

Forests, Lands and Natural Resource Operations

2017/18 to
2020/21



Silviculture Funding Criteria

LBIS Silviculture Funding Criteria for Forests For Tomorrow

Investment principles

- 1) Funds will be allocated to activities based on their potential contribution to the goals, strategic objectives, and priorities outlined in the Land Based Investment Strategy.
 - a) Allocation of investments will be based on consideration of the following factors¹ (in order):
 - i. magnitude of the impact in addressing the goals, strategic objectives, and priorities resulting from the activity;
 - ii. activities that address timber supply;
 - a. maintain adequate growth rates on existing government funded land based investments²
 - b. address critical mid-term time periods when second growth timber must be available in sufficient quantities and size to meet supply demands
 - c. reforest catastrophic disturbance where mid and long-term timber supply has been impacted
 - iii. activities that are dependent on a specific biological window where delays could result in lost opportunities;
 - iv. the ability to leverage funding from other sources;
 - v. additional benefits that can be achieved from the activity; and
 - vi. each activity must consider how climate change has affected, or will affect, resource values and their associated goals, objectives and targets.

¹ Consideration will be given to strength of evidence that the expenditure will have the impact that is claimed

² Maintaining existing investments is a higher priority to starting new investments

Criteria for implementation

Filter 1: Provincial level determination of silvicultural response

Determination of silvicultural response to provincial level timber supply issues will be based upon the ability to mitigate impacts on timber supply caused by catastrophic disturbance or constrained³ timber.

Current reforestation

Filter 2: Provincial level determination of Regional Investment level

Determination of level of investment in each region of the province will be based upon the level of need and opportunity for mitigation of impacts on timber supply caused by catastrophic disturbance or constrained timber relative to the dependency of the region or combination of regions on the forest industry (Appendix 5)

Filter 3: Determination of areas of focus

Priority should be given to the following types of disturbance in the following order:

1. Burnt plantations (no legal reforestation obligations)
2. Catastrophic killed plantations (no legal reforestation obligations)
3. Defaulted legal reforestation obligations⁴/ Caribou Mitigation Openings⁵
4. Catastrophic killed mature timber⁶,
5. Burnt Mature timber⁷

Central interior⁸

Priority management units for treatment to be identified based on the degree of impact on mid and long-term timber supply caused by catastrophic events (e.g. Mountain Pine beetle and amount of area consumed by recent wildfires). (Appendix 1)

Coast, northwest⁹, southeast¹⁰

Priority management units for treatment to be identified based on amount of timber volume currently impacted by catastrophic disturbance, amount of defaulted Free Growing obligations, or amount of caribou mitigation openings.

³ Public policy decisions that reduce harvest levels (e.g. Government Action Regulations)

⁴ Potential for others to pick up legal obligations on defaulted major licenses is exhausted as indicated by direction of the District Manager.

⁵ See appendix 6

⁶ Damage must have occurred at least 3 years prior to treatment; salvage opportunities that may generate a legal reforestation obligation on another party must have been exhausted.

⁷ Sufficient time must have passed so that natural regeneration opportunities to establish sufficient stocking is no longer a reasonable option. Salvage opportunities that may generate a legal reforestation obligation on another party must have been exhausted

⁸ Districts as indicated in appendix 1

⁹ Skeena-Stikine, and Coast Mountain forest districts

¹⁰ Districts within the Kootenay Boundary region

Additional information for consideration:

- Contribution of current harvest levels to salvaging and reforesting areas impacted by catastrophic disturbance
- Silviculture strategies
- Timber supply review background information
- Silviculture opportunities map
- Ability to naturally regenerate with appropriate commercially valuable species
- Product value (current, historic, and future)
- Contribution of current harvest levels to salvage and reforestation of catastrophic disturbances.
- Capacity to implement
- Reliability/security of intended investment benefits (e.g. potential park, protected area, urban, or recreational development)

Filter 4: Maximization of productivity¹¹

Reforestation¹² - Central interior

All else being equal, priority at the stand level will be given to units with the highest site productivity. Preference will be given in the following order:

Leading species to be reforested¹³:

1. Fdi
2. Sx/Sw
3. Lw/Pw
4. Pli/Py

Site Index of leading species to be reforested:

1. SI > 20
2. SI 15- 20
3. No treatment for areas < SI 15

Reforestation¹⁴ - Southeast¹⁵

All else being equal priority at the stand level will be given to units with the highest site productivity. Preference will be given in the following order:

¹¹ The guidelines within this section are intended to focus investments on those sites and species which have the highest return in terms of productivity and economy. However, variation from these guidelines is acceptable in adaptive management framework when piloting new treatment regimes as long as a defensible rationale is produced.

¹² Reforestation includes, site prep, planting, brushing treatments etc. necessary to successfully establish a stand.

¹³ Intent is to foster species diversity and should not preclude using the most productive species for a particular ecosystem. As well, [FFT policy #1 Management of tree species composition](#) must be followed when developing planting prescriptions

¹⁴ Reforestation includes, site prep, planting, brushing treatments etc. necessary to successfully establish a stand.

¹⁵ Districts within the Kootenay Boundary region

Leading species to be reforested¹⁶:

1. Fdi/Lw
2. Sx/Sw
3. Cw/Pw
4. Pli/Py

Site index of leading species to be reforested:

1. SI > 25
2. SI 20- 25
3. SI 15 - 19
4. No treatment for areas < SI 15

Reforestation¹⁷ - Northwest¹⁸

All else being equal, priority at the stand level will be given to units with the highest site productivity. Preference will be given in the following order:

Leading species to be reforested¹⁹:

1. Cw
2. Sx/Sw/Ss²⁰
3. Ba
4. Hw
5. Pli

Bulkely TSA

1. Sx/Sw
2. Bl
3. Pli
4. Fd/Lw

Site index of leading species to be reforested:

1. SI > 25
2. SI 20- 25
3. SI 15 - 19
4. No treatment for areas < SI 15

¹⁶ Intent is to foster species diversity and should not preclude using the most productive species for a particular ecosystem

¹⁷ Reforestation includes, site prep, planting, brushing treatments etc. necessary to successfully establish a stand.

¹⁸ Skeena-Stikine and Coast Mountain forest districts

¹⁹ Intent is to foster species diversity and should not preclude using the most productive species for a particular ecosystem

²⁰ Only where there is no Spruce leader weevil hazard or when leader weevil resistant genotypes are used.

Reforestation²¹ - Coast

All else being equal priority at the stand level will be given to units with the highest site productivity. Preference will be given in the following order:

Leading species to be reforested²²:

1. Fdc
2. Cw/Pw
3. Ss/Sx
4. Ba/Yc

Site index of leading species to be reforested:

1. SI > 30
2. SI 24- 29
3. SI 15 - 23
4. No treatment for areas < SI 15

Repression Density Spacing

Due to the significantly higher cost of repression density spacing as compared to planting un-stocked areas, repression density spacing should only be undertaken where the future timber supply improvements are strongly weighted in favour of repression density spacing as compared to the benefit of planting un-stocked areas. Undertaking repression density spacing needs to be supported through an Integrated Silviculture Strategy, Type 4, or if available a Type 2 silviculture strategy.

Review the report [Repression Density Treatment Decision Key](#) and decision key (Section 5) to fully understand the rationale behind the following priority rankings within each category. All categories listed below must be considered together to determine an overall ranking and eligibility.

Repression Density Spacing - Interior areas only

All else being equal priority at the stand level will be given to units with the highest site productivity. Preference will be given in the following order:

Leading species to be released through repression density spacing:

1. Pli
2. Lw

²¹ Reforestation includes, site prep, planting, brushing treatments etc. necessary to successfully establish a stand.

²² Intent is to foster species diversity and should not preclude using the most productive species for a particular ecosystem

Stand Origin and Stem density (Based on a count of dominant and co-dominant trees in the stand)

1. Fire origin > 500,000 stems/ha.
2. Fire origin 150,000 – 500,000 stems/ha.
3. Fire origin 50,000 - 150,000 stems /ha
4. Post Harvest Origin Stands > 150,000 stems/ha.

Stands with less than 50,000 dominants and co-dominants have a small probability of going into repression significant enough (2 m loss or more) to warrant treatment, however, these stands can be treated if significant repression is demonstrated via observed top height growth compared to expected top height growth, and the potential site index is high enough to result in sufficient breakeven treatment costs ([see table 24 pp 33 in Repression Density Decision Key](#)).

Site Index

Site index estimate should be based on the potential of the site in absence of repression density impacts on height. Note that there is a low probability of repression on higher productivity sites (SI>20) but if repression of 2 m or greater does occur then these are the top priority areas.

1. SI > 20
2. SI 15- 20
3. No treatment for areas < SI 15

Forest Health:

- Minimal forest health hazard²³

Magnitude of Repression:

The magnitude of repression is estimated by loss in site index, the higher the expected loss the higher the priority.

1. > 5 m
2. 3-5m
3. 2m
4. No treatment for less than 2m SI loss

Stand height

The magnitudes of the response to repression spacing treatments generally decline as stands age and have been in repression longer. Stands >3m should

²³ A forest health specialist should be consulted in situations where insect, disease, or animal factors may affect the priority rating of candidate stands.

consider fertilization as part of the treatment regime in the prescription. See *Repression Density Treatment Decision Key*

1. < 50 cm
2. >50 cm - <300 cm
3. >300 cm

Stand age (years post fire)

The magnitudes of the response to repression spacing treatments generally decline as stands age and have been in repression longer. Stands >15 years should consider fertilization as part of the treatment regime in the prescription. See *Repression Density Treatment Decision Key*

1. < 5 years
2. 5-10 years
3. 10-15 years
4. > 15

Filter 5: Maximization for return on investment

Priority will be given to units with highest return on investment. See *Repression Density Treatment Decision Key* for financial analysis information.

Filter 6: Project size

The largest areas or groupings of areas that give rise to the realization of greater future product capture and treatment opportunities will be given priority.

Conifer Release

Because of the potential to reduce species diversity and destroy broadleaf trees that may contribute to timber supply, caution will be exercised when undertaking conifer release.

Consideration must be given as to whether the broadleaf species meets **any one** of these conditions:

1. Broadleaves are deemed suitable as a new forest crop as either pure or mixed wood stands on the basis of:
 - a. Broadleaf species are currently or will be included in the estimation of volume contributing to a management unit's timber supply including wood fibre related products, or
 - b. Broadleaf species are currently included as part of an over-arching Land Use Objective for that area.
2. Their use is consistent with a science based strategy (e.g., TSA silviculture strategy, TFL Management plan, or Hardwood/Broadleaf strategy) that provides stated management objectives for broadleaves. These science-based strategies

should incorporate careful analysis of growth and yield implications and set out viable silviculture regimes that will achieve the management objectives.

3. Broadleaves are to be used to reduce catastrophic fire risk in Wildland Urban Interfaces under the guidance of a Community Wildfire Protection Plan, or
4. Broadleaves are to be used as a short-rotation interim crop to manage for root rot centres.

These criteria are meant for any stand which has reached free growing and exceeds the late free growing date (obligation has been met/declared), and are now at risk of reverting back to non-free growing status due to competing hardwoods. For treatment to occur there must currently be less than the minimum number of crop trees free of competition for the particular site series as determined by survey requirements outlined in Appendix 13 of the [Silviculture Survey Manual](#).

Conifer Release - Central Interior

All else being equal, priority at the stand level will be given to units with the highest single tree volume response. Preference will be given in the following order:

Species to be released²⁴:

1. Fdi
2. Pli
3. Sx/Sw

Height of conifers:

- > 2 metres
- Height to diameter ratio <80

Site Index²⁵:

1. SI >25
2. SI 20-25
3. SI 16-19

Forest Health:

- Minimal conifer health factors present
- Minimal forest health hazard²⁶

²⁴ Post-treatment leading species

²⁵ Site index of leading species post-treatment

²⁶ A forest health specialist should be consulted in situations where insect, disease, or animal factors may affect the priority rating of candidate stands.

Conifer density²⁷:

1. At least, minimum stocking standard for the target ecosystem association

Conifer Release - Coast

All else being equal, priority at the stand level will be given to units with the highest single tree volume response. Preference will be given in the following order:

Species to be released²⁸:

1. Fdc
2. Ss(where leader weevil risk is low)
3. Cw
4. Hw/Ba

Height of conifers:

- > 2 metres
- Height to diameter ratio <80

Site Index²⁹:

1. SI>30
2. SI 25-29
3. SI 20-24

Forest Health:

- Minimal conifer health factors present
- Minimal forest health hazard³⁰

Conifer density³¹:

1. At least, minimum stocking standard for the target ecosystem association

Conifer Release - Southeast

All else being equal, priority at the stand level will be given to units with the highest single tree volume response. Preference will be given in the following order:

Species to be released³²:

1. Fdi/Lw
2. Pli
3. Sx/Sw
4. Cw/Hw

²⁷ Assumes uniform distribution

²⁸ Post-treatment leading species

²⁹ Site index of leading species post-treatment

³⁰ A forest health specialist should be consulted in situations where insect, disease, or animal factors may affect the priority rating of candidate stands.

³¹ Assumes uniform distribution

³² Post-treatment leading species

5. BI/Ba

Height of conifers:

- > 2 metres
- Height to diameter ratio <80

Site Index³³:

1. SI>25
2. SI 20-25
3. SI 15-19

Forest Health:

- Minimal conifer health factors present
- Minimal forest health hazard³⁴

Conifer density³⁵:

1. At least, minimum stocking standard for the target ecosystem association

Conifer Release - Northwest

All else being equal, priority at the stand level will be given to units with the highest single tree volume response. Preference will be given in the following order:

Species to be released³⁶:

1. PI (where damage agent risk low)
2. Cw/Ba
3. Sx (where leader weevil risk is low)
4. Hw
5. BI

Height of conifers:

- > 2 metres
- Height to diameter ratio <80

Site Index:

1. SI>30
2. SI 25-29
3. SI 20-24

Forest Health:

- Minimal conifer health factors present
- Minimal forest health hazard³⁷

Conifer density³⁸:

1. At least, minimum stocking standard for the target ecosystem association

³³ Site index of leading species post-treatment

³⁴ A forest health specialist should be consulted in situations where insect, disease, or animal factors may affect the priority rating of candidate stands.

³⁵ Assumes uniform distribution

³⁶ Post-treatment leading species

³⁷ A forest health specialist should be consulted in situations where insect, disease, or animal factors may affect the priority rating of candidate stands.

³⁸ Assumes uniform distribution

Filter 5: Maximization for return on investment

Priority will be given to units with highest return on investment.

1. ROI > 5%
2. ROI 3-5%
3. ROI 2-2.9%
4. No treatment targeted for areas where the return on investment is less than 2%³⁹.

Filter 6: Project size

The largest areas or groupings of areas that give rise to the realization of greater future product capture and treatment opportunities will be given priority.

³⁹ A 2% rate of Return on Investment is employed to balance the economic return of reforestation investments with future timber supply and other resource values and objectives. Variation to levels between 0 and 2% will be utilized when benefits to timber supply or other resource values reflect a higher social priority.

Timber Supply Mitigation

Filter 2: Provincial level determination of Regional Investment level

Determination of the level of investment in each region or combinations of regions of the province will be based upon the level of need for mitigation of impacts on timber supply caused by catastrophic disturbance or constrained timber relative to the dependency of the region or combination of regions on the forest industry (Appendix 5).

Filter 3: Determination of area of focus

Priority management units for treatment are identified based on the relative timber supply available in the mid-term compared to current and future Allowable Annual Cuts. (Appendix 2)

Additional information for consideration:

- Silviculture strategies
- Timber supply review background information
- Product value
- Reliability of intended investment benefits (e.g. future forest health impacts, other forest use designations)
- Capacity to implement

Filter 4: Optimization of timber flow⁴⁰

Fertilization – Central Interior:

All else being equal, priority at the stand level will be given to units with the highest fertilization volume response. Preference will be given in the following order:

Species:

1. Fdi
2. Sx/Sw
3. Pli

Age:

1. 40 – 80 years
2. 15 - 39 years

Site Index:

- SI 15 – 30

⁴⁰ The guidelines within this section are intended to focus investments on those sites and species which have the highest return in terms of productivity and economy. However, variation from these guidelines is acceptable in adaptive management framework when piloting new treatment regimes as long as a defensible rationale is produced.

Forest Health:

- Minimal forest health hazard⁴¹

Exclusions:

- Exclude stands in the Interior Douglas Fir (IDF) Biogeoclimatic zone

Fertilization - Coast

All else being equal, priority at the stand level will be given to units with the highest fertilization volume response. Preference will be given in the following order:

Species:

1. Fdc
2. Cw
3. Ss
4. Hw (Only on specific sites as outlined in the Stand Selection guidelines for fertilization and where Hw is the only species that can be treated to address constrained timbers supply)

Age:

1. 40 – 80 years
2. 15 - 39 years

Site Index:

1. SI 24– 38
2. Northern Vancouver Island Cw fertilization SI 17 – 32

Forest Health:

- Minimal forest health hazard⁴²

Fertilization – Northwest

All else being equal, priority at the stand level will be given to units with the highest fertilization volume response. Preference will be given in the following order:

Species:

1. Cw/Fdi
2. Ss/ Sx/Sw⁴³
3. Pli

⁴¹ A forest health specialist should be consulted in situations where insect, disease, or animal factors may affect the priority rating of candidate stands.

⁴² A forest health specialist should be consulted in situations where insect, disease, or animal factors may affect the priority rating of candidate stands. Coastal Douglas-fir areas with incidence of Swiss Needle Cast (SNC) should also be discussed with the forest health specialist and district stewardship staff to ensure a benefit from the fertilization treatment.

⁴³ Only where there is no Spruce leader weevil hazard

Age:

1. 40 – 80 years
2. 15 - 39 years

Site Index:

1. SI 20– 32

Forest Health:

- Minimal forest health hazard⁴⁴

Fertilization – Southeast

All else being equal, priority at the stand level will be given to units with the highest fertilization volume response. Preference will be given in the following order:

Species:

1. Fdi
2. Sx/Sw
3. Pli

Age:

1. 40 – 80 years
2. 15 - 39 years

Site Index:

1. SI 15-30

Forest Health:

- Minimal forest health hazard⁴⁵

Spacing

The FFT spacing activity is being reviewed. Until the review process is completed, the current FFT focus for 2018/19 planning will be limited to spacing Alder on the Coast and Dry belt Fdi spacing (outside of Mule Deer Winter Range) in the interior. Spacing projects outside of these stand types will be assessed on a case by case basis where there are linkages to a management unit silviculture strategy, support from district FFT staff, and a 2% ROI can be demonstrated. For repressed lodgepole pine stands see repression density spacing under current reforestation (page 6).

⁴⁴ A forest health specialist should be consulted in situations where insect, disease, or animal factors may affect the priority rating of candidate stands.

⁴⁵ A forest health specialist should be consulted in situations where insect, disease, or animal factors may affect the priority rating of candidate stands.

Dry belt Fdi Spacing (outside of Mule Deer Winter Range)

Defined as multi-layered Fdi leading stands in the IDF BEC zone in the Southern Interior: No current commercial harvest opportunity; <100m³/ha of Fdi with >27.5cm dbh limit. The following criteria should be used in conjunction with the Interior Forest Health Decision Key Matrices included in the [FS 448b Field guidelines for the selection of stands for spacing \(interior\)](#).

Species:

1. Fdi (Post-treatment leading species)

Site Index(Fdi):

1. SI >17
2. SI 15-17

Other initial stand conditions:

1. Average Layer 2 to 4 competing density (trees competing for light as defined by having <50% live crowns) of greater than 2,500 stems per hectare for > 60% of the net treatment area and;
2. Layer 1 basal area of <10m² per hectare for > 60% of the net treatment area

Forest Health: Minimal forest health hazard (use [Interior Forest Health Decision Key Matrices in FS448b](#) and consult forest health specialists if there is any uncertainty.)

Alder Spacing

Only as part of the [Coast hardwood strategy](#) and where stand management is focused on producing short rotation saw logs. Refer to [Red Alder Managers' Handbook for British Columbia](#) for options and timing on alder spacing.

Species: Focus is on stands with a Dr component of ≥ 2000 total competing stems per hectare of Dr in the dominant and co-dominant layers.

Height: Greater than 10m in top height with live crown >40%

Site Index:

1. > SI34
2. SI 30-34

Forest Health: Minimal forest health hazard. A forest health specialist should be consulted in situations where insect, disease, or animal factors may affect the priority rating of candidate stands.

Filter 5: Maximization for return on investment

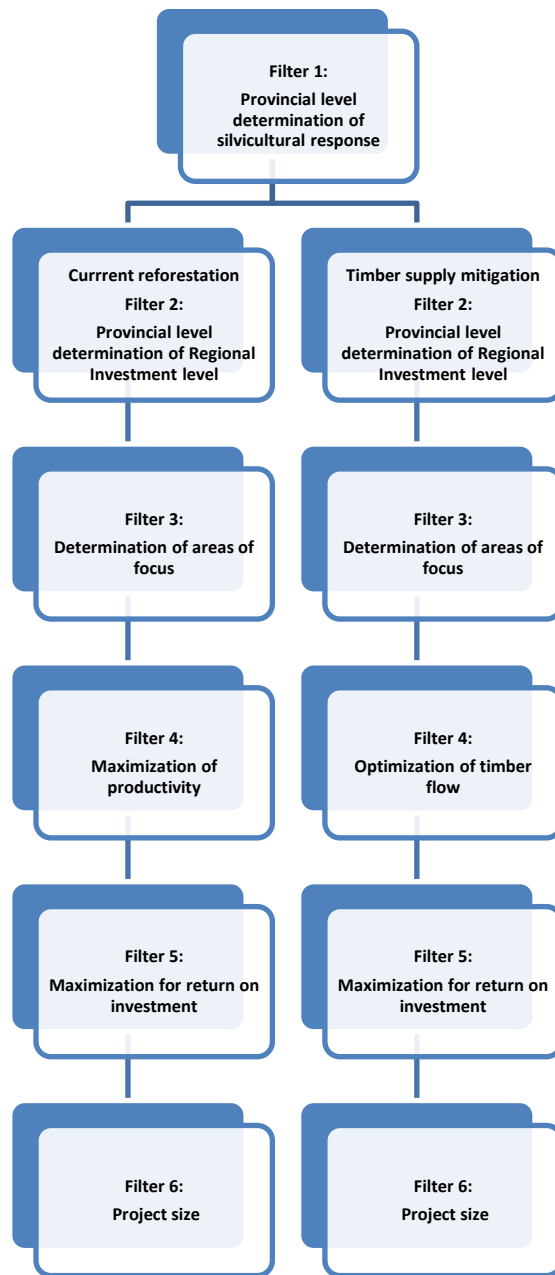
Priority will be given to treatment units with the highest return on investment.

1. ROI > 5%
2. ROI 3-5%
3. ROI 2-2.9%
4. No treatment targeted for areas where the return on investment is less than 2%⁴⁶.

Filter 6: Project size

The largest areas or groupings of areas that give rise to the realization of greater future product capture and treatment opportunities will be given priority.

⁴⁶ A 2% rate of Return on Investment is employed to balance the economic return of reforestation investments with future timber supply and other resource values and objectives. Variation to levels between 0 and 2% will be utilized when benefits to timber supply or other resource values reflect a higher social priority.



Appendix 1 – Current Reforestation Priority Unit Ranking

Ranking	TSA/District Name	Pre-uplift AAC (m3)	AAC (as of May 2016)	Mid-term FLNRO	LRSY	future Volume loss without treatment (m3/yr)	Future % loss in relation to LRSY without treatment
1	Lakes	1,500,000	2,000,000	500,000	1,200,000	310,975	26%
1	Quesnel	3,248,000	4,000,000	1,110,000	2,200,000	486,567	22%
2	Williams Lake	3,807,000	3,000,000	1,425,500	2,994,000	406,165	14%
2	100 Mile House	1,334,000	2,000,000	890,000	1,600,000	203,158	13%
2	Vanderhoof (District)	9,313,000	12,500,000	6,400,000	9,500,000	589,400	13%
2	Ft. St. James (District)					442,176	
2	Prince George (District)					248,276	
2	Morice	1,985,815	1,900,000	1,600,000	1,960,000	208,726	11%
3	Mackenzie	2,997,363	4,500,000	2,510,000	3,050,000	285,957	9%
3	Kamloops	2,682,000	4,000,000	1,830,000	2,300,000	181,447	8%
2	Dawson Creek	1,733,033	1,860,000	1,233,000	1,233,000	124,359	10%
	Merritt	1,508,000	1,500,000	1,340,000	1,500,000	94,861	6%
	Lillooet		570,000	414,000	400,000	54,376	14%
	Invermere	582,000	598,570	372,000	400,000	18,424	5%
	Cranbrook		904,000	529,000	900,000	45,917	5%
	Fort St. John		2,115,000	2,115,000	2,400,000	106,848	4%
	Robson Valley		400,000	290,000	350,000	11,641	3%
	Kootenay Lake		640,000	580,000	600,000	19,152	3%
	Arrow		550,000	450,000	700,000	17,980	3%
	Bulkley		852,000	752,400	881,290	20,808	2%
	Okanagan	2,655,000	3,100,000	2,354,000	2,469,400	71,988	3%
	Golden		485,000	446,000	400,000	5,726	1%
	Boundary		700,000	596,000	806,000	3,533	0%

Numbers in blue have been updated.

Appendix 2 – Timber Supply Mitigation Priority Unit Ranking – MPB Units

Area	Region	TSA name	District	Pre-uplift AAC (m3)	AAC	5 Yr Annual Harvest Avg (2010-2014)	Mid-term MoFR	LRSY	Mid-term vs AAC	ABSOLUTE MEASURE --Drop in mid-term vs pre-uplift AAC	ABSOLUTE MEASURE -- Drop in mid-term vs AAC	Drop in mid-term vs ave annual harvest/yr	drop in mid-term vs LRSY	%change from pre-uplift AAC to mid-term	% change from AAC to mid-term	% change from 5yr harvest to mid-term	% change from LRSY to mid-term	Potential volume increase type 2
North	Skeena	Lakes	Nadina	1,500,000	2,000,000	1,392,563	500,000	1,200,000	25%	1,000,000	1,500,000	892,563	700,000	67%	75%	64%	58%	772,200
North	Omenica	Prince George	Vander, PG, FSJ	9,313,000	12,500,000	8,859,507	6,400,000	9,500,000	51%	2,913,000	6,100,000	2,459,507	3,100,000	31%	49%	28%	33%	876,200
South	Cariboo	Quesnel TSA	Quesnel	3,248,000	4,000,000	3,598,984	1,100,000	2,200,000	28%	2,148,000	2,900,000	2,498,984	1,100,000	66%	73%	69%	50%	584,800
South	Cariboo	Williams Lake TSA	Cariboo/Chilcotin	3,768,400	3,000,000	2,648,606	1,420,500	2,994,000	47%	2,347,900	1,579,500	1,228,106	1,573,500	62%	53%	46%	53%	875,000
North	Skeena	Morice	Nadina	1,961,117	1,900,000	2,641,042	1,600,000	1,960,000	84%	361,117	300,000	1,041,042	360,000	18%	16%	39%	18%	225,420
South	Thompson	Kamloops	Kam/Headwaters	2,682,000	4,000,000	2,999,317	1,830,000	2,300,000	46%	852,000	2,170,000	1,169,317	470,000	32%	54%	39%	20%	184,379
South	Thompson	Okanagan	OK Sushwap	2,655,000	3,100,000	3,131,682	2,354,000	2,469,400	76%	301,000	746,000	777,662	115,400	11%	24%	25%	5%	377,021
South	Cariboo	100 Mile House	100 Mile House	1,334,000	2,000,000	1,953,096	890,000	1,800,000	45%	444,000	1,110,000	1,063,096	710,000	33%	56%	54%	44%	102,480
South	Thompson	Meritt	Cascades	1,508,000	1,500,000	2,936,721	1,340,000	1,500,000	89%	168,000	160,000	1,596,721	160,000	11%	11%	54%	11%	238,550
South	Kootenay/B	Arrow	Arrow Boundary	550,000	550,000	633,163	450,000	700,000	82%	100,000	100,000	183,163	250,000	18%	18%	29%	36%	3,000
South	Kootenay/B	Cranbrook	Rocky Mountain	850,000	904,000	1,089,324	529,000	900,000	59%	321,000	375,000	560,324	371,000	38%	41%	51%	41%	-
South	Kootenay/B	Invermere	Rocky Mountain	582,000	598,570	629,562	372,000	400,000	62%	210,000	226,570	257,562	28,000	36%	38%	41%	7%	115,000
South	Kootenay/B	Revelstoke TSA	Columbia River	230,000	225,000	214,185	135,878	240,000	60%	94,122	89,122	78,307	104,122	41%	40%	37%	43%	-
South	Kootenay/B	Kootenay Lake	Kootenay Lake		640,000	585,069	580,000	600,000	91%		60,000	5,069	20,000		9%			3%
South	Kootenay/B	Boundary	Arrow Boundary	700,000	700,000	711,294	596,000	806,000	85%	104,000	104,000	115,294	210,000	15%	15%	16%	26%	-
South	Kootenay/B	Cascadia			402,818	144,806												
South	Kootenay/B	Golden	Columbia River		485,000	369,863	446,000	400,000	92%		39,000	(76,137)	(46,000)		8%			
Northeast	Northeast	Fort St. John	Peace	2,115,000		1,447,560	2,115,000	2,400,000	100%		-	(667,440)	285,000					12%
Northeast	Northeast	Dawson Creek	Peace	1,860,000		1,238,069	1,233,000	1,233,000	66%		627,000	5,069	-					
Northeast	Northeast	Fort Nelson	Fort Nelson	1,625,000		49,936	1,625,000	2,300,000	100%		-	(1,575,064)	675,000					29%
North	Omenica	Robson Valley	Headwaters	400,000		107,484	290,000	350,000	73%		110,000	(182,516)	60,000		28%			
North	Omenica	Mackenzie	Mackenzie	4,500,000		2,084,818	2,510,000	3,050,000	56%		1,990,000	(425,182)	540,000		44%			18%
Coast	Skeena	North Coast	North Coast		469,738	34,454	400,000	400,000	85%		69,738	(365,546)	-					0%
North	Skeena	Nass	Skeena Stikine		865,000	146,851	661,000	400,000	76%		204,000	(514,149)	(261,000)		24%			
North	Skeena	Kispiox	Skeena Stikine		1,087,000	165,436	1,087,000	700,000	100%		-	(921,564)	(387,000)					
North	Skeena	Kalum	Kalum		424,000	260,724	353,876	421,226	83%		70,124	(93,152)	67,350					
North	Skeena	Cassiar	Skeena Stikine		196,000	218,320	196,000	196,000	100%		-	22,320	-					0%
North	Skeena	Bulkley	Skeena Stikine		852,000	644,098	752,400	881,290	88%		99,600	(108,302)	128,890		12%			
Coast	South C	Sunshine Coast	Sunshine Coast		1,204,808	1,230,273	1,204,808	1,404,000	100%		-	25,465	199,192					
Coast	South C	Soo	Squamish		480,000	379,898	480,000	480,000	100%		-	(100,102)	-					
Coast	South C	Fraser	Chilliwack		1,235,700	1,224,678	1,235,700	1,235,700	100%		-	(11,022)	-					0%
South	Thompson	Lillooet	Cascades		570,000	155,287	414,000	400,000	73%		156,000	(258,733)	(14,000)		27%			
Coast	West C	Strathcona	Campbell River		1,138,000	1,092,401	933,000	1,091,000	82%		205,000	159,401	158,000		18%			
Coast	West C	Queen Charlotte	QCI		512,000	366,287	521,256	521,256	102%		(9,256)	(154,969)	-		-2%			0%
Coast	West C	Pacific	Many		1,481,159	488,518	958,154		65%		523,005	(469,636)						
Coast	West C	Mid Coast	N Is, Cent Coast		767,000	451,209	687,000	764,000	90%		80,000	(235,791)	77,000		10%			
Coast	West C	Kingcome	N Is, Cent Coast		1,100,000	1,083,958	1,100,000	1,000,000	100%		-	(16,042)	(100,000)					
Coast	West C	Arowsmith	South Island		420,000	395,781	420,000	530,000	100%		-							
Totals					61,807,793	47,804,784	39,720,572	49,526,872			-	(24,219)	110,000					21%

priority 1	priority 2	priority 3	
55%+	45%+	15%+	current harvesting
>1M m3	>0.5 M m3	>0.1 M m3	assisting mid-term

Priority 1 rankings have 3 or more priority 1 indications	Region	AAC contribution for non-priority units (includes TFL AACs)
Priority 2 rankings had 3 or more priority 2 and/or 1 indications	Kootenay/Boundary	2,230,000.00 6%
Priority 3 ranking have 4 or more priority 1, 2, or 3 indications and no green indicated cells	Northeast	7,150,000.00 20%
	Skeena	5,264,797.00 14%
	South Coast	5,163,888.00 14%
	Thompson/Okanagan	570,000.00 2%
	Omenica	4,900,000.00 13%
	West Coast	11,245,074.00 31%
	total	36,523,759.00

Numbers in blue have been updated.

Appendix 3 – Timber Supply Mitigation Priority Unit Ranking – Non MPB units

TSA_name	District	AAC (TSR 1 app. 1990)	THLB (TSR 1)	Current AAC (2016)	THLB with current AAC	5 Yr Annual Harvest Avg billed (2011-2015)	Mid-term MoFR	LRSY	Criteria 1 - % impact change from AAC to mid-term (plus related m3 drop from AAC to mid-term)		Criteria 2 - % change from 5 year harvest to mid-term (plus related drop from 5 year average annual harvest to mid-term (m3))		Criteria 3 - % change mid-term to LRSY (plus related drop from mid-term to LRSY (m3)); No impact if AAC is the same or less than the mid-term		Criteria 4 - TSR1AAC (m3) minus current AAC and related change in THLB (ha)		Point Score (Priority 1- 3 points; P2 - 2 points; P3 - 1 point)	Filter 1- THLB Stand Age (% ha class 1-3 vs THLB and % ha age class 4 and greater)			Filter 2 - % of Provincial TSA Revenue to Crown in dollars (Average Annual Revenues 2011-2015)		Point Score (Priority 1- 3 points; P2 - 2 points; P3 - 1 point)	
									%	m3	%	m3	m3	%	ha	Class 1-3 (ha)		Class ≥4 (ha)	Age Class ≥4 minus 1-3 (% of THLB)	\$	% of target TSA MUs billed			
Revelstoke TSA	Columbia River	269,000	62,725	225,000	52,358	218,523	135,878	240,000	40%	89,122	38%	82,645	43%	104,122	44,000	16%	10,367	5	28,856	29,051	0.37%	\$1,84,530	1%	2
Kootenay Lake	Kootenay Lake	900,000	296,879	640,000	219,325	587,395	580,000	600,000	9%	60,000	1%	7,395	3%	20,000	260,000	29%	77,554	2	60,000	139,282	36.5%	\$6,466,516	6%	1
Golden	Columbia River	850,000	174,597	485,000	141,530	386,618	446,000	400,000	8%	39,000	-1%	(59,382)	-12%	-46,000	165,000	25%	33,067	2	63,365	78,165	10.46%	\$4,251,027	4%	2
Boundary	Arrow Boundary	700,000	311,321	700,000	272,286	793,395	596,000	806,000	5%	104,000	20%	197,395	26%	210,000	-	0%	39,035	3	80,000	192,286	41.24%	\$10,859,987	10%	2
Fort St. John	Peace	181,162	114,124	2,115,000	1058,540	1583,280	2,115,000	2,400,000	0%	-	-34%	(531,720)	12%	285,000	(299,838)	-17%	135,584	1	275,000	783,540	48.04%	\$4,796,088	5%	1
Fort Nelson	Fort Nelson	972,000	774,025	1,625,000	1,432,269	27,217	1,625,000	2,300,000	0%	-	-587%	(1597,783)	29%	675,000	(653,000)	-67%	(658,244)	1	175,000	1,257,269	75.56%	\$53,867	0%	0
Dawson Creek	Peace	1,860,173	758,809	1,860,000	758,335	1,365,124	1,233,000	1,233,000	34%	627,000	10%	132,124	0%	0	173	0%	274	1	195,000	563,335	48.57%	\$4,025,467	4%	0
Robson Valley	Headwaters	600,000	209,365	400,000	132,497	96,308	290,000	350,000	28%	110,000	-20%	(193,692)	17%	60,000	200,000	33%	76,868	5	57,000	82,154	18.98%	\$693,866	1%	2
Mackenzie	Mackenzie	2,951,121	1,160,581	4,500,000	1,500,726	2,585,025	2,510,000	3,050,000	44%	1,990,000	3%	75,025	18%	540,000	(1548,879)	-52%	(340,145)	2	255,000	1,105,000	56.64%	\$16,083,431	15%	3
North Coast	North Coast	650,000	114,207	469,738	145,808	36,382	400,000	400,000	5%	69,738	-99%	(363,618)	0%	0	180,262	28%	(31,601)	3	20,000	125,808	72.57%	\$130,297	0%	0
Nass	Skeena Stikine	1,150,000	262,413	865,000	189,174	213,066	661,000	400,000	24%	204,000	-21%	(447,934)	-65%	-261,000	285,000	25%	73,239	3	38,000	151,174	59.83%	\$470,467	0%	0
Kispiox	Skeena Stikine	110,000	317,939	1,087,000	327,837	6,602	1,087,000	700,000	0%	-	-1365%	(1080,398)	-55%	-387,000	13,000	1%	(9,898)	1	65,000	262,837	60.35%	\$30,557	0%	0
Kalum	Kalum	480,000	103,878	424,000	98,256	249,991	353,876	421,226	17%	70,124	-42%	(103,885)	15%	67,350	56,000	12%	5,622	3	42,000	43,000	102%	\$663,998	1%	2
Cassiar	Skeena Stikine	140,000	393,755	196,000	207,581	226,250	196,000	196,000	0%	-	1%	30,250	0%	0	(56,000)	-40%	16,174	1	31,000	179,681	71.63%	\$69,777	0%	0
Bulkley	Skeena Stikine	895,000	277,680	852,000	283,510	613,059	752,400	881,290	12%	99,600	-23%	(139,341)	15%	128,890	43,000	5%	(5,830)	1	68,000	215,510	52.03%	\$98,303	0%	0
Sunshine Coast	Sunshine Coast	1,445,580	231,121	1,204,808	222,895	1,215,084	1,204,808	1,404,000	0%	-	1%	10,276	14%	19,192	240,772	17%	8,226	2	110,000	112,863	128%	\$8,456,748	8%	4
Soo	Squamish	705,000	136,382	480,000	93,162	381,890	480,000	480,000	0%	-	-26%	(98,110)	0%	0	225,000	32%	43,230	3	47,000	51,000	4.29%	\$2,076,900	2%	2
Fraser	Chilliwack	1,765,000	365,000	1,235,700	250,405	1,251,777	1,235,700	1,235,700	0%	-	1%	15,077	0%	0	529,300	39%	114,595	3	157,000	103,918	-21.20%	\$6,188,147	6%	4
Lillooet	Cascades	650,000	304,580	570,000	250,426	194,743	414,000	400,000	27%	156,000	-10%	(219,257)	-4%	-14,000	80,000	12%	54,154	2	46,000	204,426	63.26%	\$74,485	1%	0
Strathcona	Campbell River	1,661,030	265,903	1,138,000	157,655	1,113,672	933,000	1,091,000	11%	205,000	1%	180,672	14%	158,000	523,030	31%	108,248	5	98,000	62,454	-22.55%	\$16,457,551	15%	6
Queen Charlotte	Haida Gwaii	510,000	61,884	512,000	126,311	363,181	521,256	521,256	-2%	(9,256)	-44%	(158,138)	0%	0	(2,000)	0%	(64,427)	1	15,000	66,373	39.88%	\$3,601,806	3%	0
Pacific	Many	958,154	0	1,481,159	0	537,814	958,154	0	35%	523,005	-78%	(420,340)	na	na	(523,005)	-55%	-	1	-	-	-	\$0	0%	0
Mid Coast	N Is, Cent Coast	1,151,600	256,555	767,000	123,162	474,707	687,000	764,000	10%	80,000	-45%	(212,293)	10%	77,000	748,600	49%	133,393	3	39,000	84,162	36.67%	\$2,351,476	2%	0
Kingcome	N Is, Cent Coast	1,769,500	354,300	1,100,000	186,934	1,007,789	1,100,000	1,000,000	0%	-	-9%	(92,211)	-10%	-100,000	669,500	38%	167,366	3	55,000	134,179	42.38%	\$9,937,745	9%	3
Arrowsmith	South Island	396,890	90,816	420,000	70,505	340,703	420,000	530,000	0%	-	-23%	(79,297)	2%	110,000	(23,111)	-6%	20,311	1	23,000	57,502	48.94%	\$6,646,509	6%	2

See Appendix 5 for criteria ranking descriptions; MUs, where the annual harvest is substantially less than the mid-term, are not ranked as a priority. Numbers in blue have been updated.

Appendix 4

Expenditure of Land Based Investment Strategy (LBIS) funds on areas with defaulted silviculture obligations.

Defaulted reforestation obligations are those obligations generated under post-1987 legislation outlining free growing commitments (Silviculture Regulations -1988; Silviculture Practices Regulation - 1994; FPC s 69.1 or s 70; FRPA s 29 or s 29.1) where the obligation holder has declared bankruptcy under the *Bankruptcy and Insolvency Act* (BIA) and where the licence holder is bankrupt (i.e. not a BIA proposal proceeding and not a *Companies' Creditors Arrangement Act* proceeding), or as per FRPA s 74(3) has not taken the necessary actions required to meet their free growing obligation milestones following direction from the Minister as per FRPA s 71 and 74 (2) and funding from the environmental remediation sub account (Special Accounts and Appropriates Regulation (SAAR) s 5 (2)(b) is not available.

LBIS funds should only be used on those sites that meet LBIS stand selection criteria where all other avenues of potential funding such as transfer of the license (FA 54) or the obligation (FRPA s 29.1 or s. 30) have been exhausted. As well, LBIS funds should only be used in situations where there are either insufficient funds held as security or the funds held in security are not readily accessible to undertake the necessary reforestation activities in a timeframe that would ensure milestones are met.

Security

When there are bankruptcy proceedings under the BIA, potential claimants may file a notice of claim. In some situations, if the outstanding silviculture activities have been completed under FRPA s 74, the amount of the claim may be more certain. Section 74 of FRPA not only allows government to do the work, but the person that had the obligation can be ordered to pay the costs and, depending on the type of security, there may be provision for recouping the costs from the security. Given the complexity around types of insolvency and security, District Managers should seek advice from government insolvency and security legal experts prior to attempting to access security of insolvent companies.

Under taking the ordered silviculture activities should not impact government's claim to a security. The amount of the claim would be more precisely quantified once the work was done, but if government orders repayment of the costs, the amount can be taken from the security. Even though carrying out the treatment by government results in the funds from the security no longer be required for carrying out the treatment, repayment of government's costs for that treatment from that security may still be required.

The risk is that depending on the form of the security, the bankruptcy proceedings may take precedence over the funds, and government may not be able to take from the security if the

Appendix 4

security becomes part of the bankruptcy proceedings⁴⁷. However, the fact that government has done the work should not affect the strength of government's claim to the funds.

Guidance for issuing remediation orders as per FRPA s 71 and 74 should be obtained from the appropriate compliance and enforcement personnel before undertaking any action.

⁴⁷ Deposits may be accessed if the security is a letter of credit or, in the case of cash, there is no one else with a prior ranking security interest or, in the case of a safekeeping agreement, there has been registration under the *Personal Property Security Act* and there is no one else with a prior ranking security interest.

Appendix 5

Forests for Tomorrow (FFT) Priority Management Units for Interior impacted management units: How they were determined

The Land Based Investment Strategy (LBIS) categories include Forests for Tomorrow (FFT) Current Reforestation and Timber Supply Mitigation. The purpose of this document is to describe how FFT priority management units were determined

The detailed excel spreadsheets that show how the priority units were determined by Timber Supply Area (TSA)⁴⁸, are provided in Appendix 1 and 2 spreadsheets for Current Reforestation and Timber Supply Mitigation, respectively.

Current Reforestation

Priority is given to those management units in the province where catastrophic disturbances (e.g. mountain pine beetle or wildfire) have caused significant forest mortality (percent, volume and area) in the timber harvesting land base such that the long-term timber supplies have been dramatically reduced. The following indicator within each unit was assessed and priority 1, 2 or 3 ratings were assigned.

Indicators	Priority 1	Priority 2	Priority 3
Future % loss in relation to LRSY without treatment	20%+	19-10%	9-5%
Future estimated volume loss without treatment (m3/yr)	In all cases future volume impacts must be greater than 100,000 m3		

Future volume loss was determined through Geographic Information System (GIS) overlays using best available information which provided the data to assess treatable areas. Areas that might not be sufficiently stocked were determined using the vegetation resource inventory, provincial overview surveys for forest health, perimeters of wildfires since 1999, current harvested stand updates, and the mapped boundaries of the timber harvesting land base. Areas that were either burnt or severely, to very severely impacted by MPB were further assessed for potential natural regeneration, projections on future harvest levels, site productivity, slope, and proximity to nearest mills. The resultant estimated treatable areas were compared to potential future volume if no treatment was to occur. This was then compared against potential volume if treatment did occur, to produce the estimate of future volume loss as a result of non-treatment of potentially FFT treatable areas.

⁴⁸ Reference to TSA includes all other tenure types (Tree Farm Licences, Woodlot Licences, Community Forest Agreements, etc.) within or adjacent to the TSA.

Appendix 5

A brief synopsis of how this was done:

- i. For each management unit the amount of area that had a SI of 15 or greater, and had greater than 50% pine with a cumulative MPB impact severity ranking of severe to very severe, along with the total amount of area of non-impacted (as defined in the first part of this sentence) SI 15 or greater that was burnt was determined.
- ii. From this, estimates of future harvest (based on FAIB change detection mapping projected forward factoring in shelf-life) and estimates of the amount of areas where sufficient natural regeneration would occur (based on work by Coates et al), were removed.
- iii. The future volume loss for each management unit was then determined by subtracting the potential volume produced by treating these areas from the potential volume production without treatment (“potentially treatable area” was multiplied by an estimate of the potential MAI for untreated areas (1m³/ha) and the potential MAI for treated areas (4.5 m³/ha))
- iv. The difference between treated and untreated volume was then factored as a percentage of LRSY.
- v. Any management unit that did not produce at least an impact of 100,000m³/year were dropped. (100,000m³ was chosen based on information from Tenures and Economic Branches that the typical small mill or a shift on a large mill requires about 100,000m³/year).

Priority management units were then assigned based on priority indicator for each unit:

Priority Unit	Timber Supply Area
Priority 1	Quesnel Lakes
Priority 2	Williams Lake Prince George Morice 100 Mile House Dawson Creek
Priority 3	Mackenzie Kamloops

If current reforestation funding requests exceed the available budget, then all attempts will be made to fund projects in priority 1 units followed by those in priority 2 and then priority 3 units. Some FFT funding, however, will also be provided to reforest burnt and other NSR non-obligation areas in other parts of the province.

Appendix 5

Timber Supply Mitigation

Priority is given to those management units in the province where catastrophic disturbances have caused significant drops (percent and volume) in mid-term timber supply. The following nine indicators within each unit were assessed using priority 1, 2 or 3 ratings:

Indicators	Priority 1	Priority 2	Priority 3
Percent Impact Rating	55%+	45-55%	15-44%
1. % change from pre-uplift AAC to mid-term			
2. % change from AAC to mid-term			
3. % change from 3 yr harvest to mid-term			
4. % change from LRSY to mid-term			
Volume (M = millions) Rating	>1 M m3	>0.5-1 M m3	>0.1-0.5 M m3
5. Drop in mid-term vs pre-uplift AAC			
6. Drop in mid-term vs AAC			
7. Drop in mid-term vs 3 yr harvest			
8. Drop in mid-term vs LRSY			

Priority management units were then assigned based on the number of priority indicators in each unit using the following 'screen' (i.e. the highest qualifying priority rating is given the unit):

Mountain Pine Beetle Impacted Stands

Priority Units*	# of indicators	Timber Supply Area
Priority 1	3 or more priority 1 indicators	Lakes Prince George Quesnel Williams Lake 100 Mile House
Priority 2	3 or more priority 2 and 1 indicators	Kamloops
Priority 3*	3 or more priority indicators (1, 2 or 3)	Okanagan Morice Merritt Arrow Cranbrook Invermere Revelstoke Boundary

* Units where the 3-year harvest was below projected mid-term levels were flagged in green on the spreadsheets and not considered a priority unit

Appendix 5

If timber supply mitigation funding requests exceed the available budget, then all attempts will be made to fund projects in priority 1 units followed by those in priority 2 and then priority 3 units. Some FFT funding, however, will also be provided to address constrained timber in other parts of the province. Of the proportion determined to be allocated to non-priority units (currently 30%), the level of funding for each TSA will be attempted to match the management units' total contribution, including Tree farm Licences, to the total non-impacted provincial AAC.

Timber Supply Mitigation priority ranking on non-MPB impacted units, including constrained timber supply on the Coast, Northwest, and Southeast, uses a similar process as well as considering the THLB, stand age class, and revenue generated as additional filters for consideration. See Appendix 3.

Criteria Definitions

Criteria 1 - Indicates how close the mid-term amount is to the current AAC. The higher the % the greater the impact. Volume reduction (m^3) needs to be considered as well on smaller TSAs which may have a large % impact but a small volume reduction compared to large TSAs.

Criteria 2 - Determines if average harvesting patterns can be maintained through the mid-term. Impacts will change as harvesting patterns change. If annual average harvest is substantially less ($>100,000 m^3$) than the mid-term then TSM investments are considered lower priority.

Criteria 3 - Indicates if a further drop from the mid-term cut level to the LRSY.

Criteria 4 - Demonstrates the AAC reduction from previous AAC determinations in the 1990s to current as well as the associated THLB reduction. Reductions occurred for various reasons (e.g. land use decisions; splitting of area into new MUs; withdrawal of private land from TFLs); however the focus is on the impact associated with the timber supply reduction.

Filters are used as a secondary screening to refine the allocation to the priority areas. Filters will only be used if investment decisions are to be made between two priority MUs with similar need.

Filter Definitions

Filter 1 - Looks at the distribution and balance of age classes in the MU. The larger the % difference the greater the volume in older age classes.

Filter 2 - Links investment funding to areas generating the greatest revenue in the grouping of MUs outside of the interior impacted catastrophic disturbance areas

Appendix 5

Non MPB Units including constrained timber supply MUs on the Coast, Northwest, and Southeast

Priority Units*	Timber Supply Area
Priority 1	Revelstoke Boundary Soo Fraser Strahcona Kingcome
Priority 2	Kootenay Lake Golden Mackenzie Sunshine Coast
Priority 3*	Dawson Creek Arrowsmith

* MUs, where the annual harvest is substantially less than the mid-term, are not ranked as a priority.

Feedback

The approach taken to determine priority units and contributions to non-priority units will be reviewed each year to determine if it can be improved. If you have any ideas on how to improve the priority ranking and non-priority unit determination approach, please send them to Monty.Locke@gov.bc.ca or Neil.Hughes@gov.bc.ca. For example, are there other important indicators that should be considered? Are some of the indicators that have been used not that important? Are the thresholds used to determine a priority indicator reasonable?

Appendix 6

Funding and treatment of Caribou Mitigation openings outside of the Caribou GAR areas.

Caribou Mitigation Openings will be prioritized consistent with the treatment decision process used for all other FFT eligible openings. The investment of FFT funds on Caribou mitigation openings represents government's assessment that these investments contribute to achieving government objectives.

It is understood that this strategy may:

- 1) Result in some openings not being reforested, and
- 2) Cause a shift in some expenditure of FFT funds away from some MPB impacted units that do not have Caribou Gar mitigation openings towards those lower MPB impacted units with Caribou GAR mitigation openings.