Massachusetts Department of Conservation and Recreation
Bureau of Forest Fire Control and Forestry
Forest Management Proposal
Name: Clam River Dam

Date Posted:	**February 26, 2016**
End of Comment Period:	**April 10, 2016**

West	
Recreation District:	**Lakes**
Forest Management District:	**Southern Berkshires**
State Forest:	**Sandisfield**
Closest Road:	**Beech Plain Rd.**
Town	**Sandisfield**

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Overview:

The Clam River Dam Lot is located in an extensive large block of continuous forestland in the Southern Berkshires that extends from the Mass Pike in the North into Connecticut in the South (See Locus Map). The area is part of a block of more than 15,000 acres of near and abutting protected open space including Otis State Forest, Clam River flood control land, Tolland and Sandisfield State Forest, Mass Audubon sanctuary, MA DFG conservation land, and Berkshire Natural Resource Conservation land. It is in a unique area of Massachusetts that is in a working forest landscape and home to a large variety of flora and fauna. This 130 acre proposed project area is located on the southern end of the 500 acre Clam River Dam parcel of the Otis State Forest and on a portion of the Tiffany parcel of the Sandisfield State Forest. Hammertown Road, which is owned and maintained by the town of Sandisfield, bisects the project area from Cold Springs Road on the north to Rt.57 to the south.

The project will be composed of three separate sale units of forest management. The northern stand will include the area north of the dam and east of the Clam River bordering on Hammertown Road. The middle stand includes acreage that is a part of the Tiffany Lot of Sandisfield State Forest. The third area of proposed treatment is an area of forest that straddles the dam and borders private and town owned forest land on the west and the Clam River to the east. The entire project area will be managed as one timber sale and state lands bordering the town road and dam access road will have all hazard trees removed.

The area was selected for a forest management project because:

- Ash trees make up a significant component of the forest and will most likely perish as the emerald ash borer (EAB) moves into the area.
- There has been no management of the forest since the state acquired the lands around the Clam River and built the dam in the early seventies.
- It offers an excellent opportunity to demonstrate and fulfill objectives for DCR Woodlands.
- There are many potentially dangerous hazard trees along the town road and dam access road and the number of hazard trees is expected to dramatically increase as the EAB spreads.

The Clam River Dam Forest Management Project endeavors to:

- Reduce the number of hazardous trees along the town road, dam access road and along portions of the snowmobile trail.
- Demonstrate silvicultural techniques such as thinning and gap expansion to create and maintain species and structural complexity in an area of multiple forest types.
- Demonstrate harvesting techniques and best management practices that protect forest productivity, soil, and water resources.
- Fulfill management approaches for Woodlands as directed by the Forest Futures Visioning Process (2010) and subsequent Management Guidelines (2012).
- Follow general guidelines of the Southern Berkshires Forest Resource Management Plan.
- Protect against significant white ash loss due to emerald ash borer.
- Prevent proliferation of American beech with beech bark disease complex.
- Accelerate growth of advanced regeneration from previous timber sales.
- Invest timber sale revenue into much needed forest and trail improvements.
- Assist the town with developing a new trail that links Lower Spectacle Pond to existing trail network on BNRC property to the south.

Site Description:

- Topography: The topography is mostly hill sides sloping down towards the Clam River flood control project area (flooded impoundment above the dam or stream below). Total elevation change is approximately 300 feet and slope percentage varies from 10-45%. The highest point of elevation is 1400 feet at the corner of the state land boundary in the south west corner of the treatment area while the lowest point is the Clam River below the dam at approximately 1100 feet. There are isolated areas of steeper slopes and rocks and poorly drained uplands that will not be managed under this proposal.

- Soils: According to the Soil Survey of Berkshire County produced by NRCS in 1988, this area contains four soil associations.

  BmE (Berkshire Marlow) and PmC (Peru Marlow) are the primary soil associations found in the proposal area. These soils are found in a band mid slope between the Clam River wetlands and ridge tops. They are very deep, well drained, upland soils formed from glacial till. Berkshire, Marlow and Peru soils are derived mainly from granite, gneiss and schist. The surface layer of these soils is a sandy loam about 2-3 inches thick followed by a subsoil layer of gravelly loam up to 26 inches deep. The substratum of these soils is very firm sandy loams extending to a depth of 60 inches or more. Most of these soils are used as woodland and productivity is moderate to high for white pine, red oak, and sugar maple on these sites with site indexes in the 65-70 range for these species.

Stand Description:

Stand types across the proposed treatment area are predominantly hardwood and mixed hardwood types with BB (beech birch maple) and HH (hemlock hardwood) covering the proposed treatment area according to the Sewall stand inventory data.

- Species composition: Main overstory species are beech, (Fagus grandifolia), white ash (Fraxinus Americana), black cherry (Prunus serotina), sugar maple (Acer saccarum) and red oak (Quercus rubra) Other species present include black birch (Betula lenta), yellow birch (Betula alleghaniensis), and red maple (Acer rubrum) with some eastern hemlock (Tsuga Canadensis) and white pine (Pinus strobes).

  The shrub/small tree understory is made up of the above tree species along with patches and individuals of serviceberry (Amelanchier arborea), Eastern Hop-Hornbeam (Ostrya virginianana), mountain laurel (Kalmia latifolia), hobblebush (Viburnum alnifolium), striped maple (Acer pennsylvanicum), blueberry and huckleberry (Vaccinium sp.) and witch hazel (Hamamelis virginiana) in wetter areas. The herbaceous layer is dominated by variable densities of fern, including hay-scented fern (Dennstaedtia punctilobula), wood fern (Dryopteris intermedia), Christmas fern (Polystichum acrostichoides) and cinnamon fern (Osmunda cinnamomomea). Typical populations of spring ephemerals including trout lily and red trillium (trillium erectum) spring beauty (Claytonia virginica) are commonly found in the northern hardwood stands. Beech sprouts are a problem throughout much of the forest and, in places, will need to be controlled to avoid a future forest condition where diseased beech dominates.

History, ages and size classes present:

The three stands being treated under this proposal have all had different ownerships before the state acquired the lands resulting in a variety of harvesting on the properties.

The northern most stand (stand 1) was acquired by the Commonweath's Division of Water Resources (now defunct) from Seiberts and Etzel in 1972. The land was acquired through a "taking" for flood control purposes. After the historic 1955 flood many of the tributaries of the west branch of the Farmington River were dammed in order to better control future catastrophic weather events that would send flood waters into the main Farmington River system. The southernmost stand (stand 3) was also acquired in this taking where the Commonwealth acquired 41 acres from John and Mary Yanner. The remaining acreage of the Yanner property was eventually deeded to the town of Sandisfield to be used as a park for all residents. The access road for the back acreage of the Town's Yanner Park is now on state property, and though there is frontage on Town Hill Road to the west, at least half of the Yanner Park property was accessed by this road due to a significant ridge line and wetlands impeding access from Town Hill Road. The town has approached DCR and in the future would like to do some forest management and possibly develop a trail system that utilizes state, town and BNRC property with a trail connecting Lower Spectacle Pond with existing trails in the BNRC tract south of the proposal area. The middle stand (stand 2) has been Commonwealth property since 1926 when the DB Tiffany (now Sandisfield State Forest) lands were acquired and this 75 acre tract was the westernmost extension of that property and has frontage on Beech Plain Road and Hammertown Road.

The upper stand (stand 1) does not appear to have been harvested before the Commonwealth acquired the property and larger hardwoods in this area are upwards of 24 inches in diameter. Smaller growing stock is in the mid 10-16 inch range and smaller growing stock, mostly suppressed beech and hemlock, are 6- 8 inches in size.

The Tiffany parcel (stand 2) has been managed by the state since the early 1900's. The last timber sale on this tract occurred in 1986. The total volume of timber removed was 162,250 board feet on 37 acres, 100,000 of which was white pine, with the remainder being hemlock, ash, red oak, cherry, and black birch. Many small gaps were created during the harvest and much of the younger growing stock that was present then has reached merchantable size in the 12-16 inch diameter class. Natural regeneration of black birch, ash, sugar maple, and cherry has attained significant growth, now 6-8 inches in diameter, in the thirty year period post harvest. There are also some large diameter trees 24 inch and up that were obviously left during the harvest. One species that is absent now, except for a few large specimens, is white pine, which will probably not be a significant component of the stand in the future.

The Yanner (stand 3) property was harvested right before the Commonwealth acquired the property and skid roads and several old log landing areas are still evident. The trees now occupying the site are of varied ages with some ash and sugar maple trees approaching 18-20 inches in diameter and the majority of trees in the mid range of 12-16 inches in diameter. The larger trees were mostly small growing stock not suitable for sawtimber, and probably 20-30

years old, when it was last harvested in 1971-2 making the oldest trees in the stand 65-75 years old

Stand and tree vigor:
Beech bark disease has infected most beech trees, with only an occasional one not showing signs of infestation. Ash has been steadily declining for many years and is now faced with almost certain infestation with emerald ash borer. Experience in other parts of the country has shown that most if not all ash in the infested area will die and there is little or no hope that the insect will not continue spreading. Many trees were impacted by the recent 2008 ice storm. Cherry was particularly impacted by ice damage. Cankers on hardwoods found in the area, which can cause rot and lead to stem breakage, include: black knot (causes cankers on cherries), Nectria canker (black birch), Eutypella canker (sugar maple), Strumella canker (oaks), and Hypoxylon canker (aspen). Hemlocks can be defoliated by two different insects, the hemlock looper, and the wooly adelgid which are both known to be present in the area.

Stocking level:
Stocking levels in general are varied across the proposal landscape depending on previous silvicultural treatments and forest type. There are lower densities of ash and sugar maple in stand 2 then in stand 3 due to their removal in the last harvest. Stand 2 also has more pockets of advanced regeneration that need thinning due to the more recent harvest there. Conversely, some of the forest in the northern stand have moderate to high density levels where basal area is 140-160 sq.ft./acre of large diameter ash and oak. A more accurate account of current stand stocking will be done when the stand inventory is completed.

Summary of existing stands:
The DCR Management Guidelines of 2012 stated that forest stands will be "classed . . . and considered for silvicultural treatments that generally fit their productivity, structural complexity (or potential thereof) and diversity". An analysis of site history (land use; agriculture/logging) and conditions (soil types, productivity; vegetation cover) suggest that the majority of these stands described above have a high soil productivity and forest complexity indicating that uneven age or multiage methods of forest management are appropriate in the stands present in the project area.

Aesthetic, Recreation, Wetlands, Cultural, Rare Species and Wildlife Considerations:

Aesthetic:
This harvest will have a significant amount of frontage on the town road and on the dam access road. Where trees are removed along roadsides several steps will be taken to minimize the aesthetic impact of harvesting here.

- Where possible trees will be felled away from the road
- Slash will be removed within 25 feet of the road edge

- All slash will be lopped to within 2 feet of the ground within 50 feet of the road edge

Recreation:
There are several snowmobile trails that receive sporadic use on the proposed project area. Measures will be taken to keep trails open during any winter harvesting and insure the trail is left in its original condition. No other organized recreational trails or uses are known in the proposal area. A new recreational trail may be constructed during or after the proposed harvest.

Wetlands:
There will be no timber management in regulated wetlands. It is anticipated that there will only be one stream crossing needed for the entire project area. The area in Stand 1 that borders on the banks of the Clam River Lake will be sufficiently buffered as will all regulated water courses.

Cultural Resources:
Stonewalls are mostly found along the perimeter of the forest and are not common within the proposed treatment area. Cellar holes and other stone features found during the stand examination will be appropriately protected.

Rare and Endangered Species:
According to the 13th addition of the Massachusetts Natural Heritage Atlas this proposed sale may contain Priority Habitat of Rare Species and Estimated Habitat of Rare Wildlife. The Clam River above the impoundment contains this habitat. The proposed treatment area does not border the Clam River above the impoundment area. We will need clarification from NHESP.

Wildlife:
The variable topography and species composition of the forest, together with the past harvest history, has resulted in a variety of wildlife habitats and species. Many of the common wildlife species of the Southern Berkshires can be found in the area like black bear, deer, fox, coyote, moose, bobcat and turkey.

The proposed harvest will not significantly adversely affect habitat for most species. Early succession habitat will be slightly increased with the implementation of 1/3 acre openings but not enough to significantly increase this type of habitat. To an increasing extent private and non-profit property owners within the surrounding landscape are taking advantage of state and federal programs to increase this habitat.

Past management and natural disturbance has resulted in an abundance of large cavity trees which will remain for many years. Mortality resulting from natural events will continue to add to the number of available cavity trees.

Sale Layout and Harvesting Limitations:

Areas of hydric soil and small forest seeps will be excluded from the harvest. .The steeper slopes (greater than 35%) contained within the project area will not be harvested. Trees may be individually selected and cabled out of steeper spots but no heavy logging equipment will enter these areas.

Landings and skid roads:
It is anticipated that at least three log landing areas will be used for this project. Two of the three have been used previously and the third will need to be constructed along the road adjacent to stand one. Old skid roads and charcoal roads are found throughout the sale area. Upon further inspection and prior to the completion of tree marking the forester will determine which skid road will be needed to complete the project goals.

Equipment restrictions:
Restrictions on types of equipment used are not anticipated, but sizes of equipment will be restricted to those with 6 psi or less of ground pressure. The lot is probably best suited to a combination of cable skidder and forwarder and a mechanical harvester may be suitable on some of the area.

In-kind services:
Road work to be done through in-kind services will include grading, ditching, adding gravel, and basic erosion control along the dam access road. Additional work done with in-kind services could include tree trimming, trail construction, chemical control of beech or hay-scented fern, and gravel could be provided to the town for the upkeep of Hammertown Road.

Silviculture:

Goals and objectives:
The primary goal is to implement a harvest system that creates a varied and complex stand capable of buffering future disturbance, providing a variety of wildlife habitats, and maintaining the current species, size and genetic diversity and the demonstration of a system which can obtain these goals.

Secondary goals include supporting local wood products industry, salvaging the value of damaged and diseased trees, providing income to the town and to the general fund. Another goal is the establishment of ash regeneration, by retaining most small diameter ash trees, which might survive the expected borer infestation and provide seeds for a future population.

Methods used to accomplish these goals:

The method to be used will be gap-expansion irregular shelterwood system focusing on small group harvests of 1/3 acre or less adjacent to? mature, healthy, full crowned trees to encourage natural regeneration. In some sections of the proposal area specific silviculture techniques will be dictated by density and spacing of the ash trees in the stand. In addition, selective chemical treatment of beech stumps, or a foliar application of beech sprouts, may be necessary to discourage beech from dominating the site.

Short and long term desired conditions: Both the short and long term desired condition is a forest composed of a variety of tree, shrub and herbaceous species, size classes and overstory densities. This forest will have a component of larger trees but will primarily be composed of medium to large trees depending on existing size classes in the stand diameter. Smaller trees, seedlings and saplings will be found throughout the area and in scattered small patches and will provide a variation in vertical structure. The ash component in the stand will be lowered significantly however some ash will be left to insure the species is continued if a control for the emerald ash borer is established in the area

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Future silvicultural treatments:

Future silvicultural treatments will be a continuation of what is being implemented now unless the accepted forestry practices changes for state land management. The implementation of an all age irregular shelterwood system with small group openings should promote a healthy and diverse more resilient forest that can continuously provide sustainable wood products.

District Forester: _____ **Date:** 2/9/16

Field Operations Team Leader
Or Park Supervisor: _____ **Date:** 2-10-16

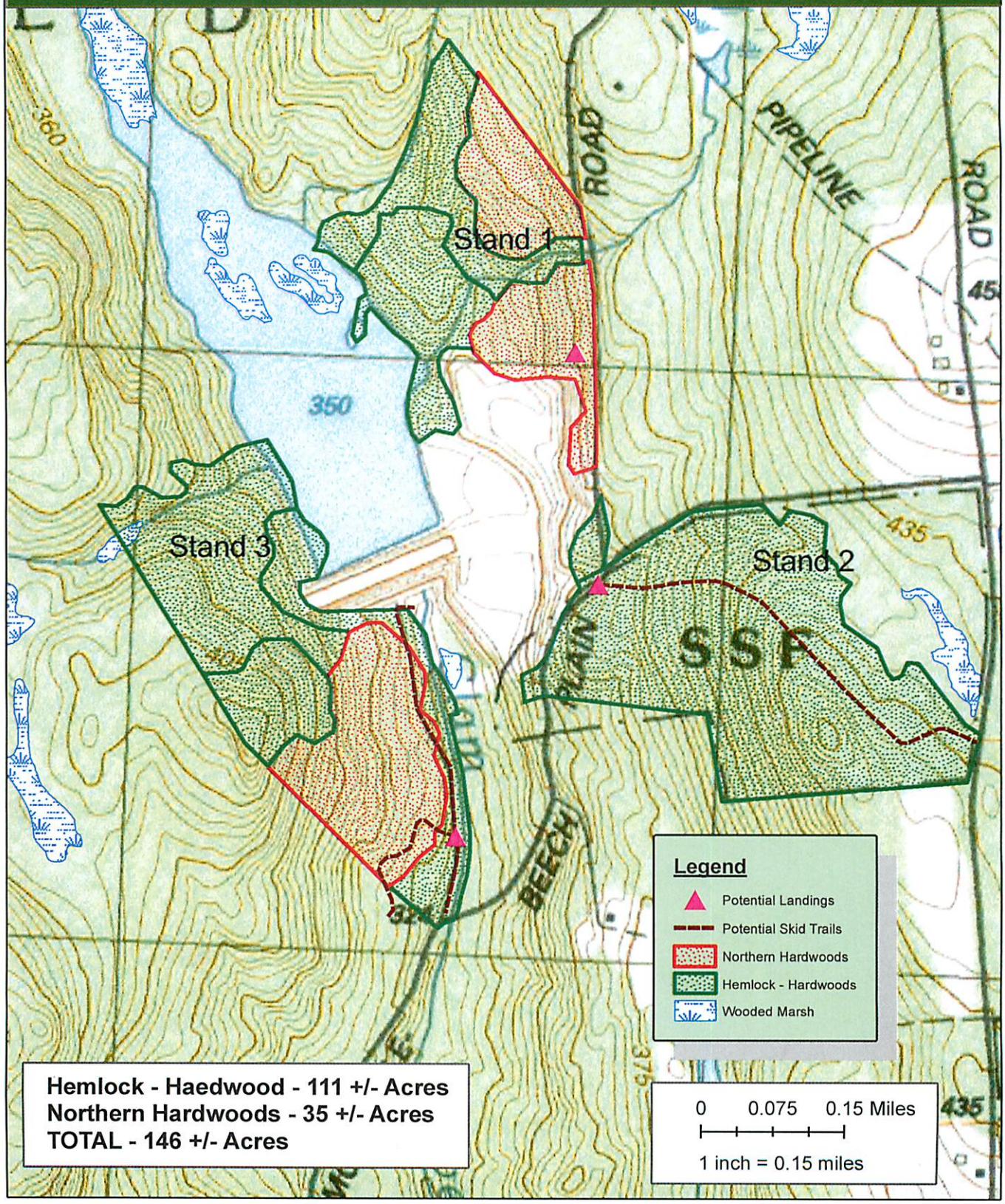
Regional Director: _____ **Date:** 1-29-16

Management Forestry
Program Supervisor: _____ **Date:** 2/16/2016

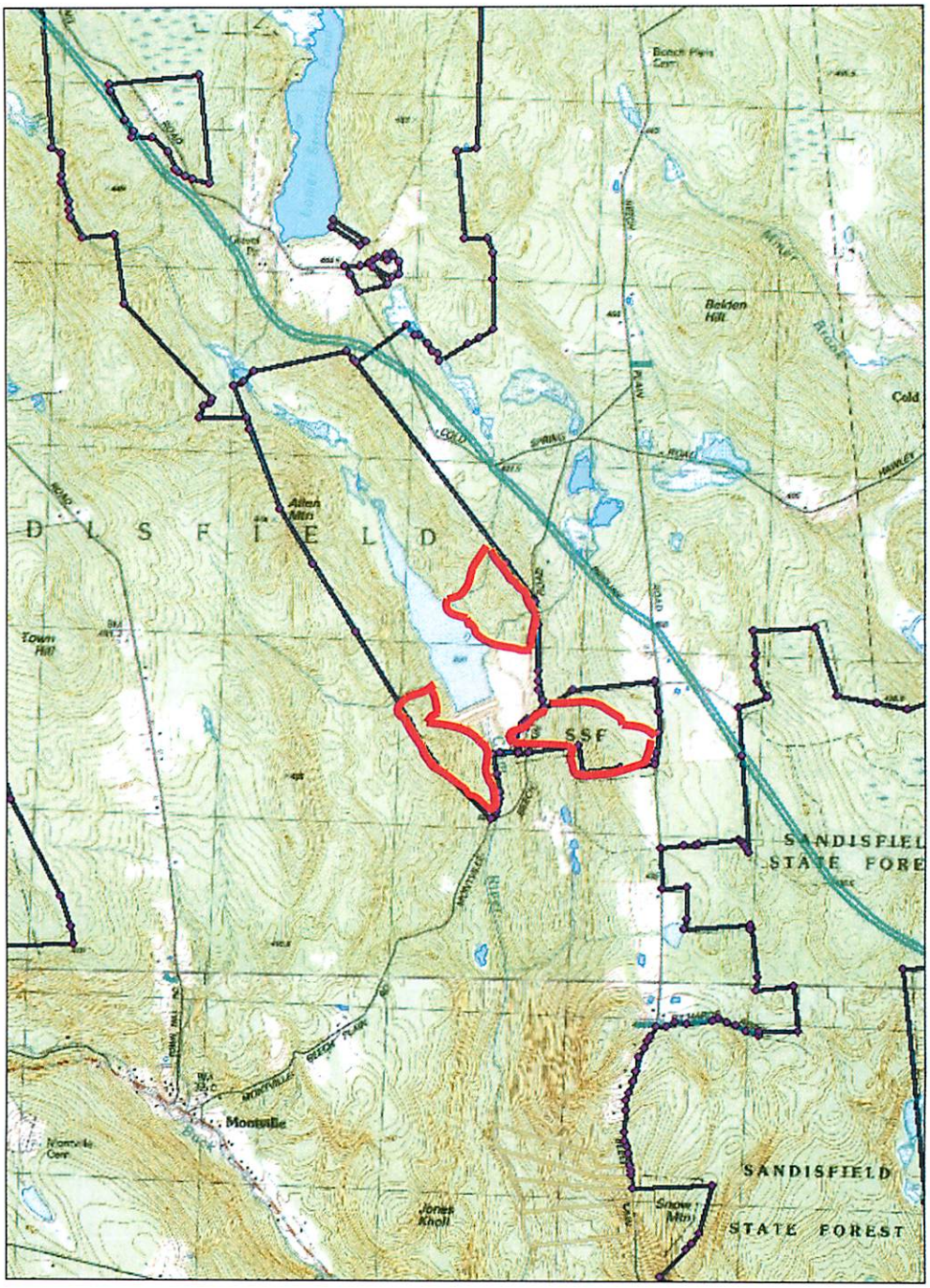
Attached: Topographic map showing project details. Locus map showing project location within regional context.

CLAM DAM TIMBER SALE

Proposed Sale Map



Hemlock - Haedwood - 111 +/- Acres
Northern Hardwoods - 35 +/- Acres
TOTAL - 146 +/- Acres



Locus Map for Proposed Clam River Dam Project
Hammertown Rd., Sandisfield MA