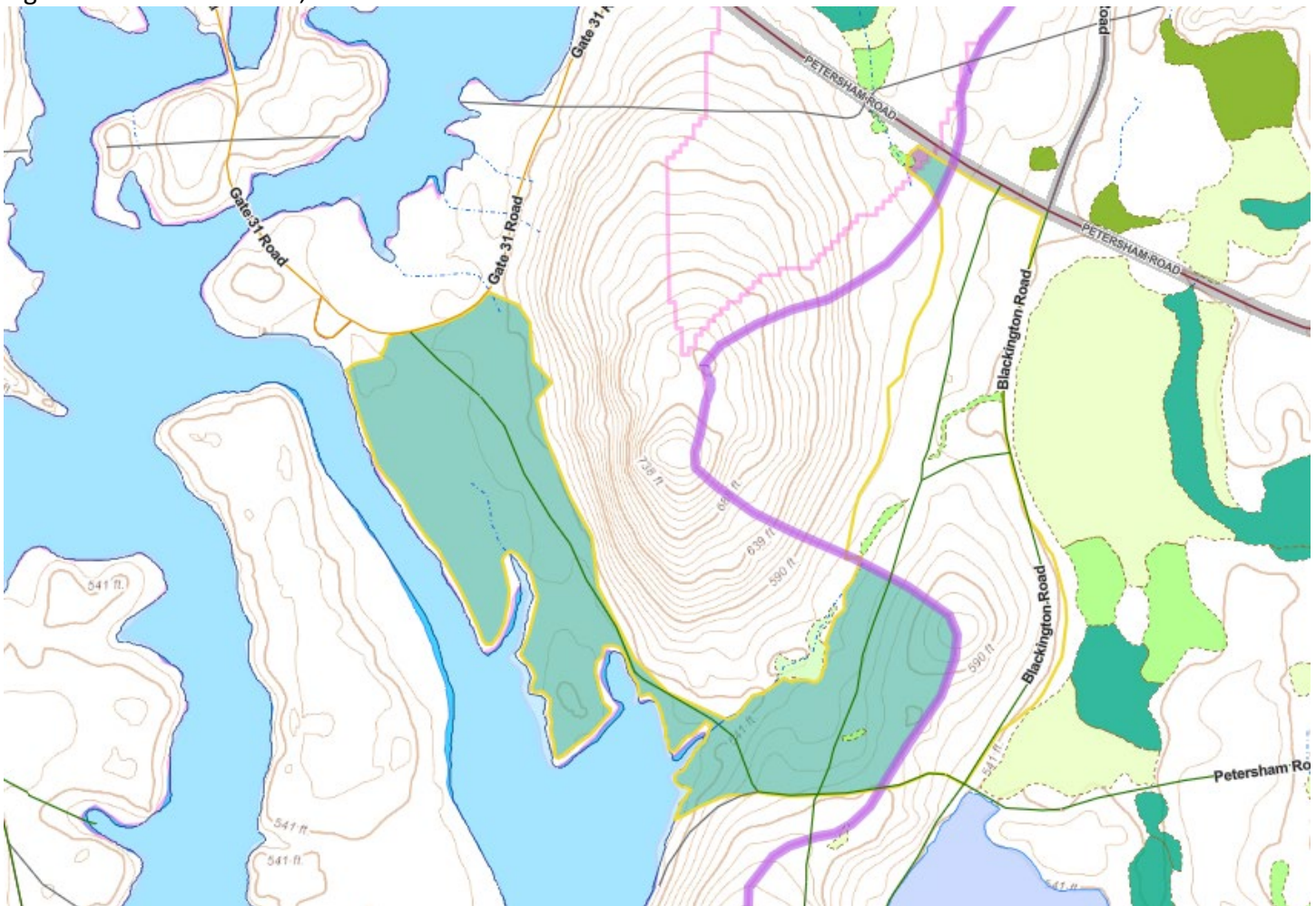
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Subwatershed Analysis

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
10 (Northeast Shoreline)	776	98	96	55
38 (Blackington Swamp)	447	30	82	0.2
Off-watershed				40

Additionally, forty acres of the proposal area drain to South Spectacle Pond, which is not on the Quabbin Reservoir watershed. The proposed harvesting levels will not exceed the 25% threshold.

Figure 6. Subwatersheds, NS-23-20.



Equipment

Forwarder required: **No**

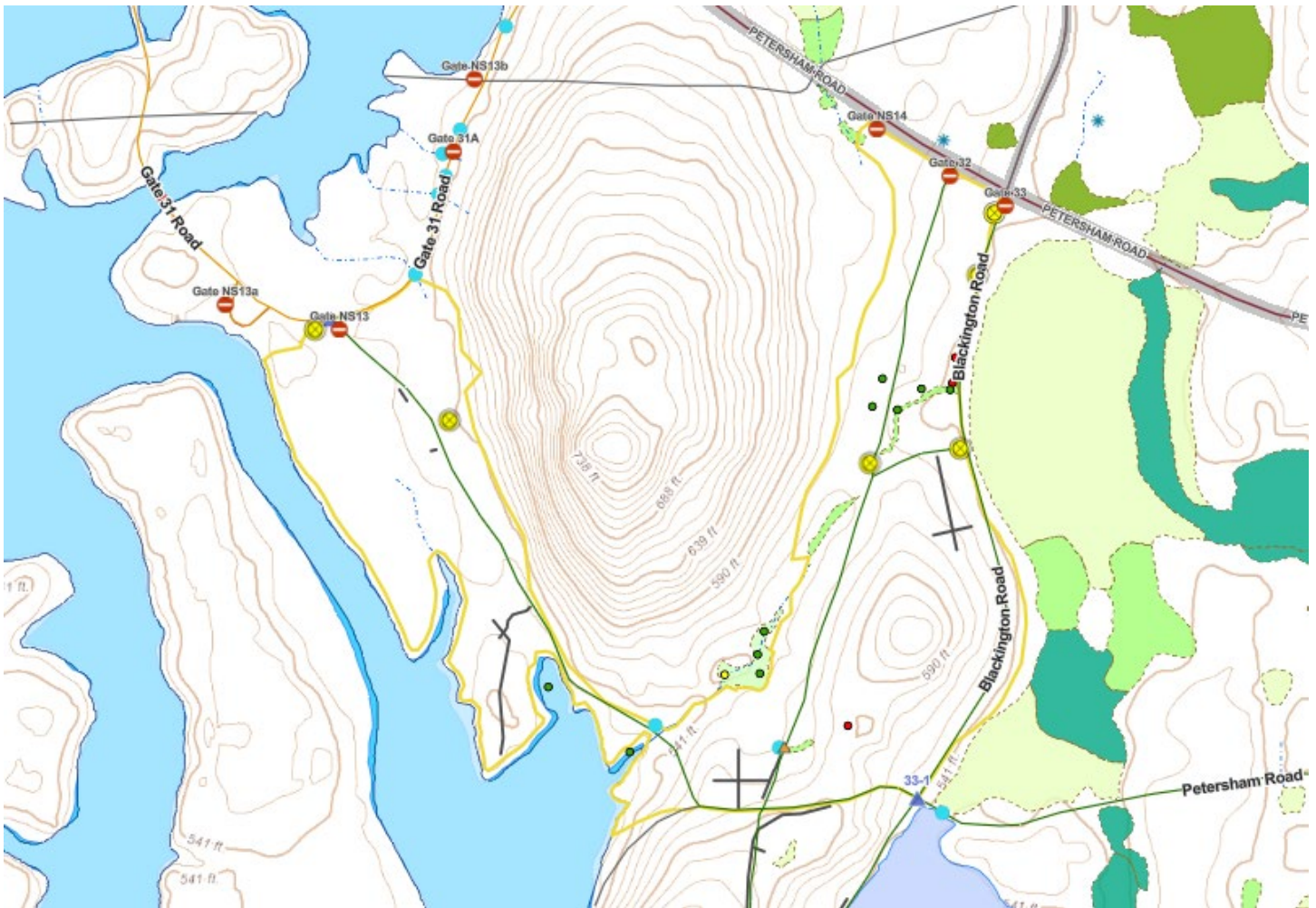
Feller/processor required: **No**

Steep slopes present: **No**

Comments on harvesting limitations:

The conditions of the proposed harvest area do not require specific limitations.

Figure 7. Harvesting limitations, NS-23-20.



Wildlife Resources & Rare and Endangered Species

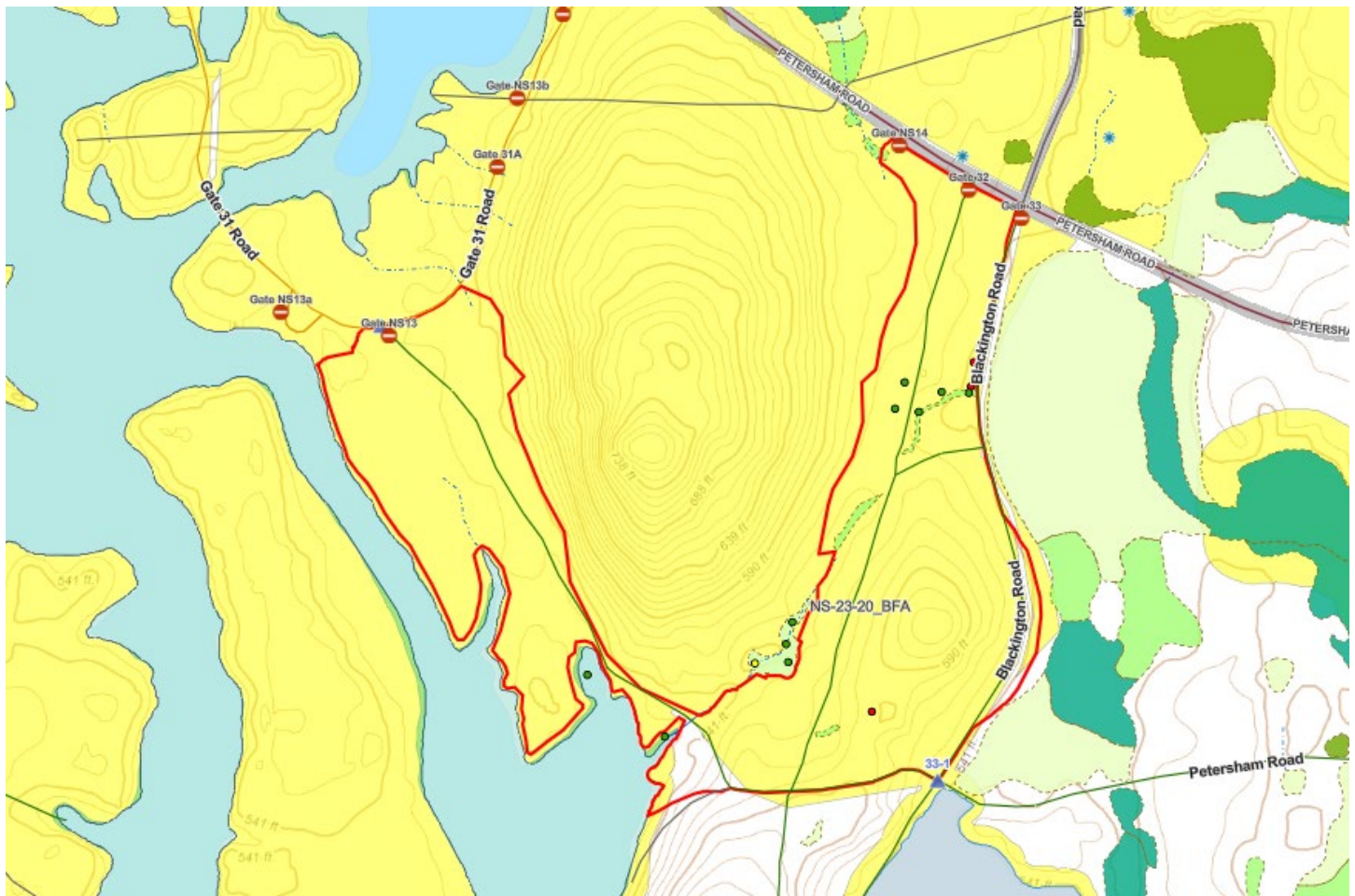
General Wildlife Comments:

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 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 activity.

Figure 9. NHESP Priority habitat overlay, NS-23-20.



Environmental Quality Engineering

Comments on EQ Issues:

There's an existing perennial stream crossing on Hagar Road, but no new crossings are being proposed. No EQ concerns.

Figure 10. Access planning, NS-23-20.



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:

Gate 32 Road has not been maintained recently by DWSP, and has a pair of sunken spots where it crosses a wetland. Maintenance will probably be needed for this proposal, which can be done by the harvesters or by DWSP staff.

Figure 11. DWSP FY 2023 Forestry Proposals – Master Legend for story maps

