Massachusetts Department of Conservation and Recreation

Division of Water Supply Protection, Office of Watershed Management

Forest Management Project Proposal Summary for Public Comment

Location, goals, and summary of proposed forest management.

Proposal Summary Item	Item Information/Description
Lot Proposal ID	**WA-26-235**
Fiscal Year	2026
Watershed	Wachusett
Town(s)	Sterling
Forester	Greg Buzzell
Estimated Acres by Treatment Type	10 acres in regeneration patch removals
Total Proposal Acres	30
Block	n/a
Compartment and/or Working Unit	235
Location and Boundary Description	In Sterling on the west side of the Stillwater River. This area is bound on the east and south sides by the Stillwater River; on the west side by John Dee Road and on the north side by Muddy Pond Road.
Previous Proposal?	No
Project Goals and Summary Description	This 30-acre forest is part of original land that was taken at the time of reservoir construction. Forests provide exceptional water quality protection and yield high-quality water. Active forest management can increase the resistance and resilience of these watershed protection forests to disturbance by deliberately diversifying forest age structure and species composition. The forest in this area is not sufficiently diverse, particularly in age structure with 58% greater than 100 years old and 0% less than 20 years old. With plenty of young trees in the understory, this operation will result in up to 10 acres of young forest through the removal of the older overstory in patches. These patches will range in size up to 2 acres and will be located throughout the area taking advantage of where young seedlings and saplings of diverse species are already present. Mature trees will be retained within nearly all of the patches, particularly those larger than ½-acre in size. This retention provides habitat diversity, ensuring the availability of snags, den trees and future downed woody debris for a variety of wildlife while more closely mimicking natural disturbance patterns than the complete removal of the forest overstory. It has the additional benefit of improving the visual aesthetics of the recently regenerated patches.

Forest Cover Types and Acreages

Overstory Forest Types	Acres
White pine	15.7
Mixed Hardwoods	9.2
White pine, hardwoods	4.3

Understory Cover Types and Relative Importance

Understory Cover Type	Relative area covered (Dominant, Secondary, Minor, None)
Tree seedlings and saplings	Dominant
Mountain laurel	None
Mesic site - witch hazel, highbush blueberry	Minor
Dry site -Huckleberry, blueberry	None
Mesic site - cinnamon fern, mixed hardwood	Secondary
Hayscented fern	None
Invasive shrubs/vines	Minor
Other	None

Forest Vegetation Description

Vegetation Topic	Description
General Description, Forest Composition, Stand History, and Harvest History	The entirety of this area was planted with white pine in 1921. In 1983, a light thinning of the pines took place with the intention of encouraging the continued development of the sugar maple regeneration. The long-range goal was the conversion of this conifer monoculture to a diverse, predominantly hardwood forest. In 1985, Hurricane Gloria caused scattered damaged that further opened the overstory. Then, in 1989, a severe thunderstorm blew down significant portions of the stand resulting in 13.8 acres of now, 36-year-old forest. These stands are comprised of sugar maple, red maple, red oak, black cherry, hickory and elm. There are a few acres where there had been a significant component of white pine but most of that has died from being overtopped by the hardwoods. The stand where the planted white pine is still standing is nearly entirely white pine in the overstory although a very large black cherry is present on the edge of the flood channel. This flood channel connects the Stillwater River from a spot just north of the first meander south of the steel bridge to a spot directly south, effectively cutting off the large eastward bend of the river. It is not known how frequently the Stillwater River overflows its banks along this stretch of the river. It does appear to have occurred in the extreme rain event of September 11, 2023.
Advance Regeneration description	Sampling found that adequate regeneration is present in 53% of the plots with marginally adequate regeneration present in an additional 28%. Species present are red maple, sugar maple, red oak, black birch, hickory, white oak, black cherry, American hornbeam and elm.
Terrestrial Invasive Plants description	Sampling found invasives present in 7% of the plots. These plots and the areas with invasives species present are near Gate S15 and in low, wet areas near and immediately to the Stillwater River. Species include oriental bittersweet, multiflora rose, and honeysuckle. A few buckthorn were observed in a small young forest area resulting from the 1989 blowdown and salvage. Scattered Japanese barberry are also present.

Description of Wetland Resources Present

Resource Type	Description of resources present
Wetlands	None.

Resource Type	Description of resources present
Streams	The Stillwater River is the entire eastern and southern border of this area.
Vernal pools	None known.
Seeps	None.

Description of Soils by Hydric Class

Soil Hydric Classes	% of area	Soil series and any further comments
Excessively Drained	100	Hinckley sandy loam
Well-drained Thin	0	
Well-drained thick	0	
Moderately well-drained	0	
Poorly to very poorly drained	0	

Proposed Silvicultural Activities

Topic	Description
Site Selection and Silvicultural Objectives	This working unit was selected due both to the lack of age diversity in the forests of this subwatershed and in this working unit itself. Most of this area is within subwatershed #4 (Thomas, Quinapoxet and Stillwater Basins). Only 10% of the forest stands within this subwatershed are 20 years old or less. Within the 30 acres of this working unit, 0% are 20 years old or less while 58% of the stands are more than 100 years old. The age structure of this working unit is as follows: 0%, 0-20 years old; 42%, 21- 40 years; 0%, 41-60 years; 0%, 61-80 years; 0%, 81-100 years; 58%, 100+ years old. The oldest stands date to the planting in 1921 making them 104 years old. Given the lack of young stands in this area and given the presence of good advance regeneration comprised of species well suited to this site, the primary goal will be to increase the proportion of young forest stands in this area.
Silviculture Prescription	Openings in the overstory will be made to release the regeneration in patches that range up to 2 acres in size. These will total as much as 10 acres. They'll be well distributed throughout the area placed in areas of the best advance regeneration. No cutting between these openings is planned. After the operation, the age structure of the forest is estimated to be: 33%, 0-20 years old; 42%, 21-40 years; 0%, 41-60 years; 0%, 61-80 years, 0%, 81-100 years and 25%, 100+ years old.

Climate Change Considerations: DWSP has determined that the decision to implement this project is consistent with EEA climate goals and guidelines and agency land management objectives. Carbon and climate change considerations specific to the activities proposed for this project are discussed below.

Proposed Activity	Alignment of Activity with Climate Oriented Strategies and Recommendations
Patch Regeneration Cut **(see page 3, Silviculture Prescription)**	Patch cutting is a regeneration technique that straddles the boundary between classic even-aged and uneven-aged forest management systems. Foresters select appropriate areas ('patches' or 'groups') covering a portion of the stand to harvest rather than removing the entire stand and then return periodically to repeat the process in other portions of the stand. In using patch cutting there is no final regeneration cut. Patch size and shape are determined by many different factors including overstory condition, desired species composition in the regeneration layer, other desirable herbaceous and woody vegetation, location, stand re-entry period, etc. Harvesting in patches aligns with many **climate-smart forestry practices**: • Increasing **structural diversity** improves resiliency by reducing the impact of age/size related disturbances. • Extending regeneration periods minimizes short term impacts to groundwater and nutrient cycling. • Partial stand overstory removals more closely align with **natural disturbance patterns**. • More **carbon is left on the landscape** for longer periods, and within-patch live tree, snag, and coarse debris retention allow for development of old forest characteristics. • Can also be used as opportunities to increase the stocking of **future climate adapted species, current climate imperiled species**, or other types of desirable vegetation.
General/other Climate Change Considerations	

Equipment and Access Constraints and Considerations

Constraint Topic	Description and Considerations
Proposed Equipment requirements	Forwarding and mechanized felling equipment will be required. This gives the best chance to adequately protect as much of the advance regeneration as possible.
Proposed wetland or stream crossings	None needed.
Further wetland comments	No comments.
Vernal Pools	No comments.
Access improvements needed	None needed.
Other EQ issues	None known.
In-kind Services	None.

Constraint Topic	Description and Considerations
Other Access Concerns (parking, trails, etc.)	None.

Subwatershed Analysis

Sub-Watershed number/name	Total DCR-owned acres in this sub-watershed	Acres regenerated on DCR land in the last 10 years in this sub-watershed	Total DCR-owned acres remaining for regenerating up to the 25% per 10 year limit for this sub-watershed	Acres in this sub-watershed that are part of this proposed lot
4/Thomas-Quinapoxet-Stillwater River	599	19	130	33

Additional comments on Subwatershed analysis:

Wildlife and Habitat Observations and Considerations

Wildlife/Habitat	Observations and Considerations
Natural Heritage Priority Habitats?	The entirety of this area is within NHESP Priority Habitat polygon #1501.
State Listed species present:	NHESP has determined that certain state-listed sensitive species or habitats may exist within the lot proposal area. To protect them from unnecessary disturbance, detailed information regarding affected species and their locations is not included in this report. DWSP will coordinate with NHESP and follow recommendations to protect these species during the proposed activity.
Rare Natural Communities:	None known.
General Wildlife Comments	Due to a variety of natural disturbances, there are numerous white pine snags with cavities throughout the area. Dead trees and trees with large cavities will be retained where possible. Overflow from the Stillwater River creates pooling which can benefit numerous wildlife species including amphibians. Existing advanced regeneration is indicative that deer pressure is low enough to support a successful forest management operation. The presence of desirable herbaceous plants such as nodding trillium (*Trillium cernuum*) is also a sign of relatively low deer impacts. Moose appear to be absent but may pass through on occasion.

Cultural Resources Description and proposed protection measures

Cultural Resource	Description and proposed protection measures
Historical features present; comments regarding protection	The cellar hole of a home on land owned by Henry Stone that was leased to John Stone is located immediately adjacent to John Dee Rd. Evidence of this structure that existed prior to the land takings can still be seen. The cellar hole will be flagged and avoided.

Cultural Resource	Description and proposed protection measures
Description of site characteristics in relation to Ancient sites modeling or other verified evidence	The entire area apart from the short steep slope that separates the higher area to the west from the low flat area to the east is less than 7% sloped. The higher area to the west nearer to John Dee Rd. was formerly pasture. The flat area to the east that includes where most or all the logging will occur was in tillage prior to being planted.

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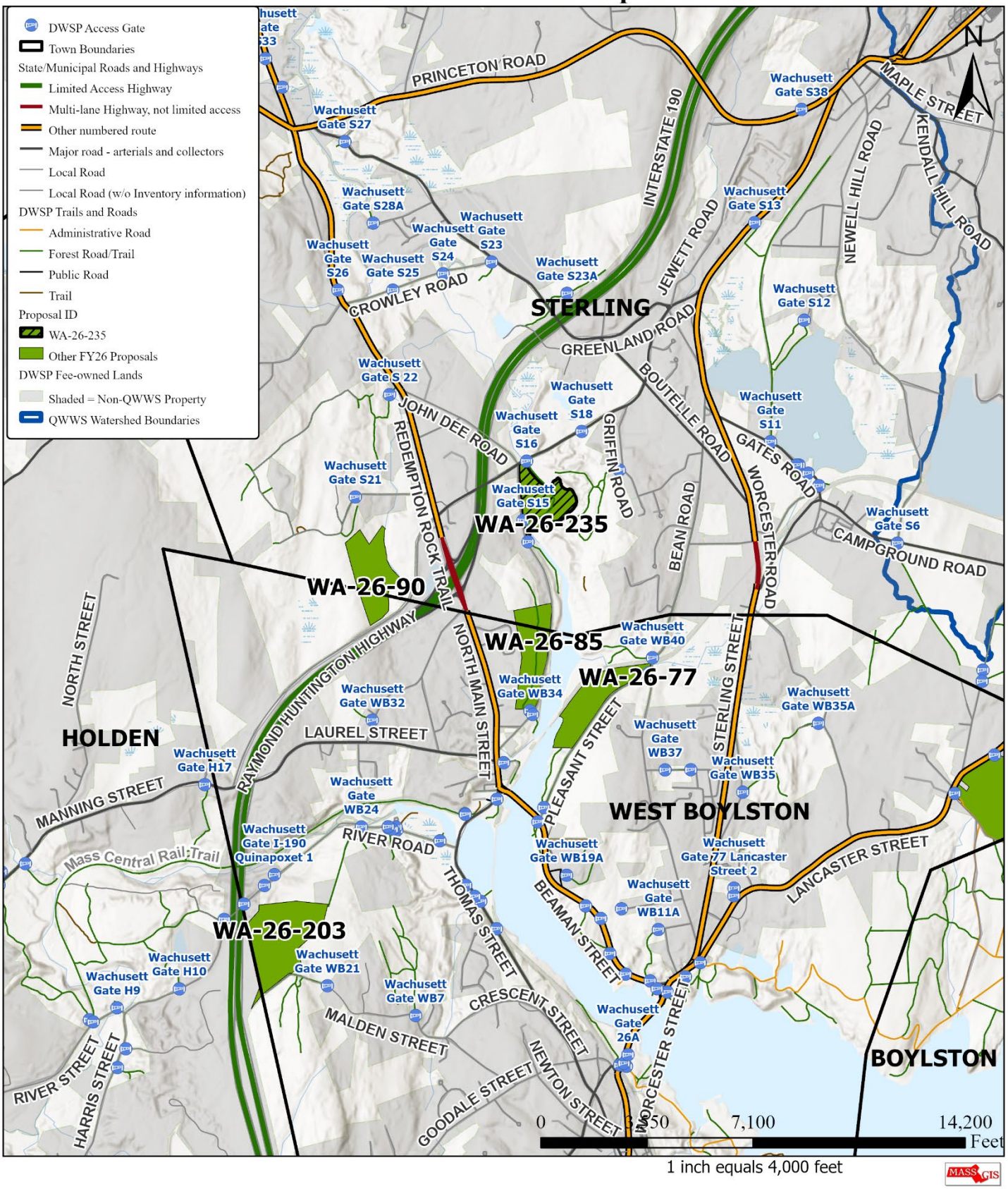
WA-26-235 -- Locus Map



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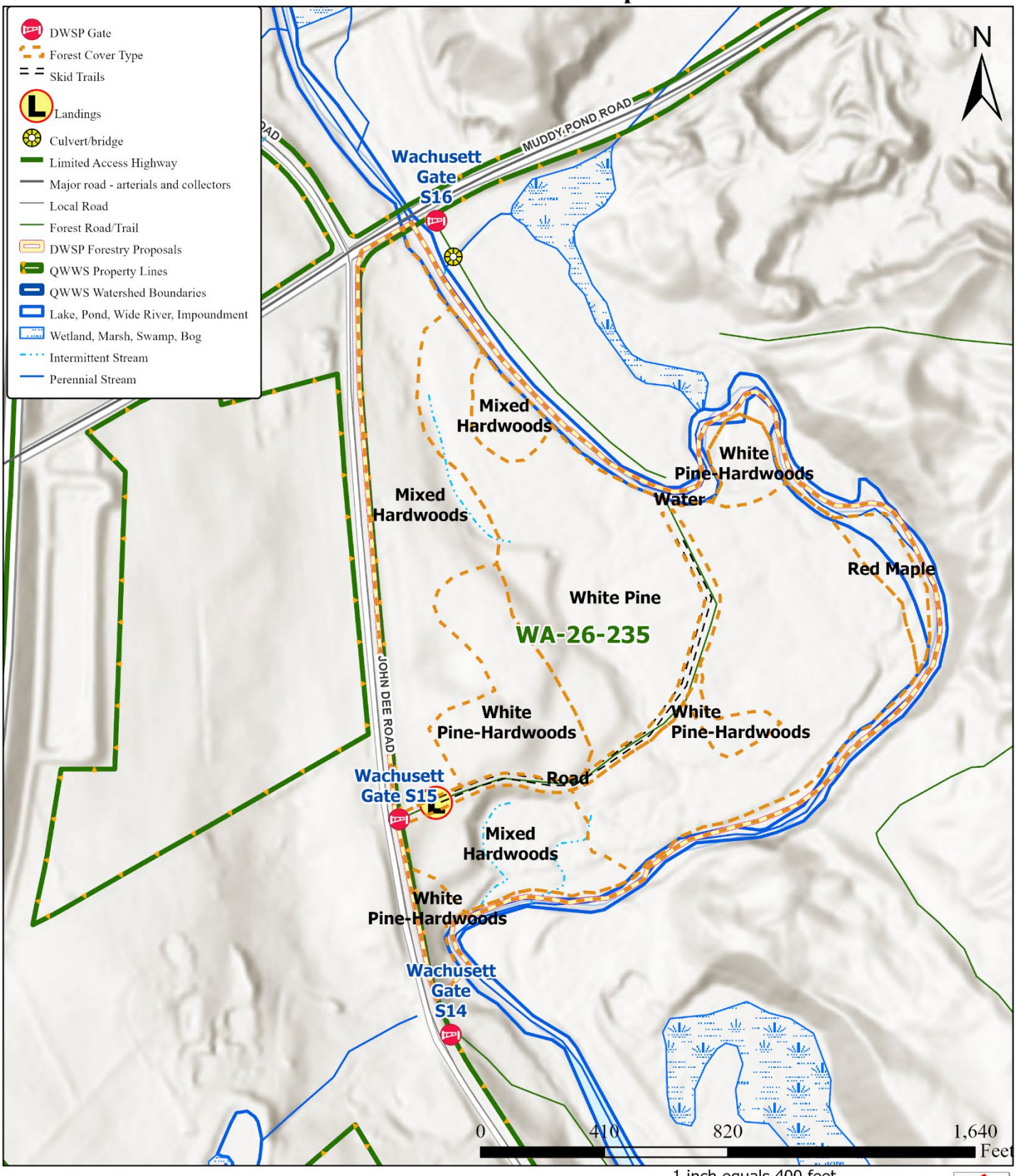
WA-26-235 -- Stand Map



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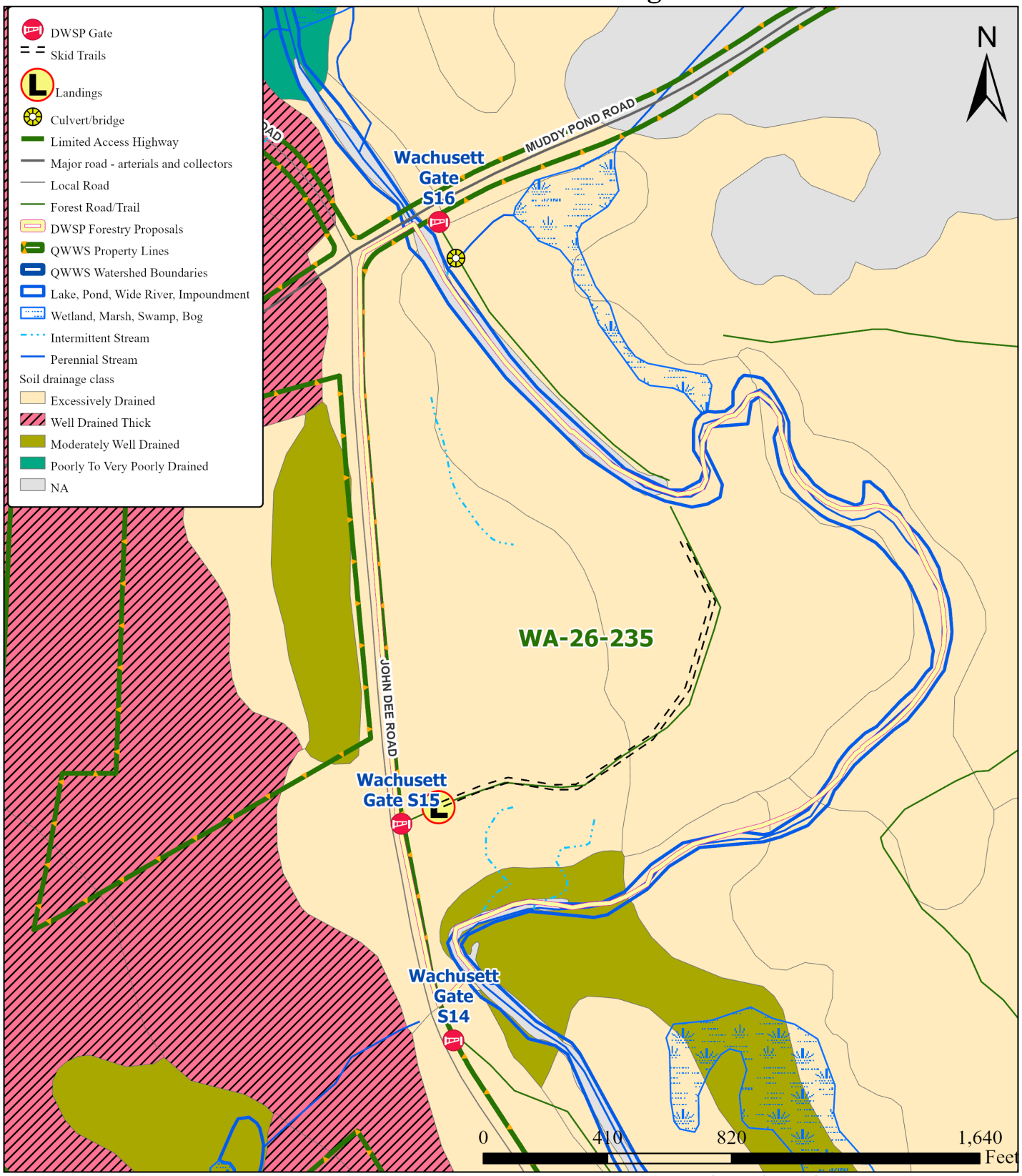
WA-26-235 -- Soil Drainage Classes



1 inch equals 400 feet

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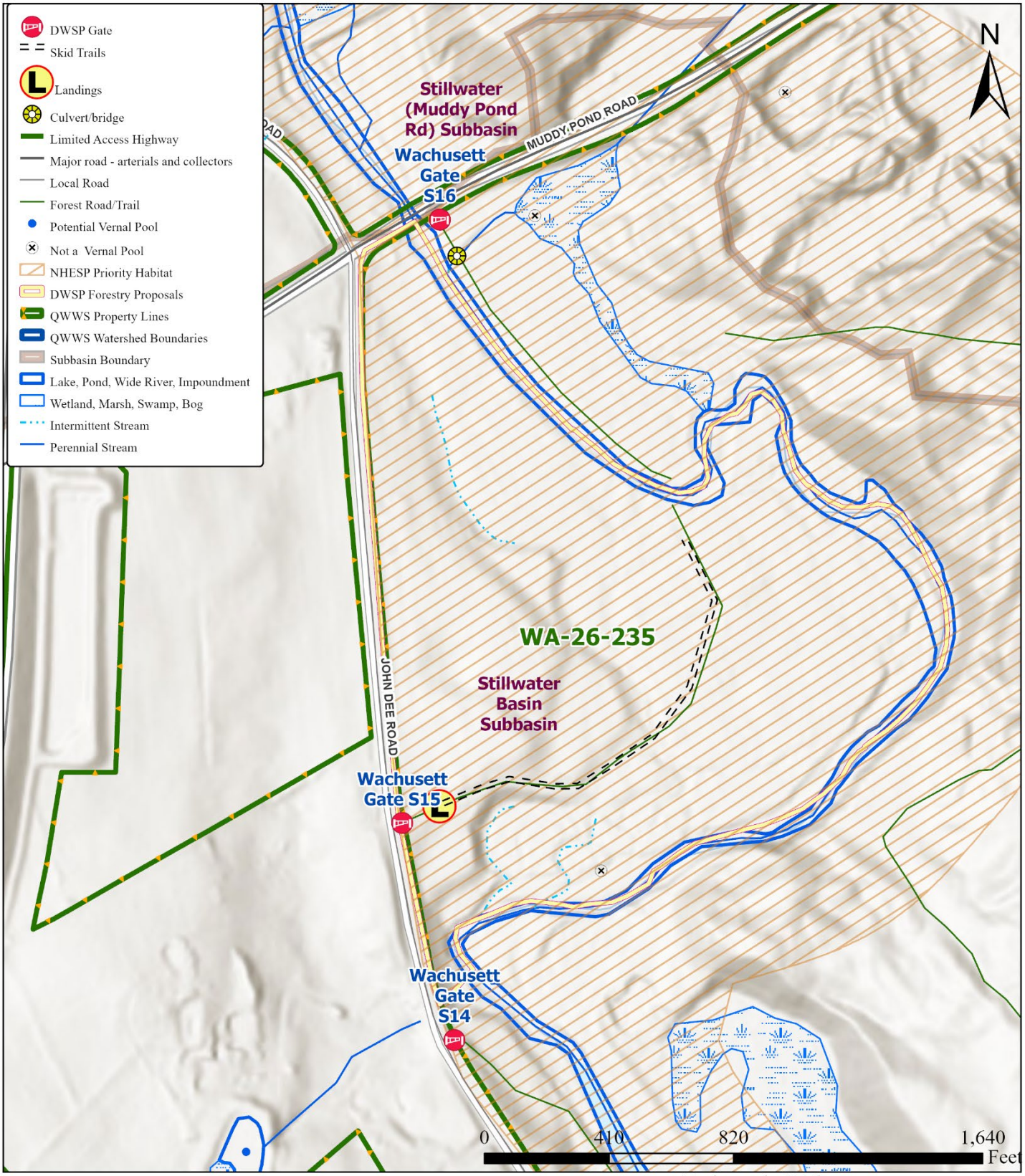
WA-26-235 -- Wetlands and Wildlife Resources



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WA-26-235 -- Cultural Resources and Landscape Characteristics