

Woodlot Management Plan #1

2010 to 2015

License W1957

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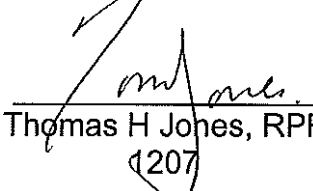
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Woodlot
Management Plan

Licence# W1957

March 1 2010 to March 1, 2015

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Limited
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1.0 PREFACE

This Management Plan is the first management plan for Woodlot W1957 which was identified for the Pacheedaht First Nation subsequent to the signing of a Forest and Range Agreement in May of 2005. This plan outlines the philosophy and stand management regimes that Pacheedaht will apply to this woodlot.

The area of the woodlot has significance to the Pacheedaht. It is in an area near to spiritual sites, historic food fishery sites, and sites where old growth cedar was harvested for canoe and village resources and is on the large river that flows through past and current village sites.

2.0 LICENCE AREA DESCRIPTION

2.1 Licensee

The holder of Wood Lot License W1957 is Pacheedaht Forestry Ltd.(PFL)

2.2 Location

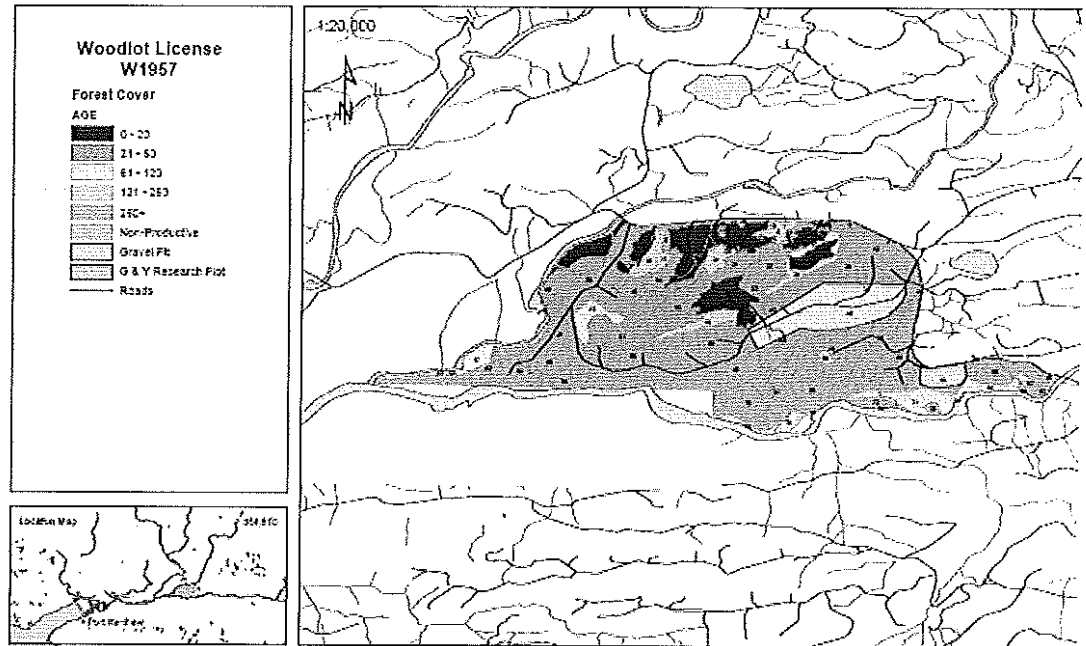
2.2.1 Description

The area of the woodlot is roughly a triangle, bounded on one side by Lens Creek, on another by the San Juan River, and by the Lens/Bear Mainline on the third side. The area of the woodlot is approximately 399 hectares. The woodlot is within the traditional territory of the Pacheedaht First Nation.

Adjacent to the San Juan River and the Woodlot boundary are small sections of private land that are orphaned from the south side of the river due to the straight line nature of the old land boundaries. These small slivers of private land present a potential trespass risk. Pacheedaht have discussed managing this area with TimberWest (the current owner) and will initialize further discussion once active in the woodlot.

2.2.2 Location Key Maps

The following key map shows the location of the woodlot.



2.3 Features

2.3.1 Terrain

The elevation of the woodlot is less than 100 meters above sea level. It is generally flat to gently rolling. However, being near major rivers and tributaries there are numerous terraces and remnant river banks characterized by short but steep slopes. Pixie Creek is contained within a major gully that cuts through the Woodlot.

2.3.2 Soils

The soils are out washed sands and gravels over till with frequent deposits of silts and clays related to deposition and erosion patterns of the San Juan River, Pixie, and Lens Creeks since glaciation. This has resulted in scattered wet areas of imperfect drainage.

2.3.3 Water

There are four fish bearing streams (Lens, San Juan, and Pixie being the main ones) within or adjacent to the woodlot area and several short intermittent streams draining the area. There are several small swamps and wet areas due to perched water tables associated with silt and clay deposits

2.3.4 Wildlife

Animals and birds which prey or scavenge on salmon frequent this area. Elk use the river corridor and old rail road grades for travel. There is a resident black bear in the Pixie gully.

2.3.5 Plants

The area is predominantly naturally regenerated 2nd growth forest. The bulk of the stands are 45 to 55 years old. The major species of trees are Western hemlock, Douglas fir (both planted and from seed), cedar (mostly co dominant or as an under story), and scattered patches of alder associated with the streams or wet imperfectly drained areas. The site soil moisture is variable and so the vegetation also ranges from salal to deer and sword fern, and in the wetter locations salmon berry with inclusions of skunk cabbage.

2.3.6 Recreation

The woodlot is not a high use recreation area, as users are attracted to the nearby campsites at Lizard and Fairy Lakes. There is however a user made campsite at the Lens Cr Bridge and a Forest Service campsite is located immediately upstream of the San Juan Bridge. Both are outside the boundaries of the woodlot. It is anticipated that as the woodlot is developed and access is improved it will experience increased use as a walking and access to seasonal fishing areas along the San Juan.

2.4 Ecosystem Classification

The entire area of the woodlot is contained within the CWHvm1 BEC variant. The area experiences very mild temperatures, copious winter rains, no snow pack and infrequent short duration snow events. There is a long growing season and no seasonal moisture deficit over most of the area. Moisture / nutrient regimes are variable due to soil substrates so a range of tree species can be grown. Ecologically sound forest management will consider the specific site types for species selection, stocking targets, vegetation, and stand and pest management. This woodlot will be managed with a bias towards cedar and Douglas fir where it is appropriate to the site. Site series 09 represented by "high bench flood plain" is a red listed site series in the CWHvm1 BEC variant. This site series may exist in small amounts adjacent and upstream of the San Juan and Pixie Cr confluence. Ground proofing will be done during the development of Woodlot Licence Plan and identified at that time for conservation measures.

2.5 Higher Level Plans

The management of this woodlot will be in compliance with the Vancouver Island Land Use Plan. The San Juan Landscape Unit of the Renfrew Aggregate Landscape Unit plan encompasses Woodlot 1957. The landscape unit is rated as an intermediated Biological Emphasis Option. The rate and scale of development on the woodlot is compatible with this designation. Woodlot are exempt from the non spatial old growth order. The woodlot, however, will eventually provide a range of habitat through all seral stages. The old growth component will evolve within the areas designated for the management for cultural cedar.

3.0 MANAGEMENT GOALS

3.1 Forestry

The over arching objective of managing the forest resource on this woodlot will be to optimize the long term sustainable cash flow to the Pacheedaht. This will be done within the constraints of protecting and conserving other identified resource, social, and environmental values.

- 3.1.1 Locate suitable sites and initiate management and cutting regimes that will manage forests on an uneven aged basis, with the objective of a final cut of large cedar suitable for cultural use. The area under this type of management will not exceed 15% of the Woodlot area unless there is also an economic justification for expanding this type of management.
- 3.1.2 Identify and manage for a supply of accessible building materials suitable to create and maintain Pacheedaht community cultural and communal structures (e.g. cultural centre, carving shed, smoke houses, canoe sheds, docks)
- 3.1.3 Where ecologically suitable, employ management regimes that will shift final crop stocking in favour of final cuts of cedar / fir.
- 3.1.4 Due to the young stand ages, develop a positive cash flow from a mixture of the selection cuts that set up objective 3.1.3 and small clear cuts in stands that are larger and more openly spaced. Pre sell logs as much as possible by seeking out niches that small scale but specific volumes can take advantage of and avoid solely producing commodity logs.

3.2 Education/Training

- Mentor and train a band member(s) to acquire the skills and experience that would permit them to manage all aspects of the woodlot inclusive of the planning, reporting, layout, harvest supervision, reforestation, and stand management.
- In conjunction with the forest harvesting and stand tending phases, foster band member skills development and knowledge through mentoring and training,
- Expand the general knowledge of band members and leaders regarding forest management and encourage the setting of management objectives to grow products that can be used in the village.

3.3 Traditional Use

Asses the woodlot for its potential contribution of resources for PFN traditional uses. Due to the finite size of the woodlot, coordinate those uses that could potentially damage the timber resources with harvesting.

(E.g. bark stripping to proceed on areas the spring prior to harvest). Develop management regimes and plans that will grow a small continuous supply of large cedar for future Pacheedaht cultural use.

4.0 FOREST MANAGEMENT

4.1 Silviculture Systems

Stands are young and of variable density and species composition. This gives a wide range of management options with which to plan intermediate cuts that will affect interim cash flows and stand species compositions. There are areas of old dense plantations with dominant fir. It is anticipated that stocking control through interim harvest will manage these stands to a larger final piece size and a less rough final product. Small portions of the woodlot that are Site index 30 or better and currently supporting a cedar component will be managed to grow a supply of cedar 3 to 5 foot diameter suitable for future Pacheedaht cultural use. These future cultural cedar areas will be a combination of dense stands on areas of good trafficability or in existing timbered areas of high water table and low stocking levels. Cedar usually is a co dominant or intermediate tree at this time.

4.1.1 Individual Tree Harvesting (ITH)

This is not a true silviculture system as it must adopt another system to regenerate the stand. However it provides for the economic use of all stems present on site over time and fits the cash flow objectives of small holdings such as this license. Larger trees are harvested to remove 15% of the standing volume every 5 years. This gradually thins the stand resulting in a slow release of the co-dominant and intermediate tree component over time. A fully stocked stand is maintained at all times. Stands slowly evolve to a state where a regeneration cut is required (clearcut, patch or group selection cut). This system will be implemented:

- In stands that have a dominant component of Hemlock and a well stocked intermediate component of Cw and Fdc.
- Dense single species stands with a variable or small piece size.
- Stands within sensitive zones. E.g. RMA, visual, research buffers.

4.1.2 Group Selection

This system involves clearcutting all trees in a small area that is usually less than 2 tree heights across. This will provide enough light to successfully restock cedar and fir through planting. This

will be the preferred system for regenerating the ITH system, and converting alder clumps to conifer. This system will also be initially used in the area chosen to grow uneven aged old growth Cw and to convert clumps of hemlock to cw

4.1.3 Single Tree Uneven Aged

This system cuts trees in all diameter and age classes to maintain a diverse multi layered stand that is self sustaining and balanced through the diameter classes. The stands selected to grow a final crop of large old growth cedar will primarily utilize this system once a significant component of dominant cedar is established through ITH and group selection cutting and restocking. Regeneration cuts may be required if hemlock dominates the regenerating layer and not Cw.

4.1.4 Clear Cut with Reserves

This system cuts most trees within an area greater than that defined for the group selection cut. It creates an area that receives full sunlight and is suitable for regenerating shade intolerant species (Douglas fir and alder). It is also suitable for regeneration cuts where the stand is uniformly the size and species of our intended end product. Such cuts will be followed up immediately with planting. Portions of the stand can be left uncut for specified management reasons (visual or wildlife)

4.1.5 Hardwood Management

Small areas within the woodlot are currently growing alder and are best suited to growing alder crops. These are in riparian areas and wet seepage sites. On these types of sites, it is the intention to create mixed stands of alder and cedar. Cedar will be established on the raised micro sites and managed through rotations of alder to develop a portion of the large cedar component desired by Pacheedaht for cultural purposes as per management objectives 3.1.1 and 3.3. On these sites the management focus and final crop are large monumental cedar and the alder will be managed opportunistically for cash flow and to manage cedar tree form. On other sites alder will also be accepted to comprise up to 10% of the crop tree stocking on sites suited to its growth and will be managed as a crop tree along with the other stocking. The conifer stocking will determine the cutting age of these stands.

4.2 Products

Values of products fluctuate over time and will be monitored. Order files will be secured prior to harvesting and suitable products cut and sold to meet these order files. Unless pulp log prices significantly increase, a

harvest strategy will be initiated that minimizes the amount of pulp produced by deferring the incidental harvest of small diameter stems on all except the clear cut areas. It is our intention to sell log products to local mills in the Sooke - Renfrew and the Cowichan Valley providing that the net return is at least equivalent to delivering to more distant markets. The added trucking costs of hauling to distant markets should give local users a price advantage.

Concurrent with harvesting, we will explore the strategic use of a near by Pacheedaht labour source and local knowledge to test seasonal markets for the collection and sale of cedar boughs and bark and other traditional or non traditional forest products. These practices would be scheduled ahead of harvesting and road development.

4.3 Harvesting Priorities

There will be a need to offset significant upfront costs associated with road development, culvert repairs, and stream crossings. For this reason the initial harvest priorities below balance value and the potential for imminent loss of stems:

- a mix of high value stems through implementation of either individual tree harvesting or group selection and small clearcuts to produce cash flow
- lower value stems associated with the recovery of damaged or damage pending stems as a result of wind, snow, and/or disease.

- alder stands older than 50 years,

- merchantable alder stems overtopped by conifer

- younger merchantable alder stands if they are showing signs of breaking up (dead tops, toppling, excessive snow damage)

- on trafficable sites, stands with variable sized trees where higher value species (Cw, Fir) are in intermediate or suppressed crown classes and are losing vigour and are in danger of dying over the next several decades due to suppression, dominant lower value species stems and some higher value species stems will be harvested through ITH. This will retain and grow on the current intermediate suppressed crown class of fir/cedar stems.

4.4 Harvesting Methods

Harvesting will be carried out in compliance with the pertinent regulations that govern harvesting within Woodlots.

The season of harvesting operations will be guided by site specific and climatic conditions with the end result being harvesting that limits site

disturbance to that prescribed and minimizes stand damage and ensures it is within required limits.

4.4.1 Falling

Due to the scale of operations only hand falling is anticipated to be utilized. This phase is key to the selective cuts as it must minimize stand damage and set up the efficiency of subsequent logging phases.

4.4.2 Forwarding

Forwarding is the process of moving felled trees from the stump to the place where they will be loaded onto trucks. This is the phase where stand and site damage is most likely to occur and the desired impacts must be planned for.

All ground skidding, whether by wheeled or tracked skidders will be along designated skid trails followed by the mechanical rehabilitation of those trails that will not be used again. Hoe chucking is viable on most sites within the woodlot and where suited to the silviculture system may be utilized.

Cable systems will be considered when no other practicable method is appropriate to the site and net timber values support this more expensive system. This may be over ridden if PFN deem there are compensating social benefits through the employment of band members for this more labour intensive process.

4.5 Cruising, Scaling, and Residue and Waste Control

Currently timber cruising and appraisals are not required, as harvested wood is valued as per tabular rates. Scaling of harvested timber will be done by a licensed scaler in accordance with the regulations.

Within fourteen days of completion of primary harvest of a block, the licensee will notify the Ministry of Forests. Depending on the outcome of a visual inspection the licensee will not perform a waste and residue survey. However if visual inspection indicates that utilization may not be acceptable the District Manager may cause a survey to be done and depending on its outcome monetary and/or cut control billings may follow.

4.6 Reforestation and Management to Free Growing

The licensee will ensure that a free growing stand is achieved within approved time frames for all areas cut. The area will be restocked with both planted trees and trees that have germinated from on site seed. Brushing treatments may be prescribed to assure the vigor of crop trees and their subsequent attainment of free growing.

4.6.1 Planting

On areas clear cut or patch cut there will be a heavy reliance on planting to regenerate a base stocking of cedar and/or fir. The densities will vary and be based on ecological and micro site specific suitability. Initial planting seedling size will be dictated by the richness of the site and the anticipated brush competition.

4.6.2 Natural Regeneration

Natural regeneration of varying densities of balsam (Ba), cedar (cw), hemlock (hw), and/or alder (dr) is anticipated over most disturbed sites and will augment plantation densities. Natural regeneration will also be encouraged and is expected to play a roll on those areas managed as uneven aged stands or those stands with extended rotations to meet cultural cedar objectives.

5.0 OTHER RESOURCE MANAGEMENT

5.1 Soil Management

5.1.1 Gravel and Sand Extraction

The Department of Highways has established a 26 hectare aggregate reserve to supply their needs for highway sanding. Portions of the aggregate reserve include well stocked 50 year old Fir hemlock stands on SI 35 land. Preliminary discussions with highways indicates that their rate of pit development will be slow so initial yields may not be affected within these areas. Depending on stand structures this may also be a good candidate for the ITH harvest strategy so as to avoid creating clear cuts and immature stands that may eventually be at risk of destruction as pits are developed prior to maturity. If Highways proceeds and significant areas are affected, the woodlot holder will make application for the addition of adjacent land to offset the significant potential loss in m.a.i. that this area represents.

5.1.2 Terrain Stability

The area of the woodlot is generally flat to gently rolling. A steep gully containing Pixie Creek physically separates the eastern third of the woodlot. There is good road access to both sides of the Pixie Creek gully. There are 3 observed old wooden culvert failures along the old rail grade. One resulted in significant site disturbance. There may be some additional existing old culverts with the potential to plug and fail contained within the woodlot. These will be located during ongoing field reviews of old and existing roads and repaired or removed using FIA or other external funding sources. If the failing structures are within or on the way to proposed harvest area they will be replaced as part of the development costs.

5.1.3 Soil Conservation

The act, regulations, and standards will be adhered to with regards to the protection of the soil resource. Soil disturbance within the net area to be reforested (NAR) will be minimized through the establishment of a well defined road and trail system. Soil moisture will be monitored and sensitive soils whose structure could potentially be damaged by the prescribed harvest system in high soil moisture periods will be deferred and harvested in drier soil conditions.

Cleared road right of ways will be kept as narrow as safety and operations permit. Optimum will be a 7m ROW and a 4 m running surface. Permanent access structures will be managed so as not to exceed 7% of the woodlot area.

5.2 Water Management

5.2.1 Wetlands and streams

The woodlot is bordered by fish streams, Lens on the West and San Juan on the South. Pixie creek, a fish stream also cuts through the woodlot. Several short streams flowing into the San Juan and Lens are potential fish streams. Wet areas and unclassified water courses exist within the Woodlot area and will be field reviewed by PFN fisheries department to verify the extent of fish use.

5.2.2 Streamside Operations

No deleterious substance (silt, logging debris, or contaminants) will be deposited into a creek or placed where one would expect normal erosion and climatic factors may cause the substance to enter a water system. To assure this the following measures will be implemented:

- Suspend yarding with ground based equipment in wet conditions on saturated soils.
- Fall and yard logs in such a way as to assure the same physical integrity and function of all stream banks as pre-existed the harvesting.
- Remove inadvertently introduced fine logging or spacing debris from creek channels
- Establish proper stream crossings for roads (culverts, bridges) and trails(culverts, puncheon)
- No refueling or parking of machinery within the RMA of a stream.
- New roads and trails will be built so as not to channel running water on their surface or in their ditch line.
- Where disturbance may result in the potential for erosion, seeding will occur to revegetate the surface.
- Roads will be patrolled subsequent to storm events and periodically to monitor road conditions and to ensure beaver or other processes have not impinged on roads or plugged culverts.

5.2.3 Water Management

Both quantity and quality of water flowing from the woodlot will be maintained. There are no known licensed water intakes on the woodlot. Unless prohibitively expensive, all brush management work will be mechanical. Herbicides are not anticipated to be used. Old rights of way of non status roads will be reviewed and potential environmental liabilities will be identified and reported.

5.3 Wildlife Management

The woodlot, due to the small rate of cut and the anticipated multi age approach on portions of the license, will function as a treed area with small openings. As such the area will not negatively impact wildlife use and will be more diverse at the micro scale than adjacent tenures

5.3.1 Raptors

Major salmon streams border the woodlot. To facilitate raptor use of the area bordering the streams, a component of potential roost and nest trees will be identified and left uncut within Riparian Management areas to mature and develop into trees suited for raptor use.

5.4 Biological Diversity

There are currently a few large (10 to 30 ha) regenerating clear cuts within the woodlot. The remainder is a uniformly dense forest canopy interspersed with linear, open canopied, high water table areas. Biological diversity will evolve over time through frequent small crown openings as stands are selectively cut in the areas identified for single stem removal to create multi-aged stands. In this process coarse woody debris as stumps, tops and branches will be uniformly distributed through the stand. As stands age and increase in value patch cuts and small clear cuts will be prescribed and these will add forest edge diversity and small openings. Coarse woody debris will be concentrated initially as slash, stumps, and tops as well as the deliberate leaving of 4 logs per hectare >5 meters long and 30 cm in diameter. Slash that could inhibit restocking or layer a roadside load out area will be piled in small piles and left as habitat and coarse woody debris. Those piles that are in the way of future work will be burnt or otherwise disposed of. Wildlife tree patches will be located within the Pixie Creek, Lens, and /or San Juan RMA and will approximate 6% of the woodlot area. The other wildlife tree functions will be provided by the evolving old growth cedar being grown on extended rotations for cultural purposes and the raptor trees and other leave trees to be left within cutting areas.

5.6 Trapping and Guiding

5.7 Landscape Management

5.7.1 Landscape Inventory

The area of the Woodlot was previously part of TFL 46 and as a scenic area it was coded as part of Zone 2 and rated as Moderate Visibility. As this area is flat to gently rolling, very little of the woodlot is visible from the Lens mainline until the vehicle has climbed up and is approaching Lens Canyon. At this point the woodlot is several kilometers distance. Timber West owns this land and maintains a gate system to limit public access. We do not expect many of the public to travel this way. The majority of

the traffic will travel the recently created Circle Route highway which travels the Harris Mainline turning inland a kilometer before reaching the woodlot.

5.7.2 Visual Quality Strategy

The small scale of operation on the woodlot will contrast with the adjacent larger tenure holders. As 1.8 km of the approximately 3 km of mainline frontage was harvested in the last 4 years under the previous tenure, any operations along the mainline will be a very small scale or be a partial cut silviculture system. This will continue until such time as visuals from the mainline are reduced by the height of the evolving regeneration in these plantations.

5.8 Cultural Heritage

Woodlot W1957 is within the Pacheedaht First Nation (PFN) traditional Territory and is issued to Pacheedaht Forestry Limited which is 100% owned by PFN. The only hard copy information is a Traditional Use study and recently documented interviews. This area has traditionally been a hunting/fishing area and contains several village sites within its boundaries. Development within the woodlot area will be referred through the Pacheedaht First Nation referral process on an ongoing basis.

5.8.1 Traditional use

Pacheedaht has given its direction to Pacheedaht Forestry Ltd that the management of the woodlot will support and enhance PFN traditional use of forest resources. To attain this objective, the following is considered at this planning stage. On a suitable portion of the woodlot a multi age strategy of stand management will be initiated that will result in the eventual regrowth of old growth cedar suitable for cultural purposes. This management process will continually open the dominant and co dominant tree canopies and encourage under storey growth and tree development This should result in a continual supply of under storey plants similar to those existing in an old growth stand. Frequent partial cuts will minimize the potential loss of m.a.i. due to the impacts of extended rotation as it will capture the potential mortality and encourage tree vigour in all crown classes. Cedar bark stripping will be encouraged but coordinated to occur on those cedars that will be cut (as a patch cut or selectively) within a two year period of the bark stripping. We will also investigate the potential of the lower reaches of Pixie creek to establish and grow an extended rotation of cedar in the currently existing alder types

5.9 Education/Training

Pacheedaht view the operation and management of this woodlot as a useful education and training vehicle and is committed to further the exposure, education, and training of its band members. Planning, Inventory, layout, supervision, marketing, and silviculture will be as hands-on as possible. As logging equipment is not currently owned, the initial harvesting jobs will be specific to labour jobs and it is the intention to train and certify a second growth faller(s) in the process of harvesting on the woodlot. The woodlot will also be a source of work for youth employment and provide logs and forest products for village initiated projects and employment.

5.10 Research and Study

Formal research is expensive to establish and monitor and will be outside of the financial scope of the licensee. As some stand management aspects of the woodlot will be unique, Pacheedaht will encourage and be open to any proposals by third parties to do studies and research within the woodlot. Previously established research trials currently exist within the woodlot. Pacheedaht will discuss these areas with the appropriate management agency and with their concurrence, prescribe adjacent to and possibly within the trial areas management practices that are compatible with the objectives of the research.

6.0 Inventory

The area was originally part of TFL 46 and is withdrawn from that tenure. Ministry of Forests (BCTS) has purchased the inventory for the area withdrawn (including the woodlot area) and agreed to calculate and provide the yield information required to set the initial AAC for the woodlot. This supporting yield analysis is included in this document as Appendix A

As the scale and use of area for which the original inventory data was gathered has significantly changed, the forest inventory information will be updated through the first plan period to more specifically apply to the woodlot area. The current information is a starting point on which to build.

6.1 Inventory Data

6.1.1 Area Summary

The yield analysis is based on the following information which was interpreted from the area information purchased from the holder of TFL 46.

Area of W1957	Gross Area	399.4 ha
	Net downs total	88.4
	THLB	311 ha
Net Downs for non productive Land Base	NP	23.8 ha
	NCBr	5.8 ha
	Water	7.8 ha
	NP gravel Pits	1.2 ha
Sub total		38.6 ha
Net Downs for productive Land	Roads @ 6% THLB	21 ha
	EP 571 Research Plots	5.0 ha
	Other	23.8 ha
Sub Total		49.8 ha

The timber Harvesting Land Base of W1957 is currently estimated at 311 ha.

6.1.2 Forest Cover Type Summary

The THLB of W1957 is subdivided into 53 productive polygons. These are described in the Yield Analysis Document located in Appendix A. The site Index for these types ranges between 30 and 45 on a 50 yr basis. Leading species by timber type based on inventory information is Douglas fir 54%, hemlock 45%, and alder 2%

6.2 Age Classes

The age class distribution is heavily skewed to younger age classes. No appreciable old growth exists. Distribution by leading species and % of the THLB (311ha) is as per the following table.

Age class	Area by leading species			% of THLB
	Fir	Hw	Dr	
0-20	23	13	3	12
21-40	0	0	0	0
41-60	145	120	1	85
61-80	0	0	1	<1
81-100	0	6	0	2

6.3 Yield Calculation

6.3.1 Woodlot Program

The yield analysis was done utilizing the MOF Software program "Woodlot program" version 3.2. This program applies the growth and volume data of MOF models. TIPSy is utilized to predict yield for current stands <20yr and for stands harvested going into the future and VDYP for stands currently > 20 years.

6.3.2 Long Run Sustainable Yield

'Woodlot For Windows' determines an annual cut that can be cut every year from stands that have met or exceeded culmination age without dropping below this cut in any given year. In the case of W1957's balance of age /site class it will tend to underestimate the sustainable cut as it has difficulty finding culminated stands in the early stages of management. The predicted Long Run Sustainable Yield for W1957 that meets the constraints inherent in the program is 1500 cubic meters per year. The total net area used in the determination was 292 ha. The existing yield was calculated to be 9.64 m³ per yr and the future predicted yield as stands are harvested, age classes are normalized, and yields calculated using TIPSy is 12.53 m³per year or 3600 m³/yr LRSY

6.3.3 Annual Allowable Cut

Using Woodlot Program version 3.2, the initial Annual Allowable cut is calculated to be 1500m³/yr. This is based on clearcutting stands as they culminate with no drop in available volume in any

future year. W1957 does not have a normal age class distribution and as the yield analysis states, the next 2 decades are the most heavily constrained and greatly influence the predicted recommended annual cut of 1500m³

We recognize that the age class imbalance is the most limiting factor in this yield analysis. Commencing in the first cut control period of the plan, thinning regimes will be implemented with the intent of harvesting a portion of the AAC through harvest systems that will not alter the age class distribution upon which this analysis is based while still contributing to marketable volume during the first several decades. Manual fertilization of the thinned stands will be considered.

7.0 FOREST PLANNING

7.1 Administration

7.1.1 Provision for Revision

This management plan will be reviewed annually and revised as required. Any amendment required to revise or update the management plan whether at the request of the licensee or licensor, will be submitted to the District Manager for approval.

7.1.2 Annual Report

An annual report covering the previous calendar year will be submitted to the Ministry of Forests on or before April 30th of each year. Road construction, harvesting, basic silviculture, and incremental silviculture will be part of this report.

7.2 Woodlot License Plan

The licensee commits to develop a Woodlot License plan and submit it to the District Manager for approval. The Woodlot License plan will form the basis for site specific planning and management activities on the woodlot

7.2.1 Harvesting

Pacheedaht will develop an internal harvest plan that is compatible with this Woodlot Management Plan and the Woodlot License Plan and this will guide the development during the term of this Management Plan.

7.2.2 Site Plans

Site plans will be developed for all areas of harvesting or treatment that will occur within the approved Management Plan area of the woodlot. The site plans will be retained by the holder of W1957 and will be available for Forest Officer review.

7.3 Access Planning

7.3.1 Access status

Currently there is all weather road access along the north and east boundaries of the Woodlot. These mainlines are maintained by Teal Jones and BCTS. Two short sections of roads were reactivated to harvested two settings in 1992 and though grown over they are sound roads. The remainder of the woodlot was harvested in the 1950's and the sub grade exists but has failed in several locations mainly at creek and culvert crossings. All roads are brushed and treed over. Some old rights of way of non status roads used in the original harvesting have been field reviewed and several places of environmental concern identified. The remainder of the old roads will be field reviewed in the first year and the potential environmental liabilities will be identified and reported. Remediation and its funding will be discussed with the MOF.

7.3.2 Road development

Once harvest chances and a long range harvest schedule are developed, an affordable road access plan will be developed. It will detail the opening up and rebuilding of roads. It will also assess potential environmental problems of the old road system and propose alternate routes if required. If severe environmental risks are encountered in the pre-existing but deteriorated road system, alternate funding to rehabilitate them will be sought.

7.3.3 Road Maintenance and Deactivation

At any given time it is intended to concentrate development on a few roads and to monitor and maintain the other roads to the benefit of the roads themselves and to the stream systems that flow through this area. Roads not scheduled for use in the short term will be seasonally deactivated (culverts removed or backed up with x drains) as required. All roads improved or developed by the licensee will be monitored following significant storms and periodically at other times. Identified maintenance will be done to safeguard the roads themselves and the water systems associated with them.

7.4 Silviculture Planning

7.4.1 Regeneration

There are several blocks harvested in the last 10 years and one as recently as 2004/5. The licensee of TFL 46 retains the free growing commitment to manage these areas to free growing. Once attained their management and control will revert to PFL.

The sites of the woodlot are rich and moist and most clear cuts will develop brush quickly. It is planned to establish stocking of cedar and/or fir through planting so it can dominate the site early. It is anticipated that hemlock, alder, and abies will regenerate naturally during the regeneration period and augment stocking.

7.4.2 Browse Protection

There is a local elk herd that is on the increase but to date browsing has not been an issue in this vicinity. This is probably because the mild climate maintains a good quantity of suitable browse so animals do not resort to conifers during the typical browse period of January to May. If repetitive browse threatens the survival of cedar, a component will be browse guarded so that a cedar/fir/hemlock stand can develop.

7.4.3 Brushing

As the sites are brush prone, all clearcut areas will be vigorously restocked and monitored for brush encroachment. If brush threatens to suppress seedlings, manual brushing will be employed to set brush back and increase the vigor of the crop trees until such time as continued growth and dominance of the crop trees is certain.

7.4.4 Fertilization

Blanket fertilization will not be prescribed. However, individual crop tree fertilization may be prescribed in the uneven age selection cut areas to encourage the growth of specific trees. It may also be applied in conjunction with brushing if crop trees are severely suppressed.

7.4.5 Spacing

Spacing will not be generally considered as a treatment option. Stocking control within densely regenerated stands will be deferred until a saleable product is possible to be produced through thinning. If a funding source directed towards social employment is available, spacing would be considered to shift species composition from hemlock dominating to cw or fir dominating on stands less than 15 years of age. However very few stands are currently in this age class (<12% of THLB).

7.4.6 Pruning

Pruning cannot presently be justified financially unless the pruned branches are the product itself and they are saleable at a profit or as a break even employment generator for band members. If pruning occurs, care will be taken to ensure the stand quality is maintained and that valuable crop trees are not disadvantaged growth wise as a result of the pruning.

7.4.7 Surveys

Surveys and their related prescriptions will be initiated to gather information with which to manage the woodlot and to prove fulfillment of legal obligations.

- Stocking surveys prior to the end of the specified regeneration period
- Free growing surveys before the latest free growing date.

Inventory mapping, labels, and yield estimates will be coming over from the previous tenure holder for initial start up of the woodlot management. Over the first several years of the woodlot this information will be field reviewed and upgraded as required to permit small scale focused management plans and decisions.

7.5 Stand Management

The status of stands less than 20 years old will be field reviewed to assess their potential long term contribution to the woodlot's management objectives. Stand management interventions will be prescribed where positive economic benefits would result.

Stocking control that shifts species distribution towards the more valuable cedar and fir will be considered.

Brushing to remove severely overtopping deciduous from cedar and fir stands will be considered.

Selection cutting in dense 35 to 65 year old stands will be considered where immediate timber value can be generated with minimal impact on the long term yield of W1957.

8.0 FOREST PROTECTION

8.1 Pest and Disease

A forest health overview to determine pest incidence will be completed for the woodlot area within the first term of the Management Plan. If a significant health problem is determined to exist, a site specific assessment that prescribes a course of action will be undertaken within a year. A preliminary walk through has not indicated any serious pest problems to date.

8.2 Fire

The operations on the woodlot will abide by the BC Fire Prevention Regulation. Currently no areas of high hazard exist within the woodlot

8.2.1 Hazard

The woodlot lies within an area characterized by low hazard conditions that are cool and moist due to the moderating influence of the ocean and the frequency of marine fog during the hottest time of the summer. The timber types are predominantly second growth hemlock/fir/cedar. The area immediately adjacent to the Lens Mainline was harvested in 2004 and is currently the highest hazard area. This has diminished quickly as brush and seedlings regenerate the area.

8.2.2 Risk

The most significant risk of fire is from people sources. The northern boundary of the Woodlot is bordered by the Lens Main Line. Camping on Lens River is popular but is limited to the other side of the river in less hazardous alder types. We feel that the risk of fire is generally low.

8.2.3 Prevention

Logging slash will not be piled unless it drastically impacts planting site availability. If piling occurs, piles will be kept small (<50m²) and "dirty" and away from the immediate road edge. These piles will not be burnt but will be retained for small animal habitat... Repetitively used staging/sort areas will be piled and burnt as slash is generated.

8.3 Climatic Factors

8.3.1 Wind

Wind damage to timber edges and individual leave trees is a real possibility in the woodlot area as it is within the San Juan valley bottom land. Layout of small clear cuts will ensure that the windward facing and leading edges are as naturally wind resistant as possible. Selection cutting areas will evolve into very wind resistant stands. On going surveys and reconnaissance will map the historic windfall and direction to assist in planning. With some exceptions (accessibility) wind damaged timber will be salvaged within a year of occurrence.

8.3.2 Rain

The terrain is gently rolling and is subject to heavy rains which will saturate the ground and create poor off road traficability for ground based harvesting in water receiving areas. During such times and in such places machinery use will be restricted.

8.3.3 Snow

W1957 can experience heavy, wet snow. This can result in toppling and crown breakage of exposed spindly trees. Stocking regimes will favour the more resilient cedar and stronger fir species. Stand treatments will avoid creating stand structures that will rely on initial stocking of low vigour, spindly trees to meet stocking requirements.

Timber Supply Analysis Report

*Woodlot Licence W1957
South Island – Pixie Lake*

March 2006



Ministry of Forests and Range

Coast Forest Region

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Report prepared by:
Econ Consulting
Wolfram Wollenheit, R.P.F.



Timber Supply Analysis Report

Woodlot Licence W1957 – Pixie Lake

INTRODUCTION

The Ministry of Forests and Range (MFR)¹ has initiated the evaluation of harvest opportunities for proposed Community Forest Agreements (CFA) and Woodlot Licences (WL) in the Coast Forest Region previous to the advertisement and award of such tenures.

This report describes the data, methodology and results of the timber supply analysis for the proposed woodlot licence W1957 in the vicinity of Chemainus on Vancouver Island. The inventory data and the timber supply analysis information for this portion of the Tree Farm Licence (TFL 46) were provided by John Pichugin from the Teal – Jones Group, licensee of the TFL. It was intended to parallel the timber supply review for the TSA and, in discussion with the staff from the Forest Districts, derivate from the assumptions of the timber supply reviews where they were not applicable to the specific area or the management of woodlot licences.

The timber supply projection for this woodlot looks into the future for 250 years and due to inherent uncertainties of the data, process and assumptions, it should not be viewed as valid for that length of time. Further, it remains relevant only as long as the information upon it is based remains relevant.

Forest management objectives and practices are known to change over time and those changes will have an impact on the timber supply in both directions – increase or decrease. The management assumptions used in this report are based on general practices as they are commonly found in woodlot licences. Any future woodlot licensee of this woodlot licence needs to compare the information used in this timber supply analysis report with the actual landbase, inventory and management in order to determine if this analysis is still applicable to the woodlot licence W1957.

¹ Previously the Ministry of Forests

SOURCE INFORMATION

The data and information for this analysis were provided by the licensee of TFL 46, the Teal – Jones Group in form of the 2001 Timber Supply Analysis spatial dataset for the area of TFL 46. Further, the licensee provided the original analysis details and information for recent harvest activities. The Ministry of Forests and Range made available the woodlot licence area file as well as the files for the EP research installation and the gravel pit, and further assisted with feed back on inventory and management assumptions.

Inventory

The data set is based on the year 1999 so that the stand ages had to be projected by 7 years to the current year. Volume and stand heights did not need to be projected as those values were generated during the 'Woodlot for Windows' run from the inherent yield tables.

In the woodlot licence W1957 there were several harvest areas, which had to be updated with stand ages and species composition according to the most likely stocking in this area.

Other modifications to the inventory database include the adjustment of crown closure of young stands and the replacement of species codes with surrogate species. The adjustment of the crown closure value is required for stands that are juvenile (less than 30 years old) and have not achieved a crown closure of 50% due to its age. The default crown closure values for the leading species were entered in those cases. Where the stand was 50 years or older and had not achieved a crown closure of 50% no adjustment was applied and other reasons for the low crown closure were assumed such as dispersed non-productive areas or extreme wet or dry site conditions.

The portion of the inventory database that was used for the timber yield calculation of managed stands in the future (2.+ rotation) was modified by replacing Bg with Hw and Pw with Fd (model limitation). Dr leading stands were kept as such as it is likely that Dr will be present in the future, even if hardwood conversion is a goal. Minor components of hardwoods were replaced with Cw to enable the individual stands to participate in the managed stand model.

Timber Harvesting Land Base

The determining factors used for the TFL 46 Timber Supply Analysis from 2001 were closely adapted for the woodlot licence area.

The reason for specifying netdown percentages were only partially identified in the dataset. From 88.4 ha of netted out area 23.8 ha were caused by non-productive land (NP), 5.8 ha by non-commercial brush such as willow (NCBR), 7.8 ha by rivers, creeks and wetlands, 1.2 ha by the open gravel pit, and 5.0 ha be the research installation (EP) in the south-eastern corner. Only the actual NP area (1.2 ha) of the gravel pit has been netted out, anticipating that the timber removed in conjunction with the further expansion of the pit will contribute to the immediate timber supply.

Sites with low timber growing potential were not specifically netted out in the process of defining the harvestable land base. These areas were rather considered via minimum settings in the

Forest Health and Unsalvaged Losses: No epidemic insect and disease losses are expected, while fire and wind throw are more likely to occur. However, it is expected that the management structure of a woodlot licence with good permanent access allows to recover such losses. No unsalvaged losses were modeled.

Utilization Levels: The net volume calculation of 'Woodlot for Windows' assumes a minimum top diameter inside bark of 10 cm and a maximum stump height of 30 cm. The stands calculated as unmanaged (VDYP) were set at a utilization of 17.5 cm minimum dbh. The stands calculated as managed (TIPSY) were set at a utilization of 12.5 cm minimum dbh.

Minimum Stand Attributes: The minimum harvest age was set to 50 years to ensure that the timber is merchantable at harvest age. As in the TSR2 model the minimum volume at rotation age is 300 m³. Stands that did not meet these minimum values did not participate in the timber supply calculation.

Green-up and Adjacency: No green-up constraints were modeled as a timber supply impact of adjacency limitations are very unusual in woodlot licences.

Scenic Values: The woodlot licence is not in a known scenic area with assigned VQOs or rVQOs. Therefore, no reduction for the impact of management for scenic values was made.

Environmentally Sensitive Areas: Environmentally sensitive area (ESA) polygons are present in this woodlot licence, indicating difficult regeneration (P). As described under *Timber Harvesting Landbase* the reduction of 90% was applied, consistent with the original timber supply analysis for TFL 46.

Wildlife Habitat Areas: No wildlife habitat areas (WHA) are present in this woodlot licence and no WHA reduction was applied.

Ungulate Winter Range: No ungulate winter ranges (UWR) are present in this woodlot licence and no UWR reductions were applied.

Old Growth Management Areas: No old growth management areas (OGMA) are present in this woodlot licence and no OGMA reduction was applied.

Wildlife Tree Patches: As described under *Timber Harvesting Landbase*, the impact through the establishment of future wildlife tree patches was modeled as 8% of the woodlot licence area.

Community Watersheds: The woodlot licence is not in a licenced community watershed and therefore no reductions were made.

RESULTS

Sustainable Harvest Rate

The sustainable harvest rate calculated by 'Woodlot for Windows' is 1,500 m³/year.

Volume over Time

The graph below (Figure 2) shows the projected development of immature and mature timber volume of the woodlot licence W1957. The majority of the stands in this woodlot licence are less than 61 years old (98%) so that the determining bottleneck of timber supply occurs at the present time.

Within the next 10 to 20 years the timber supply limitation will decrease through the maturing of the stands so that there will be more harvestable timber available on the long term. Eventually, it will be possible in the future to recalculate the allowable annual cut rate at a higher level without compromising the long term timber supply.

However, the challenge is at the moment to find sufficient merchantable timber for harvesting that allows the economically feasible start-up of this woodlot licence tenure.

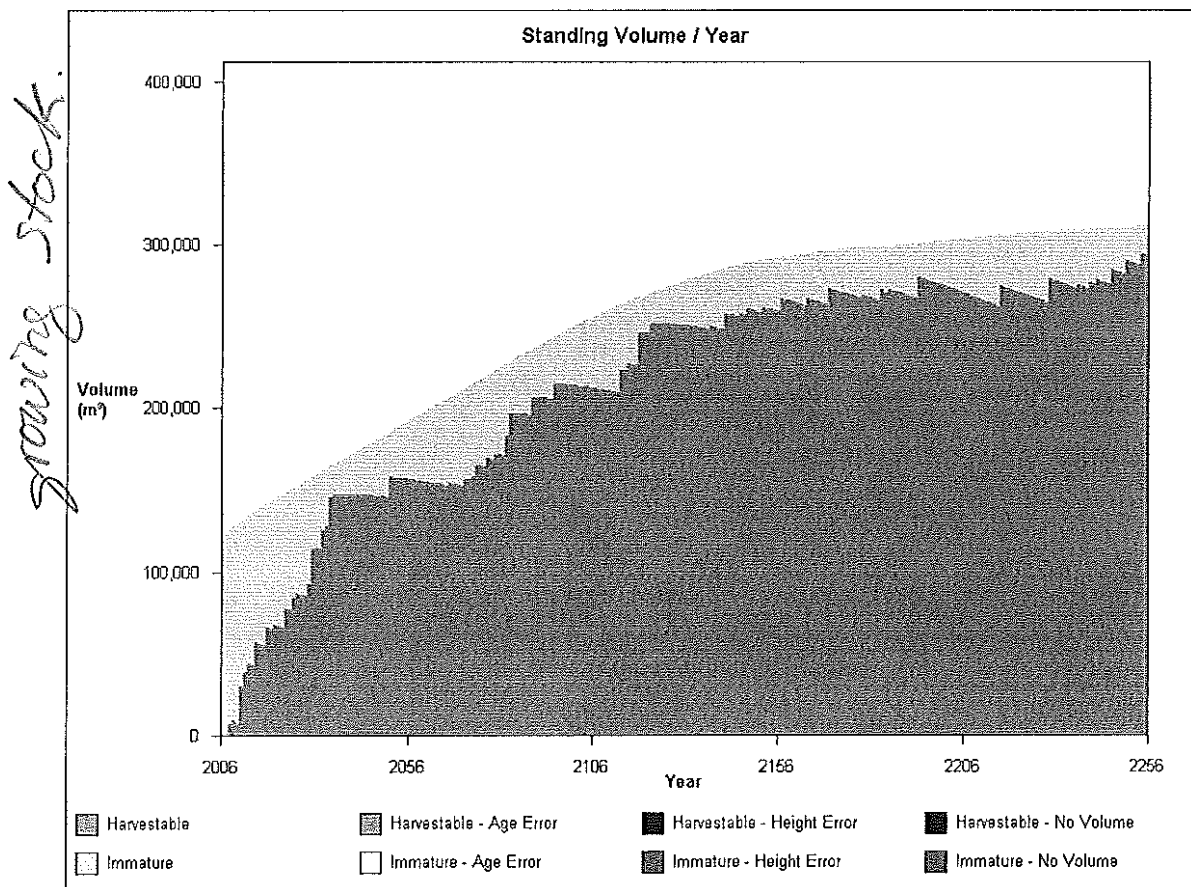
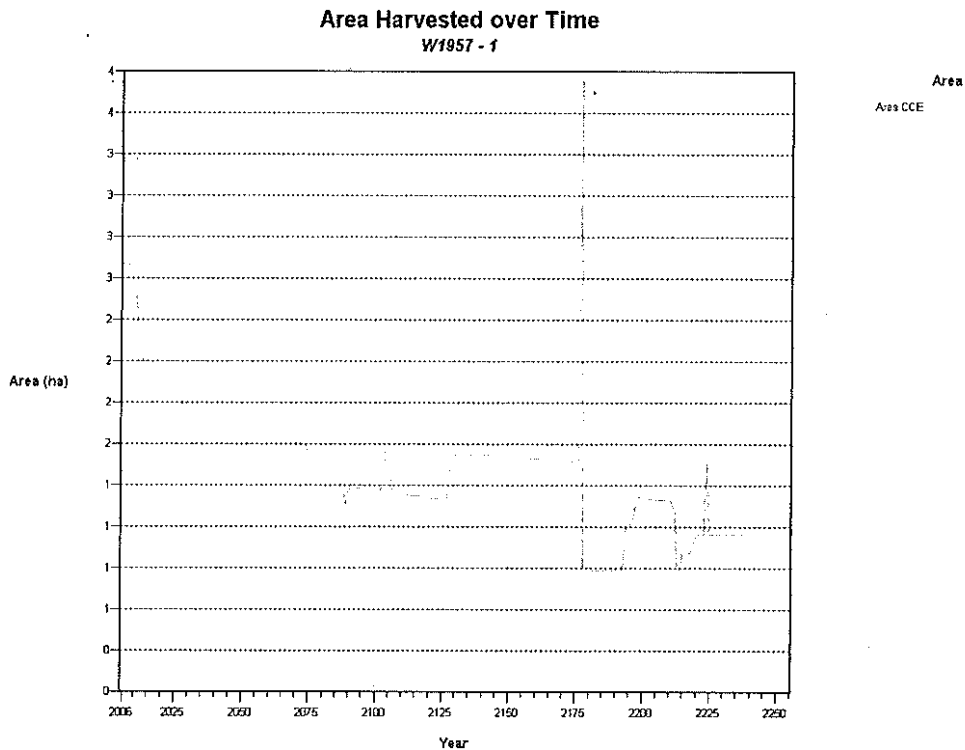


Figure 2: Projected development of immature (light colour) and mature (dark colour) timber volume of the woodlot licence W1957

Harvest Area over Time

The graph below (Figure 4) represents the development of the annual harvest area over time. The average annual harvest area is approximately 2. to 2.5 ha in the next 20 years, slowly decreasing to 1.5 ha over the planning horizon. Any upward spikes relate to the harvest of low volume stands, such as hardwoods or conifer stands on poor sites. Vice versa, average harvest areas below 1.5 ha annually indicate the harvesting of stands with high volume (over-mature stands and/or good sites).

The volume harvested per hectare will increase from approximately 750 m³/ha to approximately 1600 m³/ha over the long term.



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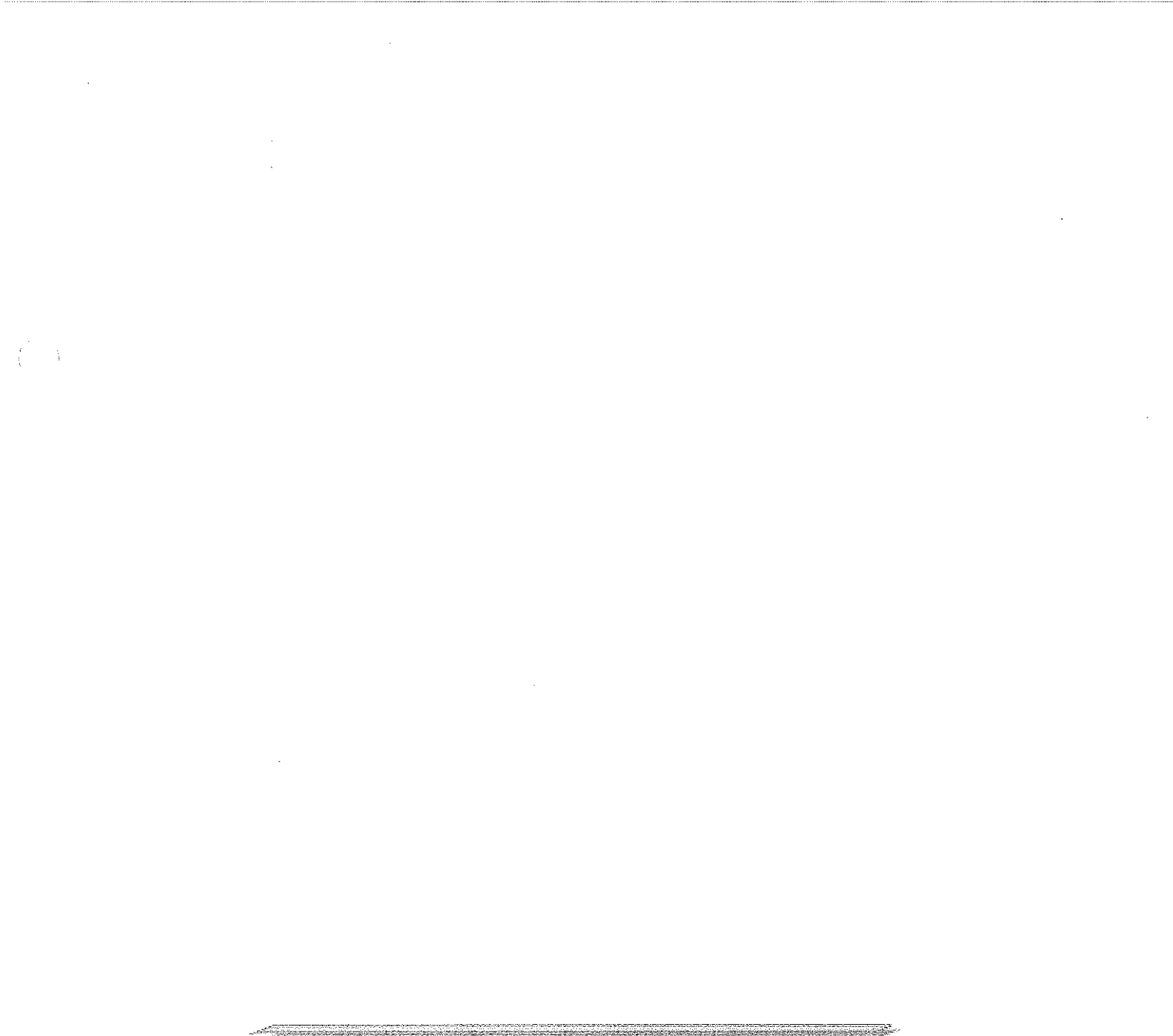
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Figure 4: Annual Harvest Area over Time

Present Harvest Opportunities

The program scheduled for the next 10 years the following polygons for harvesting (in this order): 71, 19, 43, 37, 38, 56, 63 and 2. Most of these stands are hemlock stands; only polygon 38 is an alder stand. The stands in polygon 37 and the following polygons are currently less than 60 years old.

Appendix 1: Woodlot Licence Overview Map



Appendix 2: Harvest Planning Report

01/20/2025 10:00 AM

	TIPSY	80	765	9.56	[80]	765	9.56		
092C059 23	TIPSY	60	980	16.33	[60]	2,038	5.82		
	TIPSY	60	980	16.33	[60]	980	16.33		
092C059 26	VDYP	57	691	12.12	[57]	691	12.12		
	TIPSY	60	946	15.77	[80]	946	15.77		
092C059 27	VDYP	59	600	10.16	[59]	600	10.16		
	TIPSY	70	1,120	16.00	[70]	1,120	16.00		
092C059 28	VDYP	59	600	10.16	[59]	600	10.16		
	TIPSY	70	1,120	16.00	[70]	1,120	16.00		
092C059 30	VDYP	63	621	9.85	[63]	621	9.85		
	TIPSY	70	878	12.54	[70]	878	12.54		
092C059 31	VDYP	66	725	10.99	[66]	725	10.99		
	TIPSY	70	853	12.19	[70]	853	12.19		
092C059 32	VDYP	71	608	8.57	[71]	608	8.57		
	TIPSY	80	741	9.26	[80]	741	9.26		
092C059 33	TIPSY	80	765	9.56	[80]	1,404	4.01		
	TIPSY	80	765	9.56	[80]	765	9.56		
092C059 34	VDYP	67	643	9.59	[67]	643	9.59		
	TIPSY	70	854	12.20	[70]	854	12.20		
092C059 35	TIPSY	70	840	12.00	[70]	1,483	4.24		
	TIPSY	70	840	12.00	[70]	840	12.00		
092C059 36	VDYP	66	725	10.99	[66]	725	10.99		
	TIPSY	70	853	12.19	[70]	853	12.19		
092C059 37	VDYP	57	691	12.12	[57]	691	12.12		
	TIPSY	60	946	15.77	[60]	946	15.77		
092C059 38	VDYP	26	190	7.30	[55]	302	5.48		
	VDYP	26	190	7.30	[55]	307	1.02		
092C059 39	TIPSY	60	980	16.33	[60]	2,038	5.82		
	TIPSY	60	980	16.33	[60]	980	16.33		
092C059 42	VDYP	66	725	10.99	[66]	725	10.99		
	TIPSY	70	853	12.19	[70]	853	12.19		
092C059 43	VDYP	61	612	10.03	[61]	612	10.03		
	TIPSY	70	890	12.71	[70]	890	12.71		
092C059 44	VDYP	57	691	12.12	[57]	691	12.12		
	TIPSY	60	946	15.77	[60]	946	15.77		
092C059 45	VDYP	66	725	10.99	[66]	725	10.99		
	TIPSY	70	853	12.19	[70]	853	12.19		
092C059 46	VDYP	57	691	12.12	[57]	691	12.12		
	TIPSY	60	946	15.77	[60]	946	15.77		
092C059 47	VDYP	67	643	9.59	[67]	643	9.59		
	TIPSY	70	854	12.20	[70]	854	12.20		
092C059 49	VDYP	66	725	10.99	[66]	725	10.99		
	TIPSY	70	853	12.19	[70]	853	12.19		
092C059 51	VDYP	71	608	8.57	[71]	608	8.57		
	TIPSY	80	741	9.26	[80]	741	9.26		
092C059 52	VDYP	71	608	8.57	[71]	608	8.57		
	TIPSY	80	741	9.26	[80]	741	9.26		
092C059 53	VDYP	57	691	12.12	[57]	691	12.12		
	TIPSY	60	946	15.77	[60]	946	15.77		
092C059 55	VDYP	71	608	8.57	[71]	608	8.57		
	TIPSY	80	741	9.26	[80]	741	9.26		
092C059 56	VDYP	57	691	12.12	[57]	691	12.12		
	TIPSY	60	946	15.77	[60]	946	15.77		
092C059 57	VDYP	36	171	4.76	[999]	250	0.83		
	VDYP	36	171	4.76	[999]	250	0.83		
092C059 59	VDYP	60	542	9.03	[60]	542	9.03		
	TIPSY	50	950	19.00	[50]	950	19.00		
092C059 60	VDYP	64	827	12.92	[64]	827	12.92		
	TIPSY	50	939	18.78	[50]	939	18.78		
092C059 61	VDYP	66	725	10.99	[66]	725	10.99		
	TIPSY	70	853	12.19	[70]	853	12.19		
092C059 62	VDYP	60	569	9.49	[60]	569	9.49		
	TIPSY	70	963	13.76	[70]	963	13.76		
092C059 63	VDYP	57	691	12.12	[57]	691	12.12		
	TIPSY	60	946	15.77	[60]	946	15.77		

092C059 20	2	[60]	-58	[2]
092C059 16	2	[70]	-68	[2]
092C059 35	2	[70]	-68	[2]
092C059 5	2	[80]	-78	[2]
092C059 7	2	[80]	-78	[2]
092C059 12	2	[80]	-78	[2]
092C059 22	2	[80]	-78	[2]
092C059 33	2	[80]	-78	[2]
092C059 57	62	[999]	-937	[2]

b) Harvest Constraints

Area Netdown : 6
Height Constraint : NONE
Age Constraint : NONE

c) Harvest Parameters (Global)

Minimum Harvest Age : 50 Years
Minimum Harvest Diameter : 15 cm
Minimum Harvest Vol/ha : 300 m³/ha
TIPSY OAF1 : 15%
TIPSY OAF2 : 5%
P.C. Adjustment Factor : 0.80
P.C. Harvest Ages : Manual - Set by user
Planning Horizon : 250 years

4.0 Harvest Calculation Results

a) Harvest Rate : 1500 m³/year

b) Harvest by Polygon: **

Polygon	Own	Queue	Rot	Harvest Area (ha)	Start Year	Harvest Length (yr)	Target Harvest Age	Actual Harvest Age	Actual Harvest (m ³ /ha)	Total Harvest (m ³)
092C059 71	C	CC	1	0.06	2006	0.04	[61]	132	1,044	59
092C059 19	C	CC	1	1.55	2006	0.93	[55]	82	904	1,402
092C059 43	C	CC	1	3.80	2006	2.03	[61]	82	790	3,039
092C059 37	C	CC	1	4.62	2009	2.15	[57]	57	691	3,229
092C059 38	C	CC	1	0.54	2011	0.11	[55]	57	305	163
092C059 56	C	CC	1	8.10	2011	3.97	[57]	59	715	5,954
092C059 63	C	CC	1	5.37	2015	2.72	[57]	62	750	4,086
092C059 2	C	CC	1	0.39	2017	0.19	[57]	62	750	292
092C059 13	C	CC	1	12.66	2018	6.69	[57]	63	761	10,029
092C059 26	C	CC	1	0.15	2024	0.08	[57]	69	824	124
092C059 44	C	CC	1	11.48	2024	6.58	[57]	69	824	9,867
092C059 53	C	CC	1	9.71	2031	5.93	[57]	76	891	8,898
092C059 30	C	CC	1	16.02	2037	9.02	[63]	87	816	13,530
092C059 27	C	CC	1	4.39	2046	2.51	[59]	91	850	3,761
092C059 28	C	CC	1	5.10	2048	2.96	[59]	93	861	4,447
092C059 46	C	CC	1	16.59	2051	11.74	[57]	92	1,019	17,607
092C059 59	C	CC	1	4.28	2063	2.48	[60]	107	861	3,715
092C059 62	C	CC	1	1.38	2066	0.82	[60]	110	895	1,237
092C059 15	C	CC	1	10.35	2066	6.83	[67]	114	971	10,243
092C059 34	C	CC	1	2.29	2073	1.54	[67]	121	1,004	2,314
092C059 70	C	CC	1	4.70	2075	3.27	[61]	117	1,037	4,906
092C059 47	C	CC	1	3.94	2078	2.69	[67]	124	1,018	4,033

Hanzlik Rate : 3,268 m³/year

** Net of decay, waste, breakage, VAF and OAFs

e) Age Constraints Not Met During the following Period(s)

Age constraints are disabled

f) Height Constraints Not Met During the following Period(s)

Height constraints are disabled

5.0 Report Abbreviations

Term	Definition
%	Species Composition Percent
[]	Default Variable
(s/ha)	Stems/ha
Available for	Number of years the polygon has been ready to harvest
C Age	Culmination Age
C Vol	Volume at Culmination Age
CC	Clearcut
CT	Commercial Thin
Cul	Culmination
Dens	Initial Density (stems/ha)
FIZ	Forest Inventory Zone
Harvest Area (ha)	Area reduced by the area netdown.
MAI	Mean Annual Increment (m ³ /ha/yr)
Mgmt Type	Management Type (VDYP / TIPSY / NC / NSR)
NC	Non Commercial
NSR	Non Satisfactory Regeneration
PC	Partial Cut
PC%	Partial Cut percent to harvest
PC1	First Partial Cut
PSYU	Public Sustained Yield Unit
Queue	Reason for harvest (CC, PC1, Sub PC, CT, Road, NSR, NC)
Reentry	Number of years to wait before reentering a partial cut
Regen	Regeneration Type (Natural / Planted)
Road	Road net down
S1-S6	Species Codes 1 to 6
SI	Site Index
Silv Sys	Silviculture System (CC, PC)
Stk Cls	Stocking Class (0 to 4 or R)
Sub PC	Subsequent Partial Cut
T Age	Target Age
T Vol	Volume at Target Age
Target Age	Target harvest age. The actual harvest age will depend on the time the simulation harvests the polygon. See section 4(b) for actual harvest ages.
Thin	Pre-commercial thin to density (stems/ha)
TIPSY	Table Interpolation Program for Stand Yields
VAF	Volume Adjustment Factor
VDYP	Variable Density Yield Projection