Quabbin Harvest Proposal PT-23-10

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 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 2022 in ArcGIS Online Story Map format.

Proposal Goals

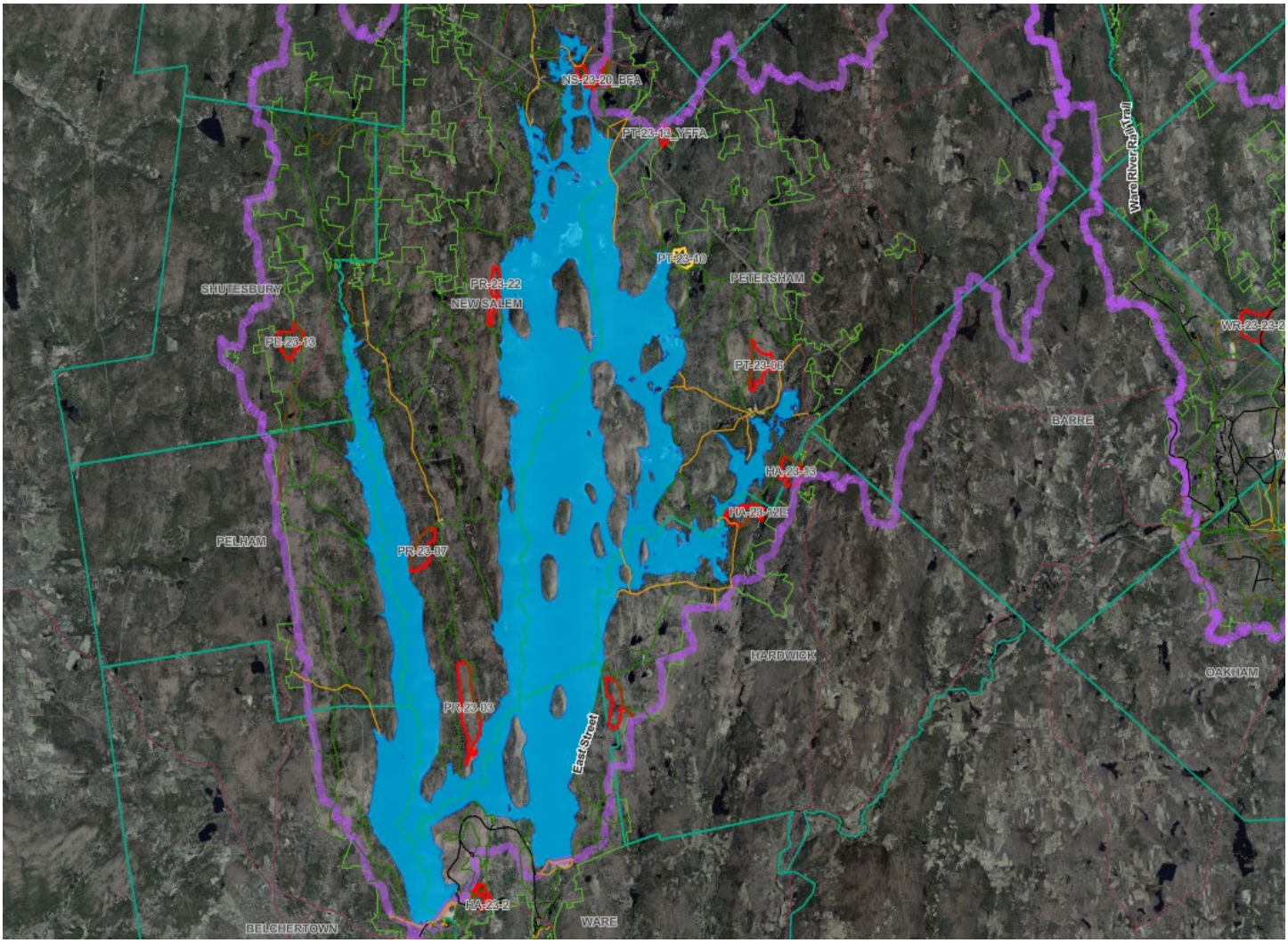
This is a resubmission of PT-17-10, with the area reduced by the acreage salvaged in the wake of the spongy moth outbreak of 2019. Silviculture is focused on increasing vertical structure (diversifying tree ages / sizes) by starting or releasing regeneration in gaps of up to 2 acres in areas where trees are declining or have unstable architecture. The best trees of all species and wildlife habitat features such as large logs, snags and den trees will be protected.

Proposal Location

(Yellow highlighted polygon in the map) This is a resubmission of PT-17-10, with boundaries reworked to remove the area harvested in 2020 (Lot S12NQ) and parts of the north end where boulders and wetland features make access difficult, and to maintain a 100 foot buffer from verified vernal pools 905 and 340. The proposal is bounded to the southwest and south by DWSP access roads, to the southeast by an intermittent stream, and to the east and north by the limit of workable terrain. Gate 37 Road (Monson Turnpike Road) is 400 to 900 feet to the northwest.

Total Acres: 57

Figure 1. Watershed Locus, PT-23-10.



General Description

Overstory Type(s)	Acres
White pine	28
Mixed oak	23
Hemlock - hardwoods	6

	Understory Type(s)
Dominant	Tree seedlings/saplings dominate site

Description of forest composition/condition:

The lower slopes of this lot are dominated by white pine, transitioning to mixed oak as one moves uphill. The midstory is dominated by black birch and red maple, with diverse associates including red, black, and white oak, white ash, sugar maple, yellow and paper birch, and black cherry. As in the overstory, oak is more common in the midstory as one moves upslope. Hemlock is present in all levels of the canopy throughout, and is particularly common in the northern portion of the proposal area.

White pine form and vigor are variable. Where there have not been past harvests, the pine is dense with a full range of crown classes, from suppressed trees with failing crowns to vigorous co-dominants. In areas that have been treated, the pine is less crowded and has better form. Overstory hemlock typically has good form but many of the crowns are thin due to hemlock woolly adelgid, and possibly also other insects such as hemlock elongate scale and hemlock looper. Midstory hemlocks more often have poor form, but sometimes better crowns than the overstory. Many oaks died as a consequence of the recent Lymantria dispar outbreak, especially in the southern and western parts of the proposal; of those that survived, red oaks generally have better form and vigor than white and black oaks.

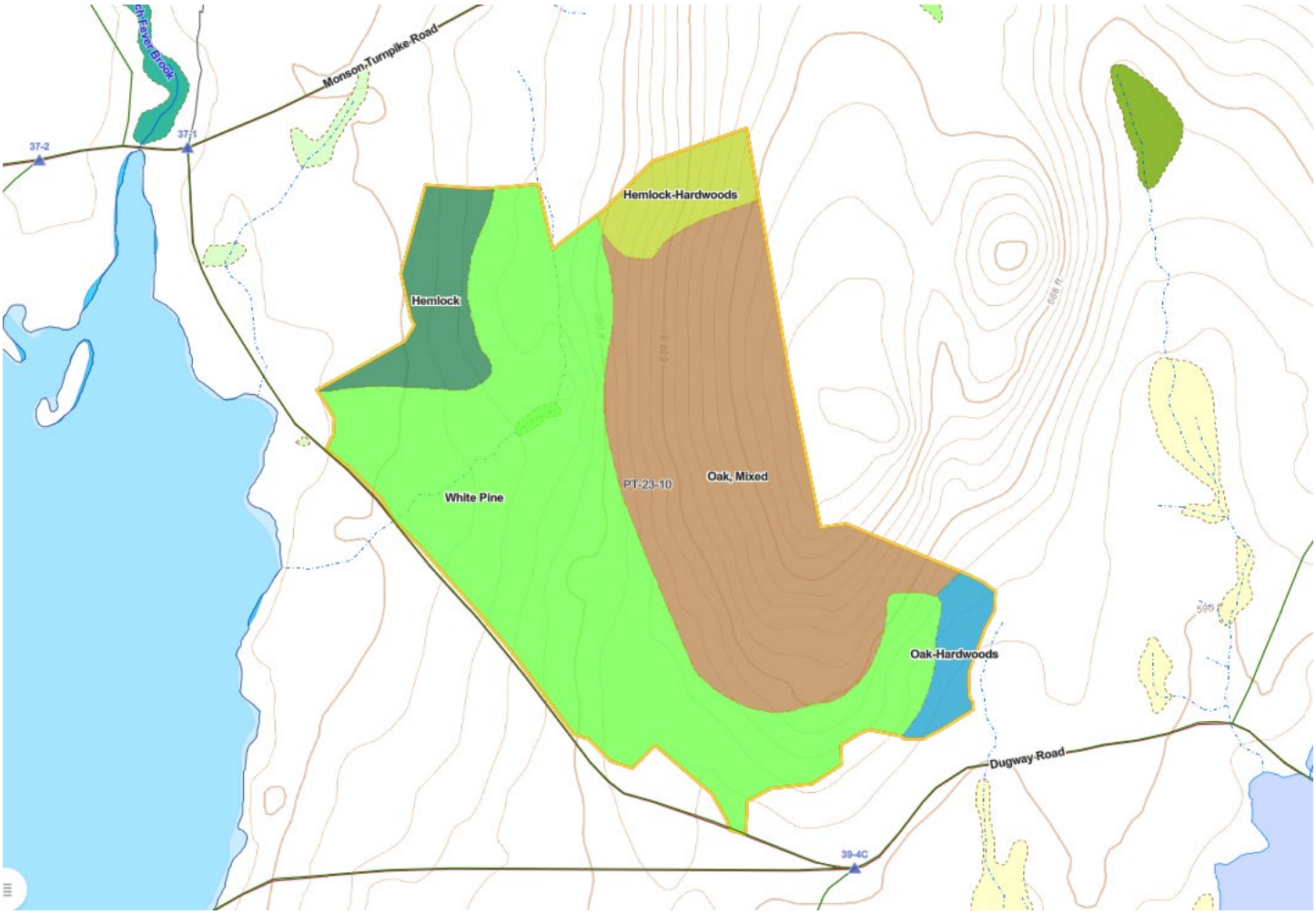
Regeneration is vigorous through much of the proposal area, and is dominated by white pine and black birch. Oak and hemlock seedlings are also present, especially in areas that were harvested in the past. Shrub and ground cover species include witch hazel, partridge berry and Christmas fern, as well as winterberry in the wetter areas. In the areas where hemlock is densest in the overstory, the understory is more open.

Past harvests include Salvage Sale S12NQ, which removed dead oaks and declining red pine at the southern edge of the proposal area in 2020, and single tree selection in the eastern half of the area in 1987 (Lot 511). About half the area has never been harvested by DWSP.

Assessment of Terrestrial Invasive Species:

None found within the main area of the lot. Bittersweet and honeysuckle are present along the road to the northwest, and in the landing to the east.

Figure 2. Forest cover types, PT-23-10.

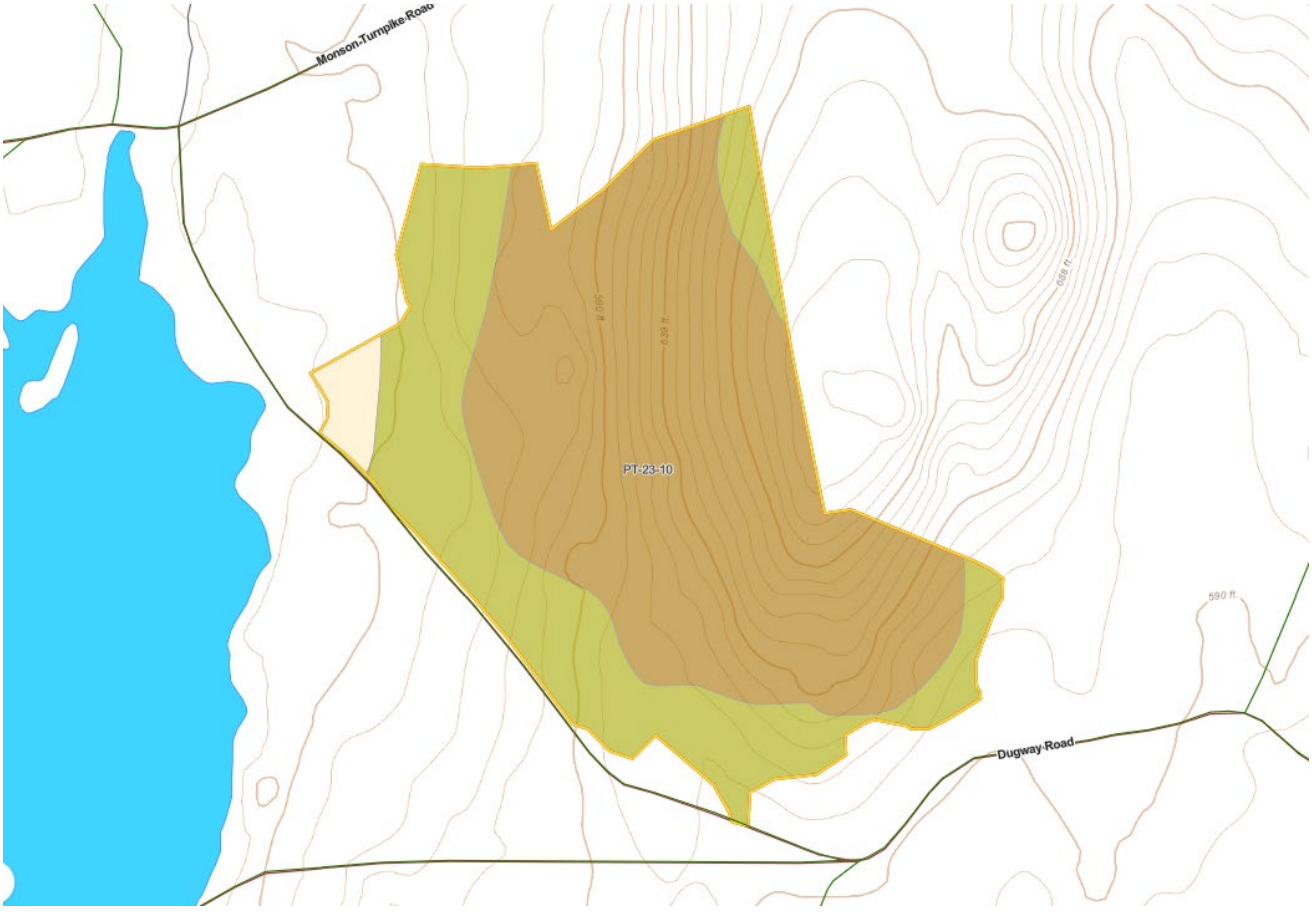


Soils

Drainage Class	%
Excessively Drained	2
Well Drained Thin	0
Well Drained Thick	98
Moderately Well Drained	0
Poorly to Very Poorly Drained	0

The primary soils in this proposal are Montauk-Canton association 15 to 35% slopes (37.2 acres) and Montauk-Scituate-Canton association, 3 to 15% slopes (18.6 acres), both extremely stony and both well drained. The remaining type is Hinckley loamy sand, 3 to 8% slopes, excessively drained (1.3 acres), located in the vicinity of vernal pool 905.

Figure 3. Soil classes, PT-23-10.

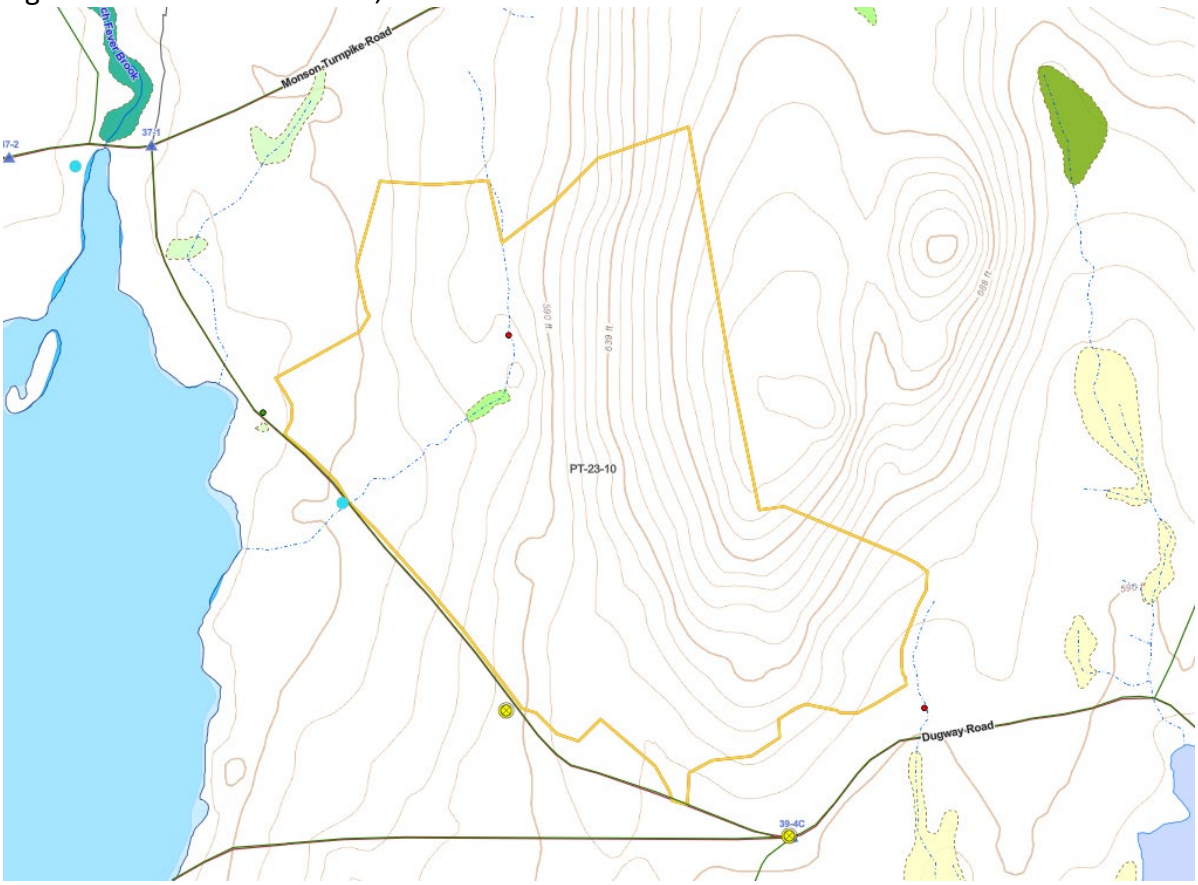


Wetlands

- Wetlands present? - **Yes**
- Streams present? - **Yes**
- Vernal pools present? - **Yes**
- Seeps present? – **None known**
- Are stream crossings required? - **Yes**
- Are wetland crossings required? - **No**
- Is logging in filter strips planned? - **No** **(Riparian Zone Mgt)**
- Is logging in wetlands planned? - **No**

Quabbin verified vernal pool 916 is central to the northern half of the proposal; it will be protected in accordance with the 2017 Land Management Plan. Five additional verified vernal pools are located outside the proposal area but within 100 feet of the DCR access roads (pool numbers 336, 893, 894, 905 and 340). Since truck traffic will have to pass within 100 feet of the verified pools, it may be wise to limit the timing of the harvest to avoid active breeding season. An intermittent stream with bordering vegetated wetlands flows east to west through the northern half of the proposal area, under the DCR access road through an established culvert, and out to the Quabbin Reservoir about 400 feet away. The above mentioned vernal pools and other wetland features prevent locating a landing to the north of this stream, so it will need to be crossed by logging equipment, either via the culvert crossing in DCR access road or in the interior of the lot. Since use of the existing crossing will be at least strongly preferred and probably required under the Wetlands Protection Act, a forwarder is being required to protect the DCR road.

Figure 4. Wetland resources, PT-23-10.



Silviculture

Acres in Intermediate cuts: **0**
Acres in prep/establishment cuts: **0**
Acres in Regeneration cuts: **15**
Average regen opening size: **1**
Maximum regen opening size: **2**

Description of advance regeneration in proposal area:

Regeneration is vigorous through much of the proposal area and is dominated by white pine and black birch. Oak and hemlock seedlings are also present, especially in areas that were harvested in the past. In the areas where hemlock is densest in the overstory, the understory is more open.

General comments on silviculture proposed:

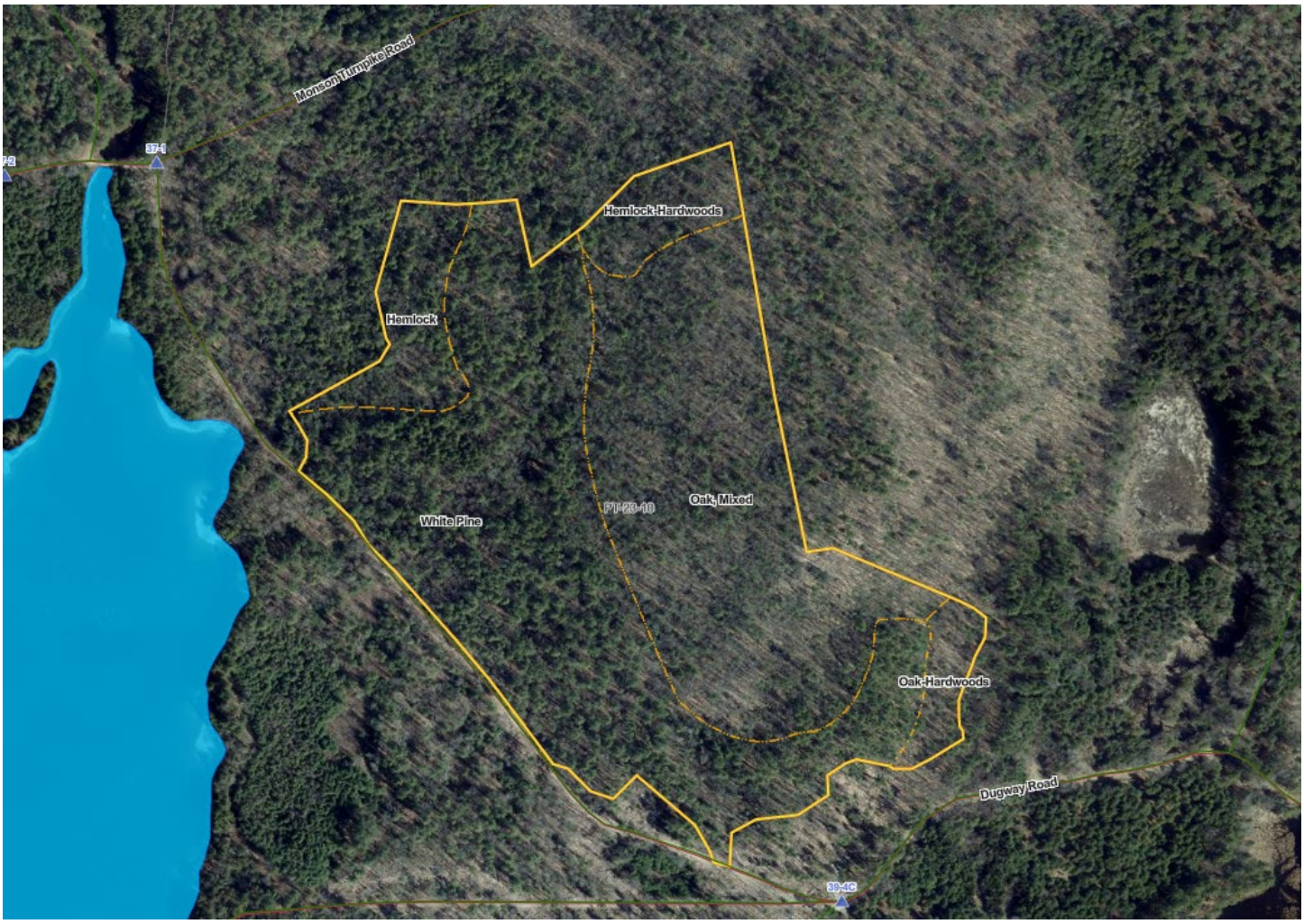
Small group selection, with openings up to two acres. Openings will be irregular in shape, and will be located where there are clusters of trees that are diseased, declining, or have poor stem structure, or where there is viable advance regeneration that needs to be released. Trees on the perimeter of openings will have large, healthy crowns (hence strong seed bearing potential), stable stem structure, and will be either vertical or leaning away from the openings so that they will not damage regeneration in the opening if cut in the future. Five to ten square feet per acre of basal area of sawlog- and pole-sized trees will be retained in openings >=½ acre.

Oak will be favored for retention, especially in and around openings in order to improve the chances of acquiring oak regeneration. White pine and black birch will be favored for removal, as the species that already dominate the seedling layer and regenerate most easily at Quabbin. Most of the red pine was harvested in the 2020 salvage sale, but any that remain will be cut in this entry. Den trees, potential den trees, large snags and logs, trees with stick nests, and potential nest trees (i.e. those with 3-way forks or similar canopy structures) will be retained wherever possible as valuable wildlife habitat.

Climate Change considerations:

Typical silviculture in this proposal designed to sustain fundamental ecological processes, reduce the risks of impacts from severe disturbances, and enhance species and structural/habitat diversity.

Figure 5. Orthophoto and cover types, PT-23-10.

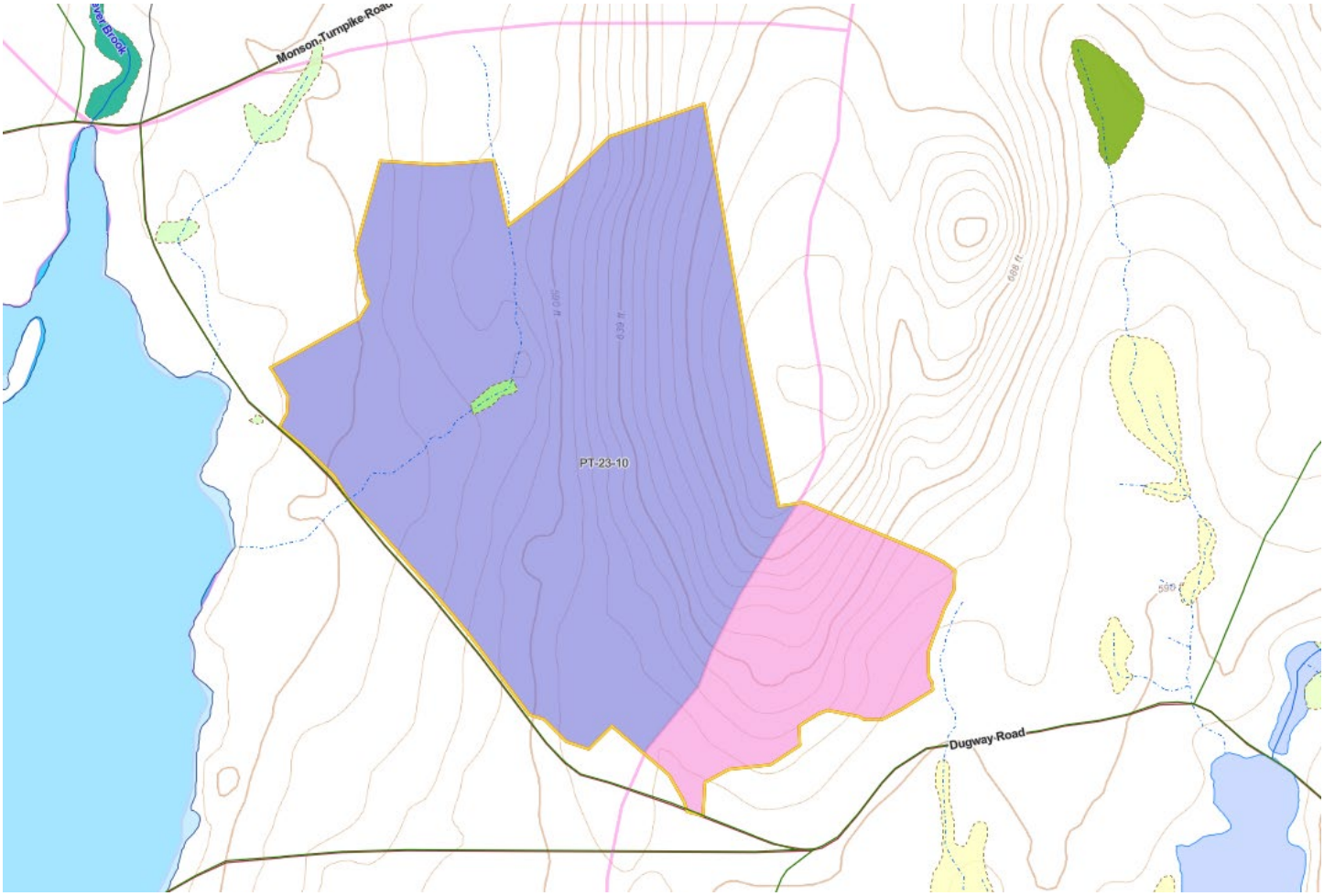


Subwatershed Analysis

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
11 (Rattlesnake Hill Shoreline)	282	10	61	47
82 (East Branch Fever Brook)	2138	25	510	11

The proposed harvesting levels will not exceed the 25% threshold.

Figure 6. Subwatersheds, PT-23-10.



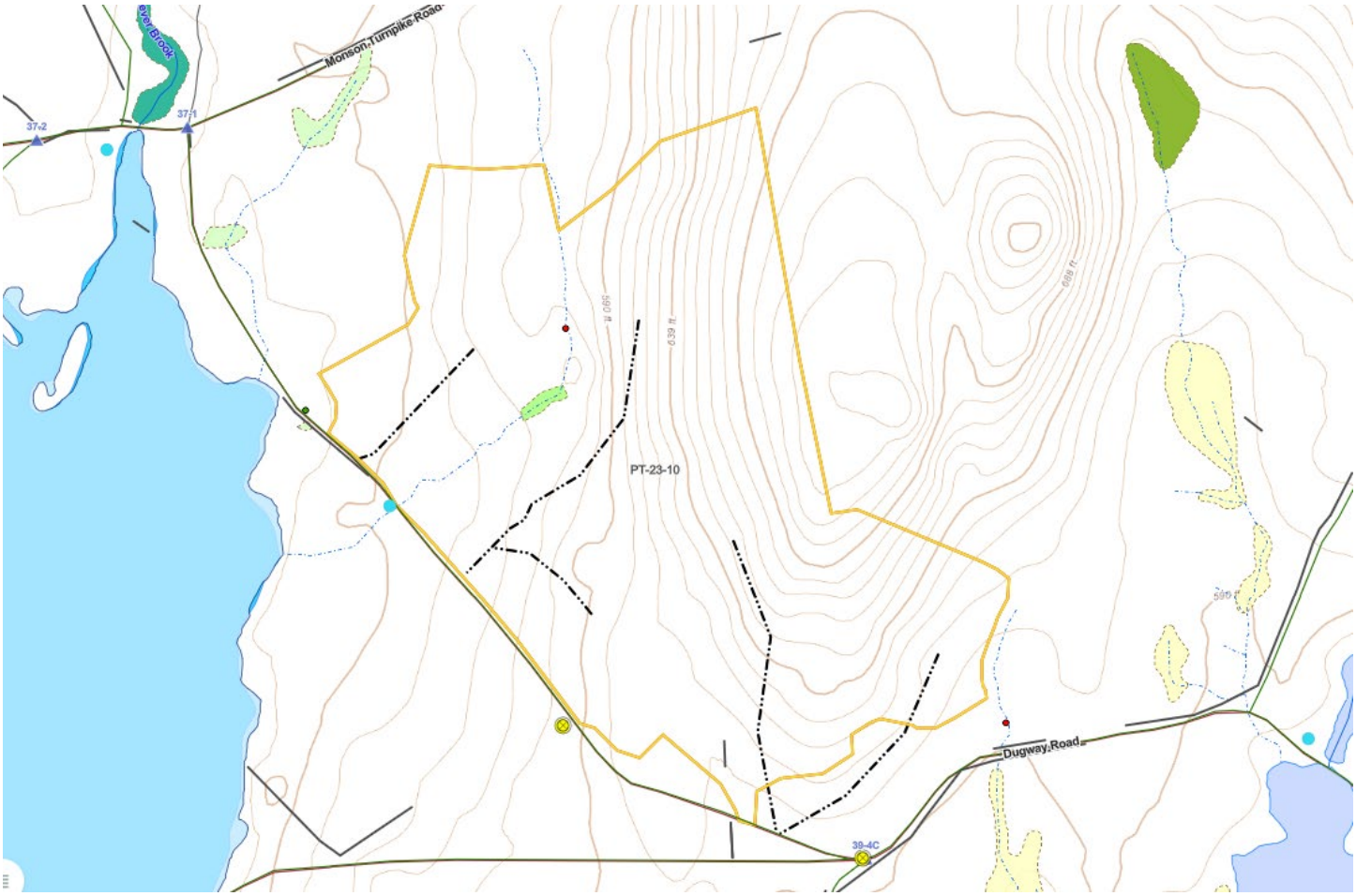
Equipment

Forwarder required: **Yes**
Feller/processor required: **No**
Steep slopes present: **No**

Comments on harvesting limitations:

A forwarder is being required in order to protect the DCR road, which will need to be used by logging equipment to cross the intermittent stream.

Figure 7. Harvesting limitations, PT-23-10.



Cultural Resources

Comments on Cultural Resources:

As recommended by DCR's archaeologist, soil compaction and disturbance will be minimized by armoring forwarding roads with slash. Any additional cultural resources that are located before or during the harvest will be flagged, mapped, photographed. reported, protected and avoided.

Figure 8. Stony and Extremely stony soils, PT-23-10.

Wildlife Resources & Rare and Endangered Species

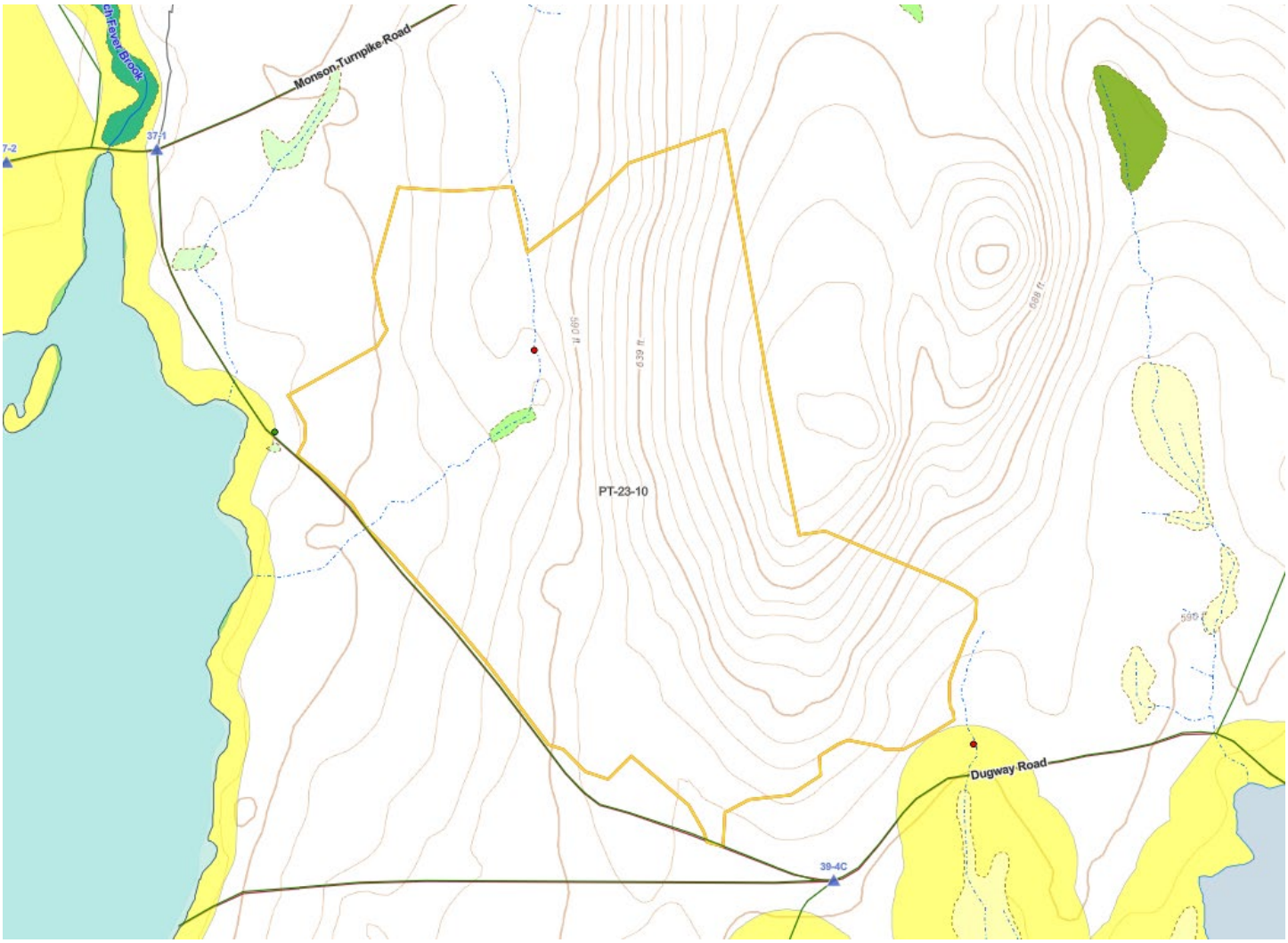
General Wildlife Comments:

See Wetlands section for comments on vernal pools.

Comments on Rare Species/Habitats:

None within proposal area.

Figure 9. NHESP Priority habitat overlay, PT-23-10.

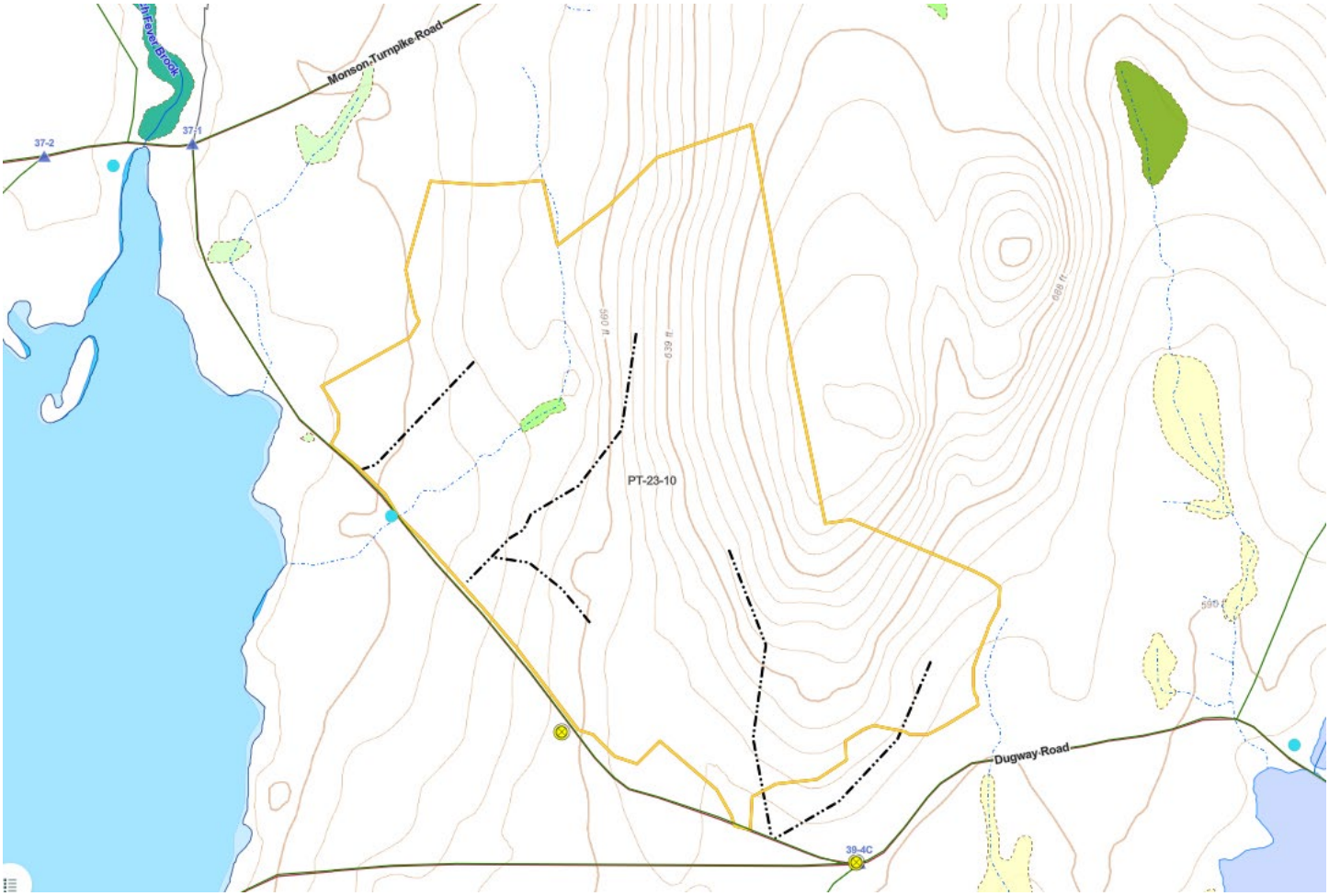


Environmental Quality Engineering

Comments on EQ Issues:

No crossings proposed except over culvert on gravel road. No EQ concerns.

Figure 10. Access planning, PT-23-10.



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:

No additional comments or work needed.

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