

**British Columbia  
Ministry of Forests and Range**

**Okanagan TSA  
Innovative Forestry Practices Agreements**

**Issued to**

**Bell Pole Company – Forest Licence A18666  
Federated Co-operatives Limited – Forest Licence A18670  
Gorman Bros. Lumber Ltd. – Forest Licence A18671  
LP Engineered Wood Products Ltd. – Forest Licence A18669  
Riverside Forest Products Limited – Forest Licence A18667  
Selkirk Timber Company – Timber Sale Licence A18632  
Tolko Industries Ltd. – Forest Licence A18672  
Weyerhaeuser Company Ltd. - Forest Licence A18674**

**Rationale for Increase in  
Allowable Annual Cut (AAC)  
Determination**

**Effective  
January 1, 2006**

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## **Executive Summary**

Section 59.1 of the *Forest Act* enables the Ministry of Forests and Range (MOFR) regional manager to increase the current allowable annual cut (AAC) associated with the licence of an innovative forestry practices agreement (IFPA) holder. An increase in AAC is based on innovative forestry practices of the IFPA-holder and justified with timber supply analysis methodology approved by the chief forester. Prior to an award, the regional manager must have approved a forestry plan that identified the innovative forestry practices or activities.

Eight innovative forestry practices agreements have been issued to forest companies operating in the Okanagan Timber Supply Area (TSA). These licensees work collaboratively through the Okanagan Innovative Forestry Society (OIFS) to develop and implement a consistent forestry plan. The Okanagan Columbia British Columbia Timber Sales office is also a member of the OIFS but does not hold an IFPA.

OIFS prepared a forestry plan that was approved by the regional manager in March 2002. The forestry plan identified a wide scope of innovative forestry projects with an emphasis on inventory and growth and yield information.

In the spring of 2003, the OIFS assembled the results of the innovative forestry practices that they had completed into an allowable annual cut increase application to the regional manager. The application from OIFS requested an increase of 345 000 cubic metres to the allowable annual cut of their licences.

To assess the application, the OIFS was required to conduct a public review and provide information to First Nations about the application. The government has consulted First Nations around the application and the allowable annual cut increase to the licences of the IFPA-holders.

On November 4, 2004, a determination meeting was held with the regional manager and government agency staff to discuss the technical merits, risks and uncertainties of the application and public and First Nations' input received.

After reviewing and considering all of the factors and associated uncertainties that are described in this document, the regional manager determined that an allowable annual cut increase of 166 100 cubic metres for the eight IFPA-holders was justified based on the innovative forestry practices or activities. In this decision the regional manager can award timber volume to only IFPA-holders. However, the regional manager identified timber volume that he did not award to IFPA-holders and that he recommended be used for accommodating of First Nation's potential aboriginal interests through other decision processes.

The AAC increase was assigned to the IFPA-holders as follows:

- 59 630 m<sup>3</sup>/yr to Riverside Forest Products Limited – Forest Licence A18667
- 29 400 m<sup>3</sup>/yr to Weyerhaeuser Company Ltd. - Forest Licence A18674
- 25 745 m<sup>3</sup>/yr to Federated Co-operatives Limited – Forest Licence A18670
- 18 105 m<sup>3</sup>/yr to Tolko Industries Ltd. – Forest Licence A18672
- 17 939 m<sup>3</sup>/yr to Gorman Bros. Lumber Ltd. – Forest Licence A18671
- 10 796 m<sup>3</sup>/yr to LP Engineered Wood Products Ltd.- Forest Licence A18669
- 3 488 m<sup>3</sup>/yr to Bell Pole Company – Forest Licence A18666
- 997 m<sup>3</sup>/yr to Selkirk Timber Company – Timber Sales Licence A18632

The determination is effective January 1, 2006 and will remain in effect until December 31, 2010 at which time the regional manager will revisit this decision. Several conditions and recommendations were also made with the intention to reduce the uncertainty and risk around the increase.

## Objective of this document

This document provides a summary of the information and factors that I have considered relevant in making my determination, under Section 59.1 of the *Forest Act*, regarding a request for an increase in allowable annual cut (AAC) to the replaceable forest licences A18666, A18667, A18669, A18670, A18671, A18672, A18674, and replaceable timber sale licence A18632 that have Innovative Forestry Practices Agreements in the Okanagan TSA.

## Introduction

In the Okanagan timber supply area (TSA), seven IFPAs were awarded by the Minister of Forests on September 1, 2001 to the following licensees holding replaceable forest licensees:

- Bell Pole Company – Forest Licence A18666
- Riverside Forest Products Limited – Forest Licence A18667
- LP Engineered Wood Products Ltd.- Forest Licence A18669
- Federated Co-operatives Limited – Forest Licence A18670
- Gorman Bros. Lumber Ltd. – Forest Licence A18671
- Tolko Industries Ltd. – Forest Licence A18672
- Weyerhaeuser Company Ltd. - Forest Licence A18674

On February 26, 2002, an eighth IFPA, was awarded to the following licensee that holds a replaceable timber sale licence with an AAC greater than 10 000 cubic metres:

- Selkirk Timber Company – Timber Sale Licence A18632

All the IFPAs expire on August 31, 2011.

The Okanagan Innovative Forestry Society (OIFS) acts on behalf of the above IFPA-holders. The Okanagan-Columbia office of the B.C. Timber Sales Program is also a member of the OIFS but does not hold an IFPA.

In December 2001, the OIFS submitted a forestry plan to the ministry. This plan identified the innovative forestry practices and activities proposed by the society. The forestry plan was conditionally approved in March 2002 for a two year period. An amended forestry plan that addressed the conditions was submitted and approved to March 31, 2006.

Under section 59.1 of the *Forest Act*, I, as the regional manager, am enabled to make an increase to the AAC of the licences of IFPA-holders. In a letter dated May 29, 2003 the OIFS on behalf of the IFPA-holders applied for an AAC increase of 345 000 cubic metres. This rationale documents my determination based on OIFS's application.

## Statutory framework

Section 59.1 of the *Forest Act* enables the regional manager to increase the current allowable annual cut associated with the licence of an innovative forestry practices agreement holder. Prior to such an award, the regional manager must have approved a forestry plan in which innovative forestry practices or activities are identified.

Eligible categories of innovative forestry practices and activities are described in the Innovative Forestry Practices Regulation. These categories include improvements due to harvesting or silvicultural systems, silvicultural treatments, collection and analysis of new data on forest composition and expected growth, and management activities to enhance and protect other resource values. To be eligible, the practices and activities must be within the forestry plan approved by the regional manager and the collection and analysis of new data must be in accordance with available specifications of the chief forester.

For the regional manager to award an AAC increase, the increase must be justified based on timber supply analysis methodology recommended by the chief forester. The chief forester made known his approved timber supply analysis methodology in a memorandum dated April 6, 2001 to the regional managers. This memorandum provided the general principles of the timber supply analysis methodology that is required to justify an increase in allowable annual cut for a licence of an innovative forestry practices agreement holder.

Under section 59.1 of the *Forest Act*, the regional manager can limit an AAC increase to a period of time, area of land, type of timber or any other condition. The regional manager can also reduce or eliminate an increase at any future time given new information or for non-compliance with the forestry plan or the conditions set. Further, the regional manager is enabled to suspend or cancel an innovative forestry practices agreement if the holder is not complying with the agreement, forestry plan, conditions, *Forest Act*, or *Forest and Range Practices Act*.

Section 59.1 of the *Forest Act*, the Innovative Forestry Practices Regulation, and the memorandum on timber supply methodology from the chief forester, are reprinted in the appendices.

## Guiding principles

As I expect to make a number of decisions with respect to Innovative Forestry Practices Agreements under section 59.1 of the *Forest Act*, I have outlined the following guiding principles. These principles assist me in ensuring administrative fairness and consistency in how I approach my decisions. Under certain circumstances I may have to deviate from these principles and I will document my reasoning for such deviations.

- For an innovative forestry practice or activity to be considered in an AAC increase decision, the practice or activity must be either currently implemented or the plans for

the practice must be clear, practical, and feasible. Given the nature of innovative forestry practices, I accept that some practices presented may be at an initiation stage rather than at a current practice stage.

- Innovative forestry practices or activities identified in the approved forestry plan, but which are not addressed in an AAC increase request, need to be considered in the AAC increase determination. It is my expectation that the IFPA-holder will work towards implementing the forestry plan as approved. My approval is based on the whole plan, not simply components that might result in increased timber supply. As such, I may weigh the risks of practices not yet carried out against identified increases presented to me.
- Any AAC increase decision should be made in the context of current government policy. While I may be aware of proposed policy changes that could impact an AAC increase decision, I must be mindful of the ever changing nature of proposed policy and not speculate on the acceptance of proposed policy. Similarly, it would be inappropriate for me to speculate on the impacts of strategic land-use or treaty processes before the decisions have been made by government and the appropriate implementation details have been determined.
- The most recent timber supply review for the management unit in which the IFPA is located provides the basis for describing current practice. This base may be updated with new information or management practices that are not innovative forestry practices or activities. While I will not credit the IFPA-holder for increases in harvest flow associated with practices that are not defined as innovative in the forestry plan and regulation, I must consider impacts on harvest flow of these updates in relation to any benefits derived from innovative forestry practices and activities.
- The right of the IFPA-holder's licence to access timber volume within the timber supply area is not affected by the IFPA unless otherwise agreed upon. I expect that any increase in AAC will be harvested from within the IFPA boundaries in accordance with the information and practices identified in the IFPA application and the conditions identified within this rationale.
- An AAC increase awarded under the IFPA must not cause a negative impact on non-IFPA licensees operating within the IFPA boundaries without agreement of the non-IFPA licensee. The non-IFPA licensees can agree to manage their operating areas within the IFPA area in accordance with the IFPA forestry plan but are not eligible for any AAC increase. However, any AAC increase associated with innovative forestry practices carried out under the IFPA forestry plan within the IFPA area can be attributable to the IFPA-holder, even if the activities are undertaken by a non-IFPA licensee.
- Innovative forestry practices and activities can be assumed to apply to areas that are temporally excluded from the IFPA area (e.g., timber licences, partitions outside of the IFPA-holder's licence) only after they have reverted to timber supply area status.

Any increases in harvest flow identified on these stands before they revert will not be eligible under the IFPA.

- Uncertainty exists in the data and management practices presented and modelled in a review of timber supply. In my decision, I must consider this uncertainty and associated risks and, where necessary, I can account for such.
  - One method to reduce risk is to periodically review the determination. As such, I will specifically assign a time period for which an AAC increase is applicable. Nevertheless, if prior to this time period, new information or an assessment of the innovative forestry practices indicates that the increment is not justified, or the licensee is not complying, I have the right to remove or decrease any AAC increase that I may have determined.
  - A second method to reduce risk associated with an increased harvest flow is to award a lower AAC increase than the timber supply analysis suggests. The level of caution that I exercise will depend on the uncertainty of the timber supply increase being attributed to an innovative forestry practice, which is normally related to the quality of the information on the practice, and to inherent uncertainties in ecological dynamics and biophysical factors.

With respect to First Nations' aboriginal interests, I am aware of the Crown's legal obligations resulting from recent court decisions. My determination should not in any way be construed as limiting the Crown's legal obligation, and in this respect it should be noted that my determination does not prescribe a particular plan of harvesting activity within the Okanagan IFPA area.

My acceptance of information on practices within this decision does not supersede or fetter other statutory decision-making authorities, and is not to be construed as approval required by any other authority or agency.

In making my decision, I am aware of my obligations as a steward of the forests of British Columbia and of the mandate of the Ministry of Forests and Range as set out under the relevant legislation.

## **The role of timber supply analysis**

Section 59.1(7) of the *Forest Act* identifies that an increase in allowable annual cut must be justified according to timber supply analysis methodology approved by the chief forester. The chief forester has made known this methodology in a memorandum dated April 6, 2001. The memorandum provides the general principles, not detailed procedures, of timber supply analysis that I have required be present in an AAC increase application and from which I have based my decision.

The timber supply analysis consists of two components. The first component is an information package that includes information from three categories: land base, growth and yield, and forest management objectives and practices. The second component is a suite of timber supply forecasts based on the information package that investigates different harvest flow options and data uncertainty.

To determine an increase in AAC requires that I have both knowledge of timber supply based on current practices and of the changes associated with the innovative forestry practices and activities. As such, the timber supply analysis must provide separate forecasts without and with innovative forestry practices and activities.

In this determination, I consider a variety of information sources originating from the IFPA-holders, government staff, First Nations, and the public. The timber supply analysis with which I am provided is an integral component to my review of the AAC increase application. As such, in this rationale my discussion does focus on the supporting timber supply analysis. However, the determination itself is not a calculation but a synthesis of judgement and analysis in which numerous risks and uncertainties are weighed. Technical analytical methods such as computer models cannot incorporate all the social, cultural, and economic factors that are relevant when making forest management decisions. Depending upon the outcome of these considerations the increase in AAC determined may or may not coincide with the original IFPA review analysis.

In the rationale, I elaborate on many of the land base, growth and yield, forest management, and other factors that influence timber supply. However, I may not discuss in my consideration details about a factor where I am satisfied that the factor is appropriately modelled and described in the timber supply analysis report of the AAC increase application. Nevertheless, I will discuss appropriately modelled factors for reasons such as high level of public input or lack of clarity in the analysis report.

## Timber Supply Analysis and Forest Management Considerations

### *Timber supply analysis overview*

A timber supply analysis was completed by Timberline Forest Inventory Consultants (Timberline) for the OIFS to support a request for an AAC increase. The supporting analysis in the May 29, 2003 application for an AAC increase comprised of four steps: (1) benchmark analyses; (2) updated TSA analyses; (3) innovative forestry practices analyses; and (4) sensitivity analyses of composite innovative practice analyses. These steps provide me with (1) knowledge that the data used in the analysis behaves similarly to data used in previous timber supply reviews, (2) current practice expectations without the innovative forestry practices, (3) the implication of the innovative forestry practices, and (4) understanding of the dynamics around inputs into the analysis.

Critical to the evaluation of the AAC increase attributable to the innovative forestry practices is the establishment of a base forecast upon which to judge the harvest flow impacts of the innovative forestry practices. As noted previously, I am judging the benefits of the identified innovative forestry practices against the Section 8 AAC determination by the chief forester in 2001 with consideration for updated information. As such, three main scenarios were modelled by the OIFS.

1. A “TSR2 plus LRMP scenario” that provides a benchmark scenario with similar assumptions to the timber supply analysis which supported the Section 8 AAC determination in 2001. This analysis is noted in the chief forester’s 2001 rationale but was not reported in the analysis report. This analysis will be referred to as the “TSR2 analysis”;
2. An “IFPA uplift base case” scenario that updates the “TSR2 plus LRMP scenario” with recent data and management changes. This is the base to which the OIFS recommends comparing the innovative forestry practices. This analysis is referred to as the “IFPA uplift base case”.
3. An “IFPA uplift innovative composite” that adds the innovative forestry practices to the “IFPA uplift base case”. This is used to demonstrate any increases in harvest flow attributable to the innovative forestry practices. This analysis will be referred to as the “IFPA composite analysis”.

I am satisfied that the above three scenarios provide a suitable basis from which to evaluate the assumptions regarding the land base, management practices, timber yields, and the impacts of the innovative forestry practices for the Okanagan IFPA area. Herein, I refer generally to the analysis provided by the OIFS as the “OIFS analysis”.

I have also considered information presented to the chief forester for a Section 8 determination at a September 21-22, 2005 meeting that provides updated information since the original IFPA AAC increase application was submitted. This information includes sensitivity analyses around the current Mountain pine beetle infestation.

I accept that the analysis sufficiently follows the chief forester's standards for timber supply methodology as outlined in the April 6, 2001 memorandum to the regional managers. The acceptance of the analysis is based on the understanding of the balance between detail, cost, and my ability to handle uncertainty within the decision.

### ***The model***

Timberline under the direction of the OIFS prepared the timber supply analysis for the Okanagan IFPA. Timberline used its proprietary timber supply model Critical Analysis of Schedules for Harvesting -version 6 (CASH6).

The forest estate model FSSIM version 3.0, developed by the Ministry of Forests and Range, was used for the 2001 Okanagan TSA timber supply review by the chief forester.

As my decision must consider an increase in harvest flow that is attributable to the innovative forestry practices, I am mindful of differences in harvest flows that might be the result of different forest estate models and methodology. It is necessary that my comparisons differ only due to the innovative forestry practices and not issues such as model differences.

The TSR2 analysis was used by OIFS to benchmark the data set and the model against the timber supply analysis supporting the 2001 Section 8 AAC determination. The TSR2 analysis demonstrated that the base data and model used result in similar harvest flows observed in the previous timber supply analysis. The harvest flow had a short-term harvest level extended by 1 decade before stepping down to a slightly (1%) higher long-term harvest flow.

Based upon my staff's experience in examining results from the CASH6 model and the results of the TSR2 analysis, I am satisfied that the model is capable of providing adequate projections of timber supply for my decision on the incremental effects of the innovative forestry practices and activities.

### ***Land base***

As part of the process used to define the timber harvesting land base in the timber supply analysis, a series of modelled deductions are made from the productive forest land base. These deductions account for the factors that effectively reduce the suitability or availability for harvest of the productive forest area for ecological, economic or social reasons.

I have considered all of the deductions applied in the derivation of the timber harvesting land base for the Okanagan IFPA area. I am satisfied the following items were appropriately modelled within the timber supply analysis. These were documented in the

information package and analysis report provided with the 2003 application and I will not discuss them in detail: TSA boundaries, non-forest, operability mapping, environmental sensitive areas, low productivity sites, and problem and deciduous forest types. The land base factors discussed below are those for which I believe my consideration requires some documentation.

### *Timber Licences*

Timber licenses are old tenure agreements that revert to the crown following harvest and regeneration to a free-growing condition. The OIFS analysis used the same area and reversion schedule information available for the chief forester's 2001 AAC determination. There is some uncertainty around a few hundred hectares that has been declared parkland that occurs within a timber license and whether this volume will be reassigned. This reassignment of volume would result in a very small downward impact on the incremental harvest flow associated with the innovative forestry practices. However, as there has not yet been any reassignment, I accept the information as modelled.

### *Woodlot Licences*

Woodlots are small area based tenures and are not considered part of the TSA land base. All woodlots are excluded from the TSA land base for this decision.

The OIFS analysis used the same woodlot information as was used in the timber supply analysis supporting the chief forester's 2001 AAC determination. This data set did not account for one new woodlot of 451 hectares and 24 woodlots that have increased in size (i.e., top ups). A further eleven woodlots are expected to receive approval for top ups in the near future. District staff estimate that a total AAC of about 22 016 cubic metres per year is attributable to the new woodlot and the 35 top ups.

For this decision, I consider that all new area associated with woodlots should be excluded. Based on district staff opinion, I extend this to include those top ups that are expected to receive approval. I described my accounting for this factor in my reasons for decision.

I am also aware that in that under the timber reallocation process (Bill 28, April 2003) that up to 12 woodlots with a total of 40 000 cubic metres allowable annual cut are proposed to be established in the TSA. I am prepared to consider the potential effect of these areas if and when they are established but will not do so in this decision.

### *Community Forests*

Community forests are a form of area based tenure authorized by government and are not considered to be part of the timber harvesting land base of the TSA landbase.

To date only one Community Forest Pilot Agreement (CFPA) has been issued within the Okanagan TSA. The Westbank CFPA was signed on July 30, 2004. This CFPA is a probationary community forest agreement with an AAC of 55,000 cubic metres for a term of 5 years. Before the end of the term, the CFPA will be assessed and a decision will be made whether to replace the agreement with a longer term.

In the OIFS analysis, the land base of the Westbank CFPA was not specifically identified and was considered to be part of the timber harvesting land base. All management, growth and yield, and other land base considerations were applied

For this decision, I consider that the Westbank CFPA is not part of the IFPA area for the term of the agreement. Furthermore, I believe that it is more likely than not the Westbank CFPA would progress to a longer term tenure, as such, it is reasonable to exclude the Westbank CFPA throughout the entire planning horizon. My accounting for this exclusion is detailed in the reasons for decision.

In addition to the Westbank CFPA, several invitations to apply for a community forests have been made by government. As these have not yet progressed to an agreement stage, I still considered the proposed areas to be within the timber supply area.

### *Protected areas*

In 1992 the province established a protected area strategy. The strategy identified candidate areas for establishing parks under two goals. Goal 1 parks were to protect viable, examples of the natural diversity of the province that were representative of the major terrestrial, marine, and freshwater ecosystems, the characteristic habitats, hydrology and land forms, and the characteristic backcountry recreational and cultural heritage values of each ecosection. Goal 2 parks were to protect the special natural, cultural heritage and recreation features of the province, including rare and endangered species and critical habitats, outstanding or unique botanical, zoological, geological, and paleontological feature, outstanding cultural heritage features and outstanding recreational features such as trails.

The Okanagan-Shuswap LRMP identified Goal 1 and Goal 2 parks. Subsequently, all goal 1 areas were established by Order-in-Council on April 18, 2001 and on May 20, 2004, ten goal 2 areas were established as parks by an order-in-council. It is expected that the remaining eight Goal 2 areas will be formally established and under current practice, harvesting is still being excluded from these areas.

Established parks and other protected areas are not considered to be part of the TSA timber harvesting land base. However, where appropriate, these protected areas may be considered to contribute to other non-timber management objectives such as landscape biodiversity. Within the OIFS analysis, existing parks and LRMP proposed goal 1 and goal 2 candidate areas were excluded from the timber harvesting land base.

Staff have advised me that a minor difference of approximately 200 hectares in area exists between the OIFS analysis and the area reported to the OSLRMP monitoring table in 2004 for Goal 1 areas. As a direct comparison of the line work was not available, for purposes of this determination I find this discrepancy in area reported to be insignificant and accept the goal 1 parks as modelled.

For goal 2 areas, eight goal 2 areas have not yet been formally established. Following my guiding principles, I would not accept these areas as being excluded from the timber harvesting land base based on the areas not yet being officially established. However, as current practice does recognize these areas as no harvest zones, I accept these goal 2 areas as modelled but remain mindful that there is a potential small upward pressure on timber supply if the establishment process is not completed.

### ***Growth and yield***

The timber supply methods used in this analysis require projections of timber volume yield over time for various stand and management regimes. Growth and yield models were used to develop these yield tables. These models require specific information related to the existing forest inventory and management, and to the expected future productivity of forested sites.

I have considered expert advice on inventory, management, and the expected rate of growth presented to me by government growth and yield staff. I am satisfied that the analysis assumptions result in appropriate yield estimates. I discuss below the factors for which I believe my consideration requires some documentation.

### ***Forest inventory***

The Okanagan TSA has one of the oldest forest inventories in the province. An inventory audit completed in 1997 concluded there were no significant differences between the audit and inventory volumes for mature stands for the entire TSA. Nevertheless, the age of the inventory has created some uncertainty about the volumes and species composition described for existing stands. In the previous AAC determination the chief forester was supportive of updating the forest inventory.

The OIFS took the initiative to update the inventory by conducting a vegetation resource inventory (VRI) phase 2 sampling project including a net volume adjustment factor

(NVAF) sample. The VRI phase 2 project was identified as an innovative practice within the approved OIFS forestry plan. I find that the forest inventory projects completed can be considered innovative forestry practices under definition in regulation.

The VRI phase 2 inventory involves a plot-based ground sample from which are derived average and variance statistics. These statistics are then used to adjust the underlying inventory for the whole management unit as was determined through aerial photo interpretation. The resulting 110 sample plots from the OIFS project demonstrate a mean volume that is 7 to 12% higher (depending on the land base stratum and the calculation algorithm) than the existing forest cover inventory estimates.

Government inventory staff reviewed and approved the design for VRI phase 2 project. During the public review, however, some concerns about the sufficiency of the number of samples were expressed. Following data collection, government staff have reviewed the data and accept that the VRI phase 2 ground samples provide an adequate base for adjustment of the inventory.

Staff agree that the VRI Phase 2 inventory volume shows a mean at least 7% higher than the current forest inventory. The variation around the estimate is within acceptable standards. I note that the current forest inventory volume falls within the lower end of the 95% confidence intervals of the VRI phase 2 ground samples. Based on the current inventory average falling within the confidence interval, one might argue that the current inventory is adequate and that there is no need to adjust the inventory to reflect the average seen with the VRI Phase 2 samples. I will discuss this further in the “Reasons for Decision”.

Different methods exist for applying the results of the VRI phase 2 ground samples to the existing inventory file. Typically, government inventory staff recommend the use of a method known as the “Fraser Protocol”. Some concerns have been expressed about this adjustment method, especially, for yield projections. To investigate concerns, government inventory staff contracted an outside review of the suitability of the “Fraser Protocol”. This review found that the Fraser Protocol if properly applied should provide a reasonable adjustment.

The OIFS presented the results of adjusting the inventory based on 3 methods: the Fraser Protocol, a constant percent, and a regression model based on stand characteristics. The 7% constant adjustment and the regression model resulted in similar harvest flows while the Fraser Protocol adjustment enable a much higher harvest flow. The OIFS chose to model a constant 7% increase on existing stand volume tables within the base OIFS analysis in support of an AAC increase rather than to use the Fraser Protocol. The application of the 7% enabled the model to have an increased harvest flow of 345,000 cubic metres per year in the first four decades.

Government staff inform me that there are several trends in the VRI phase 2 samples and that the use of a constant adjustment, as used in the OIFS analysis, raises some concerns. However, the additional analyses presented using the other methods that better address

stratum differences resulted in a similar harvest flow to the constant 7% increase or potentially higher harvest flow. As such, I accept the use of the constant 7% increase as reflective of the VRI phase 2 inventory for the purpose of this decision. I discuss this further in my below reasons for decision.

I acknowledge my staff's concerns around the application of a constant 7% versus methods that better account for various observed trends. In future submissions, I expect that OIFS will apply appropriate adjustments and where deviations from government standards are proposed that OIFS will provide detailed description why the standard methodologies are deficient.

### *Site productivity*

In British Columbia, it is generally believed that site indices based on forest cover inventory are underestimated particularly in stands older than 140 years and stands less than 30 years that have been assigned the site index attribute of the original stand. In the previous AAC determination for the Okanagan TSA, the Chief Forester recognized this potential underestimation might be affecting mid- to long-term timber supply but did not make any direct considerations on the AAC for the underestimation.

As an innovative forestry practice, the OIFS conducted studies to improve site index estimates for managed stands within the Okanagan TSA. Site productivity assessment projects were identified within the approved forestry plan. Due to differences in resources and available data for the wet-belt and dry-belt portions of the TSA, OIFS conducted 2 different projects for improving site indices. I find that these 2 site productivity projects completed can be considered innovative forestry practices under definition in regulation.

In the wet-belt, the OIFS developed a biophysical model that predicted site indices spatially across the wetbelt zone. These estimates for low-elevations stands were then adjusted based on information from a ground-based sample. In the dry-belt, the OIFS completed a predictive ecosystem mapping (PEM) project and collected additional site index BEC (SIBEC) samples. This enabled the society to predict site indices across the dry-belt.

Application of the site indices derived for the wet-belt resulted in an increase of the average site index from 18.0 m to 21.5. This translated to a small mid-term and large long-term increase in harvest flow. In the dry-belt, the use of SIBEC estimates increased the average site index from 14.6 m to 16.5 m. The improved site productivity estimate resulted in approximately a 230 000 cubic metres per year increase in the long term and 130 000 cubic metres per year in the mid-term.

I am aware of concerns around both projects.

In the wet-belt, field sampling was limited, especially in the ESSF which is approximately 28% of the productive forest land base. There was no formal review

process for the biophysical model, however I note that an improved correlation exists between ground samples and the biophysical model predictions as compared to the ground samples and forest cover inventory estimates.

In the dry-belt, I recognize that there are concerns on the PEM data accuracy and the use of SIBEC information. However, I recognize that MOFR has accepted that the PEM and SIBEC estimates as suitable for use in timber supply analysis and that the OIFS projects have improved upon the SIBEC estimates through the collection of local data.

I accept the information presented in the OIFS analysis as a reasonable estimate of site productivity within the wet-belt and dry-belt zones. I am mindful that that the modelling of the harvest flow related to this factor was designed to fill a mid-term trough and increase the long-term harvest flow. The OIFS did not use the harvest flow gains due to site productivity to directly support an increase in the short-term harvest flow.

I recommend that the OIFS continue work on improving site index estimates both from a modelling, ground sample, and overall monitoring perspective. In particular, attention needs to be given to validating and monitoring stands not represented in the original study such as high elevation stands and selection zones.

### *Operational Adjustment Factors*

Operational adjustment factors (OAFs) are used to adjust the underlying potential stand yield curves within the growth and yield model TIPS Y. This adjustment accounts for non-modelled operational issues such as less than full stocking or pest damage. In the previous timber supply review OAFs were based on standard provincial methodology of 15% and 5% respectively for the two different adjustment factors called OAF1 and OAF2. Through OAFs, adjustments in the chief forester's 2001 AAC determination timber supply analysis were made to specific stands and sites based on advice from regional staff, specifically related to root rot expectations. The OIFS analysis used these same estimates.

In order to better assess the OAFs, the OIFS conducted a sampling program in Okanagan TSA lodgepole pine leading stands that followed MOF guidelines for operational adjustments. The results indicated that OAF1 for lodgepole pine stands in the wet-belt zone should be 12.9% and 10.8% for stands in the drybelt. Applying the results of this program in a sensitivity analysis resulted in a long-term increase in harvest flow of 60 000 cubic metres per year.

Similar OAF projects were not conducted in other stratum. This may lead to some potential for bias in accepting the new OAF information. Pine leading stratum was expected to yield lower OAF1s whereas the expectations of some other strata that were not look was a higher. Nevertheless, I do recognize that information on pine-leading stands is still valuable local information and recommend that the OIFS continue studying this issue in order to improve representation of all stands and ages over time. This

recognition does not directly influence my decision around short-term allowable annual cut increases as the information identifies a long-term harvest flow improvement.

### *Tree improvement*

Genetic gains in yield production are expected where Class A seed is used. Licensees are currently required to use improved seed where it is available. The use of improved seed is considered to be current practice, and therefore is not eligible as an innovative forestry practice.

The OIFS did include genetic gains in the OIFS analysis, however, these estimates were misapplied by reversing the wet-belt and dry-belt estimates. The OIFS analysis was then corrected and reassessed using the correct information and it was estimated that the impact due to genetic gain would be less than 1% in the long-term. An additional sensitivity analysis showed potential upward pressure of 40 000 cubic metres per year in the mid-term and 80 000 cubic metres per year in the long term.

I am mindful of the modelling errors with respect to genetic gain in the results presented but accept that the impacts of such error likely do not impact the modelled short-term harvest flow increase related to the innovative forestry practices or how the mid and long-term are viewed.

I recommend that OIFS present an updated assessment of genetic gain and provide improved modelling in future timber supply analyses.

### *Yield Tables*

Projections of timber volume are required for the timber supply analysis. The current analysis separated existing and managed stands based on stand age to enable the appropriate use of 2 different growth and yield models. Stands less than 21 years of age were assigned to a managed yield table and modelled with the Table Interpolation Program for Stand Yields (TIPSY) version 3.0a. Stands 21 years and greater were assigned to existing yield tables and modelled with the Variable Density Yield Prediction (VDYP) model version 6.6d.

District staff found the break point acceptable between managed and existing stands but recognized that such a break is not distinct. In the previous timber supply review (TSR2) a 21 year age break was also used. The use of the same age break, although stands have since aged, results in some stands that were considered managed in the previous review now being considered existing stands.

During the public review, a concern was expressed about the source of initial density used for the managed stand inputs. It was questioned whether planted or actual survey numbers of well-spaced stems should be used. My staff indicated that where information

exists it could be used but that for future stands (i.e., not yet harvested) it is necessary to provide an estimated initial density.

Issues related to specific inputs such as the inventory adjustment are discussed elsewhere.

Government growth and yield staff reviewed the managed and existing yield tables and found that the tables were acceptable. I accept the information as modelled but I am mindful of the lack of a clear break point between managed and existing stands. I recommend that in future analysis the OIFS examine this issue more thoroughly and identify managed stand definitions based on a study of the issue.

### ***Forest management objectives and practices***

The MOFR is required under the *Ministry of Forests Act* to manage, protect and conserve the forest and range resources of the government and to plan the use of these resources so that the production of timber and forage, the harvesting of timber, the grazing of livestock and the realisation of fisheries, wildlife, water, outdoor recreation and other natural resource values are co-ordinated and integrated. Accordingly, the extent to which management practices for various forest and non-forest resources and values affect timber supply must be considered in AAC determinations.

To manage for resources such as water quality and aesthetics current harvesting practices prescribe the size and shape of cutblocks, the amount of disturbance (areas covered by stands of less than a specified height), and minimum green-up heights for regenerated stands on harvested areas before adjacent areas may be harvested. Green-up requirements provide for a distribution of harvested areas and retention of forest cover in a variety of age classes across the landscape.

I have reviewed the information presented to me about forest practices and management assumptions. The factors discussed below are those for which I believe my consideration requires some documentation.

### ***Roads, trails and landings***

Roads, trails, and landings are considered non-productive and once harvested do not contribute to the timber supply. In the OIFS analysis, separate modelling considerations were made for those roads, trails, and landings that exist currently and for those that are expected in the future.

For the OIFS analysis, the OIFS accounted for existing roads by removing a buffered area around mapped roads. This identified 12,889 ha to remove. However, the OIFS was concerned that this underestimated the timber harvesting land base losses due to existing roads, trails, and landings. A 2002 study commissioned by the OIFS saw no opportunity for refining the 1996/97 estimates of the MOFR regional soil scientist. As such, the OIFS

deducted a further 8,399 ha proportionately from the timber harvesting land base. The sum of the buffered roads and the proportional deduction resulted in reduction for existing roads, trails, and landings that was equal to the reduction used in the 2001 chief forester's AAC determination.

I am concerned about the OIFS's decision to fall back to the reduction used in the previous timber supply review. It would be desirable to understand and if necessary support the deductions for the existing roads netdown by validating with appropriate field information. I concur with a recommendation by ministry staff that such work be completed for any future determinations and encourage that OIFS consider this recommendation.

For future roads, a study commissioned by OIFS looked at existing soil disturbance surveys and other data. The study indicated that the 'trails' (dispersed soil disturbance) component was about 0.8% lower than suggested in the previous timber supply review. However, the OIFS analysis used the estimate from previous timber supply review of 4.9%.

As the same roads, trails, and landing deduction are used in all OIFS analysis, I see little impact on my decision of an AAC increase based on slight changes in information. As such, I accept the information as modelled in the OIFS analysis.

### *Harvest priority*

The sequence of harvesting within the timber supply analysis can affect the harvest flow. Typically harvest priority rules consists of both prioritising specific stand types (e.g., pine) and how to select among stands within that stratum (e.g., harvest oldest stands first). Ideally, the harvest priority rules would mimic current and future stand selections.

The OIFS analysis used the "oldest first rule" with no species priorities. This rule selects from within available stands the absolute oldest stands for harvest first.

It is unlikely, that the oldest first rule mimics current and future practice. Summary statistics of actual harvest by species and age show differences from those forecasted by the model in the short-term. However, my staff indicate that for the Okanagan TSA these considerations likely do not result in significant impacts on the overall harvest forecast. Sensitivity analysis where mountain pine beetle susceptible stands are given harvest priority demonstrated only minor differences in harvest flow.

I find that the choice of the oldest first rule does not influence significantly the short-term harvest flow identified.

### *Regeneration – Impediments, Delay, Not Satisfactorily Restock*

A lag exists between the time of harvest and the time a new stand is established. This regeneration delay was modelled as 2 years in the OIFS analysis for future harvesting to reflect current regeneration practices.

Some stands that have been harvested have not yet had information on their reestablishment recorded. These stands known as current non-satisfactory restocked (NSR) stands were assigned an age 0 in the analysis. District staff indicated that stands labelled NSR are due to recent harvesting and are not earlier stands that have failed to regenerate to a satisfactory stocking. As such, the assignment of age 0 would slightly underestimate the age of the stand since establishment.

District staff have identified that some existing plantations have been experiencing survival or performance issues and that it is believed this issue has the potential to increase over time, possibly due to climatic factors. Information on the scope of this issue was not available, though the current situation would not likely have a great impact on short-term timber supply.

I accept the regeneration factor as modelled but remain mindful that some stands may not be performing as expected. I recommend that in future analysis the OIFS attempt to determine and assign appropriate ages to NSR stands and to obtain information on plantation failure.

### *Forest Health*

Mountain pine beetle has dramatically spread over the past 4 years, increasing 16 fold to impact about 78 423 hectares in the Okanagan TSA in 2005. The heaviest level of the outbreak is in the northwest corner and projections are that the Mountain pine beetle will spread throughout the timber supply area.

The implications of the Mountain pine beetle infestation were not modelled at the time the OIFS conducted the timber supply analysis for this determination. The Ministry of Forests and Range completed further analysis for use in the chief forester's 2005 AAC determination. This analysis investigated the timber supply impacts of differing harvest priority rules and assumptions around unsalvaged losses of Mountain pine beetle infested volumes. This analysis informed me of the impact of Mountain pine beetle at several elevated short-term harvest levels. In particular, this analysis demonstrated potentially large increases in non-recoverable losses due to the infestation.

The mortality to the pine component of stands raises a concern about the applicability of the VRI Phase 2 ground samples that were collected prior to the current infestation. The proposed increase in short-term harvest flow is dependent on capturing the identified upward adjustment of the inventory. An elevated harvest level in the short-term to

capture the Mountain pine beetle infestation improves the probability that harvested volumes are reflective of the VRI Phase 2 inventory. However, over time as the mature pine component of remaining stands is degraded and lost, the results of the VRI Phase 2 ground sample will likely be less relevant.

In my decision, I am not considering an increase in AAC for the IFPA-holders based on beetle management. The OIFS has not requested an increase due to beetle management nor have they presented a specific beetle management strategy as an innovative forestry practice. However, I must be mindful of the implications of the beetle infestation and changes in harvest levels that might be determined by other decision-makers. I am aware the chief forester's considerations to increase the AAC for the Okanagan TSA to address Mountain pine beetle. The chief forester for his decision was presented with a summary of information similar to what was presented to me, including information on improved inventory and site productivity information. Under the reasons for decision, I discuss the implications of the beetle infestation and the chief forester's decision in the context of my decision.

Other forest health issues exist within the Okanagan TSA. The OIFS analysis attempted to address several issues but some forest health issues were not addressed directly.

Endemic timber volume losses are normally expected to be accounted for within the forest inventory growth and yield estimates. Existing stand projections that use the model VDYP capture past endemic losses. Future stand projections, using the model TIPSYP, capture volume losses through operational adjustment factors, as previously discussed.

The regional pathologist believed that there will be greater losses due to root rot in managed stands than would have been modelled by the default operational adjustment factors. As such, in analysis units likely impacted by root rots, operational adjustment factors were developed that resulted in the managed yields tables being more similar to existing stand yield tables. These adjustments were incorporated in the OIFS analysis, as such, I am satisfied root rot has been reasonably considered. The Shuswap Environmental Action Society felt second growth stands were suffering damage from root rot.

The public also raised specific concerns around dwarf mistletoes and climatic change. I discuss potential impacts as would be related to endemic losses due to dwarf mistletoe under non-recoverable losses. I also acknowledge that there is uncertainty around the future implications of many forest health issues, such as related to climatic change, within the Okanagan TSA and that more information is needed on the impact of these issues with regard to future stand yields. It is for reasons such as the uncertainty of forest health issues that I expect to periodically review any AAC increase determination and assign a specific expiry date to my decision.

While there is much uncertainty around the future implications of forest health, I accept that the information on forest health issues presented to me as the best available.

### *Non-recoverable losses*

Non-recoverable losses are dead timber volumes that are not recovered through harvest operations and that originate from catastrophic agents such as fire or abnormal pest outbreaks. Endemic timber volume losses associated with normal stand development are captured within existing forest inventory projection methods. Non-recoverable losses are accounted for separately, typically through an average annual reduction to harvest flow.

Information on non-recoverable losses was derived in the previous timber supply review by forest health staff in the 3 district offices present at that time. The current analysis used this estimate of non-recoverable loss of which 25 425 cubic metres per year were attributable to insects, 9 560 cubic metres per year for wind, and 39 525 cubic metres per year for fire.

I am aware that concerns have been expressed that the non-recoverable losses have been under-estimated, particularly in light of recent mountain pine beetle and wildfire events. However, I acknowledge that the estimates determining this factor account for losses that may periodically occur over long time periods and therefore the impacts experienced in the short-term should not necessarily be applied across all time horizons.

The current Mountain pine beetle disturbance events are unprecedented. I expect that there will be greater non-recoverable losses than those modelled in the OIFS analysis. However, while the OIFS analysis does not capture the extent of potential losses, the additional Mountain pine beetle sensitivity runs do provide me with an indication of potential losses.

I am satisfied with the information provided but recommend that in future analysis that the derivation of the non-recoverable losses be reviewed.

### *Cutblock adjacency*

Operational practices limit the size, location, and timing of harvesting operations to address management objectives such as scenic areas, water, and wildlife. Cutblock adjacency is where prior to harvesting an adjacent area, a recently harvested and regenerated stand must have reached a specified height. Modelling cutblock adjacency may be done directly in a forest estate model where spatial constraints are available. In aspatial models, cutblock adjacency is modelled by allowing only a maximum percent of an area to be under the specified height (i.e., a maximum disturbance).

In the OIFS analysis, for the first 30 years, cutblock adjacency was modelled spatially based on treatment units defined for the forest estate model CASH6 and a 2 metre green-up height as identified in the Okanagan-Shuswap LRMP. To model cutblock adjacency objectives through out the planning horizon, an aspatial maximum disturbance level of 30% was applied through all time periods.

Concerns were expressed by some First Nations on the impact of increased harvesting that could result from decreasing green-up from 3 metres to 2 metres. The analysis did not provide me with information to judge the impacts of this change of harvest flow increased identified due to improved inventory information. However, I must recognize that the change from 3 metres to 2 metres was made under the auspices of the Okanagan-Shuswap LRMP and represents current policy. As such, I find that the use of a 2 metre green up height appropriate.

Ministry staff identified some concerns that the spatial constraint may be overly constraining as compared to what is found operationally but did not have specific supporting information.

While mindful of the above concerns, I find that cutblock adjacency is reasonably considered for my determination.

### *Visuals*

Scenic areas can be designated and visual quality objectives can be established under legislation. In the Okanagan-Shuswap LRMP objectives were identified and subsequently, for what is labelled as zone 1, have been made known to licensees.

The OIFS analysis modelled visual quality in a manner that follows the Okanagan-Shuswap LRMP objectives. The regional landscape forester identified that the percent alteration limits modelled may be at the higher end of the range. Conversely, due to Mountain pine beetle infestation, alteration limits may be eased. There also remains a small area that needs to be inventoried for visual quality within the Okanagan TSA. Nevertheless, the regional landscape forester felt that visuals were sufficiently modelled.

I accept the information as modelled as representative of current policy and note that there is some potential for uncertainty. I recommend that the OIFS work with landscape inventory staff to complete the visual inventory for the TSA and to look at the appropriateness of the modelled percent alteration assumptions as compared to operational application.

### *Species at risk - Identified wildlife*

The identified wildlife management strategy is one legislative tool used to managed species at risk. Through this strategy, wildlife habitat areas are established for identified wildlife.

In the Okanagan TSA, currently 39 wildlife habitat areas have been established for species including tiger salamander, Lewis's woodpecker, and Yellow-breasted chat. Further wildlife habitat areas are expected to be established, the most recent Section 7(2)

notice under the Forest Planning and Practice Regulation identifies mature timber harvesting land base impacts of about 775 ha for 7 identified wildlife species. Supporting material for the Section 7(2) notice indicate an anticipation of a further impact of 4441 ha of mature timber harvesting landbase.

In the 2001 AAC determination, the chief forester accounted for a 1% impact due to identified wildlife within the Okanagan TSA. This 1% was a Ministry of Forests and Ministry of Water, Lands and Air Protection policy dating from 1999. Similarly in the OIFS analysis, identified wildlife impacts were modelled by applying a 1% reduction across all yield tables.

I acknowledge that it is reasonable to expect that an eventual 1% accounting for identified wildlife although the impact of established wildlife habitat areas is much lower. I encourage the OIFS to cooperate with the Ministry of Environment to establish WHAs where necessary and identify to me if my assumptions around a 1% impact are incorrect.

### *Deer winter range*

Mule deer winter range management has progressed along the direction identified in the Okanagan-Shuswap LRMP. Planning cells and management objectives have been endorsed by the LRMP monitoring table and approved by the inter-agency management committee. Section 7(2) notices of the Forest Planning and Practices Regulation identify a maximum of 213 192 ha of deer winter range with 52 096 ha of snow intercept cover.

The OIFS analysis made several simplifying assumptions on the modelling of deer winter range including applying the constraints to a single zone rather than planning cells and assuming an equal distribution of timber harvesting land base to non-timber harvesting land base. These assumptions likely resulted in deer winter range management objectives being less constraining than would be found operationally. This would influence the mid- and long-term harvest flow.

The proponent provided two additional sensitivity analyses for deer winter range management that were more restrictive. These sensitivities identify that more restrictive management would likely have an impact less than 2% and would occur in the mid- to long-term.

I am concerned that there appears to be a number of uncertain and potentially confounding issues with this factor. However, I am mindful that most opinions provided to me on this factor indicate that the short-term impacts are likely minimal. I conclude that the deer winter range was not sufficiently modelled but that this deficiency would not impact the short-term harvest. While I expect that the OIFS will update any future timber supply analysis with appropriate deer winter range modelling, I will not discuss this factor further in my reasons for decision.

The OIFS have identified several innovative forestry practices projects involving deer winter range. These studies have not been incorporated into the AAC increase application. When completed, I recommend that the OIFS make the results of these studies known.

### *Caribou habitat*

Mountain caribou in the Okanagan TSA are considered part of the Southern Mountain population and are designated as threatened under the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Provincially, Mountain caribou are designated an identified wildlife species and are red-listed.

Under the Okanagan-Shuswap LRMP, the management objective was to limit harvesting to a maximum of 825 ha per year in age class 8 and 9 within the identified caribou winter habitat zone. Additionally requirements were that 9900 ha of timber harvesting land base were to be reserved in old growth management areas within the zone and in designated corridor areas 30% of the corridor was to remain in stands with greater than 16 m in height. The LRMP stated that if further research identified different needs modification of the measures in the LRMP were possible.

Section 7(2) notice under the *Forest Planning and Practice Regulation* does not identify specific objectives for Mountain caribou. However, supporting material does identify that in the future the notice may be amended to include Mountain caribou. The projection is that about 2000 ha of mature timber harvesting land base would be impacted. I have considered this impact above for identified wildlife.

In the analysis no specific modelling considerations were made for Mountain caribou. It was reasoned that current management objectives for old growth and other biodiversity features result in no additional timber supply impacts due to the current Mountain caribou management objectives. The Shuswap Environmental Action Society stated that the OIFS should incorporate uncertainty regarding caribou management.

Within the OIFS forestry plan, research projects on mountain caribou, including a telemetry project, are identified. I encourage the OIFS with these projects and to make known the results and implications when available.

I accept the information as modelled, however, I am mindful that further information may be forthcoming regarding caribou management or direction. I recommend that the OIFS assist agency staff in the sharing of information on mountain caribou and work co-operatively to help fill knowledge gaps and to develop appropriate forest management practices that will help assist in the management of this species. I expect the OIFS to promptly inform me of any changes that occur regarding management for mountain caribou that may affect short-term timber supply.

### *Grizzly bear*

Grizzly bear management objectives are described at a broad level within the Okanagan-Shuswap LRMP. At a finer scale, wildlife habitat areas for grizzly bear may be established under the identified wildlife management strategy.

Within the Okanagan-Shuswap LRMP grizzly bear habitat objectives apply to a significant area. Specific management includes retaining forest cover adjacent to one side of avalanche chutes, reducing stocking levels on specific site series, and requiring 10% of stands to be greater 19.5 metres in height within 1000 ha units.

Section 7(2) notice under the Forest Planning and Practice Regulation does not identify specifically objectives for Grizzly bear. However, supporting material does identify that in the future the notice may be amended to include Grizzly bear. The projection is that about 190 ha of mature timber harvesting land base would be impacted. I have considered this impact above for identified wildlife.

The OIFS analysis and the previous timber supply review analysis used a cover requirement of 10% of LU/BEC subzone to be greater than 19.5 metres to model the LRMP requirement. My staff indicate that the forest cover objectives may be more limiting when applied at 1000 ha units rather than the LU/BEC subzone but the impact is not known.

I recognize the potential for underestimating the timber supply implications of Grizzly bear management but I am willing to accept the information as modelled. I will be mindful that there may be a small downward pressure on mid- and long-term timber supply.

### *Other wildlife species*

The LRMP recognized specific management objectives for a number of other wildlife species including marten, bighorn sheep, elk, moose and mountain goat. Section 7(2) notices of the Forest Planning and Practices Regulation identified winter range covering 161 952 of crown forested land base of which 53 444 ha is required for cover needs of moose. Several wildlife habitat areas for bighorn sheep were established when bighorn sheep were previously categorized as an identified wildlife.

The OIFS analysis modelled forest cover requirements for marten, moose, elk, mountain goat, and bighorn sheep including Derenzy sheep. These requirements were based upon the LRMP recognized management objectives.

The Upper Nicola Indian Band expressed concerns around the protection of wildlife and particularly red/blue listed species. Ministry of Environment staff have identified concerns around Williamson's sapsucker nest sites in the TSA and that they estimate a

timber harvesting land base reduction of 300 to 400 ha for conservation areas will be necessary.

The OIFS have or are conducting projects, such as a martin study, that will contribute to the local knowledge of these species. I expect that these studies will be made known and shared appropriately.

I recognize that considerations for many species are not directly modelled in the OIFS analysis. My staff indicate that existing modelled forest management objectives are likely sufficient to address the modelling needs of other species. Given my staff advice and my understanding of the existing management objectives, I believe that the lack of direct modelling for these species would not impact harvest flow. However, I expect the OIFS and my staff to be attentive to management information for wildlife species that might have timber supply implications. If this information suggests that management objectives would constrain timber supply, this information should be brought to my attention.

For the purposes of this determination, I accept that other wildlife species have been reasonably considered within the analysis.

### *Riparian Areas*

Riparian management in the Okanagan TSA follows closely to the 1995 Riparian Management Area Guidebook and is in accordance with LRMP recommendations.

In the OIFS analysis, riparian area management was modelled similarly to the previous timber supply review analysis. A land base reduction was created by buffering all TRIM mapped streams with a reserve width of 12.4 metres. This average width was based on an assessment completed for the previous timber supply review. Lakes and wetlands were buffered according to the recommendations in the guidebook. This buffered area for streams, lakes, and wetlands covered about 53 000 ha. To account for enhanced riparian reserves of the LRMP, a further reduction of 9300 ha was made by reducing each polygon in the timber harvesting land base by a proportionate amount.

During the review of the application, concerns were expressed around several issues including the coarseness of modelling factors (e.g., use of proportionate deduction, average width), not incorporating updated riparian information completed by licensees and agencies, and not specifically accounting for temperature sensitive streams. The Upper Nicola Indian Band expressed general concerns around the protection of wetlands.

I recognize that the modelling techniques of using average buffered, proportionate reductions, and not specifically addressing temperature sensitive streams causes uncertainty. However, the information used by the OIFS to model riparian areas including wetlands would seem to reasonably reflect current practice and the needs identified in riparian area management guidelines. As such, I accept the information as modelled and I recommend that the OIFS work with agency staff in order to improve the

understanding of inventories, management, and modelling of riparian areas in future analyses.

### *Community watersheds*

There are currently 50 community watersheds in the Okanagan TSA. Interior watershed assessment plans have been completed for many of the watersheds.

To reflect current practice as per the interior watershed assessment plans, the OIFS used an objective that no more than 30% of the community watershed could be less than 6 m in height. This objective is not a specific on the ground management objective but a value derived by the regional hydrologist for previous timber supply reviews. This objective was applied to the 47 community watersheds present at the time of the OIFS analysis.

Upper Nicola Indian Band in an August 20, 2002 letter expressed concern around the impacts of increased logging on community water uses, water quantity and quality. I am also aware that numerous watershed and hydrologic assessments have been completed for the Okanagan TSA both for community and other watersheds. These on-the-ground assessments are in place to ensure that proper management of community watersheds is occurring.

In this decision, I believe that the modelled objectives for community watersheds in conjunction with objectives for other factors will sufficiently address the current management of community watersheds. Addressing deficiencies in the techniques likely would not have significantly changed the resulting timber supply. Nevertheless, I do recommend that the OIFS in future analysis consider investigating if improvements in the modelling of community watershed management are needed.

### *Stand level biodiversity*

Wildlife tree retention and coarse woody debris management are important components for stand-level biodiversity.

Wildlife tree retention in the Okanagan TSA is considered to be consistent with the Landscape Unit Planning Guide. Wildlife tree retention levels are expected to be set as land use objectives but have not yet been established.

Wildlife tree retention requirements can be accommodated within other management objectives (e.g., riparian area management). Nevertheless, to fulfil wildlife tree retention objectives additional retention is required. To address this specific need for the OIFS analysis, volume tables were reduced by 3% as was done for the 2001 AAC determination.

Coarse woody debris objectives were not specifically modelled in the OIFS analysis. The expectation is that coarse woody debris management can be accomplished operationally without impacts to timber supply.

In the previous allowable annual cut determination for the Okanagan TSA, the chief forester accepted the modelling of wildlife tree retention as adequate but requested district staff to continue to assess requirements for stand level biodiversity so that the objectives can be clearly defined.

I accept the information as modelled as the best available, but as previously noted for district staff, I encourage IFPA-holders to continue to assess the requirements for stand level-biodiversity such that these requirements can be better incorporated into future uplift analyses.

### *Landscape level biodiversity*

The OIFS analysis incorporated minimum retention requirements for the timber harvesting land base that were based on the LRMP recommended Old Growth Management Area (OGMA) targets at the LU-BEC level. The analysis did not spatially identify OGMA's.

Approved draft OGMA's consistent with the LRMP were established under section 8 of the Order Establishing Provincial Non-spatial Old Growth Objectives on October 13, 2004. Final draft OGMA boundaries have been created for 17 of the 29 landscape units.

During the public review and by Ministry of Environment staff, concern was expressed that the LRMP did not identify if the 1/3 draw down targets used for low biodiversity emphasis areas were to remain permanent or were to be brought up to full target over 3 rotations. No direction has yet been provided on this issue. I do not expect that the short-term harvest level would be influenced by this factor, though impacts are likely in the long-term. I am willing to accept landscape biodiversity management as modelled without bringing the low biodiversity emphasis objective areas up to full target.

I acknowledge there is some degree of uncertainty associated with this factor but that for this decision the information provided is sufficient.

### *Archaeological and cultural heritage values*

The Provincial Heritage Register documents known heritage sites (archaeological sites). Within the Okanagan TSA there are over 900 archaeological sites identified of which few sites are found within the timber harvesting land base. District staff estimate that only 11 ha of timber harvesting land base is impacted by these sites. An archaeological overview assessment has been completed for the TSA that provides a base upon which future sites may be identified.

Traditional use studies (TUS) within the TSA have been conducted by several First Nations communities. These studies assist in determining areas of cultural heritage resource or traditional use. First Nations maintain the confidential information associated with these studies and where possible provide information relevant to operational referrals. Of the information shared from the Neskonlith and Adams Lake TUS and the Little Shuswap TUS, the studies indicate there are about 11 643 ha of productive forest land base with with spiritual values.

Kela7scen (Mt. Ida) is one area with spiritual value identified by the Adams Lake and Neskonlith Indian Bands. The Ministry of Forests and Range and the Bands have entered a process agreement for forestry activities at Kela7scen (Mt. Ida). Currently, there is little timber harvesting occurring within the identified Kela7scen area. District staff indicated that this area includes approximately 3000 ha of productive forested land base.

Many First Nations within and outside of the TSA have asserted traditional territories and aboriginal interests within the TSA. Several have expressed concern that cultural information such as sacred areas, medicinal plant collection areas, traditional food areas, and trail systems was not properly considered in the application. Specifically, the Okanagan Nation Alliance expressed concern that the analysis failed to incorporate or consider traditional ecological knowledge.

In the OIFS analysis, no specific accounting was completed for archaeological and cultural heritage values. Given the small timber supply impact from archaeological sites, it is reasonable that these areas were not specifically modelled, however, information about their timber supply implications has been presented to me. As such, for archaeological sites, I accept that the 11 ha of timber harvesting land base will not significantly impact the modelled harvest flow. I will not make a specific accounting for these 11 ha but I will be mindful of this small downward pressure. If future identified sites suggest a greater impact, I will consider the new information at future determinations.

For areas with spiritual value, I feel that I must recognize the expressed interests around Kela7scen (Mt. Ida) and the management determined through the existing agreement. As such, in the “Reasons for Decision”, I will not award any AAC increase to IFPA-holders that would have been derived from the Kela7scen (Mt. Ida) area of interest. Further, for other areas with spiritual values, while I am uncertain of the forest management and timber supply implications, I will make a specific accounting for these areas. I further discuss my reasoning for this accounting within “First Nations Considerations and Accommodation” and the “Reasons for Decision”.

For future determinations, due to the high interest in archaeological and cultural heritage values, I wish to see these values considered in more detail within timber supply analysis and within the supporting materials presented to me. It is important that I have the best available information to assist with my understanding of the implications of forest management on potential interests of First Nations and on timber supply.

## **First Nations Considerations and Accommodation**

First Nations that reside or have interests within the Okanagan TSA were consulted with regards to the AAC increase proposed by IFPA-holders. Information about the application has been shared with First Nations by the IFPA-holders during the periods of public review in the spring of 2003. Formally, the First Nations were made aware of the decision process in a June 30, 2003 letter. At that time First Nations were extended the opportunity to provide information on aboriginal interests and how these interests may be impacted by the proposed decision. Subsequently, First Nations have corresponded with the ministry including several meetings between First Nations and myself and the previous regional manager. All Indian Bands that reside and have aboriginal interests either participated in the meetings or provided written communication.

The following bands were contacted:

Okanagan Indian Band  
Osoyoos Indian Band  
Penticton Indian Band  
Upper Nicola Indian Band  
Lower Similkameen Indian Band  
Upper Similkameen Indian Band  
Westbank Indian Band  
Adams Lake Indian Band  
Little Shuswap Indian Band  
Neskonlith Indian Band  
Spallumcheen Indian Band

Notification was also provided to the Okanagan Nation Alliance (Syilx Nation) and the Shuswap Nation Tribal Council (Secwepemc Nation).

During the review and consultation for this determination, a variety of issues were raised from First Nations. The Okanagan Nation Alliance provided an extensive bibliography of Okanagan historical documents that I have reviewed the list. I have also reviewed and considered issues brought to the attention of government by First Nations in other processes of which I was made aware, including the 2005 chief forester Section 8 AAC determination. Some issues brought to my attention relate directly to the technical aspects of my allowable annual cut increase decision and were discussed in above sections. Some of the issues concern accommodation of interests, which I discuss below.

In a September 8, 2004 meeting members of the Okanagan Nation Alliance identified concerns around the innovative forestry practices agreements and an AAC increase under Section 59.1. There were two issues of particular note that are not covered elsewhere in this rationale. First there was the desire to have greater and meaningful involvement and representation within the Okanagan Innovative Forestry Society rather than simply an

advisory role. Secondly, specific to an AAC increase, Chief Stewart Phillip on behalf of the Okanagan Nation Alliance chiefs identified the desire that 50% of any increase be made available to First Nations.

In a November 5, 2004 meeting members of the Shuswap Nation Tribal Council also expressed concerns around the agreements. It was desired that in light of the current beetle infestation that the IFPA decision not move forward but the chief forester in a Section 8 decision address all forest management issues. I also note that the Adams Lake Indian Band and the Neskonlith Indian Band indicated at a Shuswap Nation Tribal Council Chiefs meeting on September 23, 2004 that they desire, as requested by the Okanagan Nation Alliance, 50% of any AAC increase.

My authority as the decision maker under Section 59.1 enables me only to award an increase in allowable annual cut on the licences of innovative forestry practice agreement holders. I cannot award direct harvest volume to other forms of tenure. However, legislation does allow me to make conditions on the awarded allowable annual cut increase. I recognize that such conditions can be used as a tool to accommodate aboriginal interests, where appropriate, but that such a tool needs to be used appropriately.

I am also mindful that my decision under Section 59.1 falls within a line of decisions made by government. These decisions include, for example, the awarding of forestry practices agreements by the minister, the allowable annual cut determination of the timber supply area by the chief forester, the apportionment of allowable annual cut by the minister, and disposition of apportionment by me as the regional executive director. While I cannot direct other decision-makers, I can provide them with information regarding aboriginal interests and concerns brought to my attention for their consideration. Specifically, if I believe that a portion of a proposed AAC increase should be made available as possible economic accommodation, I can award the IFPA-holders an amount that excludes the level I believe should be made available for economic accommodation. It would then be possible through the line of decisions that include the chief forester making a section 8 of *Forest Act* AAC determination and the minister making a Section 10 apportionment such that the volume I did not award to the IFPA-holders may be available to accommodate First Nations interests. However, each decision maker within this line of decisions would need to make an independent evaluation of this consideration.

The chief forester has informed me of the direction of his upcoming decision under Section 8 of the *Forest Act*. Based on this direction, I am confident that the decision of the chief forester will capture at least the magnitude of the AAC increase proposed by the IFPA-holders. Therefore, I have reasonable expectations that if I do not fully award the identified harvest flow available in the short term that such volume would become available for an apportionment decision by the minister. As such, there may be an opportunity of timber volume to be made available to First Nations through the apportionment and disposition processes.

Forest and Range Agreements between the government and First Nations are to accommodate the economic aspect of First Nations' potential aboriginal title interests and may include provisions to facilitate consultation on operational planning and administrative decisions. Forest and Range Agreement offer letters have been provided to all the above Indian Bands. To date the Little Shuswap Indian Band, Upper Nicola Indian Band, Osoyoos Indian Band, and Lower Similkameen Indian Band have signed agreements. The Westbank First Nation has signed an Interim Measures Agreement Extension. The amount of volume of timber available for disposition as an economic benefit to First Nations within the Okanagan TSA has been less than that which is available in other TSAs. Government policy recommends the consideration for accommodation use when volume becomes available through processes such as an AAC increase. My expectation is that agreements will be negotiated to allow for the accommodation that will be provided to address the interests and concerns raised in relation to this IFPA AAC increase decision.

I believe that there is the potential for aboriginal rights and title to exist somewhere within the Okanagan TSA. The additional increase in harvest level awarded to innovative forestry practices agreement holders may impact on aboriginal interests somewhere within the timber supply area at some unknown level. As such, I believe that it is reasonable that I consider and address, where appropriate, accommodation related to aboriginal interests raised during the consultation process that may be affected by my determination. However, as discussed under my "guiding principles", it is inappropriate for me to speculate on the future impacts of treaty processes before decisions have been made by government and implementation details have been determined. If decisions are made by government that affect my determination, I am prepared, as allowed under legislation, to revisit the decision.

In addition to economic accommodation, I can address other interests and concerns raised within conditions set in my decision or make recommendations that may address these interests and concerns. I have considered the information provided to me by First Nations with respect to the following 3 areas. I feel that it is warranted to make the following condition and recommendations.

*Kela7scen (Mt. Ida) and other areas with spiritual values:* The management of the land base around Kela7scen (Mt. Ida) has been consistently identified by First Nations as an area of high spiritual value. Currently, the Adams Lake and Neskonlith Indian bands have an agreement with the Okanagan Shuswap Forest District around management within the Kela7scen (Mt. Ida) agreement area. However, government has not specifically recognized this area through legislation nor have they recognized other areas with spiritual value that Ministry staff have brought to my attention. As discussed under my "Guiding Principles", it is usually inappropriate for me to attempt to speculate on the impacts on timber supply that may result from decisions that have not yet been made by government or to fetter other statutory decision-making authorities. However, I do not feel justified in awarding IFPA-holders an increase in AAC on land that the licensees are unlikely to harvest on during the term of the increase.

As such, as a condition, the eight innovative forestry practices agreement holders shall make themselves aware of and follow any agreement between the Ministry of Forests and Range and First Nations regarding the Kela7scen (Mt. Ida) agreement area and similar agreements that may occur.

*OIFS Membership and First Nations Involvement:* First Nations have noted the desire to have greater and meaningful involvement and representation within the Okanagan Innovative Forestry Society than has currently been offered. I see such involvement to be beneficial to the forest management and First Nations communities. I recommend that OIFS collaborate with First Nations to undertake the following:

- modify OIFS's constitution and bylaws to enable First Nations to sit as members of the society and board (e.g., one seat for Okanagan Nation Alliance members and one seat for Shuswap Nation Tribal Council).
- assist First Nations communities to build technical capacity to allow them to capture employment opportunities arising from the availability of timber supply and to participate in the management of forest resources in the Okanagan TSA
- ensure that forest development addresses First Nations' archaeological sites, traditional practices, and culture heritage resources
- identification and development of long-term meaningful employment and training opportunities for First Nations people

*Cultural and Heritage Studies:* First Nations have identified the need to further develop and incorporate into forest management studies around culture heritage resources and traditional use. Such studies can better inform decision processes that must consider aboriginal interests. I recommend that OIFS in collaboration with First Nations undertake the following:

- perform a data gap analysis of First Nations culture and heritage studies and literature and then undertake culture and heritage inventory work to address gaps identified
- undertake a trail inventory study starting in the Okanagan/Spallumcheen/Upper Nicola asserted traditional territories
- undertake an archaeological inventory study on non-TFL area adjacent to or on Tahaetkun mountain
- cataloguing First Nations aboriginal interests and adjusting the forestry plan if needed to address these interests

Through the above, I have considered and attempted within my authority and understanding, to accommodate the interests and concerns raised by First Nations in relation to my current decision. I am mindful that my decision is one in a line of decisions by government related to harvesting in the Okanagan Timber Supply Area. It is through this rationale that I make known my considerations regarding the interests and concerns raised during the consultation process in relation to an increase in licensee allowable

annual cut under Section 59.1 of the *Forest Act* and how I believe these interests and concerns can be best addressed.

## **Reasons for decision**

In reaching my decision on a request for an increase in allowable annual cut to the forest licences held by the eight IFPA-holders, I have considered all of the factors presented to me, and I have reasoned as follows.

Section 59.1 of the *Forest Act* gives the Regional Manager the authority to increase the allowable annual cut of an IFPA-holder's licence. The intention is that such an increase is justified by the innovative forestry practices conducted or proposed by the IFPA-holder and that this justification is demonstrated according to timber supply analysis methodology approved by the chief forester. While the chief forester's memo outlines the general considerations for timber supply analysis, it does not prescribe evaluative criteria.

I am satisfied that the IFPA-holders and Ministry staff have presented to me a timber supply analysis and supporting materials that meets the chief forester's methodology. I have reviewed factors related to the land base and inventory, growth and yield, and management objectives and I am satisfied that the majority of the assumptions appropriately reflect the best available information and current practices. In this rationale, I have documented my concerns around a number of forest management or data issues that either cause uncertainty or lead to changes in assumptions relative to the analysis.

In my review, I find that there are three general areas of significance for my determination: the innovative forestry practices of updated inventory and site productivity information, changes in land base from which identified gains can be obtained, and First Nations aboriginal interests and concerns and how these may be addressed. There were several other factors (e.g., grizzly bear management) that may impact timber supply but had very small impacts or cannot be reliably quantified at this time. For these factors, I assume that the positives and negatives balance out or do not greatly impact this decision, as such, I will not discuss further those issues.

The AAC increase application was heavily weighted on innovative forestry practices for forest inventory and site productivity. The timber supply analysis was constructed such that improvements in forest inventory were used to increase the short- and mid-term harvest flows whereas improvements in site productivity estimation were used to support an increased long-term and mid-term harvest flow increase.

The OIFS's inventory and site productivity projects significantly improve information certainty about the current and potential forest yields. However, inherent with all sampling and modelling, there are deficiencies and uncertainties that need to be considered.

The VRI phase 2 inventory is a plot-based ground sample from which are derived mean (average) and variance statistics. The adjustment of the inventory is based on the underlying assumption that the VRI phase 2 inventory average is the appropriate estimate to use. Government inventory staff have indicated that government procedures for an accepted VRI phase 2 inventory are to adjust the inventory irregardless of whether the average of the ground samples is significantly different from the current inventory average. Further, average information is used throughout the timber supply analysis and I see no reason not to accept the “average” as reasonable. I also do not see a need to be concerned with the identified variance around the data that meets current government standards. Within the timber supply analysis, I am provided through sensitivity analyses the implications of variations in specific variables.

Nevertheless, I do have concerns about the application of a single constant inventory increase given that there are observed trends within the inventory. The society presented sensitivity analyses that used adjustments that address this concern. These adjustments included the current standard, the Fraser Protocol, and an alternative regression method. I have discussed previously my thoughts on the need for further insight into why the Fraser Protocol method was not found appropriate. While I would have preferred to see an alternative adjustment in the IFPA composite analysis, the application of a 7% constant across all yield tables appears at a strategic level to be a conservative choice. As such, I am willing to accept the use of this constant upon which to consider an AAC increase.

The OIFS chose to present the benefits of the improved inventory information with a disproportionate increase in the short-term (i.e., about 13% increase in short-term harvest flow versus a 7% yield table increase). To balance this shift from the mid-term, OIFS has identified mid-term harvest flow increases based on improved site productivity information that demonstrate a more robust mid- and long-term timber supply. I consider that this application of the improved site productivity information is appropriate and conservative. However, by having a greater short-term harvest, the opportunity to reduce the potential of a mid-term fall down in timber supply is lost.

The current Mountain pine beetle infestation will prevent us from carrying mature pine stands into the mid-term for harvest. As such, it is unlikely that all of the inventory gains identified from the VRI Phase 2 samples could be captured in the mid-term. Harvesting the stands in the short-term will enable the capturing of identified inventory gains. As such, given the conservative harvest flow for site productivity information gains and the reasonability of having a higher short-term harvest for Mountain pine beetle infestation management, I am willing to accept the risk of the higher short-term harvest flow proposed by OIFS. I do have concerns that the results of the VRI Phase 2 sample are only applicable in the short-term and that reassessment of the adjustment will be necessary.

The proposed AAC increase of 345 000 cubic metres resulting from the VRI phase 2 inventory is based on the identified land base. A number of issues have been identified that result in changes in the land base and thus require adjusting the short-term harvest flow. For the below three factors, which did not have specific sensitivity analyses, I have reasoned that their land base impacts will be proportionate to the short-term harvest flow

increased proposed (i.e., the 13% or 345 000 cubic metre increase) rather than identified inventory increases (i.e., the 7% inventory adjustment)

I consider the following three factors require some accounting. Factors with uncertainty that were discussed previously in my consideration but do not influence the existing AAC are not discussed below.

- (1) *Community Forests*: Community forests are not part of the TSA land base. I will account for the Westbank CFPA by reducing the proposed AAC increase by an amount proportionate to the AAC of the CFPA and the current AAC of 2 655 000 cubic metres. The Westbank CFPA has an AAC of 55 000 cubic metres over a land base of 45 693 ha. Therefore, the estimated contribution of this CFPA AAC to the OIFS requested AAC of 345 000 cubic metres is approximately 7 100 cubic metres.
- (2) *Woodlots*: Woodlots are not considered part of the timber supply area nor fall within the IFPA-holders identified landbase. As such, benefits from innovative forestry practices cannot be realized from woodlots. I will account for the one new woodlot and the top ups that have been or are about to be approved. These changes are estimated to yield an additional 22 016 cubic metres. The estimated contribution of this AAC to the OIFS requested AAC increase of 345 000 cubic metres is approximately 2 900 cubic metres.
- (3) *Sites with First Nations Spiritual Value*: I recognize the interests expressed by First Nations around Kela7scen. As such, I have considered that Kela7scen should not be considered in the modelled timber harvesting land base of the IFPA area. Further, while the forest management considerations of other areas with spiritual values are less known, I am considering for this decision that identified increases in harvest flow that would originate from these areas is not available to IFPA-holders. While this may seem to contradict my guiding principle around policy use, I feel that it is necessary to consider such based on interests expressed by First Nations. If the area is assumed proportionate to the rest of the timber supply area, then the proportionate component of the OIFS requested AAC increase is approximately 2800 cubic metres.

The sum of these adjustments suggest that the base short-term proposed AAC increase should be reduced by about 12 800 cubic metres per year to account for the above three factors. This suggests a short-term AAC increase of 332 200 cubic metres. It is important to note that the AAC increase is the difference between a harvest flow without the innovative forestry practices and a harvest flow with the innovative forestry practices and that all of the above three changes apply to both harvest flows. As such, the harvest level without innovative forestry practices would be lower than the current timber supply area allowable annual cut of 2 655 000 cubic metres. However, it is not my decision to determine the allowable annual cut for the timber supply area but to determine an AAC increase for IFPA-holders that is attributable to the innovative forestry practices.

As discussed above under First Nations considerations, there is the potential for aboriginal rights and title to exist somewhere within the Okanagan TSA. I have discussed

how I have considered some interests and concerns raised within the section titled “First Nations Consideration and Accommodation”. However, if the above identified increase in harvest level is awarded to innovative forestry practices agreement holders, there may be impact on aboriginal interests somewhere within the timber supply area at some unknown level. As such, I believe that it is reasonable that I consider and address, where appropriate accommodation related to aboriginal interests raised during the consultation process that may be affected by my determination.

Specifically, I have rationalized that if I could accommodate aboriginal interests economically in this decision through provision of licensing around timber volume, I would do so at the level of 50% of the 332 200 cubic metres identified.

I am not enabled under Section 59.1 of the *Forest Act* to award volume other than to IFPA-holders, as such I cannot directly accommodate First Nations interests with licences for timber volume. However, I can inform other statutory decision-makers of my rationalization and considerations for accommodation for them to consider within their specific decisions. Licences for timber volume within a TSA may become available through a series of decisions including the chief forester’s Section 8 on AAC determination for the timber supply area, the minister’s Section 10 apportionment of AAC, and disposition of licences identified under Section 12 by the minister, regional manager, district manager, or timber sales manager.

While I cannot award an AAC increase other than to IFPA-holders, I can make a decision not to award volume to IFPA-holders that I believed available and identify to decision makers in other processes, such as the minister’s Section 10 apportionment of AAC, that I had purposely done so. The chief forester has informed me about his Section 8 AAC determination and that he has considered most factors similarly to my decision, including the harvest flow increase resulting from OIFS’s VRI phase 2 inventory. I find it reasonable for this decision that I purposely not award volume to IFPA-holders. As such, I am reducing what I might have awarded to the licences of IFPA-holders by 50% or a total of 166 100 cubic metres. The level of reduction, if applied towards First Nation accommodation, will increase the amount of volume of timber that is available for disposition as an economic benefit to First Nations under Forest and Range Agreements within the Okanagan TSA to a level similar to other TSAs.

In my decision, I have considered information brought forward respecting First Nations’ interests, including information presented to the chief forester during his timber supply review for a Section 8 determination. If, subsequent to my determination, I become aware of information respecting First Nations’ interests that was not available to me at the time of this decision, and indications are that all or part of the allowable annual cut increase was not justified, I may re-visit my determination.

## Determination and conditions

I have reviewed and considered all the factors and the associated uncertainties described in this document. I determine that innovative forestry practices or activities under the Okanagan IFPAs provide a total of 166 100 cubic metres per year from within the IFPA boundaries that can be awarded to the IFPA-holders.

Specifically based on a share agreement provided by the IFPA-holders and clarified in an October 11, 2005 letter, I award the following:

- 59 630 m<sup>3</sup>/yr to Riverside Forest Products Limited – Forest Licence A18667
- 29 400 m<sup>3</sup>/yr to Weyerhaeuser Company Ltd. - Forest Licence A18674
- 25 745 m<sup>3</sup>/yr to Federated Co-operatives Limited – Forest Licence A18670
- 18 105 m<sup>3</sup>/yr to Tolko Industries Ltd. – Forest Licence A18672
- 17 939 m<sup>3</sup>/yr to Gorman Bros. Lumber Ltd. – Forest Licence A18671
- 10 796 m<sup>3</sup>/yr to LP Engineered Wood Products Ltd.- Forest Licence A18669
- 3 488 m<sup>3</sup>/yr to Bell Pole Company – Forest Licence A18666
- 997 m<sup>3</sup>/yr to Selkirk Timber Company – Timber Sales Licence A18632

These increases of the allowable annual cut of the licences are effective January 1, 2006 and will remain in effect until December 31, 2010 at which time I will revisit this decision.

The share agreement of the OIFS of May 28, 2003 suggested that BC Timber Sales, who are a contributing member of OIFS, receive a 15.2% share. BC Timber Sales do not hold an IFPA, as such, I cannot award an AAC increase to them. I have not withheld any potential volume from this decision in consideration of BC Timber Sales but have fully distributed the identified increase among the above IFPA-holders.

The chief forester determines the *annual allowable cut of the Okanagan TSA*. This decision differs from my decision which awards an increase in the *allowable annual cut of the licenses* of the IFPA-holders. The chief forester's decision does not award any volume directly to licences and my current decision does not change the chief forester's determination for the TSA. In his decision, the chief forester has considered technical information similar to the information considered by me in awarding an increase of allowable annual cut to the licenses of IFPA-holders. The chief forester has informed me that his decision will result in an increase in the allowable annual cut greater than the increase awarded to IFPA-holders in this decision. Given the increased TSA allowable annual cut, the minister will be asked to make an apportionment decision. His determination will be informed by knowledge that the chief forester's allowable annual cut determination for the TSA encompasses this Section 59.1 allowable annual cut increase for the licenses of the IFPA-holders.

In making this determination, I recognize that there are uncertainties about certain information and future management. As such, the award is subject to the conditions

below that provide me with information updates and insure management in the direction reflected by this AAC increase decision:

- (1) Submission of an annual report by April 30<sup>th</sup> of each year that summarizes the activities completed by the society in the past year, the expected activities in the upcoming year, management or land base changes to the assumptions of this determination, and how conditions and recommendations of this award have been addressed.
- (2) IFPA-holders are expected to work co-operatively with the Okanagan Shuswap Forest District on addressing forest health issues, in particular for Mountain pine beetle. The harvesting profile of IFPA-holders should reflect forest health needs. The IFPA-holders are to report within the annual report their total harvests associated with beetle damaged and non-beetle damaged stands.
- (3) IFPA-holders will undertake a study to identify the implications of the current Mountain pine beetle infestation in relation to the 7% inventory adjustment based on the VRI phase 2 inventory samples. A summary report is to be submitted by December 1, 2006.
- (4) IFPA-holders shall make themselves aware of and follow any agreement between the Ministry of Forests and Range and First Nations regarding the Kela7scen (Mt. Ida) agreement area and similar agreements that may occur.

The review of information in support of an AAC increase determination provides me with the opportunity to make recommendations on issues and concerns that were identified. These recommendations are intended to reduce uncertainty and risk associated with future determinations and to ensure the intent of the forestry plan is met. Below are specific recommendations that I have identified. Other recommendations are also found throughout the rationale.

- (1) Update the OIFS monitoring plan to incorporate land base monitoring to ensure that static projects such as inventory sampling and site productivity estimates result in expected growth and yield projections.
- (2) Continue to research forest inventory adjustments and the timber supply implications of such adjustments. It is desirable to document in greater detail why the Fraser protocol method was found inappropriate. Future analysis should present government standards for adjustment in addition to other submitted methods.
- (3) Ensure that research conducted by the society, such as with Mountain caribou, is made available and appropriately extended. I expect the OIFS to promptly inform me, if through their research that they become aware of information that would affect this AAC increase determination.

- (4) Collaborate with First Nations to undertake the recommendations identified within the First Nations Considerations and Accommodation section.
- (5) Investigate and where needed refine information and the modelling for factors where uncertainty has been identified including existing roads, trails, and landings, community watersheds, and stand level biodiversity.

The determination is effective January 1, 2006 and will remain in effect, unless otherwise determined, until December 31, 2010 at which time I will revisit the decision.

Yours truly,



T.P. (Phil) Zacharatos, R.P.F.  
Regional Manager  
Southern Interior Forest Region

December 5, 2005

## Appendix 1: Section 59.1 of Forest Act

### Innovative forestry practices 59.1

- 59.1
- (1) For the purpose of improving the productivity of the forestry resource, the minister, at his or her discretion, may enter into an agreement with a person referred to in subsection (2) to allow that person to carry out, subject to subsection (5) and the *Forest and Range Practices Act*, one or more of the innovative forestry practices and other activities that are set out in a regulation made under subsection (4).
  - (2) For the purposes of subsection (1), the minister may enter into an agreement with a person who
    - (a) is the holder of a forest licence or other agreement that is entered into under section 12 and specified in a regulation made under subsection (4) of this section, and
    - (b) presents a written proposal for an agreement to the minister.
  - (3) An agreement under subsection (1)
    - (a) must be for a term not exceeding 15 years, and
    - (b) may include terms and conditions that
      - (i) the minister considers are necessary to effectively carry out the purpose of the agreement and further the social and economic objectives of the government, and
      - (ii) are consistent with this Act and the regulations and the *Forest and Range Practices Act*, and the regulations and standards made under that Act.
  - (4) The Lieutenant Governor in Council may make regulations specifying
    - (a) the innovative forestry practices and other activities that may be the subject of an agreement referred to in subsection (1), and
    - (b) the agreements entered into under section 12, the holders of which may enter into an agreement with the minister under subsection (1) of this section.
  - (5) A person may only carry out an innovative forestry practice or other activity referred to in subsection (1) if the person
    - (a) has prepared and obtained the regional manager's approval of a forestry plan that meets the requirements of subsection (6), and
    - (b) is carrying out the practice or activity in accordance with the plan.
  - (6) A forestry plan
    - (a) must contain a description of the management area where the innovative forestry practices or other activities will be carried out,
    - (b) must specify the particulars of the innovative forestry practices or other activities,
    - (c) must contain a description of how the innovative forestry practices or other activities will be carried out,
    - (d) must contain a schedule of when the innovative forestry practices or other activities will be carried out,
    - (e) must specify how the innovative forestry practices or other activities will contribute to improved productivity of the forestry resource,

- (f) must specify how the innovative forestry practices or other activities will justify an increase in the allowable annual cut of the participant's licence or agreement referred to in subsection (2) (a), and
  - (g) may include other terms and conditions that (i) the regional manager believes are necessary to effectively carry out the agreement referred to in subsection (1), and (ii) are consistent with this Act and the regulations and the *Forest and Range Practices Act*, and the regulations and standards made under that Act.
- (7) After approving a person's forestry plan, the regional manager may increase the allowable annual cut authorized in the person's licence or agreement referred to in subsection (2) (a) by an amount that is justified according to timber supply analysis methodology approved by the chief forester or the chief forester's designate.
- (8) When the regional manager increases an allowable annual cut under subsection (7), the regional manager may limit the increase to a period of time, area of land and type of timber, and may make the increase subject to conditions.
- (9) If an assessment of
- (a) the innovative forestry practices or other activities being carried out under the forestry plan, or
  - (b) information that was not available at the time the regional manager increased the allowable annual cut under subsection (7)
- indicates that all or part of the allowable annual cut increase was not justified, the regional manager may reduce the allowable annual cut of the licence or agreement referred to in subsection (2) (a) by an amount not exceeding the increase granted under subsection (7).
- (10) If, with respect to an innovative forestry practice or other activity, a person is not complying with
- (a) the agreement referred to in subsection (1),
  - (b) the forestry plan approved under subsection (5),
  - (c) any limitation or conditions imposed under subsection (8), or
  - (d) this Act and the regulations made under this Act, or the *Forest and Range Practices Act* and the regulations or standards made under that Act,
- the regional manager may do one or both of the following:
- (e) suspend or cancel the agreement referred to in subsection (1) and sections 76 and 77 apply with respect to that suspension or cancellation;
  - (f) reduce the allowable annual cut of the person's licence or agreement referred to in subsection (2)
    - (a) by an amount the regional manager determines is attributable to the default.
- (11) A reduction under subsection (9) or (10) may be apportioned over a period of up to 5 years.
- (12) If the forest licence, or other agreement referred to in subsection (2) (a), is suspended, the agreement under subsection (1) is suspended.
- (13) If the forest licence, or other agreement referred to in subsection (2) (a), is cancelled or surrendered, the agreement under subsection (1) is cancelled.
- (14) If the agreement referred to in subsection (1) is suspended or cancelled, the forestry plan is suspended or cancelled, as the case may be.

## Appendix 2: Innovative forestry practices regulation

B.C. Reg. 197/97, O.C. 0694/97 - Deposited June 18, 1997  
Consolidated to August 5, 2003

### Definitions

1. In this regulation:

"**Act**" means the *Forest Act*;

"**forestry plan**" means a forestry plan required to be submitted for approval under section 59.1(5) of the Act;

"**forest practice**" has the same meaning as in the *Forest Practices Code of British Columbia Act*;

"**free-growing stand**" has the same meaning as in the *Forest Practices Code of British Columbia Act*;

"**holder**" means a person that presents a written proposal for an agreement under section 59.1(2)(b) of the Act;

"**permanent access structure**" has the same meaning as in the *Forest Practices Code of British Columbia Act*;

"**standard practices**" means the forest practices routinely applied by licensees in the timber supply area when the forestry plan is submitted or at any other time determined by the regional manager;

"**stocking requirements**" has the same meaning as in section 1 (1) of the Operational and Site Planning Regulation, B.C. Reg. 107/98.

### Authorized innovative forestry practices and activities

2. The innovative forestry practices and other activities that may be the subject of an agreement under section 59.1(1) of the Act are the following:

(a) the implementation of harvesting methods or silvicultural systems that may

(i) increase the total amount of timber available to harvest in the timber supply area over the amount available under standard practices, or

(ii) reduce the loss of productivity associated with permanent access structures from the loss of productivity under standard practices for similar terrain and timber types in the timber supply area;

(b) activities that result in the establishment of free-growing stands on

(i) previously unforested areas,

(ii) areas that are below stocking requirements and are not part of the holder's free-growing responsibilities under section 69.1 (3) and 70(3) of the *Forest Practices Code of British Columbia Act*, or

(iii) areas that

(A) have stands of timber with repressed growth or that contain brush or species that are not commercially valuable, and

(B) are not part of the holder's free-growing responsibilities under section 69.1 (3) and 70 (3) of the *Forest Practices Code of British Columbia Act*;

(c) silviculture treatments on free-growing stands;

(d) silviculture treatments on sites that are not free growing in order to produce stands that exceed current growth performance or standards achieved using standard practices for the timber supply area;

(e) the collection and analysis of new data, in accordance with the specifications of the chief forester, to provide a more accurate representation of the forest composition and its expected rate of growth compared to the rate existing when the forest plan is submitted or at any other time determined by the regional manager;

(f) activities that will enhance and protect other resource values, including, but not limited to, water, fisheries, wildlife, biological diversity, soil productivity and stability, forage production, grazing and recreation values.

### **Authorized forms of agreement**

**3.** The holders of the following agreements under section 12 of the Act may enter into an agreement under section 59.1 of the Act:

(a) replaceable forest licences, and

(b) replaceable timber sale licences with an allowable annual cut greater than 10 000 cubic metres.

## Appendix 3: Memorandum from chief forester on timber supply methodology



Ministry of  
Forests

Chief Forester

MEMORANDUM

File: 19500-01/IFPA

April 6, 2001

To: Regional Managers

From: Larry Pedersen  
Chief Forester

Re: **Timber Supply Analysis Methodology Related to Innovative Forest Practices Agreements (IFPAs)**

I am certain you are aware that the *Forest Act*, section 59.1, gives regional managers the responsibility for determining if increases in allowable annual cuts (AACs) for IFPA holders are justified. The *Act* requires regional managers to make their judgements according to a timber supply analysis methodology approved by the Chief Forester or the Chief Forester's designate. Attached to this memorandum is a timber supply analysis methodology to fulfill my responsibility under section 59.1 of the *Act*.

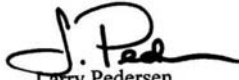


The methodology covers general analytical issues related to information needs, analysis outputs, links between AACs for IFPAs and TSAs, harvest flow, AAC increases, and legislation and policy. The method does not dictate the types of innovative practices that should or may be considered appropriate for approval as part of forestry plans, or for justifying AAC increases. Approval of forestry plans is clearly the regional managers' responsibility under the *Act*. Further, I believe that information and practices must be evaluated on their own merits within specific contexts; hence it would not be reasonable for me to prescribe evaluative criteria.

In the end, regional managers must make their own determinations based on analysis that provides insight on the full range of relevant factors, including the important risks and uncertainties. The analysis methodology is designed to assist in this undertaking.

Timber supply analysis methodology – IFPAs  
Page 2

The methodology should be included as an appendix to the Forestry Plan Outline to ensure the approach is clear to all government staff and external stakeholders. Please contact Chris Fletcher of Timber Supply Branch (250-356-5959, [Chris.Fletcher@gems8.gov.bc.ca](mailto:Chris.Fletcher@gems8.gov.bc.ca)) with comments or concerns.

  
Larry Pedersen  
Chief Forester

Attachment: Timber Supply Analysis Considerations for Innovative Practices Agreements

cc: Gary Townsend, Director, Timber Supply Branch  
Ralph Archibald, Director, Forest Practices Branch  
Henry Benskin, Director, Research Branch  
Dave Gilbert, Director, Resources Inventory Branch  
Dale Draper, Director, Tree Improvement Branch  
Jim Langridge, Director, Resource Tenures and Engineering Branch  
Drew Brazier, Resource Tenures and Engineering Branch

## **Timber Supply Analysis Considerations for Innovative Forest Practices Agreements**

Section 59.1 (7) of the *Forest Act* allows Regional Managers, after approving an IFPA forestry plan, to increase the allowable annual cut of the holder's forest licence by an amount that is justified according to a timber supply analysis method approved by the chief forester or the chief forester's designate. The following discussion outlines the timber supply analysis method and allowable annual cut decision principles used by the chief forester.

The focus is on components and principles of timber supply analysis that are crucial in gaining an understanding of factors that determine timber supply in an area. Because of the complexities involved in determining harvest levels, it is not possible to develop precise procedures or simple calculations for timber supply analysis. The process can be guided by general principles—which are outlined below—however, the detailed aspects must be developed using case specific professional judgement. In this light, the following ideas are provided as guidance, not as firm procedural requirements that must be followed in all cases. While the general ideas apply in almost all cases, each case must be viewed as unique: some cases may require additional analysis to that outlined, while others may be assessed satisfactorily with less detail than suggested here.

If a timber supply analysis incorporates the types of information noted below, and facilitates evaluation of the considerations discussed, it will have followed a timber supply analysis method supported by the chief forester.

The chief forester's task under the *Forest Act* is to provide an analysis method, not to evaluate, or provide a method for evaluating information quality. Hence, the discussion here does not address information quality, rather it focuses on an analytical method. Nevertheless, the results of any analysis depend heavily on the quality of the information used in the analysis; that is, information about the forest land base, growth and yield, and management objectives. Evaluation of information quality must be done on a case-specific basis, which Regional Managers, in their evaluation of IFPA analyses, are best positioned to do.

**Analysis should consist of clear descriptions of issues, information sources, assumptions, and any relevant data manipulations or adjustments related to the following three categories:**

### **Land base:**

- A tabular description of the categories of land and forest that are excluded from the timber harvesting land base, and the area excluded in each category. Such tabular descriptions are included in all timber supply analysis reports published for TSAs as part of the Timber Supply Review.
- A detailed description of the criteria employed in deriving the area included in the above table. This description should follow a format similar to the Information Package for Tree Farm Licence analyses.
- A description of the composition of the timber harvesting land base and the total

forested land base in terms of species, site quality, stand age, and any other features relevant in the area.

**Growth and yield:**

- A description of the models and methods used in generating timber yield tables for existing and regenerated stands.
- The yield tables used for each species and site quality group and silvicultural regime.
- Detailed descriptions of methods and concepts underlying site productivity estimates and yield tables that reflect any planned innovative management.
- Notice of acceptance by appropriate BC Ministry of Forests staff of site productivity or yield estimates or adjustments corresponding to both baseline and innovative practices, and of any sampling or study methods related to deriving the estimates.
- MoF, Regional Growth and Yield Foresters will coordinate the growth and yield review process.

**Management objectives:**

- A description of the various management objectives that apply to the area and the methods used to represent actions used to achieve the objectives (e.g., silvicultural regimes, utilization levels, seral forest cover requirements, extended “rotations,” alternative harvesting systems). The description should specify the component of the land base to which the objective applies; for example, timber harvesting land base, or Crown forested area. The template for Information Packages for Tree Farm Licence analyses provides a framework for organizing relevant information.

Analysis is facilitated if communication between relevant ministry staff and the agreement holders regarding land base, growth and yield, and management inputs occurs as early as possible in the analysis process.

**Other considerations include:**

Model review and benchmarking. There are no specific requirements or limitations on which analysis models may be used. However, interpretation of results and confidence that timber supply effects can be attributed to innovative practices rather than model differences requires a detailed understanding of assumptions made in the model about relevant processes and features. The best method of gaining this understanding is to benchmark the model with FSSIM, or other models used and understood by Timber Supply Branch staff. This is not to imply that FSSIM is a better model, or produces more accurate results than other models. It is simply the case that Ministry of Forests staff understands how FSSIM works, and can therefore use it as a basis for understanding how other models work. If the model to be used has not been reviewed and benchmarked by Ministry of Forests staff, the agreement holder should develop a review process in cooperation with Timber Supply Branch or a regional timber supply analyst. If the model being benchmarked produces different results from FSSIM (or other models used and understood by Timber Supply Branch staff), the agreement holder or its representative should be responsible for explaining the differences in detail in a technical document.

Even with a benchmarked model, the potential to increase harvest levels should be evaluated using the same model for both current and innovative practices. For example, a timber supply forecast corresponding to an innovative management regime and generated with a model other than FSSIM should not be compared directly to a forecast derived using FSSIM and the current management regime. Using results generated with the same model will help ensure any timber supply increase is based on management not model differences.

Results and reporting. The analysis report and related appendices should include sufficient output information to allow understanding of the main factors determining timber supply, and if applicable, reasons behind timber supply changes due to proposed innovative practices. Management, land base and growth and yield assumptions are to be documented in an Information Package. The timber supply analysis should demonstrate how these assumptions affect timber supply. The outputs should allow for examination of all relevant forest management objectives; for example, areas in seral stages by landscape unit, or area achieving visually effective green-up in visual management zones. Outputs related to timber inventory levels, areas and average volumes harvested, average age of harvested stands, and age class distributions over time all assist in understanding timber supply dynamics and evaluating the feasibility and realism of analysis results.

Sensitivity analysis. The analysis report must include results of sensitivity analyses that examine a reasonable range of uncertainty around management, land base and growth and yield assumptions and proposed innovative practices. The implications of changes in available funding to undertake planned innovative practice may be an important consideration for sensitivity analysis.

Operational feasibility. The analysis should examine any issues that may affect the operational feasibility of harvesting at the levels indicated. The most common issue involves the ability to locate harvest opportunities spatially.

Interactions between IFPA area and the TSA. IFPA timber supply analysis should demonstrate that any harvest level increases related to IFPAs will not disadvantage timber supply at the TSA level, or timber supply available to other operators in the TSA. An IFPA area may not be representative of the forest and management conditions for the TSA, and hence analysis results for the IFPA area should not be extrapolated and assumed to apply to the whole TSA.

Administration of IFPAs is the purview of the Regional Manager, and it is the Regional Manager's prerogative to require or request any analysis that s/he believes will assist in clarifying matters regarding IFPA AACs. It may be appropriate to investigate, using timber supply analysis, the advantages and disadvantages of different approaches to administering timber supply in the IFPA in the context of the TSA. For example, benefits may be gained by administering timber supply flexibly at the TSA level (e.g., allowing for harvesting of an IFPA increase from throughout the TSA not only the IFPA area) rather than combining timber supplies that have been assessed separately for spatial sub-units of the TSA. Ultimately, the Regional Manager will decide on the administrative approach, and the analysis must be consistent with that approach.

The intent here is to highlight that analysis must show that timber supply benefits for IFPAs will not come at the cost of supply at the TSA level or other operators in the area.

Harvest flow. Timber supply forecasts employing assumptions/estimates of both current and proposed innovative practices must follow reasonable flow patterns over time. In general, a reasonable flow pattern provides for a controlled and gradual transition from short-term to medium- and long-term harvests, and avoids large and abrupt disruptions in supply. Considerations include: rate of harvest level decline if any is necessary; the degree to which mid-term timber supply may appropriately drop below the long-term sustainable harvest level; and the timing of increase to the long-term sustainable timber supply if it is higher than mid-term levels.

A difference between mid-term and long-term levels may be justified because mid-term supply depends more on the existing stock of timber and the timing of availability of regenerated stands, while long-term timber supply is based on timber growth which is affected by site productivity and forest management practices. Maintaining mid-term levels above or equal to the long-term level could in some circumstances delay the achievement of, or lead to failure to achieve the maximum long-term level, or cause timber supply disruptions, because of limited supply of existing timber. Likewise, a decline in timber supply from a higher short-term supply to a lower mid-term may be appropriate if it can be shown that the associated harvests do not jeopardize or cause disruptions in long-term productivity.

The analysis should include different harvest flows that examine each of these considerations. A "base case" harvest flow for current practices must be chosen from the range of possibilities. The choice should be explained. In most cases this explanation can be brief, and consist primarily of reference to alternative harvest flow patterns. The IFPA base case harvest flow should reflect that used in the Timber Supply Review base case, if relevant. This will ensure that any change in short-term timber supply is due to changes in management, not harvest flow.

The analysis report should describe the criteria used to determine:

- the long-term harvest level and growing stock (criteria for sustainability);
- the harvest flow (e.g., maintain current harvest level for as long as possible, maximize volume harvested over a specified time frame, control the rate of decline);
- the minimum harvest level allowed in the medium term.

Allowable cut increases. Harvest forecasts for many management units in B.C. show declining timber supply over a period of decades. The general approach in cases of declining timber supply is that short-term allowable cuts are not usually increased unless there is a sound demonstrated forest management reason. This approach ensures that allowable cuts are not increased in the short term only to force reductions in the near future. There may be sound forest management reasons, such as existence of high risk of loss of stands to fire, insects or disease due to current or developing stand attributes (e.g., age or diameter distribution favourable to beetle attack, etc.).

An AAC increase in the short term should not decrease future timber supply below the levels forecast without the increase, unless there is a documented and compelling reason to do so.

The general approach described above for TSA and TFL AAC determinations with respect to potential increases leads to some issues for IFPAs. One of the explicit aims of the IFPA initiative is to allow AAC increases for IFPA-holders. However, one stipulation of an increase is that other license holders will not be negatively affected by any AAC increases for the IFPA. In this context, important considerations in designing and interpreting an IFPA timber supply analysis would include:

- what are the forest management reasons that justify an AAC increase?
- what effects would an increase have on future timber supply?
- would a boost in AAC increase the sensitivity of future timber supply to uncertainties?
- if the forecast is for a temporary short-term increase (that is, timber supply is forecast to decline from the higher level) what actions will be taken to mitigate or avoid future socio-economic impacts? In other words: in the absence of a forest management objective for increasing the AAC, how will a temporary increase assist in strengthening the long-term role of timber harvesting and processing in the social and economic fabric of the area (capacity-building, diversification, etc.)?

Consistency with legislation and policy. The land base, growth and yield and management regime modeled in the analysis should be consistent with current legislation and policy. While the need for consistency with laws and policy is perhaps self-evident, it must be acknowledged that one of the goals of IFPAs is to move management in new directions. Therefore, it is imperative that modeling of proposed innovative management does not imply conflicts with legislation and policy. This analytical consideration differs from the approval of innovative management that is the Regional Manager's responsibility as part of forestry plan approval. The intent here is to highlight the need to evaluate analysis inputs and results to ensure that they do not create or imply conflicts. If a timber supply forecast is based on conflicts with designations or objectives that are the responsibility of other statutory decision makers under existing laws or policies, that forecast cannot reasonably be accepted as a basis for harvest level determination.

Relationship between chief forester (TSA) and Regional Manager (IFPA) determinations.

The concern has been raised that AAC determinations for TSAs under Section 8 of the *Forest Act* may conflict in some way with AAC determinations for IFPAs. Communication between the chief forester and Regional Manager will be necessary to avoid discrepancies or conflicts regarding AAC determinations. It is not possible to generalize about the relationship between TSA AAC determinations and related to IFPAs given the diversity of timber supply conditions across the province.

A guiding principle for TSA and TFL AACs is that the determination should reflect current or reasonably foreseeable practices. Use of the preceding method and considerations should ensure that practices approved under IFPAs will constitute current or reasonably foreseeable management, and will be considered as such in TSA AAC determinations.

Documentation of decisions. Documentation of reasons for decision is useful to ensure the basis for the decision is clear and understandable. Further, both the Regional Manager and the chief forester have AAC determination responsibilities under the *Forest Act*. Reasonably detailed decision documentation, referring to the technical considerations discussed in this methods document, would help ensure consistency between Regional Manager and chief forester determinations, particularly when the time period between the decisions is long.

## **Appendix 4: Information Sources**

### **Okanagan IFPA**

- Okanagan Innovative Forestry Society. 2003. Application for an Allowable Annual Cut Increase for the Okanagan IFPAs: Forestry Plan Amendment. With technical support from J.S. Thrower and Associates Ltd., and Timberline Forest Inventory Consultants Ltd. Final Report. January 31, 2003.
- Timberline Forest Inventory Consultants Ltd. 2002. Information Package – Okanagan Innovative Forestry Practices Agreement Allowable Annual Cut Uplift Analysis. Prepared for the Okanagan Innovative Forestry Society. Final Report.
- Timberline Forest Inventory Consultants Ltd. 2002. Analysis Report – Okanagan Innovative Forestry Practices Agreement Allowable Annual Cut Uplift Analysis. Prepared for the Okanagan Innovative Forestry Society. Final Report.
- OIFS IFPA Forestry Plan Amendment cover letter requesting an AAC increase, dated May 22, 2003, which includes a summary of the socio-economic, First Nations, and public review issues.
- Southern Interior Forest Region. 2004. Technical summary of Okanagan IFPAs AAC Increase Application. Draft presented at meeting held November 4, 2004 at University College of the Cariboo, Kamloops, BC.

### **Okanagan TSA, Region, and District**

- Ministry of Forests. 2000. Okanagan TSA timber supply analysis, July 2000.
- Ministry of Forests. 2001. Okanagan. Timber Supply Area Summary of public input on data package and TSA analysis report, July 2001.
- Ministry of Forests. 2001. Okanagan TSA Rationale for AAC determination, July 2001.
- Okanagan Shuswap Forest District. 2005. Urgent Timber Supply Review for the Okanagan Timber Supply Area: Technical summary for the allowable annual cut determination meeting held September 21-22, 2005 at Okanagan Shuswap Forest District Office, Vernon BC. Draft document.

### **Provincial**

- Chief Forester. 2001. Memo dated April 6, 2001 to Regional Managers [re: stating timber supply analysis methodology related to Innovative Forest Practice Agreements (IFPAs)].
- Deputy Ministers of Forests and Environment, Lands, and Parks. 1997. Letter dated August 25, 1997 [re: conveying government's objectives for achieving acceptable impacts on timber supply from biodiversity management].
- Forest and Range Practices Act, 2002 and amendments;

- Forest and Range Practices Regulations, 2004 and amendments;
- Forest Practices Code of British Columbia Guidebooks, BCFS and MELP.
- Forest Practices Code Timber Supply Analysis, BCFS and MELP, February 1996.
- Forest Practices Code of British Columbia Act, July 1995.
- Forest Practices Code of British Columbia Act Regulations and Amendments, April 1995.
- Minister of Forests. 1994. Letter dated July 28, 1994 to chief forester [re: stating the Crown's economic and social objectives for the province].
- Minister of Forests. 1996. Memo dated February 26, 1996 to chief forester [re: stating the Crown's economic and social objectives for the province regarding visual resources].
- Ministry of Forests. 1999. Policy 15.1 – Aboriginal Rights and Title. Effective date June 3, 1999. Updated May 14, 2003.
- Ministry of Forests. 2000. Innovative Forestry Practices Agreements: Handbook.

### **General**

- Technical information provided through correspondence and communication among staff from the Ministry of Forests, Ministry of Sustainable Resource Management, and Ministry of Water, Land, and Air Protection, especially during a technical meeting held November 4, 2004 at the University College of the Cariboo, Kamloops, BC. Note changes in government structure place the staff involved in the Ministry of Forests and Range, the Ministry of Environment, and the Ministry of Agriculture and Lands
- Detailed reference lists are found within the technical summaries--Southern Interior Forest Region (2004) and Okanagan Shuswap Forest District (2005).