Division of Water Supply Protection

DCR Division of Water Supply Protection: FY2021 Forest Harvest Proposals

USING THIS INTERACTIVE STORY MAP

Each tab across the top of this page will open up an interactive map journal focused on one of the FY 2021 proposals. This year there are four at Quabbin, four at Ware River, and seven at Wachusett. As you scroll down in the frame on the left side, maps will update to highlight appropriate information relevant to the accompanying text section. The maps themselves can also be panned and zoomed using your mouse. (*If you are having issues with loading times or seemingly missing information, we have found that* ***clearing your browser cache*** *can help*.) A tab discussion archaeological review and protection of cultural resources during forestry activities has been included at the end.

Public comment on these proposals is welcome and can be submitted online at this link: https://www.mass.gov/forms/dcr-public-comments. Comments may also be submitted by U.S. mail to

Department of Conservation and Recreation

Office of Public Outreach

251 Causeway St.

Boston, MA 02114

Due to current COVID-19 health and safety precautions, these proposals were not presented at typical public meetings at Quabbin, Ware River, or Wachusett. A link to this interactive web map application was distributed to all advisory boards and committees on November 6, 2020, and letters were sent to individual Select Boards of affected towns.

Public Comments will be accepted until the close of business on Friday, December 11, 2020.

If you have any questions, please contact Natural Resources Specialist Brian Keevan at brian.keevan@mass.gov or at (413) 213-7948.


DCR Division of Water Supply Protection Forest Management
Watch later
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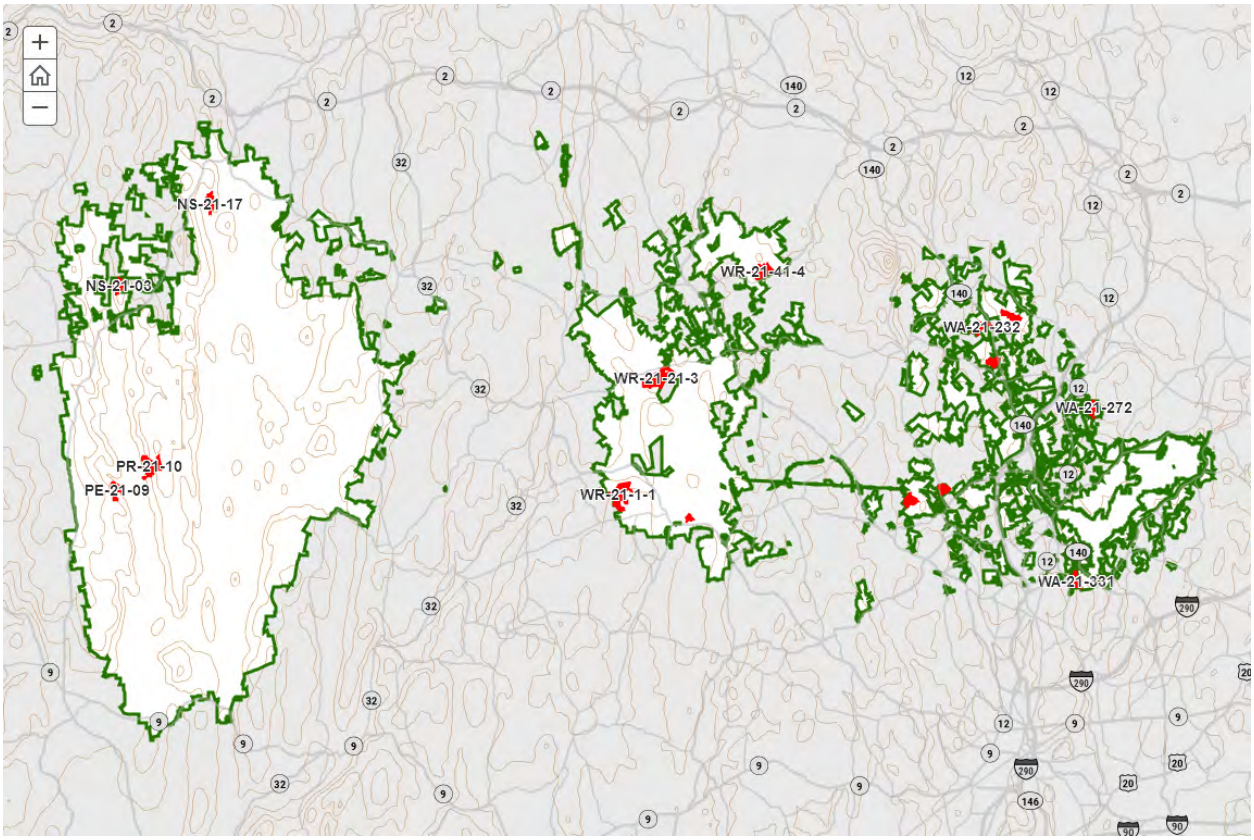

NS-21-17
NS-21-03
PR-21-10
PE-21-09
WR-21-41-4
WR-21-21-3
WR-21-1-1
WA-21-232
WA-21-272
WA-21-331

DWSP Forestry and Cultural Resources

WATERSHED PROTECTION FORESTRY

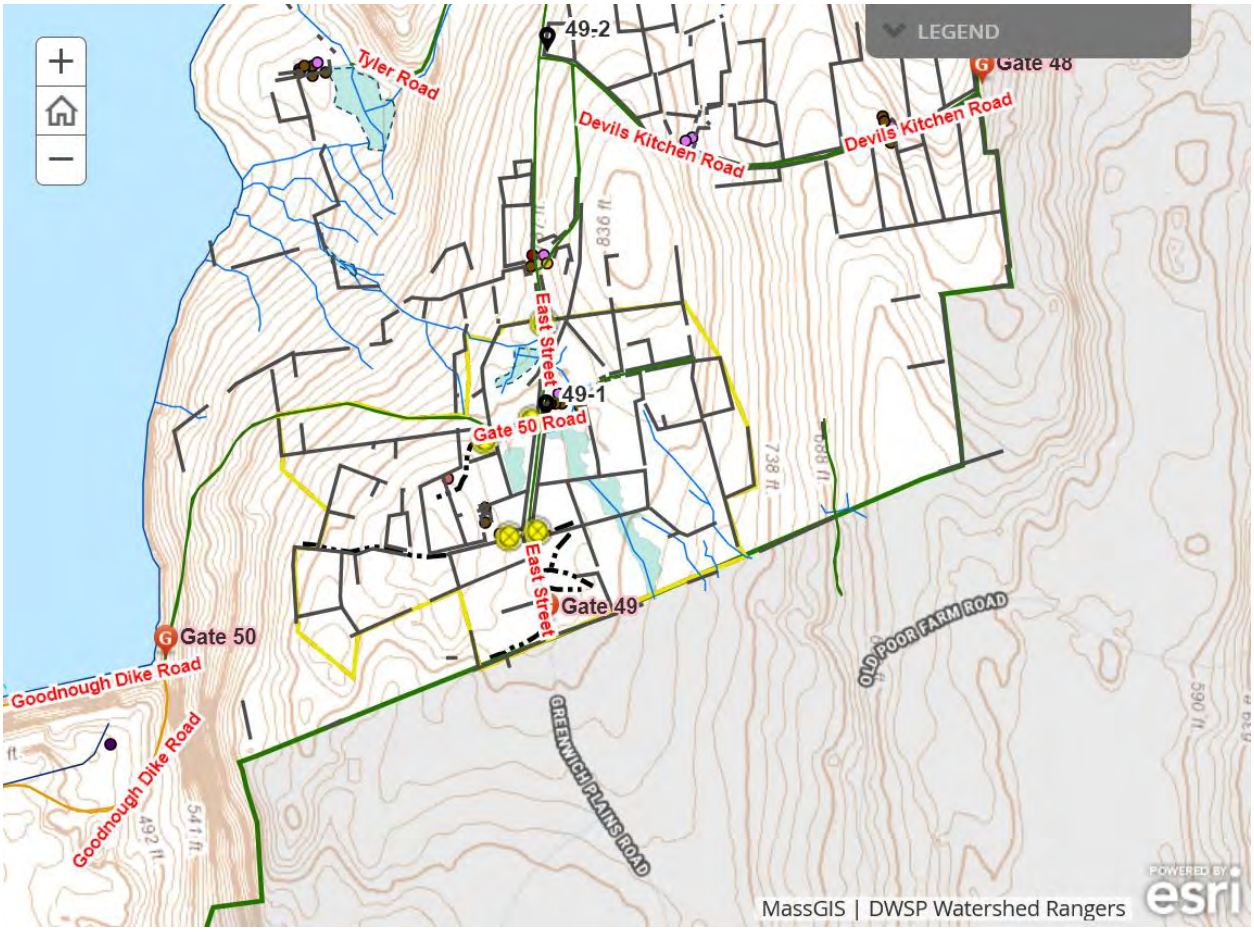
The Division of Water Supply Protection (DWSP) is mandated to protect drinking water resources for over three million Massachusetts residents. DWSP owns and manages over 100,000 acres of land within the Quabbin Reservoir, Ware River, Wachusett Reservoir, and Sudbury Reservoir watersheds. Forests on these lands serve as a living, protective filter, producing high quality water in our streams and reservoirs. DWSP is committed to maintaining a watershed protection forest cover on the vast majority of its lands, and has determined that the most resilient and protective forest is one that is vigorously growing and comprised of a broad diversity of tree species and ages. The Division's long-term objective is to steadily transition today's mostly even-aged forest into a forest with more balanced proportions of young, middle-aged, and older trees of a variety of native species. These conditions have been shown to promote and enhance native plant and wildlife biodiversity. DWSP's working hypothesis is that a diverse forest structure will also promote resiliency in the event of large and small scale natural disturbances such as increasingly severe weather events, disease outbreaks, and insect pest infestations.

For full details on DWSP watershed land management please see the:

2017 Land Management Plan (opens a pdf)

DWSP FORESTRY PLANNING AND REVIEW PROCESS

DWSP Foresters are responsible for the design, preparation, implementation, and oversight of forest management operations. Each year they prepare a number of timber harvest proposals which are reviewed for compliance with Land Management Plan goals and for protection of environmental resources by DWSP professionals in Natural Resources, Environmental Quality, and Watershed Management. Cultural resource review is completed by DCR's Archaeologist. Following this process, these proposals are made available for public comment as presented here.

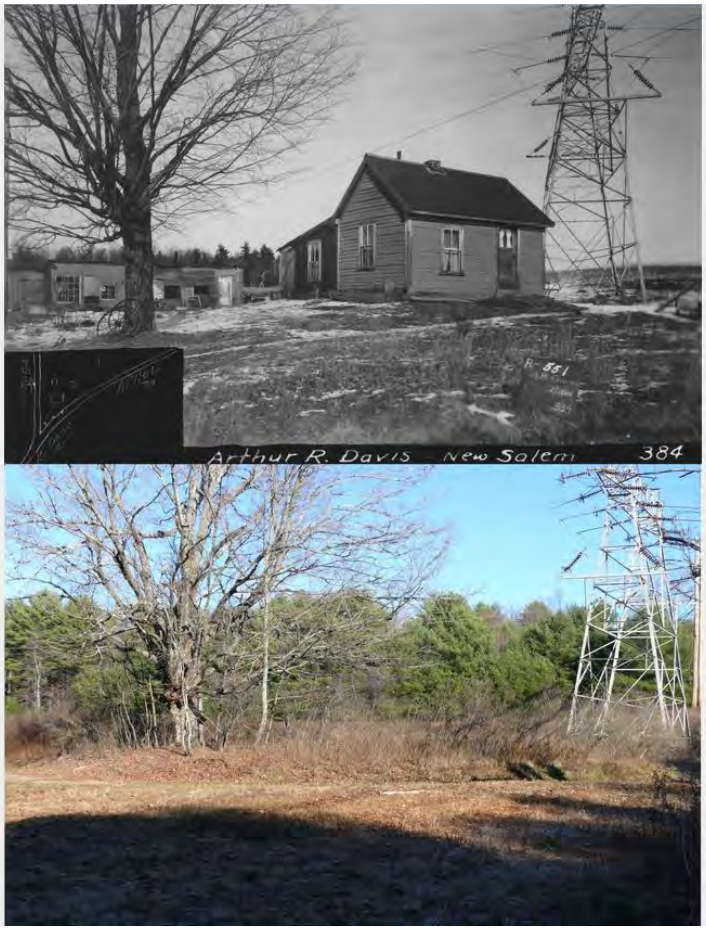


Cultural Resource Protection and DWSP Forestry Activities

Cultural resource review has been a standard part of the internal review of DCR forestry activities for over two decades. In addition to overseeing historical preservation activities throughout the DCR Parks system, the DCR archaeologist reviews the areas we propose to harvest for proximity to known or potentially sensitive sites, both historic and pre-Contact.

Feedback is often fairly standard. If there are known to be significant historic or archaeological resources documented within the proposed project parcel, then the lot will have restrictions to be operated when the ground is dry, frozen, or can support harvesting equipment. A standing requirement is that any cultural resource features located before or during the forestry project will be protected according to guidelines set forth in the current DWSP's Land Management Program and indicated on harvest maps accordingly. And foresters are asked to flag, protect, photograph, and map any cultural features and contact DCR staff archaeologist if there are any questions or concerns.

In most cases on DWSP properties, the cultural resource sites are easily identified as recent historical activities associated with agricultural land clearing and farming by European colonists. Stone walls, cellar holes, foundations, and wells are routinely encountered by foresters as they walk DWSP's watershed forests. Some of these structures are well-documented, especially at Quabbin, while others would require research to determine original owner/builder, last known owner, etc. Systematic surveys were conducted of all the known historical sites at Quabbin by researchers in the 1990s, using property maps created when the lands were surveyed and taken for construction of the reservoir. Much of this information is available upon request at the Quabbin Visitor Center in Belchertown.


Arthur R. Davis New Salem 384

Protection of Sensitive Sites

These lands had been occupied for thousands of years before the influx of Europeans in the 17th century and the reworking of the landscape to suit their agricultural way of life. Plowed soils often revealed artifacts from pre-Contact land use, such as the tools and weapons collected by this enthusiast from pre-Quabbin Enfield.

DCR's archaeologist routinely consults Massachusetts Historical Commission records to determine proximity of proposed activities to known protected sites such as villages and burial sites. Models are also consulted that use ground conditions such as topography and distance to water sources to estimate the potential locations of other pre-Contact sites such as seasonally occupied camps.

In an effort to protect this information it will not be included in the public documentation for the forestry proposals. DWSP foresters abide by all recommendations pertaining to protection of historic and pre-Contact cultural resources.

Ongoing Field Mapping of Cultural Resources

Known and visible features and sites are mapped using GIS and are incorporated into editable digital field maps. Mapping apps for smartphones and tablets have revolutionized the ability for foresters to verify locations and add previously unmapped features right in the field. This technology aids immensely in planning harvesting operations.

At Ware River, Wachusett, and Sudbury no modern systematic surveys have been conducted, although the foresters routinely map stone walls and other features and do consult property sheets that show locations of extant homes and outbuildings at the time of land takings.

Most of what you will read in these individual lot proposals will be the foresters' assessments of visible cultural features in the area, and these are nearly always stone features related to colonial and post-colonial land use.

Ware River Harvest Proposal WR-21-1-1

Proposal Goals

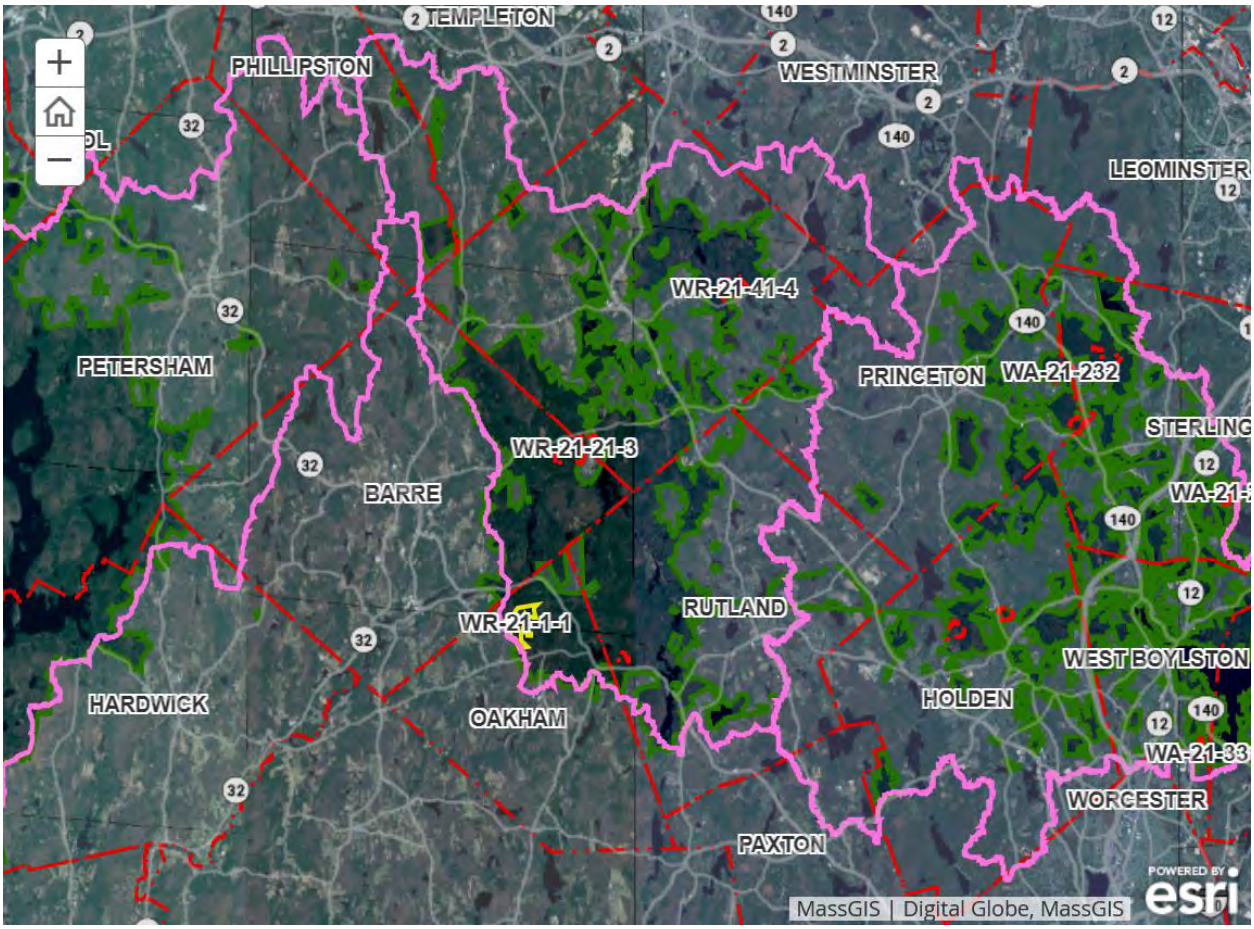
The goal for this proposal is to create regenerating areas as part of a study examining the effects of slash walls on reducing herbivory pressure on regenerating tree and other plant species.

Cornell University is spearheading this innovative new technique. To help get a visual sense of the proposed slash wall please watch https://www.youtube.com/watch?v=k3_aDNURj_8

Proposal Location

The proposal area is located in Oakham, west of Coldbrook Road, along Loop Road.

Total Acres: 169



General Description

	Overstory Type(s)	Acres
Dominant	White pine/hardwood	81
Secondary	White pine/hardwood	46

Secondary

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

Secondary	Dry site - blueberry/huckleberry

Description of forest composition/condition:

White pine/hardwood stands dominate the northern and southern portion of the lot. A 40-acre mixed oak stand is located in the center of the lot. There is an 18-acre Norway spruce plantation in the northeastern corner of the lot, adjacent to Coldbrook Road.

There is no record of a harvest on most of the lot in the last 30 years, though old stumps are present. The very southern tip of the lot was part of lot # 167, a shelterwood harvest that was completed in 1989. The spruce stand was thinned as part of lot #217 in 1995.

Gypsy moth damage and mortality is present throughout the lot.

The white pine/hardwood stands are dominated by mature, low to medium quality, sawlog-sized eastern white pine. Red maple, white oak, red oak, hemlock, black birch, black cherry, aspen, paper birch, and white ash are also present in the overstory. The stands average approximately 145 square feet of basal area per acre. The quality of overstory oak varies greatly with some good quality stems present. The quality of other hardwoods and hemlock is low. Regeneration is abundant and consists of seedling and sapling size red maple, white pine, red oak, white oak, black oak, Norway spruce, and black birch. Hazelnut, striped maple, hawthorn, high and low bush blueberries are also present.

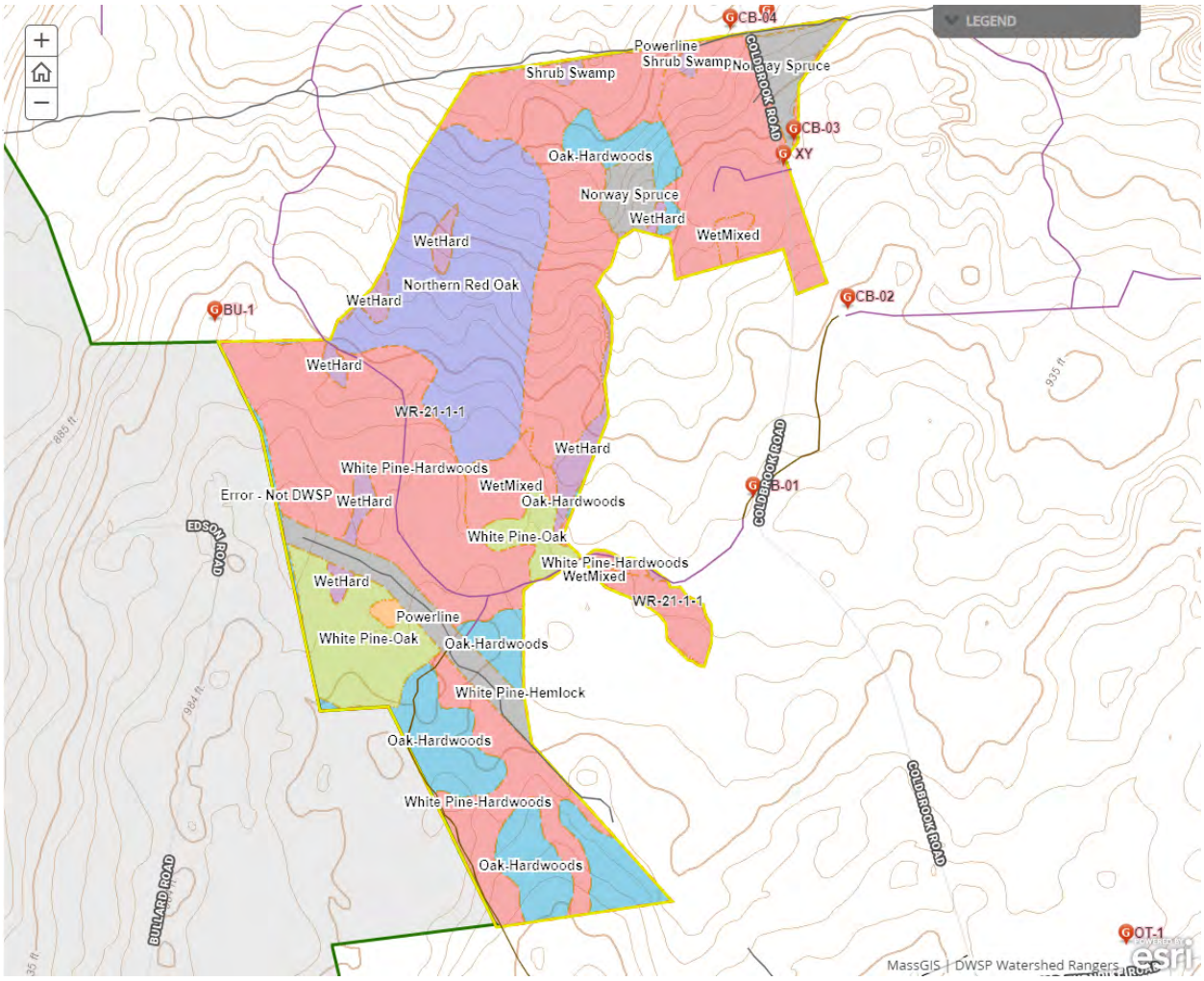
The mixed oak stand is dominated by mature, medium to good quality, sawlog-sized red, white, and black oak. White pine, red maple, and hemlock are also present. The stand averages approximately 120 square feet of basal area per acre. Regeneration consists of black birch, white pine, red maple, and Norway spruce. Gypsy moth damage is present in this stand. Mortality appears to be patchy, but will be evaluated again during the next growing season.

The Norway spruce stand is dominated by mature, medium to good quality, sawlog-sized Norway spruce. Low quality black cherry, white pine, red maple, and aspen are also present in the overstory. Non-spruce species comprise less than 10% of the stand. The stand is fully stocked with approximately 170 square feet of basal area per acre. Some areas were thinned as part of lot 217. The thinned areas have some pole sized black birch present in the understory. The

unthinned areas are lacking regeneration. Buckthorn is heavy in spots. Grape, burning bush, and bittersweet were also observed.

Assessment of Terrestrial Invasive Species:

Buckthorn is present throughout the lot. Bittersweet and burning bush were also observed in the spruce plantation.

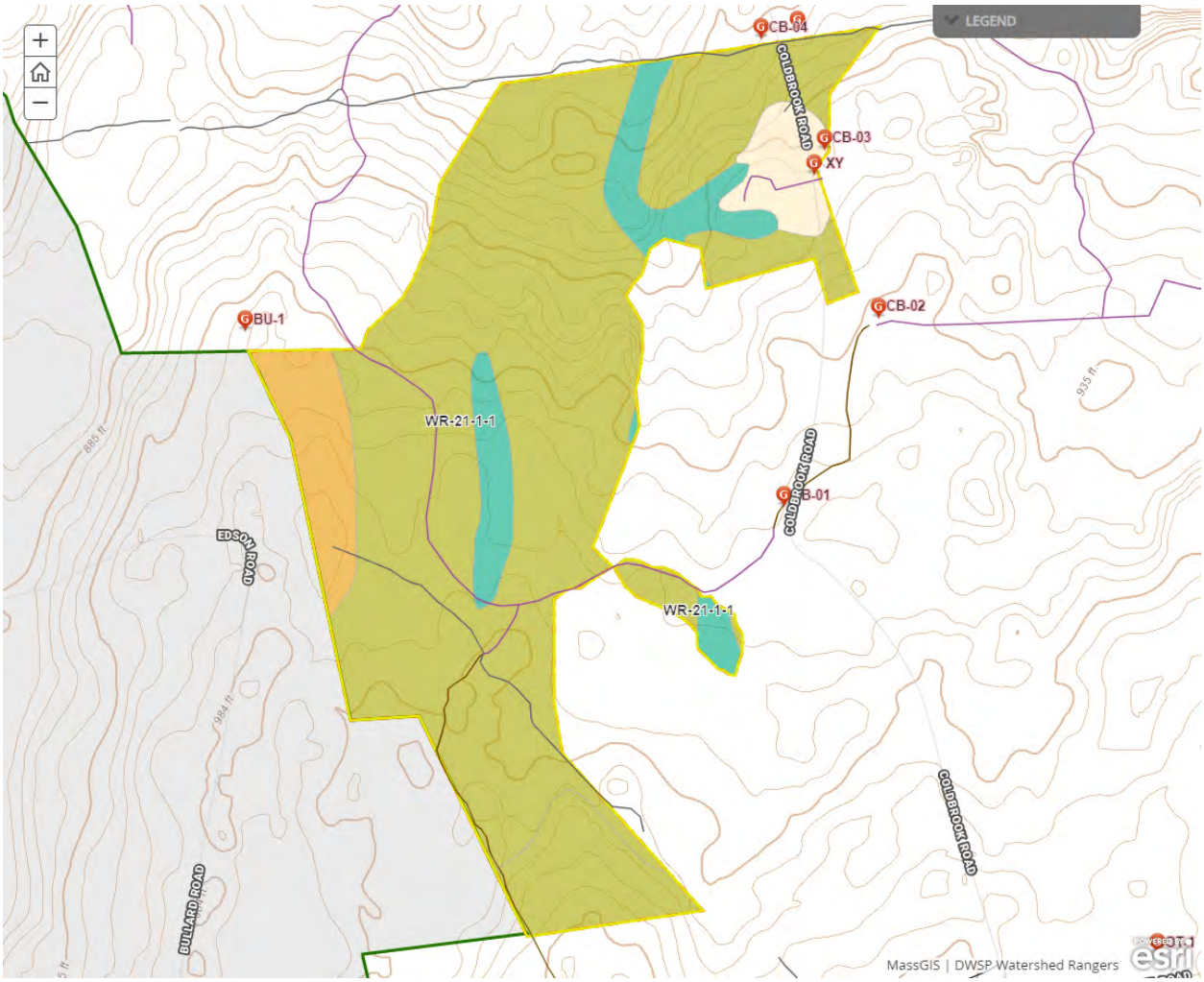


Soils

Drainage Class	%

Excessively Drained	4
Well Drained Thin	0
Well Drained Thick	6
Moderately Well Drained	80
Poorly to Very Poorly Drained	10

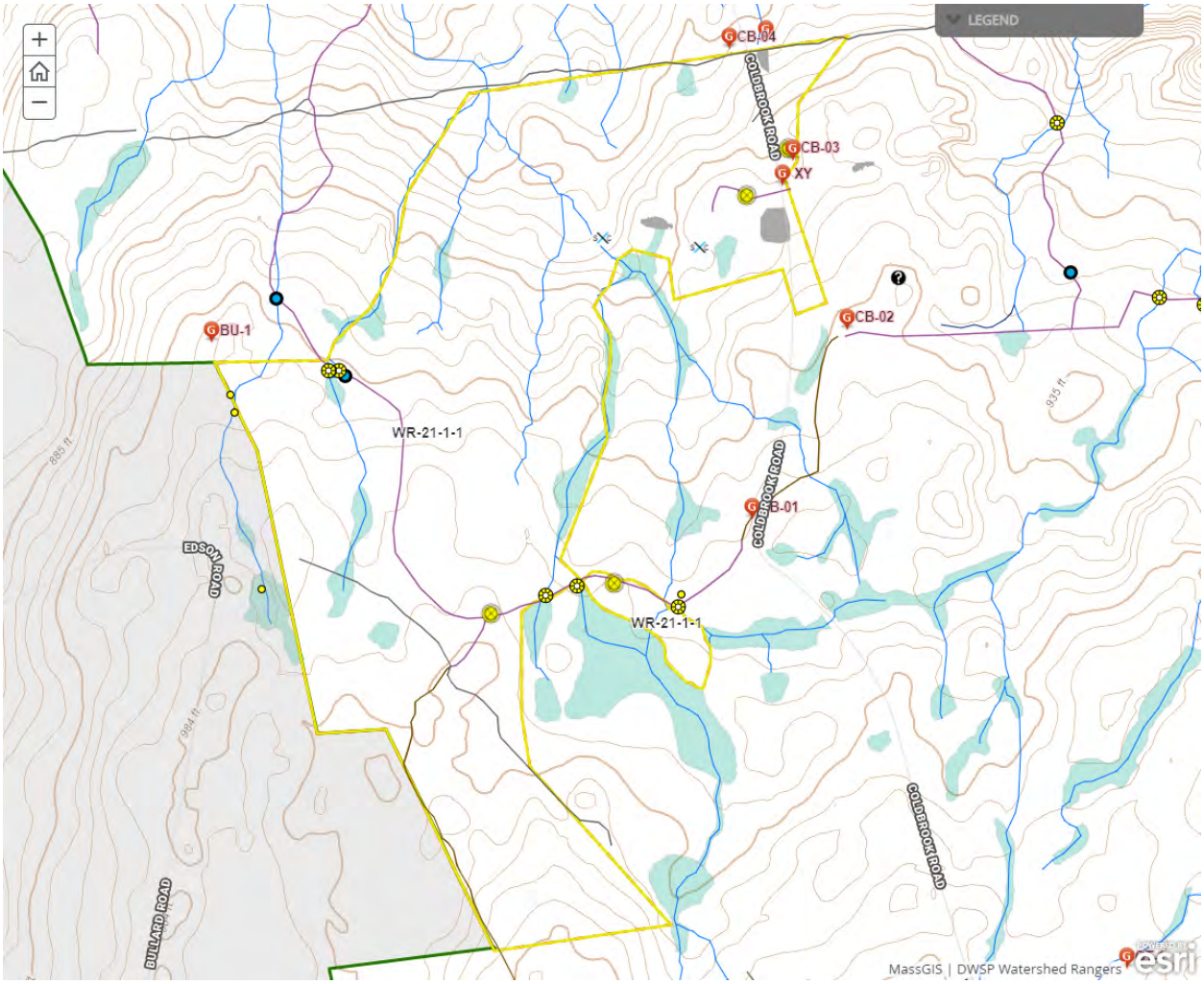
927C - Montauk-Scituate-Canton association - moderately well drained - 125 acres
918B - Ridgebury-Whitman association - poorly to very poorly drained - 15 acres - these soils are found along the brooks that run through the lot and will be avoided except for a potential stream crossing.
926C - Charlton-Chatfield association - well drained thick - 10 acres along the western edge of the lot adjacent to the property line
253B - Hinckley loamy sand - excessively well drained - 7 acres on the eastern edge of the lot adjacent to Coldbrook Rd.



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? - **Yes**
- Is logging in wetlands planned? - **No**

Wetlands associated with brooks are present. Several potential vernal pools are along the western edge of the lot, possibly on private property.



Silviculture

Acres in Intermediate cuts: **0**

Acres in prep/establishment cuts: **0**

Acres in Regeneration cuts: **50**

Average regen opening size: **2**

Maximum regen opening size: **25-30**

Description of advance regeneration in proposal area:

Regeneration varies over the lot. The white pine/hardwood stand and the mixed oak stand both have plenty of regeneration already established. Regeneration is sparse under the Norway spruce plantation. Moderate browse was observed throughout the lot.

General comments on silviculture proposed:

The white pine/hardwood and mixed oak stands at the southern end of the proposal area will be part of a multi-state research project looking at building slash walls for deer exclusion as part of the Oak Resiliency Project. A unique twist at this site will be the presence of moose, which so far have not been tested against a slash wall in other regions taking part in this study.

A 25 to 30-acre opening will be created with approximately 5 to 10 square feet of basal are per acre of overstory trees retained. Retention trees will be a the best formed, most vigorous overstory trees, as well as trees with unique wildlife characteristics such as large cavities. The opening will straddle the power lines in that area with approximately the same acreage of opening on either side of the power lines. A 10-foot-tall slash wall will be constructed during the harvesting operation around the portion of the opening to the south of the powerlines. The wall will be constructed of trees from the harvested area and will be built by the logger; the cost of construction will be offset by the value of the wood at the time of bidding.

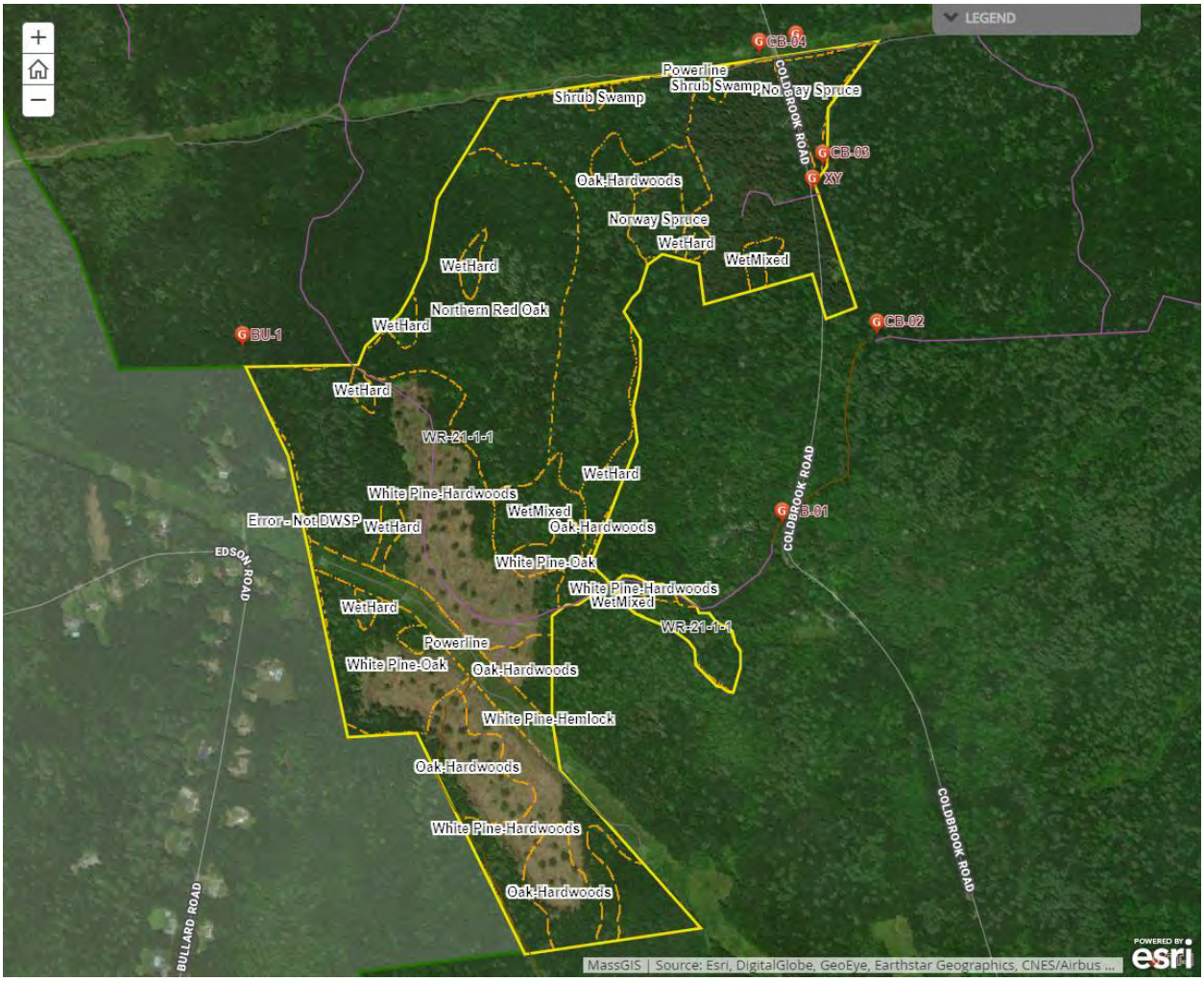
All deer and moose will be driven out of the area inside the wall. The slash wall will have to be located at least 100 feet from the property boundary in order to comply with Massachusetts slash laws. The portion of the opening located to the north of the powerlines will be the control and will remain open. Pre-harvest and post-harvest vegetation surveys will be used to determine the effect of excluding deer and moose from harvested areas on tree regeneration, shrubs, and wildflowers and to assess the feasibility of using slash walls as a tool on DWSP property. To learn more about slash walls, visit this website: http://blogs.cornell.edu/slashwall/technical-resources/

White Pine hardwood stand outside of the study area: Regeneration openings will be established in this stand. Areas with the poorest quality white pine will be targeted for openings. Openings of different sizes and shapes will be established, generally ranging in size from 1 to 2 acres. The average opening size will be approximately 1.5 acres. Approximately 30% of the stand area will be in openings. In all groups snags will be retained wherever possible and 5 to 10 square feet of basal area per acre of live trees will also be left. Live retention trees will either have unique

wildlife characteristics, such as large cavities, or will be well formed and vigorous white pine or hardwood.

Mixed Oak stand outside of the study area: It appears that there could be significant damage and mortality to overstory oaks in this stand due to gypsy moth. This will be reassessed during growing season. Severely damaged and dead oaks will be removed, particularly where they exist in groups over a quarter acre in size. The groups created will follow our oak savage guidelines. If damage and mortality is not significant, several regeneration openings of ½ to 2 acres will be established targeting gypsy moth damaged oaks, low quality hardwood, and low-quality white pine inclusions. In all groups snags will be retained wherever possible and 5 to 10 square feet of basal area per acre of live trees will also be left. Live retention trees will either have unique wildlife characteristics, such as large cavities, or will be well formed and vigorous white pine or hardwood.

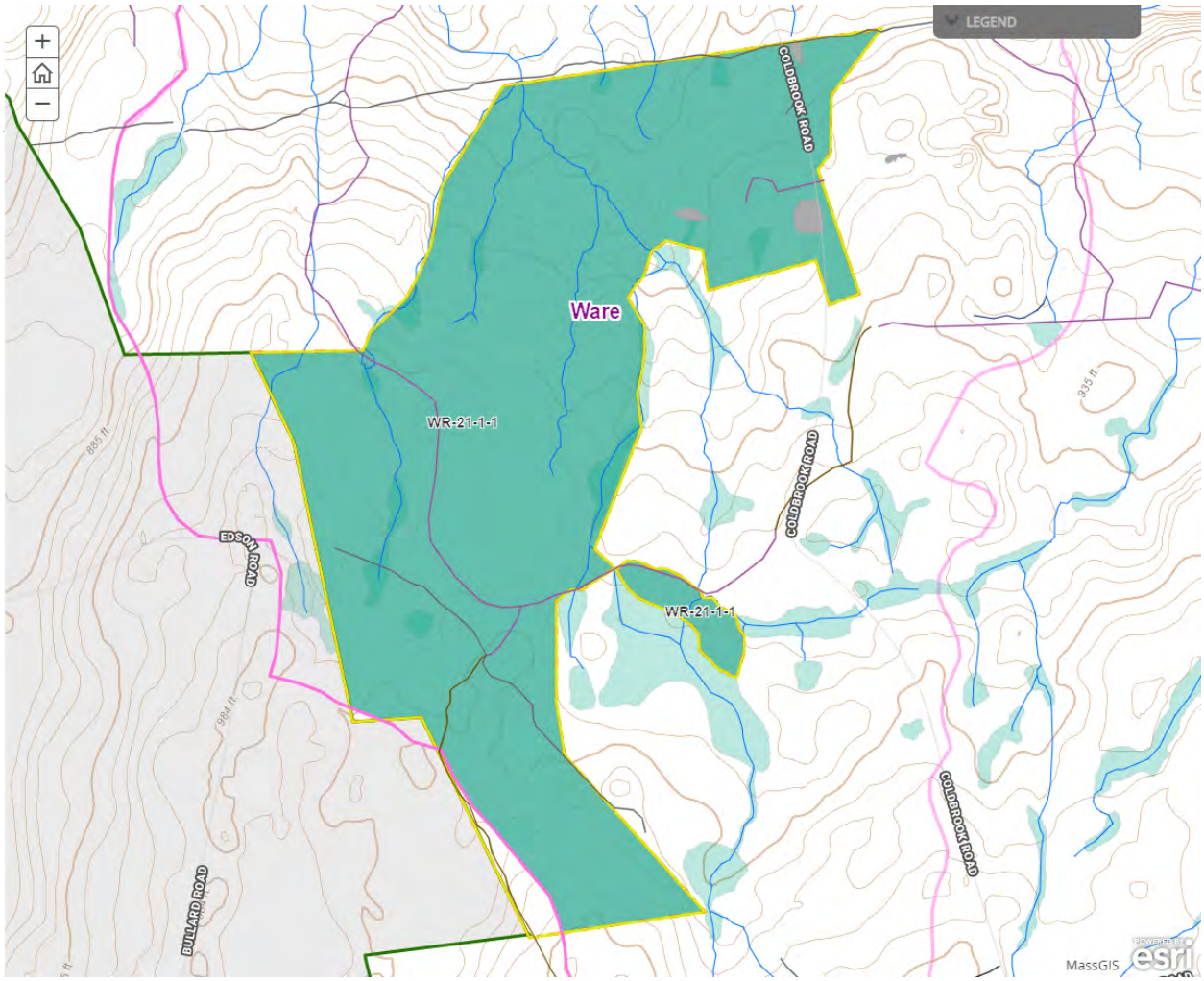
Norway Spruce plantation: This plantation has reached maturity and under typical plantation management would be removed when possible. However, DWSP recently set policy to avoid spruce plantation regeneration cutting in order to maintain dense conifer cover on the landscape. Hazard tree removal will continue to be an option; a 0.3-acre patch of spruce adjacent to Coldbrook Road died three years ago and had to be felled by DWSP staff to mitigate the public hazard. The Oakham tree warden has expressed an interest in seeing the portions of spruce plantation removed adjacent to Coldbrook Road; such removals will be considered case by case. Unfortunately, there is little native regeneration established through much of the plantation, and several invasive shrub species are established in and adjacent to it.



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
8063 (Ware River Intake)	2713	41	637	169

8063 - Ware River Intake Subdistrict - 157 acres in this proposal



Harvesting Limitations

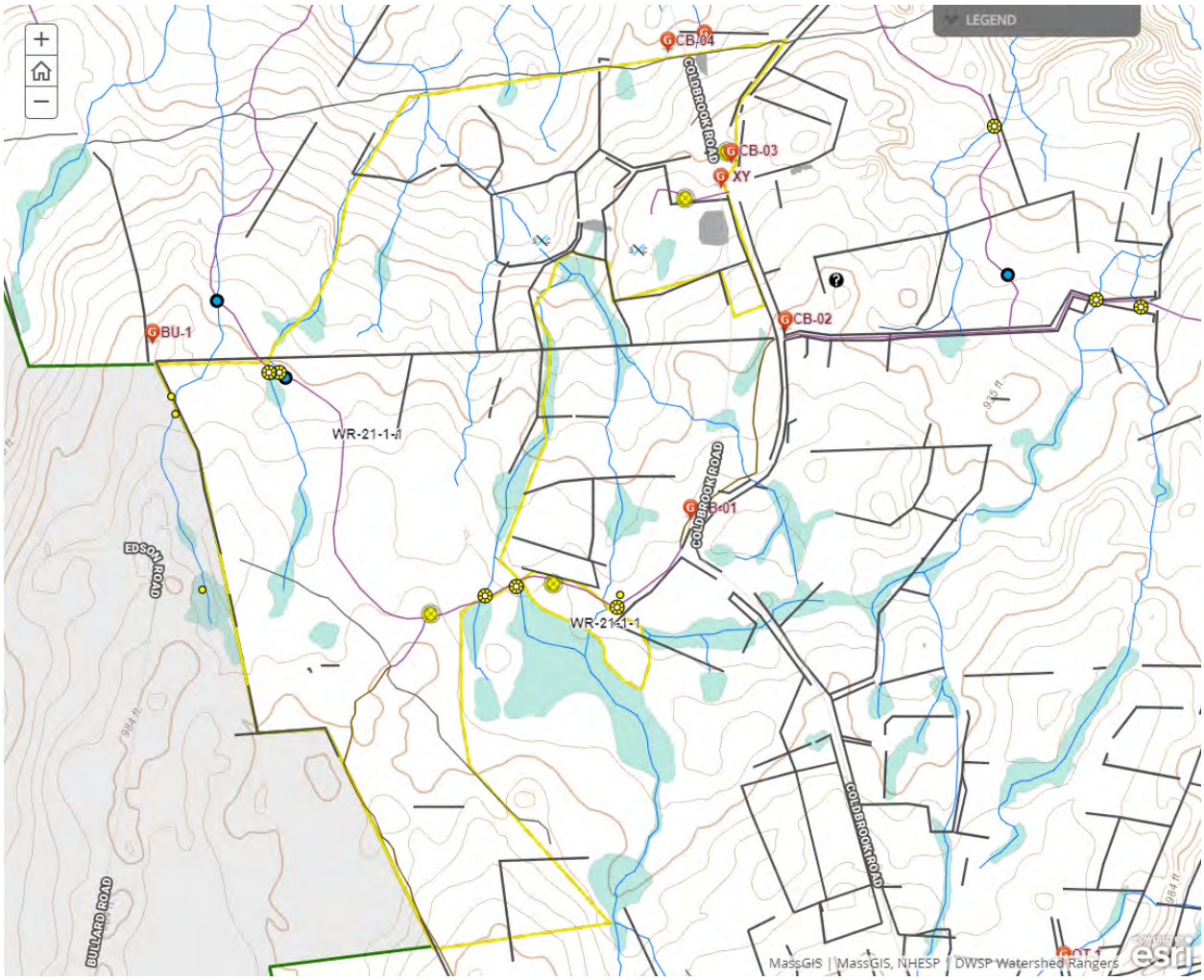
Forwarder required: **No**

Feller/processor required: **No**

Steep slopes present: **No**

Comments on harvesting limitations:

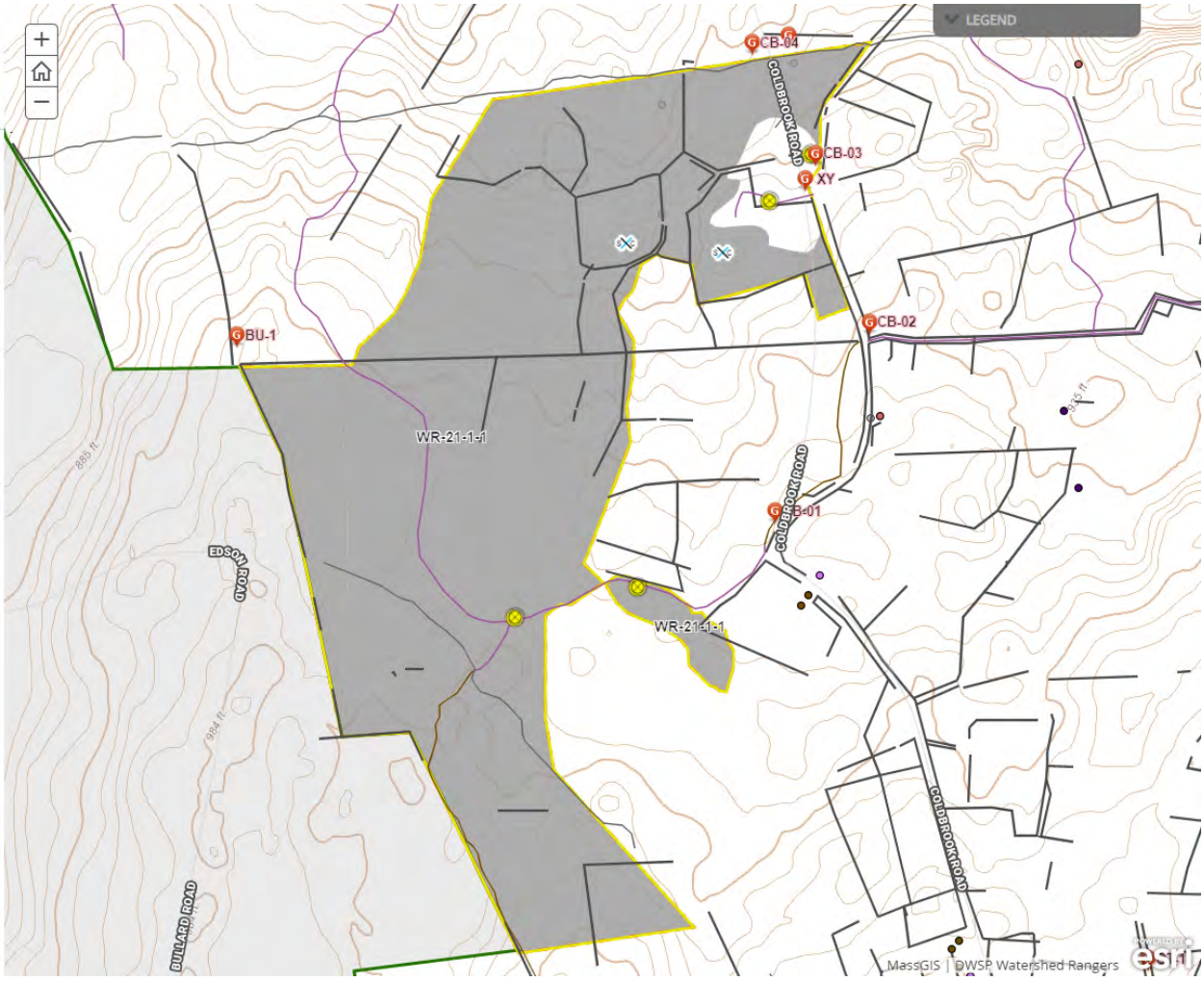
This area is being considered as a demonstration site for slash wall construction for deer exclusion as part of the Oak Resiliency Project. Typical harvesting specifications will need to be heavily modified in order to mandate construction of a slash wall. A negotiated, rather than bid, sale might be the best way to achieve a positive outcome.



Cultural Resources

Comments on Cultural Resources:

A well house is present in the northeast corner of the lot, in the spruce stand where Coldbrook Road and the power lines meet. The area around the spring house is very wet. If any activity occurs in the vicinity, the whole area will be buffered. Several stone walls and cellar holes are also present.



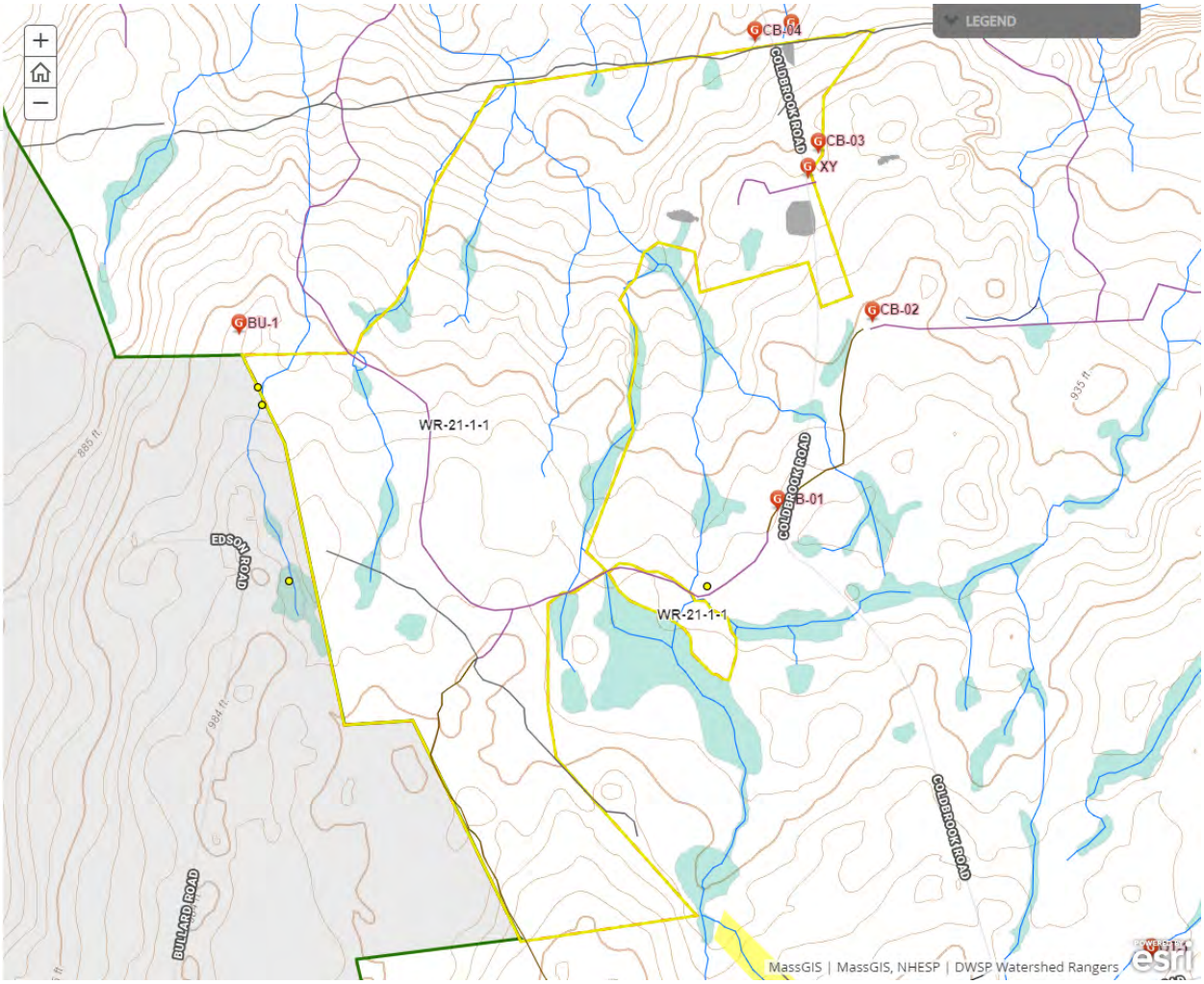
Wildlife Resources & Rare and Endangered Species

General Wildlife Comments:

No comments.

Comments on Rare Species/Habitats:

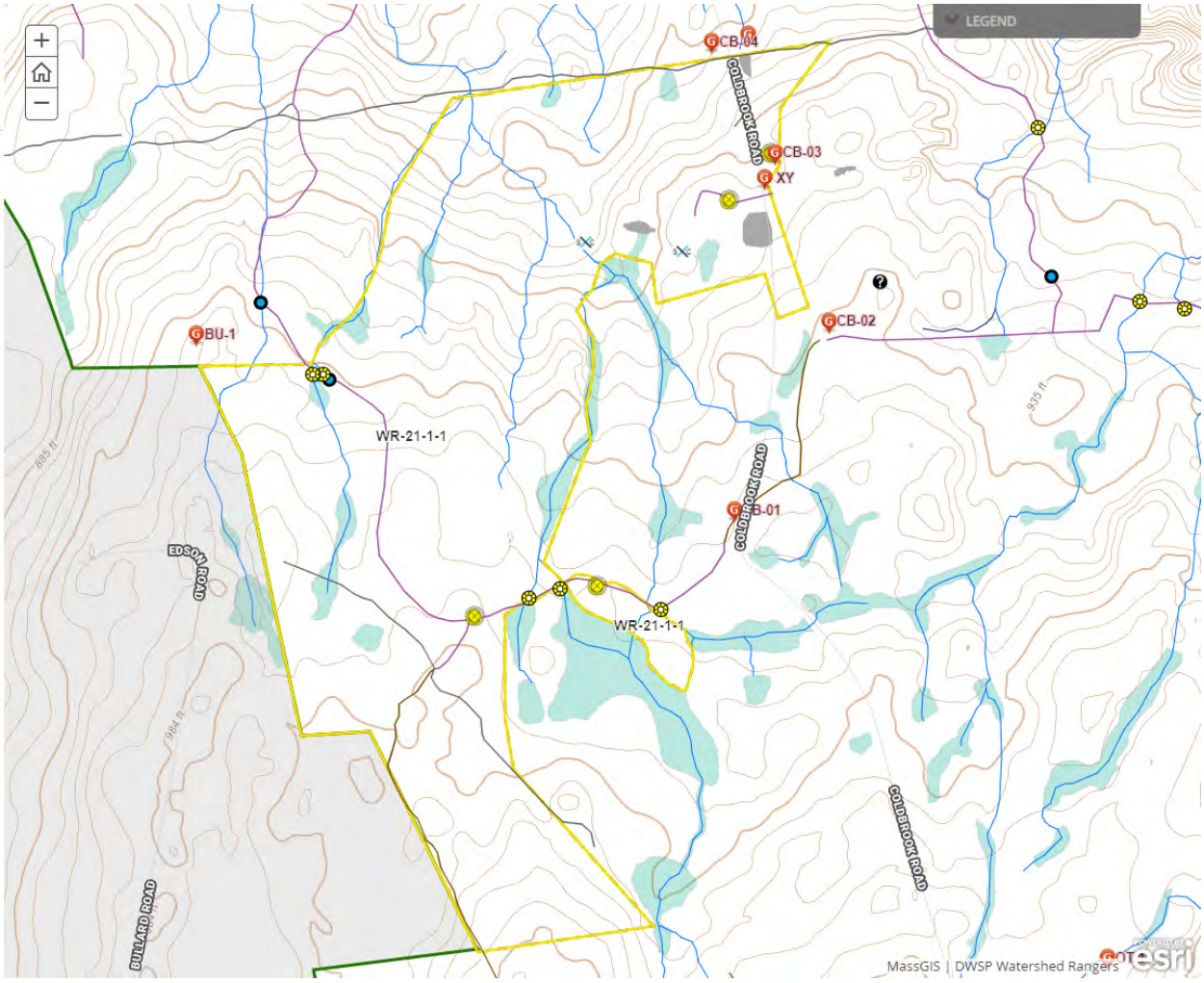
No known rare species or priority habitats on site.



Environmental Quality Engineering

Comments on EQ Issues:

No comments; no stream crossings.



Forest Access Engineering

Gravel needed: Yes

Landing work needed: Yes

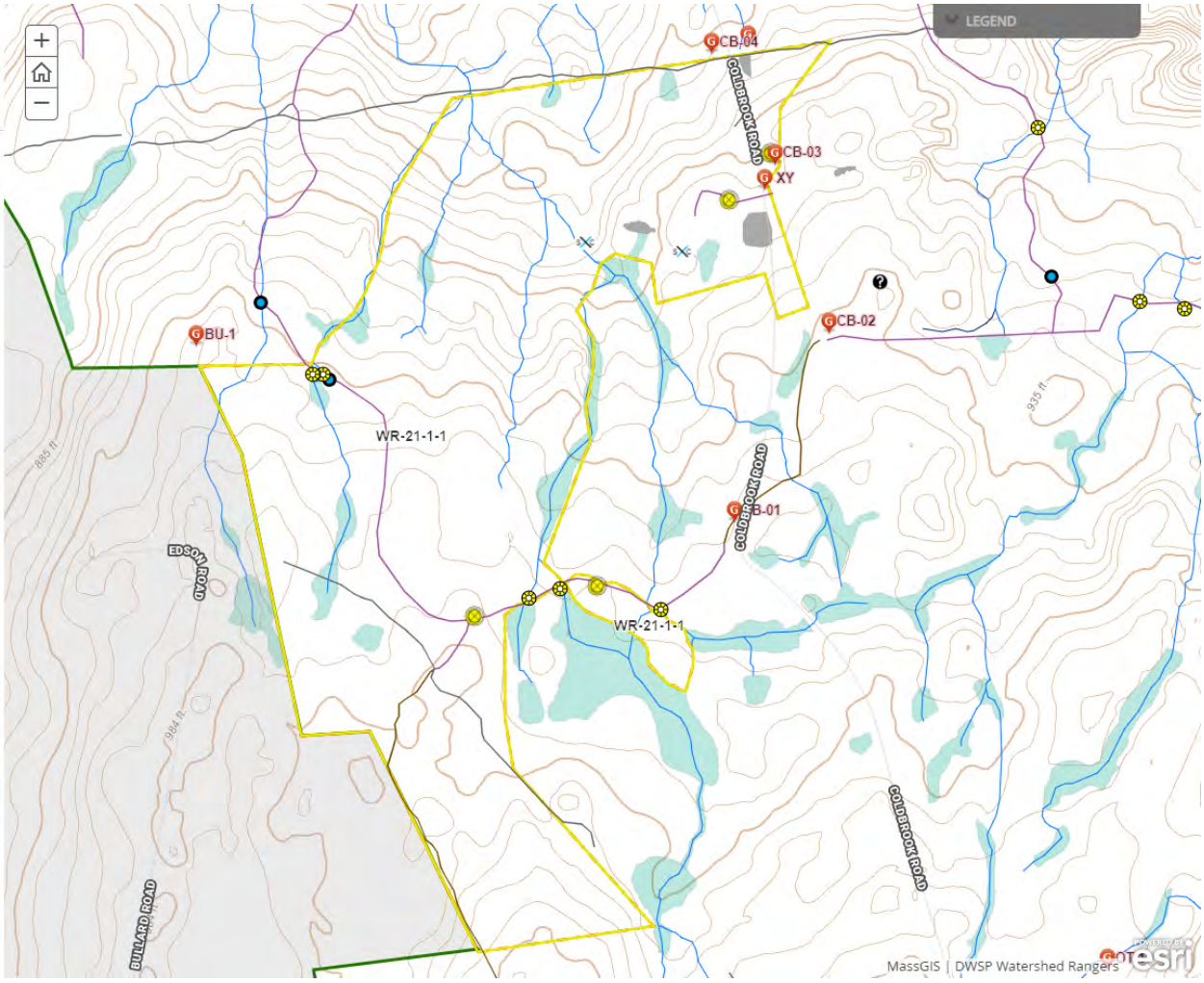
Culverts needed: No

Work needed on permanent bridges: No

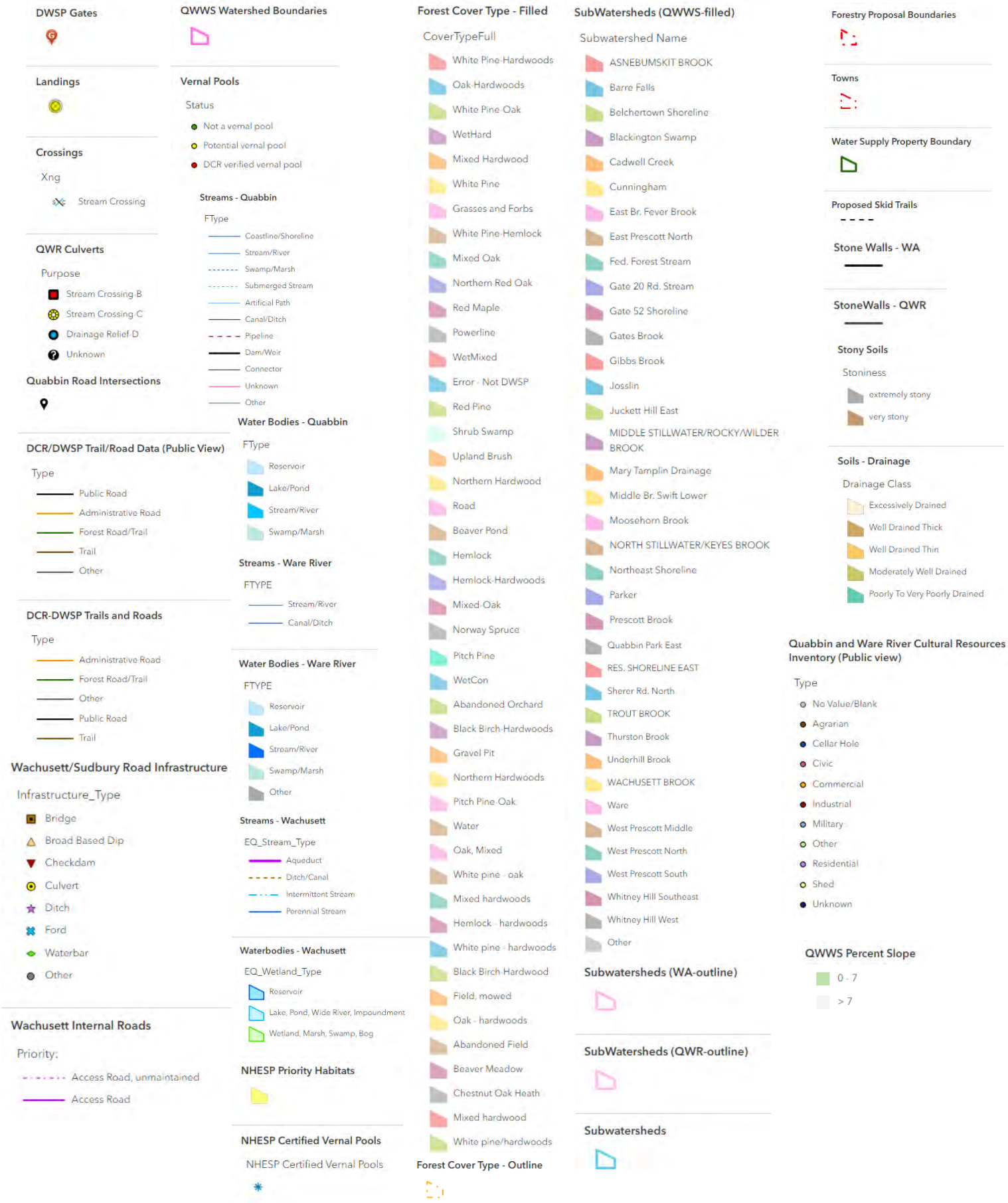
Beaver issue: No

Further comment on access needs:

Loop Road will need some improvements to be accessible for trucks. The gate CB-1 will need to be moved further up Loop Road away from Coldbrook Road so that a truck could park in front of a closed gate without blocking Coldbrook Road.



DWSP FY 2021 Forestry Proposals – Master Legend for story maps



Ware River Harvest Proposal WR-21-8-2

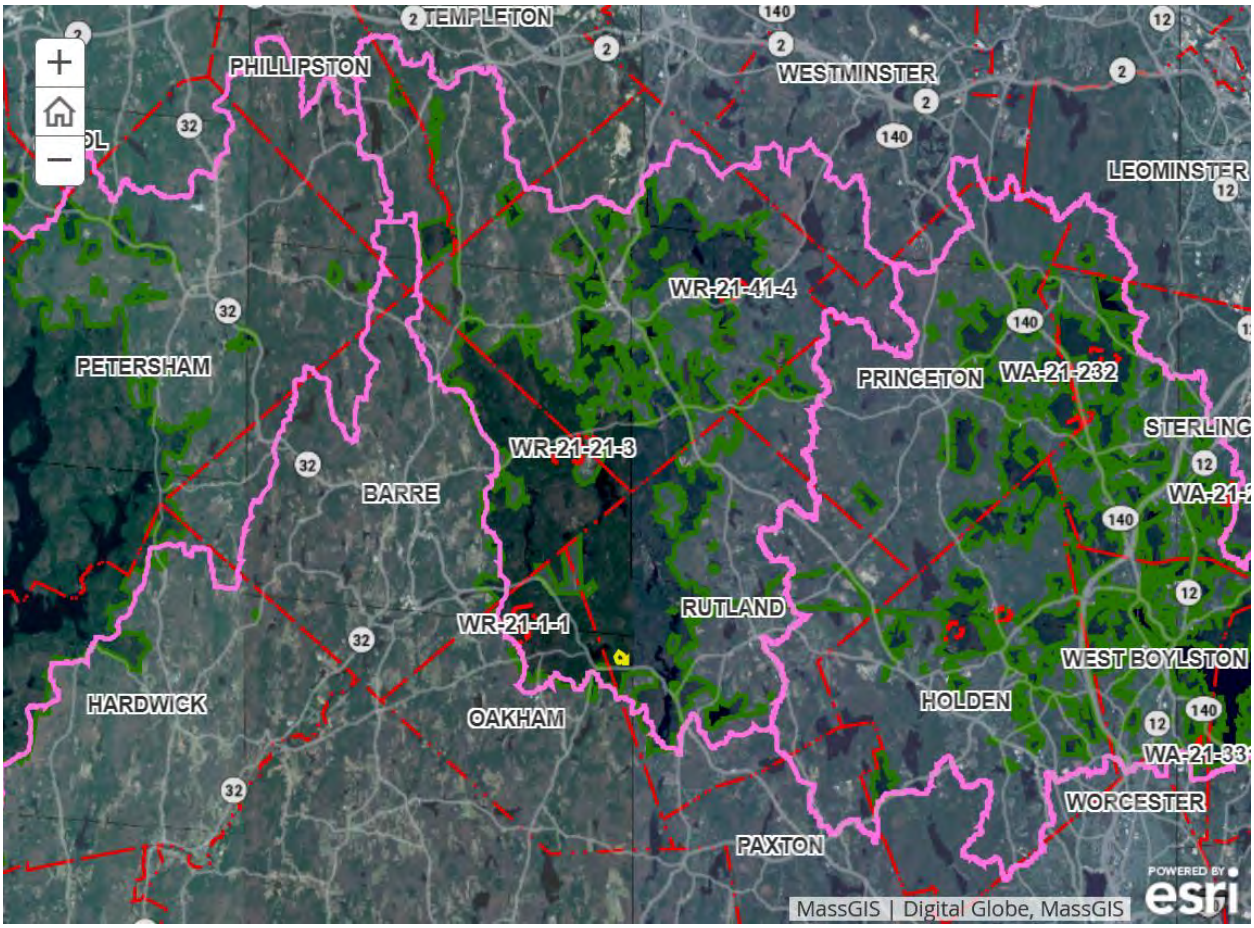
Proposal Goals

The goal for this proposal is to expand recently created pitch pine/oak barren habitat. Pine barrens are relatively rare in this part of the state and are home to several rare and endangered species of plants and insects. The habitat that is created will be maintained in the future with prescribed fire and/or mechanical mowing.

Proposal Location

The lot is in Rutland, south of Whitehall Road and the MA Central Rail Trail (MCRT) at their western intersection. The lot is bound to the northeast by the MCRT, to the northwest by Whitehall Road, to the east by a sandpit, and to the south and west by Parker Brook.

Total Acres: 26



General Description

	Overstory Type(s)	Acres
Dominant	White pine/hardwood	10
Secondary	Red Pine	8
Other	Scots Pine	8

Secondary

	Understory Type(s)

Dominant	Dry site - blueberry/huckleberry

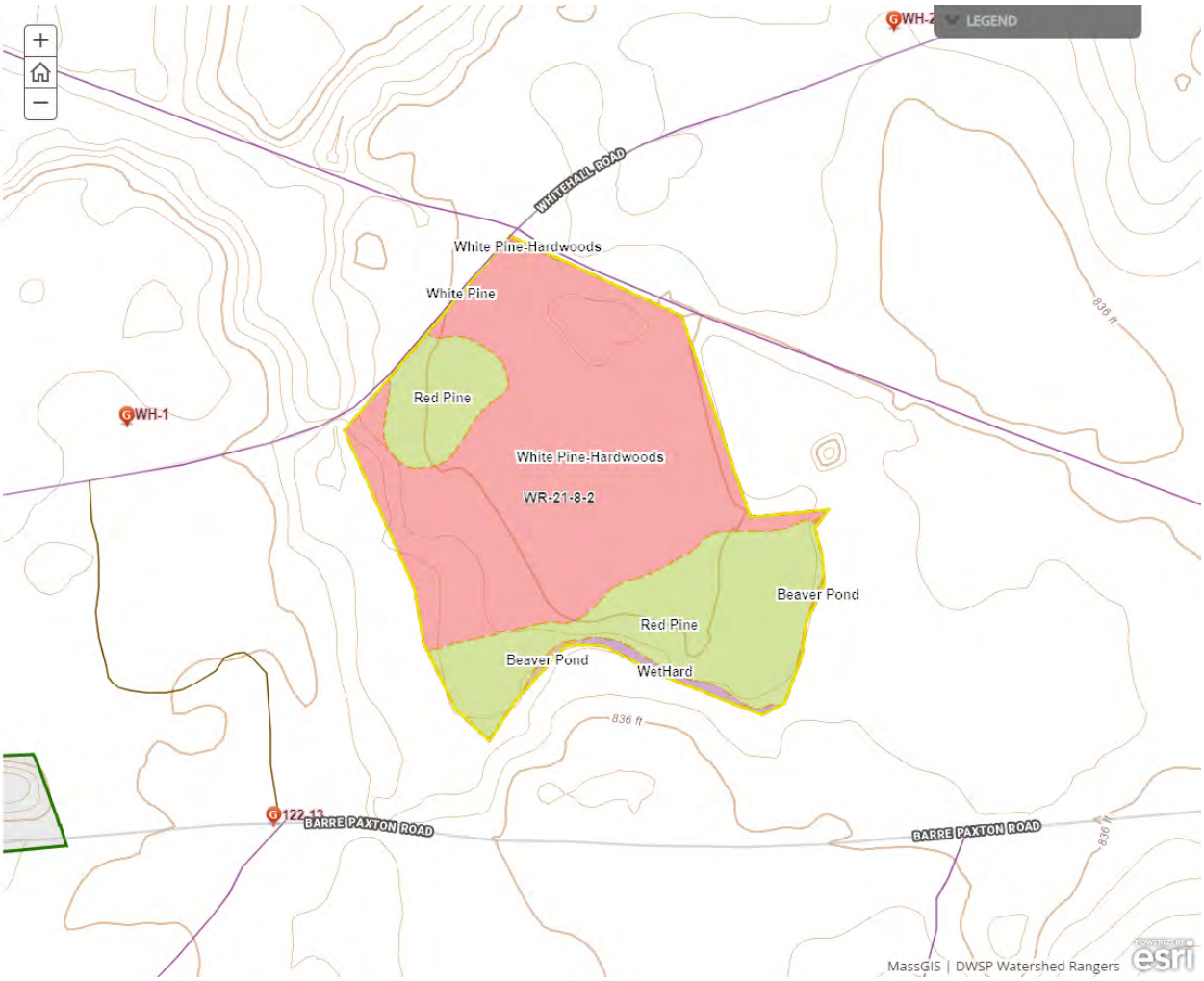
Description of forest composition/condition:

A white pine/hardwood stand is present along Whitehall Road and the rail trail. The stand is fully stocked with sawlog size trees. It has approximately 150 square feet of basal area per acre. It is dominated by low to good quality white pine, with the better quality stems mostly near Whitehall Road. Some good quality red oak is present. White oak, red maple, Scots pine, black oak, hemlock, and pitch pine are also present in the overstory. Regeneration consists of red maple, white pine, black birch, hemlock, red oak, and white oak saplings. Low and highbush blueberries are present throughout the lot. Much of this stand was part of lot 175, an 18-acre shelterwood completed in 1992. Lot 264 , was a 1.6-acre patch cut just off of Whitehall Road, completed in 1998.

A red pine stand is present in the western section of the lot. There is approximately 20 - 50 square feet of basal area of residual overstory red pine scattered through this section. The quality of residual stems is medium to good. The thick regeneration is dominated by low quality pole size white pine. Sapling size white oak, red oak, gray birch, Scots pine, black cherry and hemlock are also present.

Assessment of Terrestrial Invasive Species:

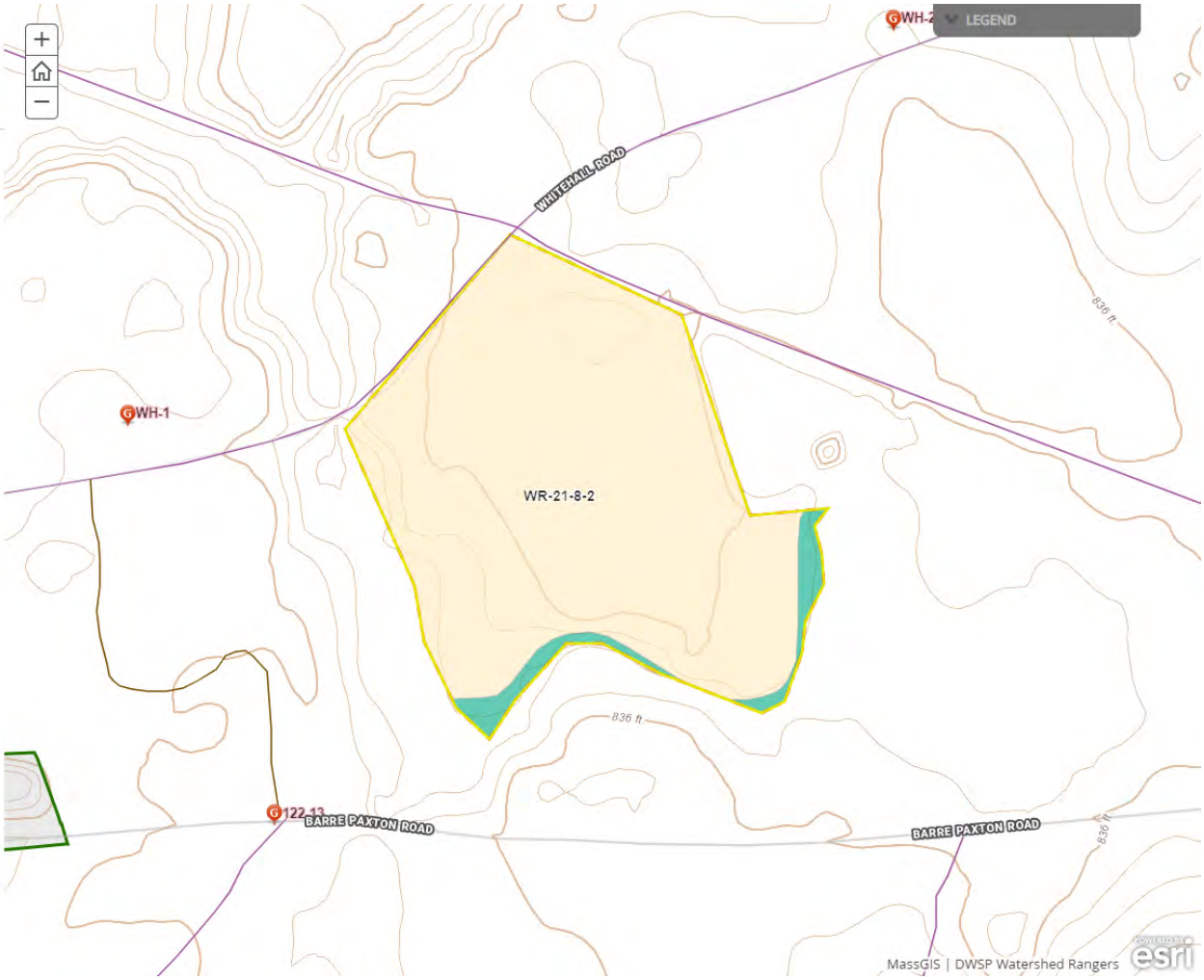
There is a 6" dbh Tree of Heaven on the rail trail, just south of where it crosses Whitehall Road. Saplings are starting to spread. This population will be controlled by DWSP staff.



Soils

Drainage Class	%
Excessively Drained	100
Well Drained Thin	0
Well Drained Thick	0
Moderately Well Drained	0
Poorly to Very Poorly Drained	0

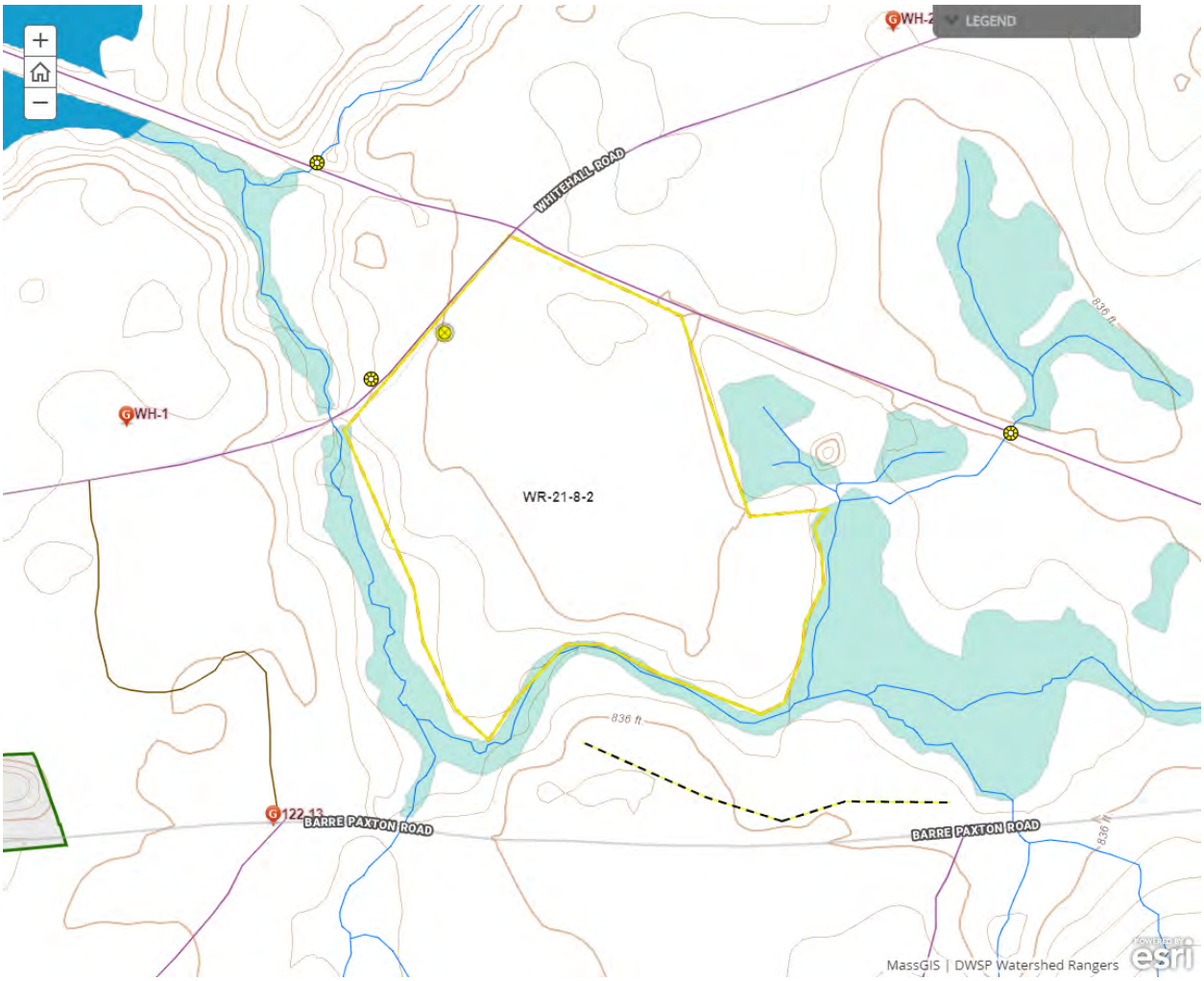
254B - Merrimac fine sandy loam - excessively drained - 25 acres



Wetlands

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

This proposal is bordered on the west and south by Parker Brook and an associated wetland/beaver pond.



Silviculture

Acres in Intermediate cuts: **0**

Acres in prep/establishment cuts: **26**

Acres in Regeneration cuts: **0**

Average regen opening size: **0**

Maximum regen opening size: **0**

Description of advance regeneration in proposal area:

Regeneration consists of red maple, white pine, black birch, hemlock, red oak, and white oak saplings.

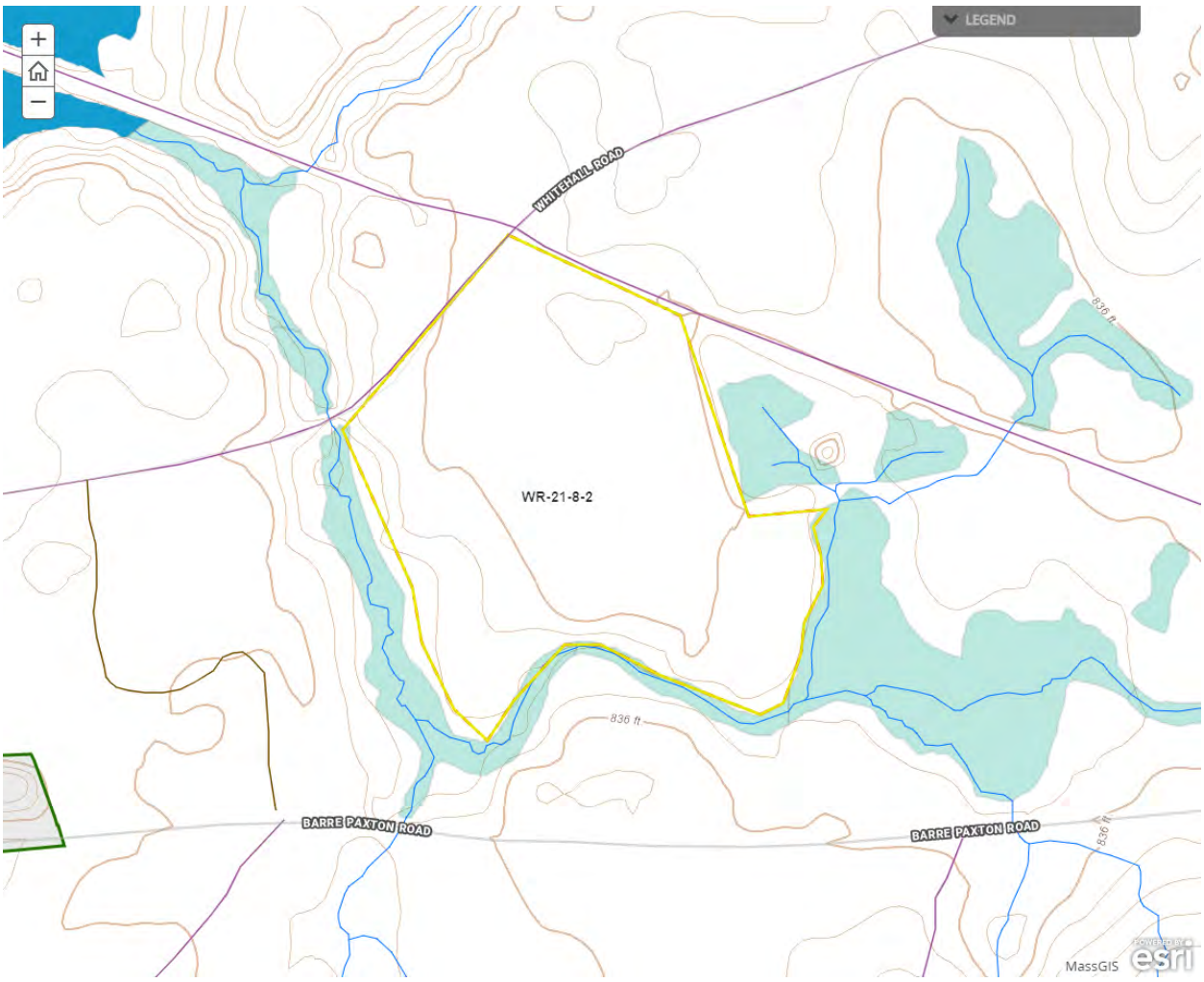
General comments on silviculture proposed:

The goal in these stands is to create additional pitch pine/oak barrens habitat to build off of the recent pitch pine/oak barrens that was established this past winter on the north side of the MCRT and an existing sand pit. This area has less overstory pitch pine and white oak, so the result will be a much more open barren area. All trees greater than 5 feet tall that are not pitch pine or white oak will be cut and removed.

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
8061 (Parker Brook)	3133	71	691	26

8061 - Ware River Intake Subdistrict, Parker Brook Sub-basin - 26 acres -



Harvesting Limitations

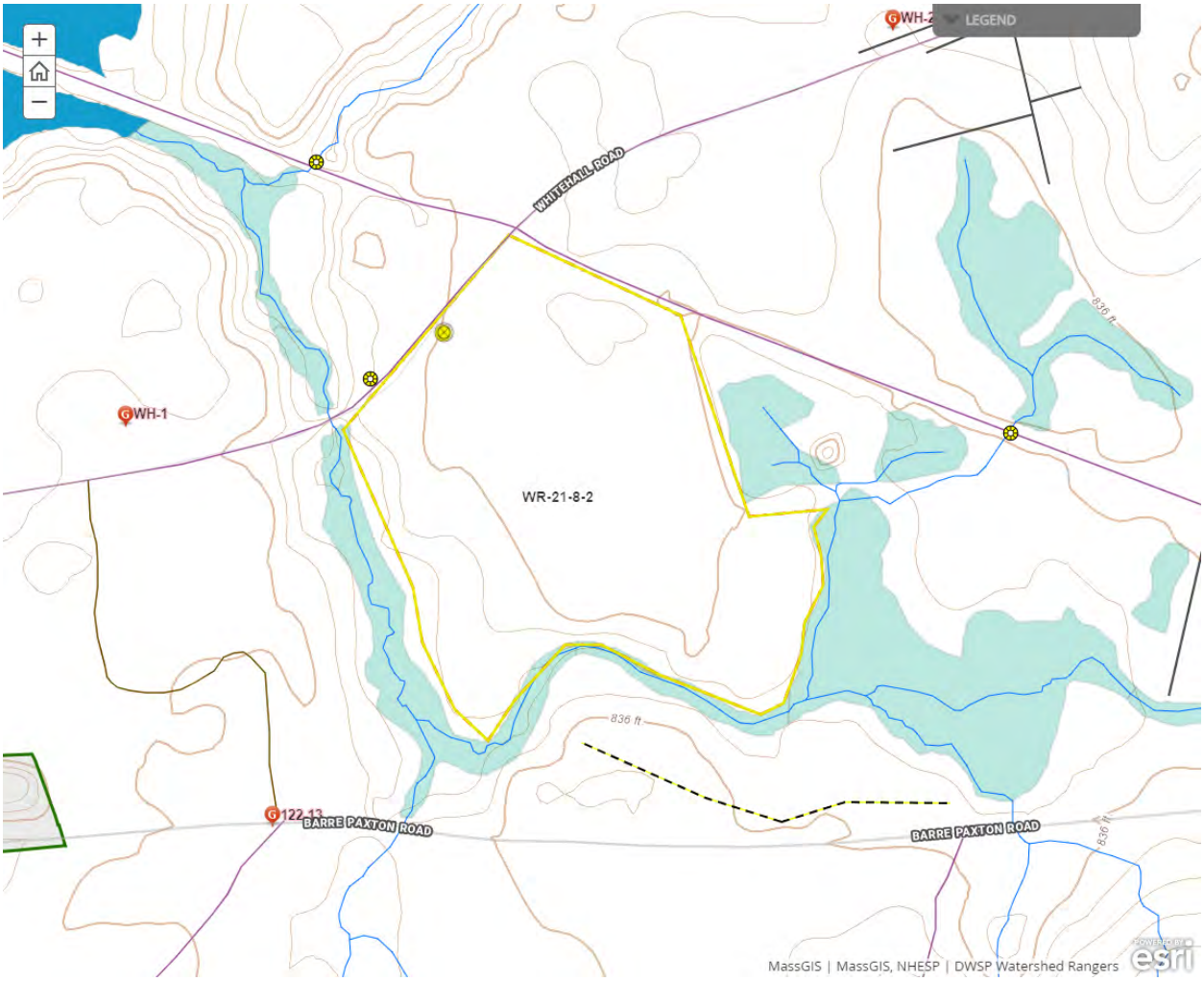
Forwarder required: **No**

Feller/processor required: **No**

Steep slopes present: **No**

Comments on harvesting limitations:

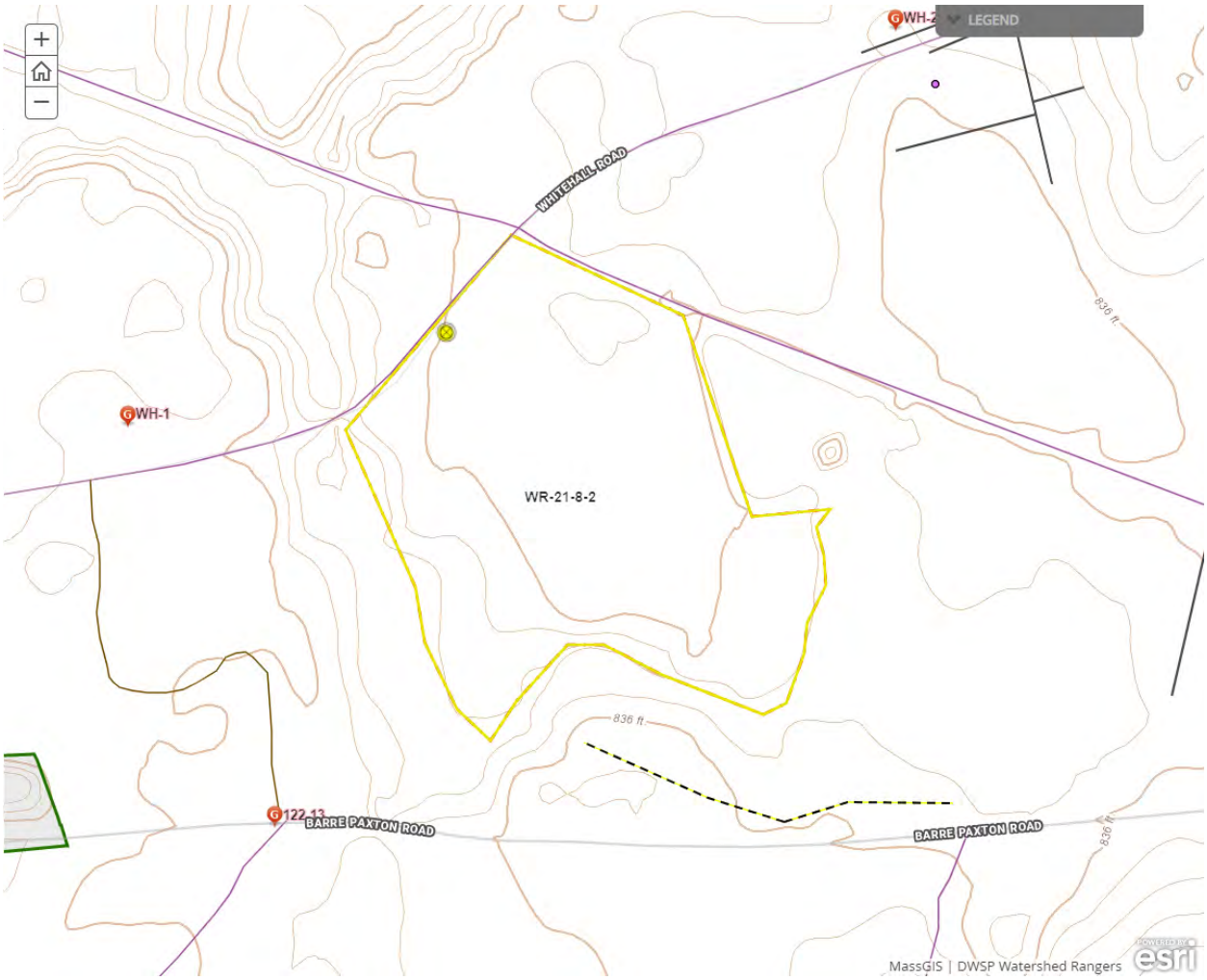
No restrictions on harvesting equipment are proposed for this lot.



Cultural Resources

Comments on Cultural Resources:

No known cultural resources in proposal area.



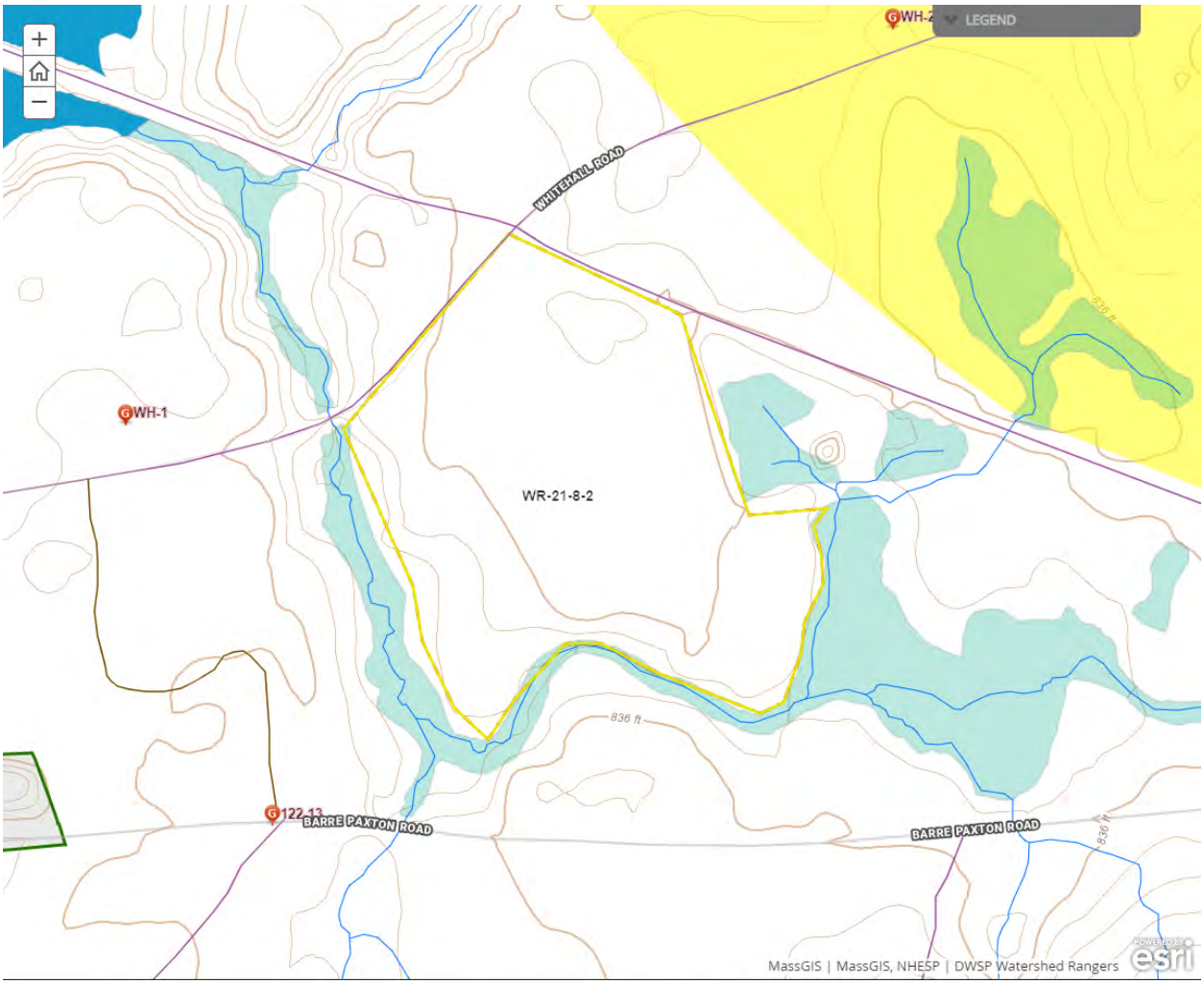
Wildlife Resources & Rare and Endangered Species

General Wildlife Comments:

This is the southern tip of a potential pitch pine/oak barren area designated in DWSP's 2017 Land Management Plan. Lot 4399 was recently harvested just east of this site on the other side of the rail trail as the first pitch pine/oak barren establishment harvest in the area. Snags would typically be spared in a harvest, but are not desirable in the barrens area due to safety concerns on subsequent prescribed burns and will be removed.

Comments on Rare Species/Habitats:

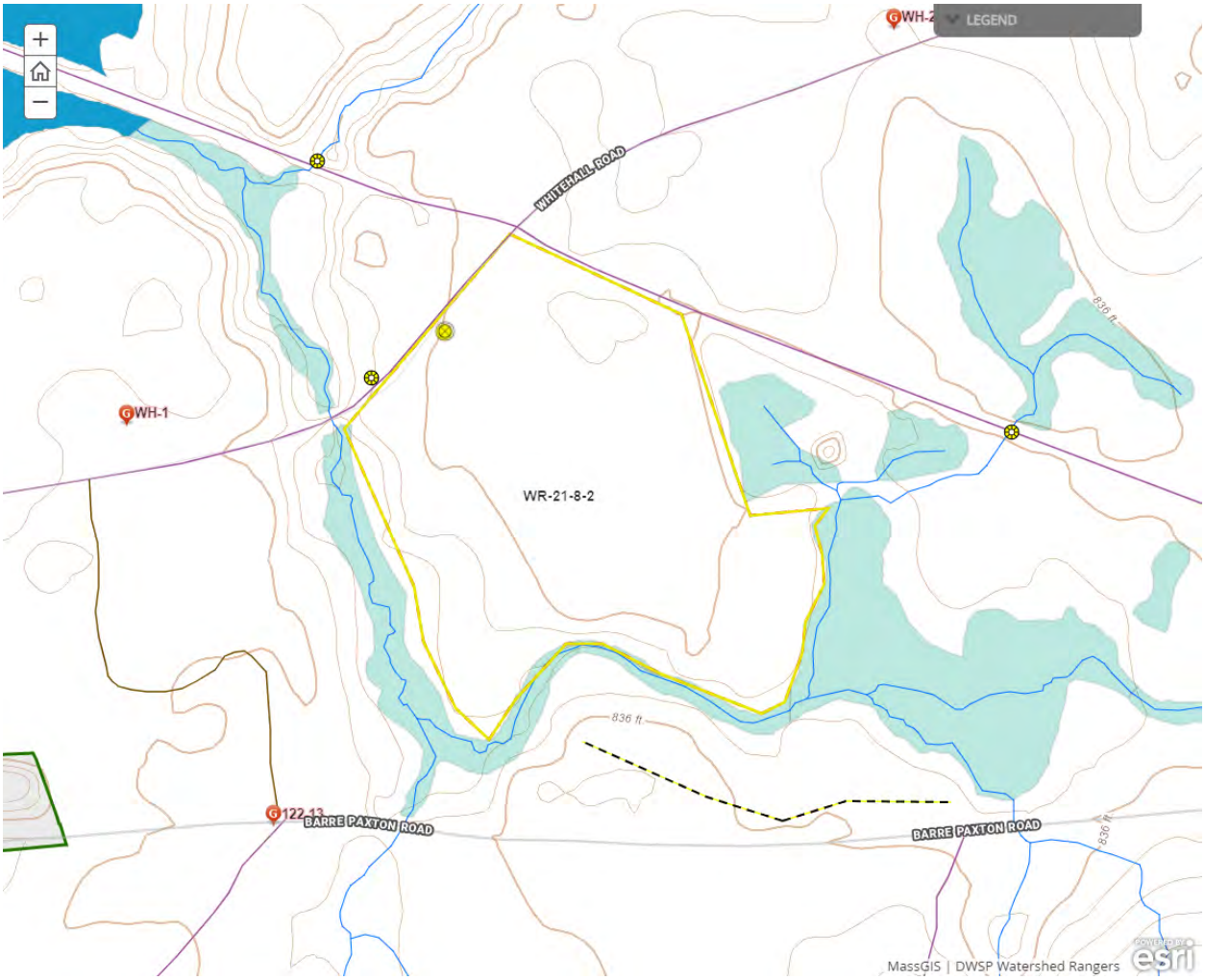
No known rare species or priority habitats on site.



Environmental Quality Engineering

Comments on EQ Issues:

No stream crossings or EQ comments.



Forest Access Engineering

Gravel needed: Yes

Landing work needed: No

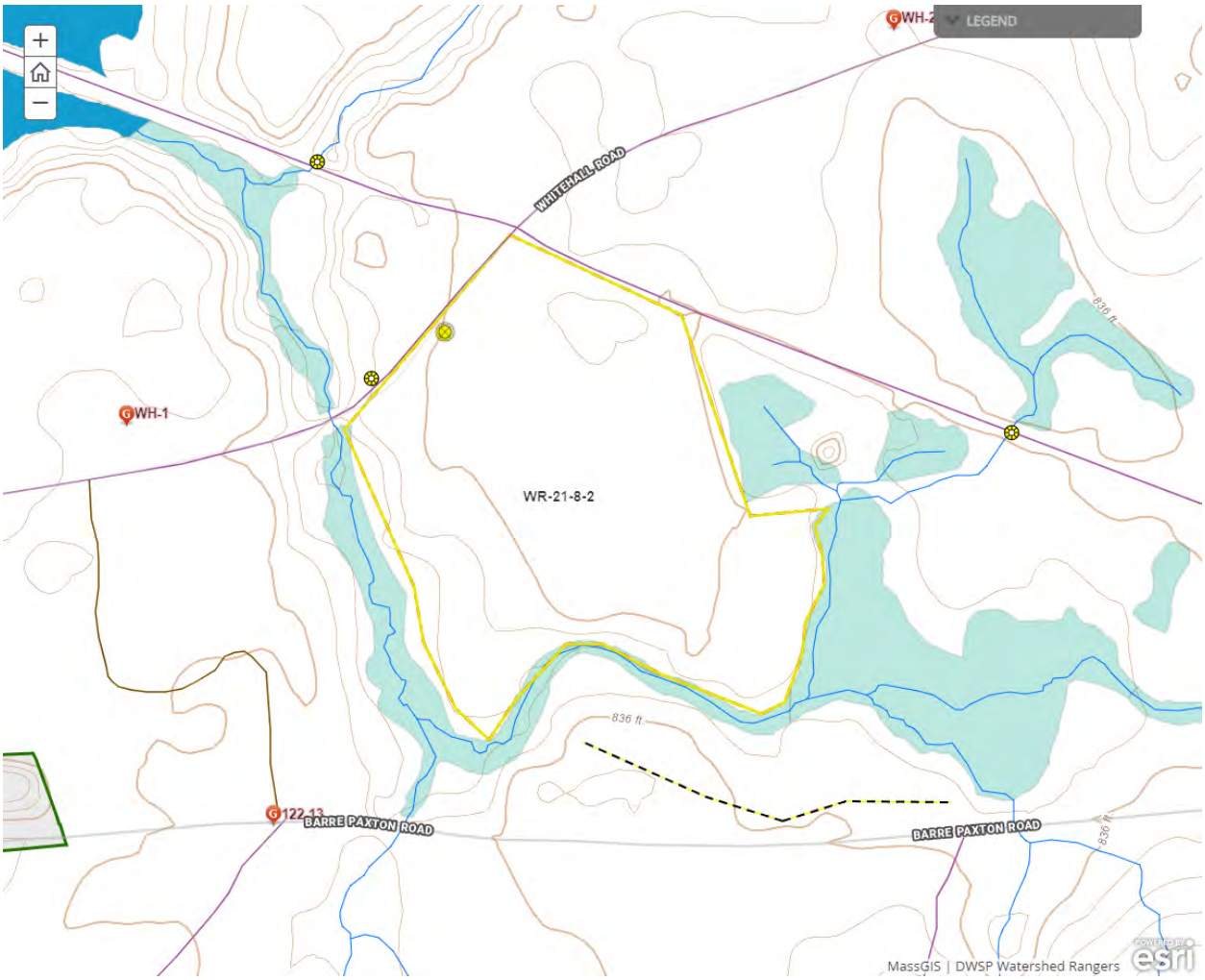
Culverts needed: No

Work needed on permanent bridges: No

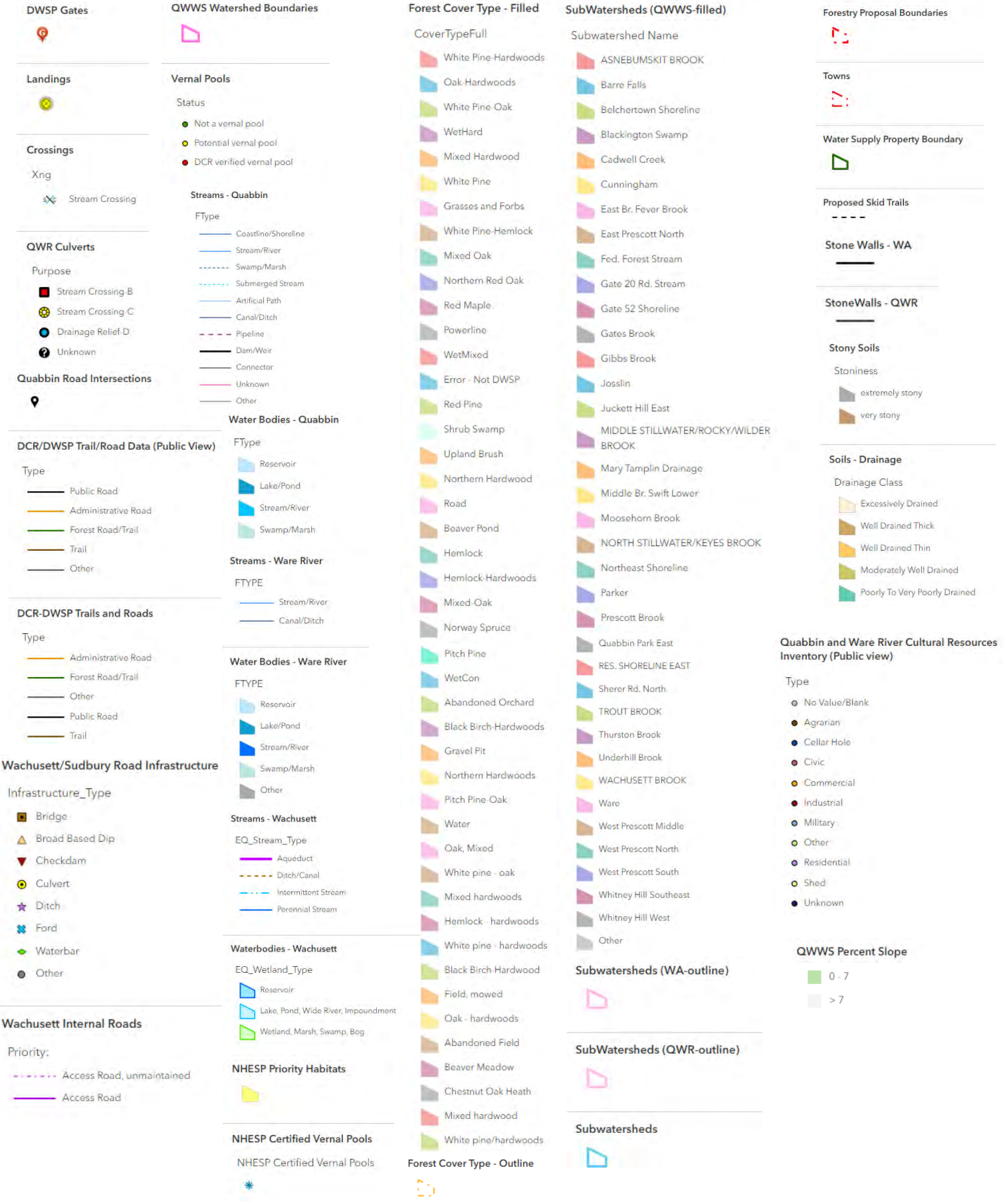
Beaver issue: No

Further comment on access needs:

Whitehall Road needs gravel, grading, and ditching.



DWSP FY 2021 Forestry Proposals – Master Legend for story maps



Ware River Harvest Proposal WR-21-21-3

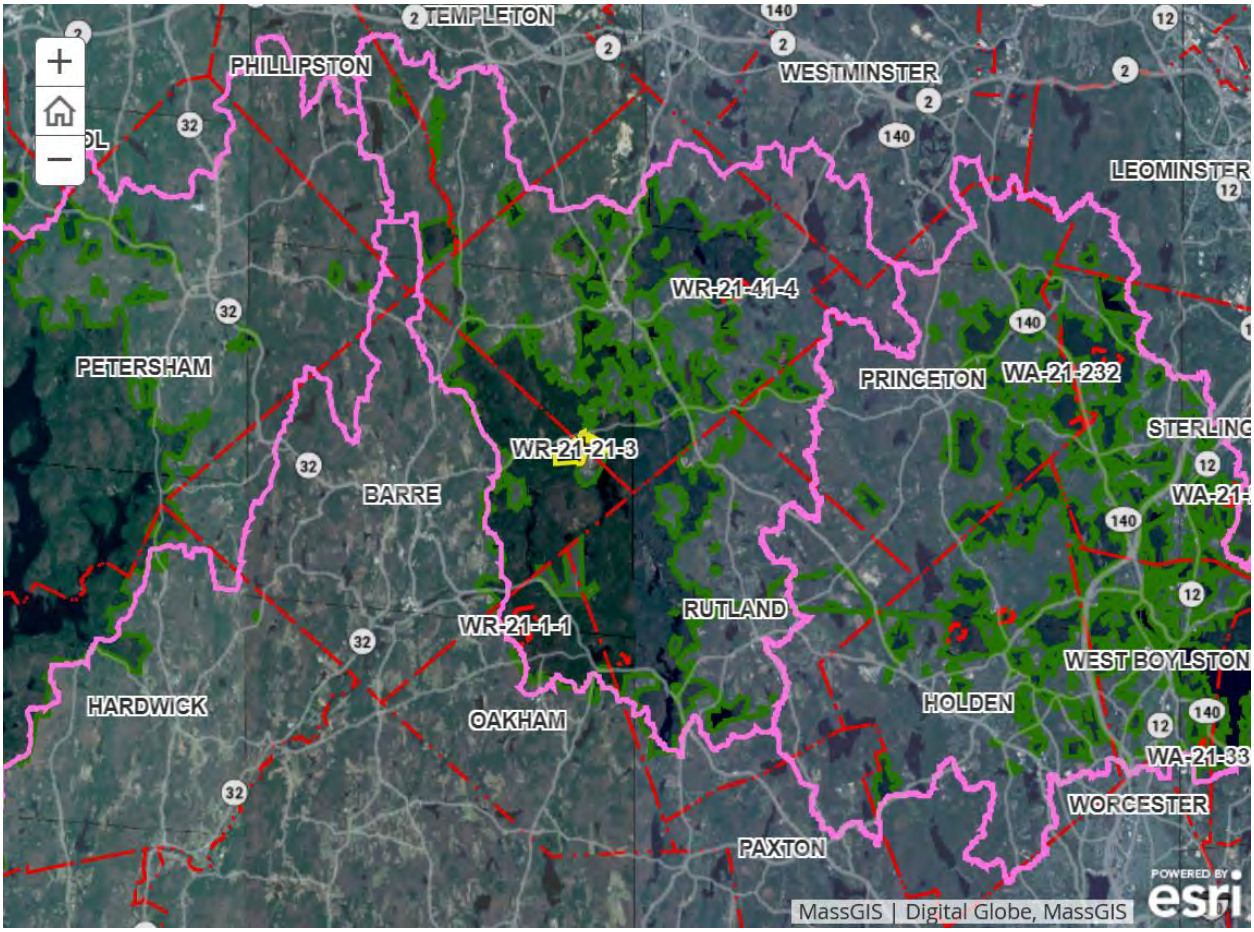
Proposal Goals

The goal for this proposal is to make the forest more diverse and resilient. It will reduce the amount of mature, old field white pine and replace it with patches of young forest of diverse species.

Proposal Location

This lot is located in Barre and Hubbardston along Coldbrook Road at the entrance of Barre Falls Dam.

Total Acres: 219



General Description

	Overstory Type(s)	Acres
Dominant	White pine/hardwood	116
Secondary	White pine/hemlock	20
Other	Oak/hardwood	19

Secondary

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

Description of forest composition/condition:

A white pine/hardwood and a white pine/hemlock stand cover most of the lot west of Coldbrook Road. They are dominated by low to medium quality, sawlog size white pine. There is approximately 160 square feet of basal area. Red oak, some of it good quality, red maple, hemlock, white oak, black oak, and black cherry are also found in the overstory. There is plenty of regeneration, although browse by deer and moose is heavy in spots. Regeneration species include white pine, red maple, hemlock, red, white, and black oak, black, white, and yellow birch, aspen, American beech, and musclewood. Several harvests occurred in this stand in the past. Lot 4293 was a 7-acre shelterwood north of Stone Road completed in 2002. The small groups are now dominated by black birch. Lot 4287 consisted two regeneration cuts of 9.0 acres and 3.3 acres completed in 2001, both north of Stone Road. These openings have regenerated well with a diverse mix of native tree species. Lot 251 was a 10.5 acre regeneration cut south of Stone Road that was completed in 1981. It has also regenerated nicely with a diverse mix of native tree species.

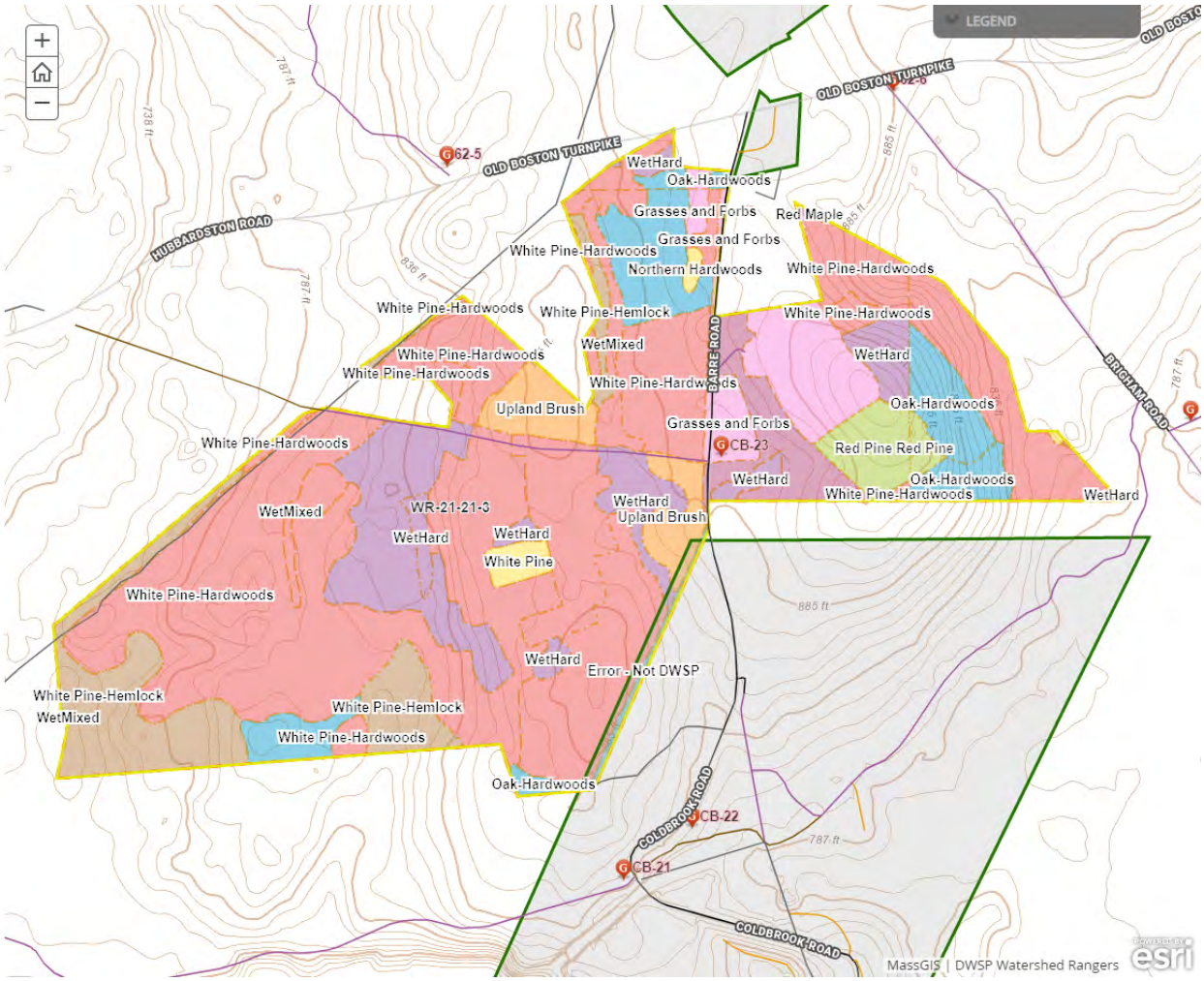
There is also an oak/hardwood stand west of Coldbrook Road. It is dominated by medium quality red, black, white, and scarlet oak. There are approximately 120 square feet of basal area per acre. Red maple, white pine, hemlock, black cherry, American beech, and aspen are also present in the overstory. Sugar maple and shagbark hickory overstory trees are found along Stone Road, particularly near the cellar holes, but don't make up a large part of the forest beyond. Regeneration is abundant and diverse. Species

present include hemlock, white pine, yellow, black, and paper birch, red and black oak, red maple, aspen, and American beech.

The area east of Coldbrook Road is dominated by hay fields. The areas in between fields are hardwood stands that are dominated by red maple, black cherry, white ash, and black oak. White pine, aspen, American elm, and red oak are also present in the overstory. Apple trees are present in the understory, but are in rough shape. There are two small sugar maple stands, one in the southeast corner near the Army Corps boundary line and one in the very northern tip of this portion of the lot. There is also a poor quality patch of white pine in the northeast corner. Native species are dominated by invasive shrub species, particularly near Coldbrook Road, in between hay fields.

Assessment of Terrestrial Invasive Species:

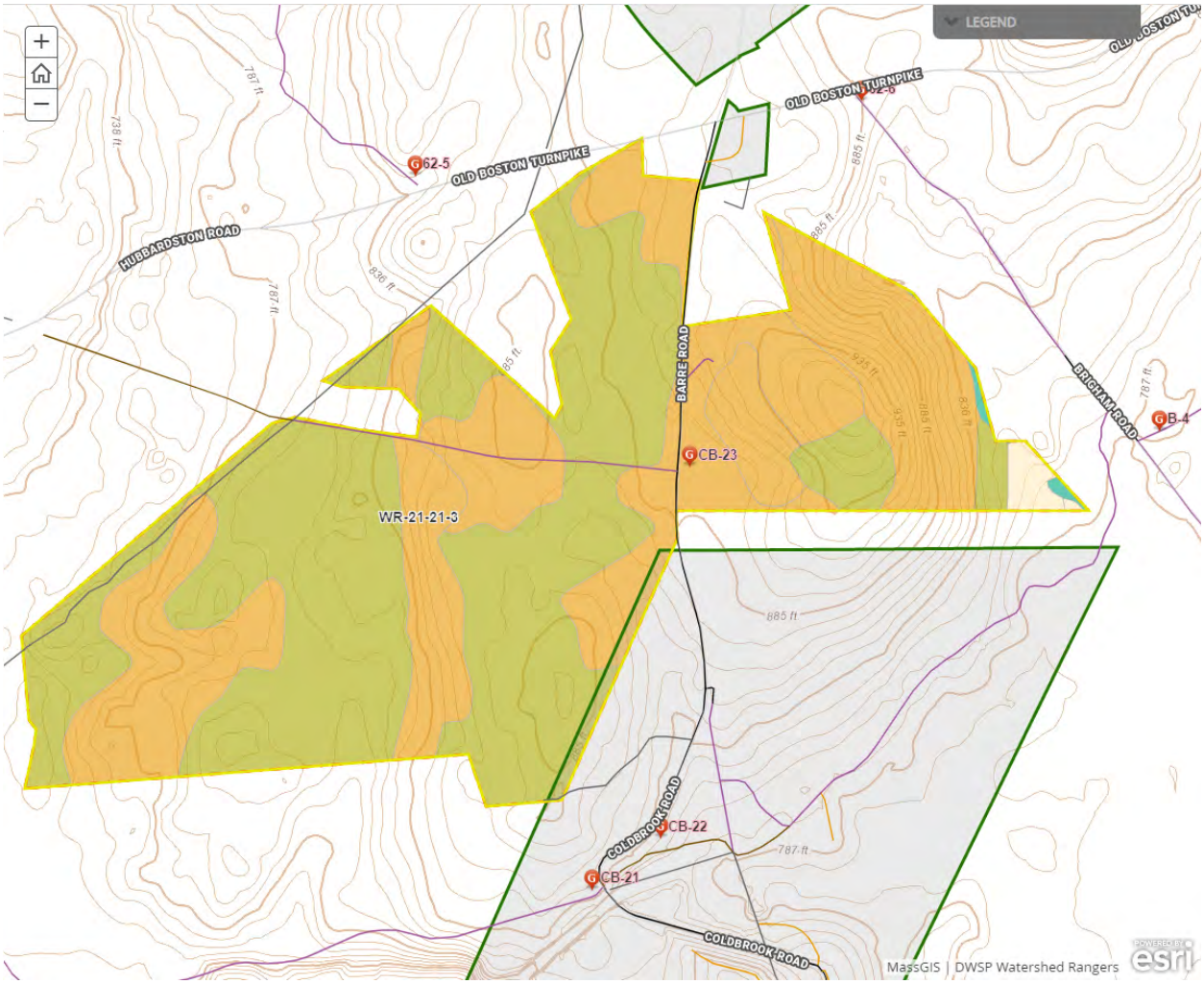
Invasive species are present throughout the lot, but are particularly dense along Stone Rd and around the hay field east of Coldbrook Road. Buckthorn is most prevalent. It has completely taken over the middle landing on Stone Road. Bittersweet, honeysuckle, burning bush, and barberry were also observed.



Soils

Drainage Class	%
Excessively Drained	1
Well Drained Thin	0
Well Drained Thick	46
Moderately Well Drained	53
Poorly to Very Poorly Drained	0

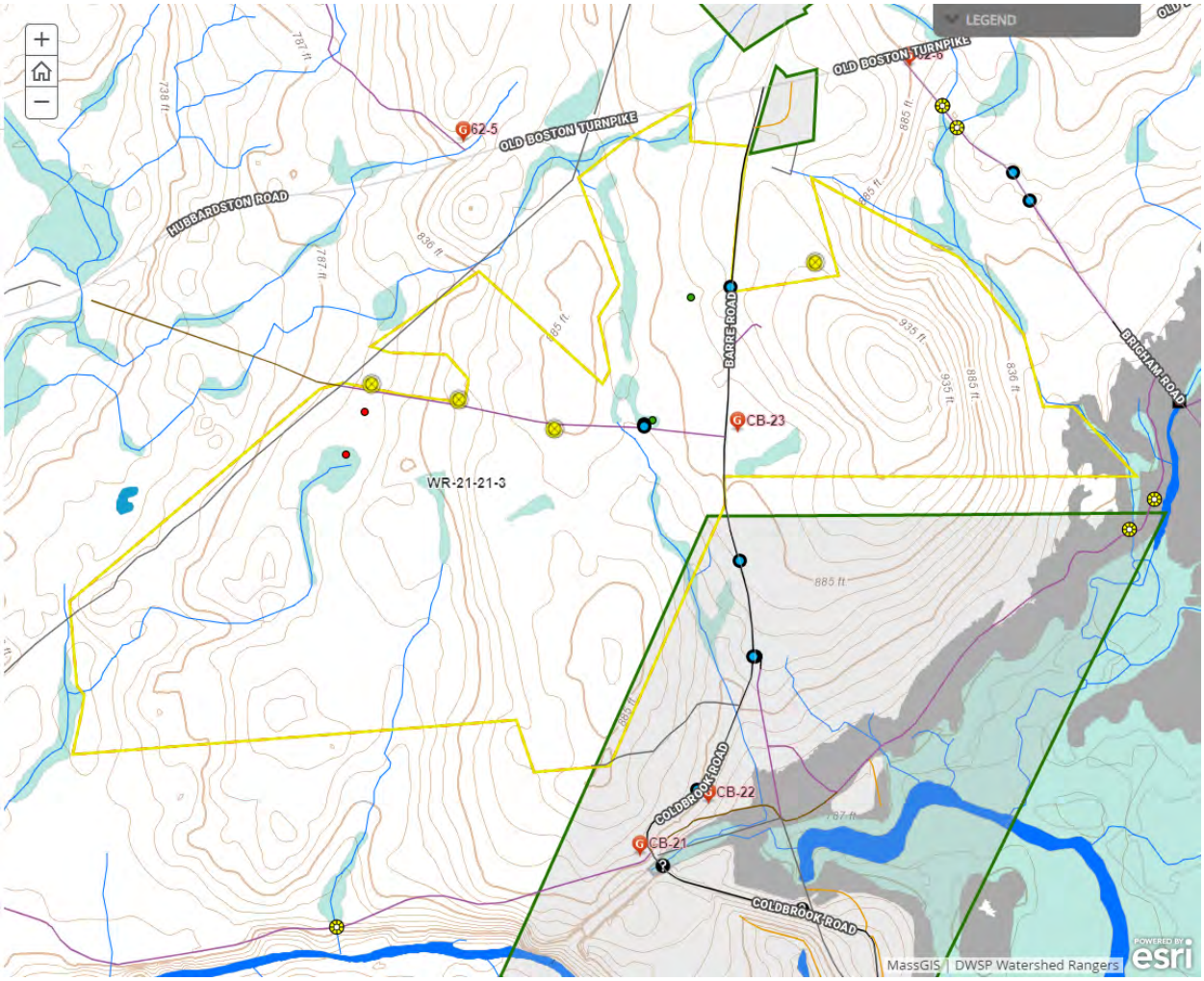
910C - Woodbridge-Paxton association - moderately well drained - 115 acres
902E - Charlton-Paxton association - well drained thick - 55 acres
305B - Paxton fine sandy loam - well drained thick - 39 acres
305C - Paxton fine sandy loam - well drained thick - 6 acres
253C - Hinckley loamy sand - excessively drained - 2 acres



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? - **Yes**
- Is logging in wetlands planned? - **No**

Several forested wetland and streams are present. All crossings are culverted along Stone Road.



Silviculture

Acres in Intermediate cuts: **0**

Acres in prep/establishment cuts: **0**

Acres in Regeneration cuts: 3**0**

Average regen opening size: **2**

Maximum regen opening size: **5**

Description of advance regeneration in proposal area:

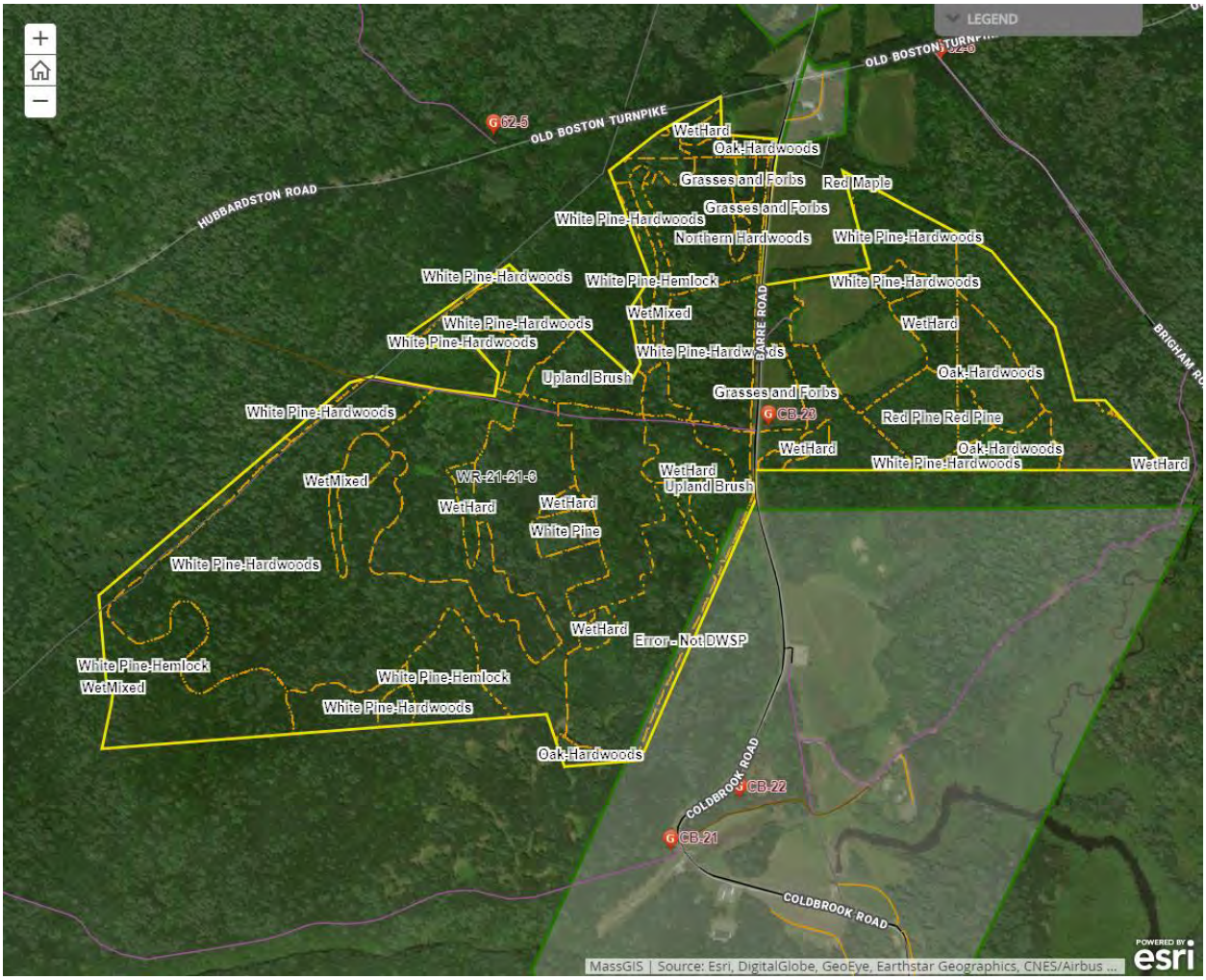
There is plenty of regeneration, although browse by deer and moose is heavy in spots. Regeneration species include white pine, red maple, hemlock, red, white, and black oak, black, white, and yellow birch, aspen, American beech, and musclewood.

General comments on silviculture proposed:

White pine/hardwood and white pine/hemlock stands: Regeneration openings that were established as part of harvests 251 in 1981, 4287 in 2001, and 4293 in 2002 will be expanded where possible. New regeneration openings will be established where they do not exist in areas with the poorest quality overstory white pine and best existing regeneration. Openings of different sizes and shapes will be established, generally ranging in size from 1 to 5 acres. At least one group, possibly two groups, of 2 to 5 acres will be established. The average opening size will be approximately 2 acres. Approximately 30% of the stand area will be in openings. In all groups snags will be retained wherever possible and 5 to 10 square feet of basal area per acre of live trees will also be left. Live retention trees will either have unique wildlife characteristics, such as large cavities, or will be well formed and vigorous white pine or hardwood.

Oak/hardwood stand: Establish up to five groups 1/2 to 2 acres in size with total acreage at 5 acres. Groups will be targeted to the areas with the poorest quality stems. Some improvement cutting will be done along skid trails that access groups.

Hardwood Stand Around Fields: Removing trees along stone walls and in groups in between the existing fields along Coldbrook Road would enhance wildlife habitat value in this area. This would have to be done carefully in order to protect existing stone walls and other cultural resources, and to mitigate the potential aesthetic impact. Invasive shrub species, particularly honeysuckle, bittersweet, and buckthorn are heavy in this area and would need to be controlled.



Subwatershed Analysis

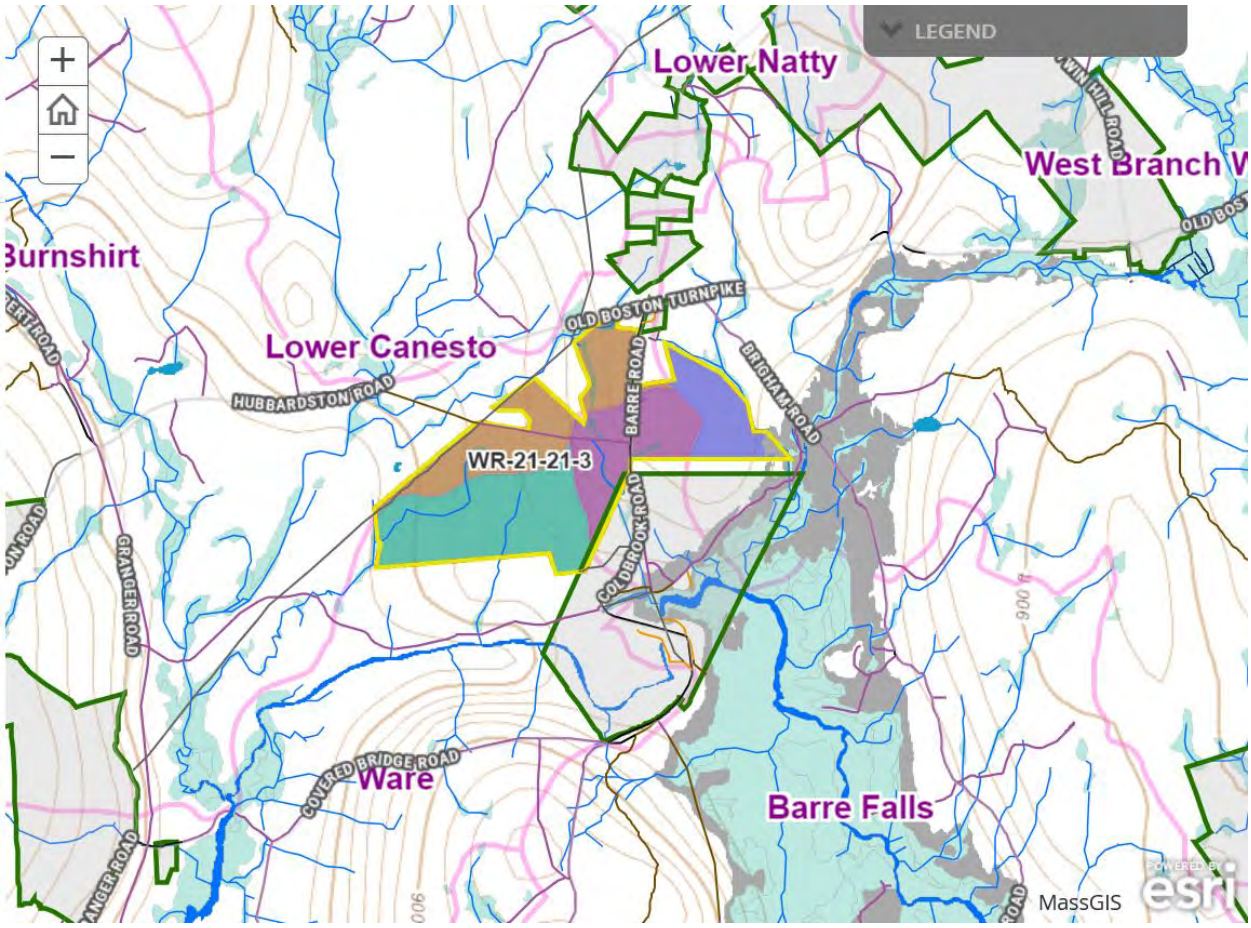
Sub-watershed number	Total DCR-owned Acres	Acres Regenerated on DCR Land in the last 10 years	Acres Remaining for Regenerating Up to the 25% / 10 Year	Acres part of this proposal
8039 (West Branch Ware River)	1927	0	1927	30
8042 (West Branch Ware River)	3930	124	858	48
8058 (Burnshirt River)	2119	82	447	63
8063 (Ware River Intake)	2713	41	637	79

8039 - West Branch Ware Subdistrict - 30 acres

8042 - Barre Falls Subdistrict - 48 acres

8058 - Burnshirt Subdistrict - 63 acres

8063 - Ware River Intake Subdistrict - 79 acres



Harvesting Limitations

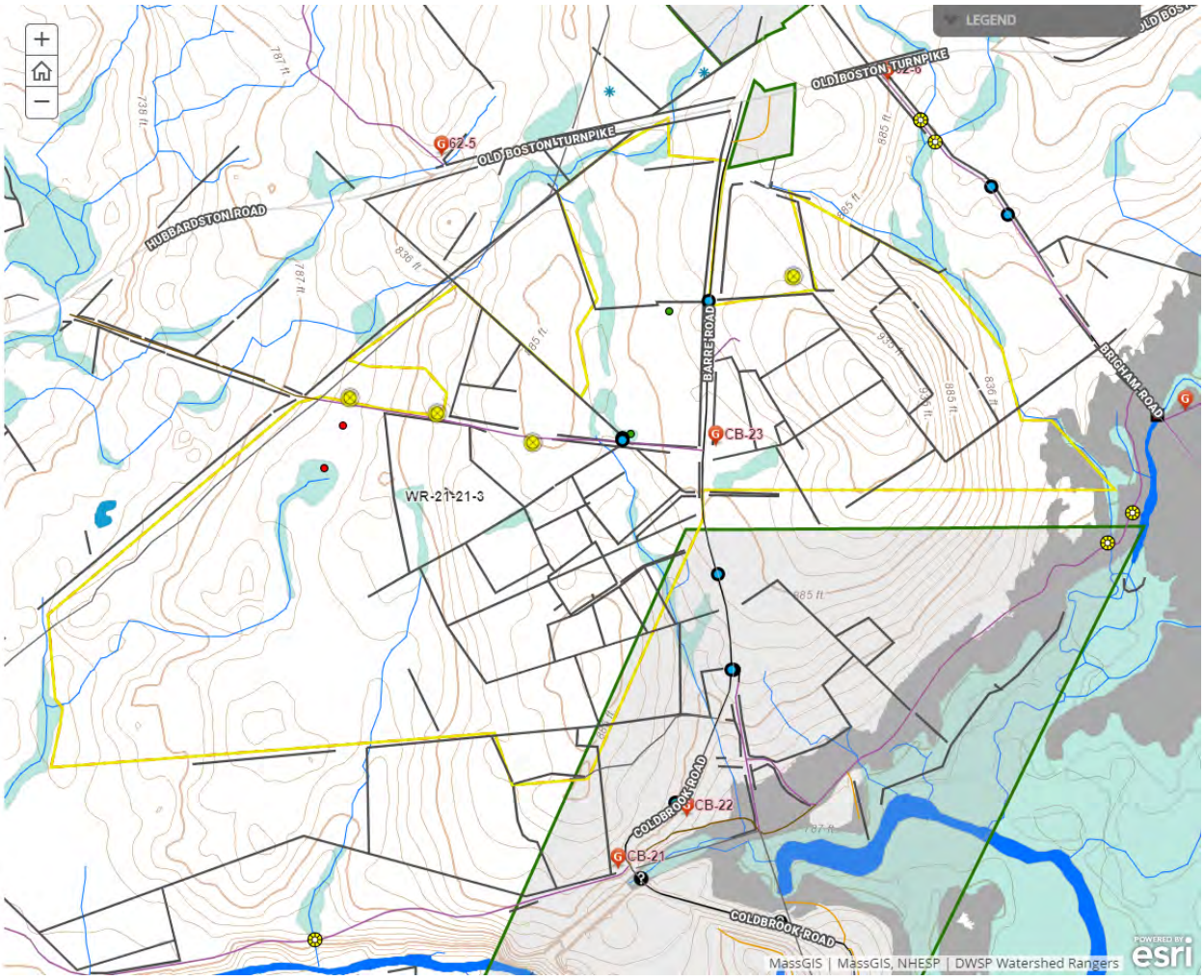
Forwarder required: **No**

Feller/processor required: **No**

Steep slopes present: **No**

Comments on harvesting limitations:

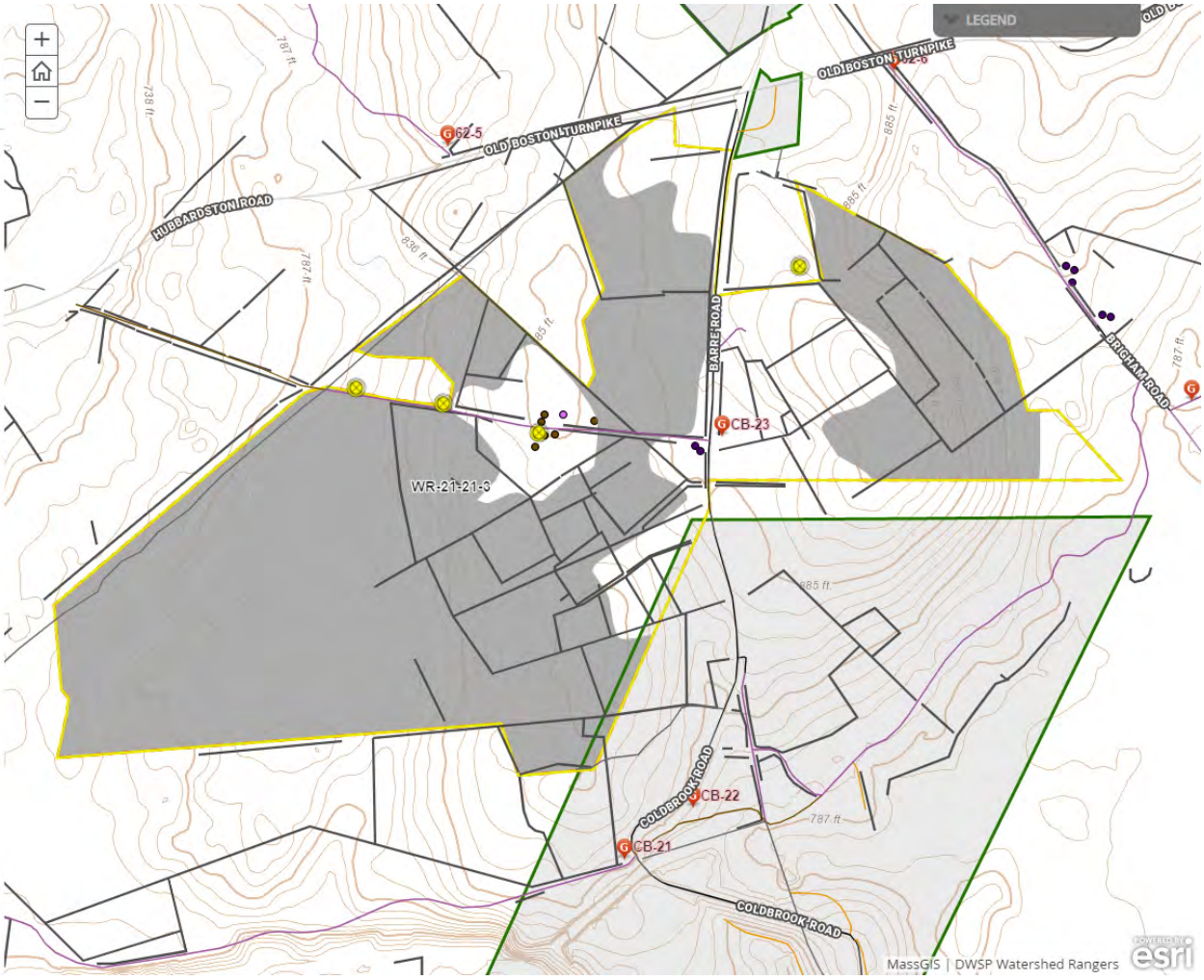
No restrictions on harvesting equipment are proposed for this lot.



Cultural Resources

Comments on Cultural Resources:

There are multiple large and small cellar hole/foundations along Stone Road. Some include cement. There are also wells in that area. These features have been mapped, and will be buffered during harvesting operations. Stone walls are also prevalent. They will be protected as much as possible. Many have already been crossed during past harvest operations.



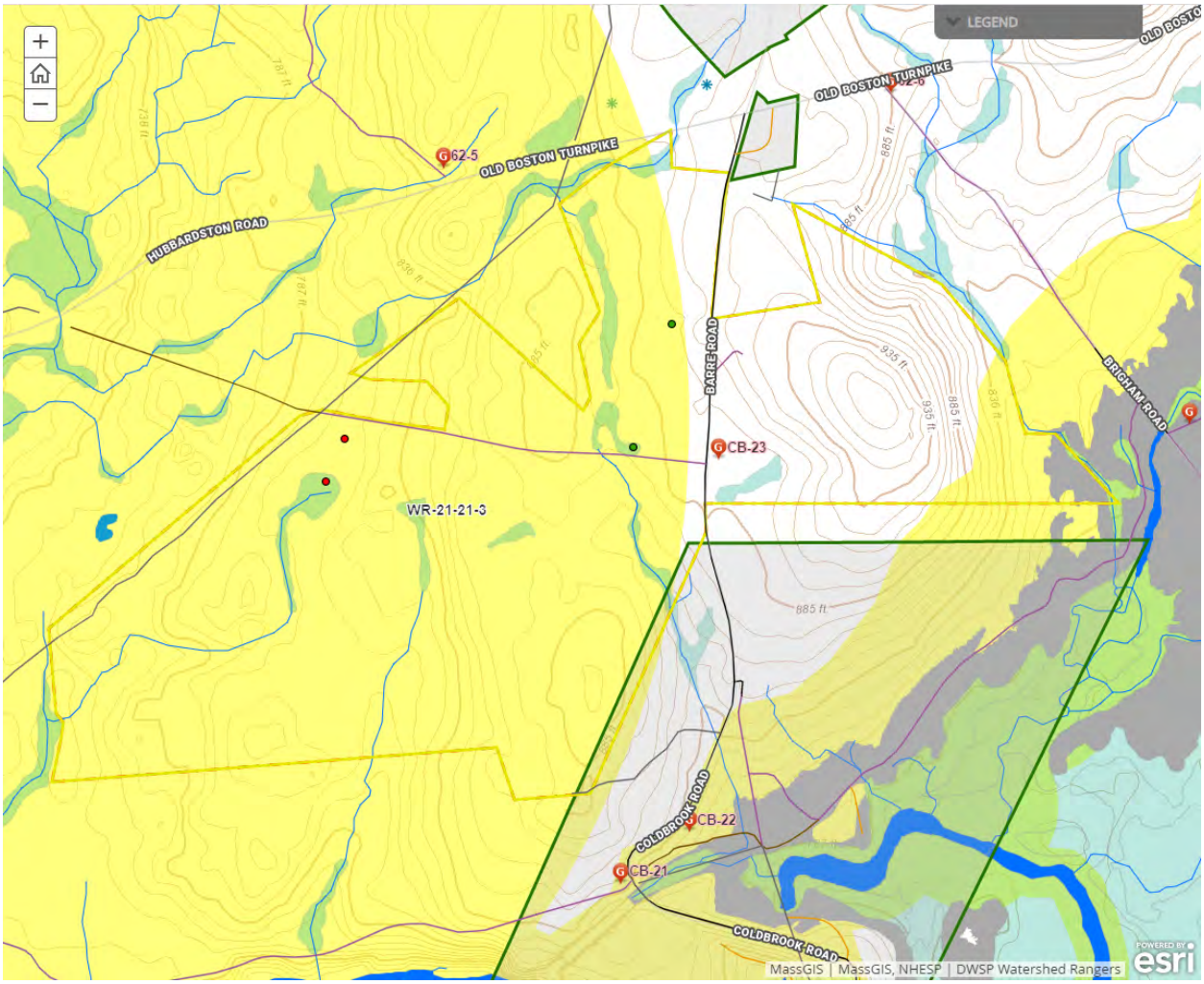
Wildlife Resources & Rare and Endangered Species

General Wildlife Comments:

Woodcock were observed in the old cut south of the hay fields on the east side of Coldbrook Road.

Comments on Rare Species/Habitats:

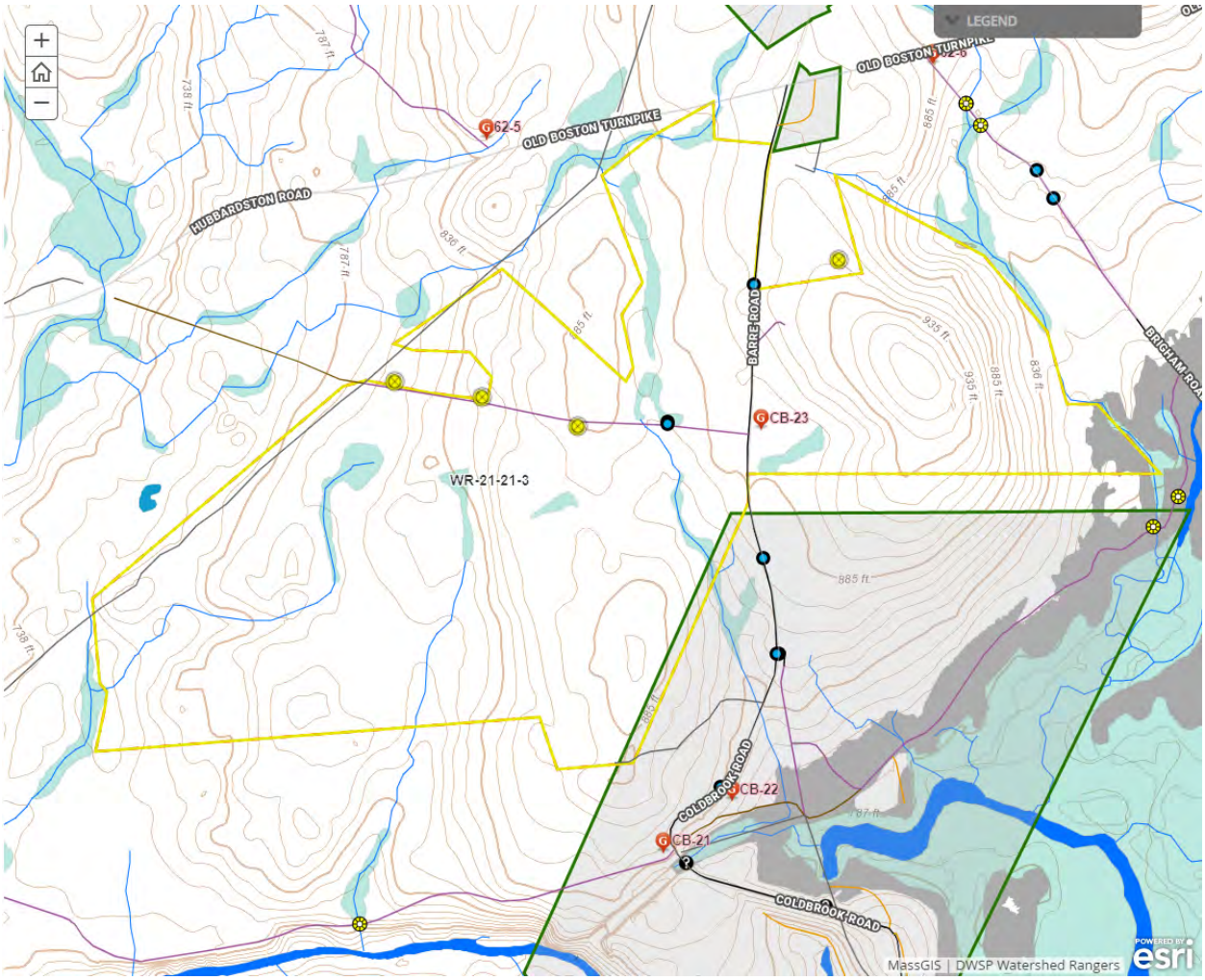
The very eastern tip of the proposal is in a NHESP bubble. Harvesting activities will not be conducted in that section since it is one of the areas with a lot of sugar maple. DWSP will coordinate with NHESP as necessary and follow any recommendations to protect rare species during the proposed activity.



Environmental Quality Engineering

Comments on EQ Issues:

No stream crossings or EQ comments.



Forest Access Engineering

Gravel needed: Yes

Landing work needed: No

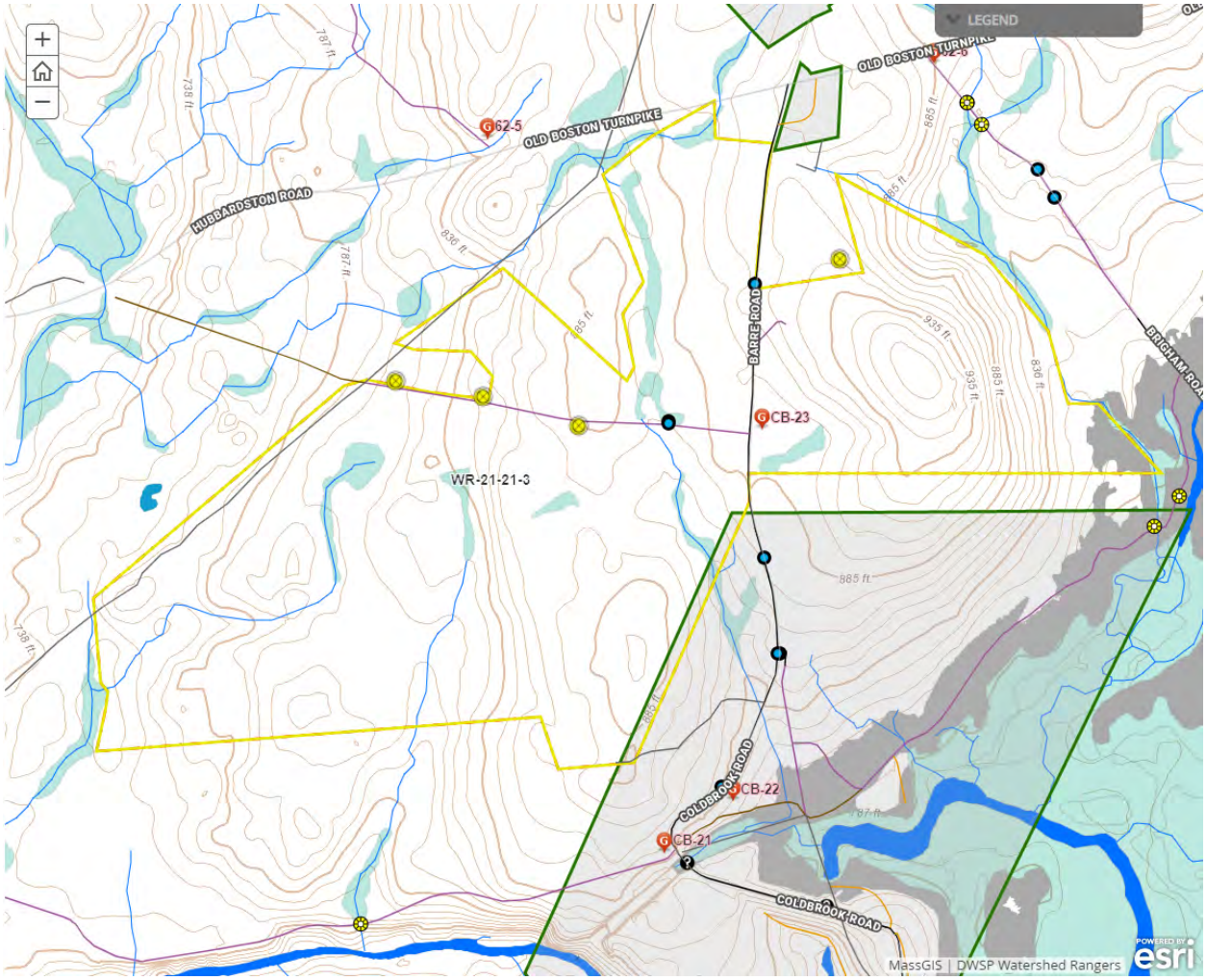
Culverts needed: No

Work needed on permanent bridges: No

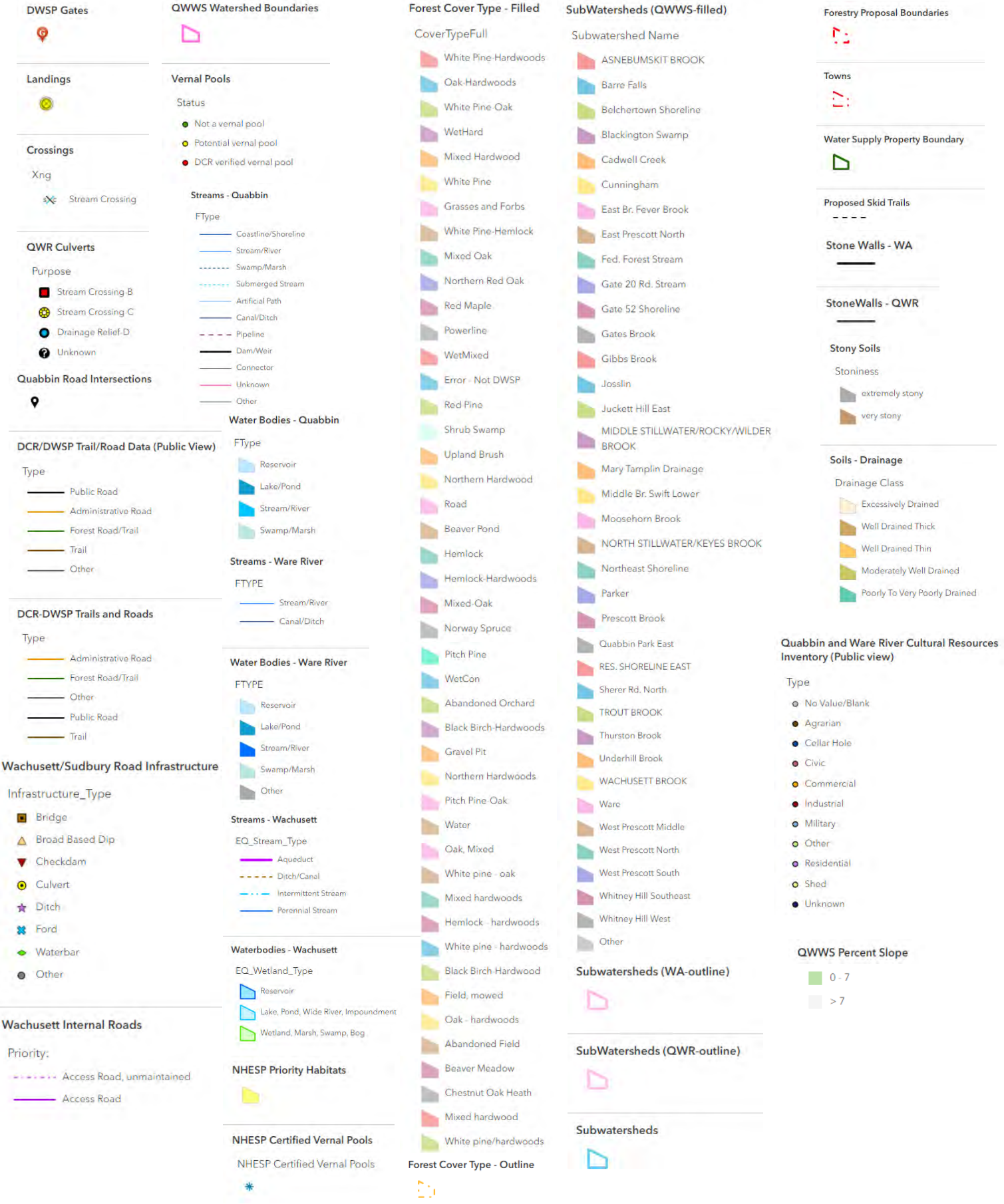
Beaver issue: No

Further comment on access needs:

Stone Road needs gravel. The gate may have to be relocated to allow a truck to swing in from Coldbrook Road. The small parking lot in front of the gate will need to be closed during the harvest to allow truck access.



DWSP FY 2021 Forestry Proposals – Master Legend for story maps



Ware River Harvest Proposal WR-21-41-4

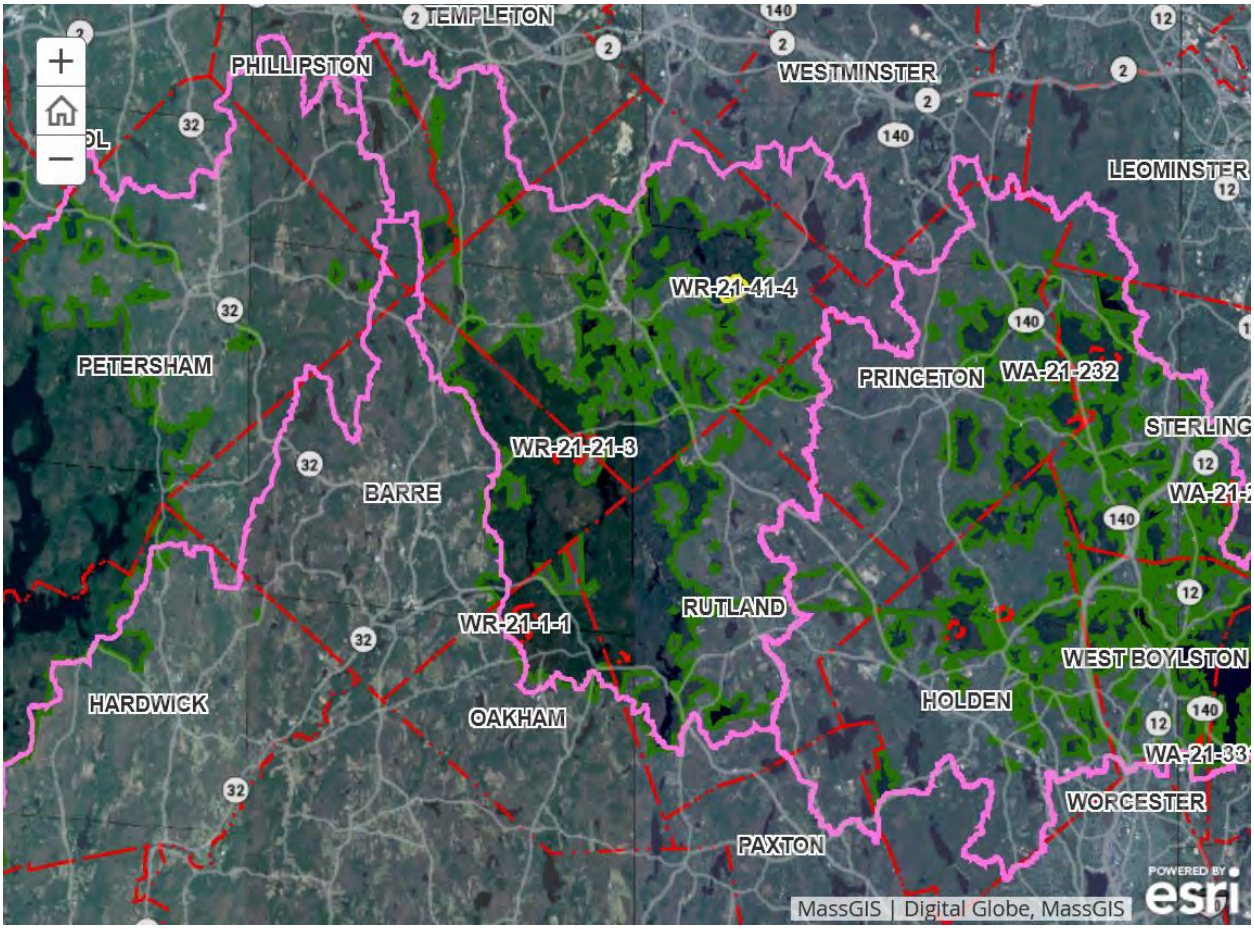
Proposal Goals

The goal for this proposal is to make the forest more diverse and resilient. It will reduce the amount of mature, old field white pine and replace it with patches of young forest of diverse species.

Proposal Location

This lot is located in Hubbardston, northwest of New Westminster Road. It is bound by New Westminster Road to the southeast, and by streams and wetlands in all other directions.

Total Acres: 140



General Description

	Overstory Type(s)	Acres
Dominant	Oak/hardwood	50
Secondary	White pine/hardwood	44
Other	White pine/hemlock	36

Secondary

	Understory Type(s)

Dominant	Tree seedlings/saplings dominate site

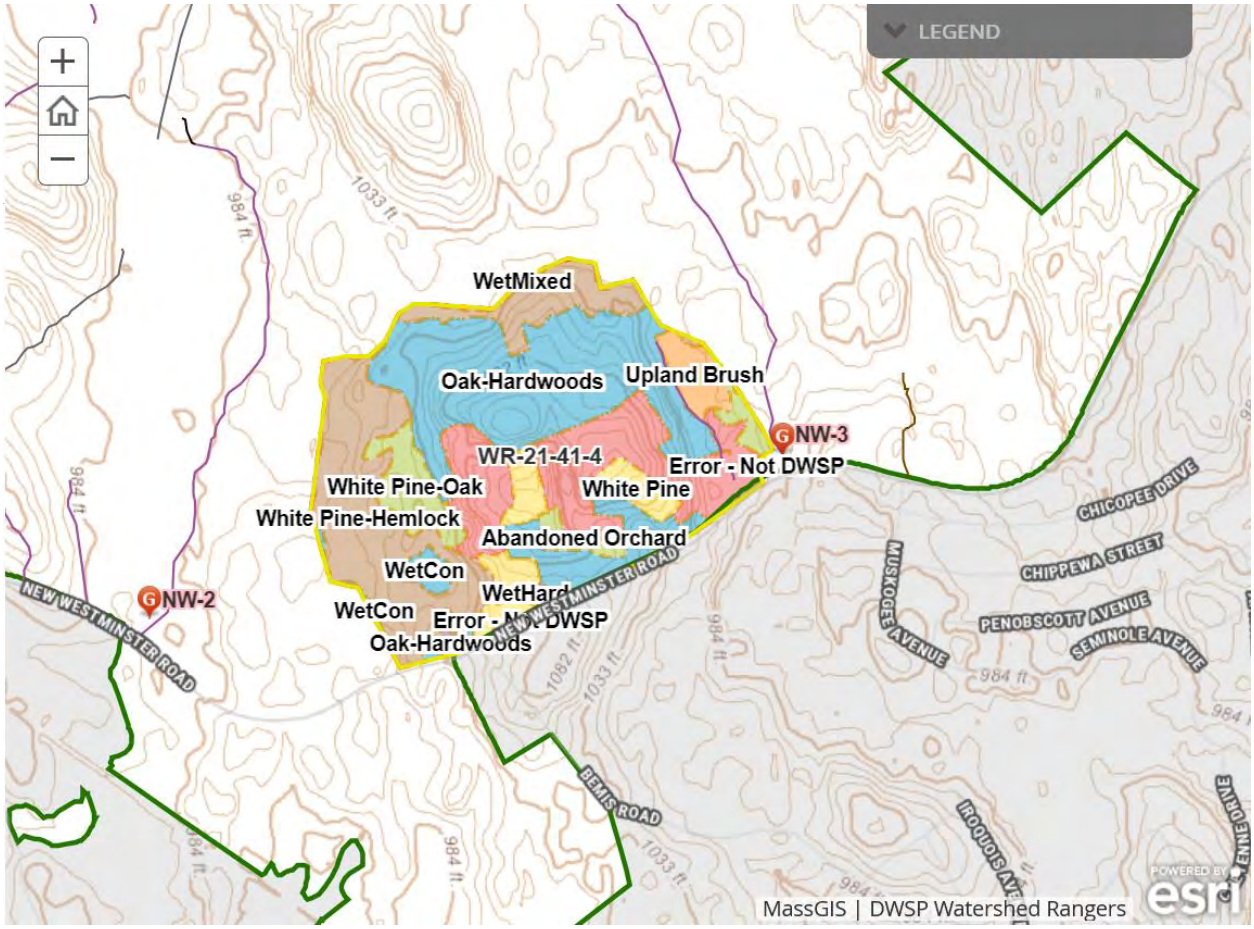
Description of forest composition/condition:

Oak/hardwood stand - This stand is dominated by red, black, and white oak. Red oak quality is good in some areas. There is approximately 110 square feet of basal area per acre of sawlog size trees. Red maple, black cherry, black birch, white pine, paper birch, white ash, hemlock, and American beech are also found in the overstory. Regeneration is present, though it can be spotty. Some areas have a heavy component of Eastern hophornbeam and beech in the midstory, and mountain laurel patches are present. Regeneration consists of red maple, black birch, American beech, hemlock, yellow birch, red oak, white pine, and white oak.

White pine/hardwood and white pine/hemlock stands - These stands are dominated by low to medium quality white pine. Low quality hemlock, red maple, black cherry, red oak, paper birch and white ash are also found in the overstory. There is approximately 150 square feet of basal area per acre of sawlog size trees. Regeneration is spotty, particularly under the very low quality white pine stands right behind the landing and on top of the hill. Regeneration species include red maple, American beech, white pine, black cherry, hemlock, white ash, and red oak.

Assessment of Terrestrial Invasive Species:

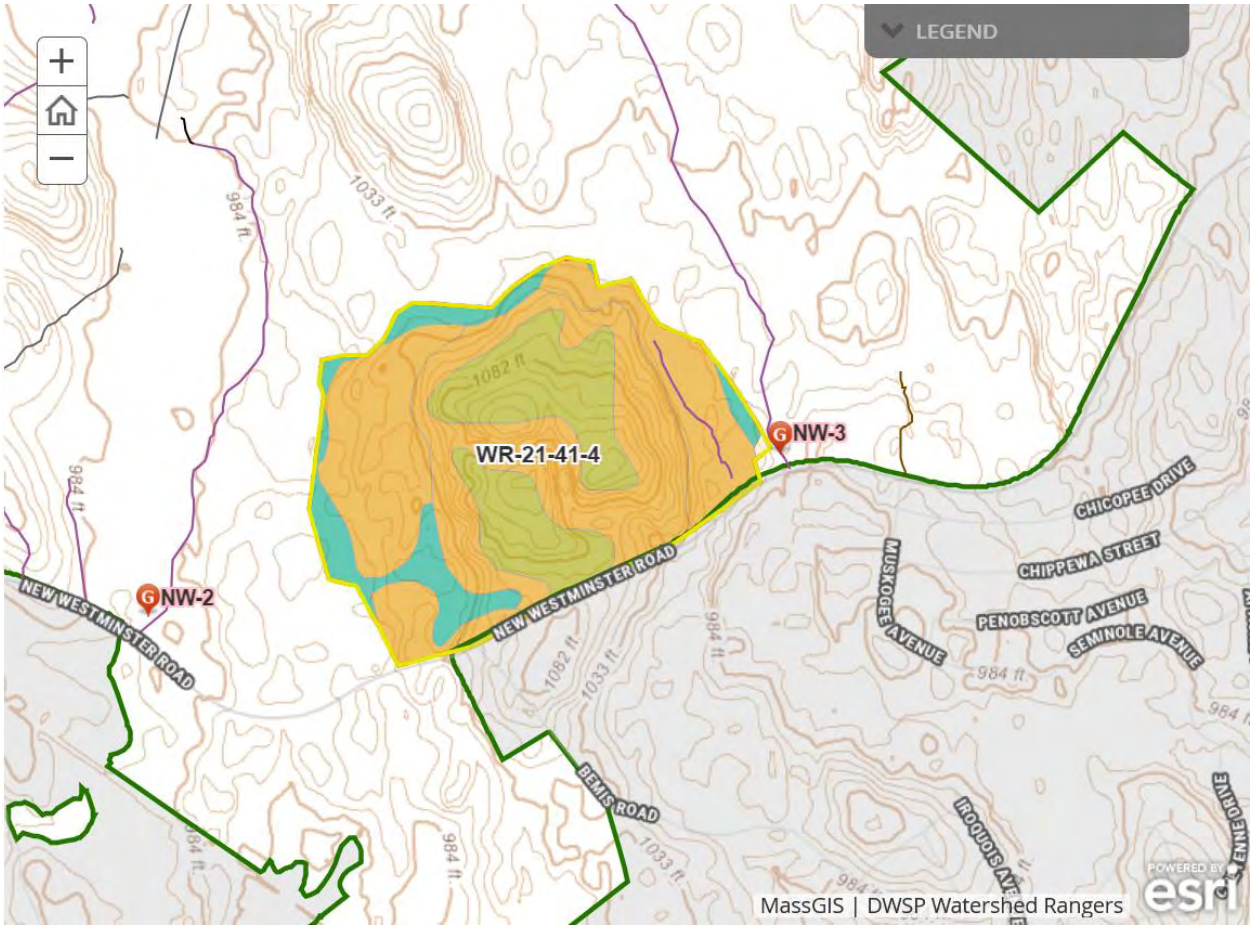
Buckthorn, barberry, Norway maple, and burning bush were all observed on the lot. Invasives are particularly abundant close to New Westminster Road.



Soils

Drainage Class	%
Excessively Drained	0
Well Drained Thin	0
Well Drained Thick	64
Moderately Well Drained	24
Poorly to Very Poorly Drained	12

901E - Berkshire-Marlow association - Well drained thick - 42 acres
905C - Peru-Marlow association - Moderately well drained - 33 acres
908C - Becket-Skerry association - Well drained thick - 29 acres
281B - Allagash fine sandy loam - Well drained thick - 17 acres
917B - Pillsbury-Peacham associaiton - Poorly to very poorly drained - 8 acres - associated with wetlands along the edges of the proposal and in the southwest corner of the proposal. These soils will be avoided.

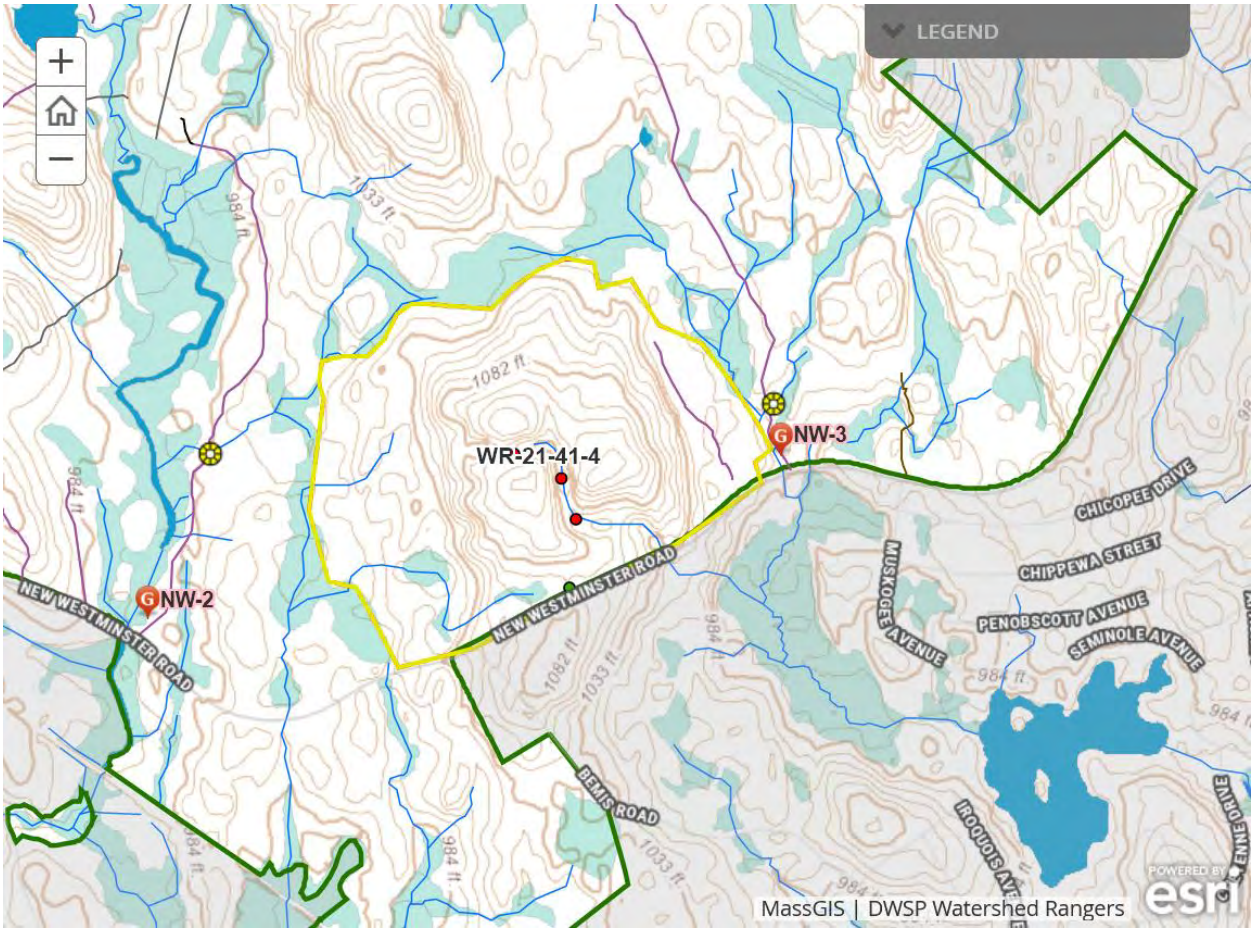


Wetlands

- 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**
- Is logging in wetlands planned? - **No**

Wetlands present along the north, west, and east edge of the proposal, and in the southwest corner of the proposal.

There are 3 verified VP's (56, 57, and 679, all connected in high water) within the drainage channel through the middle of this lot. Two certified vernal pools also exist but were not visited; one of them is further down this channel near the road and unlikely to be impacted, the other is close to PVP 58 which was determined to be not a pool.



Silviculture

Acres in Intermediate cuts: **5**

Acres in prep/establishment cuts: **0**

Acres in Regeneration cuts: 21

Average regen opening size: **2**

Maximum regen opening size: **5**

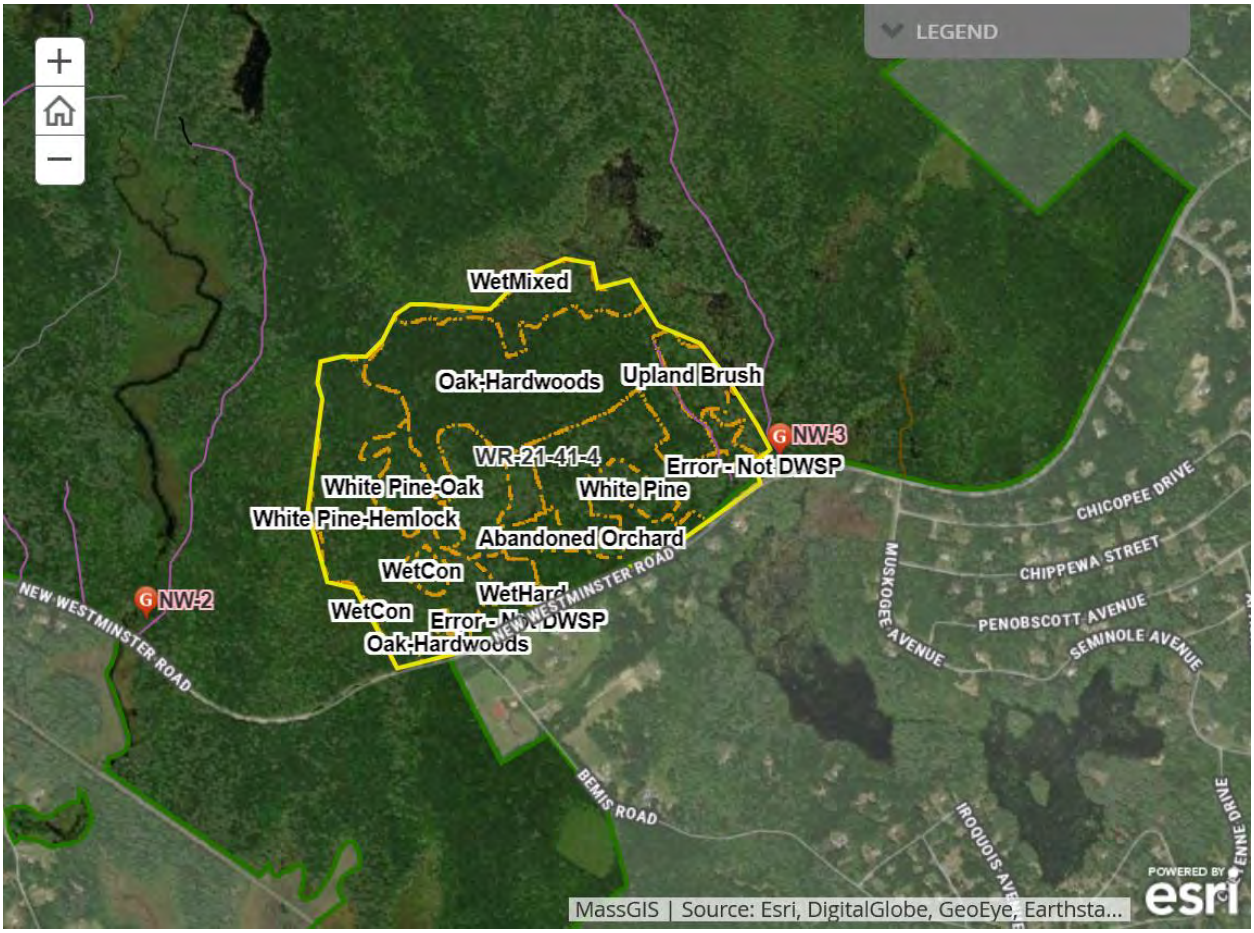
Description of advance regeneration in proposal area:

Regeneration consists of red maple, black birch, American beech, hemlock, yellow birch, red oak, white pine, and white oak. Moose and deer browse is moderate.

General comments on silviculture proposed:

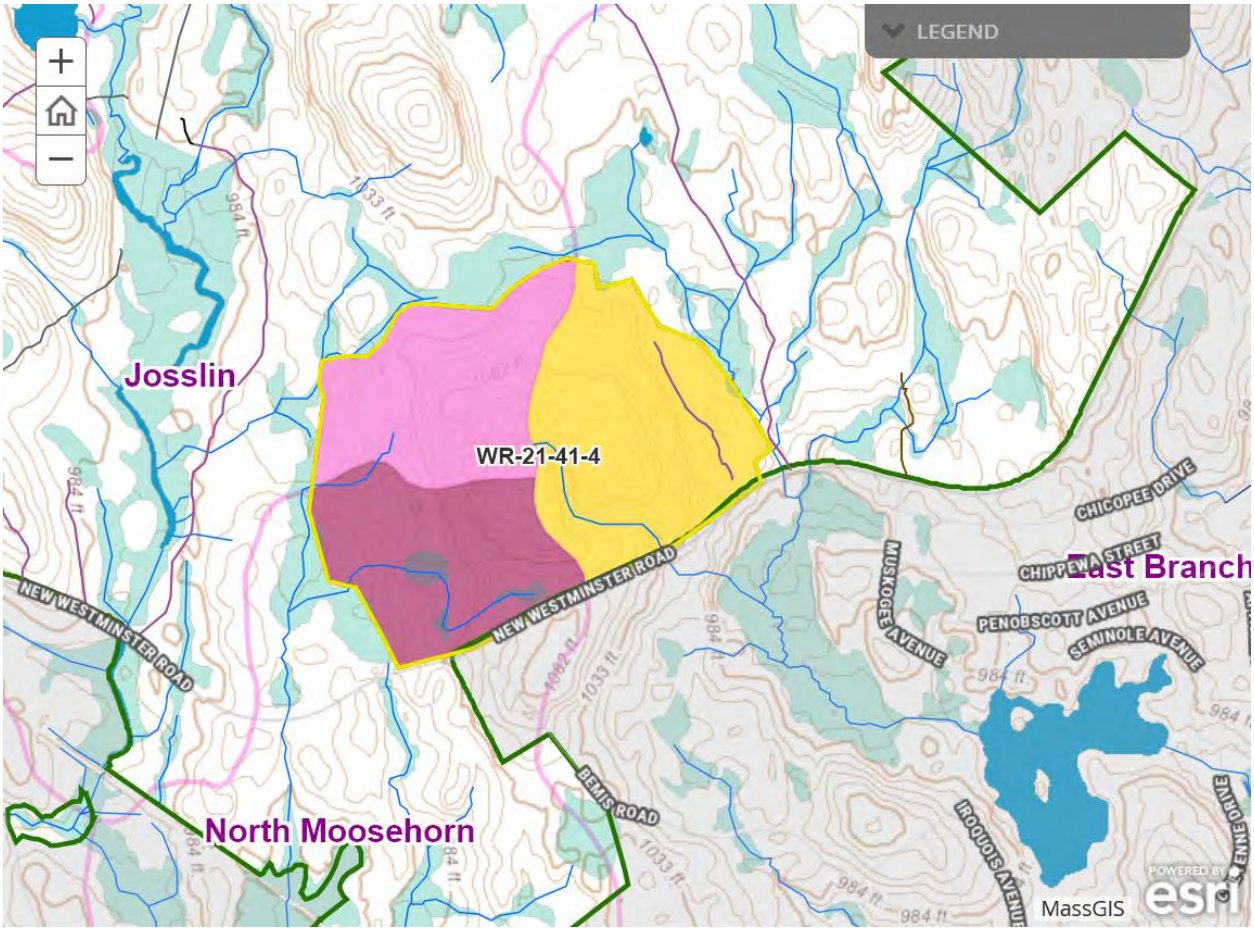
White pine stands - Regeneration openings will be established, targeting the lowest quality patches of white pine. There are several patches close to the landing, near New Westminster Road. Openings of different sizes and shapes will be established, generally ranging in size from 1 to 5 acres. At least one group, possibly two groups, of 2 to 5 acres will be established. The average opening size will be approximately 2 acres. Approximately 20% of the stand area will be in openings. In all groups snags will be retained wherever possible and 5 to 10 square feet of basal area per acre of live trees will also be left. Live retention trees will either have unique wildlife characteristics, such as large cavities, or will be well formed and vigorous white pine or hardwood.

Oak/hardwood stand - Establish up to five groups 1/2 to 2 acres in size with total acreage at 5 acres. Groups will be targeted to the areas with the poorest quality stems. Some improvement cutting will be done along skid trails that access groups.



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
8006 (East Branch Ware River)	7086	0	1764	56
8027 (Josslin Brook)	1162	0	291	42
8030 (North Moosehorn Brook)	291	0	73	42



Harvesting Limitations

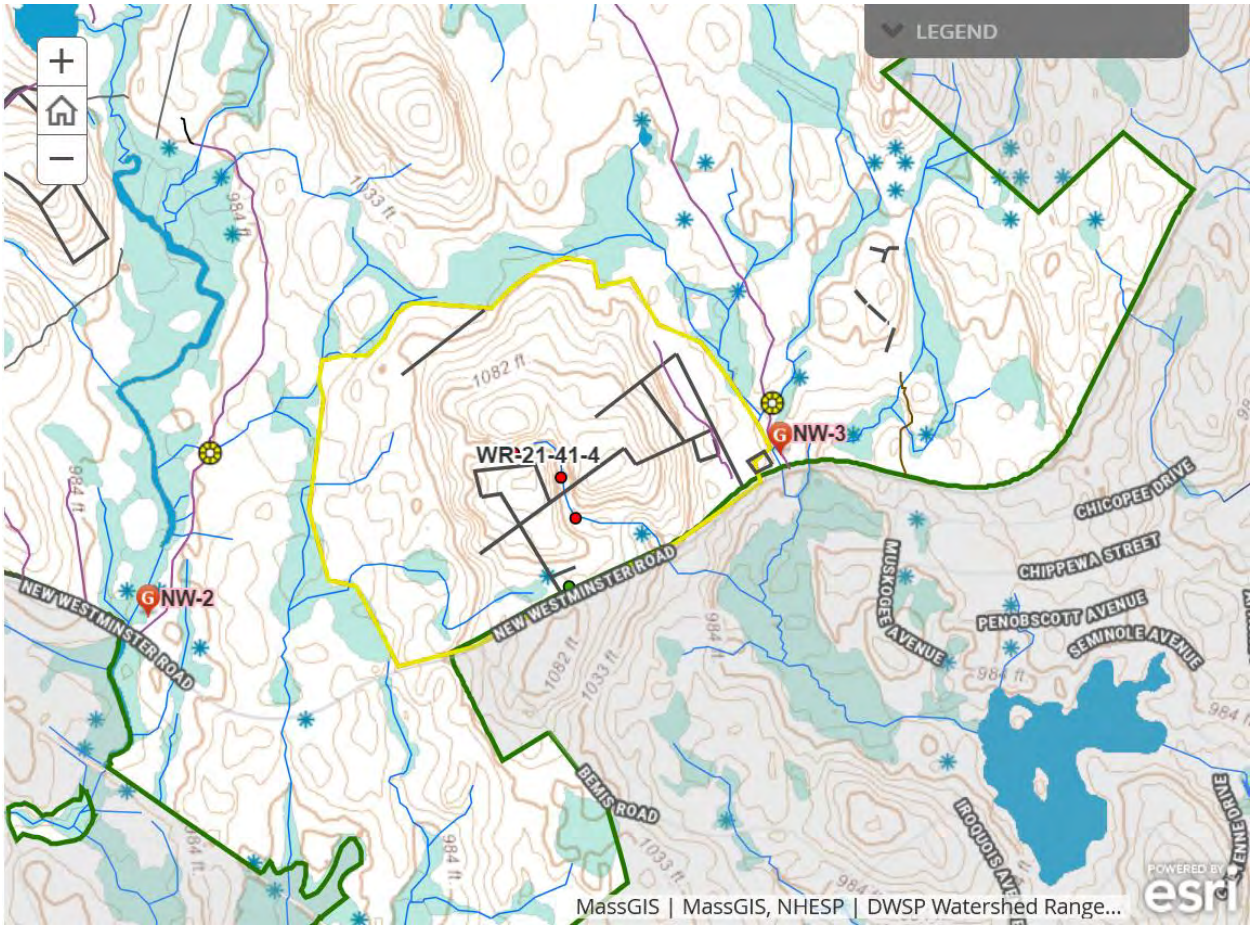
Forwarder required: **No**

Feller/processor required: **No**

Steep slopes present: **No**

Comments on harvesting limitations:

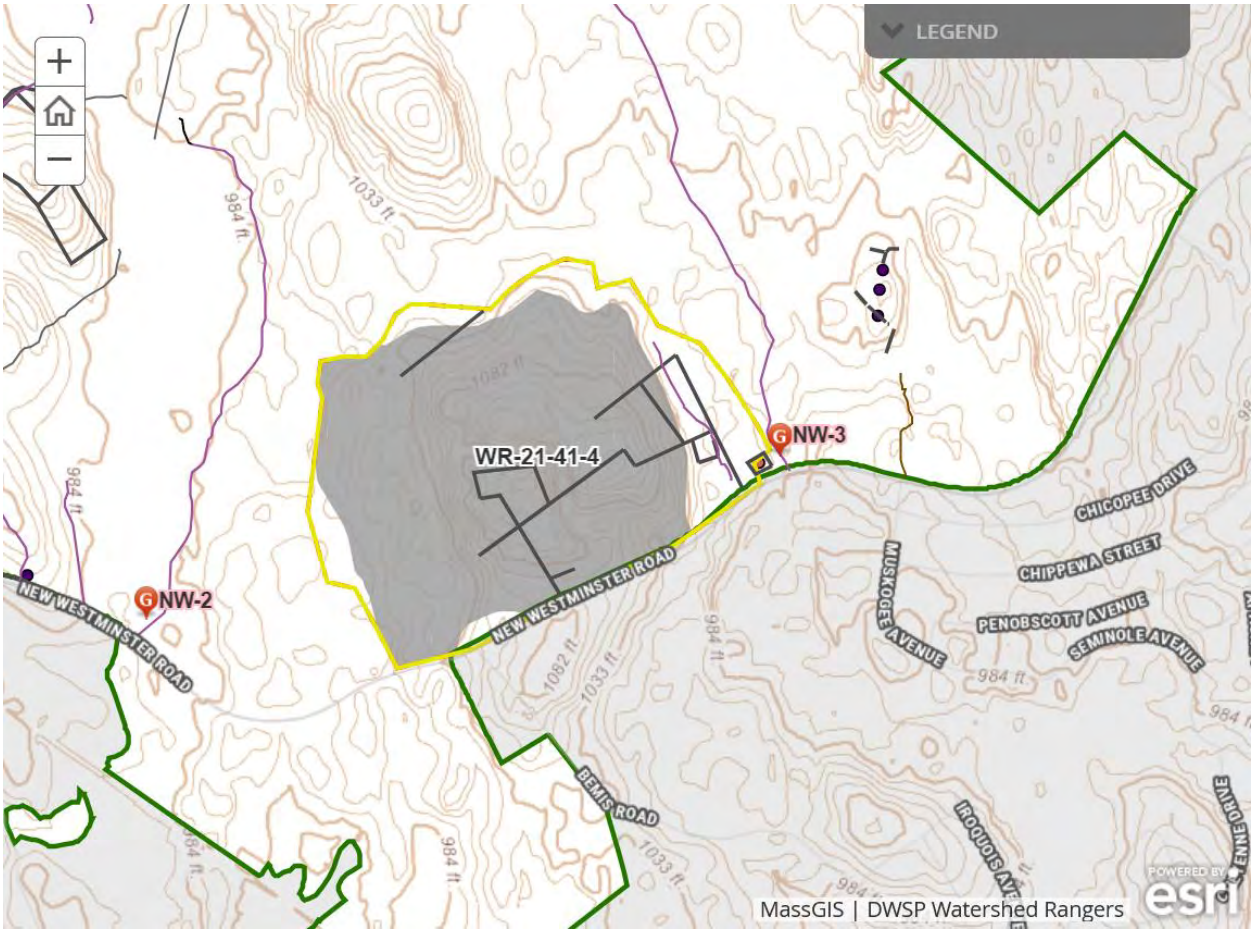
No restrictions on harvesting equipment are proposed for this lot.



Cultural Resources

Comments on Cultural Resources:

Stone walls will be protected as much as possible.



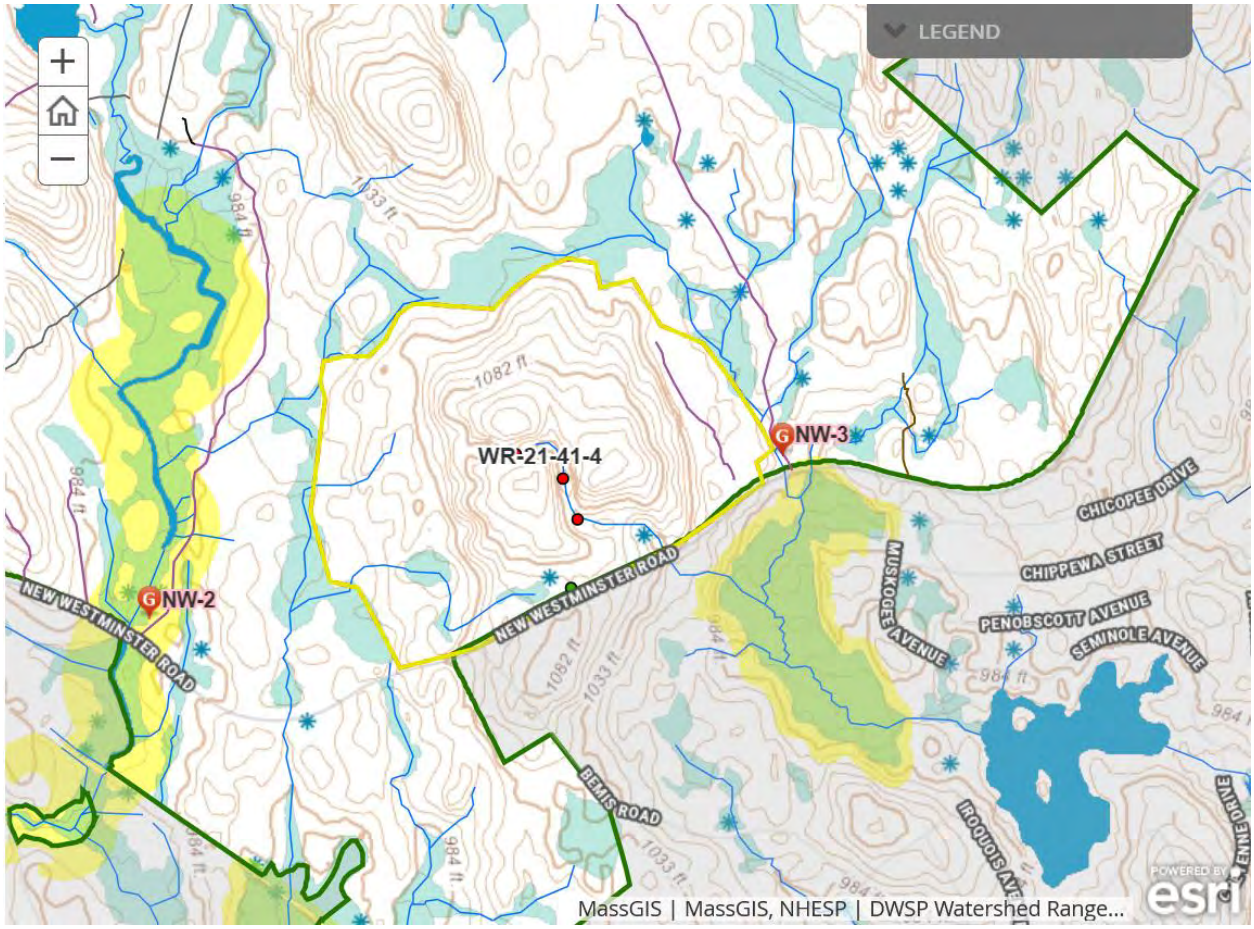
Wildlife Resources & Rare and Endangered Species

General Wildlife Comments:

No specific comments.

Comments on Rare Species/Habitats:

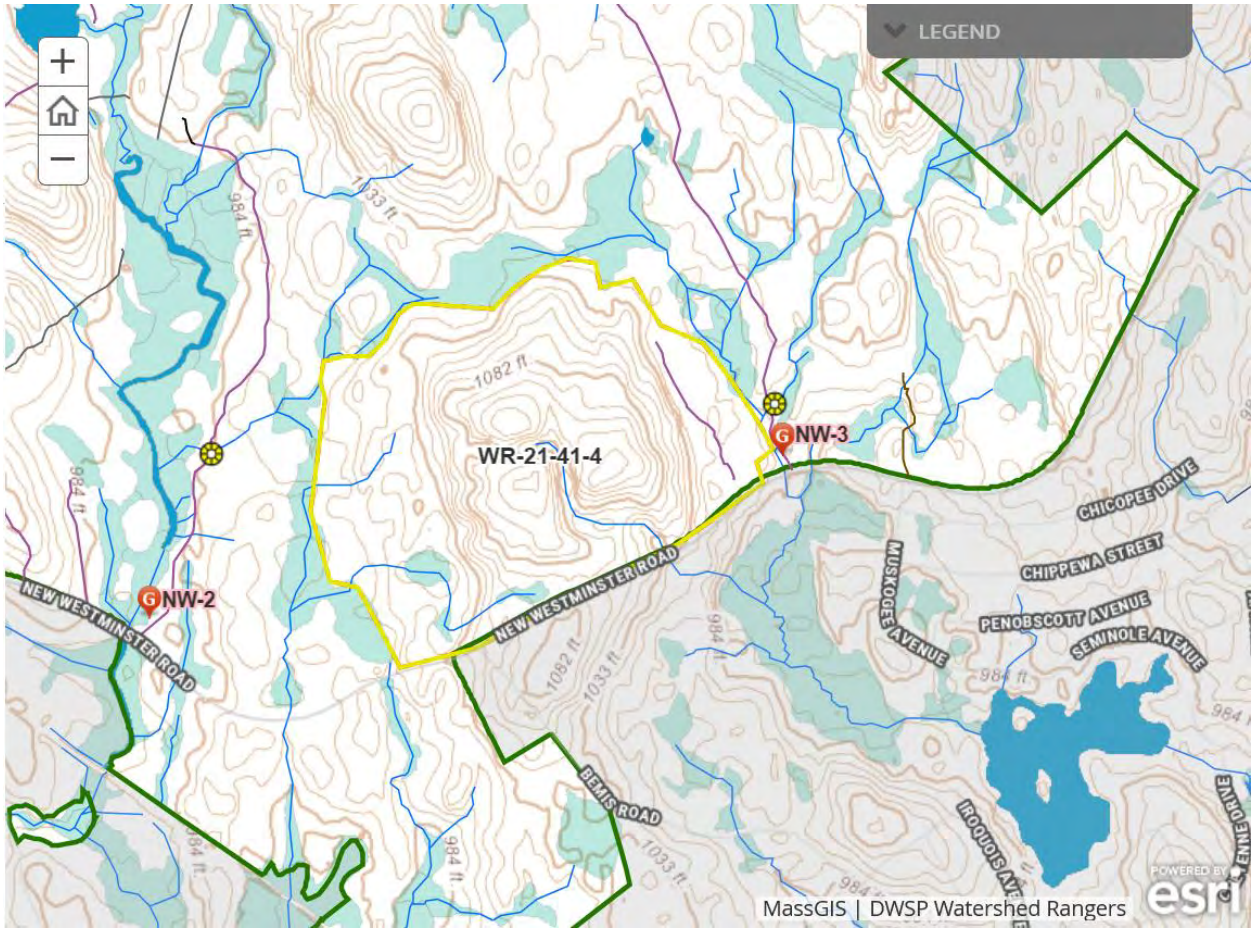
None known within the lot proposal area.



Environmental Quality Engineering

Comments on EQ Issues:

No stream crossings or EQ comments.



Forest Access Engineering

Gravel needed: No

Landing work needed: Yes

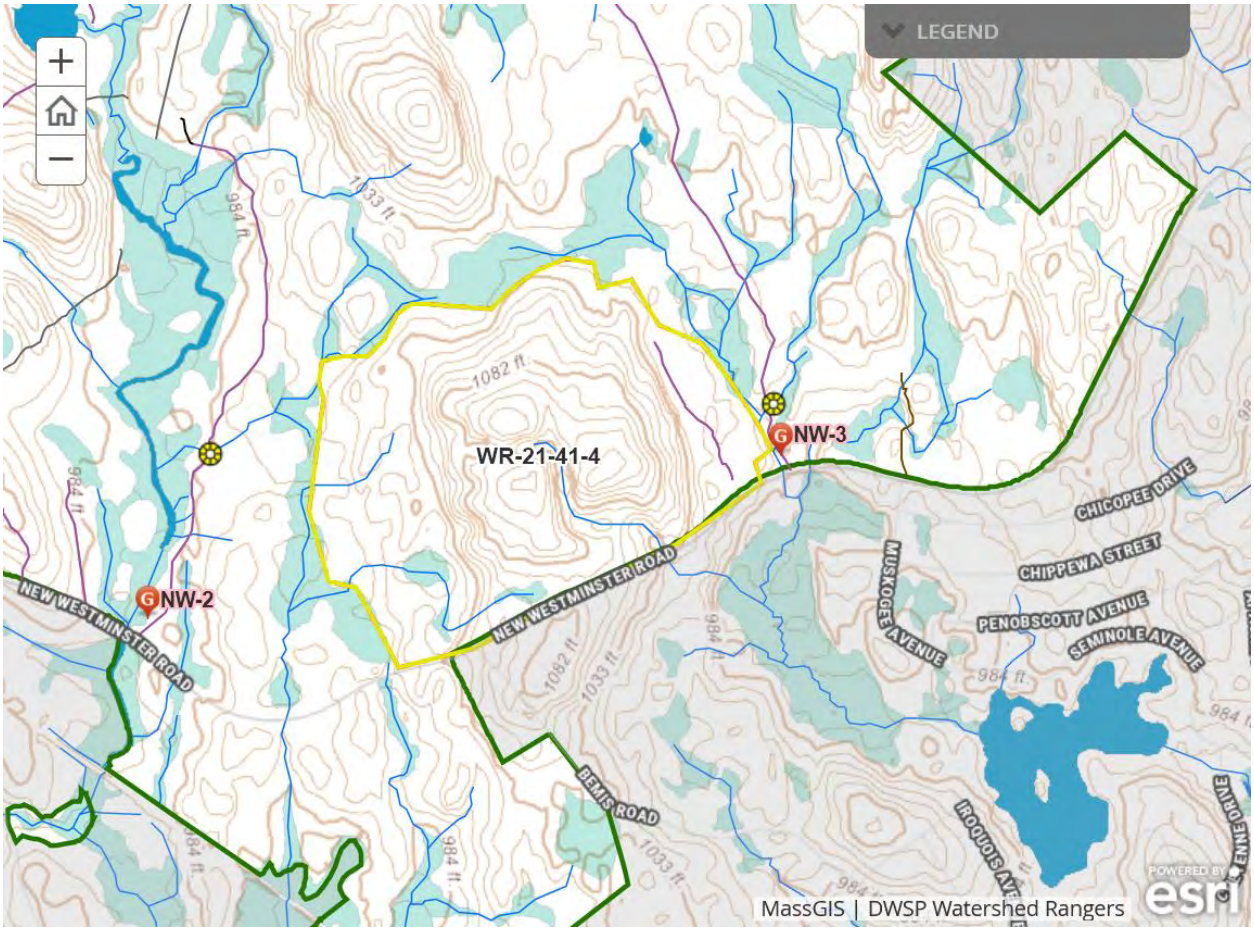
Culverts needed: No

Work needed on permanent bridges: No

Beaver issue: No

Further comment on access needs:

The entrance to the landing area off of New Westminster Road may need to be widened to allow access. The neighbor across the street recently installed their mailbox right on the edge of the opening. The mailbox will need to be relocated.


LEGEND
WR-21-41-4
NW-2
NW-3
NEW WESTMINSTER ROAD
NEW WESTMINSTER ROAD
BEMIS ROAD
CHICOPEE DRIVE
CHIPPEWA STREET
PENOBSCOTT AVENUE
SEMINOLE AVENUE
MUSKOGEE AVENUE
IROQUOIS AVE
1082 ft
1033 ft
984 ft
MassGIS | DWSP Watershed Rangers
esri

DWSP FY 2021 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