

South Narrows Peninsula Harvest Plan

As recommended in the Forest Management Plan prepared for:

The Kennebec Water District

China | Kennebec County | Maine

Prepared by:

Abigail Bailey LF#4269

and

Jason Tyler LF#3240

Originally Prepared: September 2021

Revision 1: January 2022

Revision 2: April 2024



Comprehensive Land Technologies, Inc.

PO Box 146

South China, Maine 04358

207-445-3151

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GENERAL DESCRIPTION AND SCOPE OF THE PLAN

Kennebec Water District's (KWD) 2019 Forest Management Plan recommends both thinning and partial removal silvicultural treatments on the lands owned by KWD in the China Lake watershed including the area known as the South Peninsula in China, Kennebec County, Maine. This harvest plan encompasses the harvesting recommendations and prescriptions for KWD's forested land on the South Peninsula. The harvest area can be found on the Town of China Tax Map 26 Lot 17. The information and prescriptions provided in this plan are based off the 2019 Forest Management Plan.

LANDOWNER GOALS AND OBJECTIVES

The primary goal of KWD's landownership in the China Lake watershed is to protect and enhance the water quality of China Lake. To this end, KWD's objectives in the development of the 2019 Forest Management Plan, and subsequently this harvest plan, is to actively manage the land and forest in ways that will protect and enhance water quality. KWD will utilize modern, low impact silvicultural practices to selectively harvest timber for the establishment and perpetuation of an uneven aged, mixed species forest. Such a forest is more resilient to environmental stressors, such as drought and pest infestation, than a forest of a single age and/or species. Additionally, mixed age and mixed species forests are more effective buffers for preventing nutrients from entering the lake.

In an effort to realize the objective of an uneven aged, mixed species forest, KWD will conduct periodic timber harvests (as described in this harvest plan). Harvesting teams will follow, and where appropriate exceed, Best Management Practices (BMPs) and applicable silviculture systems that produce and maintain the desired forest composition.

ACCESS

Access to the property for this harvest will be from Clark Road, off Vassalboro Road/Route 32 in China. The Kennebec Water District has an 18-foot-wide easement as it appears on the face of the earth to their property at the end of Clark Road. This access road will be improved to sustain logging equipment and logging trucks. The town portion of the Clark Road will be left in the same or better condition that it is in when the harvest begins. The paved, private portion of the Clark Road will be protected using timber mats. The 2,000 foot off-road portion of the access road will need to be improved. This improvement will consist of manipulating the existing road surface and ditches to facilitate proper drainage and brushing back the road to allow for wood transport and personnel access. These improvements will be temporary and will be done within the footprint of the existing access road to the extent possible. Several of the existing culverts will need to be replaced with more effective and compliant water crossing structures and/or matted over. Although the harvesting and trucking will be done during frozen or dry conditions, importing material to improve portions of the road will be necessary. These improvements will appropriately manage the water to support the transportation of heavy equipment and forest products. Road improvements will be done with an effort to minimize impact and will follow applicable BMPs, making sure water crossings are correctly sized, the banks stabilized, and the flow of direct runoff is diverted away from water bodies or through filter/wooded areas before reaching water bodies. These road improvements will be dependent on frozen or dry conditions and will be modified depending on the present condition when the harvest is conducted. The road will be stabilized and mulched at the close out of the harvest.

LEGAL OBLIGATIONS

The recommended timber harvests on this property will follow all pertinent laws, rules, regulations, and guidelines in the State of Maine as detailed in the *Forestry Rules of Maine 2017 2nd Edition*. The Department of Agriculture, Conservation, and Forestry will be notified prior to timber harvesting by submitting a Forest Operations Notification of Intent to Harvest to the Maine Forest Service.

Timber harvesting activities will be consistent with the *Town of China Land Use Ordinance Chapter 2, Section R—Timber Harvesting, and Section 7—Guidelines for Timber Harvesting in China*. The town of China has their own Shoreland Zoning Standards, and portions of this property fall within the town of China Shoreland Zoning. This zoning ordinance outlines specific restrictions and conditions that will be met when harvesting timber. Consultation with the Town of China Code Enforcement Officer will occur prior to the start of any harvesting. In addition, a separate Notice of Intent to Harvest Timber will be submitted to the town to be approved by the town Code Enforcement Officer.

The Maine Department of Environmental Protection is aware and approves the proposed road improvements and stream/water crossings along the access road for the timber harvesting activity. The Maine Department of Inland Fisheries and Wildlife is also aware of the access road stream/water crossings as well.

There are no clear-cuts under the Maine Forest Practices Act (Maine Forest Service Chapter 20) recommended, nor are any liquidation harvests under Maine Forest Service Chapter 23 recommended in this plan. Other than the access easement to the South Narrows Peninsula, there are no known easements or deed restrictions associated with the property.

HARVEST AREA (APPROXIMATELY 63.5 ACRES)

- South Narrows Peninsula: 63.5 acres of productive forestland
 - South Stand A: 23 acres (softwood)
 - South Stand B: 17 acres (softwood)
 - South Stand C: 23.5 acres (mixed wood)

South Stand A Prescription

South Stand A is almost entirely within the 250 foot Shoreland Zoning buffer. A thinning treatment throughout the diameter range will be conducted to release a larger component of the hardwood species and the young and middle age class trees. The thinning will favor the desirable quality northern red oak and sugar maple trees. The stem exclusion hemlock dominated areas of the stand will benefit from this treatment by improving the growth of the residuals. In areas where advance regeneration is present, desirable species that exhibit high vigor and are of desirable and acceptable quality growing stock should be favored. This thinning treatment will remove no more than 40 percent of the total volume per acre of trees 4.5 inches DBH or greater, and will leave a well-distributed stand of trees per town of China Shoreland Zoning Ordinances. The goal of this thinning is to open the stand up enough to release some intermediate shade tolerant species and promote a more mixed species stand. The removals should focus on the unacceptable quality trees, the mature eastern hemlock, mature northern red oak, and all aspen, fir and paper birch stems to capture their value as several snags are already

present. Removing some of the poor quality and mature stems of northern red oak may promote the establishment of oak saplings and sprouts to meet the goal of shifting toward a more mixed species stand.

This stand should be monitored periodically and reentered in approximately 15–20 years, or in sync with treatments in South Stands B and C. Continuous cover irregular shelterwood establishment cuts are recommended to open the stand up enough to promote the regeneration of new cohorts while maintaining continuous cover to achieve an uneven aged multi-structure stand. The stand should be reevaluated at the end of this planning period and before further management action occurs.

South Stand B Prescription

The eastern white pine in this stand has reached an age where it is economically and ecologically mature and should be perpetuated. A low thinning in the dense stem exclusion pine dominated areas in combination with a crown thinning will be conducted. This thinning will focus on removing the trees competing in the lower canopy classes to capture future mortality from self-thinning or differentiation. It will also focus on removing the lower quality mature pine that show signs of environmental stress and damage, or are lacking straight stems and healthy crowns. Trees that are likely to produce good seed crops will be favored during this thinning. Where hardwood trees such as sugar maple, northern red oak, and red maple are present, a crop tree release thinning is recommended to promote growth and to establish the desired mixed species composition. This stand will be marked to harvest prior to and during harvesting. Treatments will favor trees that exhibit desirable quality and high vigor. This thinning will bring the white pine portions of the stand down to medium stocking which will allow improved growth for the residual stand.

This stand should be monitored periodically and reentered in roughly 15–20 years (or in sync with treatments in South Stand A and C) for single tree and group selection cuts to open the stand up enough to promote the regeneration of new age classes while maintaining patch characteristics of regeneration, young-middle aged trees, and mature trees. The stand should be reevaluated at the end of this planning period and before further management action occurs.

South Stand C Prescription

Approximately half of this stand is within the 250-foot Shoreland Zoning buffer. The past disturbance event (windstorm and salvage harvest in 1995-1996) initiated the desirable structure and the present growing stock of desirable quality and species. It is recommended to maintain this structure through the continuous cover irregular shelterwood system. Patches of young high-quality trees of desirable species such as sugar maple, red maple, eastern white pine, northern red oak, and eastern hemlock will be favored and retained as continuous cover. Establishment gaps will create new age classes through the removal of unacceptable growing stock and the poor quality mature white pine and mature northern red oak. It is important to leave residual trees during these establishment cuts that serve as high vigor growing stock, legacy trees, and those of good seed tree qualities to perpetuate the desirable species composition and structure. This silvicultural system will remove no more than 40 percent of the total volume per acre of trees 4.5 inches DBH or greater, and will leave a well-distributed stand of trees per Town of China Shoreland Zoning Ordinances.

This stand should be monitored periodically and reentered in roughly 15–20 years (or in sync with treatments in South Stand A and B) for additional continuous cover irregular shelterwood establishment

cuts to continue promoting the regeneration of new age classes while maintaining continuous cover and patch characteristics of regeneration, young-middle aged trees, and mature trees. The stand should be reevaluated at the end of this planning period and before further management action occurs.

GENERAL HARVEST PRESCRIPTIONS

In addition to the specific harvest area prescriptions described, the following are additional details that will be incorporated during harvesting activities on the South Narrows Peninsula within the 250-foot Shoreland Zoning buffer:

1. Within 100-feet of the normal high-water mark of China Lake, single-tree selection harvesting methods shall be employed to maintain a crown closure of approximately 65-70% (See Focus Species Forestry: A Guide to Integrating Timber and Biodiversity Management in Maine 2007)
2. No removal of timber will be conducted on steep slopes that will result in destabilization of soils.
3. Thinning treatments will remove no more than 30 percent of the total volume.

Should general harvesting prescriptions conflict with stand specific harvesting prescriptions, the method that results in the least impact will be utilized.

HARVEST/ROAD CLOSEOUT

The road and yard area will be properly closed out at the end of the harvest. All the harvested forest products will be removed, and the yard area will be stabilized. Water bars or water diversions will be created in the road to direct the flow off runoff out of the road and into filter strip/wooded areas. If requested by KWD, some sort of natural roadblock may be used to block off the road or yard area where it enters onto KWD's property. The Clark Road will be left in the same condition than it was prior to the start of the harvest, making improvements at the end of the harvest if necessary.

SITE SPECIFIC INFORMATION

- This harvest will be conducted during frozen conditions. If conditions are not favorable for a harvest under frozen conditions, the work will be postponed until conditions are favorable.
- Due to unpredictable winter weather conditions in the past and likely going forward, a harvest under dry conditions may become a more viable option.
- If the opportunity for a harvest presents itself under dry conditions, this harvest may be conducted during the summer and fall months. The decision and timing of this harvest will be made based on professional experience with timber harvesting activity. The harvest will be conducted when conditions are conducive to support the harvesting equipment and transportation of forest products.
- A timber harvest conducted under dry conditions can be equally effective and responsible as a harvest under frozen conditions. BMPs will still be utilized to prevent and control sedimentation and runoff.
- The property lines in this harvest area were recently (spring/summer 2020) located and marked with pink flagging, brushed, blazed, and painted with blue paint. For high visibility for operators, the property lines will be refreshed with pink flagging along the property line prior to the start of the operation.
- A wood yard will be created in Stand B. This yard will be located in an area that will minimize impact. There area will be subsoiled keeping stumps in place and will minimize major soil disturbance. This yard will be large enough to get a truck and trailer turned around with space to pile wood. The yard

will be on level ground, outside of the 250-foot shoreland zone and away from any streams or wetlands.

- This harvest will be a mechanized cut-to-length operation combined with hand felling the larger diameter trees. Limbs, brush, and treetops will be placed in the trails and tracked on by forwarders.
- Skid trails will remain stable during the operation by adding brush to the trails as necessary.
- In addition to conventional nonpoint source pollution controls, all harvesting equipment will carry spill kits. To achieve the goals and intent of going above and beyond the BMP standards, qualified contactors and licensed foresters at Comprehensive Land Technologies, Inc. will be utilized to conduct and oversee the timber harvesting operation.
- Erosion control berms will be placed along the truck road where there is potential for direct runoff.
- Trees to harvest may be marked with blue paint prior to and during the operation.
- Caution will be taken when harvesting within fifty yards of the water for historical and archeological reasons. If any evidence of Native American (prehistoric) archeology is found, MHPC will be contacted. In efforts to preserve the old stone walls and cellar holes found on the property, trees that are growing up within the cellar hole or within the stone walls will be removed (where possible without further damaging the structure). Removing these trees will help preserve and prevent the structures from being destroyed by new growth.

Appendix 1: Forest Stand Type Map

