STATE OF CONNECTICUT

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

Bureau of Natural Resources

Division of Forestry

FOREST MANAGEMENT PLAN
2017 through 2027

Mattatuck State Forest
Campville Block

Approvals:

Jan. 11, 2017

Christopher Martin, Director Date
Division of Forestry

11/18/17

William Hyatt, Bureau Chief Date
Bureau of Natural Resources

January 23, 2017

Susan Whalen, Deputy Commissioner Date
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Contents

A. Executive Summary

1. Mattatuck State Forest was established in 1926. The Campville Block was added in the early-mid 1940s. The Block, consisting of approximately 512 acres, is in Litchfield County. The Naugatuck River splits the Block into two compartments: “Compartment 1”, 444 acres west of the river in the Town of Litchfield, and “Compartment 2”, 68 acres east of the river in the Town of Harwinton.

2. There has been limited harvesting since State acquisition, mostly due to steep and rugged terrain, poor access, and a lack of accurate surveys. Stands 1-2 & 1-3 were thinned for firewood in the 1980s.

3. There is potential for a small sugarbush in the southern part of stand 1-1.

4. 110 acres (22%) of the total acreage will be actively managed. Over the next 10 years, 14 acres will undergo a selection harvest, 8 acres will be regenerated with a clearcut, and 37 acres will be thinned.

B. History

1. Reason for Acquisition and Funding Sources

The first parcel (Parcel 37 in the DEEP land records), in Litchfield, was acquired from the New York, New Haven, and Hartford Railroad Company for $2,480.00 in 1942. Due to bankruptcy, the Railroad Company had no use for the land, and it became available for purchase. The deeded acreage is 310 acres, but a 2014 A-2 survey indicates it is 281 acres.

The second parcel (DEEP Parcel 39), also in Litchfield, was acquired from the American Brass Company for $3,960.17 in 1945. The deeded acreage is 196 acres, but a 2014 A-2 survey indicates it is 163 acres.

The parcels in Harwinton were acquired by DEEP (State Parks and Forest Commission at the time) in 1963 from DOT (State Highway Commission at the time) for the relocation of Route 8.
These seven parcels (Stands 2-1 through 6) have class D-2 maps that show distances but not bearings, so the boundaries can’t be accurately marked. There is a discrepancy with the acreage of these parcels in the GIS DEEP Property Layer and the acreage stated in the deeds. Because the boundaries can’t be marked, the ArcMap acreage will be used. There will be no silvicultural prescriptions for this section of the Campville Block due to steep rocky slopes, close proximity to the Naugatuck River, and no access from Route 8.

2. DEEP Management Unit

The Campville Block of Mattatuck State Forest is in the Topsmead State Park management unit, which is responsible for recreational issues and maintaining gates, roads, culverts, hazardous trees, garbage pickup, etc. The Western District Operations Unit handles maintenance issues that require heavy equipment, such as roadside mowing, road grading, and culvert installation.

3. Development of Resource Prior to Acquisition

The American Brass Company used their land for charcoal production to support their brass mills in Waterbury during the mid-1800s to early 1900s (connecticuthistory.org: "*Birth of the Brass Valley").* There are signs of old woods roads, possibly used by the Brass Company. One charcoal mound was found during the inventory for this plan.
According to an 1874 map of Litchfield, there was a saw mill where Spruce Brook enters the Naugatuck River. There are other mill remains in the flatter areas of Spruce Brook. There are old woods roads leading up the steep slopes from the railroad tracks that could have been used for logging.
There is an old powerline right-of-way that runs North- South through Stands 1- 4, 6, & 7 that was used by the Connecticut Power Company. According to a 1934 photo taken by Fairchild Aerial Photography, the powerline was in use at that time. It was abandoned sometime before 1970, according to aerial photographs.

4. Changes in the Last Ten Years
There have been no changes in the last ten years.

5. Rotations and Cuttings Cycles Used (acres for each)
Rotations and cutting cycles have not been used in the past, as there has not been much active management. However, there was firewood cutting in the pine stand (Stand 1-3), and possibly the surrounding stand (Stand 1- 2) as well, sometime during the 1980s. There is no written documentation of the work that was done.

The forest will be managed using even and uneven-aged systems. Uneven-aged management will use a 20- year cutting cycle. Even-aged management will use a 100- year rotation.

C. Acres and Access

1. Acres
Total Acreage: 512

Forested Acreage: 510

Shrubland/Old Field: 2 acres in a powerline right of way

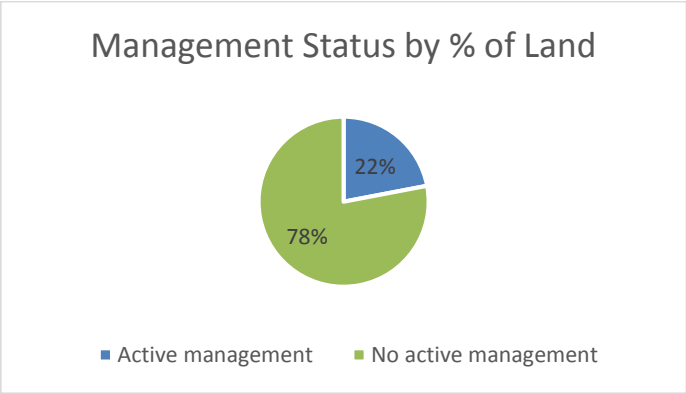

Figure 1.

2. Present Access - Roads for Public and Other Roads/Gates

There are no gates or drivable roads within the forest. There is a pull-off on Marsh Road that provides access to an informal, unmarked trail.

Inaccessible Areas (acres) and Access Potential

Compartment 2 only has road frontage along Route 8. However, there is no legal access from that highway. Compartment 2 and Stand 1-13 can only be accessed from adjacent private land.

Rights-of-Way

There is an abandoned utility line through Stands 1-4, 6, and 7. According to the deed, this area is subject to a 100'-wide right of way for transmission lines granted to the Connecticut Power Company by The American Brass Company in 1913. There is a total of 5 acres in the old powerline, which has grown up to forest and is considered part of the stands through which it passes.

An active powerline right of way runs east-west through Stand 1-13. The powerline is considered a separate stand (Stand 1-14).

Stand 2-3, (DEEP Parcel 3 of the lands acquired from DOT) east of the Naugatuck River is subject to flowage rights of the United States of America. It is part of the Army Corps of Engineers Thomaston Dam flood control project.

3. Boundary Conditions and Total Miles of Boundary

Because of discrepancies in deeded acreage and the lack of surveys of some of the boundary lines, in 2014, a new A-2 survey for Compartment 1 was completed. There are 11 miles of boundaries in the Campville Block. From the spring of 2014 to fall of 2015, 6.5 miles of boundaries were marked. All lines were painted, tagged, and blazed. No encroachments were found. One mile of boundary on the steep slopes bordering the DOT right-of-way to the railroad tracks is not marked.

4. Known Boundary Problems

The 3.5 miles of boundaries in Compartment 2 are not marked due to inadequate mapping. These parcels need to be surveyed to determine the correct acreage.

D. Special Use Areas

1. Lakes and Ponds

There are no lakes or ponds in the Block.

2. Rivers and Streams

In Harwinton, the western boundaries of Stands 2-2 and 2-4 border the Naugatuck River. There will be no management activity in these stands.

In Litchfield, Jefferson Hill Brook, Spruce Brook, and an unnamed stream flow east, and are tributaries to the Naugatuck River.

Fisheries information (from Donald Mysling, DEEP Senior Fisheries Biologist)

Fish surveys conducted by the Inland Fisheries Division, along with an independent study by the University of Connecticut, have shown that Spruce Brook provides habitat that is supportive of native (wild) brook trout along with other cold water fish species. Additionally, the confluence of Spruce Brook with the Naugatuck River provides an important summer "thermal refuge" for both fish hatchery reared trout and Atlantic salmon that are stocked several times annually into the "Campville Stretch" of the Naugatuck River (the Naugatuck River segment from the Route 118 road crossing Litchfield/Harwinton downstream (south) to Campville Road bridge crossing in Litchfield). A "thermal refuge" is the pooling of cooler water provided by a tributary stream to a warmer watercourse. The Spruce Brook thermal refuge is a critical and essential habitat feature that provides for the over-summer survival of cold water fish (such as salmon or trout).

Inland Fisheries Division fish surveys of Jefferson Hill Brook revealed the presence of a fish community dominated by native (wild) brook trout along with other cold water fish. Jefferson Hill Brook is a significant tributary to Spruce Brook, and provides it with an enhanced stream flow.

As Best Management Practices for any harvest within the management plan, I recommend the following:

a. Maintain a 100-foot no cut buffer along each side of Spruce Brook and Jefferson Hill Brook,

b. Limit harvests in areas draining directly/indirectly to Jefferson Hill Brook and/or Spruce Brook to either frozen or dry conditions, and

c. Establish and maintain all appropriate erosion and sediment controls.

3. Cultural sites

The only known cultural sites include stone walls, charcoal mounds, and the remains of old mills.

Recreation and Scenic Sites – Trails and Signs

There is one trail that is used by hikers and hunters. There are no signs.

4. Critical Habitat (State Listed Rare or Endangered Plants and Animals)

A review by the Natural Diversity Database, dated January 19, 2016, stated that their "records indicate extant populations of species documented on or within the vicinity of the site. These species include Species of Special Concern *Lasiurus cinereus (Hoary bat),* and State Threatened Species *Hetaerina Americana* (American rubyspot)."

Hoary bat (*Lasiurus cinereus*) Protection Status: Species of Special Concern
Hoary bats are found in Connecticut during the spring and summer seasons and migrate south to overwinter. Their diet primarily consists of moths and beetles. These bats will roost high in large coniferous and deciduous trees. Female hoary bats are solitary and give birth mid-May to late June. If forest clearing occurs outside this time frame, direct negative impacts to this species will be minimized.
Recommendations: Preferably tree cutting should be conducted in the winter when the bats are not in the area. Specifically work should not be conducted between May 1st and August 15th. Long-term impacts can be minimized by retaining large diameter coniferous and deciduous trees whenever possible. If these bats are found, please report the information to the Wildlife Division.

American rubyspot (*Hetaerina americana*) Protection Status: Threatened Species
The American rubyspot damselfly uses sunny riverbanks with plants or grasses along the banks or on emergent rocks in the river. Alteration or manipulation of riverine and associated wetland habitats may affect this species.
Recommendations: American rubyspot damselflies have been documented along the Naugatuck River. To help protect this species a buffer of vegetation should be maintained along the river's edge.

5. Natural Areas

There are no State Natural Area Preserves on the property.

6. Old Forestland Management Sites

There are no Old Forestland Management Sites in the Block.

7. Research Areas

There are no research areas in the Block.

8. Miscellaneous Features

There is potential for creating a small sugarbush in Stand 1-1 off of Marsh Road.

There is a ledge outcrop in the southern portion of Stand 1-8 that provides nice views to the south.

E. Extensive Areas of Concern

1. Trails/Signs

There is one unmarked trail in the southern part of the Block. This path runs for 1.16 miles through stands 1-2, 1-3, 1- 4, 1-4a, 1-6, and 1-7. It can be used for hiking as well as access for hunting and bird watching.

2. Wetlands

There are no wetlands on the property.

3. Unauthorized or Illegal Activity

Several cultivated marijuana plants were found on the Block while marking boundaries in September 2015. EnCon Police were notified and the plants were eradicated.

The unmarked trail mentioned earlier is occasionally used by ATVs and dirt bikes.

F. Wildlife Habitat – Input by DEEP Wildlife (Peter Picone)

1. Investment in Habitat Improvement

There have been no formal habitat improvement projects such as mowing or prescribed burning.

2. Existing Diversity Situation

The Block is composed of mostly hardwood and softwood sawtimber, providing habitat for a variety of birds such as wood thrush, red-eyed vireo, hermit thrush, wild turkey, and ovenbird, which all benefit from older forest conditions.

A. Early Successional Habitat

There is no early successional habitat other than the 2 acres in the powerline (Stand 1-14).

B. Conifers

There are approximately 107 acres of eastern hemlock ravine habitat, an important cover species for wild turkey, ruffed grouse, snowshoe hare, and rabbit (John Quimby, Pennsylvania Division of Forest Pest Management). It is also used as a food source for deer, as well as birds such as, black-throated green warbler, the solitary vireo, and the northern goshawk. Eastern Hemlock also keeps the ravines cool and moist, benefitting aquatic life.

Stand 1-3 is 8 acres and consists of sawtimber eastern white pine.

3. Landscape context – DEEP Wildlife

Wildlife populations are dependent on both the quality and the quantity of habitat present on the landscape. The Campville Block contains 444 forested acres of the 24,704 acres of forest in the town of Litchfield. Litchfield is approximately 68 percent forested. Forest-dependent wildlife such as black bears, fishers, bobcats, and pileated woodpeckers have benefited from the abundant forested acreage and the older saw timber-sized forest conditions (80 to 120 years old). This landscape level trend in forest condition and land use is favorable to these species in the Litchfield area for the foreseeable future as forests continue to age and land development pressures remain as they have been in the recent decade or so.

On the other hand, wildlife such as Whippoorwill, Prairie Warbler, Eastern Towhee, Chestnut-sided Warbler and New England Cottontail that depend on young forest conditions have been declining during the last 60 years due to lack of seedling/sapling stage as forest succession steadily moves toward a sawtimber stage forest, a trend mirrored on both state-owned and surrounding private forested lands in Litchfield.

	1985		2006		Change	
	acres	% of town	acres	% of town	acres	% change
Developed	3190	%8.8	3497	9.6%	306.8	9.6%
Turf & Grass	1345	3.7%	1633	4.5%	288.5	21.5%
Other Grasses	250	0.7%	334	0.9%	84.6	33.9%
Agricultural Field	5459	15%	5244	14.4%	-214.3	-3.9%
Deciduous Forest	18570	51%	18158	49.8%	-412.1	-2.2%
Coniferous Forest	4713	12.9%	4688	12.9%	-24.3	-0.5%
Water	809	2.2%	753	2.1%	-55.9	-6.9%
Non-forested Wetland	189	0.5%	224	0.6%	35.6	18.9%
Forested Wetland	1689	4.6%	1638	4.5%	-50.7	-3%
Tidal Wetland	0	0%	0	0%	0	0%
Barren	42	0.1%	86	0.2%	43.8	105%
Utility (Forest)	182	0.5%	180	0.5%	-2.1	-1.2%

Figure 2. Land use/land cover statistics/estimates for Litchfield, CT from 1985 and 2006. Data taken from UCONN Center for Land use Education and Research (CLEAR) at http://clear.uconn.edu/projects/landscape/your/town.asp?townname=74&Go=Go .

4. **Wildlife Habitat Conditions and Improvement Possibilities**

   Wildlife diversity in Mattatuck State Forest and the immediate region surrounding it will benefit greatly through the intelligent management of the forest resources of Mattatuck State Forest. Wildlife diversity can be enhanced through several forest management practices that promote vertical stratification, horizontal stratification and age class diversification (especially the creation of young forest habitat). Wildlife research has shown that manipulation of tree size-classes promotes wildlife diversity (Scanlon 1992). Being in a heavily forested region of the State, Mattatuck State Forest is an important area that can provide habitat for a variety interior forest birds, amphibians and reptiles. It also provides habitat for mammals that are being observed more frequently in this region such as bobcats, black bear and fisher.

5. **Hunting and Harvest of Wildlife**

   Mattatuck State Forest provides opportunities to harvest small game and big game animals to licensed hunters. The harvest of renewable natural resources provides supplemental food and outdoor recreation. Small game hunting could be improved through the creation of early successional habitats in appropriate and accessible areas.

   Deer hunting is open to bow, shotgun and muzzleloader seasons (Consult a current CT DEP Hunting and Trapping Guide for details).

   Spring and fall Wild Turkey hunting is allowed.

G. Vegetative Condition

1. **Silviculture- Rotations and Cutting Cycles**

   The forest will be managed with even and uneven-aged systems. Uneven-aged management will use a 20-year cutting cycle. Even-aged management will use a 100-year rotation.

2. **Forest Size Classes by Forest Type (Total Forest)**

   (Note: ArcMap and Deed acreage s are different; ArcMap data is used)

Type	Seedling-Sapling	Pole Timber	Saw Timber	All Size	Total
Mixed Upland Hardwoods	0	0	64	0	64
Sugar Maple-Beech-Yellow Birch	0	0	19	0	19
Northern Red Oak	0	0	111	0	111
Chestnut Oak		0	31	0	31

Type	Seedling-Sapling	Pole Timber	Saw Timber	All Size	Total
Chestnut Oak- Black Oak- Scarlet Oak	0	0	85	0	85
Red Maple- Oak	0	0	51	0	51
Eastern White Pine- Eastern Hemlock	0	0	62	0	62
Eastern White Pine	0	0	8	0	8
Eastern Hemlock	0	0	79	0	79
Shrubland/Old Field	2	0		0	2
Total Acres	2	0	510	0	512
				Grand Total Acres	512

Figure 3.

Forest Cover Type by Acres

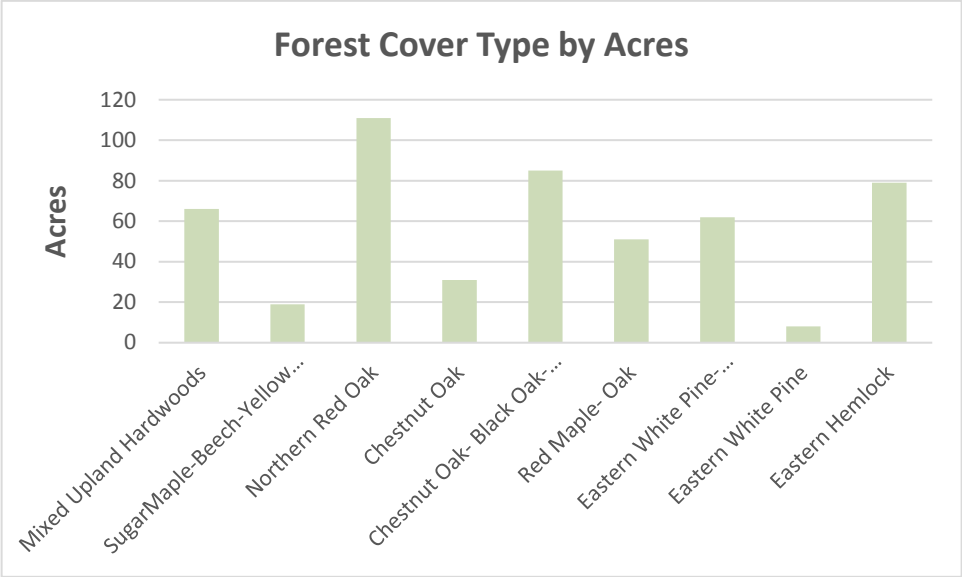

Figure 4. *Note: "Shrubland" is not included because it is insignificant.*

Forest Cover Types by Percentage

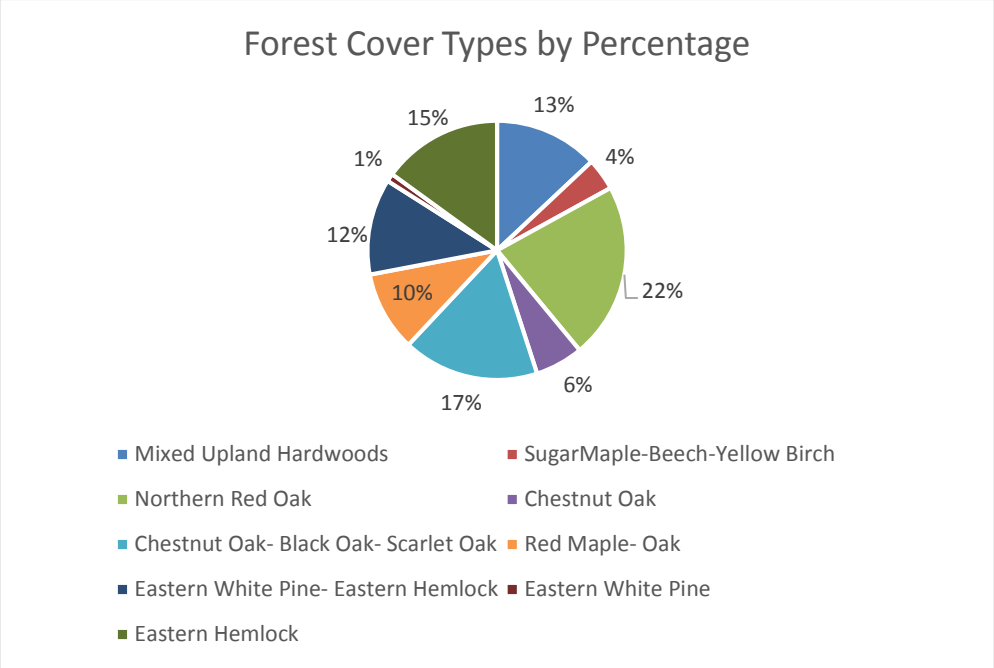

Figure 5.

Forest Type, Size Class and Condition Class on Areas to be Managed (acres)

Forest Cover Type	Selection Harvest	Thinning	Even-Aged Regeneration	Allow to Grow	Total
Sugar Maple-Beech-Yellow Birch	0	0	0	19	19
Northern Red Oak	6	37	9	31	83
Eastern White Pine	8	0	0		8
Total	14	37	9	50	110

Figure 6.

3. **Forest health**
   Hemlock Woolly Adelgid and Elongate Hemlock Scale, two exotic invasive insects are present. However, damage is not severe.
   Signs of Emerald Ash Borer, another exotic invasive insect pest, were not found, although it was discovered in Litchfield in 2014. In the next few years, most of the ash will succumb to the Emerald Ash Borer. Fortunately, ash is not a major component in this Block.
   Japanese barberry, an exotic invasive plant, was found in wetter areas of Stand 1-1.
   There are areas where trees have butt scars from past fires.

H. Landscape Context – Forestry – adjacent land uses

The block is surrounded mostly by forested, lightly developed land with a few scattered fields. The Litchfield Land Trust holds a conservation easement on two privately owned parcels (104 acres) that abut the southwestern boundary. There are no trails on the Land Trust properties, and there are no plans for any active management. The Northfield Block of Mattatuck State Forest (approximately 400 acres) is on the south side of Marsh Road. A powerline runs east/west through Stand 1- 13. To the east of Compartment 1 are old railroad tracks and the Naugatuck River. The Naugatuck River corridor is part of the Thomaston Dam flood control area.

I. Specific Acquisition Desires

1. The 2014 survey identified several inholdings of private land which would be desirable for State acquisition. These include the Fluhr property next to Stand 12, and the Price and Petke properties next to Stands 11, 6 and 13. These parcels would improve access, allowing management of what are now inaccessible areas, and make boundary marking easier.

J. Public Involvement

A copy of the management plan was sent to the Litchfield and Harwinton Conservation Commissions for their review. No comments were received.

K. Adaptive Management

1. The Division of Forestry understands the nature of forest management as it occurs as part of a dynamic landscape. Management actions are often affected by outside variables which influence the outcome of resource decisions. The Division of Forestry reserves the right to reasonably change our management approach as environmental change and resource needs warrant. Some of these changes may be associated with biological factors such as exotic insects and diseases, or population outbreaks. Increased unauthorized motorized recreation which erodes trails and roads may require action unforeseen during the composition of this plan. Additionally, environmental conditions such as hurricanes or record-breaking precipitation may additionally affect resource condition and work requirements. The Division of Forestry and our colleagues in Parks, Wildlife, Fisheries, and Agency

Support, evaluate circumstances and use an adaptive-management philosophy and additionally reserve the right to address unforeseen circumstances should they arise during the tenure of this forest management plan.

L. 10 Year Goals

The DEEP, as stewards of public land for present and future generations, must maintain soil productivity, keep streams free of sediments and pollutants, and maintain vegetative diversity and viable populations of wildlife. DEEP must carefully match management activities and public use to the natural characteristics and suitability of the land. All known, threatened, endangered, and species of special concern and their habitats will be protected as well as any known cultural features on the landscape.

Timber will be harvested to provide diverse wildlife habitat, a sustainable supply of forest products, and improve forest health.

1. 110 acres will be actively managed during this plan. The rest of the forest will not be managed because of poor access and operability. These areas will be left in a "natural" state. Commercial salvage (because of fire, storm damage, disease, or insect outbreak) in these areas is not likely because of steep terrain, ledge outcrops, and lack of access.

2. **EVEN-AGED MANAGEMENT – 77 Acres**

   Of the 110 acres to be actively managed, 77 acres will be managed on an even-aged basis (70% of the total area to be managed). A 100-year rotation will be used. At the end of the rotation, the entire overstory will be removed to provide full sunlight to the forest floor, stimulating the growth of shade-intolerant trees, such as oak, black cherry, aspen, and tulip poplar.

   77 acres/100-year rotation = 0.77 acres per year (7.7 acres every ten years) being regenerated on average on a sustainable basis. Some 10-year periods will have more than 7.7 acres, others will have less.

   *During the next 10 years, approximately 8 acres will be regenerated with a clearcut***.**

   In even-aged management, during the course of the rotation, intermediate treatments such as thinnings are used to improve the composition, growth rates, and spacing of trees. Thinnings in overstocked stands will provide optimum growing space for better quality trees.

   During the next 10 years, 37 acres will be thinned.

3. UNEVEN-AGED MANAGEMENT – 33 Acres

33 acres will be managed on an uneven-aged basis (30% of the total area to be managed). In uneven-aged management, harvests will use single tree and small group selection techniques in which openings in the canopy will generally be less than 1 acre. This should provide enough sunlight for some shade intolerant species to regenerate, although intermediate and shade tolerant species will eventually become most abundant. The stands consist of sugar maple, beech, birch, ash, hemlock, white pine, and oak, and should respond well to openings in the canopy created by future cutting.

- Roughly 1/3 of the timber volume on a given area will be removed with each harvest, to be repeated on a 20- year cutting cycle.
- 33 acres of manageable sawtimber stands divided by a 20- year cutting cycle yields 1.65 acres per year that can be sustainably cut.
- Over the course of this 10-year management plan, roughly 16.5 acres could be harvested sustainably using uneven-aged management.

During the next 10 years, 14 acres will be treated using uneven-aged management.

Long Term Forest Management Objectives for Wildlife

Uneven-aged Management

Single tree selection and group selection will help create temporary openings in the forest canopy and help enhance wildlife habitat by improving the vertical and horizontal stratification of the forest. Woodland birds will benefit from this silvicultural practice. It will create pockets of regeneration by adding sunlight to understory seedlings.

Although, uneven-aged forest management provides an overall habitat improvement, it continues to perpetuate a predominantly sawtimber size class forest. It does not address the needs of young forest habitat-dependent wildlife species.

Even-aged Management

Even-aged Management (Patch Cuts) For Young Forest Dwelling Wildlife

Creating young forest habitat (seedling/sapling stage) provides forest conditions for wildlife such as American Woodcock, Whippoorwill, Chestnut-sided Warbler, Eastern Towhee, and Cottontail Rabbits. This Block has no acreage in young forest conditions (less than 15-20 years old). Young forest habitat should be placed in the interior of the forest (whenever possible) to minimize Brown-headed Cowbird parasitism. Opportunities exist to create small or medium-sized forest patch cuts to benefit species that thrive in young forest conditions. Additional young forest patches must be created in a timely fashion to replace the original ones as they mature.

Seedling forest in >10 acre units is recommended by DeGraaf and Rudis (1986). However, it is acknowledged that this may not be feasible on a small Block such as this.

Diversification of the Forest Species Composition

Forests that have a mixture of deciduous and coniferous trees provide enhanced seasonal conditions for wildlife. Where possible, conifers should be enhanced through thinning/crop tree release and opportunistically regenerated by scarifying the ground in good seed years. White pine seedlings form dense stands that provide excellent cover for wildlife. White pine management/enhancement can help restore an evergreen component to areas that have experienced eastern hemlock defoliation from the invasive exotic woolly adelgid and scale insects.

Management of Eastern Pine-Eastern Hemlock Stand Type:

Thinnings (crop tree release) should be undertaken to improve habitat conditions by restoring health and vigor of the dominant white pines and hemlocks. Also, thinnings will improve the potential for increased understory evergreen cover and seedling recruitment. Trees that are released will also grow thicker and denser crowns, making better nesting, resting, and predator avoidance habitat for several raptor species.

Special Concern Species and Forest Management

Forest management practices should be used wherever wildlife field data or surveys show the opportunity to enhance a habitat for a special concern, threatened or endangered species. For example, if wildlife biologists find New England Cottontail occurrence then appropriate measures should be taken to enhance that area for optimal habitat conditions. This may include making temporary openings through patch cuts and group selection, brush pile creation, or making herbaceous openings to enhance forbs and grass forage.

Snags, Den Trees, and Ground Woody Debris

Dead or dying trees both standing and downed are important components of wildlife habitat. Three or more snags of 12 inches or larger should be left per forested acre. More snags (as many as possible) should be left along riparian zones (100 feet of wetlands and streams). A minimum of one den tree should be left per acre. Potential snags or den trees should be left whenever practical.

Ground woody debris can be enhanced by leaving some large tree boles ($\geq$ 12 inches) on the ground for potential use by Ruffed grouse, small mammals, reptiles, and amphibians.

Log Landings as Temporary Herbaceous Openings

Log landings should be seeded to a mixture of little bluestem, Indian grass, clover, annual rye and/or winter rye (Conservation Mix with no invasive non-native plant material). These areas can become valuable foraging/ sunning locations for local Wild Turkeys and/or Eastern Box Turtles. Selective cutting of trees to improve the southern exposure to sunlight should be encouraged when possible at these sites to improve herbaceous growth.

Wild Turkey seasonal habitat needs can also be improved through forestry operations such as mast tree (crop tree management) improvement cuts, and brooding habitat improvement through daylighting of roads and field edges.

Fisheries

There are no specific recommendations for Fisheries.

M. Work Plans

1. **Silvicultural Activity**

Stand Number	Acres	Activity
Stand 1-3	8	Selection Harvest-during cone year
Stand 1-5	6	Selection Harvest
Stand 1-4	8	Clearcut
Stand 1-2	37	Thinning

Figure 7.

2. **Road Maintenance and Construction**
   Construct a road entrance for log truck access at the pull off on Marsh Road.

3. **Road Construction, Gates, Signs**
   The two trail entrances to compartment 1 (off of Marsh Road) will need gates installed eventually. Informational signs will be posted at all timber harvest sites explaining reasons for the cutting.

4. **Boundary Marking**
   Remark Boundary lines by 2026. The 3.5 miles of boundaries in Compartment 2 are not marked due to inadequate mapping. These parcels would need to be surveyed to determine the correct acreage, but it is a low priority considering the area is not accessible.
5. **Stream Improvements**
   None planned.

6. **Cultural Site Maintenance**
   None planned.

7. **Trail Maintenance**
   None planned.

8. **Upland Wildlife Opening or Leasing**
   None planned.

9. **Wildlife Habitat Improvement**
   None planned.

10. **Wildlife Population Controls**
    The forest will continue to be open for hunting and trapping as per DEEP regulations.

11. **Recreation or Scenic Site Work**
    If there is interest, there is potential to extend the existing trail. This would create a way for hikers and hunters to get to areas that are currently not easily accessible. The trail would have to undergo DEEP's trail approval process to ensure that a responsible group will maintain it. The trail would have to be built on suitable soils and terrain, not necessarily just following existing paths, and be compatible with other uses of the Forest.

12. **Control of Invasive Exotic Plants**
    Nonnative invasive plants will be treated, and monitored and controlled when needed thereafter.

Appendix A – References

References

Many references were used in creating this plan. Some of them include:

"*Birth of the Brass Valley,"* "American Brass Company Records." Thomas J. Dodd Research Center, University of Connecticut Libraries, 2012. http://connecticuthistory.org/birth-of-the-brass-valley/
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Natural Diversity Database Review.
Picone, Pete, DEEP Wildlife Biologist. Personal Communication.
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Appendix B – Definitions

Size Classes

Sawtimber - hardwood trees 12-inch dbh (diameter at breast height, or 4.5 feet off the ground) and larger, and softwood trees 10-inch dbh and larger, that contain at least one 8-foot sawlog. Poletimber-hardwood trees between 5 and 11 inches dbh, and softwood trees 5 to 9 inches dbh. These trees are too small for sawlogs, but could be sold as pulpwood, fuelwood, or other small products where such markets exist.

Saplings - trees 1 to 5 inches dbh. Seedlings - trees less than 1-inch dbh.Stand - an area of trees of a certain species composition (cover type), age class or size class distribution and condition (quality, vigor, risk), usually growing on a fairly homogeneous site. An even-aged stand contains trees in the main canopy that are within 20 years of being the same age. Even-aged stands sometimes are designated by age-class (e.g. a 40-year old stand) or broad size-class (e.g. seedling/sapling, poletimber, sawtimber). An uneven-aged stand contains trees of several 15-20 year age-classes. These stands generally contain trees of many sizes (seedlings through sawtimber) due to the range in ages and the differences in growth rates among species.

Types of Silvicultural Treatments

Clearcut- Used in even-aged management to regenerate a new forest using seeds already in the soil, seeds brought in from adjacent areas by wind or animals, and/or sprouts from stumps. All stems are removed to provide maximum sunlight for the new forest. Trees such as black cherry, yellow poplar, aspen, and paper birch often regenerate after clearcuts. Often used to create early successional wildlife habitat.

Selection harvest- Used in uneven-aged management. Trees are removed singly or in small groups up to an acre in size, maintaining a fairly continuous canopy. Selection harvests tend to favor trees that can grow in partial shade such as sugar and red maples, black and yellow birch, beech, and hemlock.

Shelterwood- Used in even-aged management. Understory and lower crown canopy trees are removed to allow the new stand to regenerate in partial sunlight. Trees to be retained are usually of the best quality to serve as a desirable source of seed. After adequate regeneration is established, the overstory is removed in one or two cuts. Shelterwoods are often used to regenerate species such as oak and white pine that have irregular crops of seed.

Forest Types (from the U.S. Forest Service)
Forest Type is based on species composition of the overstory, with the overstory defined as all trees in the 1" dbh class and larger. Species composition is based on the proportion of total stand basal area represented by each species or species group. Forest type designations are not assigned to stands until they grow out of the seedling stage into the sapling class.

Forest Types mentioned in this plan are:

Maple-Beech-Birch: Sugar maple, American beech, and Yellow birch: Associates-basswood, red maple, hemlock, northern red oak, white ash, white pine, black cherry, black birch.
Northern Red Oak: Associates- black oak, scarlet oak, chestnut oak, and tulip poplar. Sites—spotty distribution on ridge crests and north slopes in mountains but also found on rolling land, slopes, and benches of loamy soil.
Mixed Upland Hardwoods: Associates – Any mixture of hardwoods of species typical of the upland central hardwood region, should include at least some oak. Sites- wide variety of upland sites.
Chestnut Oak: Associates – scarlet oak, white oak, black oak, pitch pine, , red maple, red oak. Sites—rocky outcrops with thin soil, ridge tops.
Chestnut Oak - Black Oak - Scarlet Oak: Associates – northern red oak, white oak, shagbark hickory, pignut hickory, tulip poplar, red maple, Eastern white pine, pitch pine. Site—dry upland sites on thin soiled rocky outcrops on ridges and slopes.
Red Maple- Oak: Associates – the type is dominated by red maple and some of the wide variety of central hardwood associates include upland oak, hickory, tulip poplar, and sassafras. Site—uplands.

Eastern White Pine: Associates – pitch pine, gray birch, aspen, red maple, pin cherry white oak, paper birch, black birch, yellow birch, black cherry, white ash, northern red oak, sugar maple, basswood, hemlock, tulip poplar, white oak, chestnut oak, and scarlet oak. Site—wide variety but best development on well drained sands and sandy loams.

Eastern Hemlock: Associates- beech, sugar maple, yellow birch, basswood, red maple, black cherry, white ash, white pine, paper birch, paper birch, northern red oak, and white oak. Sites—cool locations, moist ravines, and north slopes.

White Pine – Hemlock: White pine, hemlock: Associates- Northern red oak, black birch, red maple, black cherry, white ash, white pine, paper birch, white oak, chestnut oak, and tulip poplar. Sites—wide variety but favors cool locations, moist ravines, and north slopes.

Shrubland/Old Field: Goldenrod, cool season grasses, staghorn sumac, blackberry, high bush blueberry.

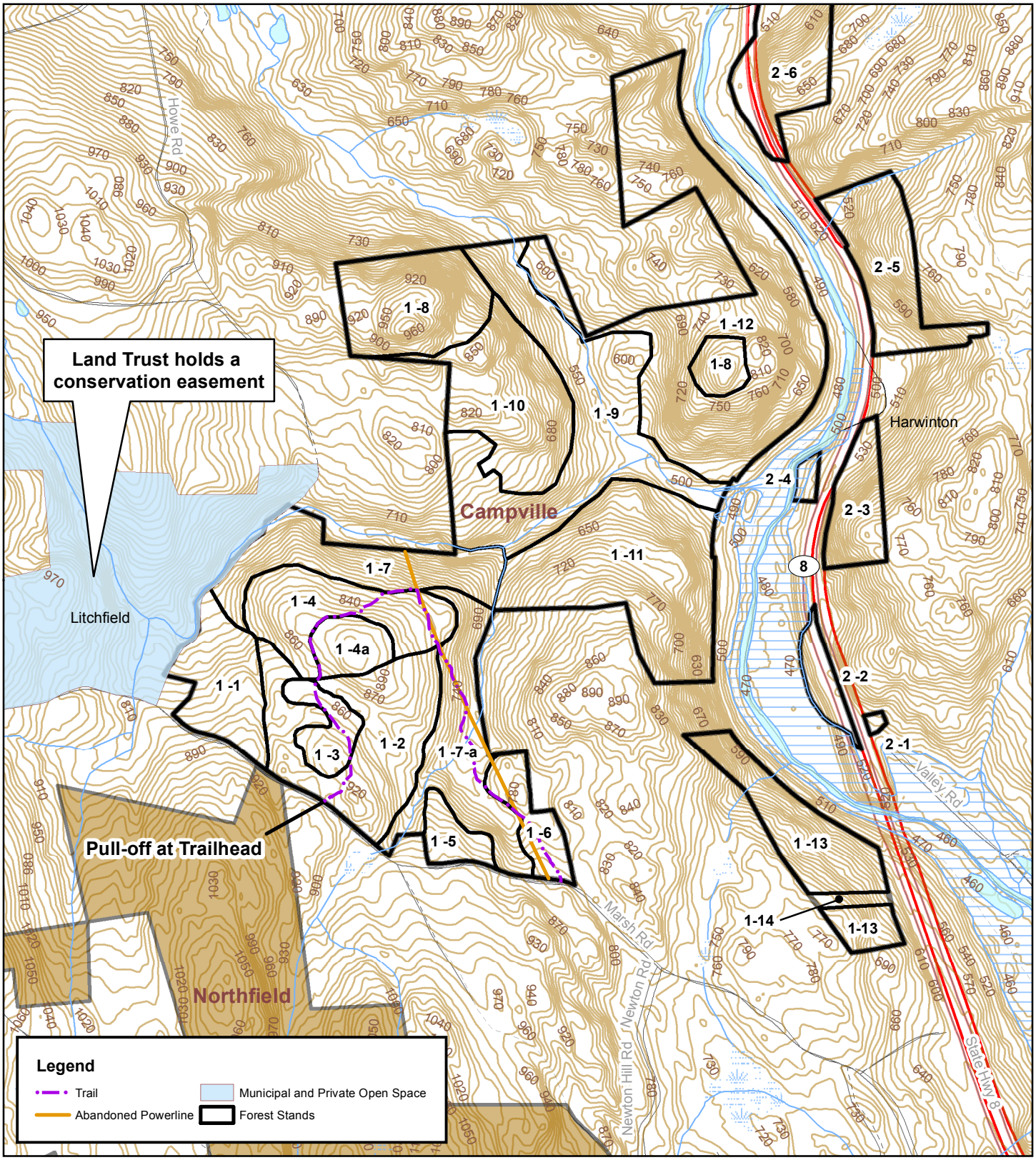
Map A - Topographic
Mattatuck State Forest, Campville Block

Litchfield & Harwinton, Connecticut
512 Acres

Compartment 1; 444 Acres, Compartment 2; 68 Acres

November 29, 2016

0 1,250 2,500 Feet



Coordinate System: NAD 1983 State Plane Connecticut FIPS 0600 Feet

Projection: Lambert Conformal Conic

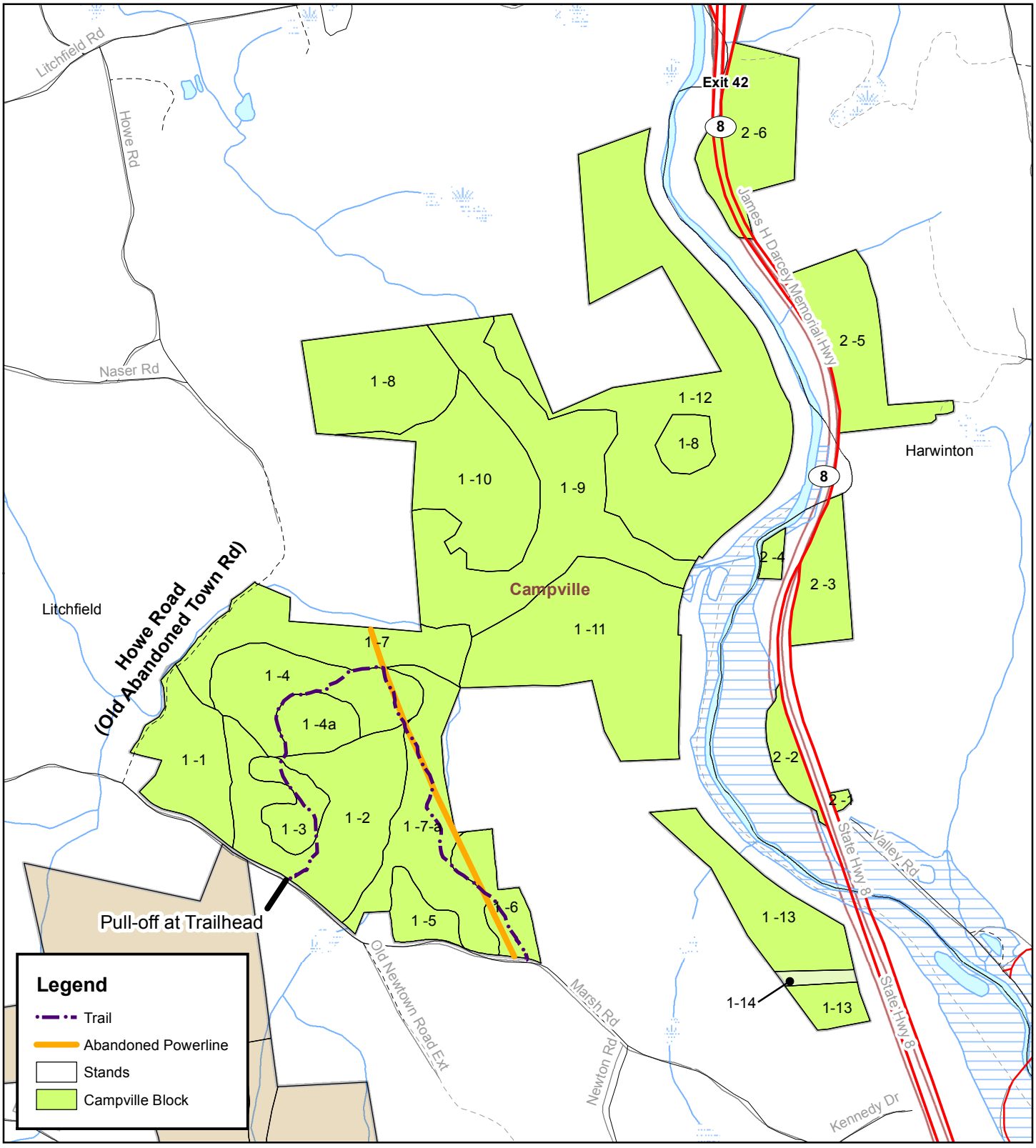
Map B - Base
Mattatuck State Forest, Campville Block

Litchfield & Harwinton, Connecticut
512 Acres

Compartment 1; 444 Acres, Compartment 2; 68 Acres

November 29, 2016

0 1,250 2,500 Feet



Coordinate System: NAD 1983 State Plane Connecticut FIPS 0600 Feet

Projection: Lambert Conformal Conic

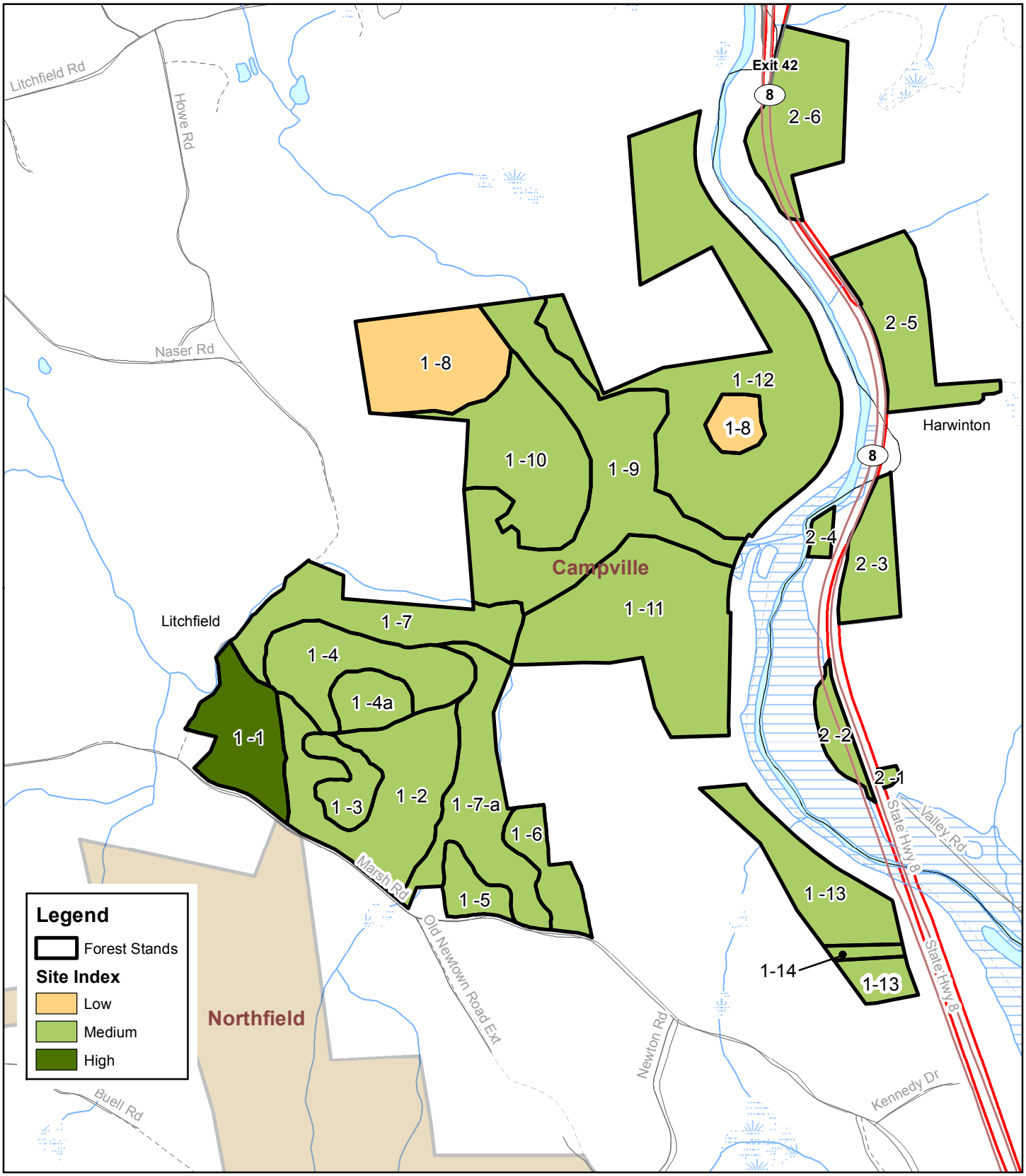
Map C - Site Quality
Mattatuck State Forest, Campville Block

Litchfield & Harwinton, CT
512 acres

Compartment 1; 444 Acres, Compartment 2; 68 Acres

November 29, 2016

0 1,250 2,500 Feet

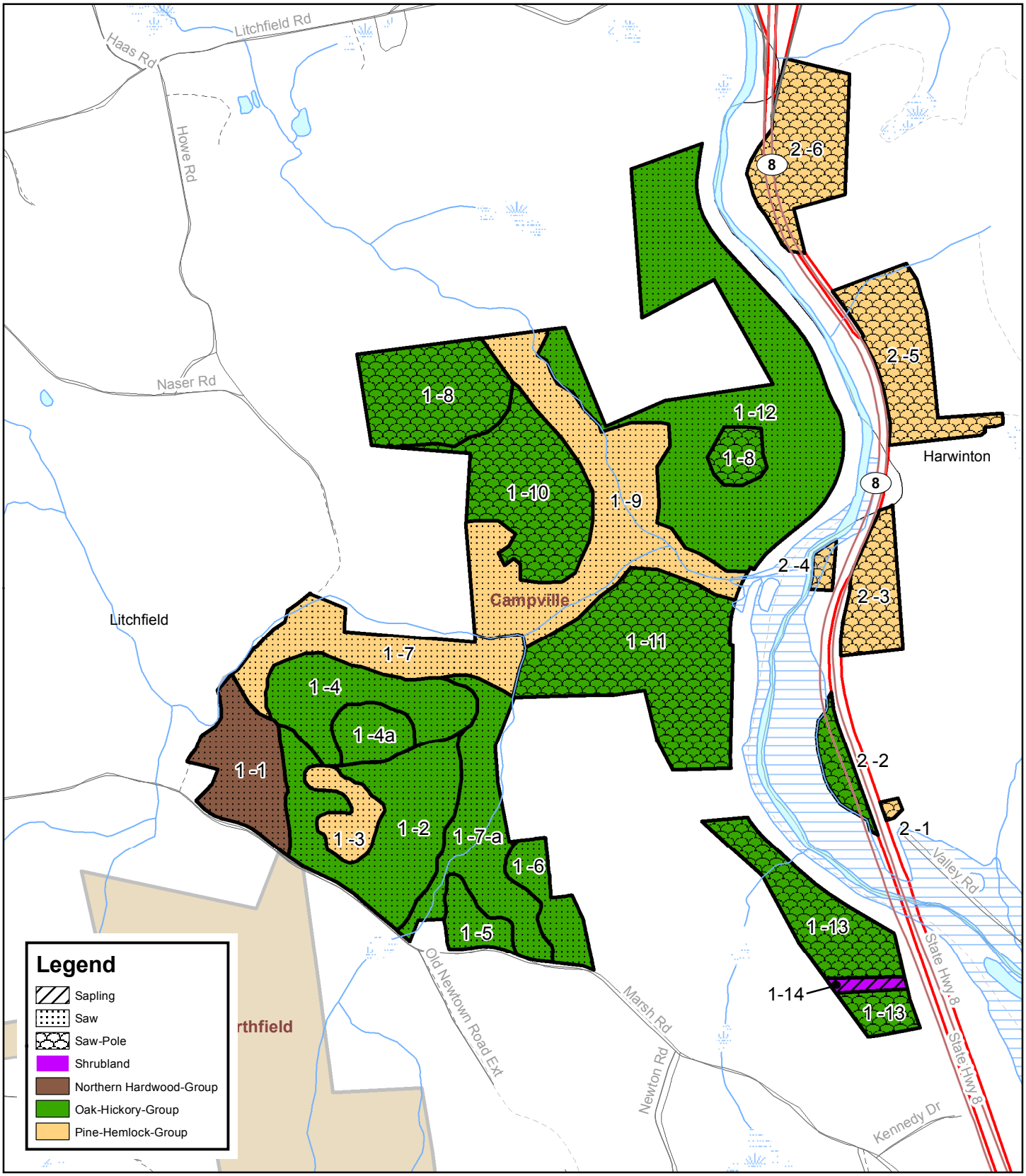


Map D - Forest Type & Size Class
Mattatuck State Forest, Campville Block

Litchfield & Harwinton, Connecticut
512 Acres
Compartment 1; 444 Acres, Compartment 2; 68 Acres

November 29, 2016

0 1,250 2,500 Feet



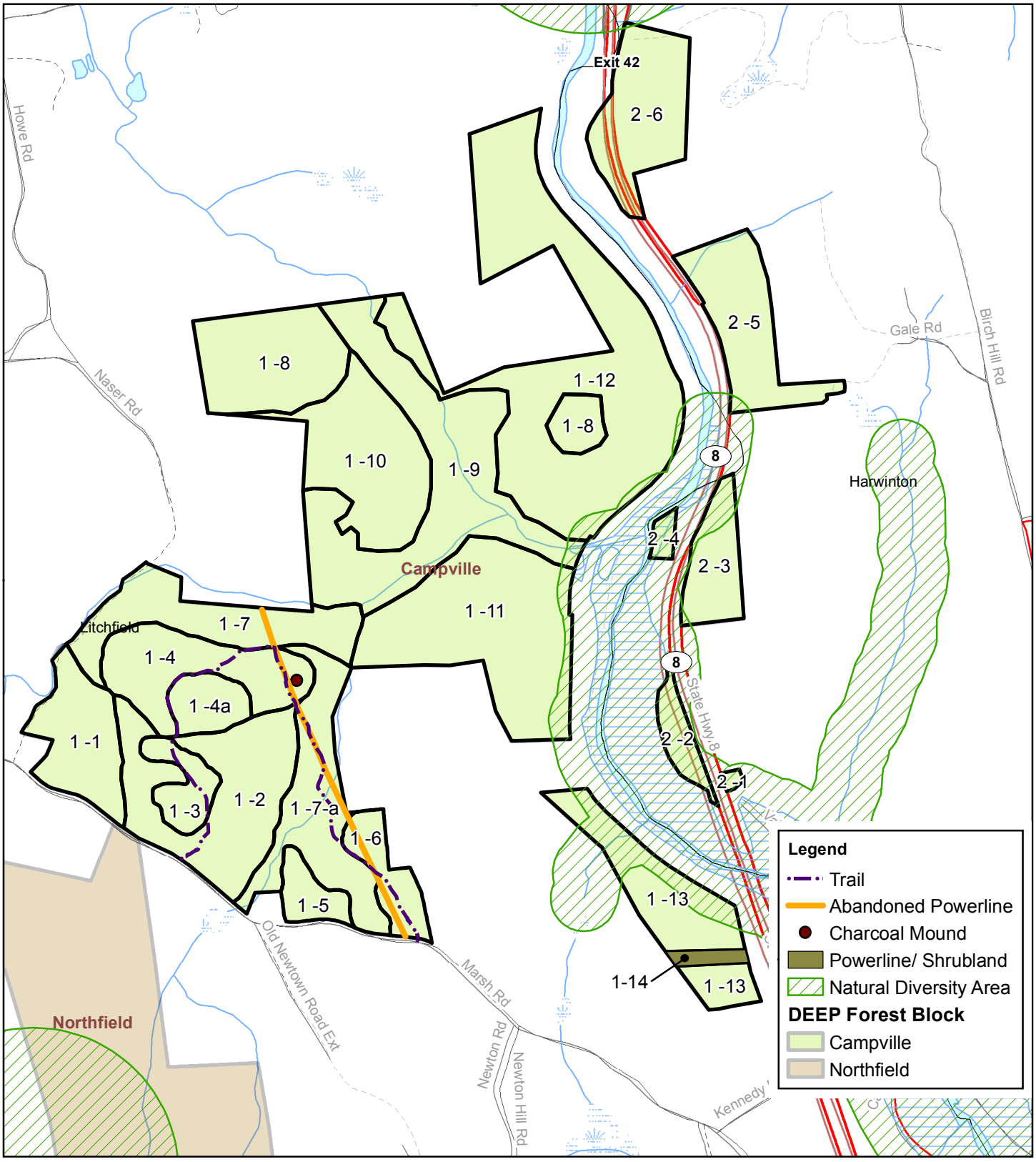
Map E - Special Features
Mattatuck State Forest, Campville Block

Litchfield & Harwinton, Connecticut
512 Acres

Compartment 1; 444 Acres, Compartment 2; 68 Acres

November 29, 2016

0 1,250 2,500 Feet



Coordinate System: NAD 1983 State Plane Connecticut FIPS 0600 Feet

Projection: Lambert Conformal Conic

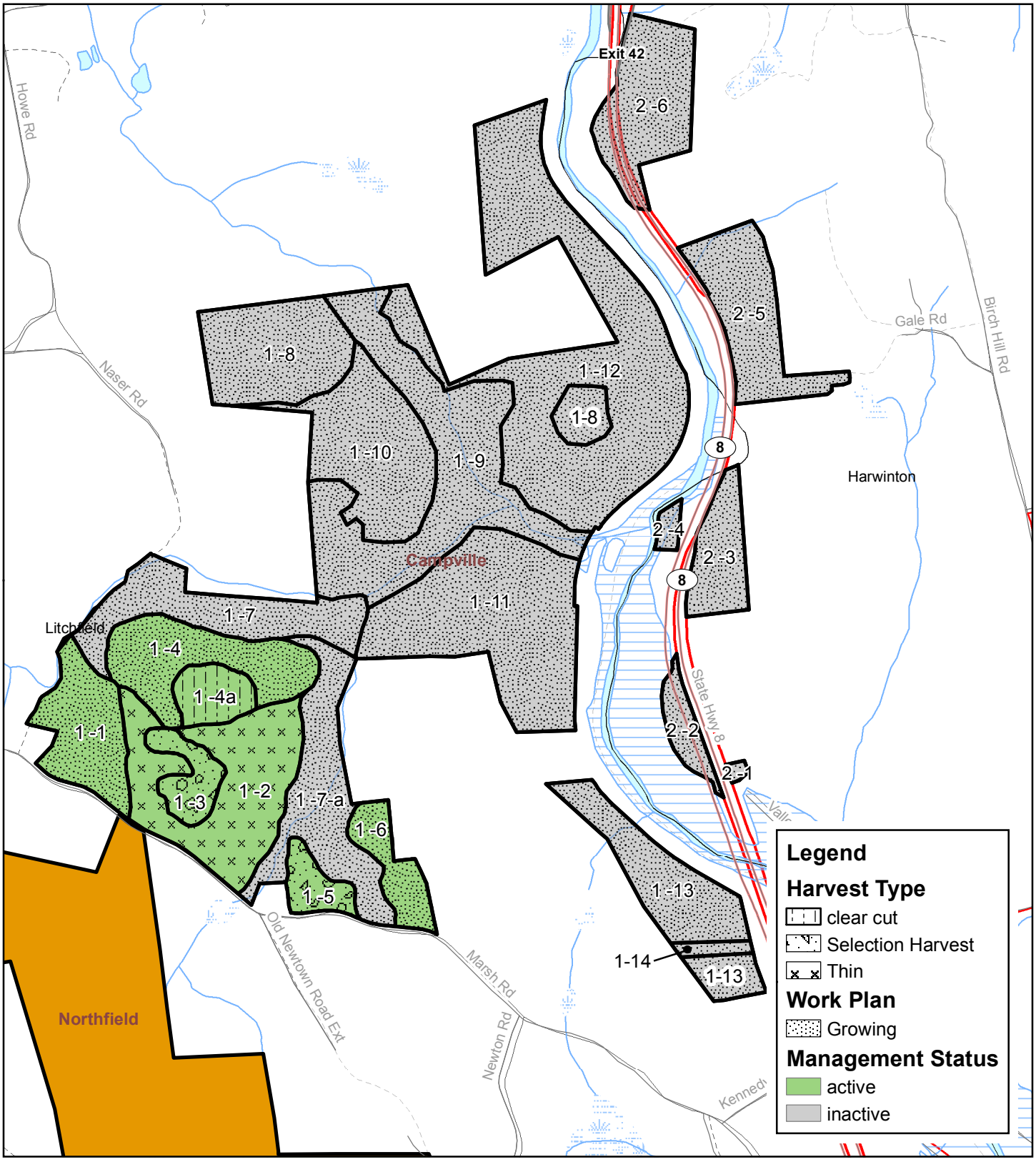
Map F - Work Plan
Mattatuck State Forest, Campville Block

Litchfield & Harwinton, Connecticut
512 Acres
Compartment 1; 444 Acres, Compartment 2; 68 Acres

November 29, 2016

N
W E
S

0 1,250 2,500 Feet



Western District Comments for

Mattatuck State Forest, Campville Block, Management Plan

Jack Hine, Topsmead State Forest Unit Manager 8-29-16

Jerry,

This appears to be a well thought out and workable plan from a Park Supervisor perspective.

Topsmead staff have already completed a majority of the tires and equipment parts removal. A couple of new tires were spotted on a recent tour of the informal trail and will be picked up by staff as time allows. I am certain we can assist with gate installation when the time comes.

Let me know if there are other aspects that I may have missed in my review that need to be addressed by the Parks Division.

Skip Kearns, Support Services 8-29-16

There are no Support Service concerns with this plan.

Skip

Tammy Talbot, Outdoor Recreation 8-29-16

Looks good Jerry...thanks for the efforts on this. And I apologize for the delay in response.

Comments from **Fisheries** (Donald Mysling) and **Wildlife** (Peter Picone) were already incorporated into the plan.