



2023-2028 Forest Development Plan for Nisga'a Public Land License

May 13, 2023 to December 31, 2028

Public Review and Comment Period

March 13, 2023 to April 13, 2023

Prepared by:

K'Alii Aks Timber Corporation



Jon Dehouwer, RPF

Date: March 9, 2023



Executive Summary

This Forest Development Plan (FDP) replaces the *Nisga'a Lisims Government Forest Development Plan dated January 1, 2021*. It proposes forest management direction and forest practices that are consistent with the *Nisga'a Final Agreement*, legislative direction from the *Nisga'a Forest Act*, higher-level plan guidance from *A Land Use Plan for Nisga'a Lands (2002)*, previous public input, and other applicable natural resource plans, reports, orders and guidance. The FDP document follows the format and content of the previous plan submission. Forestry operations will be conducted by Registered Forest Professionals in good standing with Association of British Columbia Forest Professionals.

The K'Alii Aks Timber Corporation FDP provides Nisga'a citizens, the general public, government resource agencies, and private interests with information on the location and scheduling of proposed timber harvesting, road construction, road maintenance, road deactivation and other related activities on Nisga'a Public Land from May 13, 2023 to December 31, 2028.

The FDP outlines forest practices to conserve and manage forest resources and features such as timber, biodiversity, soil, water, fisheries, riparian areas, wildlife, visuals, cultural and heritage uses, recreation, and botanical forest products.

The Forest Development Plan strives to “balance” environmental, social and economic forest values. No pesticides or herbicides will be used or prescribed for any aspect of forest management by K'Alii Aks Timber Corporation (K'Alii Aks).

K'Alii Aks commits to update the FDP on an annual basis, updating the past year's harvest, adding another year of harvest, updating reforestation status and continuously improving the content and commitment to stewardship in the FDP.

K'Alii Aks commits to host public open houses up-to twice a year in Nisga'a communities to solicit citizens input, improve citizen communications, and to inform Nisga'a citizens about the K'Alii Aks business.

The new FDP assumed an Annual Harvest Level of 130,000 m³ per year. It proposes 67 cutblocks, with an average size of 60.4 ha. The total gross proposed harvest area is 3,988 ha at an estimated timber volume of 1,368,342 m³ or a gross average 273,668 m³ per year. Additional volume above the Annual Harvest Level has been identified and included to accommodate cutblock scheduling changes and unforeseen circumstances such as changing log markets, poor cutblock merchantability, and access and land use constraints.

The FDP proposes the construction of 109.9 km of roads, mostly spur roads, and the maintenance of 205.3 km of roads including branch roads and mainlines. Each year there will be approximately 22.0 km of new road construction and 41.1 km of maintenance.



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1. PURPOSE

K'Alii Aks Timber Corporation's Forest Development Plan (FDP) provides Nisga'a citizens, the general public, government resource agencies, and private interests with information on the location and scheduling of proposed timber harvesting, road construction, road maintenance, road deactivation and other related activities on Nisga'a Public Lands for the five-year period from May 13, 2023 to December 31, 2028.

The FDP outlines forest practices to conserve and manage forest resources and features such as timber, biodiversity, soil, water, fisheries and riparian areas, wildlife, cultural and heritage uses, recreation and tourism, and botanical forest products.

The FDP contains a text document and a series of 1:20,000 and 1:50,000 scale maps.

1.1 Background

Beginning in 2005, FDP's were submitted by Lisims Forest Resources (LFR), the holder of the Nisga'a Public Lands Licence (NPLL) to the Director of Lands and Resources (the Director) for approval under section 19 (1.1) of the *Nisga'a Forest Act (Forest Act)*. On March 31, 2020 LFR's NPLL expired. After March 2020, the Nisga'a Lisims Government prepared and approved an FDP for use with Timber Harvesting Licences. On January 1, 2021 K'Alii Aks was issued an NPLL and is required under the terms of the licence to submit an FDP to the Director for approval.

Contained within this FDP are cutblocks and roads that were in the NLG FDP and LFR NPLL FDP. These are shown as *approved* within this FDP. Other new or significantly revised cutblocks and roads are shown as *proposed* on the associated FDP maps.

1.2 Management Philosophy

Management of the forest resources on Nisga'a Public Lands will be to the standards required by the *Nisga'a Forest Act*. The FDP strives to meet a 'balance' of environmental, social and economic forest values. Timber harvesting will remain focused on mature stands and old growth, and within the next 10 years start to include stands of timber that were previously harvested – 'second growth'. When planning timber harvesting attention is given to values such as water quality and quantity; visual sensitivity; old growth retention; recreation; forest health; wildlife habitat; community water supply; local employment; safety; environmental protection.

Regular public involvement and feedback is necessary to ensure a 'balance' of values is maintained. All plans and information supporting those plans will be available for public review at the K'Alii Aks office. K'Alii Aks will host a website and social media accounts to improve communications, K'Alii Aks will host public open houses in Nisga'a communities to solicit additional input from Nisga'a citizens and others, and to inform interested parties about K'Alii Aks ongoing forest management activities.

The FDP will be updated and amended with another year of cutblocks on an annual basis. The FDP will show the past year of harvest and road construction activity, the addition of a new year of



proposed timber harvest, and the status of cutblock reforestation. K'Alii Aks stewardship initiatives would also be included in the update as well.

1.3 Legislative Framework for Forest Development Planning

The *Nisga'a Final Agreement* and the *Nisga'a Forest Act* are the legislation that govern forest management on Nisga'a Lands. *Part 4, sections 19-24* of the *Forest Act* set out the primary legislative requirements that apply to planning for forest harvesting on Nisga'a Public Lands.

Nisga'a Final Agreement

- Chapter 5 and, where applicable, Appendix "H"

Nisga'a Forest Act

- Part 4, Sec. 19 – requirement for the FDP: 'The holder of a Nisga'a Public Lands License must submit a forest development plan to the Director for approval'.
- Part 4, Sec. 20 – term of the FDP: 'A forest development plan must address a period of at least five years unless the Director determines that a shorter period of time is appropriate'.

1.4 Strategic Plans, Reports, and Assessments

The K'Alii Aks FDP will utilize direction from the *Land Use Plan for Nisga'a Lands (December 2002)* (*Land Use Plan*), as well as guidance and advice from applicable strategic resource plans, reports, and assessments.

The FDP gives guidance and direction to operational plans such as Site Plans that prescribe specific practices to achieve management objectives and forest stewardship for each cutblock.

2.0 FOREST DEVELOPMENT PLAN SCOPE OF WORK

2.1 Building on Previous Forest Development Planning Work

Part of the work in preparing this FDP involved reviewing plans previously completed by Lisims Forest Resources for the NPLL as well as the following:

- Review the *Nisga'a Final Agreement*, the *Nisga'a Forest Act*, the *Land Use Plan* and the Nisga'a Public Lands 2020 – 2025 FDP
- Check the existing status of cutblocks and roads
- Check the accuracy of mapping updates from past operations
- Review best available land information for applicability to this FDP
- Identify cutblocks which have been approved and carried from plan to plan
- Review cutblocks which have been planned and/or engineered but not harvested for various reasons



2.2 2023 - 2028 Forest Development Plan

Part of the work in preparing this FDP involved collecting and reviewing new information such as the following:

- Analyze forest cover and contour maps, and aerial and ortho photography
- Collect data from aerial and ground reconnaissance
- Develop mapping to show the forested area suitable for sustainable management
- Identify feasible cutblocks on already built and active road systems
- Conduct field work to verify new cutblocks
- Review and update proposed forest management objectives and forest practices

For operating area planning, K'Alii Aks established 9 operating areas listed from the north: Kwinamuck; Nass Valley; Tseax; Ksedin; West Nass; Nass Bottomlands; Xnukw; Ishkheenickh; Burton. These areas were created to facilitate operational decisions and analysis and are not intended to or propose to create a legal designation. They are based on the existing access to the forest resource, traditional use, biogeoclimatic zone characteristics, interior vs coast, etc.

2.3 Forest Development Plan Guiding Parameters for Cutblock Selection

To facilitate the review and approval of the FDP, 1:20,000 maps were produced that show the *Land Use Plan* values and the Nisga'a forest resources. Cutblocks were evaluated based on the following parameters:

- **Location:** coastal vs interior; elevation; slope; access; site productivity
- **Stand Characteristics:** species composition; volume; density; age
- **Commercial Characteristics:** sawlog vs pulp content; presence of non-timber values
- **Harvest Method and Season of Harvest:** ground versus cable; winter versus summer
- **Harvest System:** clear felling; clear felling with reserves; partial cutting; uneven management; single tree selection; ecosystem based
- **Market Flexibility:** develop a diverse portfolio of ready to harvest cutblocks to meet current and forecast market demand
- **Financial:** reduce the cost of development by capitalizing on existing access infrastructure, and incorporating information from previous plans, engineering, studies, and harvesting into plans for new cutblocks and roads
- **Higher Level Plans:** utilize *Land Use Plan* direction
- **Landscape Level Assessments:** when necessary review and mitigate the impacts on seral



stage distribution, water quantity and quality, terrain stability, and designated species and species at risk habitat

- **Site Level Assessments:** when necessary review and propose practices to incorporate landscape level assessment guidance.

The proposed annual harvest level (“AAC”) for this FDP is 130,000 m³ per year. As the plan moves forward, the proposed annual volume identified exceeds 130,000 m³ to account for cutblocks that will be lost due to land use constraints, unmerchantability or inaccessibility, and to provide operational flexibility to capitalize on changing log markets. To meet these demands, operations will vary the yearly sequence of proposed harvesting.

K’Alii Aks notes that previous NPLL’s have accumulated a significant amount of undercut. The undercut represents unharvested AAC from previous years.

Should log markets support the harvest of more than the proposed AAC, and approved cutblocks are available, K’Alii Aks will propose harvesting the undercut.

As previously committed, K’Alii Aks will annually update the figures and tables in sections 2.4 and 2.5 to reflect the actual cutblock harvest and road construction operations of the previous year and to show a possible sequencing of approved cutblocks and roads for the remaining years covered by the FDP. These annual updates will not be considered as amendments to the FDP.



2.4 Forest Development Plan in Numbers

Table 1. FDP annual timber harvest volume.

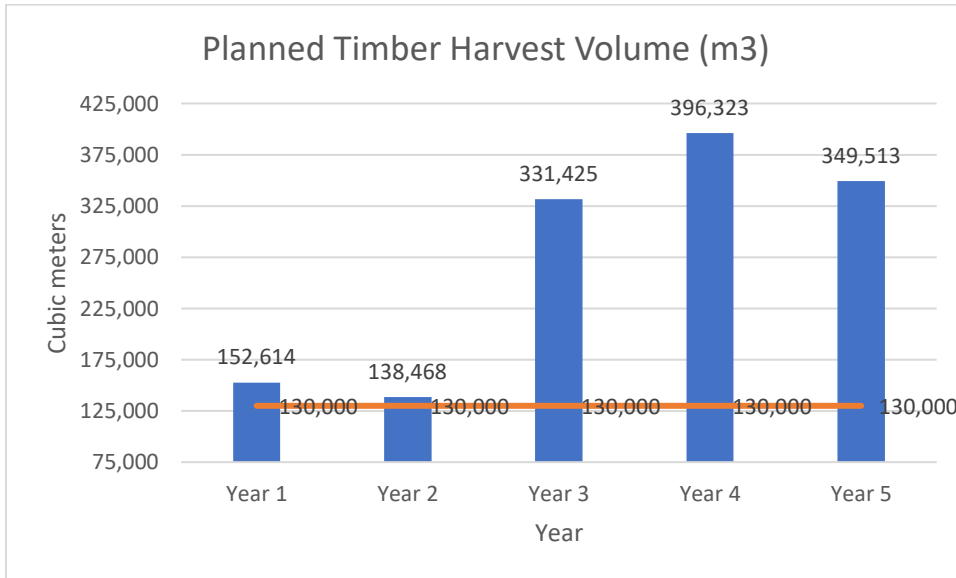


Table 2. FDP annual timber harvest area.

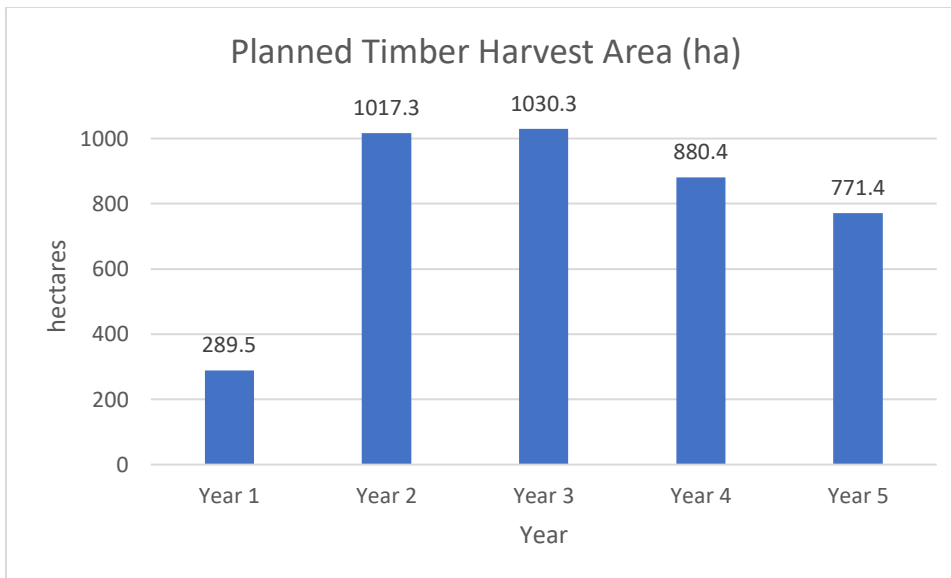
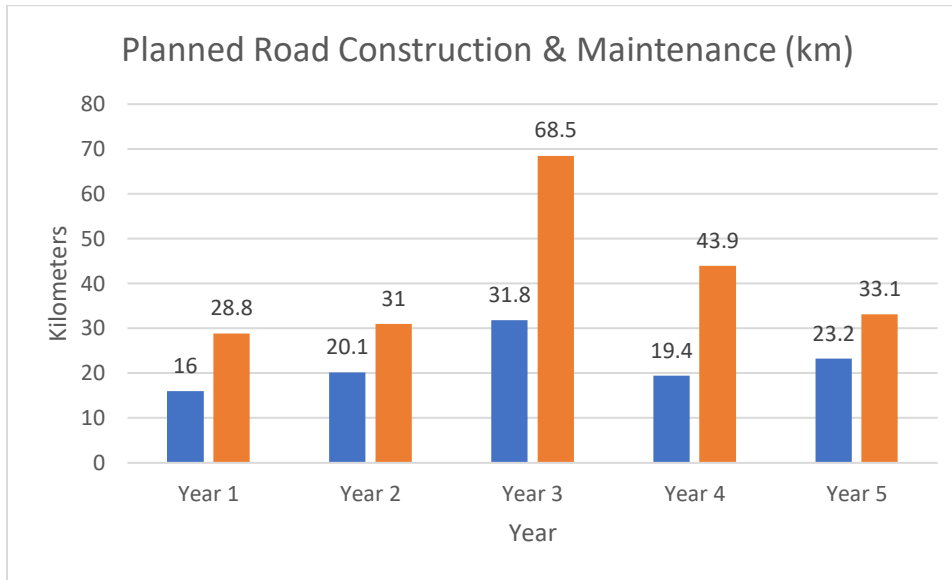




Table 3. FDP annual road construction and road maintenance.



2.5 Forest Development Plan Five Year Cutblock and Road Activity

The following tables list the proposed annual harvest and road access plan.

Year 1: 2023

Year 1						
Block ID	Operating Area	Cutblock Information ¹			Access Roads ²	
		Method Cable/Ground	Area (ha)	Volume (m ³)	Construction Length (km)	Maintenance Length (km)
ANU606	West Nass	C/GBS	20.9	10,955	1.7	4.2
ANU701	West Nass	C/GBS	30.7	18,052	2.5	0.0
ANU702	West Nass	C/GBS	43.2	24,534	3.6	0.0
DLK315	Nass Valley	GBS	30.5	3,000	1.4	1.0
KSD514	Ksedin	C/GBS	27.9	12,162	0.9	0.8
KSD515	Ksedin	C/GBS	29.2	16,760	1.8	7.6
DLK509	Nass Valley	GBS	25.7	11,148	0.7	0.6
VET307	Tseax	C/GBS	15.9	8,000	0.8	4.7
VET309	Tseax	GBS	20.3	9,885	0.6	5.7
KSD611	Ksedin	GBS/C	45.2	38,118	2.9	2.8
		Totals	289.5	152,614	16.0	28.8

^{1, 2} Please refer to Appendices A and B for more details.

The selection of cutblocks and roads for year 1 (2023) is driven by existing cutting applications (ANU606, KSD514, KSD515, KSD611, VET307, VET309), completed engineering (DLK509), and the current forest engineering (ANU701, ANU702, DLK315).



Year 2: 2024

Year 2						
Block ID	Operating Area	Cutblock Information ¹			Access Roads ²	
		Method Cable/Ground	Area (ha)	Volume (m ³)	Construction Length (km)	Maintenance Length (km)
DLK201	Tseax	GBS/C	60.2	23,280	2.7	7.8
DLK204	Tseax	GBS/C	43.3	18,992	3.5	0.0
DLK309	Nass Valley	GBS	76.7	6,000	1.7	1.7
DLK310	Nass Valley	GBS	18.5	9,528	0.7	3.5
DLK950	Nass Valley	C/GBS	50.9	17,218	3.1	0.8
DSK200	West Nass	GBS	41.7	5,000	2.3	0.0
ISH999	Ishkheenickh	SS	355.0	4,000	0.0	0.0
KWT100	Nass Valley	GBS	176.0	14,000	3.7	2.8
KWT101	Nass Valley	GBS	25.4	10,200	0.4	7.8
KSD802	Ksedin	C	109.3	20,250	2.8	7.4
NAS201	West Nass	GBS	60.3	10,000	2.0	0.0
		Totals	1017.3	138,468	20.1	31.0

^{1, 2} Please refer to Appendices A and B for more details.

The cutblocks selected for year 2 (2024) include engineered cutblock DLK201. The remaining cutblocks are anticipated to be engineered and submitted for approval in 2023. The goal is to complete engineering and approvals one year prior to harvesting.

Year 3: 2025

Year 3						
Block ID	Operating Area	Cutblock Information ¹			Access Roads ²	
		Method Cable/Ground	Area (ha)	Volume (m ³)	Construction Length (km)	Maintenance Length (km)
ANU751	West Nass	C/GBS	47.9	30,000	2.0	2.9
ANU802	West Nass	C	41.5	28,635	0.9	6.3
CAN102	Kwinamuck	GBS	23.7	13,035	1.0	3.6
CAN103	Kwinamuck	GBS	39.5	10,000	1.9	0.0
CAN104	Kwinamuck	GBS	35.1	18,954	1.5	0.0
DLK206	Tseax	GBS/C	44.2	20,849	1.6	0.0
DLK301	Nass Valley	GBS	32.4	22,680	0.5	6.9
DLK306	Nass Valley	GBS/C	201.4	18,000	4.3	4.1
DLK307	Tseax	GBS	232.4	18,000	7.1	0.0
DSK103	West Nass	GBS/C	53.5	22,000	0.3	1.1
DSK104	West Nass	GBS/C	11.6	5,301	1.4	1.7
KWT102	Nass Valley	GBS	60.0	17,700	0.3	8.6



KSD703	Ksedin	GBS	31.6	10,000	1.3	3.3
KSD800	Ksedin	GBS	73.5	26,000	1.3	5.7
KSD801	Ksedin	C/GBS	20.8	18,200	0.6	3.1
GIN001	Xnukw	C	20.1	11,557	1.7	0.0
NAS200	West Nass	GBS	28.1	10,000	0.7	4.2
VET005	Aiyansh	C/GBS	50.3	15,000	1.3	8.9
VET401	Tseax	GBS	7.1	3,514	0.2	0.0
VET402	Ksedin	GBS	23.6	12,000	0.8	9.2
Totals:			1030.3	331,425	31.8	68.5

^{1,2} Please refer to Appendices A and B for more details.

Year 4: 2026

Year 4						
Block ID	Operating Area	Cutblock Information ¹			Access Roads ²	
		Method Cable/Ground	Area (ha)	Volume (m ³)	Construction Length (km)	Maintenance Length (km)
CAN101	Kwinamuck	GBS	103.2	30,000	3.0	0.0
DLK106	Tseax	C	53.1	31,800	1.9	0.0
DLK107	Tseax	GBS/C	83.5	58,000	0.0	6.8
DLK300	Nass Valley	GBS	88.4	57,460	1.5	2.1
DLK302	Nass Valley	GBS	17.5	8,750	0.8	4.9
DLK303	Nass Valley	GBS	23.4	14,040	1.0	3.2
DLK304	Nass Valley	GBS	74.2	42,665	1.2	2.3
DLK305	Nass Valley	GBS	104.9	40,000	2.2	8.5
DLK314	Nass Valley	GBS	77.6	29,100	1.7	0.0
KSD700	Ksedin	C/GBS	26.5	12,239	1.0	3.8
KSD701	Ksedin	C/GBS	67.5	27,268	1.8	3.4
KSD704	Ksedin	C	48.7	20,000	1	6.1
NAS204	West Nass	C	111.9	25,000	2.3	2.8
Totals:			880.4	396,323	19.4	43.9

^{1,2} Please refer to Appendices A and B for more details.

Year 5: 2027

Year 5						
Block ID	Operating Area	Cutblock Information ¹			Access Roads ²	
		Method Cable/Ground	Area (ha)	Volume (m ³)	Construction Length (km)	Maintenance Length (km)
ANU805	West Nass	C	185.5	35,000	6.3	8.0
CAN001	Kwinamuck	C/GBS	33.6	17,131	0.0	2.9
CAN100	Kwinamuck	GBS	79.8	24,738	2.0	0.0



DLK170	Tseax	C/GBS	18.9	9,300	0.6	3.2
DLK180	Tseax	C/GBS	19.5	8,424	0.5	1.8
DLK308	Tseax	GBS	41.9	14,665	1.9	1.8
DLK312	Nass Valley	GBS	84.2	46,310	2.3	4.8
GIN002	Xnukw	GBS	106.9	73,227	4.9	0.0
KSD411	Ksedin	GBS	61.3	42,910	0.6	0.0
ISH501	Ishkheenickh	C/GBS	15.7	7,011	0.0	0.4
ISH510	Ishkheenickh	C/GBS	52.0	29,074	1.7	4.7
ISH511	Ishkheenickh	C/GBS	34.2	19,449	1.2	3.7
ISH602	Ishkheenickh	C/GBS	37.8	22,274	1.2	1.8
		Totals:	771.4	349,513	23.2	33.1

^{1, 2} Please refer to Appendices A and B for more details.

The Block Table in Appendix A and the Road Table in Appendix B provide more detailed information about FDP cutblocks and roads.



2.6 Forest Development Plan Timber Profile by Species

Table 4. 2023-2028 FDP species volume distribution.

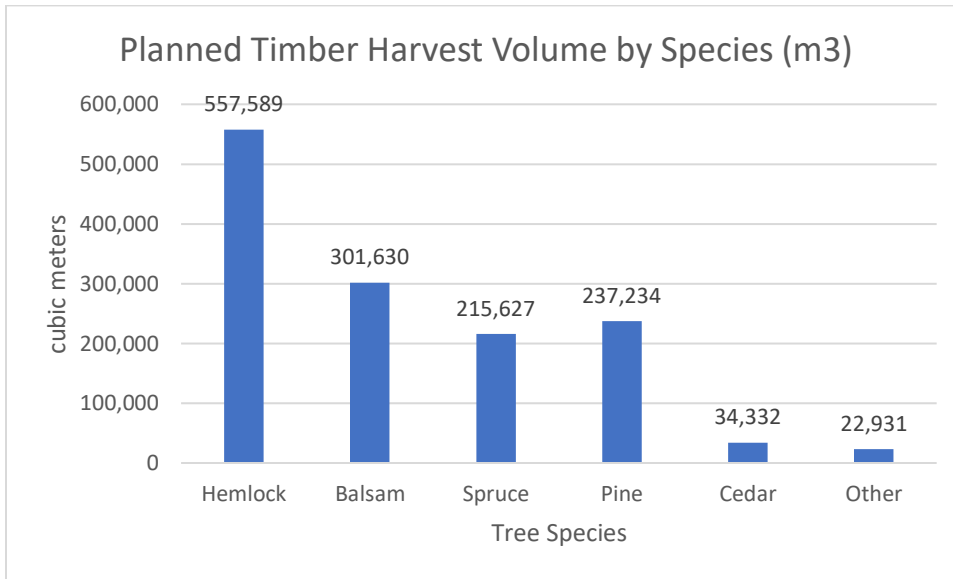
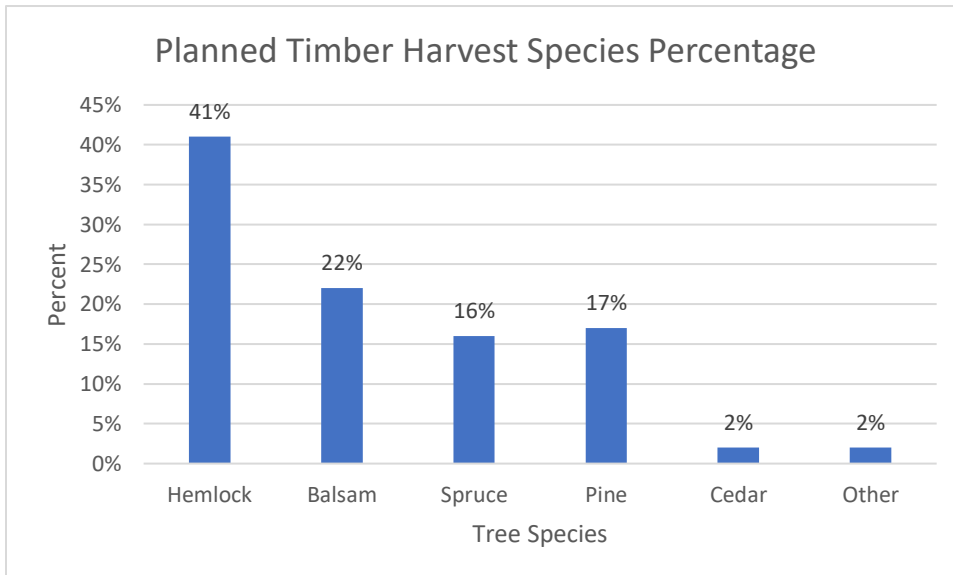


Table 5. 2023-2028 FDP species percentage distribution.



A portion of the proposed cutblocks are at higher elevations which increases subalpine fir (*Abies lasiocarpa*) content. Subalpine fir is combined with amabilis fir (*Abies amabilis*) in column “BA”. Column “Other” contains deciduous species (cottonwood, birch, aspen and alder).



2.7 Areas of Future Potential Development

Three areas have been identified that require specific attention to capitalize on the timber harvesting opportunity – Kwinamuck, Monkley Bay, and Burton. The Kwinamuck area (Appendix C) has been assessed before but has not been developed due to various uncertainties involving the cost of access and the management of non-timber values. The Monkley Bay and Burton areas have been in previous FDP's, but due to the significant access costs development did not occur (Appendix D & E). Reducing access costs will be key and may be done so through volume, timing, and alternate methods of access or harvesting.

Cutblock areas in these regions are proposed in excess of their final shape, due to access issues it is not possible to confirm final cutblock designs accurately without extensive ground truthing of the preliminary designs during layout phases. All final cutblock sizes and designs will correspond with the *Nisga'a Final Agreement*, the *Nisga'a Forest Act*, and the *Land Use Plan*. Final cutblock design is overrepresented in gross block area to account for reconnaissance that is still to be completed for the majority of proposed areas after year 1 when constraints, operability and other values are identified during field work.

2.7.1 Kwinamuck Operating Area (Appendix C)

K'Alii Aks understands that an NLG Executive resolution is required to open this area for timber harvesting. A reconnaissance of the area has found it can be accessed from the Canyon mainline via a bridge over the Ksga'maal creek.

In 2007 a forest resources feasibility report was completed on the Kwinamuck area. Part of the report proposed the development of a total chance timber harvest plan based on access and operational considerations. K'Alii Aks will review the report and other information, discuss the future development with NLG Lands and Resources, and subsequently seek NLG Executive approval to proceed with detailed development planning and the harvest of timber within 5 years.

The Kwinamuck area is an accessible part of the Nisga'a timber harvesting land base and if opened may yield more than 400,000 m³ of timber harvest. This equates to one average sized cutblock every year for the next 32 years. Access into this area will create an opportunity for the Gitlaxt'aamiks Village to access Gitlaxt'aamiks Village Lands along the northside of the Nass River. Access to these areas would facilitate Gitlaxt'aamiks Village timber harvesting opportunities, wildfire prevention, and the harvesting of over mature Hemlock-Pine stands.

The cutblocks presented in Appendix C, are for discussion purposes only, the total estimated volume is 79,867 m³.

2.7.2 Monkley Bay Log Dump Area (Appendix D)

The Monkley Bay Log Dump area is loosely defined as west of Ksi Hlginx Creek following along the Nass River to the northwest corner of former IR12 - Lacktesk. There are six previously approved



cutblocks in the Monkley area (ISH001, ISH002, ISH003, ISH004, ISH005, ISH006). Due to significant access challenges and costs in combination with market fluctuations, the harvest of these cutblocks did not occur.

This area is not seeking approval at this time.

The cutblocks presented in Appendix D, are for information purposes only. The total area of the proposed cutblocks is 298 ha with an estimated volume of 121,451 m³.

2.7.3 Burton Operating Area (Appendix E)

There are three previously approved cutblocks in the Burton watershed (BUR001, BUR002, BUR003 - 2014-2019 FDP). These cutblocks and additional areas are not included in this FDP at this time because of access issues.

A review of the Burton aerial photography has identified additional conventional harvest cutblocks. The plan is to design a watershed level plan that identifies a significant volume of economic timber to be accessed in one or two seasons through the Burton log dump. Significant road construction costs limit development at this time.

The cutblocks presented in Appendix E are not seeking approval, they are included for information purposes. They have an estimated volume of 122,687 m³.

2.8 Higher Level Plan Integration

The document *A Land Use Plan for Nisga'a Lands* (2002) is the higher-level plan for Nisga'a Lands and K'Alii Aks FDP takes management direction from the *Land Use Plan*. Direction that includes objectives and limitations on timber harvesting in community watersheds, visual quality management, botanical forest products zones, and access management planning. Any forest operations that are not consistent with the *Land Use Plan* require approval by the Executive.

The *Land Use Plan* impacts the available timber harvest volumes on Nisga'a Public Lands, and its constraints are intended to conserve values that were determined 20 years ago through public consultation and approved by the Nisga'a Lisims Government Executive. Higher level plans need to be living documents that reflect changing circumstances.



3.0 FOREST PRACTICES TO CONSERVE AND MANAGE NATURAL RESOURCES

3.1 Forest Health

Forest health is the responsibility of the NLG to monitor, report on, fund, and give management direction. Maintaining forest health through suitable harvest plans and practices is the responsibility of K'Alii Aks. Forest health will impact tree growth and survival, wood yield and quality, as well as non-timber values such as fish and wildlife habitat, and recreational, scenic, botanical, and cultural values. K'Alii Aks is unaware of any major forest health concerns or infestations on Nisga'a forested lands. K'Alii Aks silviculture surveys of cutblocks will note areas with significant damaging agents or pests and make recommendations to manage the problem. NLG provides oversight for pest and disease issues on Nisga'a Lands, management plans, and the funding for mitigation measures. K'Alii Aks may conduct the mitigation measures.

3.1.1 Pests and Pathogens

3.1.1.1 Spruce Bark Beetle (*Dendroctonus rufipennis*)

In the province of BC there is a serious spruce bark beetle outbreak occurring along the rocky mountain trench from north of Mackenzie to 100 Mile House. Since 2016, spruce bark beetle activity has been of concern on Nisga'a forest lands. It is directly associated with spruce leading timber types, small pockets of spruce trees, and spruce windthrow.

In 2018 NLG directed the deployment of trap trees and pheromone traps, and in 2019 LFR conducted "sanitation" timber harvesting of susceptible spruce stands in the Fulmar creek north area (VET303, SAN001, SAN002, SAN003). LFR was also contracted by the BC Ministry of Forests, Lands and Natural Resource Operations and Rural Development (FLNRORD) to implement a trap tree prescription program outside Nisga'a Lands in the Fulmar creek north area.

In 2019, LFR conducted spruce bark beetle reconnaissance probes in the ANU700 area to determine beetle activity in susceptible stands. It found no areas of immediate concern.

K'Alii Aks management strategy is to monitor areas through its normal ground based activities (engineering, timber harvesting, silviculture, road maintenance), and if an area of concern is identified, notify NLG and then conduct a ground inspection to identify the infestation sites and verify the severity of damage. Then working with NLG develop a control plan or outbreak management plan. The plan may include practices such as fall and burn of infested trees and timber salvage.

3.1.1.2 Mountain Pine Beetle (*Dendroctonus ponderosae*)

The mountain pine beetle outbreak in the interior of BC collapsed several years ago mainly due to the lack of host pine stands. The likelihood that epidemic infestations of mountain pine beetle may impact lodgepole pine stands within Nisga'a Lands still exists and K'Alii Aks will continue its normal



monitoring practices, as described for spruce beetle infestations. In 2008 a mountain pine beetle management plan was developed by NLG, and K'Alii Aks proposes to work with NLG at updating the plan.

Similar to spruce beetle, K'Alii Aks management strategy for mountain pine beetle is to monitor areas through our normal ground-based activities (engineering, timber harvesting, silviculture, road maintenance), and if an area of concern is identified, notify NLG and then conduct a ground inspection to identify the infestation sites and verify the severity of damage. Then working with NLG develop a control plan or outbreak management plan. The control plan may include practices such as fall and burn of infested trees, and timber salvage, and altering cutblock reforestation standards in favour of other non-pine tree species.

3.1.1.3 White Pine Weevil (*Pissodes strobi*)

White pine weevil attacks the terminal leaders of regenerated spruce trees reducing stand growth and timber quality throughout Nisga'a forest lands. K'Alii Aks management strategy is to minimize the impact of white pine weevil through reducing the number of spruce seedlings planted on a site, managing for higher or denser levels of initial conifer stocking, and or maintaining a deciduous tree cover over regenerating spruce trees.

3.1.1.4 Red Band Needle Rust (*Dothistroma pini*.)

Red band needle rust is a fungus that infests juvenile lodgepole pine stands and may cause significant mortality in stands found in the northern portion of Nisga'a forest lands. The disease depends on continued moist weather conditions so the intensity of spread may vary from year to year. K'Alii Aks management strategy when juvenile pine plantations are failing due to needle rust is where possible amend silviculture plans to include fill planting with alternate conifer species (non-pine). In areas of known needle rust, silviculture plans will where possible limit planting of lodgepole pine to less than 20% of total stocking.

3.1.1.5 Hemlock Dwarf Mistletoe (*Arceuthobium tsugense*)

Hemlock dwarf mistletoe has minimal impact on tree growth. It is endemic in the over-mature western hemlock stands within the northern portion of Nisga'a forest lands. It primarily attacks western hemlock, although the secondary hosts, Sitka spruce and amabilis fir are also susceptible. Due to the ease by which mistletoe spreads from overstory trees to understory trees, K'Alii Aks management strategy in infected areas selected for harvest will be clear-cutting. All infected residuals greater than 2 meters in height that are not required for riparian management, wildlife tree patches, or wildlife tree management purposes will be slashed. Planting of species not susceptible to infection will be specified adjacent to infected timber edges.



Small Mammals

3.1.1.6 Porcupine (*Erethizon dorsatum*)

Damage is most prevalent in the pole stage of the western hemlock and sitka spruce stands. Lodgepole pine stands are also susceptible to damage. K'Alii Aks management actions to limit porcupine damage include through managing for a mixture of tree species on regenerating cutblocks; favoring other tree species over hemlock, spruce and pine during stand tending; retaining previously damaged “sacrifice trees”; avoiding stand tending in areas with >2% current feeding damage.

3.1.1.7 Snowshoe Hare (*Lepus americanus*)

Damage has been limited in recent years but is variable due to population cycles. K'Alii Aks will monitor snowshoe hare damage and adjust its planting, brushing and thinning programs as required to address anticipated snowshoe hare damage. Sites at highest risk are brushy sites slated for fill planting.

3.1.1.8 Meadow Vole (*Microtus pennsylvanicus*)

In the past, the meadow vole has caused damage to regenerating stands within Nisga'a Lands. Current management controls include not planting during peak population cycles.

3.1.1.9 Root Rot Pathogens

Tree root rot occurs at endemic levels on Nisga'a forest land and damage is normally localized and relatively insignificant. The most common root rots are annosus root disease (*Heterobasidion annosum*), armillaria root disease (*Armillaria ostoyae*), and tomentosus root rot (*Inonotus tomentosus*).

3.1.1.10 Other Pests and Pathogens

Other pests and pathogens present on Nisga'a Lands include western balsam bark beetle (*Dryocoetes confuses*), yellow-cedar decline, and aspen leaf minor (*Phyllocnistis populiella*). For various reasons these pests are unlikely to have significant economic impact within Nisga'a forest lands but will be considered for more active management if conditions change.

3.1.2 Fire Preparedness Plan

The government of British Columbia is responsible for the control and suppression of forest fires on Nisga'a Public Lands, and NLG is responsible for the control and suppression of forest fires on Nisga'a Village Lands and Nisga'a Private Lands.



K'Alii Aks must comply with the forest fire and prevention provisions in the *Nisga'a Forest Act, Part 9, Division 1 and 2*, and the *BC Wildfire Act*. K'Alii Aks will annually submit to NLG a Fire Preparedness Plan.

Forest Practices to Conserve and Manage

Road and cutblock design and prescriptions will consider fuel breaks and wildfire prevention.

K'Alii Aks is committed to ensuring potential forest fire fuels produced by operations do not pose an unacceptable risk to identified values and may employ modified harvesting methods that limit fire hazard and risk.

All logging activities will ensure that excess slash accumulations can be disposed of in a safe orderly manner eliminating both fire and insect hazards. Upon completion of timber harvesting activities, completed blocks and roadways will be assessed to determine if treatments are required for reforestation and hazard abatement purposes.

Appropriate treatments will be prescribed to satisfy forest protection, silvicultural and ecological management objectives, such as the retention of coarse woody debris for the maintenance of biodiversity and soil nutrients.

Specific treatments may include prescribed burning and pile burning. Prescribed burning may be used as a silvicultural tool to reduce fuel loading or for pest management. Burning strategies will be timed to minimize the risk to other resources (usually before or after the fire season) and follow provincial venting requirements.

Immediate action will be taken to extinguish any fires that may ignite due to timber harvesting operations. All fires will be reported immediately to NLG and other authorities as per the Fire Preparedness Plan.

3.1.3 Windthrow

Windthrow can be categorized as normal or catastrophic. Normal windthrow occurs on a smaller scale in areas that have an inherently higher hazard such as block edges and ridges, or in areas of frequent high winds. Catastrophic windthrow is an event that occurs infrequently when exceptionally strong winds caused extensive damage to large areas of standing timber.

Windthrow can have a significant impact on fisheries habitat if riparian management areas are impacted by blowdown or where windthrow creates conditions that may cause sediments to be introduced into a stream. Windthrow on sensitive soils may also lead to slope failures or slides. Areas of windthrow will be assessed to determine if the salvage of damaged timber is feasible.

Forest Practices to Conserve and Manage

To minimize the risk of windthrow when planning timber harvesting K'Alii Aks will utilize information such as blowdown history, prevailing winds, topography, stand structure, and soil conditions. Areas that are determined to be at moderate to high risk of windthrow will be identified during block planning and managed through appropriate block design. Possible practices to reduce the amount of windthrow include minimizing the amount of exposed timber edge to prevailing winds, maintaining



wide buffers or leave strips along susceptible stands, clear-cutting high hazard stands or topographic features, and mechanical pruning or topping to establish a wind-firm edge. In areas with very high non-timber values, edge stabilization treatments such as feathering or limbing and topping will be considered.

In a catastrophic windthrow event, an assessment of the affected area will be conducted to determine the extent of the damage, the forest health risk, and the feasibility of implementing a timber salvage plan for the area. If it is determined the salvage must occur, K'Alii Aks will prepare a timber salvage plan and apply to amend the FDP as required. The time between the event and salvage of the timber is critical to minimizing forest health risk and capturing timber value.

3.1.4 Reforestation

K'Alii Aks NPLL requires it to reforest areas harvested under this FDP, and K'Alii Aks Timber Harvesting Licence, as well as areas previously harvested under LFR's Timber Harvesting Licence and LFR's NPLL's.

K'Alii Aks will make deposits into a cutblock Silviculture Levy Account to fund the cost of reforestation for the cutblocks it harvests. K'Alii Aks is not responsible to fund reforestation costs for cutblocks harvested by LFR. LFR made reforestation deposits for all cutblocks it harvested. Areas harvested by other licensees remain the responsibility of the other licensee or the Ministry of Forests Lands and Natural Resource Operations and Rural Development (FLNRORD).

Forest Practices to Conserve and Manage

Harvested areas will be reforested to contain at least the minimum number of crop trees per hectare as determined by the stocking standards for the area unless different measures are prescribed to accommodate other forest values. Methods and strategies for adequately reforesting harvested areas are described within the Site Plan for individual blocks. K'alii Aks will use standard reforestation methods as prescribed by a Registered Professional Forester (in good standing with the Association of British Columbia Forest Professionals). Maintenance of minor species such as cedar may be prescribed. Following the establishment of crop trees, appropriate treatments to encourage crop tree vigor such as brushing and weeding or spacing may be prescribed.

K'alii Aks is committed to promoting cedar in its reforestation efforts and planting cedar on suitable sites in reforested blocks will help ensure a continuous supply of cedar over time for cultural purposes. However, cedar is less drought tolerant than other species, and overall drier climatic conditions due to climate change may mean that stocking standards will need to be adjusted in silviculture plans if forest health concerns are noted.

K'Alii Aks predecessor LFR was successful in meeting its reforestation obligations. K'Alii Aks is currently reviewing and confirming the current status of each harvested cutblock, i.e., stocked, not stocked, and free-to-grow. Free-to-grow generally means that a new crop of ecologically appropriate trees of a minimum height and density, and free of pests and competition can be expected to grow to maturity. For cutblocks that are not stocked or free-to-grow, K'Alii Aks will prescribe treatments such as fill-planting, brushing, spacing, or additional surveys to establish a free-to-grow cutblock.



K'Alii Aks will not prescribe or use pesticides or herbicides for any aspect of forest management.

3.2 Water Resources

Water resource management objectives include the maintenance of water quality and quantity for domestic, recreational, agricultural and industrial use, and for wildlife and fisheries needs. The *Land Use Plan* directs that no industrial activity be permitted within areas identified as community watersheds. The *Land Use Plan* allows other activities within the community watershed with permission from the Lands and Resources Directorate, and only if the activity clearly presents no threat to the quality or quantity of potable water, such as the Northwest Transmission Line.

Timber harvesting can be conducted in a manner that presents minimal to no threat to potable water, and where communities' source potable water from wells or water treatment systems, there would be no threat to a community's potable water supply. K'Alii Aks proposes to initiate discussions around the opportunity to harvest timber in community watersheds. The discussions would cover the best practices that would be taken to minimize risks to water quality and quantity, and the potential area that K'Alii Aks would propose as a trial.

Certain forest health issues such as spruce bark beetle and mountain pine beetle, or a wildfire may present a threat to the health of a community watershed, specifically water quality. Early mitigation of a pest or disease in a watershed through timber harvesting may be appropriate and prevent further mortality to trees within and outside a watershed. If a forest health issue determines that timber harvesting is a viable option within a community watershed, then protection of water quality and quantity will be the primary objective.

Forest Practices to Conserve and Manage

The strategies that K'Alii Aks may prescribe to protect water quality may involve some or all of the following: the designation of riparian management areas; machine free zones; fell and yard away techniques around watercourses; terrain stability assessments; prescriptions to avoid unstable sites; hydrological assessments; minimal disturbance road construction; reduced roads; capping roads, ditch drainage and sediment controls; total chance planning.

3.3. Fisheries

The Nass River and its tributaries are one of the most productive fish bearing river systems in British Columbia. The cultural, economic, and social importance of salmon to the Nisga'a Nation and other indigenous people require K'Alii Aks to mitigate any disruption of fish or fish habitat from forestry activities.

The objective for the fisheries resource is to maintain and/or restore the integrity of all aquatic systems supporting fish.



Forest Practices to Conserve and Manage

Subject to the *Nisga'a Final Agreement*, NLG, the BC Ministry of Environment and Climate Change (MoECC), and the Department of Fisheries and Oceans Canada (“DFO”) each play a role in the management of fisheries and fish habitat on Nisga'a Lands.

Proper identification and classification of all riparian areas will enable protection of fish populations and habitats. The FDP maps identify all mapped streams, lakes and wetlands. Unless the stream has been inventoried for fisheries values, the FDP planning process will use a default system of stream gradient and estimated stream width to conservatively classify streams.

Non-inventoried streams with less than a 25% gradient, suitable fish habitat above, and without discernible obstructions are, by default, classified as fish bearing streams. Non-inventoried streams which sustained exceed the 25% gradient criteria for are classified as non-fish bearing streams. Non-fish bearing stream reaches that are deemed to be especially important may be managed as fish bearing. K'Alii Aks is unaware of any stream classification information for Nisga'a forested lands.

Fisheries values are field assessed at the stand level during the preparation of Site Plans. Stream gradients, widths, and fish habitat suitability are confirmed on the ground. When timber harvesting, road construction or bridge building are scheduled next to a known fish habitat, K'Alii Aks will use guidance from the *Standards and Best Practices for Instream Works* (2004) in making prescriptions.

When in-stream work is required outside the established timing windows, K'Alii Aks will request a variance authorization from the MoECC, and consult with DFO to ensure the appropriate protective measures are taken to mitigate potential impacts to fish and fish habitat.

3.4. Riparian Management

The Nisga'a Nation has set the protection of riparian areas and marine/coastal habitat as a top priority. Riparian management areas provide for the protection and management of fisheries, riparian wildlife habitats, and water quality. The objective is to maintain and/or restore the function of riparian systems. Riparian management areas are stream banks, wetlands, and the natural boundaries of a lake.

The *Nisga'a Forest Act*, Part 5, Division 2, provides details of riparian management requirements along streams and rivers, and around wetlands and lakes. Streamside tree retention is to be encouraged, particularly mature hardwoods to maintain streambank stability and stream temperature control, and to provide a source of wildlife trees and future large woody debris.

Forest Practices to Conserve and Manage

Timber harvesting within a riparian management area will adhere to the criteria established within the *Nisga'a Forest Act section 28 General Requirements within Riparian Management Areas*. The degree of retention within any specific riparian management area will be dependent on the



riparian classification, the values present, and an assessment of windthrow hazard and consequences – risk.

Site-specific prescriptions will be developed to meet fish and riparian area stand level objectives. K'Alii Aks forest practices in a riparian management area will be designed to minimize impacts on stream channel dynamics, aquatic ecosystems, water quality, and the diversity, productivity and sustainability of wildlife habitat and vegetation within the riparian management area, and will to minimize the risk of windthrow on trees retained adjacent to the stream wetland or lake.

3.5 Wildlife

The Nisga'a Nation places a high priority on the maintenance and improvement of wildlife populations on Nisga'a Lands and within the Nass Wildlife Management area.

Forest Practices to Conserve and Manage

Subject to the *Nisga'a Final Agreement*, NLG and the MoECC is each responsible and play a role in the management of wildlife. K'Alii Aks will consult with NLG and MoECC when developing harvest plans in the *Land Use Plan* Wildlife Habitat Zones. Where necessary, timber harvesting plans in the Wildlife Habitat Zone will be supported by a wildlife habitat assessment and must not degrade the wildlife habitat for the designated species. Moose, grizzly bear and mountain goat have been identified as designated species.

The *Land Use Plan* created Ecologically Sensitive Areas to protect ecologically sensitive, rare or vulnerable habitat. Proposed timber harvest in Ecologically Sensitive Areas will be supported by an ecological assessment and must not degrade the natural environment. No forestry activities will be permitted in areas designated as critical ecologically sensitive areas.

In addition to the above designated species, the FDP identifies the following potentially present wildlife species for further forest management consideration: furbearers (fisher, marten, fox, lynx, weasel, etc.), coastal tailed frog, great blue heron, marbled murrelet, keen's long eared myotis, northern goshawk, and wolverine.

K'Alii Aks will refer to the MoECC *Accounts and Measures for Managing Identified Wildlife Report* (2006) for forest practices guidance, and the *Species at Risk Act (SARA)* legislation and *species lists*, BC *Government Action Regulations (GAR) Orders*, and BC *Government Wildlife Measures (GWM)* for further wildlife and forest management guidance and direction. Under *SARA*, species of Special Concern are to be managed to prevent the species from becoming endangered or threatened, and Threatened Species are to have a Recovery Management Plan prepared by the government authority.

K'Alii Aks Forest Development Plan objectives are centered on habitat maintenance strategies to sustain viable populations of all native wildlife species within their natural ranges. Achievement of these objectives is linked to the implementation of biodiversity and riparian management strategies. For example, the establishment of riparian management areas, old growth reserves, and group and



single tree retention will provide critical components of wildlife habitat, such as wildlife trees, vertical structure, snags, coarse woody debris sources, a variety of forest edge types, and migration and dispersal corridors. Proposed forest practices must not restrict access to hunting and trapping areas.

3.5.1 Moose

Moose is a designated species. Important moose habitat is known to occur throughout Nisga'a Lands. Moose are well adapted to the early successional stages of forests, foraging extensively on deciduous trees and shrubs that colonize sites following disturbance. However, moose are also dependent on the cover provided by mature coniferous forests to provide security cover, thermal cover, and access to forage during the winter. Quality moose habitat includes a variety of different interspersed seral stages.

Forest Practices to Conserve and Manage

Forest management strategies will focus on the maintenance of security and thermal cover for moose. Forest practices in the Nass Bottomlands and specifically where moose winter range can be identified will prescribe wildlife tree patches or reserves to ensure sufficient security and thermal cover for moose. Additional forest practices may include limiting the log haul to the period May to November and prescribing that roads and structures within 500 meters of moose winter range will be constructed in a manner that will facilitate effective deactivation (no vehicle access) following completion of activities.

Forage production for moose will be encouraged through silvicultural treatments such as manual brushing and managing for a component of deciduous tree species in regenerated stands.

3.5.2 Mountain Goat

Mountain goat is a designated species. The snow shedding properties of steep bedrock slopes with sharp ledges and overhangs, and particularly the southern exposures, are favored habitat areas for mountain goats to evade predators. Vertical ravines and canyons may serve as traditional seasonal movement areas as well.

As summer progresses, mountain goats will move upslope to alpine meadow habitats to feed on shrubs, grasses, sedges, and forbs. Mountain goat populations tend to compress as winter approaches, retreating to lower elevations below timber line to escape heavy snows and cold temperatures. Winter foraging will occur in very close proximity to steep escape terrain, including areas of old growth forests where browse such as coniferous trees, lichens, forbs, and mosses may be available.

Spring birthing and nursing occurs in May or June and is typically associated with extreme terrain. Over wintering and early spring birthing habitats are the most critical to Mountain Goat populations and may be a concern for forest management.



Forest Practices to Conserve and Manage

In areas that are identified as critical mountain goat habitat, forest management strategies will be directed by the measures prescribed in the *Kalum Ungulate Winter Range Order #U-6-001* (2012). There will be no logging within mountain goat winter range (except individual trees for safety reasons). Logging within 500 meters (2000 meters for helicopter logging) of mountain goat winter range will take place between June 15th and October 31st. Roads and structures within 500 meters of mountain goat winter range will be constructed in a manner that will facilitate effective deactivation (no vehicle access) following completion of activities.

3.5.3 Grizzly Bear

The grizzly bear is a designated species and is a species of Special Concern under SARA. Grizzly bears depend on diverse habitats. Valley-bottom salmon streams and riparian area forests provide important forage species such as devil's club, red elderberry, currants, and skunk cabbage. Avalanche tracks, subalpine and alpine meadows are also important upland habitats. Suitable grizzly bear habitat may be found across all of Nisga'a Lands.

Forest Practices to Conserve and Manage

Forest management strategies for grizzly bears prescribe connectivity of habitats, the maintenance and growth of forage species over time, and access management. K'Alii Aks will plan the harvest of highly productive valley-bottom sites to include a diversity of structure such as clusters of mature conifers with frequent groupings of deciduous trees and brushy areas in conjunction with the preservation of riparian reserves and wetland ecosystems.

Silvicultural treatments will prescribe clusters of trees through variable density planting and variable spacing densities. K'Alii Aks will investigate new habitat management strategies for grizzly bears and where prescribed propose additional stand level measures to support grizzly bear populations.

3.5.4 Fisher, Marten and Other Furbearers

For fisher, marten and other furbearers, the predominant impacts of clearcut logging are the reduction of forest interior conditions leading to reduced connectivity of suitable habitat. The maintenance of connective corridors, specifically along riparian areas, within wetland forest types and to upland habitats is extremely important for maintaining habitat opportunities. The *Nisga'a Forest Act* requires the maintenance of riparian management areas along streams, lakes and wetlands.

Fisher is a species of Special Concern under SARA. Critical habitats for fisher are generally associated with suitable resting and maternal denning sites. Large coarse woody debris is important for both winter rest sites and as habitat for prey species. Maternal den sites are predominantly located in large, declining cottonwood.

Fisher, marten and other furbearers may avoid large openings (25 ha +) because of the lack of cover and susceptibility to being preyed upon, therefore the maintenance of corridors or screening patches will reduce sighting distances and link unharvested forest stands.



Forest Practices to Conserve and Manage

When planning timber harvesting in known fisher and marten habitat, K'Alii Aks will prescribe wildlife tree retention patches that include large veterans and deciduous species to maintain important opportunities for denning and cover habitat and to provide sources of coarse woody debris for resting and foraging sites, and may prescribe leaving slash piles unburned.

3.5.5 Coastal Tailed Frog

The tailed frog is the only known stream breeding frog in Canada. For coastal British Columbia, the tailed frog distribution coincides with the coastal western hemlock biogeoclimatic zone. The known northern limits of its distribution are found in the Coast Mountains Forest District just outside of Nisga'a Land so the potential exists for the tailed frog to occur on Nisga'a Lands, specifically where coarse-grained bedrock geology is present. The coastal tailed frog is a species of Special Concern under SARA.

Research from the Center of Applied Conservation Biology at the University of British Columbia indicates that the coastal tailed frog primarily inhabits headwater gullies of cool and permanent mountain streams. Creek width and low fine sediment levels appear to influence tailed frog populations.

Forest Practices to Conserve and Manage

Management objectives are the maintenance of stream sediment levels and transport regimes, and the conservation of forested buffers along streams. Strategies such as riparian reserves, fell and yard away techniques and machine free zones in riparian management areas, and ditch sediment traps on roadways may be employed.

3.5.6 Great Blue Heron, Marbled Murrelet, Keen's Long-eared Myotis and Northern Goshawk

Great blue herons are likely present in low numbers on the coastal and estuary portions of Nisga'a Lands. It is a species of Special Concern under SARA. Great blue herons require abundant and accessible prey within 10 km of a breeding location. If any heron colonies are identified, NLG and MoECC will be notified and a management strategy developed.

Marbled murrelet is likely present in low numbers on the coastal portions of Nisga'a Lands. It is a Threatened species under SARA. If any marbled murrelet is identified, NLG and MoECC will be notified and site and area specific reserves and/or alternative silviculture systems may be prescribed.

Keens long-eared myotis is a bat species with a limited and sparse distribution, and it is not known to occur on Nisga'a Lands. It is a species of Special Concern under SARA. If it is identified, NLG and MoECC will be notified and a site-specific strategy developed for the immediate vicinity and around associated habitat features.

The northern goshawk is widely distributed throughout the Skeena Region and the interior subspecies is likely present within Nisga'a Lands. It is a species of Special Concern under SARA. If



any northern goshawk nests are identified within proposed developments, NLG and MoECC will be notified and a biologist will be consulted to guide a site specific prescription which may include timing restrictions, to a system of reserves and/or alternative silviculture systems (e.g. shelterwood) in the immediate vicinity of the identified nests.

3.5.7 Wolverine

Wolverines are widely distributed at low densities throughout British Columbia. It is a species of Special Concern under *SARA*. Wolverines utilize a variety of food items and habitat types throughout the year and may require a variety of habitat types over their large home range.

Forest Practices to Conserve and Manage

Because wolverines are not habitat specialists and have extensive home ranges, management will be focused on general wildlife measures such as wildlife tree patches, dispersal corridors and riparian management. If specific features such as den sites are located, they will be considered for inclusion in wildlife tree patches.

3.6 Botanical Forest Products

The *Nisga'a Forest Act* defines botanical forest products as pine mushrooms, and any plant or fungus that occurs naturally on Nisga'a Lands and is a prescribed botanical forest product. The *Land Use Plan* lists ten different mushroom species as well as fiddleheads as prescribed botanical forest products (pine mushroom, black morel, oyster mushroom, king boletus, blue chanterelle, funnel chanterelle, lobster mushroom, chicken of the woods, hedgehog mushroom, cauliflower mushroom). Other potential botanical forest products may include edible berries, floral products, bark, and medicinal plants.

Throughout the year, many people can be found in various locations within Nisga'a Lands collecting and harvesting botanical forest products.

Forest Practices to Conserve and Manage

To help manage botanical forest products, the *Land Use Plan* established the Botanical Forest Products zone. Within this zone, forest management will include consideration of the cumulative effects on the appropriate habitat for botanical forest products across all of Nisga'a Lands, and an assessment of botanical forest products habitat. Access to botanical forest product harvesting areas will not be unduly restricted by forest management practices.

A portion of the Botanical Forest Products zone consists of the Pine Mushroom polygon. The Pine Mushroom polygon was established for the protection of the commercially viable pine mushroom (*Tricholoma magnivelare*) grounds. Pine Mushroom polygons can be assessed for suitability for pine mushroom habitat, and can be removed from the polygons if a field survey determines that the lack of presence and potential for pine mushroom growth does not meet the definition of pine mushroom habitat. Pine mushroom habitat is typically characterized by a poorly developed hemlock and



lodgepole pine mature overstory, with minimal understory, heavy moss layer and well-drained/shallow soils.

Within the pine mushroom polygon and on pine mushroom habitat: (i) timber harvesting, including that associated with roads, will retain a minimum of 80% of the forest cover at an age of at least 120 years; and (ii) the silviculture system, other than for areas to be occupied by roads, will be a selection system and provide for retention of up-to 70% of the total basal area of the cutblock.

The protection or management of habitat suitable for other botanical forest products or areas that are suitable pine mushroom ground outside the Pine Mushroom polygon will be dealt with on a site-specific basis.

3.7 Biological Diversity

The long-term objective of the Nisga'a Nation is to maintain and/or restore biodiversity across Nisga'a Lands. Biodiversity will be managed at the landscape and stand levels. Prior to harvesting areas identified as being Ecologically Sensitive in the *Land Use Plan*, the area will be assessed on its ecological values to ensure those ecological values are being adequately conserved.

Alternatively, an overall assessment of ecological values within the areas identified as ecologically sensitive in the *Land Use Plan* may be developed during the term of this Forest Development Plan.

In the context of forest management on Nisga'a Lands, biodiversity (biological diversity) is regarded as the diversity of plants, animals and other living organisms in all their forms and levels of organization, and includes the diversity of genes, species and ecosystems, as well as the evolutionary and functional processes linking them.

Forest Practices to Conserve and Manage

Biodiversity conservation strategies in managed forests are based on evolving ecosystem management concepts that assume the needs of most organisms will be met by maintaining a range of habitats across a broad geographic distribution. Because all species cannot practically be managed on all areas individually, biodiversity must be managed at a variety of scales and across a variety of landscapes. Strategies for individual species may be specifically designed as required.

Cutblock design, including size, shape, and pattern, can be used to create a range of disturbance types and sizes, and can be enhanced by including even and uneven aged forest stand management. Small scale disturbances will be mimicked through dispersed patch cutting or uneven aged management and clearcutting with Wildlife Tree Patch retention. Some larger patches will be cut and aggregated to form larger openings, particularly at lower elevations and on drier aspects where fire disturbance was a historic influence.

Cutblock location across the landscape and across time will attempt to reflect natural disturbance patterns, subject to the limitations caused by previous timber harvesting. Landforms, features and site sensitivity to development will also be considered in cutblock design.



Until an analysis of patch size distribution is completed, openings that are greater than 60 ha of non-greened up area require a variance authorization from the Director of Lands and Resources (*Nisga'a Forest Act*, part 4, section 24).

Connectivity at the landscape level is to be managed through riparian and upland corridors, i.e., extended rotations and use of non-clearcut silvicultural systems and corridor replacement via aggregation of harvest units. These management practices are meant to ensure that landscape level stand structures will reflect natural disturbance patterns across Nisga'a Lands.

At the stand level, an average of 10% of the area of individual cutblocks will be retained as wildlife tree patches. Patches of advanced regeneration, and non-merchantable trees retained as recruitment snags will further increase the diversity of stand structure at the cutblock level. Tree and vegetation species composition will be maintained by retaining a variety of native understory plants and plant communities, particularly within wildlife tree patches or riparian management areas. Where practicable, minor tree species that form less than 20% of the trees present on a cutblock may be retained as individual trees or reserved within wildlife tree patches. If these minor tree species are harvested, Site Plans will prescribe that reforestation treatments will be planned to maintain these species through planting or natural regeneration.

When carrying out forest practices, if K'Alii Aks finds a protected resource feature (such as a raptor nest or identified wildlife) that was not identified on an approved operational plan or permit, K'Alii Aks will modify or stop any forest practice within the vicinity of the resource feature and promptly advise the Director of Lands and Resources of the nature and location of the feature.

A high percentage of the forest on Nisga'a Lands contains significant volumes of non-merchantable timber that, subject to log markets, is often left on the cutblock. This residual and waste timber will serve a biodiversity function and may be left on the cutblock as coarse woody debris for small mammal habitat and cover. Where timber quality is such that insufficient coarse woody debris will remain post-harvest, the Site Plan may require the processing (limbing and topping) of harvested trees in the cutblock.

3.8 Soils and Terrain Stability

The *Nisga'a Forest Act* outlines requirements for management of the soil resource. K'Alii Aks will comply with those requirements and prescribe forest practices that minimize soil resource impacts.

Forest Practices to Conserve and Manage

Longer-term timber harvest planning is used to develop road access management plans which seek to minimize road construction and in turn soil disturbance. Stand level soil disturbance objectives are set in Site Plans and soil disturbance rehabilitation measures will be prescribed where necessary. Harvesting systems and seasonal restrictions will be prescribed to limit soil disturbance to acceptable levels.



K'Alii Aks may conduct Terrain Stability Overview Mapping to provide a landscape assessment of terrain stability. In the absence of overview mapping, K'Alii Aks will complete a Terrain Stability Assessment of all proposed cutblocks and roads where side slopes are greater than 60%, and where there are aerial photo, lidar or field indicators or related reports of terrain instability.

3.9 Timber Salvage

Where timber is recently damaged due to windthrow, insects, disease or fire, and the timber is merchantable, economic and safe to salvage, K'Alii Aks will propose timber salvage operations.

Forest Practices to Conserve and Manage

Timber damage resulting in timber salvage may be caused by the activities proposed in this plan or an event of nature. K'Alii Aks will plan and prescribe forest practices to minimize timber damage and the subsequent need for timber salvage. K'Alii Aks will where possible inspect areas through its normal course of activities or after major wind and rain events to identify damaged timber and possible timber salvage. When timber damage has been identified, it will be reported to NLG. If the damaged timber is deemed salvageable, K'Alii Aks will develop a timber salvage prescription for approval by NLG.

3.10 Cultural Heritage Resources and Archaeology

A “Cultural Heritage Resource” is an object, site, or location of a traditional social practice of historical, cultural or archaeological significance to the Nisga’a Nation or the province.

Cultural Heritage Resources are identified through historical maps, archaeological impact assessments (AIA’s) and public comment, and will be addressed in accordance with the *Heritage Conservation Act*. AIA’s are required under the *Heritage Conservation Act* to manage and conserve archaeological resources, including areas affected by forest development proposals.

An Archaeological Overview Assessment has been completed for the Coast Mountains Forest District (including portions of Nisga’a Lands) that provides guidance in determining where AIA’s will be required.

The *Land Use Plan* established a Heritage Preservation Zone to protect heritage sites and features identified in the *Land Use Plan*.

The *Land Use Plan* established a Cultural Forest Products zone whose primary objective is the production of forest resources important to the Nisga’a people. The zone must be managed in such a way as to ensure that the cultural forest resources continue to be available. Cultural forest resources include botanical forest products, medicinal products such as devil’s club, food resources such as berries, and specific tree species such as cedar.

Forest practices must address the cultural forest resources that have been identified as important to the Nisga’a Nation. Timber harvesting prescriptions must consider the cumulative effects on identified cultural forest products across all of Nisga’a Lands.



Forest Practices to Conserve and Manage

AIA's will be completed by a professional archaeologist on proposed cutblocks that show or have a high likelihood of containing archaeological resources unless NLG directs otherwise. Once completed K'Alii Aks will propose an appropriate prescription. Proposed timber harvesting must not restrict access to cultural forest product areas. In the Cultural Forest Products zone K'Alii Aks will prescribe the growing of cedar on sites suitable for cedar.

The hot springs at Hlgu Isqwit (Little Stink Hot Spring) and Ksgyukwsa'a (Burton Creek Hot Spring) have been identified as Cultural Heritage Resources, mapped, and no harvesting will be planned near them. K'Alii Aks will conserve these cultural heritage features as recreation sites and manage the hot springs view to meet a partial retention visual quality objective. K'Alii Aks will manage any cutblocks in the vicinity of the hot springs to minimize the risk of diverting or affecting ground water.

K'Alii Aks will solicit cultural heritage and archeological comments and concerns through community consultations, and meetings with elders and community representatives. Public comment and concerns will be recorded, and the actions to address the comments or concerns documented, and a summary forwarded to the Director.

3.11 Recreation

Recreation values within Nisga'a Lands are associated with the adjacent Anhluut'ukwsim Laxmihl Angwinga'asanskwhl (Nisga'a Memorial Lava Bed Park), the Nass River and some major tributaries, the coastal marine environment at the mouth of the Nass, and the designated recreation sites at Dragon Lake, Hlgu Isqwit (Little Stink Hot Springs), and the Ishkheenickh River (Quilgaw). For the purposes of forest management planning, the Kwinamuck Lake site will also be considered a recreation site.

Cultural resource features also contribute to recreational and tourism-based activities. Hlgu Isqwit (Little Stink Hot Springs) and Ksgyukwsa'a (Burton Creek Hot Springs) are cultural resource features, have very high recreational values and will also be treated as recreational sites for the purpose of forest management.

Forest Practices to Conserve and Manage

K'Alii Aks supports potential outdoor recreation and tourism based economic development at the recreational sites and will work to ensure that where possible recreational values are accommodated in its plans.

K'Alii Aks will employ visual quality management for recreational and cultural resource features where required by the *Land Use Plan*, as well as for select viewsapes visible from communities and the Nisga'a Highway.

There is an NLG - BC government Master Management Agreement for Anhluut'ukwsim Laxmihl Angwinga'asanskwhl (Nisga'a Memorial Lava Bed Park). K'Alii Aks will respect the agreement and conduct a visual impact assessment on cutblocks within 1 kilometer of Anhluut'ukwsim Laxmihl



Angwinga'asanskwhl (Nisga'a Memorial Lava Bed Park) or within the Tseax visual polygon to ensure that timber harvesting will not result in more than 10% of the visual area having vegetation of a height less than 5 meters.

3.11.1 Designated Recreation Sites

Dragon Lake Recreational Site

The Dragon Lake recreational site is located on the west side of Dragon Lake. It is a day-use and over-night camping site with a small dock and a boat launch area and is well used by both local users and tourists from May to September.

Forest Practices to Conserve and Manage

K'Alii Aks will prepare visual impact assessments for various visual quality objectives and review them with local day-use and over-night tourist visitors to assist in designing the FDP cutblocks above Dragon Lake.

Hot springs

Little Stink (Hlgu Isgwit) Hot Springs

Hlgu Isgwit Hot Springs is located about 500 meters east of Ksi Ansit'aagan (Ansedagen Creek) on the southside of the Nisga'a highway. The very close highway access allows significant numbers of local users and tourists to visit this site.

Forest Practices to Conserve and Manage

For any cutblocks in the vicinity of the hot springs, K'Alii Aks will prescribe forest practices that minimize the risk of diverting or affecting ground water. K'Alii Aks will prepare visual impact assessments and ensure visual quality objectives for recreation sites are achieved.

Burton Creek (Ksgyukwsa'a) Hot Springs

Ksgyukwsa'a Hot Springs is located about 500 meters above the mouth of Burton Creek on the southside of the Nass river across from the village of Gingolx. Access is by boat.

Forest Practices to Conserve and Manage

No harvesting is planned in the vicinity of the hot springs. K'Alii Aks will prescribe forest practices that minimize the risk of diverting or affecting ground water and will prepare visual impact assessments and ensure visual quality objectives for recreation sites are achieved.

Ishkheenickh River (Quilgaux) Recreational Site

The Ishkheenickh River recreational site is located on the Ishkheenickh River at approximately 16 kilometers along the Ishkheenickh mainline road. It is a day-use and overnight camping site used primarily for sport angling. Both local users and tourists enjoy the use of the recreational site.

Forest Practices to Conserve and Manage



Should proposed timber harvesting impact visual quality objectives at Ishkheenickh, K'Alii Aks will prepare visual impact assessments and ensure visual quality objectives for recreation sites are achieved.



4.0 Forest Development Plan Time Schedule for Referral and Public Consultation

- K'Alii Aks Timber Corporation will be holding public meetings as described in the following:

Start Public Consultation	Location	"Open House" Staff Attendance	End Public Consultation
Feb 22, 2023	Nisga'a Tsiamiks, 2475 Franklin Street, Vancouver	Mar 17	Apr 13
Feb 22, 2023	Gitmaxmak'ay Nisga'a, 301- 860 3rd Ave, Prince Rupert	Mar 21	Apr 13
Feb 22, 2023	Terrace Nisga'a Urban Local Office	Mar 21	Apr 13
Feb 22, 2023	Gitlaxt'aamiks Village Government	Mar 22	Apr 13
Feb 22, 2023	Gitwinksihlkw Village Government	Mar 22	Apr 13
Feb 22, 2023	Gingolx Village Government	Mar 23	Apr 13
Feb 22, 2023	Laxgalts'ap Village Government	Mar 23	Apr 13

- For K'Alii Aks 2023 – 2028 Forest Development Plan comments, concerns, and questions please contact: Jon Dehouwer- jon.dehouwer@npvlp.ca
- K'Alii Aks Timber Corporation will summarize public comments, concerns and questions, and its response and any action taken.

The Forest Development Plan text and 1:50,000 maps can be viewed at:

Submission of FDP	Location	Distribution Date	End Public Consultation
K'Alii Aks Timber Corporation	K'Alii Aks Office, 4714 Tait Ave, New Aiyansh (northeast door)	Mar 13, 2023	Apr 13, 2023
Nisga'a Lisims Government	NLG Administration Building -- Upstairs	Mar 13, 2023	Apr 13, 2023
Gitlaxt'aamiks	Gitlaxt'aamiks Village Government Offices	Mar 13, 2023	Apr 13, 2023
Gingolx	Gingolx Village Government Offices	Mar 13, 2023	Apr 13, 2023
Laxgalts'ap	Laxgalts'ap Village Government Offices	Mar 13, 2023	Apr 13, 2023
Gitwinksihlkw	Gitwinksihlkw Village Government Offices	Mar 13, 2023	Apr 13, 2023
Terrace	Terrace Nisga'a Urban Local Office	Mar 13, 2023	Apr 13, 2023
Prince Rupert	Gitmaxmak'ay Nisga'a, 301- 860 3rd Avenue	Mar 13, 2023	Apr 13, 2023
Vancouver	Nisga'a Ts'amiks, 2475 Franklin Street	Mar 13, 2023	Apr 13, 2023





5.0 Appendices

Appendix A Forest Development Plan Proposed Cutblocks

Appendix B Forest Development Plan Proposed Roads

Appendix C Kwinmuck Operating Area

Appendix D Monkley Bay Operating Area

Appendix E Burton Operating Area

Appendix F (1) 1:20,000 Forest Cover Maps

Appendix F (2) 1:20,000 Known Resource Values Maps

Appendix G 1:50,000 FDP Overview Maps (North and South)

Block ID	Status	Operating Area	Mapsheet	Harvest Method	Gross Area (ha)	Silviculture System	Species Composition by Leading Species	Estimated Total Volume (m³)	Percent of Pulp Content (H/M/L)	Logging Season (W or S)	Biogeoclimatic Ecosystem Classification	Elevation (m)	Land Use Plan Layers					Comments	
													Ecological	Wildlife	Agricultural	Botanical (BFP)	Cultural (CFP)		
Year 1													2023						
ANU606	A	West Nass	103P.013	C/GBS	20.9	CC	HwSx(Ba)	10,955	L	S	CWHws1	85							
ANU701	A	West Nass	103P.013	C/GBS	30.7	CC	HwBaSx	18,052	L	S	CWHws1	337	yes						
ANU702	A	West Nass	103P.013	C/GBS	43.2	CC	HwBaSx	24,534	L	S	CWHws1	337	yes						
DLK315	P	Nass Valley	103P.025	GBS	30.5	P.RET	SxAcPl(Hw)	3,000	L	W	ICHmc2	180	yes	yes			yes		
KSD514	A	Ksedin	103P.004	C/GBS	27.9	CC	HwBa	12,162	M	S	CWHws2	715							
KSD515	A	Ksedin	103P.004	C/GBS	29.2	CC	HwBa	16,760	M	S	MHm2	821	yes						
DLK509	A	Nass Valley	103P.036	GBS	25.7	CC	Hw(BaSx)	11,148	H	W	ICHmc2	394	yes				yes		
VET307	A	Tseax	103P.015	C/GBS	15.9	P.RET/CC	HwCwSx	8,000	L	S	ICHmc2	473	yes				yes	Community Watershed	
VET309	A	Tseax	103P.015	GBS	20.3	CC	HwSx(AcCw)	9,885	M	W	ICHmc2	240	yes					CHR	
KSD611	A	Ksedin	103P.004	GBS/C	45.2	CC	HwBa(SxAc)	38,118	L	S	CWHws1	349							
Year 2													2024						
DLK201	A	Tseax	103P.036	GBS/C	60.2	CC	HwBa	23,280	L	S	MHm2	1052	yes					VIA	
DLK204	A	Tseax	103P.036	GBS/C	43.3	CC	HwBl(Sx)	18,992	L	S	MHm2	914					yes	VIA	
DLK309	P	Nass Valley	103P.025	GBS	76.7	CC/P.RET	PIAt	6,000	L	S	ICHmc2	130	yes	yes			yes		
DLK310	P	Nass Valley	103P.025	GBS	18.5	CC	PIHw	9,528	L	S	ICHmc2	180	yes	yes			yes		
DLK950	A	Nass Valley	103P.025	C/GBS	50.9	CC	PIHw(Sx)	17,218	L	S	ICHmc2	216						yes	
DSK200	P	West Nass	103P.003	GBS	41.7	P.RET	SxDr(Hw)	5,000	L	W	CWHws1	25	yes	yes					
ISH999	P	Ishkheenic	1031.092	SS	355.0	P.RET	CwHwSxYc	4,000	L	S	CWHw1	100	yes				yes	VIA	
KWT100	P	Nass Valley	103P.056	GBS	176.0	CC/P.RET	Hw(BIAC)	14,000	L	W	ICHmc2	260		yes		yes	yes		
KWT101	P	Nass Valley	103P.046	GBS	25.4	CC	PIHw(Ac)	10,200	L	W	ICHmc2	200		yes		yes	yes		
KSD802	P	Ksedin	103P.014	C	109.3	CC	BaHw	20,250	M	S	ICHmc2	490	yes				yes		
NAS201	P	West Nass	103P.002	GBS	60.3	P.RET	CwHw(Sx)	10,000	L	W	CWHw1	150	yes				yes		
Year 3													2025						
ANU751	A	West Nass	103P.013	C/GBS	47.9	CC	HwBa(Sx)	30,000	L	S	CWHws1	480							
ANU802	P	West Nass	103P.013	C	41.5	CC	BaHw	28,635	L	S	CWHws2	700							
CAN102	P	Kwinamuck	103P.025	GBS	23.7	P.RET/CC	PIAt(Hw)	13,035	L	S	CWHws2	45	yes	yes		yes	yes	yes	
CAN103	P	Kwinamuck	103P.025	GBS	39.5	P.RET/CC	PIAc(Hw)	10,000	L	S	CWHws2	70	yes	yes		yes	yes	yes	
CAN104	P	Kwinamuck	103P.025	GBS	35.1	P.RET/CC	PIHw	18,954	L	S	CWHws2	110				yes	yes	yes	
DLK206	A	Tseax	103P.036	GBS/C	44.2	CC	HwBl(Sx)	20,849	L	S	MHm2	888						yes	
DLK301	P	Nass Valley	103P.036	GBS	32.4	CC	BlHw	22,680	M	W	ICHmc2	470							
DLK306	P	Nass Valley	103P.036	GBS/C	201.4	P.RET/CC	HwPl(BI)	18,000	M	W	ICHmc2	350	yes					yes	
DLK307	P	Tseax	103P.036	GBS	232.4	CC	BlHw(Ba)	18,000	M	W	MHm2	1170						VIA/TSA	
DSK103	A	West Nass	103P.003	GBS/C	53.5	CC	HwBa(Sx)	22,000	H	W	CWHws2	35	yes						
DSK104	A	West Nass	103P.003	GBS/C	11.6	CC	HwBa(Sx)	5,301	H	W	CWHws2	35	yes						
KWT102	P	Nass Valley	103P.045	GBS	60.0	CC	HwPlBl(Sx)	17,700	L	S	CWHws2	170		yes		yes	yes		
KSD703	P	Ksedin	103P.004	GBS	31.6	CC	SxBaHw	10,000	M	S	CWHws1	195							
KSD800	P	Ksedin	103P.014	GBS	73.5	CC	BaHw	26,000	M	S	CWHws2	600							
KSD801	P	Ksedin	103P.014	C/GBS	20.8	CC	BaHw	18,200	M	S	MHm2	980							
GIN001	P	Xnukw	103P.001	C	20.1	CC	CwHw(Yc)	11,557	M	S	CWHw1	135	yes				yes	TSA	
NAS200	P	West Nass	103P.002	GBS	28.1	CC	SxHw	10,000	M	S	CWHws2	530					yes		
VET005	A	Aiyansh	103P.015	C/GBS	50.3	CC	HwHmBa	15,000	H	S	MHm2	941					yes		
VET401	P	Tseax	103P.015	GBS	7.1	CC	BaHw	3,514	M	S	ICHmc2	360					yes		
VET402	P	Ksedin	103P.015	GBS	23.6	CC	BaHwBl	12,000	M	S	MHm2	900							
Year 4													2026						
CAN101	P	Kwinamuck	103P.025	GBS	103.2	P.RET/CC	SxHw(Ac)	30,000	L	S	CWHws2	90	yes				yes	yes	
DLK106	A	Tseax	103P.026	C	53.1	CC	HwBl	31,800	H	S	CWHws2	840	yes					yes	
DLK107	P	Tseax	103P.026	GBS/C	83.5	CC	SxHwBl	58,000	H	S	CWHws2	550	yes					yes	
DLK300	P	Nass Valley	103P.035	GBS	88.4	CC	PIHw(AcSx)	57,460	M	W	ICHmc2	200	yes	yes					
DLK302	P	Nass Valley	103P.036	GBS	17.5	CC	Hw(AcPl)	8,750	M	W	ICHmc2	215							
DLK303	P	Nass Valley	103P.035	GBS	23.4	CC	HwPl(BI)	14,040	M	S	ICHmc2	130	yes						
DLK304	P	Nass Valley	103P.035	GBS	74.2	P.RET/CC	PIHw	42,665	M	S	ICHmc2	100	yes						
DLK305	P	Nass Valley	103P.036	GBS	104.9	P.RET/CC	HwPl(SxBl)	40,000	M	W	ICHmc2	280	yes						
DLK314	P	Nass Valley	103P.025	GBS	77.6	P.RET	PIHwAt(Sx)	29,100	L	W	ICHmc2	190	yes	yes				yes	
KSD700	A	Ksedin	103P.003	C/GBS	26.5	CC	HwBa(Sx)	12,239	H	S	CWHws1	362							
KSD701	A	Ksedin	103P.003	C/GBS	67.5	CC	HwBa(Sx)	27,268	H	S	MHm2	593							
KSD704	P	Ksedin	103P.004	C	48.7	CC	BaHw(Sx)	20,000	M	S	CWHws2	750	yes						
NAS204	P	West Nass	103P.003	C	111.9	CC	HwBaSx	25,000	H	W	CWHws2/1	370							
Year 5													2027						
ANU805	P	West Nass	103P.013	C	185.5	CC	SxHwBa	35,000	L	S	CWHws1	375	yes						
CAN001	A	Kwinamuck	103P.025	C/GBS	33.6	CC	HwBl(Ba)	17,131	M	W	CWHws2	304	yes						
CAN100	P	Kwinamuck	103P.025	GBS	79.8	P.RET/CC	PI	24,738	L	W	CWHws2	180	yes					yes	
DLK170	A	Tseax	103P.026	C/GBS	18.9	CC	HwSx(Ba)	9,300	M	S	ICHmc2	420							
DLK180	A	Tseax	103P.026	C/GBS	19.5	CC	HwSxBa	8,424	M	S	CWHws2	617							
DLK308	P	Tseax	103P.036	GBS	41.9	CC	HwSxBa	14,665	M	S	MHm2	1190	yes						
DLK312	P	Nass Valley	103P.025	GBS	84.2	CC/P.RET	PIHwCw(At)	46,310	L	W	ICHmc2	312	yes	yes				yes	
GIN002	P	Xnukw	103P.002	GBS	106.9	CC	HwSx(Yc)	73,227	M	S	CWHw1	210	yes						
KSD411	P	Ksedin	103P.014	GBS	61.3	CC	HwBa(Sx)	42,910	M	S	CWHws1	270						yes	
ISH501	A	Ishkheenic	1031.093	C/GBS	15.7	CC	HwSxBa	7,011	H	S	CWHws1	99	yes						
ISH510	A	Ishkheenic	1031.093	C/GBS	52.0	CC	HwBa(Sx)	29,074	M	S	CWHws1	502	yes						
ISH511	A	Ishkheenic	1031.093	C/GBS	34.2	CC	HwBa	19,449	M	S	CWHws1	400	yes						
ISH602	A	Ishkheenic	1031.093	C/GBS	37.8	CC	HwBa(Sx)	22,274	M	S	CWHws1	290							

Volume L <20
M 21 to 35
H 36 >

Block ID	Operating Area	Mapsheet	Road ID M/B/S	Work Required				Major Structures	Deactivation		Provincial Secondary Road
				Activity	Status	Length (km)	Year		Year	Level	
Year 1											
2023											
ANU606	West Nass	103P.013	Spur	C	T	1.7	2023	Br	2023	P	
			Branch	M	T	4.2	2023		2023	S	
ANU701	West Nass	103P.013	Spur	C	T	2.5	2023		2024	P	
ANU702	West Nass	103P.013	Spur	C	T	3.6	2023		2024	P	
DLK315	Nass Valley	103P.025	Spur	C	T	1.4	2023		2024	P	yes
			Spur	M	T	1.0	2023		2024	P	
KSD514	Ksedin	103P.004	Spur	C	T	1.8	2023	Br	2024	T	
			Branch	M	S	7.6	2023		2024	S	yes
KSD515	Ksedin	103P.004	Branch	M	S	2.2	2023		2024	S	yes
DLK509	Nass Valley	103P.036	Spur	C	T	0.7	2023	BC	2024	P	
			Spur	M	T	0.6	2023		2024	P	
VET307	Tseax	103P.015	Spur	C	T	0.8	2023		2023	P	
			Spur	M	T	1.2	2023		2023	P	
			Branch	M	P	3.5	2023		2023	T	
VET309	Tseax	103.P.015	Spur	M	P	5.7	2023		2023	P	
			Spur	C	P	0.6	2023		2023	P	
KSD611	Ksedin	103P.004	Spur	C	T	2.9	2023		2023	P	
			Spur	M	S	2.8	2023		2023	P	yes

Year 2											
2024											
DLK201	Tseax	103P.036	Spur	C	T	2.7	2024		2024	P	
			Spur	M	T	7.8	2024		2024	S	
DLK204	Tseax	103P.036	Spur	C	T	3.5	2024		2024	P	
DLK309	Nass Valley	103P.025	Spur	C	T	1.7	2024		2024	P	
			Spur	M	S	1.7	2024		2024	S	yes
DLK310	Nass Valley	103P.025	Spur	C	T	0.7	2024		2024	P	
			Spur	M	S	3.5	2024		2024	S	yes
DLK950	Nass Valley	103P.025	Spur	C	T	2.3	2024		2025	P	
DSK200	West Nass	103P.003	Spur	C	T	0.3	2024		2025	P	
ISH999	Ishkheenickh	103I.092				0.0					
KWT100	Nass Valley	103P.056	Spur	C	T	3.7	2024		2025	P	
			Spur	M	P	2.8	2024		2025	S	
KWT101	Nass Valley	103P.046	Spur	C	T	0.4	2024		2025	P	
			Spur	M	P	7.8	2024		2025	S	
			Spur	C	P	2.8	2024		2025	P	
KSD802	Ksedin	103P.014	Spur	M	T	7.4	2024		2025	T	yes
			Spur	C	P	2.8	2024		2025	P	
NAS201	West Nass	103P.002	Spur	C	T	2.0	2024		2025	P	

Year 3											
2025											
ANU751	West Nass	103P.013	Spur	C	T	2.0	2026		2026	P	
			Spur	M	S	2.9	2026		2026	P	
ANU802	West Nass	103P.013	Spur	C	T	0.9	2026		2026	P	
			Spur	M	T	6.3	2026		2026	S	
CAN102	Kwinamuck	103P.025	Spur	C	T	1.0	2026		2027	S	
			ML	M	P	3.6	2026		2027	S	
CAN103	Kwinamuck	103P.025	Spur	C	T	1.9	2026		2027	T	
CAN104	Kwinamuck	103P.025	Spur	C	T	1.5	2026		2027	S	
DLK206	Tseax	103P.036	Spur	C	T	1.6	2026		2027	S	
DLK301	Nass Valley	103P.036	Spur	C	T	0.5	2026		2027	P	
			Spur	M	T	6.9	2026		2027	S	
DLK306	Nass Valley	103P.036	Spur	C	T	4.3	2026		2027	P	
			Spur	M	T	4.1	2026		2027	S	yes
DLK307	Tseax	103P.036	Spur	C	T	7.1	2026		2027	P	
DSK103	West Nass	103P.003	Spur	C	T	0.3	2026	Br	2027	P	
			Branch	C	S	1.1	2026		2027	P	
DSK104	West Nass	103P.003	Spur	C	S	1.4	2026		2027	S	
			Branch	M	S	1.7	2026		2027	S	
KWT102	Nass Valley	103P.045	Spur	C	T	0.3	2026		2027	P	
			ML	M	P	8.6	2026		2027	P	
KSD703	Ksedin	103P.004	Spur	C	T	1.3	2026		2027	P	
			Spur	M	S	3.3	2026		2027	S	yes
KSD800	Ksedin	103P.014	Spur	C	T	1.3	2026		2027	P	
			Spur	M	S	5.7	2026		2027	S	
KSD801	Ksedin	103P.014	Spur	C	T	0.6	2026		2027	P	
			Spur	M	S	3.1	2026		2027	S	
GIN001	Xnukw	103P.001	Spur	C	S	1.7	2026		2027	S	
NAS200	West Nass	103P.002	Spur	C	T	0.7	2026		2027	P	
			Spur	M	T	4.2	2026		2027	P	
VET005	Aiyansh	103P.015	Spur	C	T	1.3	2026		2027	P	
			Spur	M	S	8.9	2026		2027	S	yes
VET401	Tseax	103P.015	Spur	C	T	0.2	2026		2027	P	
VET402	Ksedin	103P.015	Spur	C	T	0.8	2026		2027	T	
			Spur	M	S	9.2	2026		2027	P	yes

Year 4											
2026											
CAN101	Kwinamuck	103P.025	Spur	C	T	3	2027		2028	S	
DLK106	Tseax	103P.026	Spur	C	T	1.9	2027		2028	P	
DLK107	Tseax	103P.026	Spur	M	T	6.8	2027		2028	P	
DLK300	Nass Valley	103P.035	Spur	C	T	1.5	2027		2028	P	
			Spur	M	T	2.1	2027		2028	S	yes
DLK302	Nass Valley	103P.036	Spur	C	T	0.8	2027		2028	P	
			Spur	M	T	4.9	2027		2028	S	yes
DLK303	Nass Valley	103P.035	Spur	C	T	1.0	2027		2028	P	
			Spur	M	T	3.2	2027		2028	S	yes
DLK304	Nass Valley	103P.035	Spur	C	T	1.2	2027		2028	P	
			Spur	M	T	2.3	2027		2028	S	yes
DLK305	Nass Valley	103P.036	Spur	C	T	2.2	2027		2028	P	
			Spur	M	T	8.5	2027		2028	S	yes
DLK314	Nass Valley	103P.025	Spur	C	T	1.7	2027		2028	P	
KSD700	Ksedin	103P.003	Spur	C	T	1.0	2027		2028	P	yes
			Spur	M	S	3.8	2027		2028	P	
KSD701	Ksedin	103P.003	Spur	C	T	1.8	2027		2028	P	
			Spur	M	T	3.4	2027		2028	P	yes
KSD704	Ksedin	103P.004	Spur	C	T	1	2027		2028	P	
			Spur	M	T	6.1	2027		2028	S	yes
NAS204	West Nass	103P.003	Spur	C	T	2.3	2027		2028	S	
			Spur	M	T	2.8	2027		2028	P	

Year 5											
2027											
ANU805	West Nass	103P.013	Spur	C	S	6.3	2028	Br	2028	S	
			Spur	M	T	8.0	2028		2028	S	
CAN001	Kwinamuck	103P.025	ML	M	P	2.9	2028	Br	2029	S (only last 1.5km)	
CAN100	Kwinamuck	103P.025	Spur	C	T	2.0	2028		2029	P	
DLK170	Tseax	103P.026	Spur	C	T	0.6	2028		2028	P	
			Branch	M	T	3.2	2028		2028	S	
DLK180	Tseax	103P.026	Spur	C	T	0.5	2028		2028	P	
			Branch	M	T	1.8	2028		2028	S	
DLK308	Tseax	103P.036	Spur	C	T	1.9	2028		2028	P	
			Spur	M	T	1.8	2028		2028	P	
DLK312	Nass Valley	103P.025	Spur	C	T	2.3	2028		2029	P	
			ML	M	T	4.8	2028		2029	P	
GIN002	Xnukw	103P.002	Spur	C	S	4.9	2028		2028	S	
KSD411	Ksedin	103P.014	Spur	C	T	0.6	2028		2028	P	yes
ISH501	Ishkheenickh	103I.093	Spur	M	S	0.4	2028	Br	2028	P	
ISH510	Ishkheenickh	103I.093	Spur	C	T	1.7	2028		2028	P	
			Spur	M	S	4.7	2028		2028	S	yes
ISH511	Ishkheenickh	103I.093	Spur	C	T	1.2	2028		2028	P	
			Spur	M	S	3.7	2028		2028	S	yes
ISH602	Ishkheenickh	103I.093	Spur	C	T	1.2	2028		2028	P	
			Spur	M	S	1.8	2028		2028	S	yes

Road Activity	Road Status
M - Maintenance	P - Permanent
C - Construction	S - Semi-Permanent
D - Deactivation	T - Temporary

Structures
Br - Bridge
BC - Box Culvert
T - Temporary

Deactivation Level
P - Permanent
S - Semi-Permanent
T - Temporary

