Western Forest Products Inc.

NOOTKA

FOREST STEWARDSHIP PLAN

(consolidated to include Amendment #1)

2006

Western Forest Products Inc.,

Nootka Sound Economic Development Corporation

and

International Forest Products Limited

Nootka Sound Economic Development Corporation

INTERFOR

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1.0 DEFINITIONS AND INTERPRETATION

In this forest stewardship plan (FSP; “the plan”; “this plan”):

> “Date of Submission” means with respect to conditions applicable to a specific forest development unit (FDU), the date of submission to the District Manager for approval of this FSP or an amendment having the effect of adding the FDU to the FSP.
>
> “FRPA” means the *Forest and Range Practices Act*, “FPPR” means the *Forest Planning and Practices Regulation*, and “GAR” means the *Government Actions Regulation* as each was in force on the date this plan was originally submitted to the District Manager, except as may be explicitly specified otherwise for a specific Section(s) of this FSP.
>
> “Lead Licensee” means the Licensee indicated in the sections where the term appears, or where not indicated, Western Forest Products Inc. (WFP).

The abbreviation “s.” is used to indicate a numbered section or sections of the indicated Act or Regulation.

The capitalized word “Section” is used in the singular or plural to refer or cross reference to a numbered clause or Section within this FSP.

2.0 APPLICATION (FRPA s. 3(4))

2.1 LICENSEES & LICENSES

This FSP applies to the Licensees and licences indicated in Table 1.

Table 1. Application of Forest Stewardship Plan

Licensee	Licences	Management Unit
Western Forest Products Inc.	TFL 19	TFL
	FLA19231	TSA
	TO295; TO349; TO362; TO376; TO381; TO702; TO716; TO801; TO835; TO844; TO892;	TSA
Nootka Sound Economic Development Corporation	FLA53746	TSA
International Forest Products Limited	TO182; TO193; TO219; TO259	TSA
Ehattesaht First Nation	FLTCA80907	TFL

2.2 LIMITED RESPONSIBILITY

Except where otherwise specified in this FSP, each Licensee is individually responsible for achieving the results, carrying out the strategies, meeting the stocking requirements or implementing the measures in this FSP that pertain to the forest practices of said Licensee.

Future FSPs may continue or replace the results, strategies, and measures that have not at the end of this FSP's term, been achieved or completed during the term of this FSP. Except where otherwise indicated herein or in a subsequent FSP, results will be maintained or strategies will be initiated during the term of this FSP only.

2.3 CUTBLOCKS & ROADS TO WHICH THE CODE WILL APPLY (FRPA s.197)

Except as may be provided otherwise in Section 7 with respect to stocking standards,

(a) For cutblocks and roads within the FDUs originally approved September 15, 2005 (Zeballos area only) all cutting permits or road permits submitted on or before September 15, 2005 will continue to operate under the Code and the Code regulations ("the Code"), not the provisions of this FSP and new cutting permit or road permit applications submitted after September 15, 2005 will be subject to this plan, not the Code, and

(b) For cutblocks and roads within FDUs proposed under Amendment #1 (Nootka operating areas and Tashish Timber Licences but excluding Zeballos area) all cutting permits or road permits submitted on or before of the date of approval of the Amendment will continue to operate under the Code, not the provisions of this FSP. New cutting permit or road permit

applications submitted after the date of approval of the Amendment will be subject to this plan, not the Code.

3.0 TERM (FRPA s.6(1)(a)(b); 6(2))

The term of this FSP commences September 15, 2005 and expires 5 years after the date of approval of Amendment #1 or another date specified in writing by the minister or his delegated decision maker (DDM).

4.0 MAP (FRPA s.5(1)(a) and FPPR s. 14)

The FSP map appended to this document shows the forest development units (FDUs), tenures and other features of the FSP area at a 1:50,000 scale.

4.1 FDUs IN EFFECT ON DATE OF SUBMISSION (FPPR s. 14(1)(b); FRPA s.7)

Table 2 provides an area summary of the FDUs in effect with the original approval of this FSP and that would take effect with approval of Amendment #1. Refer to the appended FSP maps for details.

Table 2. Forest Development Unit Summary

FDU[1]	Area (ha)	Effective
a	2,309	at approval of Amendment #1
b	14,133	at approval of Amendment #1
c	16,950	at approval of Amendment #1
d	3,759	at approval of Amendment #1
e	9,665	at approval of Amendment #1
f	7,113	at approval of Amendment #1
g	10,539	at approval of Amendment #1
h	6,401	September 15, 2005
j	13,431	at approval of Amendment #1
k	6,749	1,786 ha September 15, 2005; 4,963 ha at approval of Amd #1
m	6,032	September 15, 2005
n	7,881	September 15, 2005

[1] lowercase FDUs are those in the Strathcona Timber Supply Area; uppercase FDUs are those in Tree Farm Licence 19; FDU 716 refers to Timber Licences in the Tahsish landscape unit.

FDU[1]	Area (ha)	Effective
o	3,443	September 15, 2005
p	702	September 15, 2005
y	2,260	at approval of Amendment #1
z	3,310	at approval of Amendment #1
716	1,278	at approval of Amendment #1
G,S,T,U[2]	2,720	at approval of Amendment #1
total TSA	118,675	
A	3,159	at approval of Amendment #1
B	7,315	at approval of Amendment #1
D	932	at approval of Amendment #1
E	8,077	at approval of Amendment #1
F	9,498	at approval of Amendment #1
G	5,188	at approval of Amendment #1
H	4,959	at approval of Amendment #1
I	5,008	September 15, 2005
J	12,152	at approval of Amendment #1
K	17,144	at approval of Amendment #1
L	5,267	September 15, 2005
M	2,852	at approval of Amendment #1
N	8,884	at approval of Amendment #1
O	4,471	September 15, 2005
P	11,405	at approval of Amendment #1
Q	12,067	at approval of Amendment #1
R	7,053	at approval of Amendment #1
S	2,961	at approval of Amendment #1
T	2,893	at approval of Amendment #1
U	3,789	at approval of Amendment #1
V	3,242	at approval of Amendment #1
W	11,409	at approval of Amendment #1
X	4,585	September 15, 2005

[2] Interfor Timber Licences within TFL 19 FDUs contributing to TSA area calculations.

FDU[1]	Area (ha)	Effective
Y	9,203	at approval of Amendment #1
Z	5,219	September 15, 2005
total TFL	168,732	
28[3]	-	at approval of Amendment #1

4.2 FDP ROADS & CUTBLOCKS WITH ASSESSMENTS COMPLETE (FPPR s. 14(1)(c))

The appended FSP Map shows the cutblocks and roads from previous Forest Development Plans (FDP) where assessments have been completed that are considered approved under FRPA s. 196(1).

Other roads that may be indicated are for reference only.

4.3 DESIGNATIONS IN EFFECT BEFORE SUBMISSION (FPPR s.14(2))

The FSP Map shows the designations and other areas listed in FPPR s.14(3) that were in effect on the date Amendment #1 was submitted for approval.

Designations in effect include Ungulate Winter Ranges and Wildlife Habitat Areas within TFL 19, scenic areas, a fisheries sensitive watershed, a community watershed, a sensitive area, adjacent Parks, road permits, and cutting permits.

4.4 AREAS WITHIN FDUs SUBJECT TO CUTTING PERMIT OR ROAD PERMIT (FPPR s. 14 2(b) and 14(3)(j))

The FSP Map shows the areas within each FDU that are subject to a cutting permit (CP) or road permit (RP) held by the Licensees and in effect on the Date of Submission. Blanket CPs issued for the purposes of salvage are listed below in Table 3.

[3] FDU 28 refers to Bill 28 takeback areas for which Licensees may have retained silviculture obligations for earlier cutblocks, and into which minor incidental parts of new cutblocks located in an adjacent FDU may overlap. For such incidental harvesting only stand level provisions of this plan apply. Although harvest planning is not precluded in this FDU, for the foreseeable future the signatories to this plan are not intending to propose cutblocks wholly within this FDU.

Table 3. Blanket Cutting Permits for Salvage

Tenure	CP	FDUs
TFL 19	99A, 99B	A through Z
FL A19231	99A, 99B	a through z
TO295; TO349; TO362; TO376; TO381; TO801; TO835; TO844; TO892;	Y, Z	a through z
TO182, TO193, TO219, TO259	Z	f, G, S, T

The CPs and RPs listed or shown on the FSP Map are considered to have received approval and are not the focus of review and comment.

CPs and RPs issued after the Date of Submission are also considered to have received approval.

5.0 RESULTS & STRATEGIES

LAND USE OBJECTIVES

Order Establishing Provincial Non-Spatial Old Growth Objectives

Sections 5.1 through 5.4 apply to all FDUs.

5.1 During the term of this FSP and to the degree possible due to circumstances within the control of the Licensees, the minimum percentages of old forest (plus mature or other recruitment where applicable) indicated in Table 4 will be maintained. Where a Landscape Unit is not entirely within the FSP area, the results stated apply only to that portion of the Landscape Unit within the FSP area until the amount of contributing old growth to be retained is apportioned by government or by Licensee agreement among FSPs and/or Licensees.

Table 4. Landscape Unit Results by BEC Variant

Landscape Unit or portion (biodiversity emphasis)	FDUs within	Lead Licensee	BEC Variant	Old Growth Target (%)	Draw Down to Maintain Timber Supply	RESULT: Min. % Old Growth Retention + Suitable Recruitment	THLB old forest retention required if no recruitment?
Zeballos (low)	I,L,O,X, Y,g,n,o	WFP	CWHvm1	>13%	-	13.0%	-
			CWHvm2	>13%	-	13.0%	-
			MHmm1	>19%	-	19.0%	-
Kaouk (intermediate)	I,j,k,m,n, o,p,X,Z	WFP	CWHvh1	>13%	-	13.0%	yes
			CWHvm1	>13%	-	13.0%	-
			CWHvm2	>13%	-	13.0%	-
			MHmm1	>19%	-	19.0%	-
Artlish (intermediate)	m,n,p,o, X,716	WFP	CWHvm1	>13%	-	13.0%	yes
			CWHvm2	>13%	-	13.0%	-
			MHmm1	>19%	-	19.0%	-
Eliza (low)	h,I,j,,k,m ,n,,Z	WFP	CWHvh1	>13%	-	13.0%	-
			CWHvm1	>13%	-	13.0%	-
			CWHvm2	>13%	-	13.0%	-
			MHmm1	>19%	-	19.0%	-
Tahsis (low)	g,I,L,Q, R,S,T,U, V,W,Y	WFP	CWHvm1	>13%	-	13.0%	-
			CWHvm2	>13%	-	13.0%	-
			MHmm1	>19%	-	19.0%	-
Tahsish (intermediate)	716	WFP	CWHvm1	>13%	-	13.0%	yes
			CWHvm2	>13%	-	13.0%	-
			MHmm1	>19%	-	19.0%	yes
Nootka (intermediate)	a,b,c,d,e ,f	WFP	CWHvh1	>13%	-	13.0%	-
			CWHvm1	>13%	-	13.0%	-
			CWHvm2	>13%	-	13.0%	-
Tlupana (intermediate)	F,G,H,J, K,P,QR, S,T,U,V, W	WFP	CWHvm1	>13%	-	13.0%	yes
			CWHvm2	>13%	-	13.0%	-
			MHmm1	>19%	-	19.0%	-
Gold (high)	D,E,F,J, K,M,N,P Q,y,z	WFP	CWHvm1	>19%	-	19.0%	yes
			CWHvm2	>19%	-	19.0%	-
			CWHxm	>13%	-	11.0 + 2.0%	yes
			MHmm1	>28%	-	28%	-

Landscape Unit or portion (biodiversity emphasis)	FDUs within	Lead Licensee	BEC Variant	Old Growth Target (%)	Draw Down to Maintain Timber Supply	RESULT: Min. % Old Growth Retention + Suitable Recruitment	THLB old forest retention required if no recruitment?
Kleeptee (low)	F,G,H,J, K,a	WFP	CWHvh1	>13%	-	13.0%	yes
			CWHvm1	>13%	-	13.0%	-
			CWHvm2	>13%	-	13.0%	-
			CWHxm2	>9%	yes	4.7 + 4.3%	yes
			MHmm1	>19%	-	19.0%	-
Burman (low)	A,B,D,E, a	WFP	CWHvm1	>13%	-	13.0%	-
			CWHvm2	>13%	-	13.0%	-
			MHmm1	>19%	-	19.0%	-

5.2 Annually, all Licensees signatory to this FSP are to agree in writing to a total harvest area attributable to each Licensee prior to harvesting any block in a BEC variant-Landscape Unit combination where old growth retention in the THLB is indicated in the table above. A Licensee harvesting without or contrary to an all Licensee agreement assumes responsibility for this result irrespective of the later harvesting activities of the other signatory and agreeing Licensees. Otherwise, where all Licensee written agreement is documented and with respect to this result only, the Lead Licensee assumes responsibility for the legally authorized and agreed to harvesting of all signatory Licensees, provided total harvest area by BEC variant - Landscape Unit attributable to each Licensee remains as agreed.

5.3 The Lead Licensee will maintain area accounting to ensure that the stated percentage result for any BEC variant-Landscape Unit is attained within the plan area. Where a Licensee completes or becomes aware of an inventory update, that Licensee is to promptly share the revised information with the other Licensees. Where a calculated result for a BEC variant – Landscape Unit is potentially compromised by an updated inventory or other information, signatory Licensees are to agree in writing to a revised strategy to attain the stated non-spatial result.

5.4 The results for each Landscape Unit as indicated in Table 4 will be maintained until the earlier of

(a) the replacement of this plan, or

(b) with respect to each Landscape Unit,

i. the effective date of a notice or an exemption provided by the appropriate Minister or delegate with respect to old growth management areas, or

ii. an order establishing a Landscape Unit Plan.

Thereafter only the terms of the replacement plan, exemption, or Landscape Unit Plan, not Sections 5.1 through 5.3, will prevail.

Vancouver Island Land Use Plan Higher Level Plan Order

Special Management Zones (SMZ)

Sections 5.5 through 5.8 apply only within Special Management Zones 6, 11 and 12 (those portions of FDU “O” and “X” that overlap SMZ 6, and those portions of FDUs “b”, “c”, “d”, “e”, “N” and “z” that overlap SMZ 11 or 12).

5.5 At least 25% of forested area within the portion of each SMZ within the plan area will be retained in combined mature and old forests.

5.6 The requirement set out in Section 5.39 for wildlife tree retention apply except that the cumulative average is with respect to each SMZ rather than the FSP area.

5.7 The practice requirements set out in FPPR for wildlife tree retention (FPPR 66(2)) and coarse woody debris (FPPR 68) apply.

5.8 Cutblocks harvested during the term of this FSP will be chosen from more than one of the following silviculture systems:

(a) seed tree, clearcut with reserve, or clearcut and net area to be reforested will be limited to a maximum of five hectares in size, or

(b) retention, selection and shelterwood silviculture systems and net area to be reforested will be limited to a maximum of 40 hectares in size.

The foregoing maximum size limits may be exceeded for the purposes of recovering damaged timber provided the cutblock incorporates structural characteristics of natural disturbances, wherever possible.

Sections 5.9 through 5.10 apply only to those portions of FDUs “z” and “N” that overlap Special Management Zone 11.

5.9 By December 31, 2009 the Lead Licensee will draft old growth management areas and/or WHAs of various sizes which will incorporate important biodiversity elements including critical nesting habitat for species at risk, large diameter trees, broad-leaved trees, rare ecosystems, or under-represented site series.

5.10 Until draft OGMAs meeting the requirements of Section 5.9 are delineated, each Licensee will design cutblocks with associated wildlife tree retention or other reserve areas that cumulatively over the term of this plan over-represent those uncommon edaphic conditions with both

(a) a relative soil moisture regime outside the range of “3” through “5”, and

(b) a soil nutrient regime outside the range of “B” through “D”

Enhanced Forestry Zone (EFZ)

Sections 5.11 through 5.13 apply only within Enhanced Forestry Zones 18, 19, 21, 23 and 24 (FDUs “A”, “B”, “D”, “F”, “G”, “H“, “J”, “Q”, “R”, “S”, “T”, “U”, “V”, “W”, “Y”, “Z”, “h” and “716” and those portions of FDUs “a”, “j” and “k” that overlap EFZs 18, 19, 21, 23 or 24).

Maximum Cutblock Size

5.11 Individual blocks or multiple blocks may form a contiguous not greened up area larger than 40 hectares in size where:

(a) significant impacts to wildlife, biodiversity, or recreation values are unlikely,

(b) scenic values are addressed as per Section 5.45, and

(c) monitoring confirms that watershed equivalent clearcut areas are:

iii. less than or equal to 30%;

iv. between 30% and 40% with no significant indications of watershed instability; or

v. greater than or equal to 40% only where supporting hydrological information confirms that significant cumulative impacts over and above known channel impacts related to historic forest development are unlikely.

5.12 A cutblock is greened-up if it is adequately stocked and the average height of those trees that are:

(a) the tallest tree in each 0.01 ha plot included in a representative sample; and

(b) a commercially valuable species or other species acceptable to the district manager

is at least 1.3 meters.

5.13 Within each of these EFZs, the cumulative area to date that has been declared free growing and stocked with a single species within any variant, will not exceed 20% of the total cumulative free growing area. Species composition and free growing status is to be as determined from free growing declarations of standards units identified in site-level plans.

Nootka Trail

Sections 5.14 and 5.15 apply to the Nootka Trail Sensitive Area as set out by Order of the Campbell River District Manager dated November 21, 2003 (portions of FDUs “b”, “c”, and “d”

5.14 Licensees will maintain a wilderness setting by not harvesting timber within the Sensitive Area, and

5.15 Licensees will manage visual quality as set out in Section 5.45.

OBJECTIVES PRESCRIBED UNDER LEGISLATION (FRPA s. 149; FPPR s. 5-10)

Soils

5.16 For all FDUs the Licensees undertake (FPPR s. 12.1(1)) to comply with the legislated requirements setting limits for soil disturbance and for permanent access structures as outlined in section 35 and 36 of FPPR. A conditional exemption under FPPR s. 12.2 does not apply.

Timber

5.17 Should, after the Date of Submission, the operable timber within the plan area be reduced for the management of biodiversity or wildlife values by an amount in excess of 426 ha in TFL 19 (FDUs "A" through "Z" inclusive) or 228 ha in the Strathcona TSA portion of the FSP area (FDUs "a" through "z" inclusive and FDU "716"), then otherwise operable map units associated with one or a combination of the following values:

(a) Species at risk, regionally important wildlife, specified ungulate species

(b) Riparian area

(c) Biodiversity – wildlife tree retention areas

(d) Wildlife habitat

and occupying an area equivalent to at least twice the reduction area may be identified by the Licensee as candidate rollback areas. Candidate areas are then to be evaluated and numerically ranked by qualified professionals with respect to their utility:

(a) for maintaining or conserving the intended biological value(s) from lowest to highest utility (1 to X); and

(b) for maintaining timber supply, economic activity, and associated human communities from highest to lowest utility (1 to X).

Within 90 days of notification by the Licensee, the Ministry of Environment is requested to review the biological rankings of the polygons and confirm the ranking, or provide a replacement ranking.

Within 120 days of original notification of the Ministry, the Licensee is to submit an amendment application to the Delegated Decision Maker proposing, to the extent that the amount of operable timber within the TFL or TSA portion was reduced, specific rollbacks of areas that had been

designated in the past for one or more of the values above and requesting a balancing of objectives under FPPR s. 27 as applicable at the time of the request. The sum of the nominal timber and biological rankings will provide a numerical ranking for potential release of candidate areas. Candidate areas will be proposed for release starting with those of lowest sum rank and adding additional units in order until the estimated operable and merchantable timber volume of the map units released is equivalent to the estimated operable and merchantable timber volume of the reduction in operable area which had triggered the balancing request.

5.18 For the purposes of Section 5.19 below, the "TSR THLB" means:

(a) with respect to Tree Farm Licence 19 (FDUs "A" through "Z" inclusive), 85,161 ha based on the Chief Forester's AAC determination effective August 1, 2001 and reduced for Bill 28 and reserves added to December 31, 2005, or

(b) with respect to the portion of the FSP area within the Strathcona Timber Supply Area (FDUs "a" through "z" inclusive and "716"), 45,639 ha based on the TSR 3 dataset.

5.19 Should, for the purposes of managing non-timber values, the TSR THLB be reduced or constrained to in effect reduce the TSR THLB or the timber supply flow (TSR base case), then modification of provisions for one or a combination of the following values may be proposed:

(a) Maximum cutblock size

(b) Reducing green up requirements

(c) Visual quality

(d) Water quality

(e) Fisheries sensitivity

To the extent that the TSR THLB or the modeled timber supply flow is reduced, within 90 days of notification by the Licensee, the appropriate government Ministry, in consultation with other affected agencies, is requested to recommend for relaxation one or a combination of the above provisions to the extent necessary to maintain short and long term timber flows. Verification of timber supply flow impacts is to be done by modeling the TSR base case with original input assumptions modified to reflect relaxation of the non-timber provisions, but with base case harvest flow requests intact.

The Licensee is to submit an amendment application to the Delegated Decision Maker within 120 days of original notification requesting a balancing of objectives under section 27 of FPPR and proposing modifications to one or a combination of provisions for the values above based on Ministry recommendations, or where recommendations are not received or are found

insufficient to restore timber supply, based on the Licensee's analysis of each provision's impact on timber supply and the other resource value.

5.20 Where funding is provided through government sources and subject to efficacy, environmental concerns and other restrictions, the Licensee will undertake broadcast forest fertilization projects on Crown land within the FSP area to increase the future supply of timber.

5.21 Areas of timber damaged by wind or other agents and greater than 0.5 ha in continuous extent, if within TFL 19 will be assessed by the agreement holder or if within the TSA portion of the plan will be assessed by the holder of the nearest Cutting Permit within the plan area. Where the assessment indicates that damaged timber can be feasibly and profitably recovered, the Licensee completing the assessment will do so before the damaged timber degrades to the point where recovery becomes unprofitable.

Wildlife

Ungulate Winter Ranges (UWR)

5.22 Section 5.23 is relevant to all FDUs.

5.23 Ungulate winter ranges have been established for the plan area by Order of the Minister, thus the Licensees are exempted from the obligation to specify a result or strategy herein. Legal requirements are set out in these Orders, including updates from time to time, rather than in this FSP..

Marbled Murrelet

5.24 The following strategy will be implemented within the plan area by the Lead Licensee over the term of this FSP to refine suitable Marbled Murrelet nesting habitat and facilitate the establishment of appropriate WHAs that are consistent with government policy:

Air photo interpretation and primarily low-level aerial surveys using helicopters will be used to map and rank potentially suitable marbled murrelet habitat (these inventory techniques to replace GIS-based habitat modeling). Candidate WHA selection will be based on:

(a) the size (area), integrity, and location of the area, relative to other areas of suitable habitat that are being considered;

(b) distance to known or likely foraging areas at sea (patches of suitable habitat that are increasingly distant from foraging sites are less likely to be used by nesting murrelets);

(c) other evidence of the use of the proposed area, such as radar counts, distribution of known nest sites in the area, and audio-visual survey results;

(d) the role of the proposed WHA or maintained area within the entire murrelet conservation region (e.g., maintaining the spatial distribution of breeding murrelets across the region);

(e) the likely future of surrounding areas which might affect the suitability of the proposed area to be maintained as nesting habitat;

(f) the contribution that the proposed area might make to maintaining other wildlife or biodiversity attributes;

(g) economic and social implications of selecting the area as a WHA.

A selection of areas identified as having suitable habitat values will be recommended and submitted to the Ministry of Environment for designation as WHAs.

5.25 Of the habitat identified as suitable under Section 5.24 above, signatory Licensees will maintain within the plan area at least 12,336 ha plus an amount equal to a proportion of the THLB amount specified in the Section 7 Notice for the Campbell River Forest District, where the proportion is:

(a) as established under FRPA s. 9 or otherwise established by the Campbell River Forest District, or where a proportion has not been established,

(b) specified in an agreement amongst tenure holders in the Campbell River Forest District, or where no agreement,

(c) 700 ha.

Until the earlier of the replacement of this plan or the effective date of an exemption provided by the appropriate Minister or delegate with respect to the establishment of wildlife habitat areas and/or other reserves, the result set out in this Section will be maintained. If an exemption is provided the terms of the exemption or any associated general wildlife measures will prevail thereafter.

Red Legged Frog

5.26 Where significant breeding habitat of this species is identified in the field within the plan area and is not adequately managed within a riparian management area or wildlife tree retention areas, the FPPR Section 7(2) Notice will be assessed to determine the appropriate course of action. In the event that establishment of a wildlife habitat area is appropriate, the WHA must be consistent with the Notice and objectives set out in the FPPR on the date of establishment including sections 6 and 7.

Keen's Long Eared Myotis

5.27 In the event that important habitat features such as tree cavities or caves within the plan area are determined to be occupied by this species, the FPPR Section 7(2) Notice will be assessed to determine the appropriate course of action. In the

event that establishment of a wildlife habitat area is appropriate the WHA must be consistent with the Notice and objectives set out in the FPPR on the date of establishment including sections 6 and 7.

Great Blue Heron

5.28 If a nest colony for the Great Blue Heron is located within the plan area, the FPPR s. 7(2) Notice will be assessed to determine the appropriate course of action. In the event that establishment of a wildlife habitat area is appropriate the WHA must be consistent with the Notice and objectives set out in the FPPR on the date of establishment including sections 6 and 7.

Riparian

5.29 Throughout the plan area, the Licensees undertake (FPPR s. 12.1(2) and/or 12.3) to comply with the legislated requirements of the FPPR setting stream (s. 47), wetland (s. 48), lake (s. 49) riparian classes and minimum zone widths will apply as do the restrictions for a riparian management area (s. 50) and temperature sensitive stream (s. 53).

Restrictions within a Riparian Reserve Zone (RRZ)

5.30 With respect to conditional exemption under FPPR s. 12.3(5), the legislated exceptions set out in FPPR section 51(1,2) continue to apply to all FDUs and in addition within the RRZ of streams (S3 only) and wetlands (W1, W5):

(a) a tree or trees having a high likelihood of being windthrown and of creating a material adverse effect on the aquatic system or RRZ may be felled;

(b) removal of the felled tree(s) may occur only if the removal will not have a material adverse effect on the aquatic system or RRZ; and

(c) at plan expiry, a tree or trees containing substitute wildlife and biodiversity attributes of similar or better ecological value and that would have been otherwise harvestable, will have been reserved from harvest within or adjacent to a RMA elsewhere within the FDU. The reserved tree(s) will be:

i. incorporated into wildlife tree retention,

ii. representative of the tree species removed; and

iii. in a location of similar ecological characteristics.

5.31 The Licensee is exempt from the legislated practice requirement stated under FPPR s. 51(3) and instead may carry out spacing or thinning in second growth riparian reserve zones to:

(a) enhance wildlife values;

(b) enhance fisheries values;

(c) create old growth characteristics; or

(d) reduce future windthrow potential.

Forest Practices in a Riparian Management Zone (RMZ)

5.32 For all FDUs and with respect to FPPR s. 12(3), unless specific wildlife and/or biodiversity values are identified in the RMA, retention of trees within the RMZ of streams (S1, S2, S3) or wetlands (W1, W5) requiring a RRZ will be based on consideration of the likelihood of damages to the RRZ caused by windthrow. Specifically for stands with:

(a) A Low likelihood of post-harvest windthrow within the RRZ, retention of trees is unnecessary in the RMZ.

(b) A Moderate or High likelihood of post-harvest windthrow within the RRZ,

i. retention will vary, with possible edge manipulation treatments to improve wind-firmness in the RMA.

ii. where trees are felled under Section 5.30, retention may be reduced to minimize windthrow hazards.

Should specific wildlife and/or biodiversity values be identified, appropriate retention levels will be maintained to conserve and protect these values.

5.33 For all FDUs and with respect to FPPR s. 12(3), trees will be retained where necessary to protect the integrity of the stream bank, channel, or waterbody, on a site-specific basis within the RMZ of streams (S4, S5, S6), wetlands (W3) or lakes (L3) not requiring an RRZ (including S4, S5, or S6 RMZs not defined in FPPR s. 52(2)), where it will benefit the protection of identified water quality, fish habitat, wildlife, and/or biodiversity values.

Community Watersheds (FPPR 8.2)

5.34 Within the area of FDU Y which feeds the water intake on McKelvie Creek and supplies drinking water to the community of Tahsis, each Licensee proposing harvesting is to confirm that monitoring by the Lead Licensee indicates that equivalent clearcut area would be:

(a) less than or equal to 20%

(b) between 20 and 30% if no significant indications of watershed instability, or

(c) greater than or equal to 30% only where independent professional assessment of significant cumulative hydrological effects determines that:

i. a material adverse impact on the quantity or timing of flow from the licensed waterworks would be unlikely, and

ii. a material adverse impact on human health associated with consumption of water from the licensed waterworks would be improbable had required water treatments been carried out.

5.35 Further to the timing requirement of FPPR s. 40, within the area referred to in Section 5.34 Licensees commit to revegetate as climatic and soil conditions allow within "two growing-season-months[4]" instead of "two years".

Wildlife & Biodiversity

Maximum Cutblock Size

Section 5.36 applies only to areas of the plan that are not within an Enhanced or Special Management Zone designated under the *Vancouver Island Land Use Plan* Order.

5.36 With respect to conditional exemption under FPPR s. 12.4(1), the practice requirement set out in FPPR s. 64(1) applies, except cutblocks may exceed 40 hectares where:

(a) UWRs, WHAs and/or OGMAs have been designated or drafted such that wildlife and biodiversity values are adequately accommodated in the vicinity of the FDU in accordance with Provincial government policy directives,

(b) the patch size distribution for age class one is consistent with the following table (Ecosystems with Rare or Infrequent Stand Initiating Events - NDT1 or 2) for each landscape unit or portion thereof covered by the plan area:

Patch Size (ha)	% Forest Area within Landscape Unit
< 40	30-40
40-80	30-40
80-250	20-40

For the purposes of this analysis FDUs will be grouped by landscape unit as follows:

Landscape Unit	Applicable Forest Development Units	Lead Licensee
Artlish	m, o, p, 716	WFP

[4] "growing-season-months" means consecutive months occurring during the growing season, where the growing season refers to the months of April through September inclusive. For example, if the soil were exposed outside the growing season, the allowable time period would commence at the start of the next growing season (i.e. April 1st) and have to be complete within two months (i.e. May 31st). If, for example, the soil exposure were completed in mid September, then revegetation would need to be complete by mid-May in the following season.

Kaouk	m, n, j, k	WFP
Zeballos	I, L, X, O, o	WFP
Nootka	a, b, c, d, e, f	WFP
Gold	E, K, M, N, P, y, z	WFP

(c) Annually, all Licensees signatory to this FSP agree in writing to a list of proposed cutblocks >40 ha attributable to each Licensee. A Licensee harvesting without or contrary to an all Licensee agreement assumes responsibility for this result irrespective of the subsequent harvesting activities of the other signatory and agreeing Licensees. Otherwise, where written agreement is documented and with respect to this result only, the Lead Licensee assumes responsibility for the legally authorized and agreed to harvesting of all signatory Licensees, provided cutblock list and sizes attributable to each Licensee remain as agreed, and

(d) Licensees demonstrate that:

i. prior to unforeseen natural disturbance that may or may not occur, stand level retention in the form of wildlife tree retention areas was:

a. a minimum of 7% of the gross cutblock area,

b. representative of the tree species and tree height classes within the proposed cutblock,

c. located within or adjacent to the cutblock boundary, and

d. the distance from any point in the net area to be reforested to any edge, tree or group of trees of age class 2 or greater is no more than 250 meters,

ii. monitoring to confirm that watershed equivalent clearcut areas are:

a. less than or equal to 30%,

b. between 30% and 40% with no significant indications of watershed instability, or

c. greater than or equal to 40% only where supporting hydrological information confirms that significant cumulative impacts, in addition to known channel impacts related to historic forest development, are unlikely, and

iii. where a significant resource concern has been noted, development is unlikely to increase the risk to that resource.

Harvesting Adjacent to Another Cutblock

5.37 For all FDUs and with respect to conditional exemption from the provisions of FPPR s. 65(2) under FPPR s. 12.4(2), harvesting adjacent to another cutblock will be as per the other practice requirements outlined in FPPR s. 65, except that each Licensee must not harvest timber on a new cutblock unless:

(a) the combined area of the new cutblock and any non-conforming regenerating areas that are immediately adjacent to the new cutblock does not exceed the requirements relating to cutblock size set out in FPPR s. 64(1),

(b) all existing cutblocks that are adjacent to the new cutblock meet the requirements set out in FPPR s.64(3) or s. 65(3),

(c) the new cutblock is as described in FPPR s. 64(2) or s. 64(4)

(d) the new cutblock conforms to Section 5.11 if in an FDU to which Section 5.11 applies,

(e) the new cutblock conforms to Section 5.36 if in an FDU to which Section 5.36 applies, or

(f) the new cutblock is less than or equal to the cutblock size set out in FPPR s. 64(1) but the combined area otherwise conforms to Section 5.36 if in an FDU to which Section 5.36 applies.

Retention of Wildlife Trees & Restrictions on Harvesting

5.38 For all FDUs and with respect to conditional exemption under FPPR s. 12.5(2), FPPR s. 67 applies except:

(a) a Licensee, for facilitating adjacent cable logging operations, may establish one or more tail holds or guyline tiebacks in a wildlife tree retention area, and

(b) where wildlife tree retention is rendered ineffective by wind, fire, or another damaging agent, damaged timber may be removed from a wildlife tree retention area where stand level requirements for wildlife tree retention under Sections 5.39 and 5.40 are maintained within the plan area.

Sections 5.39 and 5.40 are with respect to conditional exemption from the provisions of FPRP s.66 under FPPR s. 12.5(1).

5.39 Within the FSP area each Licensee will:

(a) maintain a ledger indicating total area under prescription (TAUP) and area of retention for each of their cutblocks submitted for cutting permit,

(b) include cutting permit submissions occurring on or after the starting date of January 1, 2005

(c) use the ledger to sum the retention and TAUP areas from the starting date for calculation of the cumulative average retention percentage, and

(d) maintain the cumulative average retention percentage at greater than or equal to the percentage specified in FPPR 66(1) at all times.

5.40 For all FDUs except those portions of “O” and “X” that overlap SMZ 6, and those portions of FDUs “b”, “c”, “d”, “e”, “N”, and “z” that overlap with Special Management Zones 11 or 12, in the event that wildlife tree retention overlaps otherwise operable area and exceeds the percentage requirements in FPPR s.66(1), the retention requirements for a cutblock identified in FPPR s. 66(2) may be a lesser percentage or be zero provided:

(a) the obligations in Section 5.39 above are met,

(b) specific wildlife values or features of significance in the cutblock are unaffected, and

(c) stand level retention provided in one or more of the cutblocks referred to in item 5.39 above was representative of the tree species and tree height classes which were present in or near the identified cutblock prior to harvest.

Cultural Heritage Resources (FPPR s. 10)

5.41 The Licensees will, in the exercise of their rights and the carrying out of their obligations under the agreements to which this forest stewardship plan pertains, take action that is consistent with:

(a) conserving or, if necessary, protecting cultural heritage resources that are:

i. referred to in FPPR s. 10 or as designated to be resource features under GAR s. 5(1)(e),

ii. likely to be adversely impacted by the activities of the Licensee under this FSP,

iii. not conserved or protected by other arrangements,

iv. capable of being addressed in the context of this plan, and

v. in the context of a traditional use by an aboriginal people, are determined through:

a. consultation with First Nations prior to review and comment of this plan under FPPR s.20, or

b. comments made by affected First Nations in accordance with FPPR s. 21 and, subsequently, confirmed by government in consultation with the First Nations, or

c. comments made by affected First Nations during information meetings with the Licensee that may occur from time to time during the term of the plan and, subsequently, confirmed by government in consultation with the First Nations,

to be important, valuable, scarce and of continued importance;

(b) the historical extent of the traditional use within a forest development unit of the cultural heritage resources referred to in paragraph (i); and

(c) the timber harvesting rights in the agreements to which this plan pertains.

5.42 To the extent that the criteria set out in Section 5.41 above are met in regards to cedar, opportunities for traditional uses will be maintained as follows:

Cedar Bark

(a) Cedar will be planted on ecologically suitable sites to ensure it is maintained as an inventory component of this planning area.

(b) With reasonable advance notice from a First Nation, Licensees will identify opportunities to gather bark from inactive areas under cutting permit or from cedar logs at dryland sort yards.

Cultural Cedar Timbers

(c) Licensees will make available cedar timbers through operational sources where the timbers are for cultural or other traditional uses and the quantity of timbers made available is consistent with the historical extent of the traditional use within the plan area.

(d) A Licensee operating under this plan will, upon request, assist a First Nation in identification of cedar trees suitable for cultural uses should the First Nation choose to harvest trees themselves.

(e) Over the term of the plan, Licensees will work in cooperation with each First Nation to identify areas that support cultural cedar timber and within the plan area and term will identify and set aside in total at least 25 cedar trees with characteristics (dbhs ranging from 90-200+ cm; straight bole; >30m tall; sound outer shell > 45cm thick and free of frost cracks) suitable for carving poles or canoes. Wherever possible large cultural trees will be identified or located in constrained areas including:

i. Riparian Management Zones

ii. Wildlife Tree Retention Areas

iii. Ungulate Winter Ranges or Wildlife Habitat Areas

iv. Old Growth Management Areas

v. Riparian Reserve Zones

vi. Any other area constrained for non timber values

Cutblock Referral

5.43 Except where a similar condition provided for under FRPA s. 112 applies, Licensees will refer the approximate location of cutblocks or roads to a First Nation whose traditional territory includes that location, where that location is:

(a) in an area of moderate to high potential as indicated on an archaeological overview potential map,

(b) in or adjacent to areas of high archaeological potential,

(c) in or adjacent to areas of moderate-high culturally modified tree potential as indicated on the confidential cultural use map as “CMT potential”,

(d) in the vicinity of a “known” archaeological or traditional use site,

(e) in the vicinity of a feature that has been registered in good faith by a person of First Nations heritage via the WFP Features Registry System, or

(f) in an area of a traditional territory where the First Nation has requested, in writing, referrals from the signatory Licensees and provided a map indicating an “area of enhanced referral”.

5.44 Referrals made under Section 5.43 would be for no less than 31 days, and may be made as soon as possible and well in advance of road or cutting permit submission.

Objectives Established under GAR

Visual Quality (GAR 7)

5.45 Within the plan area, a cutblock or road affecting visual quality will be designed by the Licensee to meet the established visual quality objectives for scenic areas as those objectives and scenic areas were on the earlier of the date the cutblock or road:

(a) is submitted for cutting or road permit, or

(b) becomes a declared area under FPPR s. 14(4).

Viewpoints for planning and evaluation may include:

(a) rest stops, vistas, view stops, or other attractions along travel routes

(b) marinas, lodges, campsites, picnic sites, parking areas

(c) grouped dwellings and gathering places in settled areas, and

will be from water or land only. Two classes of viewpoints are recognized:

“significant viewpoints” are the focus of prolonged and frequent viewing, receive hundreds or more visits annually by people sensitive to altered forest landscapes, and are the most likely places or place from which the altered forest landscape would be seen,

“secondary viewpoints” are more distant, used less frequently, have transitory viewing opportunity, or are most often viewed by people tolerant of altered forest landscapes.

A cutblock or road as projected from each:

(a) significant viewpoint must meet or exceed the visual quality objective as per the definition of altered forest landscape set out in FPPR s. 1.1, and

(b) secondary viewpoint must meet or exceed the requirements of the next category of altered forest landscape set out in FPPR s. 1.1 that allows more alteration relative to the category applicable to a significant viewpoint in (a) above.

A cutblock, road or an amendment thereof for the purpose of recovering damaged timber or public infrastructure development may not conform to the visual quality objective but will, to the extent practicable, exhibit elements of good visual design.

Fisheries Sensitive Watersheds

5.46 Within FDUs “o” and “p” Licensees will monitor the amount and timing of primary forest activities to confirm that watershed equivalent clearcut areas are:

(a) less than or equal to 30%,

(b) between 30% and 40% with no significant indications of watershed instability, or

(c) greater than or equal to 40% only where supporting hydrological information confirms that significant cumulative downstream impacts, in addition to known channel impacts related to historic forest development, are unlikely.

OBJECTIVES (NOT PRESCRIBED UNDER LEGISLATION)

Forest Hydrology

5.47 By the later of December 31, 2009 or the date of proposed harvesting in a watershed, the Lead Licensee will, on a voluntary basis and subject to availability of external funding, conduct a hydrological assessment of geomorphology and forest cover for each watershed >1000 ha and shedding directly via a single stream to the ocean to identify those locations, seral stage distributions and/or forest management activities within each watershed that pose a high risk of:

(a) changing stream channel morphology

(b) causing siltation

(c) decreasing summer low flows

beyond the range of natural variability and in a manner that would materially adversely affect the long term survival of those vulnerable salmonid populations, or specific fish populations designated by Order as, requiring special management.

5.48 These actions will be voluntarily implemented for the entire plan area, except that for Fisheries Sensitive Watersheds designated after the Date of Submission by Order of the Minister of Environment or his delegate, the actions set out in this Section become enforceable results or strategies applicable to the Fisheries Sensitive Watersheds only.

Licensees will, at locations where the assessment completed above indicates high risk of a material adverse effect by way of:

(a) altered channel stability

(b) channel aggradation

(c) siltation, or

(d) decreasing summer low flows

undertake with respect to each high risk, the following action(s) to:

(a) reduce the likelihood of channel-altering peak flows, by delaying primary forest activities until equivalent clearcut area is, for an area specified by the hydrological assessment completed under Section 5.47 above, below a percentage determined:

i. by the hydrological assessment completed under Section 5.47 above,

ii. where not determined in ‘i’ above, by another assessment completed by a qualified professional, or

iii. where not determined above, to be 30% for the entire watershed

(b) reduce the likelihood of channel aggradation by limiting the identified high risk area that is clearcut within any 3-year period to below a percentage or area determined:

i. by the hydrological assessment completed under Section 5.47 above,

ii. where not determined in ‘i’ above, by another assessment completed by a qualified professional, or

iii. where not determined above, to be the greater of 5 ha or 2% of the total area of Class 4 to 5 terrain plus Class 3 terrain with slopes >60%

(c) reduce siltation, by

i. conducting and following the recommendations of terrain stability or other assessments to reduce the probability of mass wasting,

ii. deploying silt control measures during road construction, maintenance and deactivation,

iii. seeding erodable exposed soils within two-growing-season months of exposure, and

iv. rehabilitating old road segments if funded externally, or

(d) maintain or increase summer low flows, by reducing the proportion of mid seral forest via harvesting, where feasible and economic to do so.

Karst and Caves

5.49 Once karst resource features are identified by Order of the Minister or his designate, the Licensees will adhere to the requirements of FPPR 70(1) for those features so identified.

The following actions apply with respect to the entire plan area, but are voluntary and thus not subject to enforcement. Prior to an Order - and thereafter - Licensees will, for each of the indicators below, adhere to the actions below to the extent that they exceed the legal requirements of the day.

Within the plan area, where a Licensee encounters during layout for primary forest activities or otherwise becomes aware of in the potentially-affected vicinity:

(a) a cave greater than 5m in extent and able to accommodate a person to that point, or

(b) the following indicators of karst:

i. a karst cave

ii. a karst canyon

iii. a karst spring

iv. a swallet

v. sinkholes,

vi. grikes, or

vii. substantive epikarst, karren or other carbonate surfaces

the Licensee is to conduct an assessment of the near-surface cave and/or surface karst features and will use that assessment, and as appropriate the advice of a suitably qualified person, to design primary forest activities so that:

(a) large sinkholes, and caves including entrances, subterranean chambers, and internal formations, are not damaged or rendered ineffective for the purposes of recreation, scientific study or biodiversity conservation, and

(b) sufficient vegetation is retained to maintain microclimatic conditions at entrances, springs, and other unusual karst formations.

Recreation Sites

5.50 For recreation features, sites, or trails identified by Order of the Minister or his designate, the Licensees will adhere to the requirements of FPPR 70(1). For those features, sites, or trails set out in this Section, the actions below are enforceable results or strategies only to the extent that they address recreation objectives set by government, if any, for those features, sites, or trails. Actions beyond the forgoing will be implemented voluntarily and are not subject to enforcement.

The Licensees will maintain the potential for long term public recreational use of the following sites:

(a) Muchalat Lake campsite,

(b) Upana Caves trail

(c) Cougar Creek campsite,

(d) Star Lake picnic site,

(e) Big Bend picnic site,

(f) Leiner River campsite, and

(g) other sites that may be designated by Order of the minister or his delegate.

by, where fully funded externally,

(a) undertaking assessments, improvements, site and road maintenance, and

(b) harvesting trees only for the purposes of maintaining safety, fire prevention or control, salvage or other reasons if consistent with the recreation intent of the site.

6.0 MEASURES

INVASIVE PLANTS

6.1 Within the plan area, each Licensee will:

(a) provide training in the recognition of listed (Invasive Plant Regulation) invasive plant species to Forestry and Engineering field staff by October 31, 2007,

(b) maintain mapping of known occurrences of listed invasive plant species and annually report detections of previously-unknown listed invasive plant species to the Ministry of Forests and Range,

(c) for facilities under their ongoing management, annually inspect recreation sites, employee parking areas, and the shop yard where equipment and vehicles are cleaned and parked,

(d) for re-vegetation use seed mixtures meeting standards for reclamation set out in Canada's Seeds Regulations and where equally effective and available at similar cost, containing native or naturalized grasses,

(e) where a new introduction of a listed invasive plant, or a satellite introduction of Scotch Broom, Japanese/Giant Knotweed, or another moderate- or high-hazard listed invasive plant, is detected greater than 5 km from a known occurrence Licensees will cut,pull, or otherwise control up to 20 plants or stems at the point of detection within 60 days of detection and at their own expense. Further eradication or control measures will be undertaken if fully funded externally by government or other agencies,

(f) where moderate or high-hazard listed invasive plants such as Scotch Broom are established within 100m thereof,

   i. seed recently exposed mineral soils along roadsides as climatic and soil conditions allow within two growing-season-months[4] of disturbance,

   ii. reforest clearcuts within 18 months of harvest completion to encourage early crown closure by native trees, and,

(g) by December 31, 2007,

   i. identify gravel pits for road construction and maintenance from which gravel is expected to be transported to locations where Scotch Broom is not present within 1 km, and

   ii. annually cut or pull Scotch Broom prior to seed set in these gravel sources to suppress build-up of seeds in source gravel.

7.0 STOCKING STANDARDS

7.1 Situations or Circumstances that Determine Whether Free Growing is Assessed on a Block Basis or Across Blocks

FPPR s. 44 (1) applies in all situations or circumstances under the FSP where a free growing stand is required to be established under FRPA s. 29.

7.2 Regeneration Date, Free Growing Height and Stocking Standards

Appendix 1 specifies the regeneration date, free growing height and stocking standards for the situations or circumstances where FPPR s. 44 (1) applies.

7.3 Situations or Circumstances that Determine When FPPR s. 44 (4) Applies and the Standards Applicable (FPPR s.16 (4))

Where harvesting of special forest products (FRPA 44(3)(i)) occurs, stocking within each harvest unit will be maintained as specified in Appendix 1 for a period of at least 12 months after special forest products are removed.

Where individual trees are removed (FRPA 44(3)(h)) stocking standards, if any, are as specified in Appendix 1 and are to be maintained for a period of at least 12 months after the removal of trees is completed. Where intermediate cutting or commercial thinning is implemented stocking will be maintained above 80% of post-treatment basal area for a period of at least 12 months after removal of trees is completed.

7.4 Standards Applying to Pre-FSP Plans and Prescriptions (FRPA 197)

For cutblocks where stocking standards set out in the Code or in a pre-Code prescription would otherwise apply (including a site plan, silviculture prescription or pre-harvest silviculture prescription), a Licensee may elect to, for the purposes of otherwise specifying stocking standards under FRPA s. 197(4, 5 or 7) within an FDU as specified by FPPR s. 14(1)(d or e) and where ecologically appropriate, have stocking standards approved under this plan apply to standards units within such cutblocks. For each standards unit, this election is to be made prior to the previously specified late free growing date by electronically providing notice using the Ministry's RESULTS system to indicate the replacement FSP standard.

8.0 SIGNATURES OF PERSONS REQUIRED

8.1 Licensees:

Western Forest Products Inc.

PO Box 220
Gold River, BC
V0P 1G0
Phone: (250) 283-2221 Fax: (250) 283-2221

Authorized Licensee Signature: Name: _____
Mark Kenny, Regional Manager

Date: December 10, 2006

NOOTKA SOUND ECONOMIC DEVELOPMENT CORPORATION

P.O. Box 893
Gold River, BC
V0P 1G0
Phone: (250) 283-9260 Fax: (250) 283-7578

Authorized Licensee Signature: Name: _____
Larry Fehr, President

Date: December 10, 2006

INTERNATIONAL FOREST PRODUCTS LIMITED

#311-1180 Ironwood Road
Campbell River, BC
V9W 5PY
Phone: (250) 286-1881 Fax: (250) 286-3412

Signature PENDING…

Authorized Licensee Signature: Name: _____
Harry Barrett, Operations Manager

Date: December 10, 2006

EHATTESAHT FIRST NATION
#P.O. BOX 59
Zeballos, BC
V0P 2A0
Phone: (250) 761-4155 **Fax: (250) 761-4156**

Signature PENDING…

Authorized Licensee Signature: Name: _____
Corby Lamb

Date: December 10, 2006

8.2 Signing Forester:

Name: _____
Doug Meske, RPF
Regional Engineer - WFP

Date: December 10, 2006

"I certify that I have reviewed this document and while I did not personally supervise the work described, I have determined that this work has been done to the standards expected of a member of the Association of British Columbia Forest Professionals"

Appendix 1

Stocking Standards

Forest Stewardship Plans

Western Forest Products Inc.

Nootka Operating Areas

2006

1.0 FOREWORD

Pursuant to the Forest Planning and Practices Regulation section 16, the following tables are the stocking standards that are to be applied to cutblocks harvested under Forest Stewardship Plans (FSPs) within Western Forest Products' Nootka operating areas including TFL 19 and those areas of the Strathcona TSA that may be subject to harvesting under FL A19231. These standards are to apply to areas harvested under an FSP referring to this Appendix whether the harvesting is by WFP or other signatory Licensees. These standards are to be used in conjunction with Site Plans that are to be prepared as required by the *Forest and Range Practices Act*.

These standards recognize several silvicultural systems and regeneration situations that may occur as a result of harvesting or other disturbances.

The tables and standards herein are based on the Provincial publications:

- Tree Species and Free Growing Stocking Standard Guidelines (May 2000) for the Vancouver Forest Region,
- Establishment to Free Growing Guidebook (Version 2.2, Revised May 2000),
- A Field Guide for Site Identification and Interpretation for the Vancouver Forest Region (1994, Land Management Handbook Number 28),
- email guidance for red alder stocking from the Vancouver Region Regional Silviculturalist (April 8, 2005)

and importantly, on the local experience and opinion of professional foresters based within the Nootka area.

2.0 EVEN-AGED MANAGEMENT

The following standards apply to blocks and/or standards units where even-aged management is practiced and are applicable to the following silviculture systems:

- Clearcut
- Clearcut with (Group) Reserves
- Seed Tree
- Shelterwood
- Retention, where edge influence is less than 100%, within openings[5] only
- Group Selection, within openings[5] only

The tables following cover site series commonly found within the Nootka area for the following biogeoclimatic (BEC) variants: CWHvm1, CWHvm2, CWHxm2, CWHvh1, and MHmm1. A particular FSP referring to this Appendix may not encompass all of these BEC units.

2.1 Atypical Conditions

There are two ecological situations identified that are not identified in Handbook 28 or in the stocking guidelines, but that may occur within the Nootka area.

"c" phase:

- These are sites that contain a significant amount of bouldery colluvium where full stocking is not possible due to the extensive amount of rock.
- The most common examples are colluvial phases of the zonal site series of the CWHvm. CWHvm1-01c is an example.
- These boulder veneers may occur on almost all site series but for brevity only the commonly known ones are listed herein. Where needed new standards units may be created by reducing stocking density and

[5] determined by drawing chords up to and no more than 20m long among all tree trunks peripheral to the gap such that if the area within or enclosed by all the chords exceeds 0.1 ha or 1,000 m^2 and the gap was created by harvesting, the gap is deemed an opening.

minimum inter-tree distances as per the zonal examples.

Landslides:

Generally three productivity zones are evident corresponding to the initiation zone, the transport zone and the deposition zone. Relative proportions of these zones vary widely from slide to slide. Regeneration objectives may vary within these zones and first rotation timber productivity may be secondary to other objectives such as site stabilization, silt control, and visual amelioration.

- Deposition Zone: composed of mixed mineral and organic materials often including large woody debris. Stocking standards are to be as for the equivalent, often adjacent, site series and generally should be for zonal or more productive site series. Where organic matter is lacking or visual amelioration is sought, red alder (min. height 4.0m) may comprise up to 25% of target stocking[6], or where a hardwood crop is desired red alder is to be more than 90% of target stocking and broad-leaved standard (BL) is to be followed.
- Transport Zone (LT): often organic soil layers have been scoured away and the slide track is characterized by exposed remnants of mineral soil horizons and small deposits of mixed mineral and organic materials. Materials can be planted but are typically nutrient poor and often are seeded to reduce further surface erosion. Pioneering coniferous species such as Douglas-fir or shore pine are Preferred and western redcedar, western and mountain hemlock, and yellow cypress are Acceptable within each species' elevation and BEC limits. These species may be substituted for Fd as Preferred in the CWHvh1 and the western portion of the CWHvm1. Red alder (min. height 2.5m) is acceptable up to 25% of target stocking to ameliorate site productivity and/or visual quality. Minimum free-growing heights are as per the 03 site series for the applicable BEC variant.

[6] If shown in a site plan, this minor modification to the standards unit is considered amended to the standards unit, for the single instance.

- Initiation Zone: typically steep, and characterized by removal of the majority of productive soils. Classified as Non-Productive with no reforestation objectives or stocking standard. Seeded and spot planted as feasible.

2.2 Riparian Management Areas

In certain Riparian Management Areas timber production may not be a primary objective. Accordingly MSS P&A and minimum inter-tree distance stated in the Tables may be reduced by up to 50% for specific site plans but not exceeding 5.0 ha in total area within the FSP area during the term of the plan. This is intended to simulate naturally occurring patterns and maintain a partially open canopy to promote understory vegetation and horizontal patchiness. In these situations red alder (min. height 3.0 m) is acceptable up to 25% of the target stocking to diversify the canopy and litterfall composition.

Where timber objectives are primary and site edatope is as indicated below for broad-leaved species, but herbicide use is undesirable, red alder (min. height 4.0 m) may be considered a Preferred species.

2.3 Broad Leaved Management (BL)

Broad-leaved species may be the leading species on up to 3% of the timber harvesting land base harvested and regenerated during the term of an FSP.

On fresh to very moist actual hygrotope and medium to very rich trophotope sites within the following site series:

- CWHvm1-05, 07, 08, 09, 10
- CWHvh1-05, 06, 07, 08, 09
- CWHxm2-01, 05, 06, 07, 08, 09,13, 14

and where foliar herbicide application is undesirable, red alder may be regenerated to more or less pure stands to the following stocking standards:

Target: 1500	Min P&A: 1200	Min P: 1000
Min Intertree: 2.0m	Regen Date: 3 years	Minimum FG ht: 4.0m

Where the number of red alder trees per hectare on the area exceeds the target stocking a spacing treatment is required prior to the late free growing date to reduce the number of alder trees per hectare to between 600 to 900

2.4 Free-Growing Characteristics

All free growing trees must be of good form, colour, and vigour and be relatively free of significant pest infestations and meet the minimum heights specified. In addition, an advanced regeneration tree is free growing if it has:

- greater than 30% continuous live crown,
- evidence of post-harvest release, and
- no open injuries (scars) with a horizontal width at the widest point(s) greater than 25% of the circumference of the tree at that point.

A western white pine (Pw) tree meeting the general conditions above is free growing if at the time of survey there are no stem infections of blister rust and, either the tree has been pruned or the tree is from a seedlot genetically selected or bred to be resistant to blister rust. Pruned means that the lowest branches have been removed such that at least 40% of the tree height remains as live crown and the pruning height is at least the greater of 50% of tree height or the indicated FG height.

2.5 Site Series Transitions and Complexes

Stocking standards for transitions and complexes will be based on the dominant site series with modification by professional foresters to reflect the estimated percentages of the minor site series component(s). In some cases where components of a complex are discrete and easily recognizable in the field each component may be treated and assessed on the basis of its respective standard.

2.6 Minor Acceptable Species

To promote biodiversity and timber productivity and recognize the unforeseeable, a coniferous species not listed in the tables for a site series may be deemed Acceptable up to a limit of 5% of the target stocking, if the height is greater than the lowest minimum height listed among the preferred and acceptable tree species for that site series.

2.7 Even-Aged Tables

The following Tables set out the even-aged coniferous stocking standards for common BEC site series and/or phases within the Nootka area.

ID[9]	BEC Variant	Site Series	Species/Minimum FG Height (m)		Well-Spaced Stocking at FG (sph)			Min. Inter-tree[7] (m)	Regen Date[8]
			Preferred	Acceptable	Target	Min. P & A	Min. P		
1000762	**CWHvm1**	**01**	Hw/3.0 Ba/1.75 Cw/1.5 Fd[i]/3.0	Ss[ii]/3.0 Pw[iii]/3.0 Yc[iv]/1.5	900	500	400	2.0	6
1000763		**01s**	Hw/3.0 Cw/1.5	Fd/3.0 Pw[iii]/2.5 Yc[iv]/1.5	900	500	400	2.0	6
1000764		**03**	Hw/2.0 Cw/1.0 Fd[i]/2.0	Pw[iii]/1.75	800	400	400	2.0	6
1000765		**01c**	Hw/3.0 Cw/1.5 Fd[i]/3.0	Pw[iii]/3.0 Ba/1.75 Ss[ii]/2.5	800	400	400	1.0	6
1000766		**04**	Fd[i]/3.0 Hw/3.0 Cw/1.5	Ss[ii]/3.0 Ba/1.75 Pw[iii]/2.5	900	500	400	2.0	4
1000767		**05**	Hw/3.0 Ba/1.75 Cw/1.5 Fd[i]/3.0	Ss[ii]/3.0 Pw[iii]/3.0	900	500	400	2.0	4
1000768		**06**	Hw/3.0 Ba/1.75 Cw/1.5	Ss[ii]/2.5 Yc[iv]/1.5 Pw[iii]/2.5	900	500	400	2.0	6
1000769		**06s**	Hw/2.0 Cw/1.5	Yc[iv]/1.0 Pw[iii]/2.5 Pl/2.0	900	500	400	2.0	6
1000770		**07**	Hw[xii]/4.0 Ba/2.25 Cw/2.0	Ss[ii]/4.0 Fd[xiii]/3.0	900	500	400	2.0	3
1000771		**14**	Cw/1.0	Hw/2.0 Ss[ii]/2.0	800	400[v]	400[v]	1.0	3
1000809 1000810 1000812 1000813	**vm1 - 01 03 vm2 - 01 03**	**LT[10]**	Fd/see 03 Pl/1.25	Dr/2.5 Cw/see 03 Hw/see 03 Hm/see 03 Yc/see 03	800	400	400	1.5	4
	(see text)	**BL[11]**	Dr/4.0	Ss[ii]/3.5 Fd/3.0 Cw/1.5 Hw/3.0 Ba/2.0	1500	1200	1000	2.0	3

- [7] Reduce by 25% in slashy or rubbly roadsides where treatment is impossible, or costs would significantly exceed normal roadside site preparation costs.
- [8] years following harvest initiation.
- [9] ID numbers will be issued by the Ministry of Forests for each standards unit after approval of this FSP.
- [10] Landslide, Transport zone. See text.
- [11] Broad-leaved management. See text

ID[9]	BEC Variant	Site Series	Species/Minimum FG Height (m)		Well-Spaced Stocking at FG (sph)			Min. Inter-tree[7] (m)	Regen Date[8]
			Preferred	Acceptable	Target	Min. P & A	Min. P		
1000772	**CWHvm2**	**01**	Hw/2.5 Ba/1.75 Cw/1.5 Fd[i,vi]/2.5 Yc[iv]/1.5	Hm[vii]/1.5 Bp[viii]/1.5	900	500	400	2.0	6
1000773		**03**	Hw/1.75 Cw/1.0 Fd[i,vi]/1.5 Yc/1.0	Pw[iii]/2.5 Hm[vii]/1.2	800	400	400	2.0	6
1000774		**01c**	Hw/2.5 Cw/1.5 Fd[i,vi]/2.5 Yc[iv]/1.5	Pw[iii]/2.5 Ba/1.5	800	400	400	1.0	6
1000775		**04**	Fd[i,vi]/1.5 Hw/1.75 Cw/1.0 Yc[iv]/1.0	Ba/1.5 Pw[iii]/2.5	900	500	400	2.0	6
1000776		**05**	Hw/2.5 Ba/1.75 Cw/1.5 Yc[iv]/1.5	Bp[viii]/1.25 Fd[i,vi]/2.5	900	500	400	2.0	4
1000777		**06**	Hw/2.5 Ba/1.75 Cw/1.5 Yc[iv]/1.5	Hm[vii]/1.0 Bp[viii]/1.25 Fd[i]/2.5	900	500	400	2.0	6
1000778		**07**	Hw/3.5 Ba/2.25 Cw/2.0 Yc/2.0	Ss[ii]/4.0 Fd[vi]/3.0	900	500	400	2.0	4
1000779		**09**	Ba/1.5 Cw/1.0 Hw/1.75 Yc/1.0	Hm/0.75 Plc/1.25	800	400	400	2.0	4
1000780	**CWHxm2**	**01**	Fd/3.0 Hw/2.0 Cw/1.5	Pw[iii,ix]/2.5 Bg[x]/2.0	900	500	400	2.0	4
1000781		**03**	Fd/2.0 Cw/1.0	Pw[iii]/2.5 Hw/1.2	800	400	400	2.0	4
1000782		**04**	Fd/3.0 Cw/1.5	Pw[iii]/2.5	900	500	400	2.0	4
1000783		**05**	Fd/4.0 Cw/2.0	Pw[iii]/2.5 Hw/2.0 Ss[ii,xi]/3.0 Bg[x]/3.5	900	500	400	2.0	4
1000784		**06**	Hw/2.0 Cw/1.5 Fd[xii]/3.0	Bg[x]/3.0 Ss[ii,xi]/3.0	900	500	400	2.0	6
1000785		**07**	Fd[xii]/4.0 Bg/3.5 Cw/2.0	Hw/2.0 Ss[ii,xi]/4.0	900	500	400	2.0	3

ID[9]	BEC Variant	Site Series	Species/Minimum FG Height (m)		Well-Spaced Stocking at FG (sph)			Min. Inter-tree[7] (m)	Regen Date[8]
			Preferred	Acceptable	Target	Min. P & A	Min. P		
1000786	**CWHvh1**	**01**	Hw/2.0 Cw/1.5 Yc[xiii]/1.5	Ss[ii]/3.0 Pw[iii]/2.5 Fd[i]/2.0 Ba/1.75	900	500	400	2.0	6
1000787		**03**	Cw/1.0 Hw/1.25 Yc[xiii]/1.0	Pl/1.25	800	400	400	2.0	6
1000788		**04**	Ba/2.25 Cw/2.0 Hw/1.75	Ss[ii]/4.0	900	500	400	2.0	6
1000789		**06**	Ba/2.25 Cw/2.0 Hw/1.75 Yc[xiii]/2.0	Ss[ii]/4.0	900	500	400	2.0	4
1000790		**07**	Ba/2.25 Cw/2.0	Hw/1.75 Ss[ii]/4.0	900	500	400	2.0	4
1000791		**11**	Cw/1.0 Hw/1.25 Yc[xiii]/1.0		800	400	400	2.0	4
1000792		**12**	Pl/1.25 Yc[xiii]/1.0 Cw/1.0 Hw/1.25	Ss[ii]/2.0	400	200	200	2.0	4
1000793		**13**	Ss[ii,xii]/2.0 Yc[xiii]/1.0 Cw/1.0 Hw[xii]/1.25	Pl/1.25	800	400	400	2.0	4
1000794 **1000824**	**MHmm1**	**01** **03**	Hm/1.0 Ba/0.6 Yc/1.0	Bp[xiv]/1.25 Hw[vi,xi]/1.0 Se[xiv]/1.0	900	500	400	2.0	7
1000795		**04**	Hm/1.0 Ba/0.6 Yc/1.0	Hw[vi,xi]/1.0 Se[xiv]/1.0	900	500	400	1.5	7
1000796 **1000825**		**05** **07**	Ba/0.6 Yc/1.0 Se[xiv]/1.0	Hm/1.0	900	500	400	1.5	4
1000797		**06**	Hm/0.75 Ba/0.6 Yc/0.75	Hw[vi,xi]/0.75	800	400	400	1.5	7

Species Notes:

[i] Fd is a preferred species on aspects with a southerly exposure, or where there is local evidence of its natural occurrence.

[ii] Ss is to be from seed sources selected for high resistance to *Pissodes strobi*. Nutrient medium or better sites only.

[iii] Pw is to be from seed which has been selected to be resistant to *Cronartium ribicola* and/or is to be pruned and is for nutrient medium or better sites only.

[iv] on northerly aspects or where it occurs naturally.

[v] MSS may be reduced to 80% of natural stocking potential based on stocking survey assessments.

[vi] restricted to lower half of local elevation range within the biogeoclimatic variant.
[vii] restricted to higher elevations within the biogeoclimatic variant.
[viii] Bp is acceptable at higher elevations on a trial basis. NB: abbreviation may be “Bn” in government databases.
[ix] “Preferred” in root rot pockets.
[x] restricted to richer/moister microsites up to 15% of the stand.
[xi] restricted to a maximum of 10% of the stand.
[xii] elevated microsites unlikely to be flooded are most suitable microsites.
[xiii] Yc is a preferred alternate to Cw when present in the existing natural stand.
[xiv] trial basis only.

3.0 HIGH RETENTION APPROACHES

The following sets out general principles to be applied when developing standards for non-even-aged management or high retention approaches. Appendix 1A provides a conceptual diagram and decision key outlining some situations where high retention of a residual basal area, volume, or stem count would be an acceptable management approach.

With the following retention exceptions:

- feathering treatments with an average width of 30m or less along timber edges, or
- special forest products salvage,

each alternate management approach set out below requires – prior to application for cutting permit – that an amendment to this plan be approved by the delegated decision maker. The amendment is to add the appropriate stocking standards identification number and description to the Table set out in section 3.4 following.

3.1 Dispersed Retention >5% and Feathering

The Licensees may use dispersed retention along windthrow-prone timber edges or within and along riparian management areas for the purposes of creating feathered edges to reduce the severity of damage to retained trees and the values associated with them. Tree species selection and density will consider:

for regenerating trees: shade tolerance, productivity and value, advance and natural regeneration potential, and resistance to mistletoe; and

for leave trees: wind resistance, competitive potential, and future harvest potential (vigour, pests, defect, value).

3.2 Uneven-aged Management

The following concepts are for cutblocks and/or standards units where uneven-aged management is practiced and are applicable to the following silviculture systems:

- Single Tree Selection
- Retention, where edge influence is 100% and openings[5] are ≤ 0.1 ha
- Group Selection, where openings[5] are ≤ 0.1 ha

For each BEC site series or phase the Preferred and Acceptable species listed in the Tables for even-aged management may be considered "Preferred", with the exception that in Layer 4 only, locally shade-intolerant species (Fd, Dr) may be considered "Acceptable". Hemlock trees in Layer 4 growing within the seed rain area of an overstory tree infected with hemlock dwarfmistletoe should make up no more than 50% of the minimum well-spaced stocking (P+A).

The following recommended percentages could be applied to the even-aged stocking targets and minimums to calculate a starting point for the uneven-aged targets and minimums for well-spaced trees in Layers 2-4 within each site series:

25%	Layer 2	Pole (7.5cm to 12.4cm dbh)
70%	Layer 3	Sapling (≥1.3m to 7.4cm dbh)
100%	Layer 4	Regeneration (<1.3m)

Where pre-harvest densities in Layers 2-4 exceed the calculations above by 10%, the calculated values for each Layer would be the stocking standard densities. Otherwise the minimum stocking standard densities for Layers 2-4 are 80% of the pre-harvest density in each Layer. The minimum stocking standard densities for Layers 2-4 apply to each Layer individually and independently. A standard should commit to maintaining stocking densities of retained trees and advance regeneration for at least 12 months following the completion of a cutting cycle or longer if there is significant risk of damage related to harvest operations in the post-harvest period.

For Layer 1 (Mature; ≥12.5cm dbh), up to 50% of pre-harvest basal area might be removed but this will typically be much less depending on the frequency of expected re-entries, the need for disease control or sanitation treatments, diameter distributions, harvest economics and other factors.

3.3 Partial Cutting

Trees may be harvested where short and/or long term objectives for other values including protection of visual quality, terrain stability, cultural heritage features, wildlife features or habitat, and stream bank integrity may be as, or more, important than timber and economic objectives. Partial extraction cuts may be employed in these situations where otherwise even-aged management would be preferred for timber production.

In cases where timber objectives are secondary, standards need to encourage or facilitate regeneration or release of those desirable timber species set out in the even-aged tables for each site series as other

objectives, logistics and other circumstances allow. As the possibilities, complexities, and methods will vary with local circumstances, specific stocking standards for most of these situations would need to be developed as they arise; hence a suite of situation-specific standards would evolve as amendments add to the Table set out in Section 3.4.

Where long term timber objectives do not exist , or as in the case of intermediate cutting or commercial thinning where regeneration objectives are delayed until final harvest, there are no regeneration objectives or free growing obligations associated with the current harvest entry. In Layer 1 the minimum stocking level ought to be no less than 50% of the pre-harvest basal area and often would be much higher. Species composition, as determined by sampling the number of stems, could be managed such that at a minimum the combined Layer 1 plus Layer 2 species composition percentage post harvest for each species does not change substantially from the pre-harvest species percentage. Alternatively, species shifts also can be assessed at a watershed or landscape level where cutblocks under even-aged management can compensate for shifts away from shade intolerant species in partially-cut stands.

3.3.1 Special Forest Products

Where partial cutting involves harvesting of special forest products such as cedar shake and shingle blocks, stocking standards apply as follows:

- In areas not yet free growing and subject to a site plan, or if no site plan a silviculture prescription, the Licensee will maintain the stocking standards for the standards unit as set out in the site plan or silviculture prescription for 12 months or the attainment of free growing, whichever occurs later.
- In harvest units or blocks forming part of a larger salvage cutting permit and previously declared free growing, and to the extent that stocking levels and species composition are changed by the Licensee's harvesting of special forest products, the Licensee will maintain stocking levels and species composition at 95% or more of pre-harvest levels for 12 months after the harvesting of special forest products is completed.

3.4 Table of High Retention Standards

ID #	Name	Description & Standards (species; BA/stems retained, stand & stock tables, BDq, leave tree specifications, preferred/acceptable, etc. as applicable)	
		Retained trees	Regeneration
	edge feathering (<30m deep on average)	applies along timbered edges as a buffer with retention increasing with proximity to the timber edge. Retain windfirm trees (well rooted, low sail)	regeneration increasing away from the timber edge. Included within larger adjacent standards unit for inventory and compliance purposes and the stocking standards for the adjacent SU apply to as much of the feathered area as practicable.
	SFP salvage	maintain SP standards as applicable or 95% of pre-harvest stocking and composition. See text.	no additional regeneration required.
	tba	others to be proposed to and approved by DDM by amendment.	

Appendix 1A. High Retention Management Decisions

Figure 1 illustrates a decision key provided for guidance and to be used when developing standards for requests for “one of” approval of specific high retention proposals. The key outlines some considerations for when high retention harvesting of single trees or small groups could be considered. It is expected that this key will evolve over time as it is tested in practice, as other situations come to light, and as “one of” approvals and rejections unfold. The diagram presented in **Figure 1** presents a simplified version of the key in the form of a flow chart and is provided for general reference. Refer to the decision key following for detail.

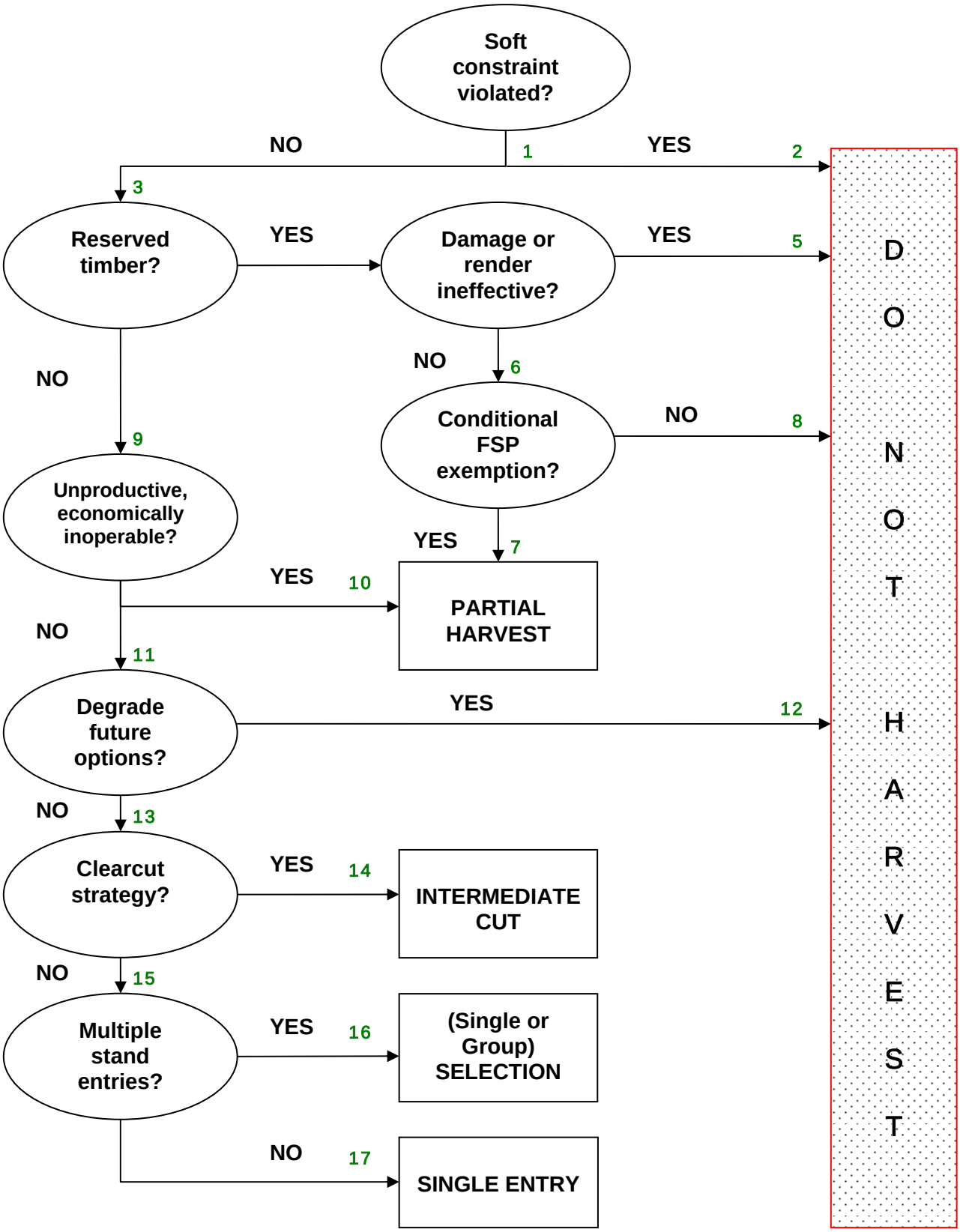

Figure 1. High Retention Decision Diagram

DECISION KEY (follow the numbers in sequence until otherwise directed)

1. Will proposed harvesting materially adversely affect the attainment of non-spatial or "soft" constraints such as the Non-Spatial Old Growth Order, a Section 7 wildlife notice, a Visual Quality Objective, or a cover constraint? (if NO skip to "3")

    2. DO NOT HARVEST

3. Is proposed harvesting of or from a spatially-identified, "hard" reserve such as a Riparian Reserve Zone, Wildlife Habitat Area, Old Growth Management Area, Resource Feature, Culturally Modified Tree? (if NO skip to "9")

    4. Will proposed harvesting "damage or render ineffective" the reserve for the purpose(s) for which it was established? (if NO skip to "6")

        5. DO NOT HARVEST. [If currently in TSR as "unconstrained operable", recommend inventory reclassification]

    6. Is a conditional FSP or other exemption applicable that permits the proposed harvest? (If NO, skip to "8")

        7. PARTIAL HARVEST very carefully without or with[12] regeneration objectives. Document rationale, consult specialists.

    8. DO NOT HARVEST

9. Would a future rotation be impossible if clearcut; or in other words, is the stand unproductive for future timber crops and economically inoperable? (if NO skip to "11")

    10. PARTIAL HARVEST without regeneration objectives.

11. [if classified "inoperable" in TSR, recommend reclassification.]

    Is residual stand unlikely to continue growing to harvestable size and value within reasonable timeframe (30-50 years)? I.e. would partial value removal degrade future harvest potential to the point that future harvest would not be viable? (If NO skip to "13")

    12. DO NOT HARVEST (High Grading)

13. Could a subsequent stand entry be a profitable clearcut? (if "NO" skip to "15")

    14. INTERMEDIATE CUT with no regeneration objectives.

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[12] generally natural regenerative processes would be preferred unless specific objectives require otherwise.

15. HIGH RETENTION HARVEST with regeneration objectives. Are multiple stand entries likely within the next century? (if NO skip to “17”)

    16. SELECTION SYSTEM (Single Tree or Group) with continuous regeneration objective.

17. SINGLE[13] ENTRY high retention with regeneration objective.

Note that line 17 of the key is the residual. Although such stands may be rare, they likely exist nonetheless. As these productive and accessible stands cannot be clearcut due to constraints, and cannot be managed under a selection system due to economic or other impracticalities, they nevertheless harbour timber values. There needs to be a mechanism to allow partial extraction from such stands provided self replacement will occur with modest artificial reforestation efforts or via natural mechanisms.

[13] “single” is here used to mean very infrequent entries that for all intents and purposes are unlikely to recur within a human lifetime. Alternatively the regime might be characterized as high retention with very long cutting intervals.