STATE OF CONNECTICUT

DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

Bureau of Natural Resources

Division of Forestry

FOREST MANAGEMENT PLAN
2014 through 2024

American Legion State Forest

Approvals:

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A. Executive Summary

American Legion State Forest is approximately 1,247 acres, located on the western shore of the Farmington River. The largest portion is in Barkhamsted, consisting of 1,126 acres.

The Forest is popular for hunting, hiking, fishing, kayaking, and camping. There are two Blue Trails, totaling 2.7 miles in length. The Hawes Campground has tent and cabin sites.

The Forest has a long history of forest management, beginning with the Civilian Conservation Corps in the 1930s.

Six hundred forty four (644) acres will eventually undergo active forest management. This is 54% of the total forested area.

Two hundred sixty eight (268) acres will be managed on an even-aged basis.

Three hundred eighty (376) acres will be managed on an uneven-aged basis.

B. History

Reason for acquisition and funding sources

This Forest was given to the State in large part by the American Legion of Connecticut, at the suggestion of Elliott B. Bronson, the local forest fire warden who also was responsible for acquiring land for State Forests. Apparently, veterans of World War I who served in Europe were impressed by the condition of the forests there as a result of centuries of forest management. They wanted to replicate it in Connecticut. The first deed was received on July 16, 1927. Parcels since that time have been acquired with state funds.

Development of resource before and after acquisition

The Civilian Conservation Corps (CCC) established Camp White (named after Alain White, an early benefactor of Connecticut's State Forests and Parks) in January, 1934. They built Legion Road, a gravel road leading from West River Road into what was then the southern portion of the Forest. They also constructed the Henry Buck Trail off the west side of West River Road. The CCC did quite a bit of silvicultural work, including thinnings over most of the area, plantings of conifers and black locust, and salvaging of chestnut. They also cleared a fire break running the length of the Forest.

The Pleasant Valley field office was built by the CCC in 1940, using wood salvaged from the 1938 hurricane. The Austin Hawes Campground was opened in 1968. It is named after a State Forester who served for 28 years and was instrumental in establishing Connecticut's State Forest System.

Changes since the last management plan was written in 1999.

There have been timber harvests on 186 acres, totaling 739,620 board feet. These sales generated $114,811 in cash revenue in addition to goods and services such as lumber and logs delivered to the DEEP sawmill. All of the timber harvests were thinnings. In addition, 248 acres of land were acquired.

DEEP Management Unit

American Legion is in the People's State Forest management unit, which is responsible for recreational issues and maintaining gates, roads, culverts, hazardous trees, the youth group camping area at Camp White, garbage pickup, etc. The Western District Operations Unit handles maintenance issues that require heavy equipment, such as roadside mowing, road grading, and culvert installation.

C. Acres and Access

Acres

Total acres: 1247

American Legion is divided into two compartments. Compartment 1 is the main section, consisting of 1,126 acres. It is located in Barkhamsted. Compartment 2 (formerly called the Shaw Gates parcel) is 121 acres. It is located in Hartland, although the entrance is at the end of School Street in Riverton (a section of Barkhamsted). The town line between Barkhamsted and Hartland comprises the southern boundary of this compartment.

Forested acreage: 1197 (includes old fields and open swamps, but not the campground)

Gasline right-of-way: 2.5 acres

Developed areas (campground, gravel bank, forestry office, senior center buildings): 42 acres

Mowed hay fields: 5.6 acres

Present access

Legion Road, a 1.7 mile gravel road, provides vehicular access from West River Road. It is gated in the winter.

An unnamed gravel road provides access into the western side of the Forest from the end of Yarmoshuk Road. It is 850 feet in length and is gated year round. There is parking for two vehicles at the entrance.

The gravel roads that loop through the Hawes Campground total about one mile. They are gated outside of camping season.

There is an 800-foot long, ungated, dirt road that enters Compartment 2 from the end of School Street in Riverton. The road is blocked with a log, but needs a gate to allow access by DEEP. There is also a

small parking area that needs to be enlarged to keep vehicles from parking on the adjacent private property.

There is 1,300 feet of frontage on Route 318 (also called Ripley Hill Road). There is a gated road with parking for one car on the west side of Rt. 318, near the intersection of Rt. 44. An unnamed dirt road extends about 500 feet into the Forest past the gate.

There is 1,200 feet of frontage along Route 44. The roadway for Old Route 44 provides parking for one vehicle to access Morgan Brook on the north side of the current Route 44.

Town Roads

There are 2.2 miles of frontage on West River Road, a paved town road. There are many places for pull-off parking along West River Road.

Inaccessible areas (acres) and access potential

The acquisition of the Yorker parcel in 2004 (off of Rt. 318) and the Centrella property in 2008 (at the end of Yarmoshuk Road), provided access to the southern and western portions of the Forest, respectively, so that virtually all of the Forest is accessible from public roads. Additional access to several hundred acres would be possible if the State owned land with frontage on Bridle Drive. There is undeveloped land on this road that might be available for acquisition.

Rights-of-Way and Easements

There is an easement for a gasline owned by the Tennessee Gas Pipeline Company. The right-of-way runs through the northwestern portion of the Forest for a distance of 4,660 feet. The company's nearest office is in Enfield. Their phone number is 860-763-6033. A Logging Encroachment Agreement is required before logging is allowed within the easement area. Crossings must be approved by the Company and appropriate materials such as wooden bridges must be used.

Leases

The Town of Barkhamsted leases a building and approximately one acre around it on West River Road, south of the Pleasant Valley Field Office, for a Senior Citizens Center. The lease expired in December, 2012. Regarding this parcel, in 2014, the Legislature passed House Bill 5550, which was signed by Governor Malloy. The language of the bill states, " Notwithstanding any provision of the general statutes, the Commissioner of Energy and Environmental Protection shall convey to the town of Barkhamsted a parcel of land located in the town of Barkhamsted and any improvement upon said parcel, for the sum of one dollar. Said parcel of land has an area of approximately 2.6 acres and is located in the American Legion and Peoples State Forest and a portion of said parcel is identified as lot 3, unit X in Block 13 of town of Barkhamsted Tax Assessor's Map 21, located at 109 West River Road. The conveyance shall be subject to the approval of the State Properties Review Board." The deed for this parcel dates to 1936. It states that "the above described premises are to be used for forestry purposes only." DEEP Property Management is working on this issue.

There are three leased fields, totaling 5.6 acres, accessed from the end of Yarmoshuk Road. The Wildlife Division has an agricultural agreement with a farmer to grow hay. The lease is for five years and is automatically renewed unless either party has an objection.

Boundary Conditions and total miles of boundary

There are 17.3 miles of boundaries, including 3.3 miles of shoreline along the Farmington River.

All of the boundaries of Compartment 1 were marked in 2004-05 (excluding the shoreline along the River). The Centrella acquisition was marked in 2008. Compartment 2 was marked in 2009. Remarking of the boundaries of Compartment 1 began in 2013 (2.2 miles were marked).

The boundaries are in generally good shape. The only line that is not marked is along the extremely steep slope on the north side, west of West River Road.

Known boundary problems

There are no known significant encroachments to the boundary lines.

D. Special Use Areas

Lakes and ponds

There are no lakes or ponds in this Forest.

Rivers and streams

The West Branch of the Farmington River forms the eastern boundary of the Forest. In August, 1994, the section of this waterway from the Massachusetts line to Canton was designated as a National Wild and Scenic River, in no small part because American Legion and People's State Forests protect its watershed. The Fisheries Division created a Trout Management Area in the river. It is heavily stocked with trout and is considered one of the best places for fishing in Connecticut. The Forest provides access to the river for fishing, canoeing, kayaking, and tubing.

In Appendix C is the section of "A Fisheries Guide to Wadable Streams and Rivers of Connecticut" by Neal Hagstrom of the DEEP Fisheries Division that pertains to the West Branch of the Farmington River.

Cultural sites

There are many charcoal mounds scattered throughout the Forest, indicating that the woodlands were heavily cut over from the 1800s to the early 1900s to produce charcoal for iron and brass industries, brick kilns, and for curing tobacco in the Farmington Valley.

Figure 1. Possible remains of the chimney of a collier hut in American Legion SF. Photo: Gerard Milne

There are remains of the CCC's Camp White, such as the tall fieldstone chimney of the camp dispensary with an attached commemorative plaque. A few building foundations are still evident.

There is an old sawmill site on the west bank of the Farmington River, across from the Pleasant Valley Field Office, in what used to be called the "Youngsdale Area". An old, narrow woods road leads down to the site from West River Road.

There is a mill site on the Henry Buck Trail, believed to be the remains of a cheese box factory.

In Compartment 2, at the end of School Street, are the remains of an old industrial mill site.

The following is correspondence from Paul Hart of the Barkhamsted Historical Society, regarding this site:

The location was used for three different uses- a sawmill, a "calico" mill, and finally a paper mill. The saw mill was started about 1800 or before by Ralph Pemeroy. He sold the mill and 270 acres of land to the partners Lent Benham and Ezra Doolittle who ran the mill. Benham's wife was Lambert Hitchcock's sister. Hitchcock came to this section of town (later called Hitchcocksville, then Riverton) about 1816 and used a shed near the sawmill to produce his first chair parts. His shop was powered by the same dam and waterwheel as the sawmill. Later Hitchcock built his own shop downstream of the Benham and Doolittle sawmill. One of the partners, I think it was Doolittle, was killed in a wagon accident. The other partner sold the mill to the Wards about 1835.

The father (John Ward) and his two sons (James and Michael) converted the sawmill site into a calico shop- they would buy cotton cloth and imprint it with dyed patterns- so they were NOT producing the cloth there, just dying the cloth with their own designs. We have some samples of the cloth printed there in the Barkhamsted Historical Society collection, and the Connecticut Historical Society has a couple of sample books from the calico mill. They did a pretty good business up until about the 1850s, when sales began to decline.

About 1878, Michael Ward's sons converted the shop to a paper mill and this business was continued up until 1941 when the building was destroyed by fire. The paper mill was operated under different names over the years- starting out as Ward Brothers, and at one point it was the Setag Paper Company, and it may have had different owners and names over the years- I'm not too sure about how long the Wards ran it and if others came in later.

Attached is a photo that shows a little bit of the paper mill at the end of School Street.

Figure 2. Paper mill at the end of School Street, Riverton. Looking northward, Farmington River on right side. Date unknown. Photo: Barkhamsted Historical Society

Recreation and scenic sites

Blue Trails

The Henry Buck Trail is a 2.3 mile loop trail with two trailheads on West River Road. It was named after the civil engineer who directed the construction of Connecticut's CCC camps. Mr. Buck was also a vice-president of the Connecticut Forest and Park Association (CFPA) from 1928-1930. The trail leads from the former CCC camp over steep ledges and back down to West River Road. At one time, it connected to a footbridge over the Farmington River that led to an island. The bridge was later washed out by floods, although the stone abutments are still present. A commemorative plaque, installed in 1935 on a cliff face on the trail, honors Mr. Buck.

The Turkey Vulture Ledges Trail is a 0.4 mile trail that starts on the east side of Legion Road and leads to a vista overlooking the Farmington River Valley.

Austin Hawes Campground

The Hawes Campground has tent sites and six cabins. With frontage on the Farmington River, it is especially popular with fishermen, kayakers and canoeists.

Camp White Youth Group Camping Area

This camping area is on the site of the former CCC Camp White. There is one Adirondack style shelter.

Letterbox

There is a DEEP-sanctioned letterbox on the Henry Buck Trail. The letterbox is maintained by a volunteer. Clues are available at www.ct.gov/deep/letterboxing.

Signs

There are informational signs at the Forestry Field Office at 117 West River Road, at the Camp White Area, and at the Hawes Campground.

Critical Habitat

According to the Natural Diversity Database Review for this management plan, plant species of special concern documented at American Legion include Canada violet, Great-spurred violet, Virginia waterleaf, and One-flower wintergreen.

The following habitats of conservation concern have been documented: Floodplain Forest and Alluvial Grassland/Outcrop.

Wildlife species of concern found on or within the Forest include Broad-winged hawk, Eastern pearlshell, and Jefferson salamander "complex".

Virtually all of these species and habitats occur either on the steep rocky slopes above West River Road, in wetlands, or along the Farmington River. There are no forest management activities proposed for any of these areas.

Natural Areas

There are no State-designated Natural Area Preserves in American Legion.

Old Forestland Management Sites

There are no formal "old forestland management sites". However, the steep slopes rising up from the west side of West River Road will not have any active management and will be left to the forces of nature.

Research Areas

There are no research areas in the Forest.

Miscellaneous

There is a small gravel bank off of Legion Road that provides material for the Forest roads.

E. Extensive Areas of Concern

Trails/signs

The Blue Trails are well marked and maintained by CFPA volunteers. Timber harvesting in these areas may have to be modified as per Department directives.

Wetlands

The only unusual wetlands concern is that sometimes beavers plug the culverts at the south end of Legion Road, causing the road to wash out. This has not occurred in several years.

Unauthorized or illegal activity

There are illegal ATV trails leading into the Forest from private property west of the gasline. The ATV operators use the gasline to enter the Forest. Small trees in the Forest have been illegally cut to make the trails more accessible for the ATVs.

In February, 2014, snowmobile tracks were observed leading from the backyard of 5 Fenn Road into the Forest for some distance, mostly following old skid trails.

F. Wildlife Habitat – DEEP Wildlife (compiled with assistance from Peter Picone)

Investment in habitat improvement

The Wildlife Division periodically mows the old fields at the southern end of the Forest off of Rt. 318.

Existing diversity situation – wetlands, conifers, early succession habitat

Wetlands

There are 16.4 acres of open marsh in the vicinity of Legion Road, and 6.5 acres of marsh west of Rt. 318, for a total of 22.9 acres.

Early Successional Habitat (ESS)

Old fields - there are 3.7 acres off of Rt. 318 and 4.7 acres in Compartment 2.

Hay fields - there are 5.6 acres of hay fields off of Yarmoshuk Road Extension. The Wildlife Division has an agricultural agreement with a farmer to grow hay.

There is also the gasline near the western boundary (2.5 acres). In total, there is approximately 16.5 acres of early successional habitat.

Landscape context – Wildlife Habitat Conditions and Improvement Possibilities

The regional context of a forested area is important when considering strategies for enhancing or protecting wildlife resources. The 1,247 acres of the American Legion State Forest, by its sheer size and location in Connecticut provides habitat to a wide array of species. This predominately forested block adds to the region's biodiversity and ecological processes and services.

Wildlife diversity in American Legion State Forest and the immediate region surrounding it will benefit greatly through the intelligent management of the forest resources. Wildlife diversity can be enhanced through forest management. Research has shown that manipulating tree size-classes promotes wildlife diversity (Scanlon 1992). Being in a heavily forested region of the State, American Legion State Forest is an important area that can provide habitat for interior forest birds, amphibians and reptiles. It also provides habitat for mammals, such as bobcats, black bear, and fisher that are being observed more frequently in this region.

The intelligent and scientific management of the forest resources of American Legion State Forest would have a positive effect on the biological diversity of the region. Wildlife requiring larger tracts of unfragmented forest are already benefiting from this sparsely developed and heavily forested region. More urgent and needed, however, is enhancing habitat through patch cuts and even-aged forest management to benefit listed species that require early successional conditions.

Habitat Management Actions

Improve conditions for early successional habitat wildlife such as ruffed grouse, American woodcock, chestnut-sided warbler, blue-winged warbler, prairie warbler, New England cottontail, eastern towhee, and whippoorwill.

Stands 1-20, 1-21, 1-22, 1-23, and 1-24 would be good areas to increase young forest patches adjacent to existing fields/grasslands near Yarmoshuk Road. Several patch cuts of 5 to 10 acres (25 acres in total) with all stems cut down to a 2-inch diameter should be created in this area to improve early successional forest habitat. A sustainable rotation of small clear cuts (5 to 10 acres) throughout the Forest in 5 to 7 year intervals should be planned, whenever feasible. Establish at least three patch cuts initially totaling 15 acres. Patch cuts are most valuable to early successional species in the 3rd year to the 10th year after establishment. During the course of this plan, Stands 1-4a, 1-6, and 1-7, totaling 18 acres, will be clearcut.

Thin forest edges to create soft edges adjacent to and adjoining existing fields/grassland area near Yarmoshuk Road. This can be accomplished through aggressive cordwood cutting and/or creating patch cuts sharing a border/edge with the fields.

Opportunistically, group selection cuts should be made in mixed forest stands to promote white pine seedling establishment and development. Given the uncertainty of the continuing loss of eastern hemlock due to invasive non-native insect damage, creating young, dense white pine seedling/sapling stands is recommended to attenuate the loss of evergreen cover due to the eastern hemlock decline. Creating dense white pine seedling patches provides beneficial evergreen cover component that

serves as predator avoidance cover for wildlife. Maintain and enhance existing white pine stands through thinnings, seed tree cuts, group selection cuts or other forest management strategies to increase quality patches of white pine throughout the forest. Time forest management activities, whenever feasible, to coincide with good white pine seed crop years to improve seedling development and retention.

When log landings are planned, create small patch cuts of 2 to 3 acres in size. These "larger-than-usual" log landings serve as small herbaceous openings with increases in soft mast species such as Dewberry, Black Raspberry, and Blackberry. Bare soil and/or scarified areas from the logging equipment should be seeded with a conservation mix of grasses and red clover. These areas will help improve wild turkey poult foraging sites for insects, fruits and tender herbaceous plant material.

Daylighting patches of fruit producing shrubs that provide seasonal food sources can be accomplished with group selection cutting or individual tree harvesting. Fleshy fruit is a key food resource for both game and nongame wildlife (Martin et al. 1951). Fruit resources are important for fall migratory songbirds (Wilson 1986) and for resident birds in winter (McCarty et al. 2002, Whitehead 2003). Greenberg et al. (2007) has reported in a study in the Journal of Wildlife Management that land managers can enhance fruit availability for wildlife species by creating or maintaining young stands within forests.

Identify invasive non-native plants in each forest stand and develop management strategies (where practical) to reduce or eliminate their threat to native flora. The identification of invasive non-native species during forest inventories could help in the planning efforts to identify and help curtail the expansion of the detrimental invasive non-natives throughout the Forest.

Wildlife- based Recreation - Hunting and Harvest of Wildlife

American Legion State Forest provides opportunities to harvest small and big game to licensed hunters. This renewable natural resource provides supplemental food and outdoor recreation. Small game hunting could be improved by creating early successional habitats in appropriate and accessible areas.

Spring wild turkey hunting is allowed.

Deer hunting is open to bow and muzzleloader seasons and a no lottery system is in place for shotgun season (Consult a current CT DEEP Hunting and Trapping Guide for details).

The Wildlife Division's district wildlife biologist is available for more specific recommendations upon request.

Literature Cited and additional references

1) Borgmann, K. L., S.F.Pearson, D.J. Levey, and C.H. Greenberg. 2004. Wintering yellow-rumped warblers (Dendroica coronata) track manipulated abundance of Myrica cerifera fruits. Auk 121:74-87.

2) Greenberg, C.H., D.J. Levey, and D. L. Loftis. 2007. Fruit production in mature and recently regenerated forests of the Appalachians. Journal of Wildlife Management 71(2): 321-335; 2007).

3) Martin, A.C., H.S. Zim, and A.L. Nelson. 1951. American wildlife and plants; a guide to wildlife food habits. Dover, New York, New York, USA.

4) McCarty, J. P. , D. J. Levey, C. H. Greenberg, S. Sargent. 2002. Spatial and temporal variation in fruit use by wildlife in a forested landscape. Forest Ecology and Management 164:277-291.

5) Scanlon, J. J. 1992. Managing forests to enhance wildlife diversity in Massachusetts. Northeast Wildlife 49:1-9.

6) Whitehead, M. A. 2003. Seasonal variation in food resource availability and avian communities in four habitat types in the Southern Appalachian Mountains. Dissertation, Clemson University, Clemson, South Carolina, USA.

G. Vegetative Condition

Silviculture

Forest Types by Size Class on Entire Forest (acres)

Forest Types	Size Classes				
	Sapling	Saw	Saw-Pole	Nonforest	Total
Cherry/ash/yellow-poplar		5.2			5.2
Eastern hemlock		261.9			261.9
Eastern White pine		50.5			50.5
Eastern White pine/Eastern hemlock		65.6			65.6
Eastern White pine/northern red oak/white oak		46.9			46.9
grassland - cool season				8.1	8.1
Mixed upland hardwoods		21.3			21.3
Northern red oak		459.7			459.7
Red maple/lowlands	24.0				24.0
Red maple/oak		226.8			226.8
shrubland - invasives	4.7				4.7
shrubland - mixed types	4.4				4.4
Sugar maple/beech/yellow birch		61.8	3.3		65.1
Developed				3.0	3.0
Total	33.1	1199.8	3.3	11.1	1247.4

Figure 3.

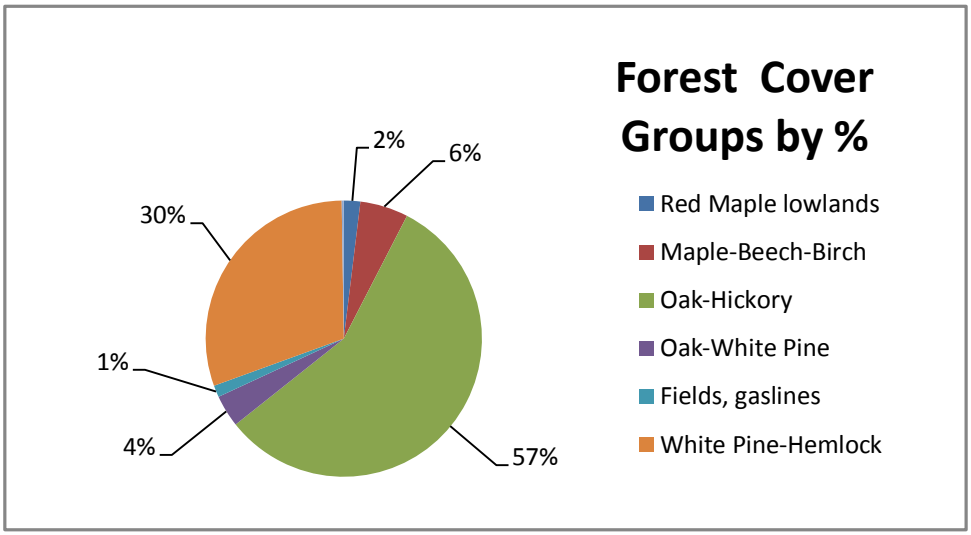

Figure 4.

Forest cover group, size class and condition class on areas to be managed (acres)

Forest Cover Group	Regenerate Clearcut	Regenerate Selection Harvest	Thinning	TSI*	Adequate stocking-allow to grow	Total
Maple-Beech-Birch						
Sawtimber	5	27	0	0	0	32
Sawtimber-pole	0	0	0	3	0	3
Oak-Hickory						
Sawtimber	13	39	160	3	78	293
Oak-Pine						
Sawtimber	0	45	0	0	0	45
White Pine-Hemlock						
Sawtimber	0	157	14	0	100	271
Total	18	268	174	6	178	644

*TSI (timber stand improvement)
Figure 5.

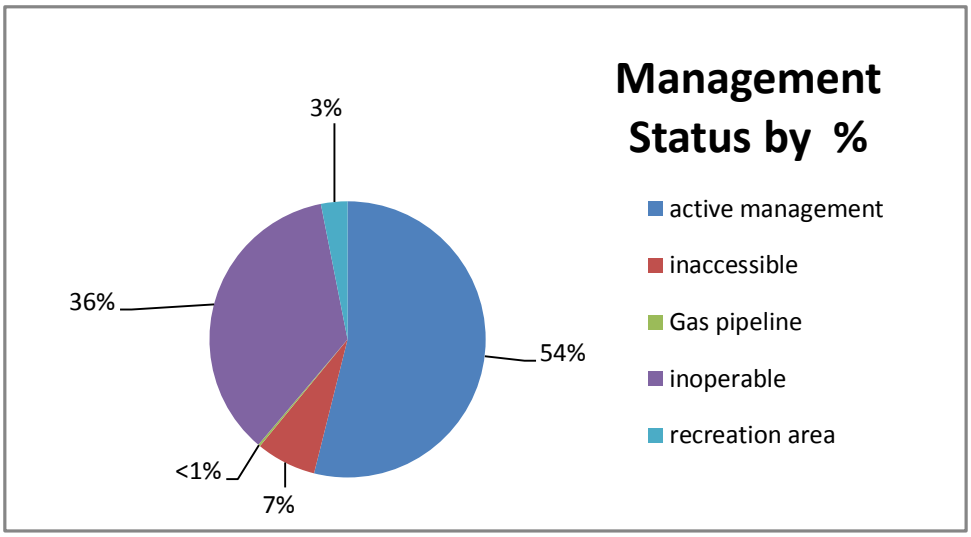

Figure 6.

Forest health

Hemlock woolly adelgid and elongate hemlock scale, both imported insects, are starting to negatively affect the health of the hemlocks. Infested trees have sparse canopies. Beech bark disease has killed or damaged many beech trees. Beech is a significant component of the understory in several stands. Emerald Ash Borer has not been confirmed in this Forest, although it has been found in Massachusetts and in southern Litchfield County. White ash is fairly widespread in this Forest. Some of the best examples are on the rocky slopes above the Henry Buck Trail near Camp White. Nectria canker, a

fungus that disfigures birch stems, is a localized problem but is not a major deterrent to growing birch trees for timber.

Invasive exotic plants are mostly a problem along West River Road, areas near the Hawes Campground, in and around the Field Office and the Senior Center, near the fields off Yarmoshuk Road Extension, and in the fields in the Shaw-Gates Block at the end of School Street in Riverton. Japanese barberry, Oriental bittersweet, and winged euonymous are the primary concerns. Japanese stiltgrass was identified in 2013 along West River Road by Betsy Corrigan, consulting biologist with the Farmington River Coordinating Committee. Japanese hop was identified growing next to the Field Office (it was sprayed).

Invasive plants near proposed timber harvesting sites need to be controlled before opening up the canopy by logging.

The deer population is not an impediment to obtaining desirable regeneration after timber harvests.

H. Landscape Context – Forestry – adjacent land uses

Much of the land adjacent to American Legion is forested, including People's State Forest (3,124 acres to the east, separated by the Farmington River). To the west, there is mostly privately-owned forestland, although a subdivision borders part of the property. Compartment 2 (the Shaw Gates parcel) is bordered to the north by several hundred acres owned by the Metropolitan District Commission.

I. Specific Acquisition Desires

It would be desirable to acquire property at the end of the cul-de-sac off of Bridle Drive on the western side of the Forest. There are two vacant building lots totaling about 5 acres, and a larger parcel of about 113 acres. These lots would provide access to several hundred acres of State Forest.

J. Public Involvement

A copy of this plan was sent to the Barkhamsted and Hartland Conservation Commissions for their review. No comments were received.

K. Adaptive Management

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 insect and disease, 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

American Legion State Forest was acquired to serve as a demonstration area for sound forest management, to provide a sustainable source of timber and cordwood, to offer the public a place for forest recreation, to provide wildlife habitat, and for watershed protection.

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.

Timber will be sustainably harvested to provide diverse wildlife habitat, revenue to the State of Connecticut, and a sustainable source of raw material to the locally-based forest products economy.

Over the long term, 644 acres (54% of the total forested area) will eventually undergo active forest management. 550 acres (46% of the total forested area) will not be actively managed because of poor access, operability, or unique wildlife habitat, and will be left in a "natural" condition.

Even-aged management

Of the 644 acres of forest to be actively managed (this does not include acreage in fields), 268 acres will be managed on an even-aged basis (42% 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.

268 acres/100-year rotation= 2.7 acres per year (27 acres every 10 years) being regenerated on average on a sustainable basis. Some 10-year periods will have more than 27 acres, others will have less.

During the next 10 years, 18 acres will be regenerated using even-aged management.

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 the trees. Thinnings in overstocked stands will provide optimum growing space for the better quality trees.

During the next 10 years, 58 acres will be thinned.

Uneven-aged management

376 acres will be managed on an uneven-aged basis (58% of the total area to be managed). In uneven-aged management, timber harvests will use single tree or 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, such as tulip poplar, although intermediate and shade tolerant species will eventually become most abundant (such as birch, maple, beech, and hemlock).

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.

376 acres/20-year cutting cycle = 19 acres per year (190 acres every 10 years).

During the next 10 years, 166 acres will be treated using uneven-aged management.

Long Term Forest Management Objectives for Wildlife

Uneven-aged Management

Uneven-aged silvicultural methods create favorable habitat conditions for existing wildlife, especially forest interior songbirds. Single tree and group selection harvests will create temporary openings in the forest canopy, allowing more sunlight to penetrate to the forest floor. This improves understory growth, enhancing vertical stratification.

Even-aged Management

Even-aged silvicultural methods create habitat for a variety of wildlife species that are disturbance-dependent and have evolved by using young forest habitat. These include some of the species of greatest conservation need such as blue-winged warblers, chestnut-sided warbler, American woodcock and New England cottontail *(Connecticut's Comprehensive Wildlife Strategy, DEEP 2005)*.

Even-aged management creates young forest conditions in larger patch sizes (10 or more acres). Early successional forest (also known as young forest/seedling-sapling forest) is uncommon statewide *(US Forest Service, 2007)*. Currently, about 5 percent of Connecticut's woodlands are seedling-sapling forest. Patch cuts or clear cuts that create young forest conditions are used by early successional species for about 20 years, after which the patch becomes pole-timber sized.

Additional young forest patches must be created in a timely fashion to replace the original ones as they mature. Creating additional seedling-sapling sized forest in this plan will help reach the long term goal of 10-20% of the acreage in young forest conditions and benefit disturbance-dependent wildlife.

Coarse Woody Material

Keeping or leaving some coarse woody material on the forest floor provides micro-environments for salamanders, reptiles, and insects. It is important not to clear out all woody debris to create a "park-like" understory.

Snag and Den Trees

Generally, the value of a snag increases as its size increases. Three snags of 12-inches in diameter at breast height (dbh) or greater should be left, if available, per acre. All snags should remain in clearcuts if possible and within 100 feet of wetland and riparian zones.

A minimum of one 15-inch dbh or greater den tree should remain per acre. Potential snag and den trees should be left where possible in stands being marked for even- aged and uneven-aged management.

Fisheries

There are no specific recommendations for Fisheries.

M. Work Plans

Road maintenance

All roads will need periodic maintenance, such as trimming overhanging branches, removing fallen trees, mowing roadsides to allow for road grading, cleaning out culverts after leaf fall, clearing drainage ditches, and maintaining water bars. This is the responsibility of the People's Forest management unit.

Road construction, gates, signs

The road at the entrance to Compartment 2 (at the end of School Street) will have a gate installed this summer. The extension of this road into Compartment 2 needs upgrading with gravel to allow access for log trucks for future timber harvests. The parking area at the end of School Street needs to be expanded to provide more room for vehicles to park on State property and not encroach on the neighbor's land.

Maintain signs at the Valley Field Office, the Hawes Campground, Camp White, and at the entrance to Compartment 2 with maps and information on recreational opportunities in the Forest.

Informational signs will be posted at all timber harvest sites explaining the reasons for the cutting.

Boundary marking

Remark all boundaries by the end of 2015.

Stream Improvements

None planned.

Cultural site maintenance

None planned.

Recreation or scenic site work

The pine trees in the Hawes Campground and next to the fishermen's parking on West River Road will be evaluated for their health and possible hazards. There may be potential for including their removal as part of a thinning in Stand 1-8.

Improvement of critical habitat

None planned.

Trail maintenance

It is anticipated that CFPA volunteers will continue to maintain the Henry Buck and the Turkey Vulture Ledges Trail.

Upland wildlife opening work or leasing

The Wildlife Division will mow the old fields west of Rt. 318. The agricultural agreement to mow the fields at the end of Yarmoshuk Road will also continue.

Wildlife habitat improvement

The timber harvests recommended in this plan will enhance the diversity of wildlife habitat.

Wildlife population controls

The Forest will be open to hunting and trapping as per DEEP regulations.

Control of Invasive Exotic Plants

Stands 1-31 and 2-2 will be treated to control invasive exotic plants. This will include selective spraying with herbicides, burning with propane torch, or other mechanical means, perhaps even grazing.

Forest Management (Even-aged)

Stand	Acres	
1-3	3	Thinning
1-8	7	Thinning
1-23	48	Thinning
1-4A	6	Regeneration by clearcut
1-6	5	Regeneration by clearcut
1-7	7	Regeneration by clearcut
Total	**76**	

Forest Management (Uneven-aged)

Stand	Acres	
1-2	21	Selection harvest
1-22	44	Selection harvest
1-25	2	Selection harvest
2-3	90	Selection harvest
2-4	9	Selection harvest
Total	**166**	

Pre-fire suppression work

None planned.

Appendix A -References

References

Some of the references used in creating this plan:

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Appendix B – Glossary

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.

Oak-Hickory: Northern red oak, white oak, hickory: Associates- chestnut oak, black oak, tulip poplar, black birch, red maple.

Oak-Pine: Northern red oak, white oak, chestnut oak, white pine: Associates-black birch, red maple, hemlock

Red Maple Lowlands: Red maple, white ash, elms

White Pine – Hemlock: White pine, hemlock: Associates- Northern red oak, black birch, red maple

Appendix C – A Fisheries Guide to Wadable Streams and Rivers of CT

A Fisheries Guide to Wadable **Streams and Rivers** of Connecticut

by
Neal Hagstrom
Senior Fisheries Biologist

CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION

The Honorable M. Jodi. Rell
Governor of Connecticut

Amey Marrella
Commissioner

Susan Frechette
Deputy Commissioner

William Hyatt
Chief, Bureau of Natural Resources

Peter Aarrestad
Director, Inland Fisheries Division

West Branch Farmington River Drainage

Tributary to: Farmington River
Towns of: Barkhamsted, Colebrook, Hartland, New Hartford

Major Streams:		
West Branch Farmington River	**Stocked, TMA**	
Sandy Brook	**Stocked**	
Still River	**Stocked**	
Slocum River		

Description: The West Branch Farmington River supports one of the premier catch-and-release trout fisheries in New England. It is a large (100+ft wide), cold, cobble-boulder, upland river. Beginning in Otis, Massachusetts, the river flows south 13 miles to enter Connecticut at the upper end of Colebrook River Lake (AKA: Colebrook Reservoir or Colebrook River Reservoir). The river flows 4.5 miles through Colebrook River Lake and then 1.3 miles through the West Branch Reservoir, a second reservoir that is located immediately below Colebrook River Lake. There is a bottom release from the West Branch Reservoir at the James Goodwin Dam, (AKA: Hogback Dam), that creates an 11 mile, cold, free-flowing section of river in Connecticut. Water temperatures immediately below the dam can be 50-55°F in midsummer, with the water gradually warming as the river flows southeast to join the East Branch Farmington River near New Hartford. The single largest source of warmer water in the system is from the Still River that joins the river south of Riverton. During the summer, the flows from the Still are usually low enough that they cause only a slight increase in the West Branch water temperatures, but they do add considerable nutrients to the river. This unusual, regulated river can have consistent cold flows during the summer when the reservoirs are gradually drawn down for hydropower generation. As long as the cold bottom waters are not depleted, the West Branch Farmington will stay cool all summer. Water releases from Otis Reservoir in Massachusetts can change the flow patterns of the West Branch. The need for storm water storage and discharge, hydroelectric generation, and general recreation use, all effect how the river's flows will change. Bottom water releases in the winter help maintain water temperatures in the river at 33-40°F. This helps to prevent anchor ice formation and during most winters will leave the river open for fishing.

Fish Species and Abundance

	West Branch Farmington River	Slocum River
American eel	C	
Atlantic salmon	C	
Blacknose dace	R	R
Brook trout	C	C
Brown trout	A	R
Common shiner		X
Creek chub		R
Cutlip minnow		R
Fallfish	R	R
Longnose dace	A	R
Rainbow trout	A	
Rock bass	R	
Slimy sculpin	R	
Smallmouth bass	R	
Tessellated darter	R	
White sucker	C	R
Yellow perch	R	

A=Abundant, C=Common, R=Rare and X=Present, density not known

There is only light residential development adjacent to most of West Branch's length with large sections protected by either State Forest or water commission lands. The river's southeast direction, moderately deep valleys and long sections of shading forest all help to keep water temperatures cool in the

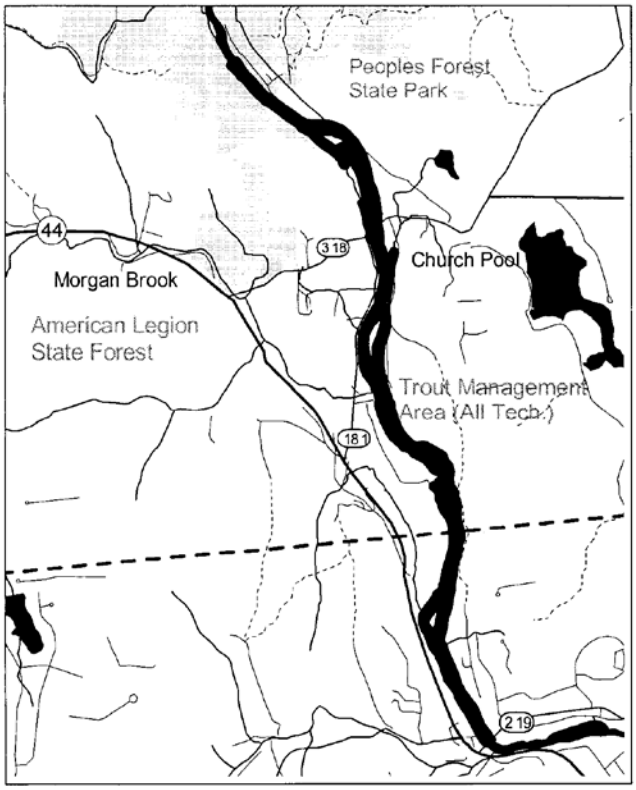
West Branch. The waters are generally colorless. The larger pools in the river, many over 5 ft deep, provide some cover for larger trout; however, there is little overhead structure. There are broad, moderately deep riffles, many are less than 1.5 ft deep. The river braids in some sections forming smaller shallow areas important for juvenile salmonids. See A Fisheries Guide to Lakes and Ponds of Connecticut for detailed descriptions and information on Colebrook and West Branch Reservoirs.

Slocum Brook is a moderate sized (15 ft wide), boulder upland brook that feeds into the eastern side of Colebrook River Lake. This cool, colorless stream is heavily shaded and the portion of the stream in Connecticut is in Metropolitan District Commission (MDC) property.

Fish: The bottom releases at the James Goodwin Dam creates a coldwater, tailrace environment in the West Branch Farmington River. The number of fish species is not very high for this large a stream, but this is to be expected in a cold-water stream (14 species, 11 native). Salmonids, trout and Atlantic salmon, dominate the river's fish population. American eels and Atlantic salmon are the only diadromous fish using the system. Slimy sculpins are most common close to the Hogback Dam, but will be found further downstream during cool summers. An occasional individual warmwater fish will be found in the river. Usually these have been washed out of either the upper reservoirs or from the Still River system. Sometimes rainbow smelt from the reservoirs have been caught in the West Branch during the spring. Slocum River has a moderately diverse coldwater fish population (8 species, 8 native). A cutlip minnow, which are mostly limited to the lower Housatonic and Naugatuck River drainages, was found in Slocum Brook. This specimen most likely was from a bait bucket and no viable population of cutlip minnows exists in the stream. It is likely that Slocum Brook is used as a spawning area for smelt from Colebrook River Lake. **Trout:** Within the TMA, the West Branch Farmington River produces some fast growing wild brown trout and a few brook trout, but the majority of trout present are from hatchery stockings of various size fish. Larger trout, surplus broodstock up to 29 inches, have been found during fall population samples as well as some wild brown trout up to 24 inches. The typical trout is usually a stocked, 11-14 inch brown trout. There are numerous brown trout redds in the TMA in the late fall and consistently low to moderate densities of fast growing wild trout are present in the TMA. Outside the TMA, heavy fishing pressure reduces the number of trout to an occasional wary wild fish or stocked brown trout. **Atlantic Salmon:** Atlantic salmon are presently under restoration in many streams in this drainage. Salmon parr are very common year-round in most of this drainage due to the annual stocking of hatchery-origin fry. Stocked streams in this drainage include: West Branch Farmington River, Morgan Brook, Still River, and Mad River, Indian Meadow Brook, Mill Brook, Colebrook Brook, Sandy Brook, Center Brook, and Howell's Pond Brook.

Fishing and Access: There is year-round trout fishing in the West Branch Farmington River. Anglers do not just fish for 9-12 inch stocked trout, but also have an opportunity to catch larger stocked trout and wild trout that can reach sizes of up to 20+ inches. Trout are stocked several times during the spring, summer and fall from Hogback Dam down to the Farmington River. The river is stocked with over 30,000 trout/yr in the put-and-take sections and 3,800 adult trout/yr in the TMA. In addition the TMA is stocked with 3,000 yearling brown trout.

There is also an American eel fishery, all spring and summer. The eels are used as striped bass bait and for eating (usually smoked). This fishery is a night fishery in pools and requires moderate to heavy tackle.



The West Branch of the Farmington River has a tremendous amount of access. Accessible areas for canoeists and anglers vary from steep rocky trails to flat lawn-like paths. There is even a specially designed handicap access fishing areas within the TMA. Anglers can wade most of the riffles and pool edges or they can fish from the banks. There is room to use both spin and fly gear. This is a great river to fish while canoeing, although the canoeing can be challenging in some sections, especially during high spring flows. Anglers should be cautious about wading at high flows. River height information is available at the U.S. Geological Survey website. The best fly-fishing occurs when river flows are below 500 cfs.

A local fishing club, The Farmington River Anglers Association (FRAA), has produced a guide to the Farmington River that gives detailed information on fishing the river and its access and can be very useful to anglers new to the river.

The following are several areas very popular with anglers. At the corner of Route 20 and Hogback Road is a small parking lot (5-10 cars) that allows canoe launching and fishing access. Upstream along Hogback Road are several pull-offs that anglers use to fish the river through DEP water access areas (see maps). About 0.5 miles north of Route 318 begins the American Legion State Forest on the west side of the River and People State Forest on the east side. There is a popular picnicking area with toilets and a pavilion in People State Forest, located on East River Road about 1 mile from Route 318. A parking fee is charged from May to October at this site. There is a state campground in the American Legion State Forest on West River Road that opens for the beginning of trout season. Within the state forest, there are numerous pull-offs on the river's banks along both East and West River roads where anglers can fish. The "Church pool" is the most famous area in the TMA and is located below the Route 318 "Steel" bridge in Barkhamsted. The area, open to the public by permission of the Metropolitan District Commission (MDC), has a parking lot for 20+ cars close to road and a dirt access road on the west side of the river. The access road leads to a handicap access pier near the lower end of the pool. There is a dirt access road off River Road

(Route181) about 0.25 miles north from Route 44 that will lead anglers into the middle of the TMA (The Greenwoods).

Management: The river sections are managed for either put-and-take or catch-and-release fishing. The West Branch Farmington River Trout Management Area (TMA) consists of a 3.5 mile section of river upstream of the Route 219 Bridge in New Hartford. The upper end of this area is marked by the power line crossing in Peoples State Forest, about 1 mile upstream of the Route 318 bridge in Barkhamsted. The TMA is managed under catch-and-release regulations with a barbless hook gear restriction. This area provides anglers with an opportunity to fish for trout year-round. Catch rates are high and anglers have a high probability of catching trout at any time of the year. Outside the TMA, the river is managed for larger trout and high catch rates. Fewer fish may be kept in these areas then under general state trout regulations because larger trout are stocked and the areas are stocked more frequently. Fisherman should consult the state Angler's Guide for current size, and creel limits. These areas are all stocked with adult size trout, numerous larger, 12-16 inch, trout and surplus brood stock, but are also stocked with numerous small yearling trout that grow quickly in this river. Currently, a trout strain specifically breed for its ability to survive in the Farmington River, is being developed.

Map A - Topographic
American Legion State Forest, Compartments 1 & 2
Barkhamsted and Hartland, CT
Total Acreage: 1247

March 20, 2014

0 1,000 2,000 4,000 Feet

N W E S

Compartment 2

Compartment 1

Legend

- American Legion State Forest
- People's State Forest

Coordinate System: NAD 1983 State Plane Connecticut FIPS 0600 Feet

Projection: Lambert Conformal Conic

Map B - Base Map
American Legion State Forest, Compartment 1
Barkhamsted, CT
Total Acreage:1247; Comp.1 (1,126 acres)

March 20, 2014

N
W E
S

0 600 1,200 2,400
Feet

Winchester
State Hwy 20-Riverton Rd
20
Old Coach Rd
Wallens Hill Rd
Ramsgate Ln
Warner Rd
Greenwoods Rd
Beaver Brook Rd
Beaver Brook
Peoples State Forest
1-32
1 -24
1 -24
1-22
1 -22
1 -21a
1 -27
1 -23
1 -18
1 -19
1 -26
1 -21a
1 -21
1 -21
1-1
Horseshoe Cir
Bridle Dr
Harness Dr
Yarmoshuk Rd
1 -20
1 -5
Legion Rd
1 -2
River Rd
Kings Rd
1 -4
1 -7
1 -15
1 -4a
1 -8
Legion Rd
River Rd
Greenwoods Rd
Barkhamsted
Compartment 1
1 -6
1 -9
Old North Rd
1 -3
1 -10
1 -11
1 -26
1 -14
1 -12
1 -13
West Branch Farmington River
1 -29B
Fenn Dr
1 -29A
1 -28B
1 -28A
1 -28C
1 -31
1 -28D
318
Raymond Dr
Knob Hill Rd
New Hartford Rd
Hickory Rdg
Old Farm Rd
Dew Rd
Morgan Brook
Fancher Rd
Mallory Brook
US Hwy 44
44
West Hill Rd
West Hill Rd

Legend

- American Legion State Forest
- People's State Forest
- Forest Stands

Coordinate System: NAD 1983 State Plane Connecticut FIPS 0600 Feet

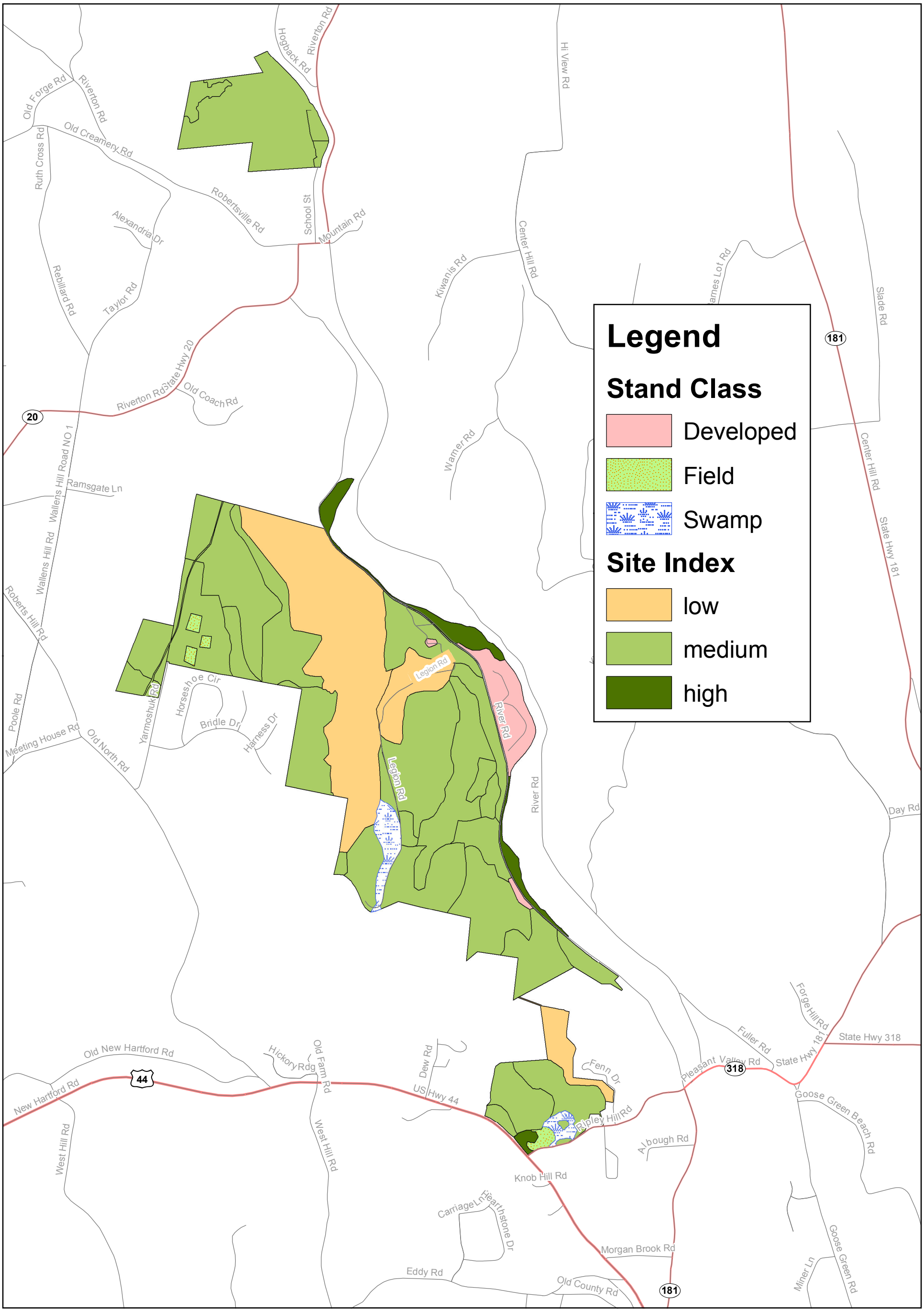
Projection: Lambert Conformal Conic

Map C - Site Quality
American Legion State Forest, Compartments 1 & 2
Barkhamstad and Hartland, CT
Total Acreage: 1247

March 20, 2014

N
W E
S

0 1,000 2,000 4,000
Feet



Coordinate System: NAD 1983 State Plane Connecticut FIPS 0600 Feet

Projection: Lambert Conformal Conic

Map D - Forest Cover Group and Size Class
American Legion State Forest, Compartments 1 & 2

Barkhamsted and Hartland, CT

Total Acreage: 1247

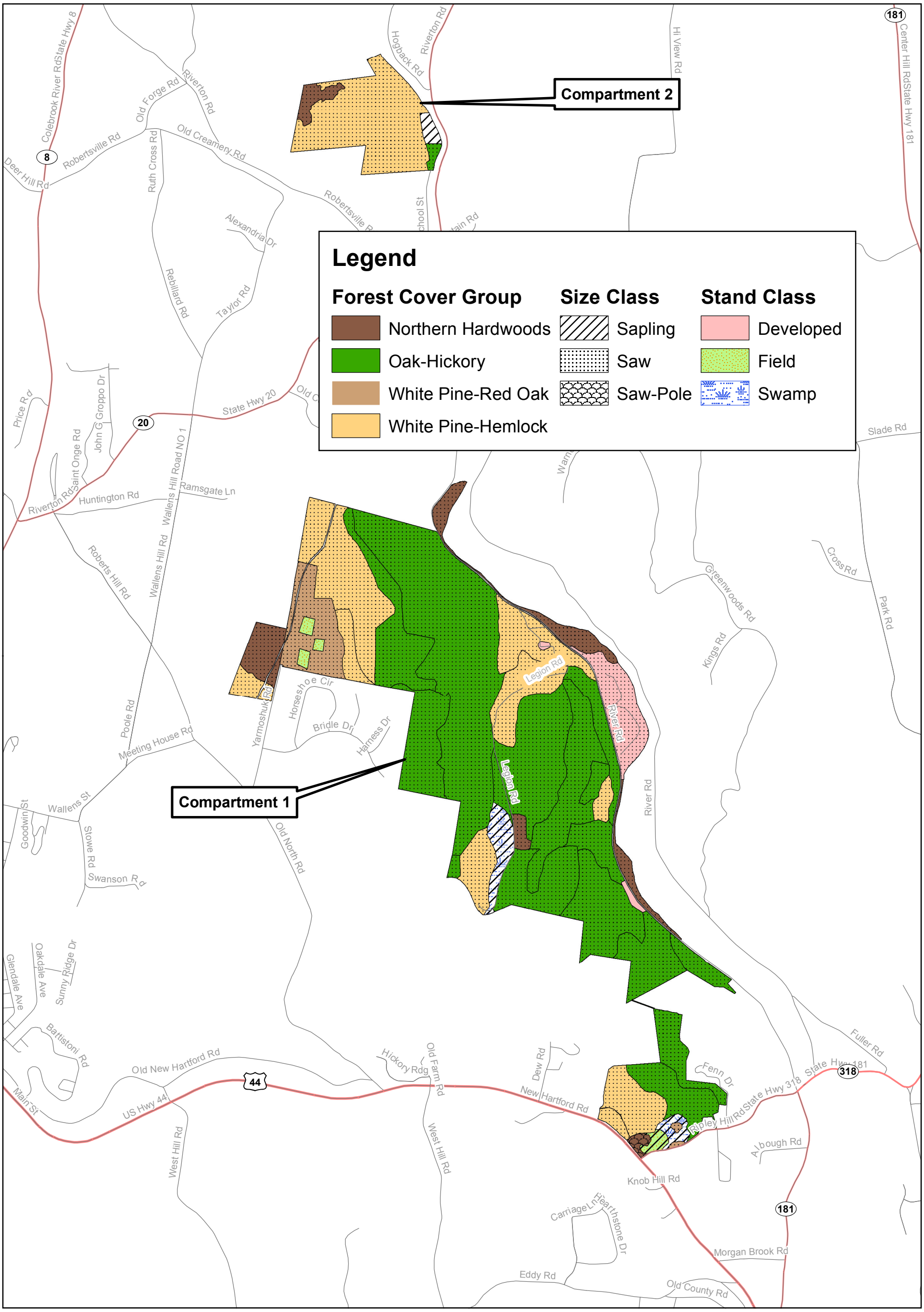
March 20, 2014

N

W E

S

0 1,000 2,000 4,000 Feet



Coordinate System: NAD 1983 State Plane Connecticut FIPS 0600 Feet

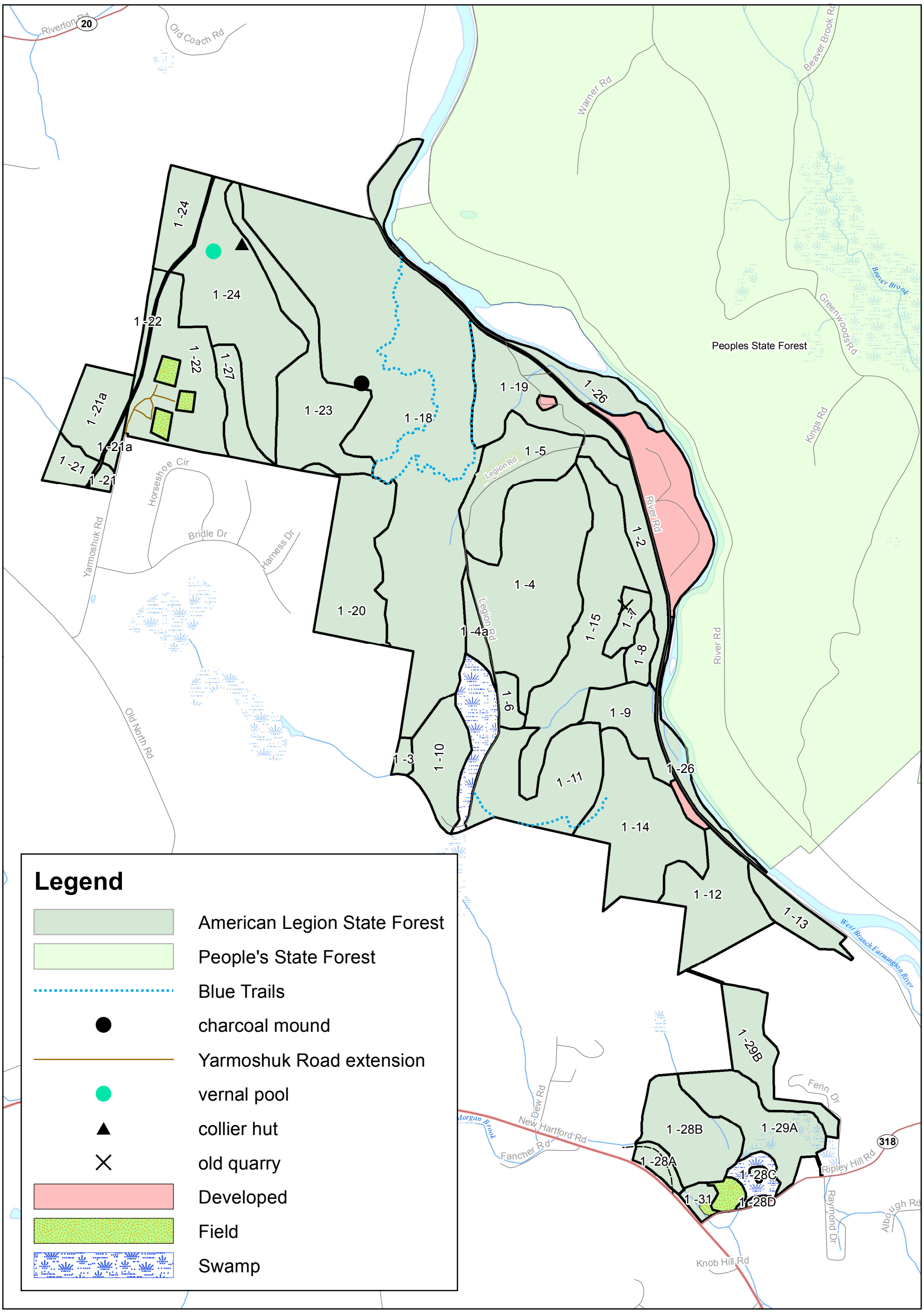
Projection: Lambert Conformal Conic

Map E - Special Features
American Legion State Forest, Compartment 1
Barkhamsted, CT
Total Acreage: 1247; Comp. 1 (1,126 acres)

March 20, 2014

N
W E
S

0 600 1,200 2,400
Feet



Legend

- American Legion State Forest
- People's State Forest
- Blue Trails
- charcoal mound
- Yarmoshuk Road extension
- vernal pool
- collier hut
- old quarry
- Developed
- Field
- Swamp

Coordinate System: NAD 1983 State Plane Connecticut FIPS 0600 Feet

Projection: Lambert Conformal Conic

Map F - Work Plan
American Legion State Forest, Compartments 1 & 2
Barkhamsted and Hartland, CT
Total Acreage: 1247

March 20, 2014

N W E S

0 875 1,750 3,500 Feet

Compartment 2

Compartment 1

Legend

Management Status

- inaccessible
- inoperable
- recreation area

Work Plan

- growing
- clear cut
- selection harvest
- thin
- timber stand improvement

Coordinate System: NAD 1983 State Plane Connecticut FIPS 0600 Feet

Projection: Lambert Conformal Conic