Quabbin Harvest Proposal HA-22-5

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.

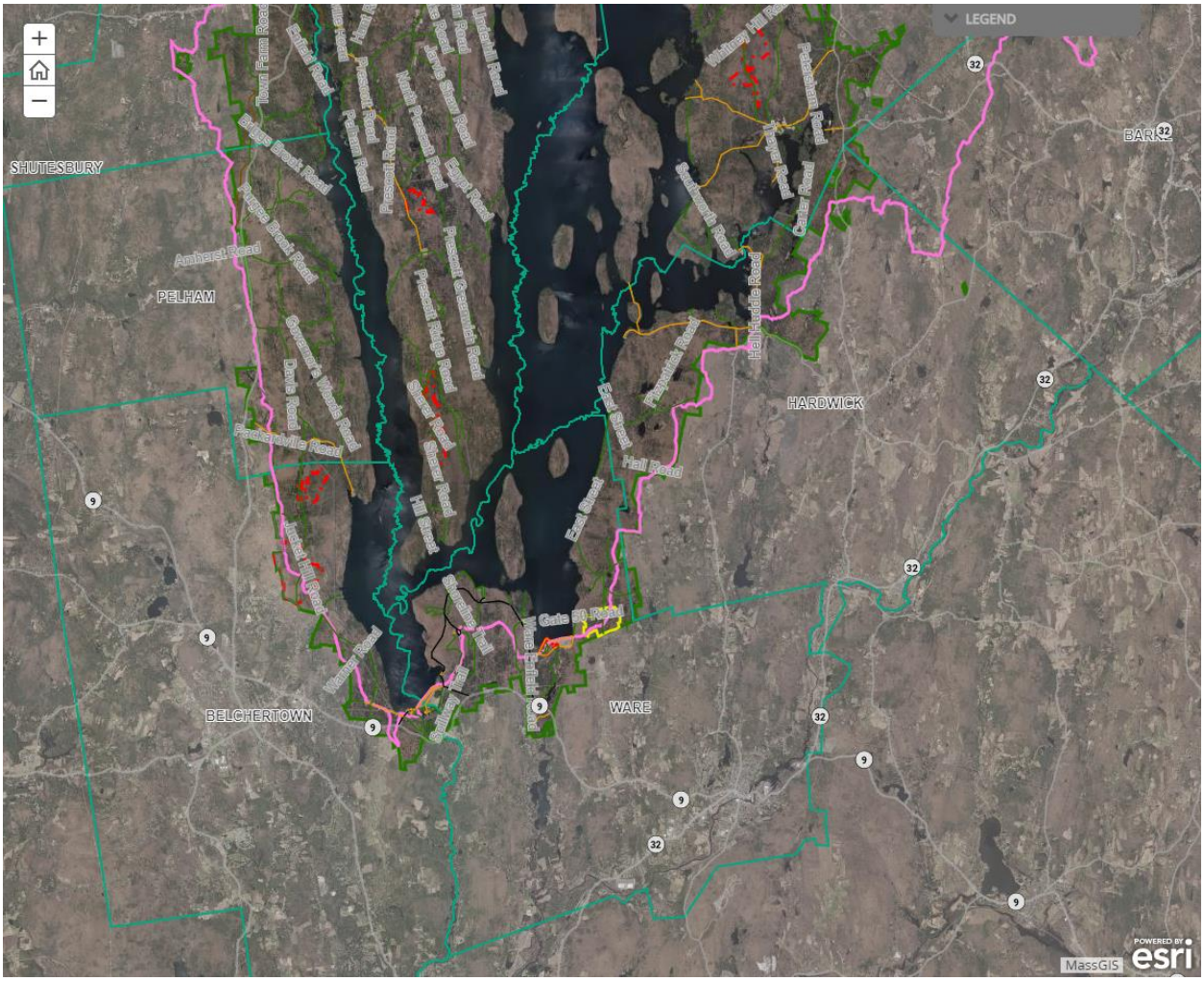
Proposal Goals

One third of this proposal is red pine plantations that have been cut multiple times and have been declining due to red pine scale. A final harvest is proposed here which will leave a diverse uneven- aged stand. The rest of the area is mainly white pine or white pine hardwood stands proposed to receive our standard group selection harvest or a seed cut shelterwood harvest which will allow for diverse regeneration to become established and further release existing regeneration.

Proposal Location

135 acre block of red pine plantations and abutting white pine, oak and hardwood stands. Starts at boundary at gate 49 and is roughly a rectangle 2,300' x 3,600' that is mostly bounded by stone walls.

Total Acres: 135



General Description

	Overstory Type(s)	Acres
Dominant	White Pine - hardwoods	67
Secondary	Red pine	40
Other	Oak - hardwoods	19

	Understory Type(s)
Dominant	Tree seedlings/saplings dominate site
Secondary	Mesic site - witch hazel, highbush blueberry

Description of forest composition/condition:

The red pine plantations here have all been cut multiple times and are in various stages of being converted to uneven-aged white pine - hardwoods. Red pine scale has been present in the stand and the harvests occurred before there was much mortality in the stand so there is some, but not a lot, of standing dead currently. Scale is still most likely present and some of the crowns are thin and getting brown again. First cut (P 38) was in 1968 and covered most of the stands. In 1977 a second cut (RP C5) was done in stands east of intersection 49-1 and in one of the stands to the west of East Street. Most of area was cut again in 1990-'91 (600, 677 and S18). The 2 stands on the north end had most of the remainder of the red pine cut at this time. The final harvest (1040) in the remainder of the plantation was completed in February 2014 and left groups and strips of red pine and created groups of regeneration on about 25% of the cut area. These stands are currently two-aged mixed species, predominately red and white pine with red, white and black oak, red maple, and black birch. Scattered ash, white birch and black cherry are also present. The regenerated groups are mainly sapling to pole sized white pine, black birch and red maple with scattered hickory, ash, oaks, and black cherry. Southwest of intersection of East Street and Gate 50 Road (49-1) is a large wooded wetland that contains a shrub swamp and has had vernal pool species identified in it. This area will be buffered and not harvested. Overstory is red maple with white pine and scattered hardwoods.

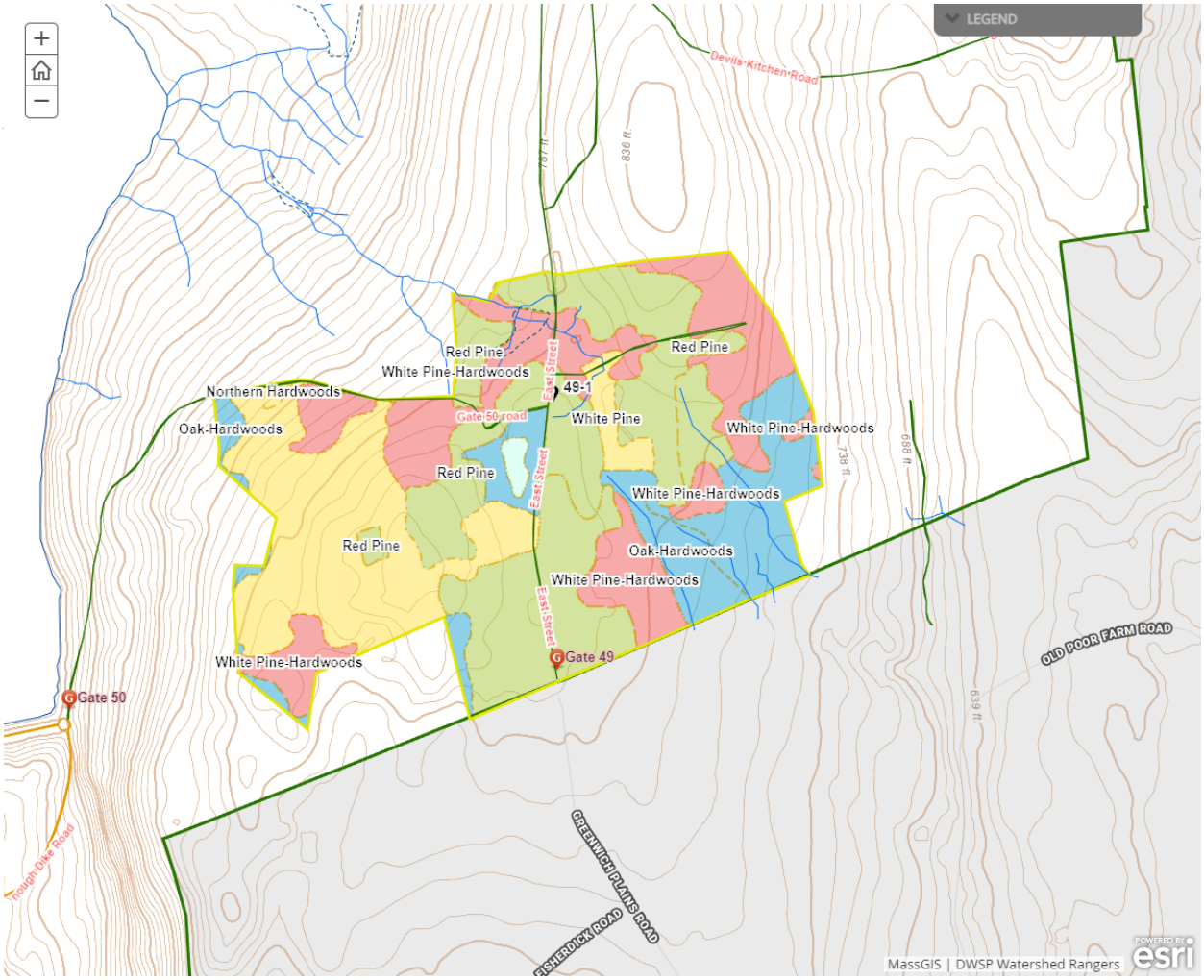
The rest of the western portion of proposal is mostly even-aged white pine/hardwoods with scattered small openings. All of this area has been previously cut starting in 1970 (61) and 1980 (222) and these cuts appear to have areas that overlapped, possibly to pick up gypsy moth - caused mortality. A second harvest was done in 2008 (1032) with small groups with retention created. There was plenty of regeneration started at this time but most now are overtopped and at risk of being damaged during future harvests. A similar cut took place in 2006 (1015) but most of this harvest was to the west of this proposal. Overstory is mainly white pine with oaks, red maple and black birch and scattered hickory, black cherry and white birch.

The eastern portion of the lot east of the red pine contains a couple of stands of white pine/hardwoods which have similar composition to the western stands but have not been cut recently for the most part. South of the walled lane, towards one of the vernal pools, is a pocket of large pitch pine mixed in with the pine/hardwoods. The southeast corner of the proposal contains an even-aged uncut oak/hardwood stand that transitions into a red maple wetland associated with an intermittent stream. There are several other intermittent streams that start on the southern edge and drain south off the property. Overstory is predominately red and black oak with red maple, white oak, black birch and ash along with scattered white birch, hickory and black cherry. Note the wetlands contain a lot of invasives (see section on invasives). Fortunately most are currently restricted to the wetter soils which won't be harvested. The last two stands are mainly red maple and black birch on seasonally wet soils. Most of these stands won't be cut this

time. The one just east of East Street was created by a patch cut of red pine (294) 5.3 acres in size and now is well stocked with white and black birch, red maple with scattered ash and oak.

Assessment of Terrestrial Invasive Species:

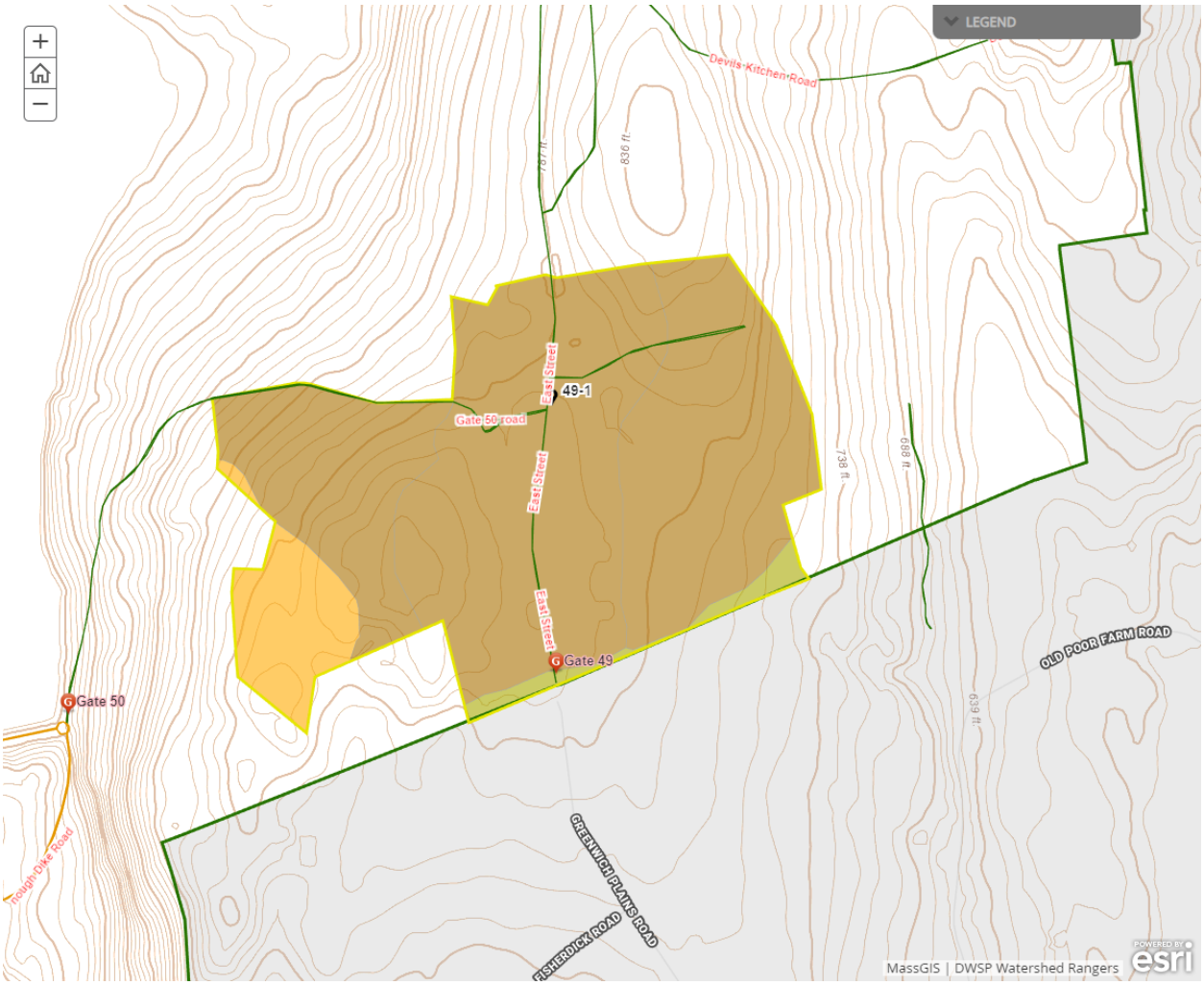
Japanese Barberry and Asiatic Bittersweet are common in and around several of the wetlands particularly the ones flowing out to southern boundary. Winged Euonymus and multiflora rose are scattered in these areas too.



Soils

Drainage Class	%
Excessively Drained	0

Well Drained Thin	9
Well Drained Thick	88
Moderately Well Drained	3
Poorly to Very Poorly Drained	0



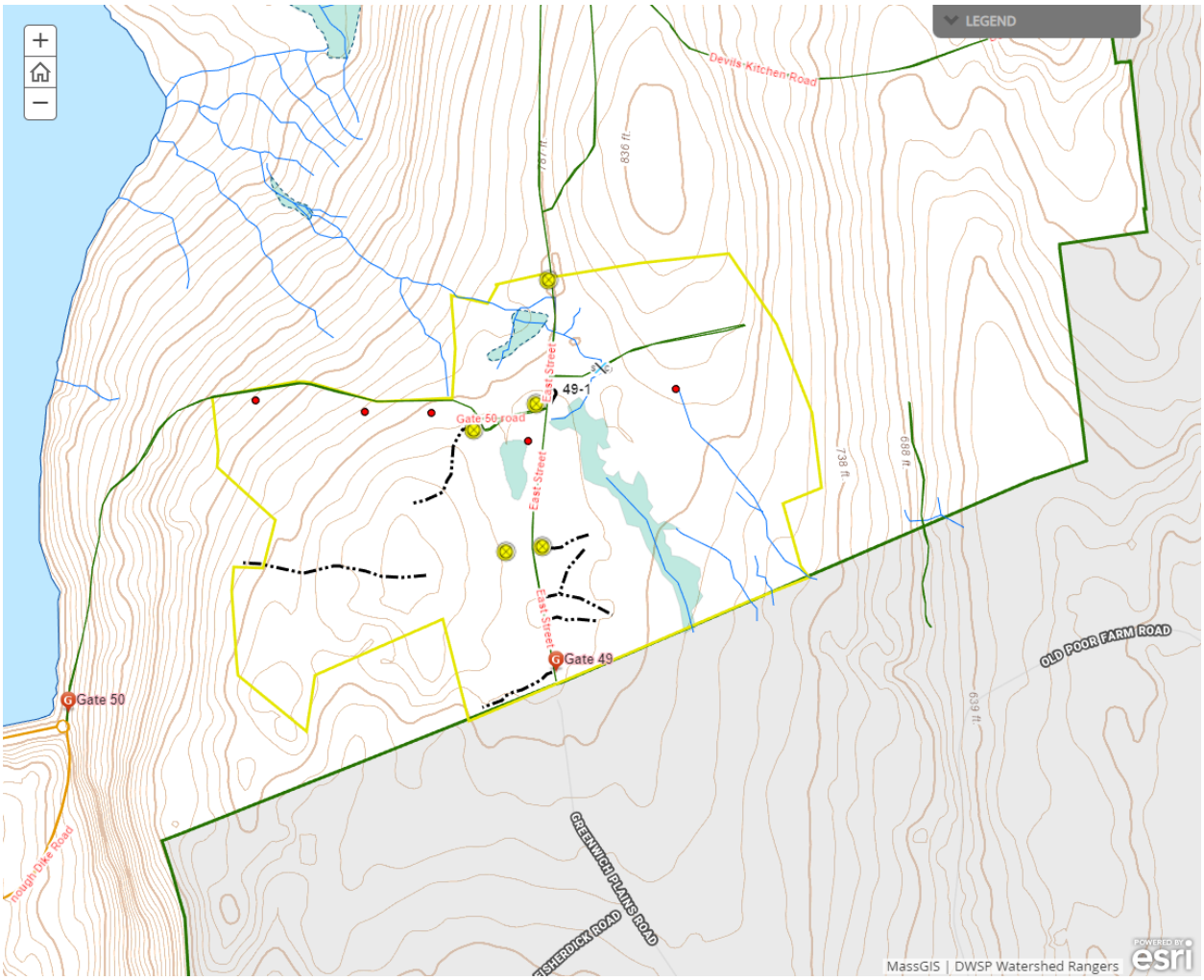
Wetlands

- Wetlands present? - **Yes**
- Streams present? - **Yes**
- Vernal pools present? - **Yes**
- 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**

The only crossing that should be required is over an intermittent brook that passes through a stone culvert in an old roadway. There are now 4 vernal pools identified south of Gate 50 Road. 2 are located in old gravel pits, one is and old gravel test hole and the third is a large shrub swamp/wooded wetland complex that has had vernal pool species identified in it. This last area stays wet all year. 2 more pools were identified and confirmed this year. 1111 was created by the above mentioned stone culvert which has become partially blocked with sediment over the years. The existing roadway has been used as a main skid trail and is the best access to the land to the east. Care needs to be taken when this access is used so as not to disturb the pool or create ruts in road. A portable bridge should be required to protect the stone culvert from damage. The last pool 2222 is in a depression that was probably dug long ago to water livestock. There is a well beside the intermittent brook that drains out of this pool.

Note the long skinny wetland that runs from the southern boundary to the old lane and vernal pool crosses the Quabbin watershed boundary. The northern end of this wetland is a large flat area that drains both to the south across the boundary and northwest out of the stone culvert. The latter intermittent stream forms another wetland after it crosses East Street.



Silviculture

Acres in Intermediate cuts: 4

Acres in prep/establishment cuts: 31

Acres in Regeneration cuts: **38**

Average regen opening size: **1**

Maximum regen opening size: **4.9**

Description of advance regeneration in proposal area:

Advance regeneration is established on most of the proposal and is moderately diverse, but mainly black birch, red maple and white pine. Oak, hickory, black cherry, beech and sugar maple are scattered on uplands and some yellow birch and hemlock are present along the wetlands. Regeneration is mostly in the sapling size with some pole sized particularly where there were larger openings created from past harvests. Seedlings are present throughout but other than areas most recently cut (1040) are mainly non-vigorous due to being suppressed for so long. Deer are common here and moose pass through and are one of the reasons for lack of diversity and prevalence of white pine and black birch which are not preferred browse. There is more oak and red maple seedlings and saplings surviving with less browse than typical so there is still hope for some to get past the browse height of moose. Most areas have over 1,000 seedlings/acre.

General comments on silviculture proposed:

Opening sizes and retention will be as directed by current guidelines in place at the time the lot is marked. Opening sizes and retention cited below are from current guidelines.

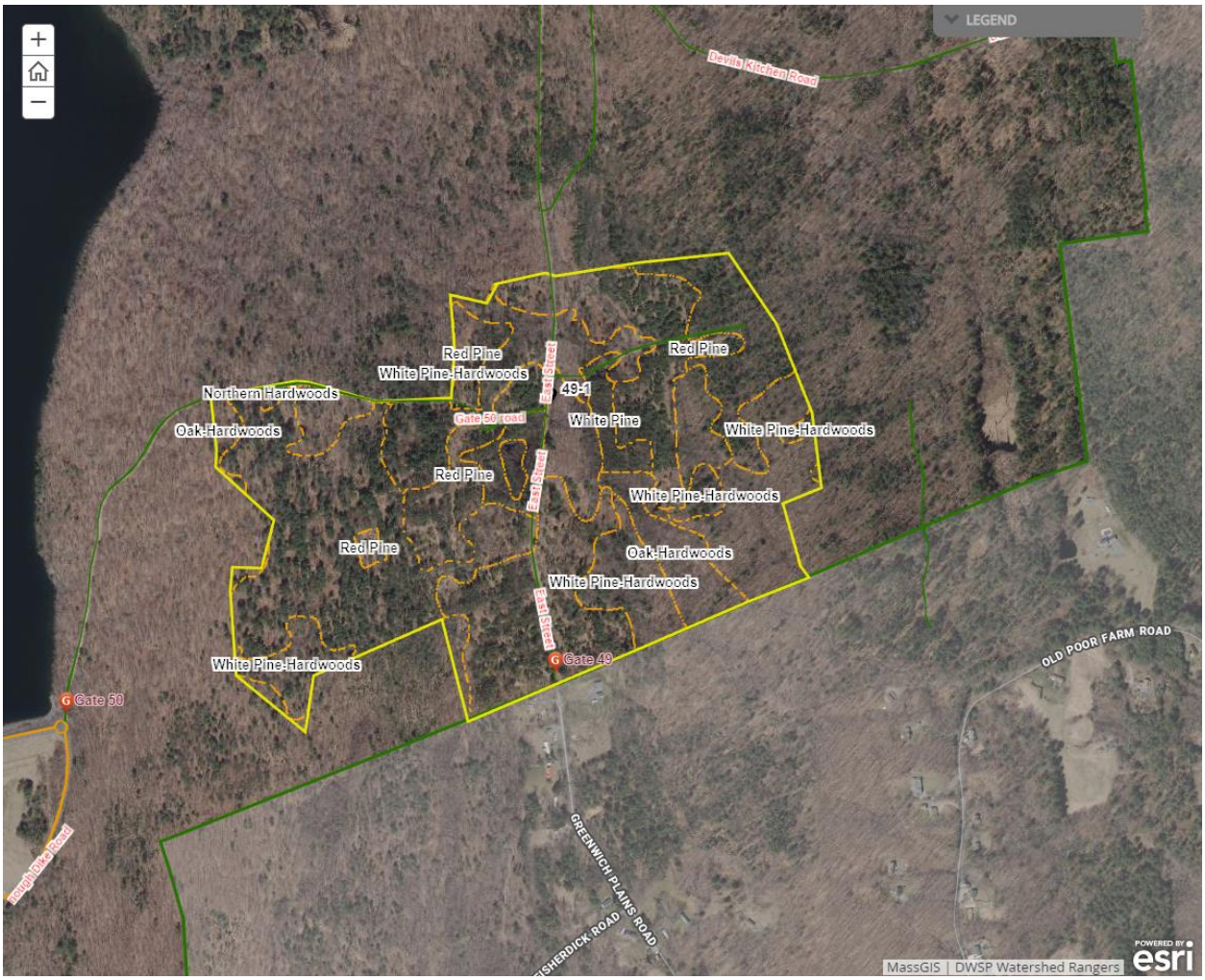
For the red pine plantations the remainder of the red pine outside of restricted areas such as wetlands and vernal pool buffers will be harvested, along with most of the remaining unacceptable growing stock (ugs), ash, merchantable dead oak, trees of poor form or vigor, and additional trees to create openings from 0.5 up to 4.9 acres in size. In the majority of openings over 0.5 acre at least 5 sq ft of basal area will be retained. Intent is to create an uneven-aged stand with this being the final harvest for 30+ years.

About 75% of the rest of the operable portion of the proposal will be treated mostly with our standard group selection silviculture with openings ranging from 0.25-4.9 acres. Exceptions will be in areas with well formed white pine under 18" which may be treated more as a shelterwood seed cut to allow these trees to continue growing. The other section to be treated differently is the area with pitch pine. This section will have most if not all of the white pine removed along with most of the hardwoods except retaining the better formed oaks. Intent is to release the pitch pine and reduce the basal area to around 50.

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 large 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.

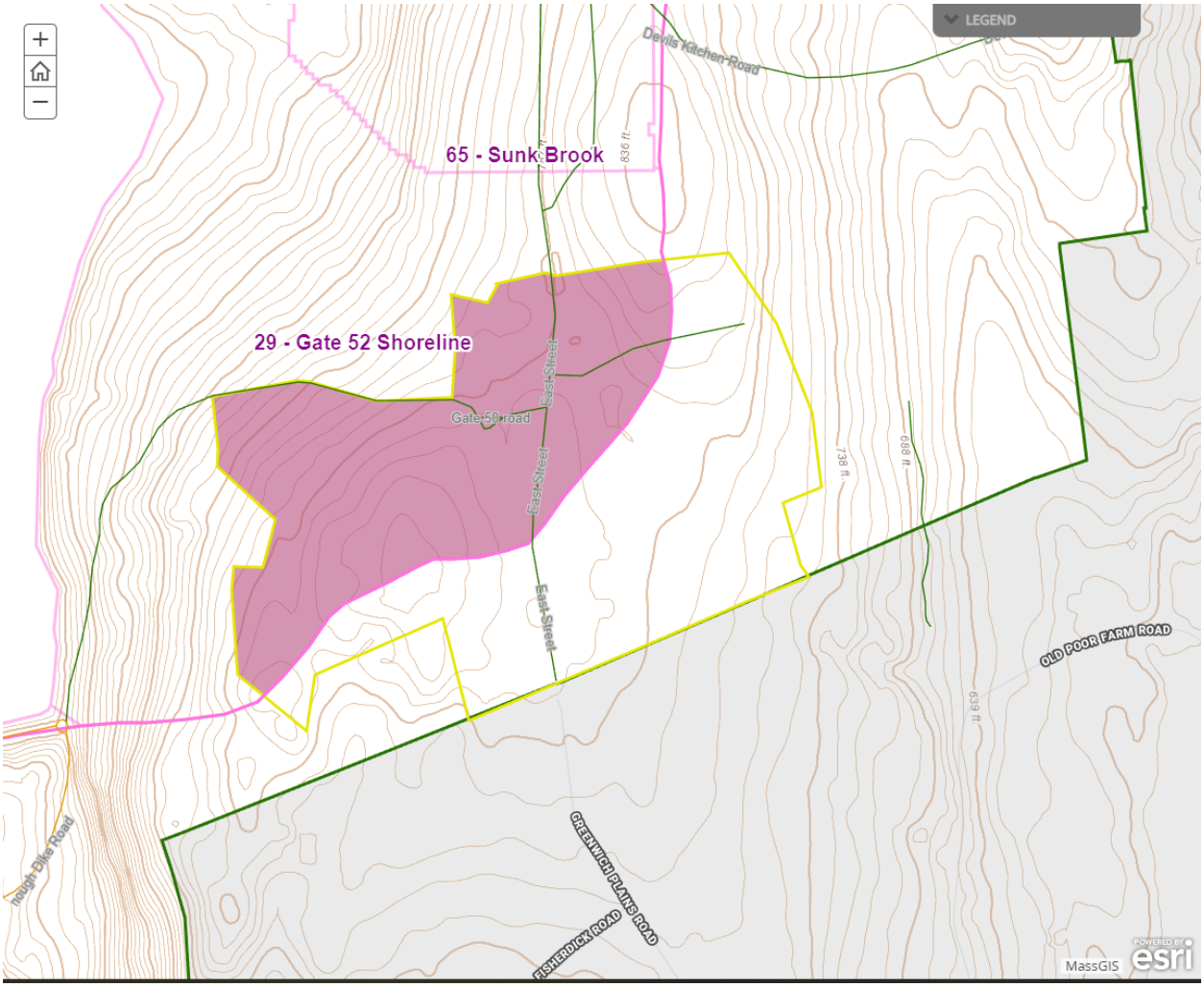
Scattered wildlife trees, standing dead, healthy individuals of all species present, and individuals with superior form and vigor will be retained throughout proposal to preserve habitat, maintain or increase diversity, improve overall stand health and vigor and retain some carbon storage and increase 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 sections with areas of free to grow regeneration that should stay vigorous until the next harvest is done. 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
29 (Gate 52 Shoreline)	224	10	46	67
Off-watershed	-	-	-	68

Half (68 acres) of this proposal are off watershed. Of the acres in watershed it could be possible, though unlikely, to exceed the 25% harvest limit. The only cut within 10 years that is affecting this calculation is from lot 1040 which was a harvest of red pine completed 2/19/2014 so these 10 acres will drop out of calculation in less than 3 years. The area cut is now all stable and fully regenerated. Also since typically we are only regenerating 25% of an area that would come out to 14.2 acres which is well below the 45.7 acre threshold. Proposed harvesting will not exceed the 25% threshold.



Harvesting Limitations

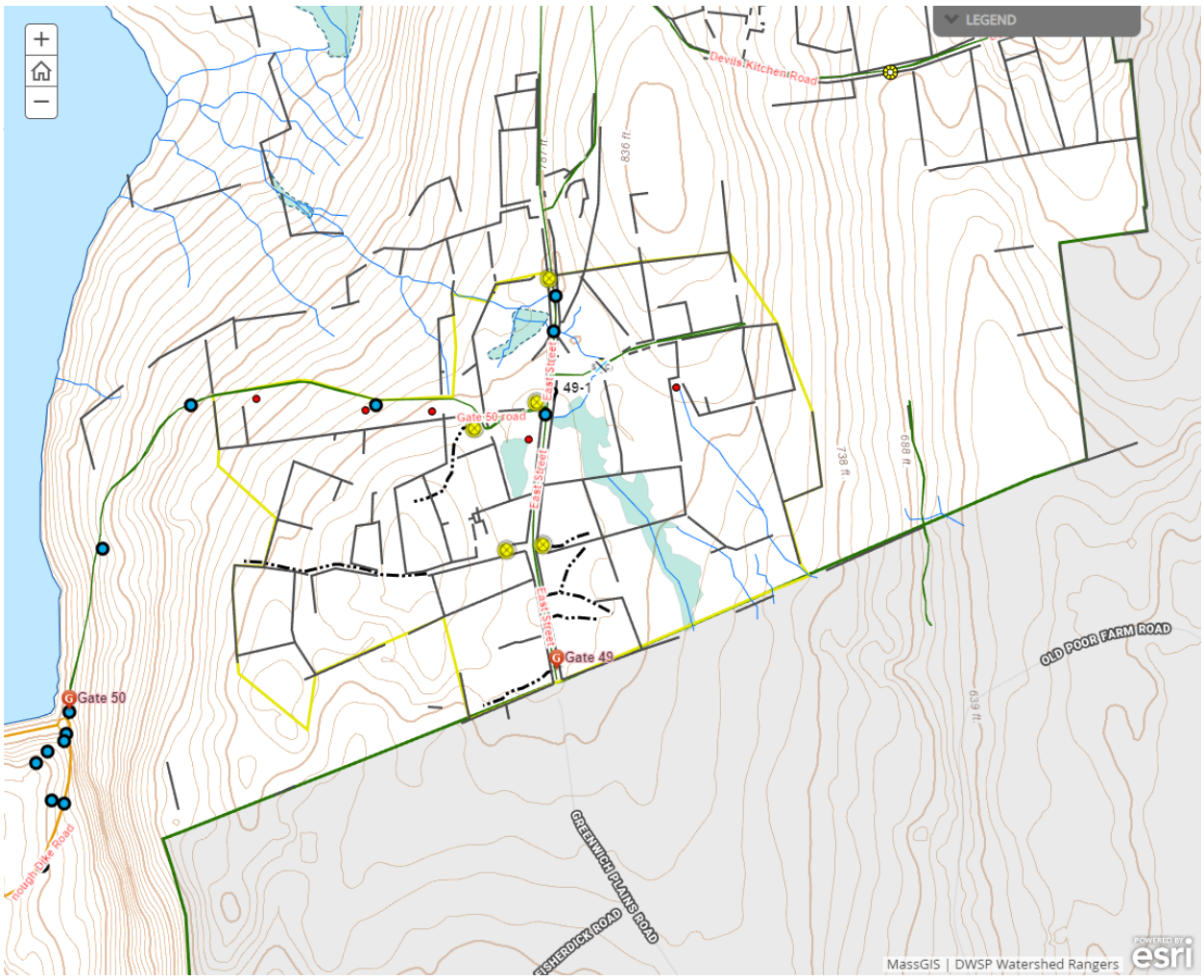
Forwarder required: **Yes**

Feller/processor required: **No**

Steep slopes present: **No**

Comments on harvesting limitations:

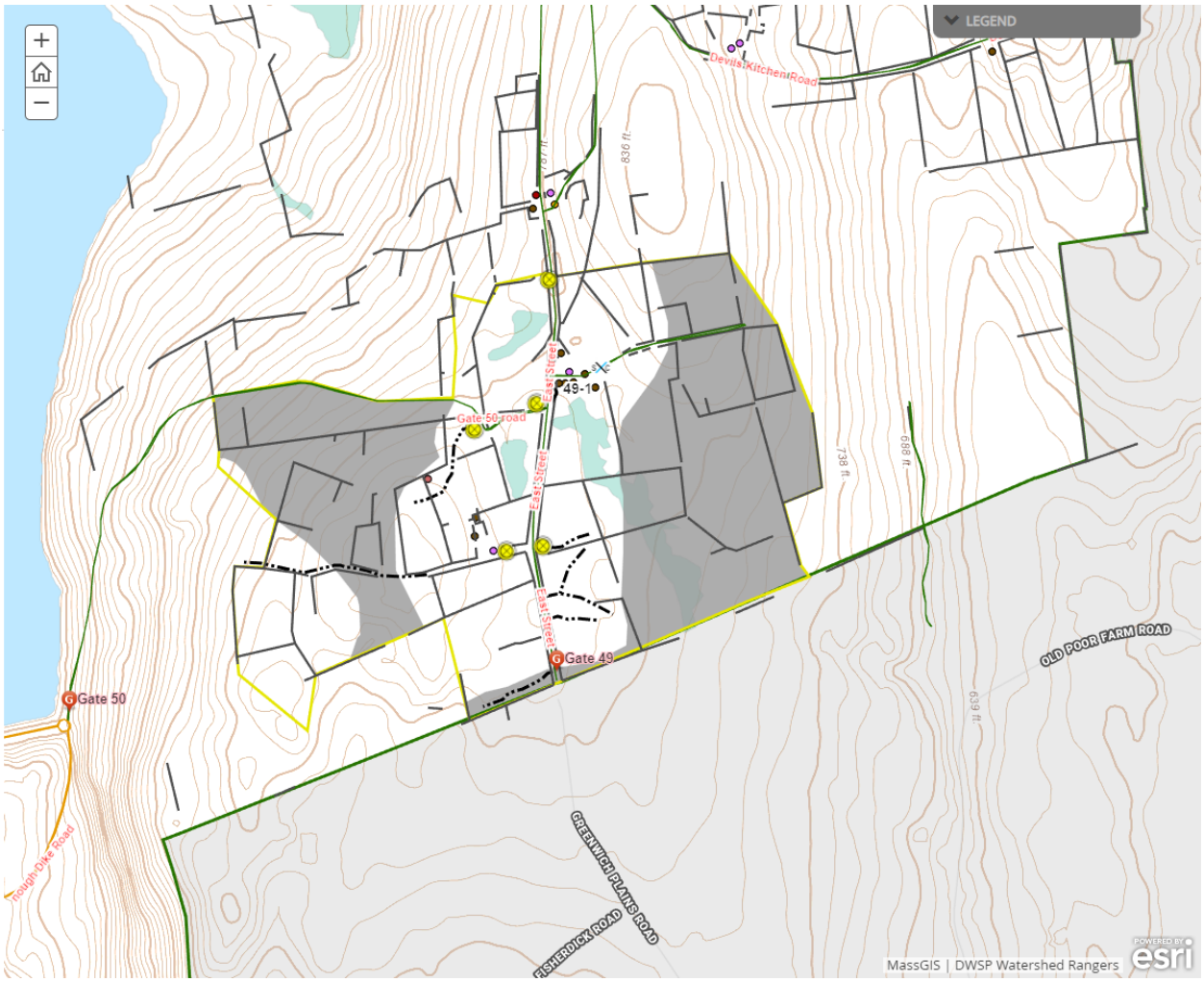
Do to the number of walls and historic features to be worked around a 6- or 8-wheel forwarder with tracks available will be required, as will ability to winch or directionally fell trees within filter strips and around historic features.



Cultural Resources

Comments on Cultural Resources:

Most of lot was previously reviewed (HA-07-05). Surface stone is prevalent through out lot, microtopography is pronounced except in a few of the red pine plantations which might have been tilled or stumped at some point. There are several cellar holes present, one with a stone covered entry way that is still in good condition.



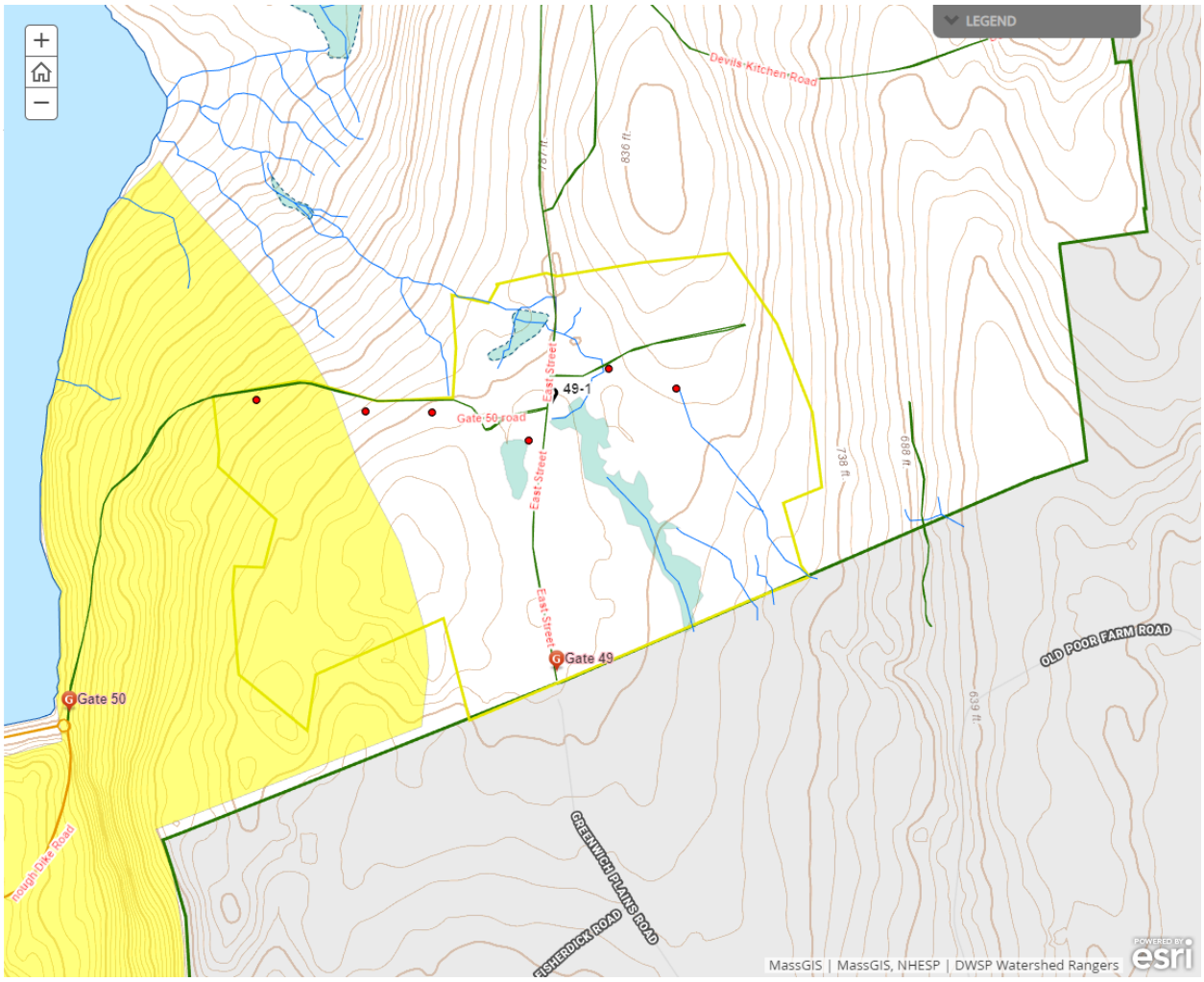
Wildlife Resources & Rare and Endangered Species

General Wildlife Comments:

Deer and turkeys use the area frequently, moose pass through occasionally. Woodcock were seen twice in the long wetland that drains south across boundary.

Comments on Rare Species/Habitats:

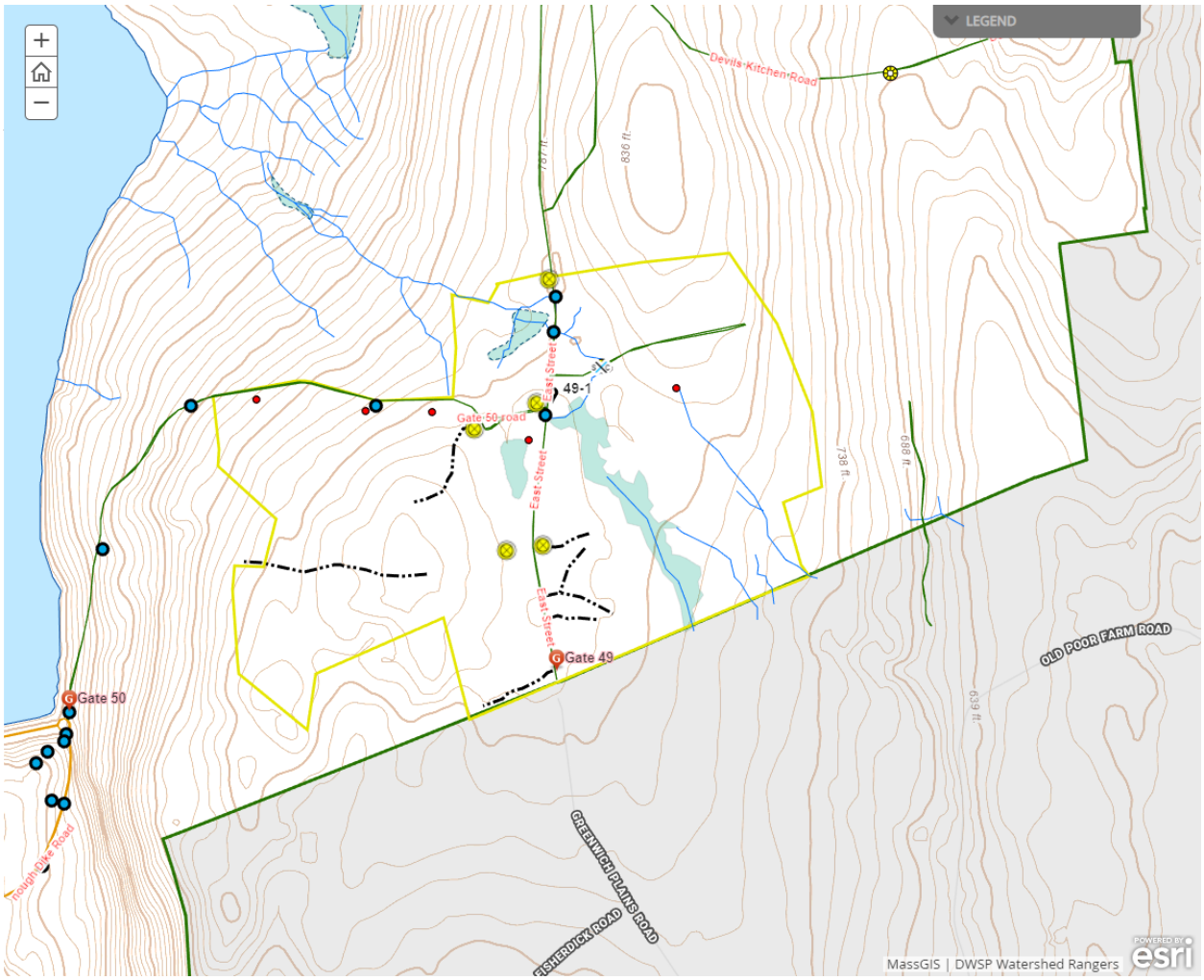
There is a mixed stand of larger pitch pine mixed in with white pine and hardwoods on the eastern side of lot south of the walled lane.



Environmental Quality Engineering

Comments on EQ Issues:

Only one intermittent stream crossing in an old road which has a stone culvert. Flow is very low and intermittent. Bridge panels will be used to protect stone work and prevent siltation at the crossing location.



Forest Access Engineering

Gravel needed: Yes

Landing work needed: Yes

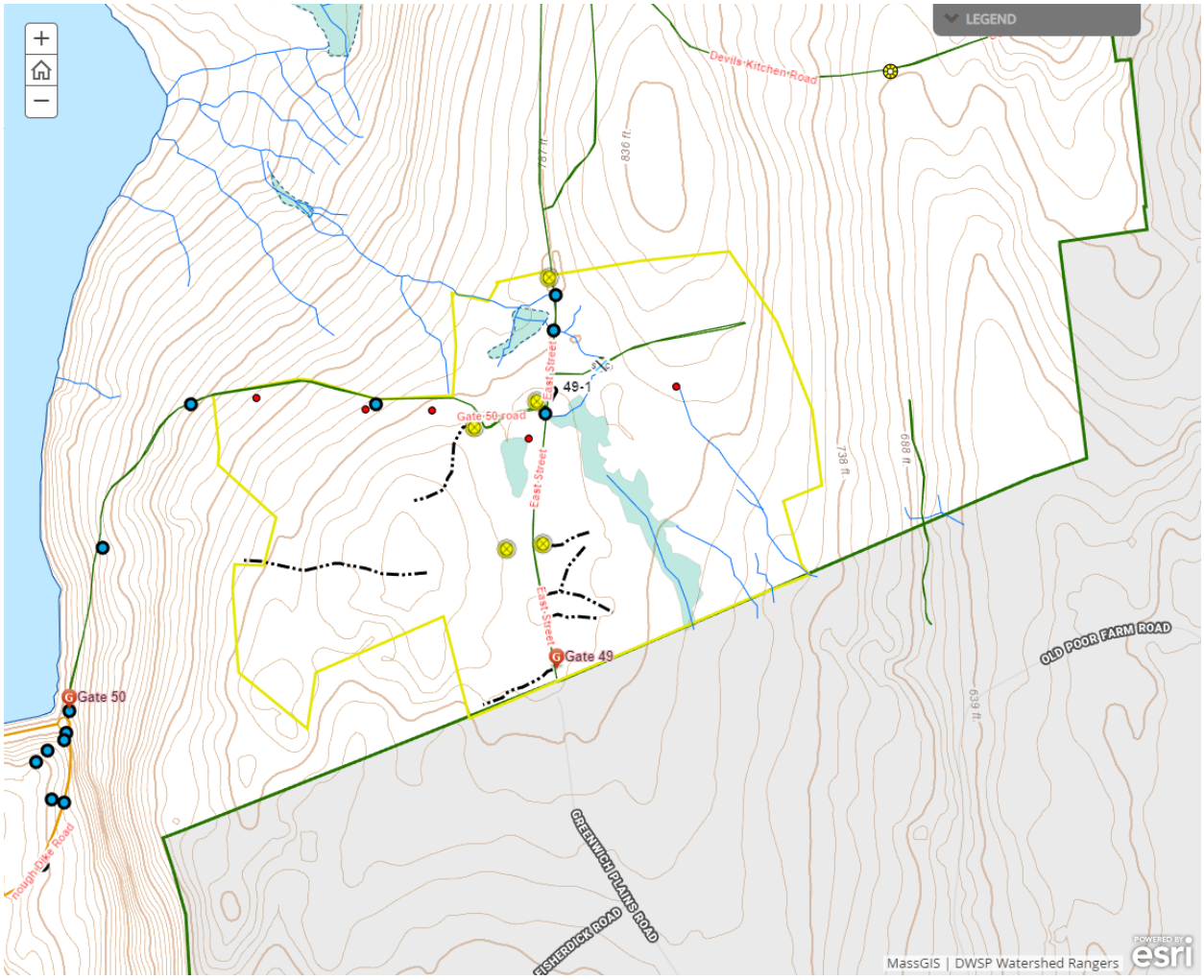
Culverts needed: No

Work needed on permanent bridges: No

Beaver issue: None

Further comment on access needs:

Several of the landings could use additional gravel. Culverts on the road from gate 49 may need additional cover.



DWSP FY 2022 Forestry Proposals – Master Legend for story maps

DWSP Gates

Landings

Crossings

Xng

Stream Crossing

QWR Culverts

Purpose

Stream Crossing-B

Stream Crossing-C

Drainage Relief-D

Unknown

Quabbin Road Intersections

DCR/DWSP Trail/Road Data (Public View)

Type

Public Road

Administrative Road

Forest Road/Trail

Trail

Other

DCR-DWSP Trails and Roads

Type

Administrative Road

Forest Road/Trail

Other

Public Road

Trail

Wachusett/Sudbury Road Infrastructure

Infrastructure_Type

Bridge

Broad Based Dip

Checkdam

Culvert

Ditch

Ford

Waterbar

Other

Wachusett Internal Roads

Priority:

Access Road, unmaintained

Access Road

QWWS Watershed Boundaries

Vernal Pools

Status

Not a vernal pool

Potential vernal pool

DCR verified vernal pool

Streams - Quabbin

FType

Coastline/Shoreline

Stream/River

Swamp/Marsh

Submerged Stream

Artificial Path

Canal/Ditch

Pipeline

Dam/Weir

Connector

Unknown

Other

Water Bodies - Quabbin

FType

Reservoir

Lake/Pond

Stream/River

Swamp/Marsh

Streams - Ware River

FTYPE

Stream/River

Canal/Ditch

Water Bodies - Ware River

FTYPE

Reservoir

Lake/Pond

Stream/River

Swamp/Marsh

Other

Streams - Wachusett

EQ_Stream_Type

Aqueduct

Ditch/Canal

Intermittent Stream

Perennial Stream

Waterbodies - Wachusett

EQ_Wetland_Type

Reservoir

Lake, Pond, Wide River, Impoundment

Wetland, Marsh, Swamp, Bog

NHESP Priority Habitats

NHESP Certified Vernal Pools

NHESP Certified Vernal Pools

Forest Cover Type - Filled

CoverTypeFull

White Pine-Hardwoods

Oak-Hardwoods

White Pine-Oak

WetHard

Mixed Hardwood

White Pine

Grasses and Forbs

White Pine-Hemlock

Mixed Oak

Northern Red Oak

Red Maple

Powerline

WetMixed

Error - Not DWSP

Red Pine

Shrub Swamp

Upland Brush

Northern Hardwood

Road

Beaver Pond

Hemlock

Hemlock-Hardwoods

Mixed-Oak

Norway Spruce

Pitch Pine

WetCon

Abandoned Orchard

Black Birch-Hardwoods

Gravel Pit

Northern Hardwoods

Pitch Pine-Oak

Water

Oak, Mixed

White pine - oak

Mixed hardwoods

Hemlock - hardwoods

White pine - hardwoods

Black Birch-Hardwood

Field, mowed

Oak - hardwoods

Abandoned Field

Beaver Meadow

Chestnut Oak Heath

Mixed hardwood

White pine/hardwoods

Forest Cover Type - Outline

SubWatersheds (QWWS-filled)

Subwatershed Name

ASNEBUMSKIT BROOK

Barre Falls

Belchertown Shoreline

Blackington Swamp

Cadwell Creek

Cunningham

East Br. Fever Brook

East Prescott North

Fed. Forest Stream

Gate 20 Rd. Stream

Gate 52 Shoreline

Gates Brook

Gibbs Brook

Josslin

Juckett Hill East

MIDDLE STILLWATER/ROCKY/WILDER BROOK

Mary Tamplin Drainage

Middle Br. Swift Lower

Moosehorn Brook

NORTH STILLWATER/KEYES BROOK

Northeast Shoreline

Parker

Prescott Brook

Quabbin Park East

RES. SHORELINE EAST

Sherer Rd. North

TROUT BROOK

Thurston Brook

Underhill Brook

WACHUSETT BROOK

Ware

West Prescott Middle

West Prescott North

West Prescott South

Whitney Hill Southeast

Whitney Hill West

Other

Subwatersheds (WA-outline)

SubWatersheds (QWR-outline)

Subwatersheds

Forestry Proposal Boundaries

Towns

Water Supply Property Boundary

Proposed Skid Trails

Stone Walls - WA

StoneWalls - QWR

Stony Soils

Stoniness

extremely stony

very stony

Soils - Drainage

Drainage Class

Excessively Drained

Well Drained Thick

Well Drained Thin

Moderately Well Drained

Poorly To Very Poorly Drained

Quabbin and Ware River Cultural Resources Inventory (Public view)

Type

No Value/Blank

Agrarian

Cellar Hole

Civic

Commercial

Industrial

Military

Other

Residential

Shed

Unknown

QWWS Percent Slope

0 - 7

> 7