Quabbin Harvest Proposal PR-23-07

Proposal Update, May 2024:

This forestry proposal was originally approved through the public process in 2022. At that time, salvage of the dead and dying oak was a component of the proposed management. However, salvage was not the primary objective driving the decision to implement forest management in this area and ***salvage of the dead and dying oak will no longer be part of this proposal****. 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 remaining activities in this proposal align with EEA climate considerations developed from the 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, but* ***the reader should ignore references to salvage****.*

Proposal Goals

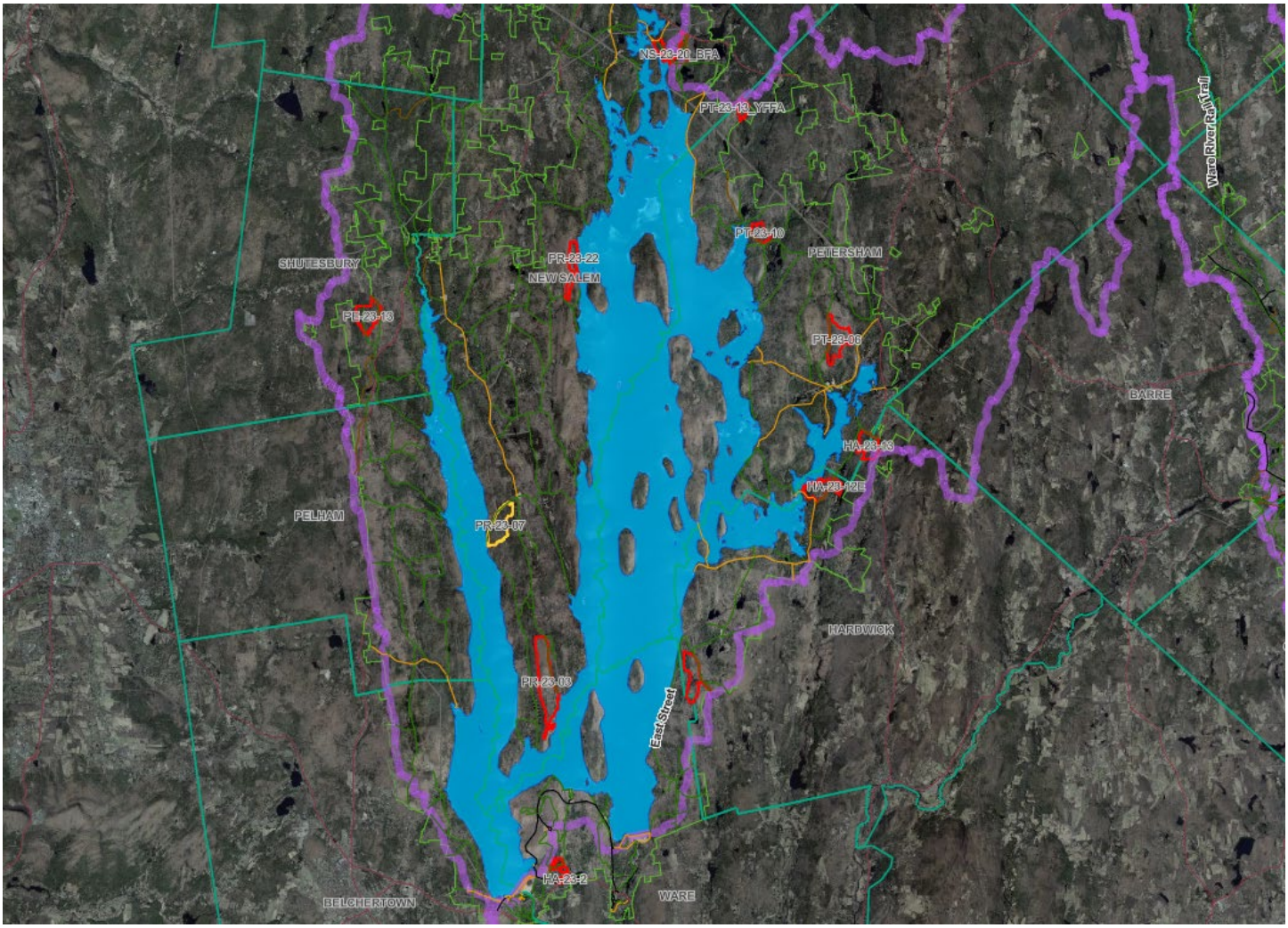
Building off what was started 22 years ago and continuing to rebalance the area's forest structure via recruitment of a vigorous forest understory is the primary goal of the harvest. This is a re-proposal originally presented for FY2018.

Proposal Location

(Yellow highlighted polygon in the map) The proposal area is bounded by East Valley Road to the west/northwest, to east by stonewall and west harvest boundaries for past timber lots 826 and 3067 and south by intermittent brook.

Total Acres: 140

Figure 1. Watershed Locus, PR-23-07.



General Description

Overstory Type(s)	Acres
Oak, mixed	120
White pine	20

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

Description of forest composition/condition:

The proposal area is dominated by oak. Red oak leads at 57% followed by chestnut oak (16%) and black/white/scarlet all around 5% respectively. The remaining 10% is captured by white pine, red maple, black birch, sugar maple, white ash, hickory and hemlock. The afore composition percentages were capture in 2016; just as the region's Spongy moth infestation was cranking up. As a result, the oak percentages have decreased due to 15 to 20% mortality. Mortality is particularly skewed to chestnut oak at around 30 to 40%. Site index declines with ascending slope. Concentration of chestnut oak increases with ascending slope. Black/white/scarlet have an even distribution. Sugar maple and ash are found in isolated patches of mesic soil near intermittent brook and seeps. Excluding the area's northeast corner, white pine is scattered, large and well formed; likely survivors following the hurricane of 1938. The northeast portion of the area encompasses a block of dense large diameter below average to poor quality white pine; a common occurrence from pasture abandonment at the hands of the late 19th century/early 20th century industrial revolution.

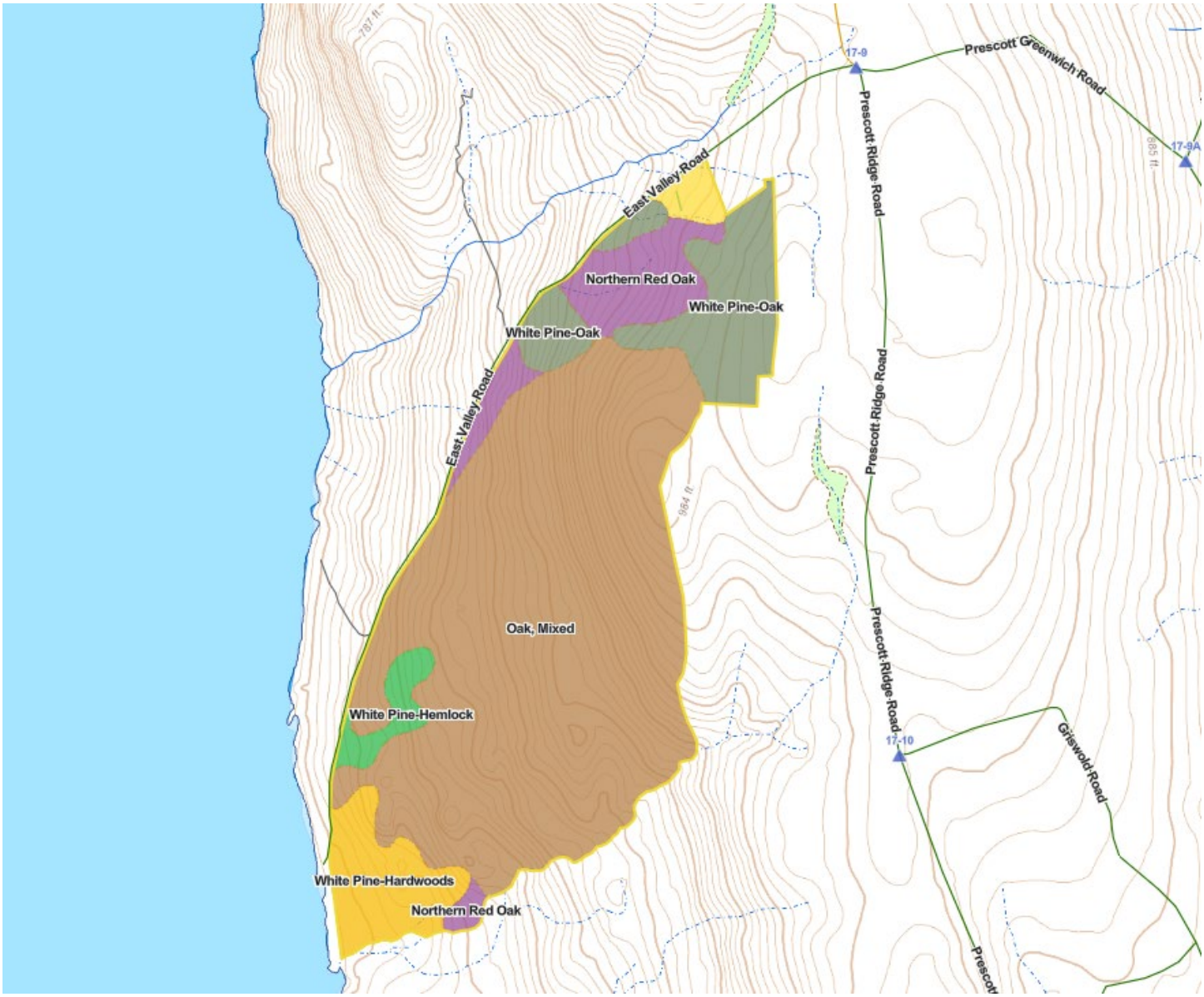
Understory is dominated by suppressed white pine saplings. Secondary component are seedling oaks. Pockets of vigorous growth composed of sapling black birch, white pine, red maple and oak are the result of an in-house crew selection harvest completed in 2000. Herbaceous/shrub layer is composed of pockets of which hazel on lower slope and huckleberry on mid/upper slopes. There is also a scattering of mountain laurel on upper slopes.

Forestry records indicate most of the lower slope and portions of the mid and upper slopes where treated with an early stage shelterwood type harvest in 1965. The 2000 harvest covered 20 acres on the east side of East Valley Road beginning just south of the old road leading to Daniel Shays homestead. Residual basal area is around 60 sq. ft. per acre of good grade medium to large size red oak sawtimber. Numerous trees on the drier mid and upper slopes have basal scaring indicative of fire.

Assessment of Terrestrial Invasive Species:

Field assessment identified Japanese barberry, honeysuckle and bittersweet in the area's northeast corner. The barberry is quite dense. In varying densities, barberry is also found along intermittent brooks and seeps. In particular barberry density increases while ascending the southerly intermittent brook (area's south boundary) and invasive diversity expands to include honeysuckle, multiflora rose and bittersweet along the main skid trail approaching the gate 17 trailer landing at intersection 17-10.

Figure 2. Forest cover types, PR-23-07.

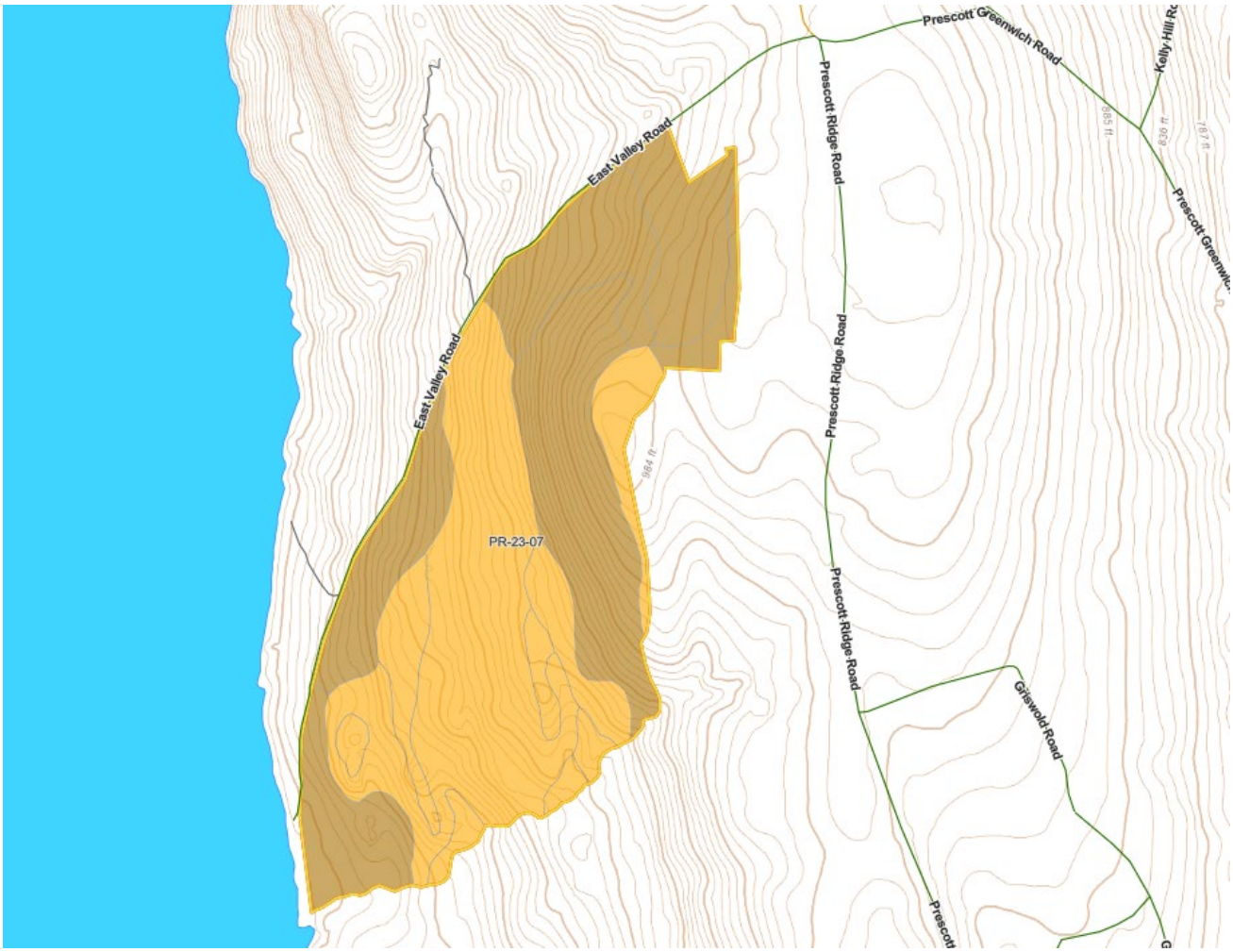


Soils

Drainage Class	%
Excessively Drained	0
Well Drained Thin	50
Well Drained Thick	50
Moderately Well Drained	0
Poorly to Very Poorly Drained	0

Canton fine sandy loam: Upland rocky well drained soil derived from gneiss and schist loam over a rock till. Chatfield-Hollis complex: A well drained rocky till derived from gneiss and schist found on uplands and upland slopes. The finer Canton series is found on the lower slopes and transitions to the rockier till of the Chatfield-Hollis series.

Figure 3. Soil classes, PR-23-07.

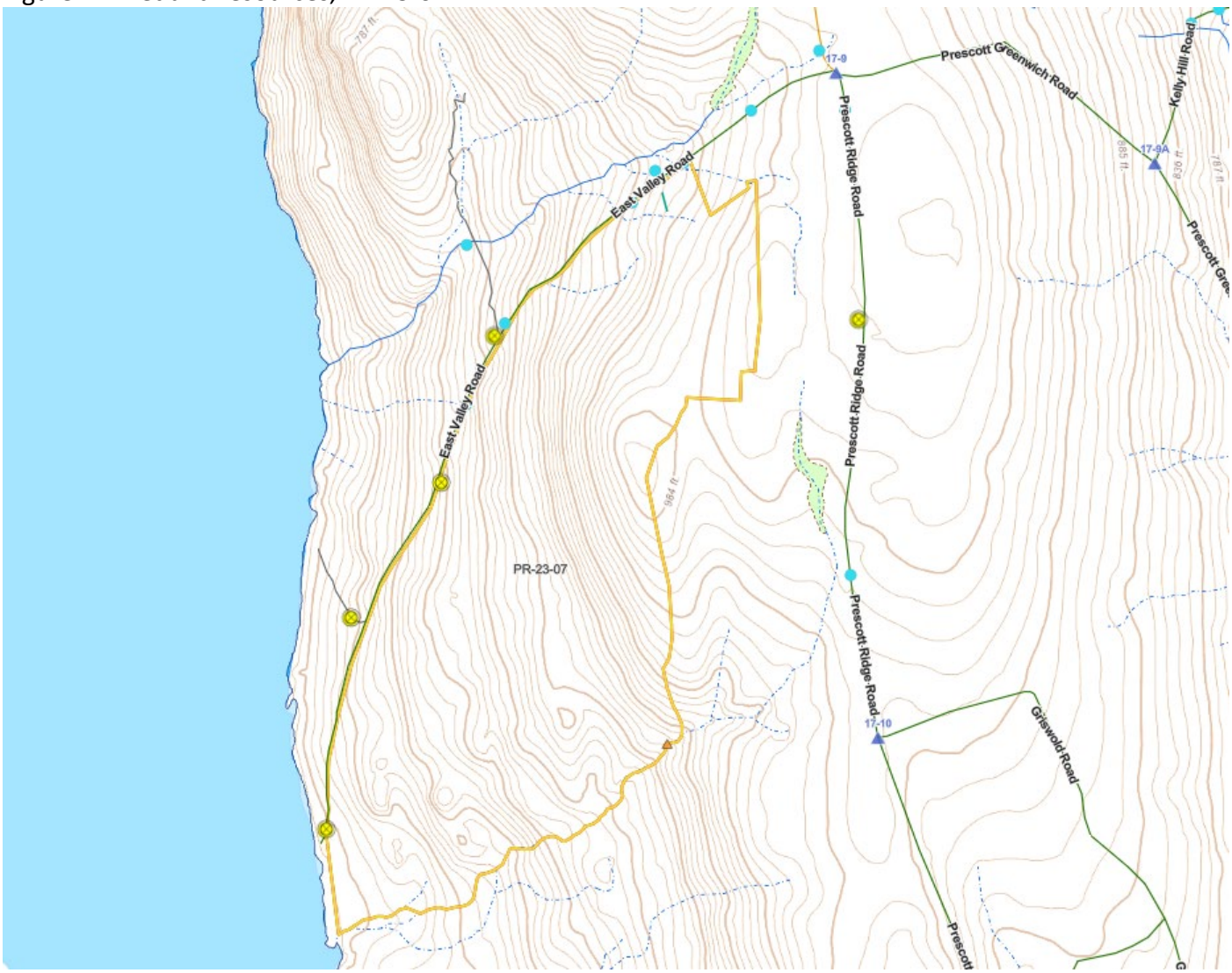


Wetlands

- Wetlands present? - **No**
- Streams present? - **Yes**
- Vernal pools present? - **No**
- 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**

There is one possible stream crossing where what appears to be an old town road (now main skid road) commencing northwesterly from intersection 17-10 crosses the intermittent brook that forms the area's south boundary. Other intermittent streams are culverted under East Valley Road.

Figure 4. Wetland resources, PR-23-07.



Silviculture

Acres in Intermediate cuts: **0**
Acres in prep/establishment cuts: **0**
Acres in Regeneration cuts: **20**
Average regen opening size: **2**
Maximum regen opening size: **8**

Description of advance regeneration in proposal area:

Based on field observation regeneration levels are greater than 2,000 stems per acre; lead by sapling size white pine and followed by seedling red oak, chestnut oak and sapling black birch (highest concentration of black birch in year 2000 prep harvest). Excluding the 2000-year harvest area, and prior to the Spongy moth infestation (2016), all regeneration was fairly suppressed due to nearly 100% canopy closure. Now with overstory oak mortality from Spongy moth infestation there are random patches of regeneration receiving increased light and responding accordingly (particularly white pine).

General comments on silviculture proposed:

Excluding the twenty acre, year-2000 timber harvest and more recently, scattered random overstory gaps from Spongy moth killed oak, the area is fully stocked with high canopy forest. Regeneration is adequate but not particularly vigorous (excluding 2000 harvest area). Building off what was started 22 years ago and continuing to rebalance the area's forest structure via recruitment of a vigorous forest understory is the primary goal of the harvest. With respect to harvest trees, first priority will be the large low quality white pine located in the northeast portion of the area. The pine in this section is of very poor quality and will be harvested in an opening larger than 5 acres. Secondary focus will be salvage of dead oak sawtimber and firewood through patch or opening type silviculture. Priority will be given to areas of advanced regeneration, particularly pine and oak.

Climate Change considerations:

Maintaining oak species in oak types through release of advance oak regeneration offers resiliency benefits under future climate scenarios. Reducing cover of poor quality white pine to favor a diversity of tree species in the regeneration layer.

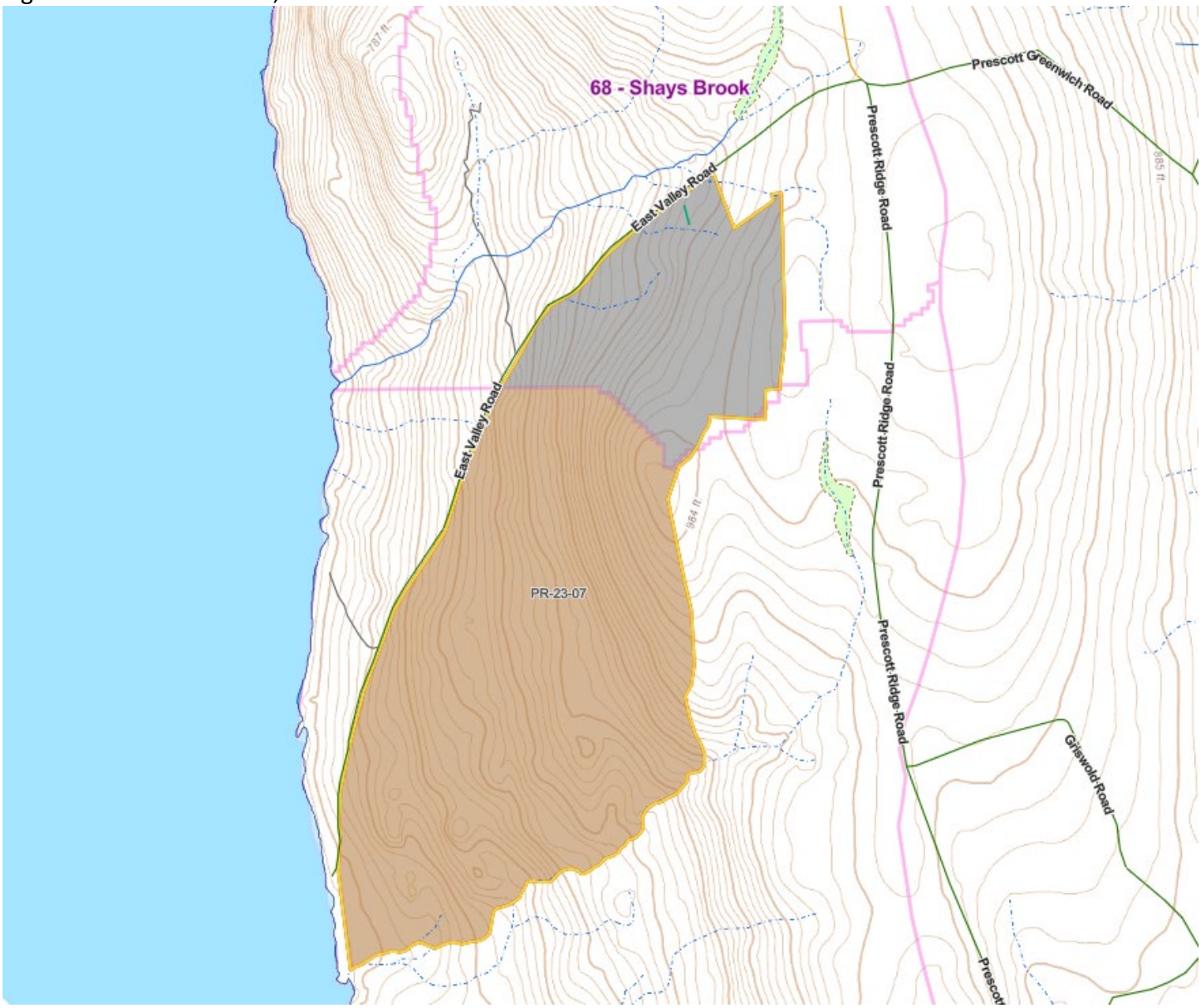
Figure 5. Orthophoto and cover types, PR-23-07.

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
31 (West Prescott Middle)	855	15	199	93
68 (Shays Brook)	219	14	41	47

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

Figure 6. Subwatersheds, PR-23-07.



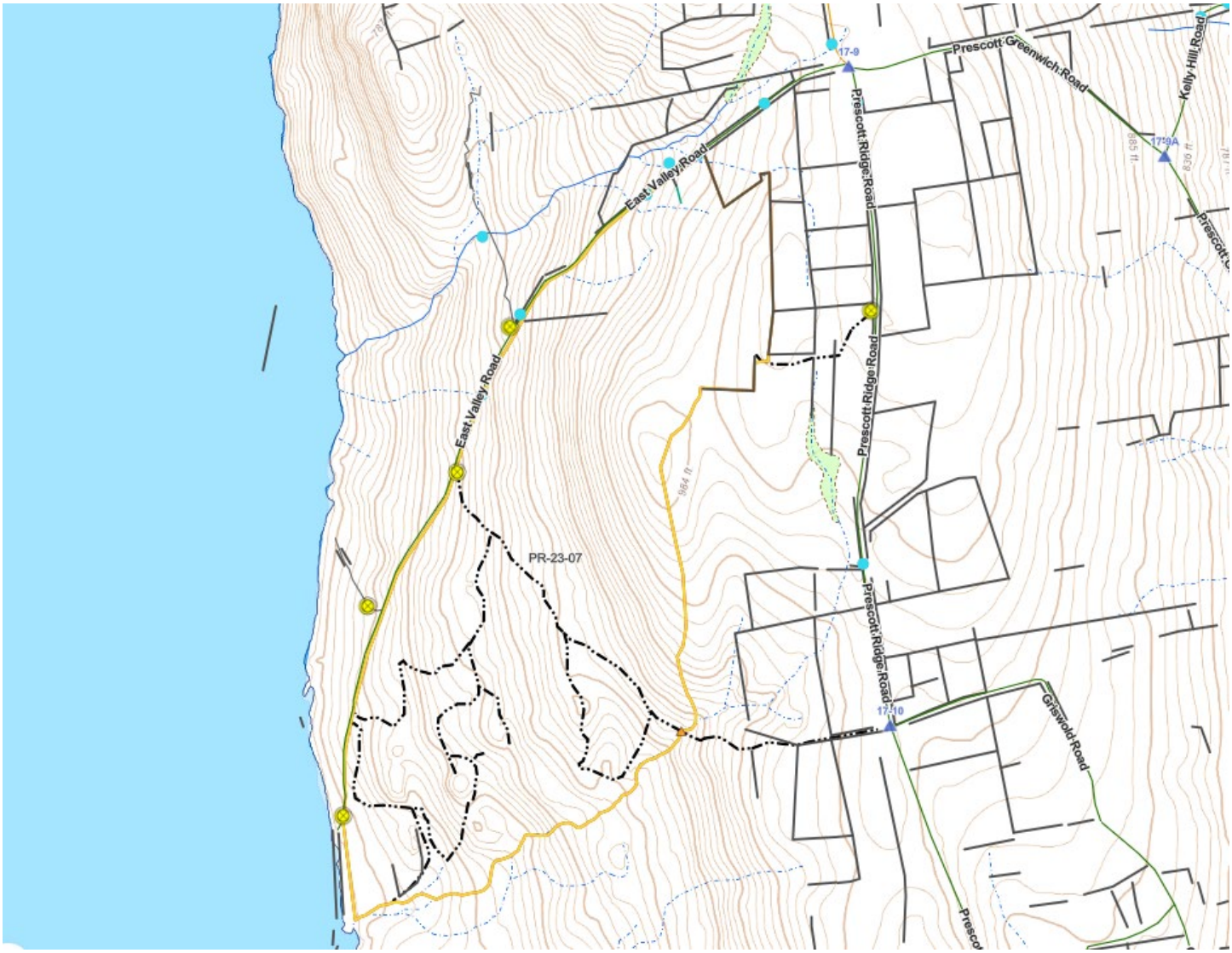
Equipment

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

Comments on harvesting limitations:

Two separate harvests may be planned for the area. A whole tree chipping operation that can accommodate significant volumes of white pine pulp in the northeast part of the area, and a short wood logging system (forward) for the remaining oak salvage work.

Figure 7. Harvesting limitations, PR-23-07.

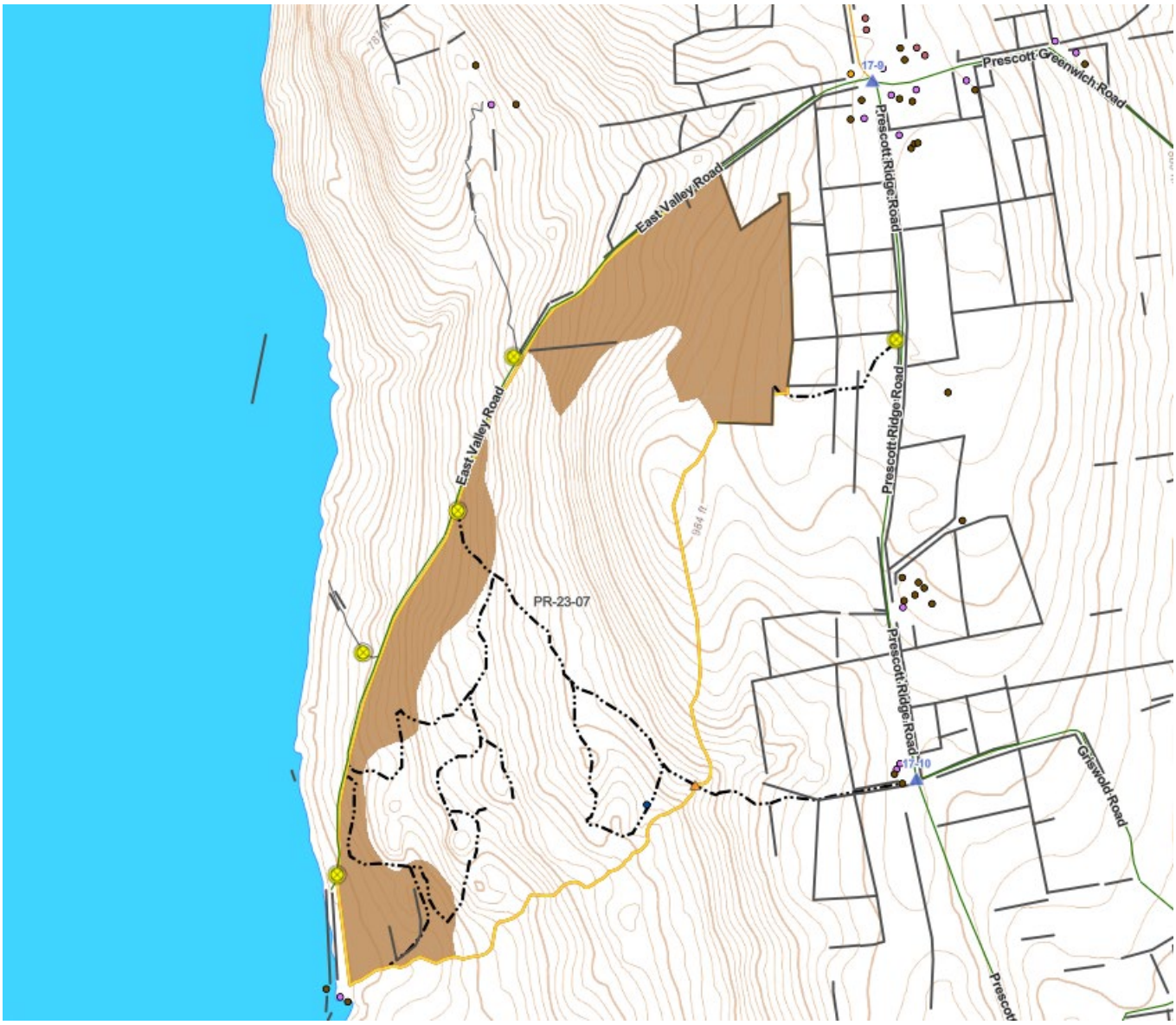


Cultural Resources

Comments on Cultural Resources:
The southeastern corner of the area may have been home to a century ago or more sugarbush and sugar house evidenced by the remains of a chimney and possible foundation where a boiling pan may have been set. In addition to the sap boiling site are scattered old metal buckets likely used for sap collection. In the extreme northeast corner of the area is what appears to be a field stone cistern (water collection) structure. There are stone walls in the southwestern corner of the area associated with an old homestead that is underwater (reservoir).

Appropriate BMPs will be utilized to minimize soil compaction as recommended, and care will be taken to avoid disturbance to otherwise undisturbed above ground features.

Figure 8. Stony and Extremely stony soils, PR-23-07.



Wildlife Resources & Rare and Endangered Species

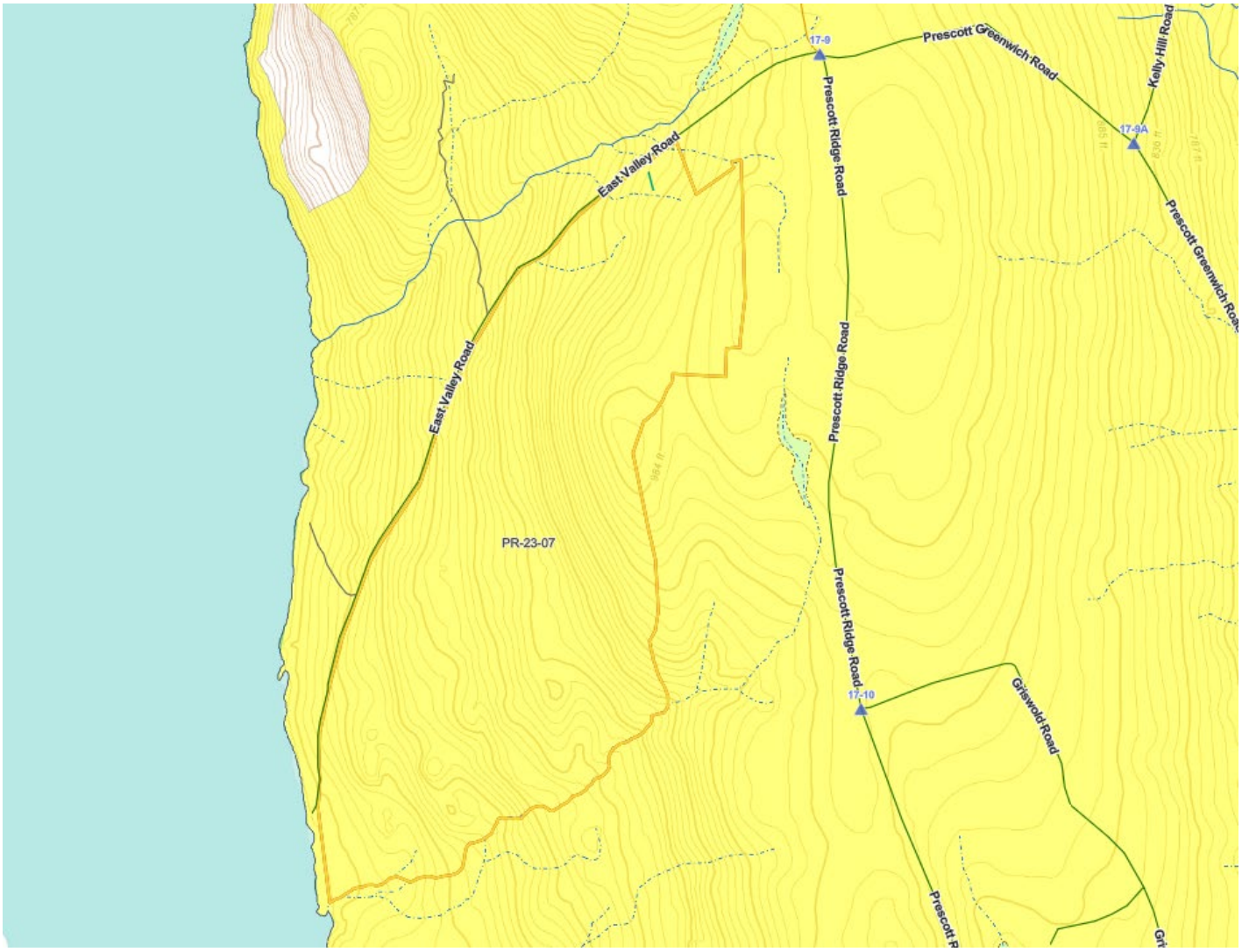
General Wildlife Comments:

There was presence of moose and deer sign (pellet, tracks, and browse) and, a Ruffed Grouse was observed. No vernal pools.

Comments on Rare Species/Habitats:

NHESP map shows habitat for whippoorwill covering the entire proposal, and for bald eagle along the shoreline. DCR will follow appropriate recommendations from NHESP to protect these species and their habitats.

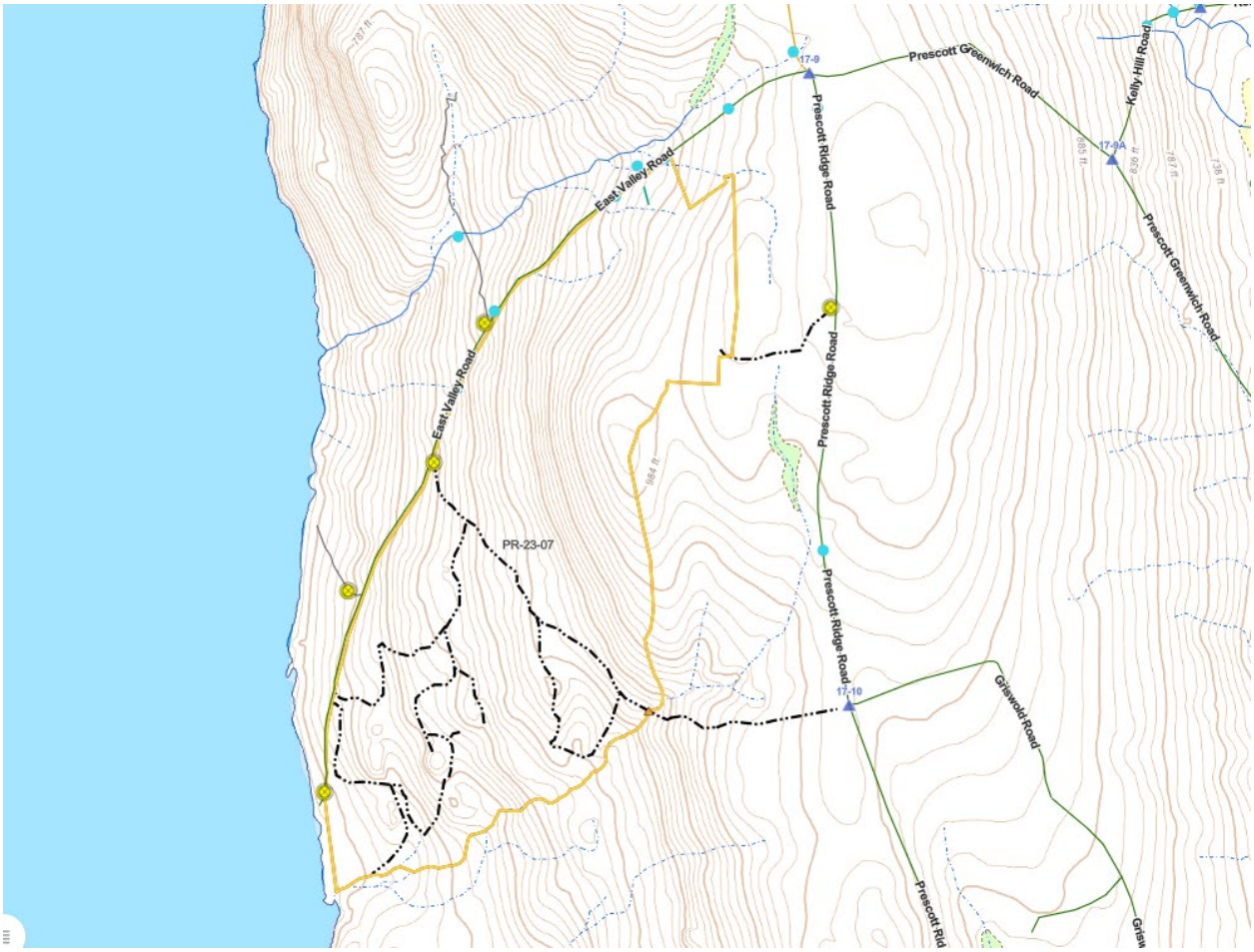
Figure 9. NHESP Priority habitat overlay, PR-23-07.



Environmental Quality Engineering

Comments on EQ Issues:
The proposed intermittent stream received enough flow that the crossing will likely be monitored as per EQ protocol.

Figure 10. Access planning, PR-23-07.



Forest Access Engineering

Gravel needed: Yes
Landing work needed: Yes
Culverts needed: No
Work needed on permanent bridges: No
Beaver issue: No

Further comment on access needs:
Consider constructing trailer landing on west side of gate 17 road, 1500 ft south of intersection 17-9 (Old UMASS Observatory site). May need to relocate a portion or all of road scrapings pile on west side of gate 17 road at intersection 17-10 to make log landing function. Consider making road improvements to the last 500 ft or so of East Valley Rd. There are some large roots protruding into the road surface and bottom triaxle landing/turn around.

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