Quabbin Harvest Proposal PE-22-02

Proposal Update, May 2024:

This forestry proposal was originally approved through the public process in 2021. 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 2021 in ArcGIS Online Story Map format.

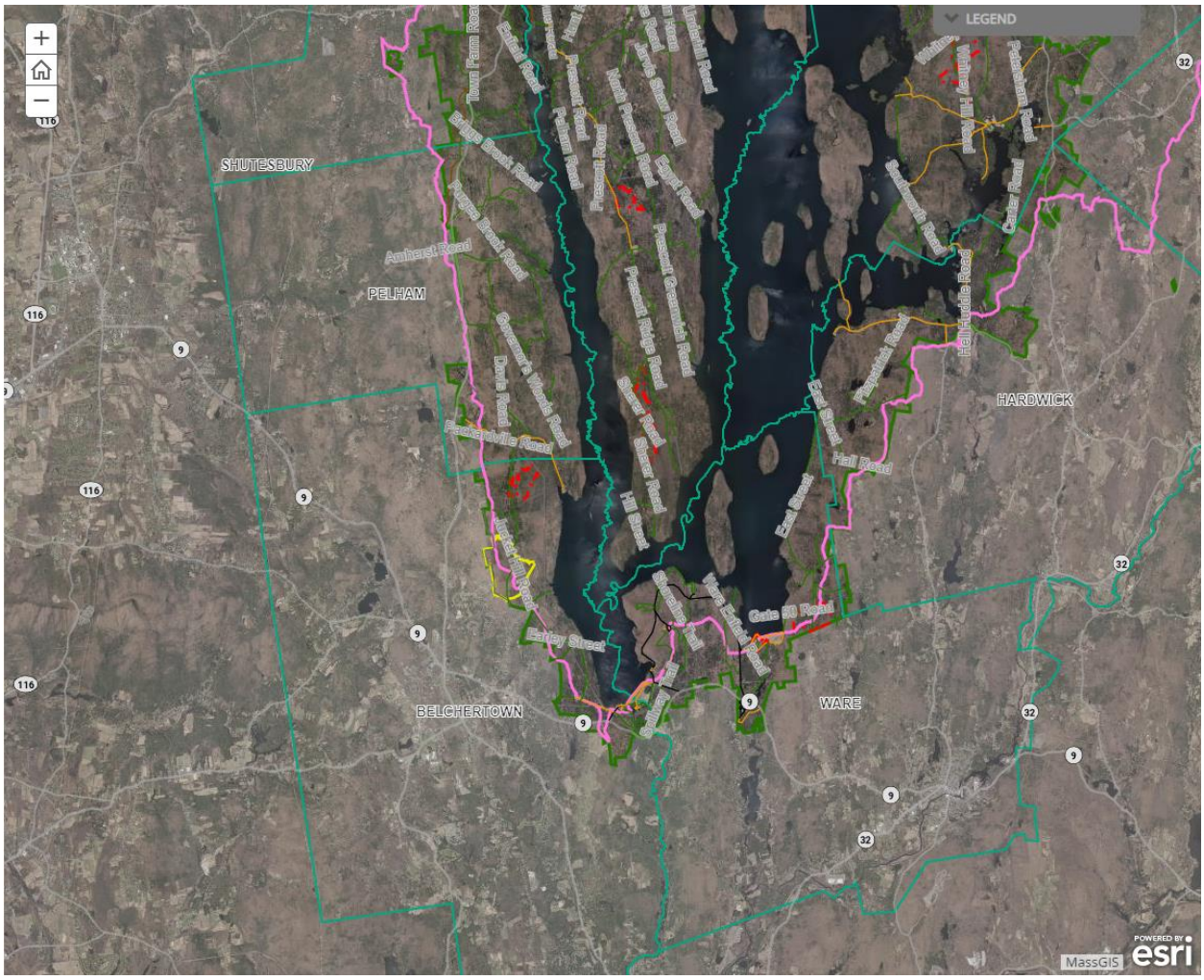
Proposal Goals

Most of this proposal is in oak and oak - hardwood types which were severely impacted by the gypsy moth infestation of 2015-2019 and which were previously thinned in 1980's and 90's. Our standard group selection harvest will be implemented further releasing saplings and poles started from previous harvests and creating a new age class in openings ¼ acre to 4.5 acres in size..

Proposal Location

Starting at gate 6 go north along road till hit end of PE-15-02 and end of lot 1053, follow edge of 1053 east and then northeast, continue past 1053 to Gates Brook, follow Gates brook upstream, cross Jucket Hill Road and continue following Gates Brook to the first intermittent stream on left, follow that upstream to a small wetland, head westerly across that to another wetland, cross that and head west a short distance to property boundary, follow boundary all way back to gate 6.

Total Acres: 332



General Description

	Overstory Type(s)	Acres
Dominant	Northern red oak	195
Secondary	Oak - hardwoods	76
Other	White pine - hardwoods	46

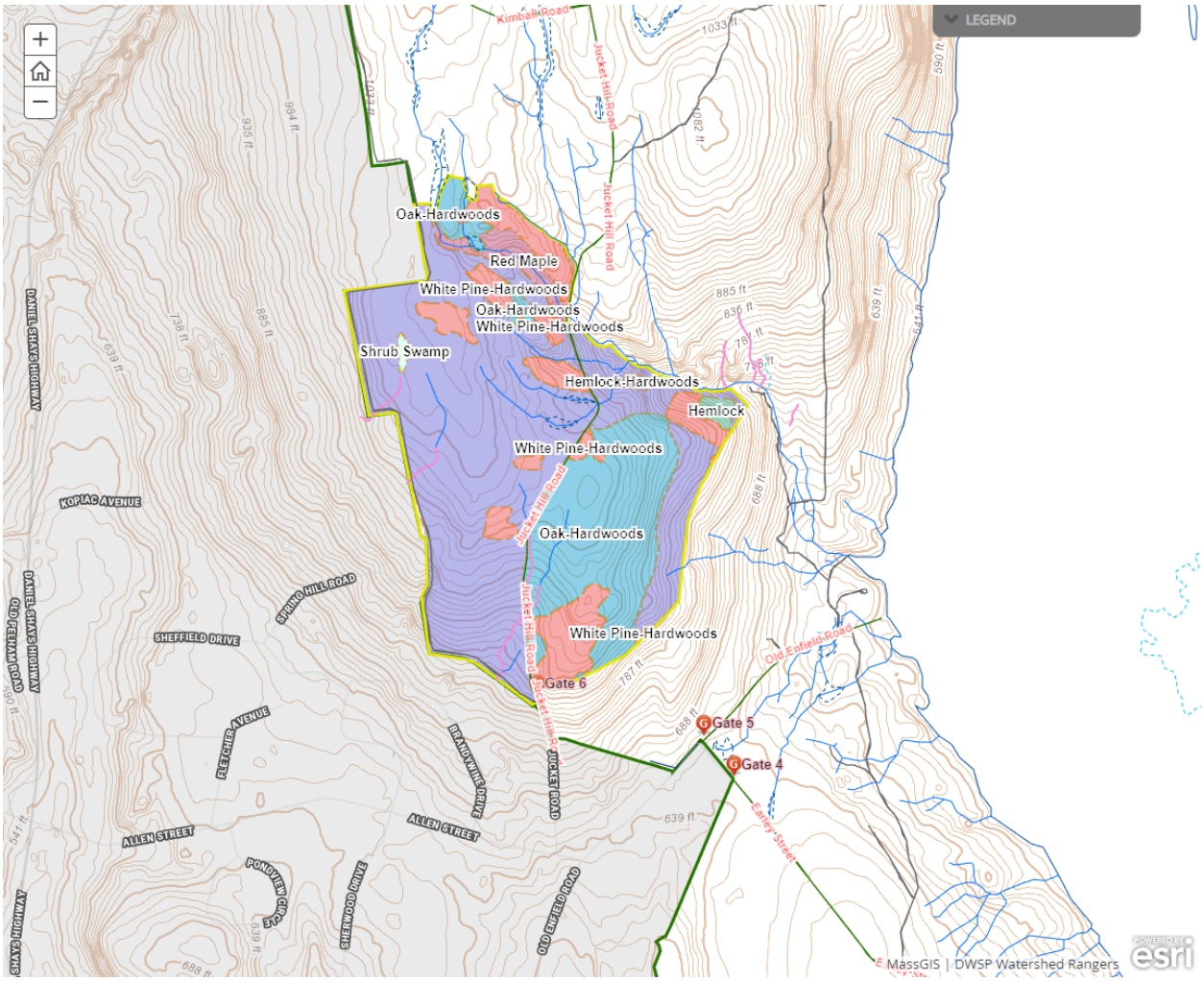
	Understory Type(s)
Dominant	Tree seedlings/saplings dominate the site
Secondary	Dry site - blueberry/huckleberry

Description of forest composition/condition:

All of this area was impacted by gypsy moth (GM) from 2015-2020 with heavy mortality of oaks particularly east of Jucket Hill Road and in pockets around the central portion of the west side. Emerald ash borer (EAB) also started affecting the area around the end of 2019 and many ash were showing the characteristic "blonding" by the fall of 2020. Decline and mortality of white pine regeneration has also been noted in the area, most likely from several funguses and a canker that have been active in the region. Droughts in 2015-2016 and fall of 2020 have also had an impact as had competition from surrounding seedlings/saplings and shading from overstory. In general the understory is healthier and more vigorous where the stand was cut heavier in past or where understory is more open for other reasons. About the only good thing from the GM caused mortality is the releasing of regeneration. Most of proposal area has been thinned once or twice since 1970, with only scattered openings with vigorous regeneration still present. Most of these are in the northern 2/3rds of the eastern section of the portion west of Jucket Hill Road. Most of the proposal would currently be classed as fully stocked and even-aged.
There were 3 harvests (288, 366 and 388) on the east side of road between 1981 and 1986, with all but the steepest areas being cut. These appear to have been mostly thinnings and very well could have been salvage cuts from the last GM infestation. This side of road is mostly dry site oak with a couple of stands of white pine/hardwood. Overstory is a mix of red, black and white oak with some scarlet oak, red maple, white pine, hickory, black birch and white birch. There is a small stand of hemlock/hardwoods in the northeastern corner. Terrain is steep here and that stand might not be treated.
The west side of road had most of the area thinned in 1974 (95) and then there were multiple harvests between 1982-1996 (293, 342, 616, 642, 648, 760). These covered most of the western side, with several of them overlapping in some areas. Again the 2 cuts that occurred in 1982 most likely included some salvaging.
The oak on the west just after gate 6 is on the better site and is the best quality and most vigorous on the proposal. The site gradually declines and becomes drier up the hill. There is an old cart road at the junction with the main landing and truck turnaround. Along this old road some of the heavier cutting was done and the more diverse and vigorous regeneration is found. Up to the landing overstory is mostly red oak with black oak, red maple, black birch and scattered ash, hickory, sugar maple and white birch. The western area past the landing is flatter and has an intermittent stream with associated wetlands cutting through it. Species composition is about the same here but with some hemlock along the wetland and some scattered beech. North and east there are several intermittent brooks that flow easterly into Gates Brook. Types here transition in and out of white pine/hardwoods. Overstory here is generally lower quality white pine with red maple, red, black and white oak, and black and white birch.

Assessment of Terrestrial Invasive Species:

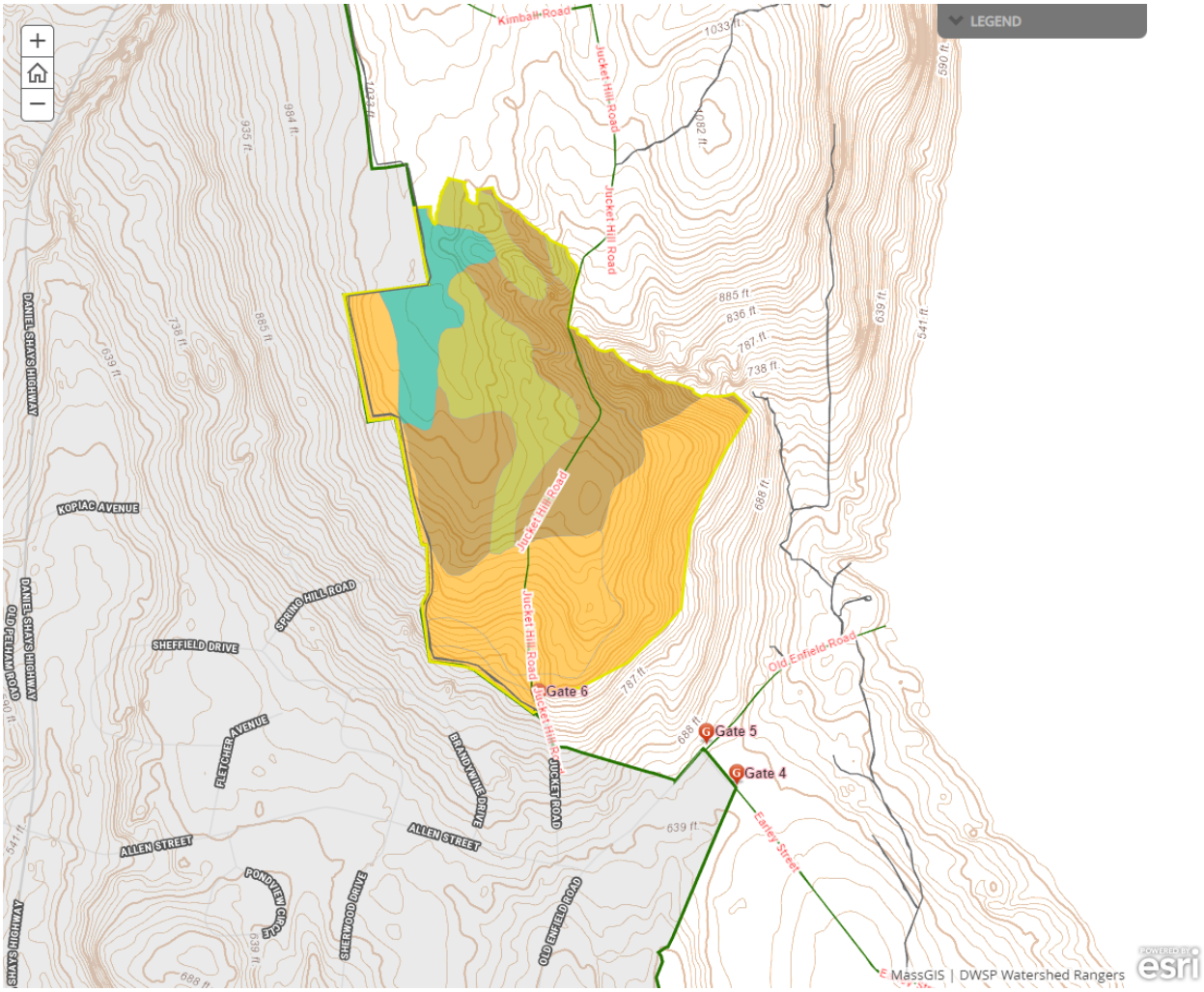
No invasives observed during various site walks. Probably is some Japanese barberry along some of the wetlands or intermittent streams.



Soils

Drainage Class	%
Excessively Drained	0
Well Drained Thin	42
Well Drained Thick	31
Moderately Well Drained	18
Poorly to Very Poorly Drained	9

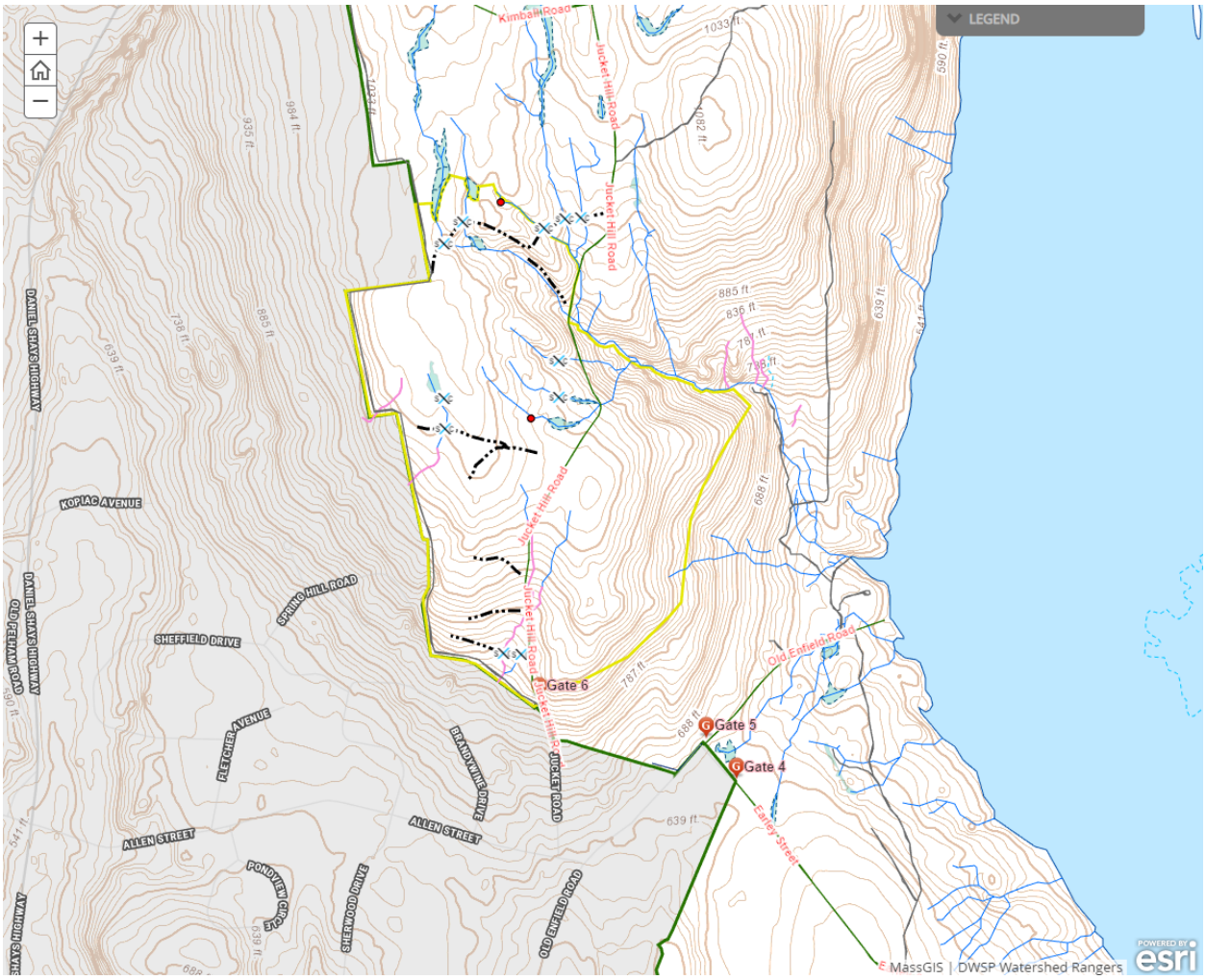
Flat along existing woods road is 317C moderately drained Scituate fine sandy loam, rest of site is mainly 442B&C well drained thick Gloucester gravelly fine sandy loam. Along the western boundary soil is 103C well drained thin Charlton-Hollis-rock outcrop complex and a section of 71B poorly to very poorly drained Ridgebury fine sandy loam. The latter area contains most of the wetlands which will be avoided.



Wetlands

- Wetlands present? - **Yes**
- Streams present? - **Yes**
- Vernal pools present? - **Yes**
- Seeps present? - **Yes**
- Are stream crossings required? - **Yes**
- Are wetland crossings required? - **Yes**
- Is logging in filter strips planned? - **Yes** **(Riparian Zone Mgt)**
- Is logging in wetlands planned? - **No**

1 new vernal pool was identified on lot.



Silviculture

Acres in Intermediate cuts: **17**

Acres in prep/establishment cuts: **163**

Acres in Regeneration cuts: **71**

Average regen opening size: **1**

Maximum regen opening size: **4.5**

Description of advance regeneration in proposal area:

Good white pine, mixed hardwood and oak regeneration present throughout lot. The central section around the old road has some very nice oak (red, black and scarlet) regeneration to about 16'. There is also a lot of oak seedlings that are suppressed. We had a good white pine seed crop in 2020. Most areas have over 1000 seedlings/acre. Moose and deer are common here with 4 separate moose being identified on abutting harvest in 2020.

General comments on silviculture proposed:

Silviculture will be group selection with additional thinning between some groups, and on the better sites where there are nicely formed vigorous stems some prep or seed cuts in shelterwoods will be done. Groups created will range from .5-4.9 acres but will be concentrated in the 2-4 acre range in the oak types. The groups of good oak and mixed species regeneration will be released by harvesting around them to expand the original openings. The advanced vigorous regeneration will be protected as much as possible.

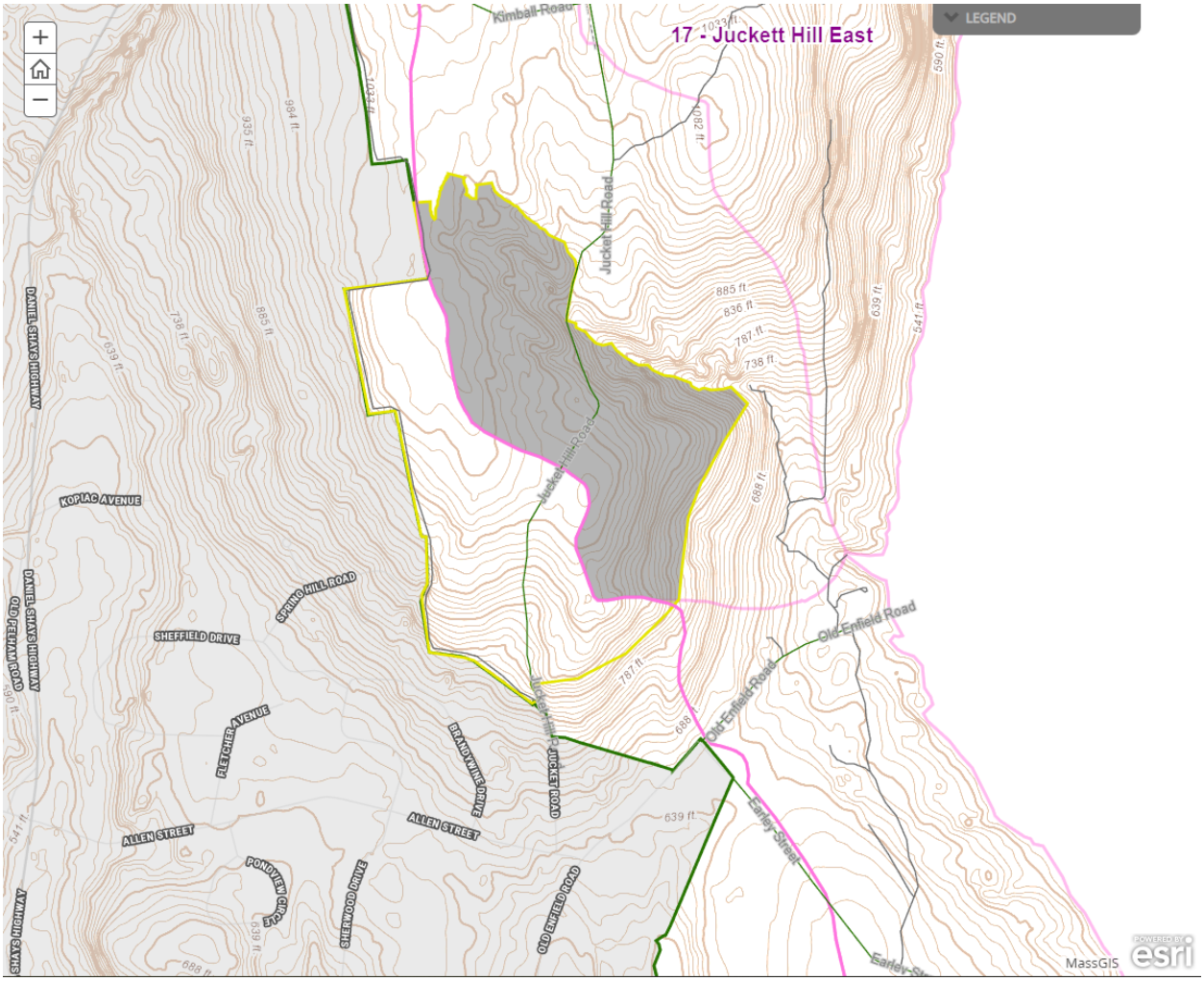
For all treatments openings will be placed as per our then current guidelines and will be located first in areas with more trees of low vigor or poor form or health. In areas partially cut these same categories will be targeted first. Additional larger higher quality trees will then be included to create the desired condition. Retained trees, other than wildlife and structural trees mentioned below, will generally be the better formed, vigorous individuals of the range of species that are desired to be regenerated on the area. Attempt will be made to retain structure and select well rooted, wind firm trees particularly in retained exposed groups in openings.

Scattered wildlife trees, standing dead, healthy individuals of all species present and individuals with superior form and vigor will be retained throughout proposal to preserve habitat, maintain or increase diversity, improve overall stand health and vigor and retain some carbon storage and increase the growth rate (carbon sequestration) of the retained trees. One of the main silvicultural goals across the proposal is to diversify species and age structure by regenerating openings with free to grow regeneration that should stay vigorous for at least 10 years. These openings should also encourage species that are better adapted to our changing climate to become established.

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
5 (Belchertown Shoreline)	683	37	134	<1
61 (Gates Brook)	594	3	145	174

158 acres of this proposal are off watershed. 25% threshold potentially could be exceeded on sub-shed 61 but typically only 43.6 acres would be regenerated in this sub-shed which is far below the 145.3 acre limit.



Harvesting Limitations

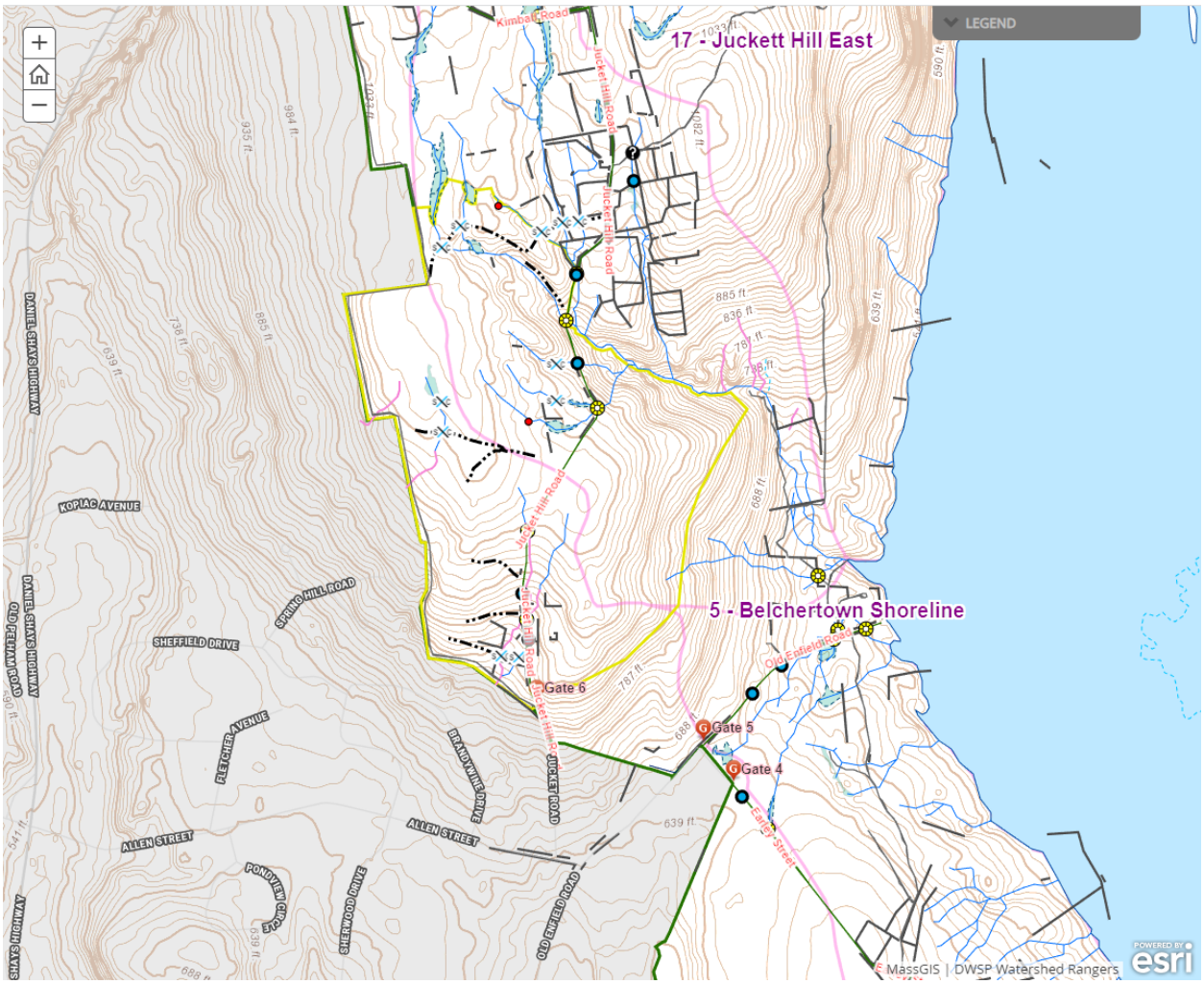
Forwarder required: **Yes**

Feller/processor required: **No**

Steep slopes present: **No**

Comments on harvesting limitations:

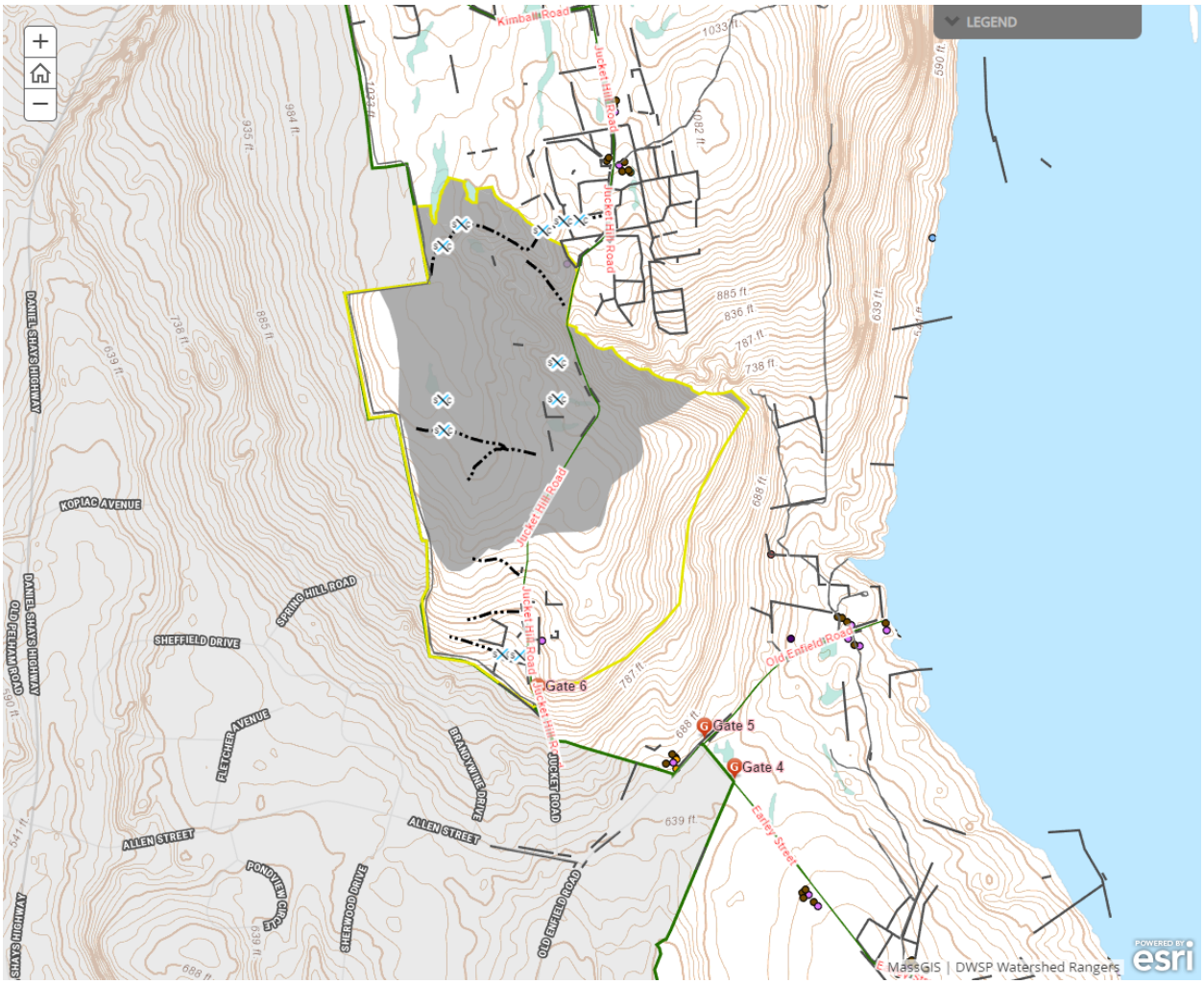
No equipment restrictions should be needed except for the southern portion of lot where landings are small and roadside and numerous walls and other cultural features are present. In these areas a 6 or 8 wheeled forwarder will be required for log transport.



Cultural Resources

Comments on Cultural Resources:

Most of the area surface stone is prevalent and micro topography is pronounced. No wells have been identified but there must have been some around the foundations.



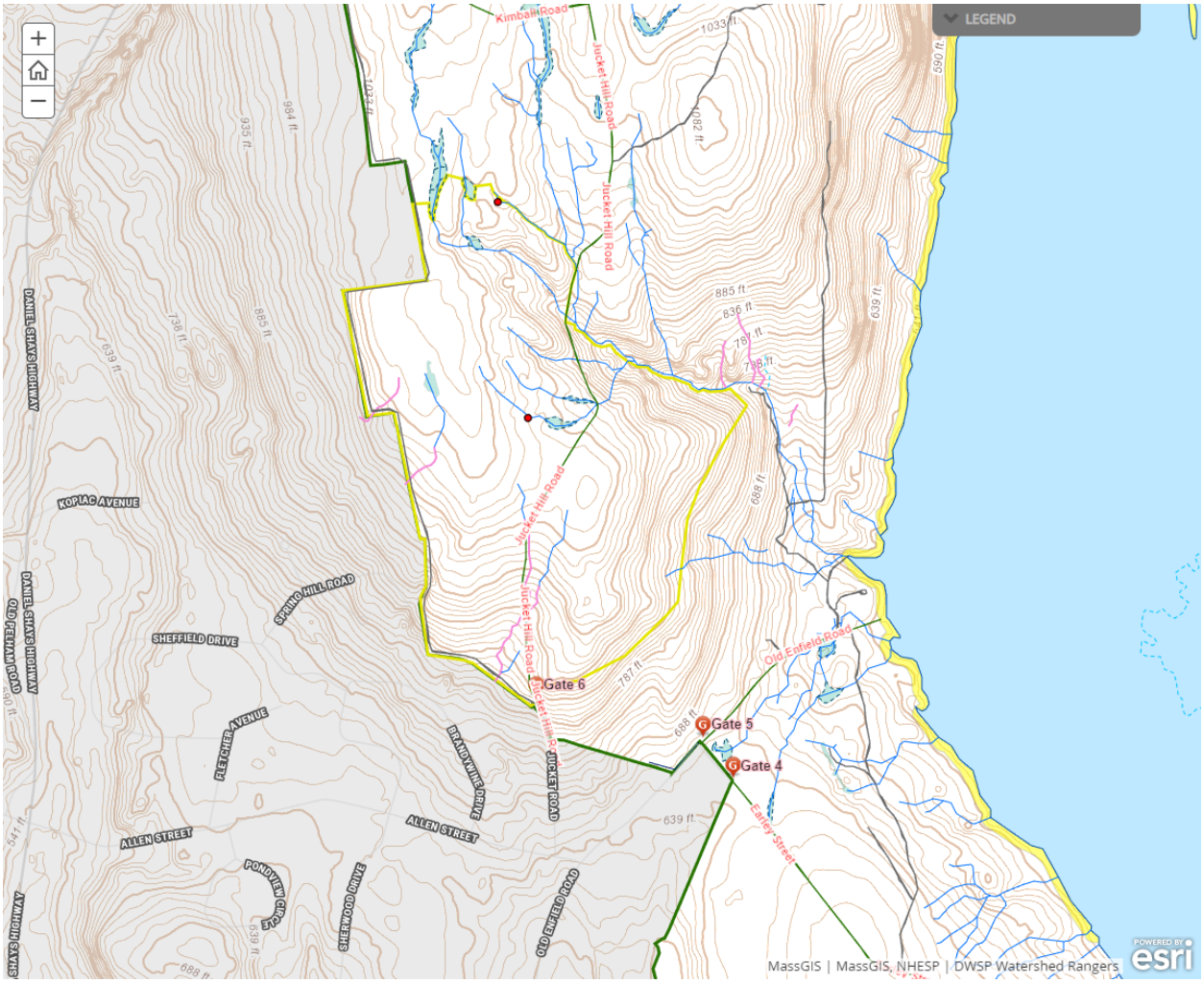
Wildlife Resources & Rare and Endangered Species

General Wildlife Comments:

No known unusual sites or habitats. Moose are present on lot and at least 4 were identified on harvest across the road in October of 2020. Browse is currently light to moderate but both deer and multiple moose have been spotted in area recently and moderate to heavy browse is expected. Bear, turkey, grouse and coyote also use this area.

Comments on Rare Species/Habitats:

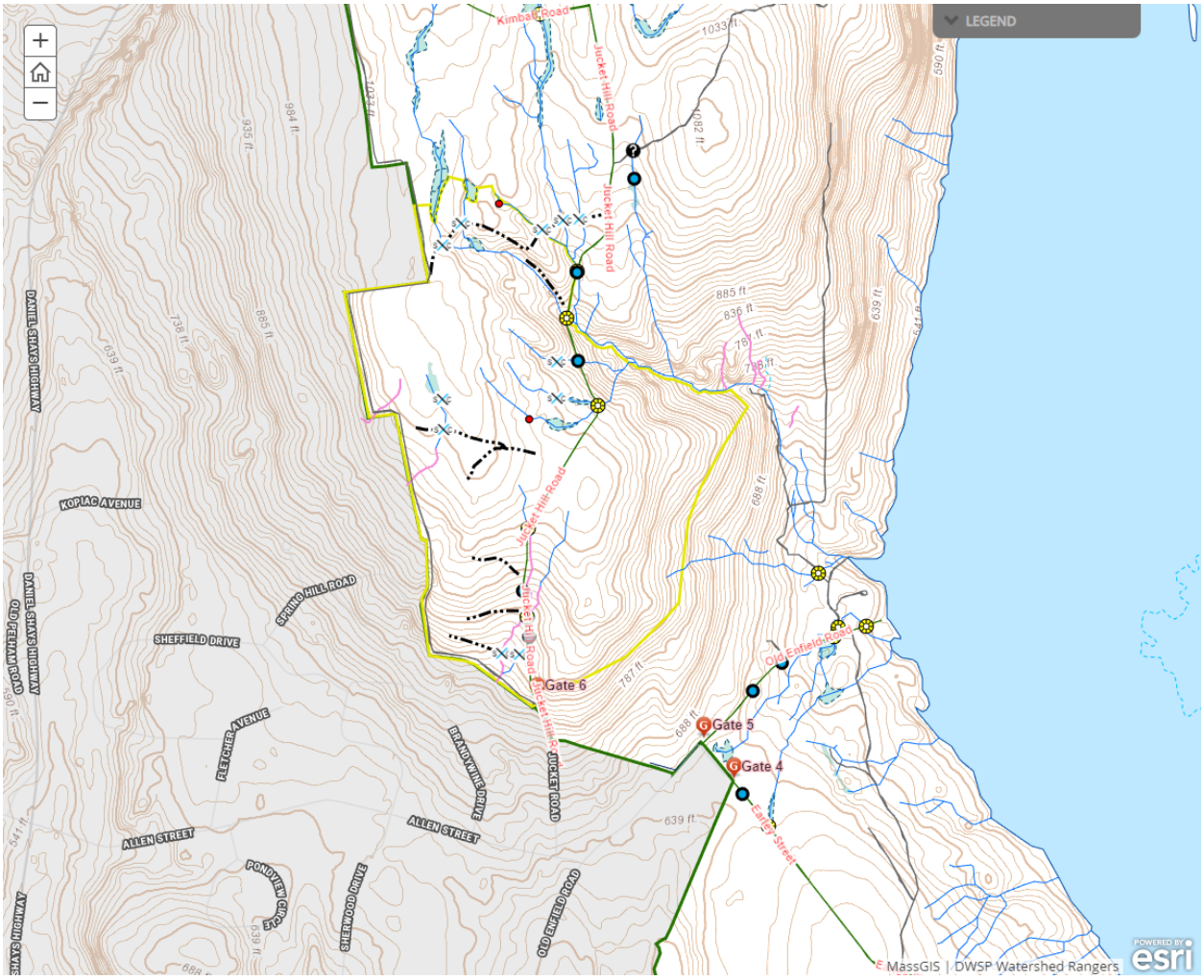
No NHESP habitats in the treatment area. Two new vernal pools were identified and confirmed as active.



Environmental Quality Engineering

Comments on EQ Issues:

Only two stream crossings flow to require sampling. Other 9 crossings are all on intermittent or ephemeral crossings, as is the flow through the one wetland crossing. Most have been crossed before and several might be avoided depending on how harvests are laid out. All will be bridged if flowing or likely to flow during harvest.



Forest Access Engineering

Gravel needed: Yes

Landing work needed: Yes

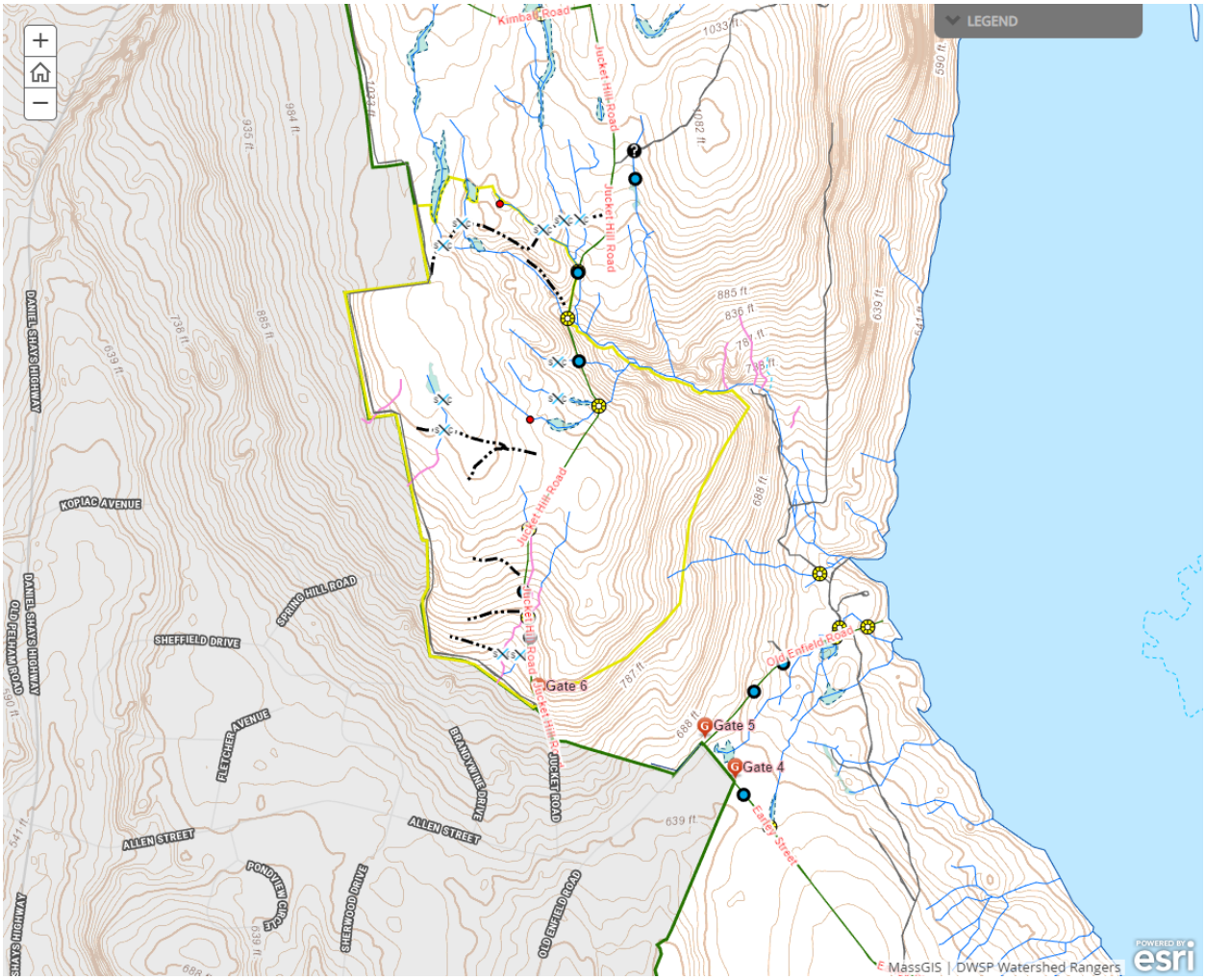
Culverts needed: No

Work needed on permanent bridges: No

Beaver issue: No

Further comment on access needs:

General maintenance is needed on Juckett Hill Road south of where trailer turnaround was created in 2020 and landing/turnaround will need to be improved at landing site (existing) here. Main need is ditch maintenance/improvement and some straightening and widening of road surface on corners to allow trailer access. Access will be from gate 8 unless gate 6 end is improved.



DWSP FY 2022 Forestry Proposals – Master Legend for story maps