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To Forest Licensees

Over the last two years, I have provided relief to some licensees from the hauling/milling restrictions imposed through cutting permits/TLS's based on requests and mitigative measures outlined by each licensee. My letter providing relief outlined the risks associated with the transportation and mill storage of beetle infested timber and also provided mitigative measures which were expected to be undertaken by each licensee as conditions of that relief.

As some licensees within Lakes District are aware, Ray Schultz (Beetle Management Co-ordinator) recently provided district managers with an information package that included risk assessments and a compendium of mitigative factors. I have reviewed that information, and have decided to modify the decision-making framework currently being used to evaluate licensee proposals to haul and mill beetle infested wood during periods of peak beetle flights. The modification is intended to better enable participating licensees to maximize the efficacy of their cut for the removal of bark beetle brood throughout the year.



I have separated this guidance into the two aspects for consideration: hauling, and milling.

Hauling

In the past, district staff has monitored the flight of the beetle throughout the summer to determine the start and end of the peak flights. This information, in turn, allowed the district manager the flexibility to apply the "monitored temperature" approach for transportation of infested timber during the relevant peak periods only rather than the entire higher-risk season (July 1 to September 15).

I will modify the requirements for hauling beetle infested timber due to consideration of the following:

The spruce beetle populations have declined over the past year throughout the north and that includes Lakes TSA. The numbers have reduced by approximately 30% (from an estimated 700,000 m3 to 500,000 m3) and current projections are that the spruce beetle will continue to decline further this year. Additionally, the spruce beetle peak flight typically extends from early June to mid-July, and hauling is infrequent during this time.

The southern portion of the Lakes TSA is predominantly in an epidemic situation with respect to its mountain pine beetle population. District staff have estimated that the mountain pine beetle flight from 2000 infested approximately 4.4 million m3 of timber and last year's flight (2001) yielded an estimate of between 12 and 15 million m3 of infested timber. Infestation pockets of timber due to spread from the south reached as far north as Uncha and Binta Lakes. In light of the past winter's mild conditions, projections are that the infestation will continue to build at similar rates to the previous years and the infestation "line" may very well cross Francois Lake.

- Although there is some risk during the haul of beetle infested timber, the incidence of significant spillover into susceptible timber has been relatively imperceptible. Additionally, the small-scale salvage programs currently active within the TSA have proven quite aggressive and successful in dealing with small infestations. This would assist considerably in reducing spread due to spillover. Mitigative measures undertaken during the haul will also serve to reduce the risk of spread.

And so, I hereby provide the direction to licensees that no restrictions will be imposed when hauling infested timber through Lakes TSA. Licensees hauling infested timber should, however, consider the following mitigative factors in their hauling practises:

- 1 If beetle infested wood is hauled during the beetle flight, transportation operators are instructed to ensure un-interrupted transportation from the block to the mill-site or storage area.
2. If an interruption occurs, due to a vehicle breakdown or for any other reason, the mill owner is notified and plans are in place to assess the extent of possible beetle escapement. Treatment plans are formulated to address the additional risk associated with the incident.

The direction outlined above applies to Lakes Forest District only. If transportation of infested timber extends outside of the TSA, licensees need to consult with the respective district managers of that Forest District.

Milling

The following guidance is extended to all licensees with wood processing facilities including major licensees and Small Business Category 2 registrants.

As in previous years, licensees will continue to be responsible for applying methods that mitigate as much as possible the impact of beetle emergence from beetle infested timber that is stored within their millsite. In providing licensees with as much flexibility as possible, I would ask that each licensee intending to mill infested timber during beetle flight periods prepare a "Bark Beetle Mill Strategy" (the Strategy) for the mill-site storage of priority beetle wood during periods of peak beetle flights. This strategy should address all sites where infested wood is intended to be stored, whether in the field or at a mill-yard. Exceptions could include storage sites located within category "C" (Salvage/Limited Action) Emergency Management Units (E.M.U.) or

within areas where no host tree species exist. It is not required that the strategy be submitted for approval. However, in the spirit of co-operation, I ask that, upon request, you communicate with my staff the following specific data:

- Current infested mill-site inventory at break-up,
- Projected processing of infested wood for "hot-milling" from June 15 to September 15, (Note:: hot-milling describes a period where attempts are made to prevent or restrict beetles from leaving the infested logs), and,
- Projected daily milling capacity for infested wood.

It is my expectation that the following results would be reflected in "the Strategy". The strategy would address:

- milling activities conducted during peak beetle flights to result in minimal incremental impact to Parks, Private Properties and Woodlot Licenses.
- the storage of infested inventory at the millsite and the processing of all infested wood, regardless of source or origin.
- consideration for management of new bark beetle infestations within 3 kilometres of your mill site or areas where infested wood will be stored during peak beetle flights.
- hauling and milling activities must be complementary to, and reflective of, the treatment targets associated with designated E.M.U.'s within which the activities are planned. E.g. Aggressive EMU target of 80 to 100% and Sanitation E.M.U. target of 50 to 80%.

Please note that the guidance outlined in this letter applies only to the Lakes Forest District and Licensees must consult with other districts within which hauling or milling activities will be conducted.

Recognizing the differing circumstances confronting each licensee and to better enable these challenges to be effectively managed, I have attached, for your consideration, the following guidance for reducing the risk of hauling and milling beetle infested wood during beetle flight periods.

Appendix 1 - "Guideline for Licensees Contemplating Hauling and Milling Beetle Infested Wood during Flight Periods within the Emergency Bark Beetle Management Area".

Appendix 3 - Mitigative Factors.

The guidance provided is not intended to be definitive and should not be interpreted as the only options to be considered. It is intended to provide licensees with a menu of "guidances" to consider when developing a mill strategy. Although primarily formulated with a focus upon the management of Mountain Pine Beetle, the package can, with professional application, be modified for use with other bark beetle species. At a later date, we propose to amalgamate the three appendices into a single concise, consolidated document. However, recognizing the need to have a framework in place for this summer, I feel it is necessary to provide this package in its present form.

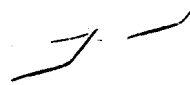
I would also expect that any informational communication with First Nations, other Agencies or the Public with respect to the "Bark Beetle Mill Strategy" would be administered through the licensee.

I trust the above modified decision-making framework will be both administratively functional and operationally effective and will support our collective bark beetle management efforts within the Lakes Forest District. If you have any questions or concerns regarding this matter, please contact me at 692-2200.

Yours truly,



Mark Vieweg
A/District Manager
Lakes Forest District



APPENDIX #1

Guideline for Licensees Contemplating Hauling and Milling Beetle-Infested Wood during Flight Periods within the Emergency Bark Beetle Management Area

Haul&MillRisk02.doc

revised February 26, 2002

I. Background

The success of sanitation harvesting is contingent upon expeditious extraction, transportation and processing of beetle-infested logs before beetles can emerge in the forest, escape from loads in transit, or fly from mill yards. This 3-step process is only as effective as its weakest component. If substantial beetles escape from logs during their transportation or, especially, mill yard storage, the objective of expeditious sanitation harvesting has been largely wasted. This is particularly important in “suppression” and “maintain low” beetle management units. This provides guidance for licensees contemplating hauling and milling of beetle-infested wood during the beetle flight.

Under endemic or early outbreak conditions, hauling restrictions will normally be in effect in Districts for a 12 week period, commencing June 15th and ending September 15th of each year. Such restrictions may not be necessary or practical under outbreak conditions for a variety of reasons and this document provides guidance for increasing flexibility in hauling and storage of infested trees under certain criteria. This flexibility starts with the licensee monitoring the beetle flight period using relatively simple methodology (Attach.1) in order to further reduce the “no haul window” to an approximate 6 week period. This restricted period can be further reduced to approximately 3 weeks if the procedures for a “**monitored temperature approach**” are followed (Attach. 2).

Plans to haul and mill infested wood during the traditional “no haul” window should be formulated at least 8 weeks prior to the proposed hauling or by March 15. If hauling and milling activities are to be conducted in more than one district, proponent licensees need to liaise with adjacent Districts. Plans should consider, as a minimum, the information outlined in Attach. 3. Particular attention should be paid to providing accurate and complete information to facilitate a risk assessment. Although plans do not have to be submitted to District Managers for approval, licensees may be asked for the plan at a later date.

II. Assessing and Managing Risk

The potential benefits from hauling and milling beetle-infested wood during the flight must clearly outweigh the likelihood and magnitude of beetles escaping around temporary storage areas, in transit, or especially around mills. The assessment of risk should consider an analysis of the environmental, economic and social risk of this activity. Where the risk is high, serious consideration should be given to not hauling and milling through the normal “no haul” window.

Potential Benefits:

The licensee should document the reasons for and benefits of hauling and milling during the flight. The likelihood and magnitude of these benefits should be clearly explained.

Reasons/benefits could include:

- a) a newly detected infestation in a previously uninfested area can not be hauled and processed before the flight period starts. This area must have a high potential for spread wherein baiting would not sufficiently contain emerging beetles;
- b) there has been an extended spring break-up and the licensee needs wood in the mill to keep it operating;
- c) hauling and milling during the flight leads to a net benefit in beetle management. The strategy could increase the capacity of licensees to utilize more beetle infested wood by harvesting in the season best suited for the site. Therefore, a better balance in harvesting infested summer and winter blocks is possible resulting in a net gain in beetle management;
- d) the winter harvest capacity for an area with infested wood is insufficient and infested trees would otherwise need to be baited and left in the woods. This assumes that all other options to bring additional harvest capacity into the area have been explored; and
- e) the risk of beetle escapes during transport has been minimized because the wood has been “watered” and/or a high percentage of the brood is dead.

Potential Risks:

The likelihood and magnitude of risks should be considered for:

- a) economic impacts on the licensee or community, e.g., increased operating costs, increased deterioration of log and lumber quality through delays in manufacturing if the plan is not implemented;
- b) any operational barriers, e.g., a mill unable to process wood greater than a certain diameter that may impede the success of the project;
- c) community concerns regarding past milling practices during significant infestations;
- d) any past beetle escapes along haul routes or around mill-yards. The potential spread of beetles in these areas should be heeded with consideration of the current attack status and forest susceptibility of these areas;

- e) areas of high beetle susceptibility in sensitive land ownership categories (e.g., private land, parks, first nations reserves, etc. .) should be identified and considered and
- f) how infested wood being hauled out of the district will be handled.

Assessment of Risk

A sample risk analysis is provided in Table 1. Licensees can find more information on risk management in: *"Risk Management and the principles in statutory decision making - handbook, October, 1998"* (Compliance and Enforcement Branch).

Table 1. Sample Assessment of Risks of Hauling & Milling During Beetle Flight

Risks	Likelihood of Event	Magnitude of Consequences	Total Risks
Potential spread along: - haul route - mill yard or temporary storage area	Low Moderate	High Moderate	Moderate Moderate
Community Concerns: - problems with historic milling practices - affect of proposal on private land - loss of public trust	High Moderate Low	Low Moderate Low	Moderate Moderate Low
Licensee Concerns: - reduced revenue	Low	Low	Low

The above risks should be compared to the potential benefits of implementing the proposal:

- reduced licensee costs through increased access to summer wood;

reduced beetle spread through improved sorting infested wood; and
- improved licensee contingency plans to assess the risk around mill yards.

In this case study a plan to haul and mill infested wood during the flight could be made under certain conditions in order to reduce the potential moderate risks while realizing the positive benefits.

III. Contingencies and methods that could be included in a licensee's plan to haul and mill infested wood during the beetle flight.

None of these terms preclude a licensee from moving operations into uninfested or non-host stands during the beetle flight to ensure sufficient uninfested inventories in the log yard for uninterrupted milling operations.

- Infested logs can be marked and sorted prior to loading as at least one major licensee has done in the past. Beetle-infested loads can be hauled to the mill without avoidable delays and processed expeditiously.
- No infested wood should be delivered to a mill when rapid processing cannot occur, e.g. excessive infested inventory may remain unprocessed because of a holiday.

Harvesting, hauling and milling staff should be trained and delegated with the responsibility for ensuring the success of the plan. Clear instructions should be provided to all relevant personnel regarding the strategy.

- Scaling of infested wood should be managed in order to avoid unnecessary milling delays.

A contingency plan should be developed as part of the risk assessment strategy to detect and treat spillover attacks within 3 km of mill yards (see Appendix 2) and within 400 m (or other reasonable distance) of transportation corridors.

- If the monitored temperature approach is used, then licensees should monitor the temperature at the mill site and operations must be made consistent with those described in Table 2 (i.e., if a weather forecast is used to initiate the "monitored temperature approach" then weather stations near the mill can be used to shut down hauling if the thresholds in Table 2 are exceeded.)
- The licensee should track the processing times for infested timber, record the strategy's successes, failures and recommend solutions.

Attachment 1 - Methodology for Monitoring the Mountain Pine Beetle Flight

The methods listed here should be used to monitor the mountain pine beetle (MPB) flight in order to determine when the period of greatest beetle flight will occur. This period is considered to begin one week after the main flight starts until two weeks after the peak of the main flight (see point 5 below). The companion monitoring system mentioned in point 6 below is important to help distinguish the main beetle flight from the scattered emergence of a limited number of last year's parent adults which can survive and emerge in May or June.

The method described below includes the use of MPB-infested trees for flight monitoring. The use of Lindgren funnel traps **is not suitable** for the purposes of monitoring the MPB flight, as these baited devices do not trap sufficient beetles for the trends in beetle flight to be established.

- 1) Select 3 lodgepole pine (PI) trees that contain active MPB brood from a successful attack the previous year in your operating area. For licensees that have large operating areas, monitor as close to the harvesting area as possible. Selected trees should be representative of the typical beetle attack from the previous year in the area. More than one clump of 3 trees may be necessary for larger infestations or for infestations influenced by varying elevations, aspects, or proximity to waterbodies.
- 2) Place two MPB tree baits on unattacked PI near the above attacked trees in order to attract the escaping beetles. All attacked trees should be harvested or treated after the monitoring period.
- 3) Use white latex to paint a 0.5 m² area of bark on the trees selected in 1) at 1.3 to 2.3 m in height.
- 4) Start examining the painted surface on June 1st and when exit holes are noticed, cross them off with a red permanent marker pen to avoid recounting the holes again. The hauling or storage of infested wood should be controlled one week after the first beetle exit hole is observed.
- 5) Continue to graph the beetle exit holes twice per week. The restrictions on hauling and milling of infested wood can stop two weeks after the main beetle flight has peaked providing that trap catches at this time are less than 10% of the peak levels. The premise here is that any late emerging beetles at this point would be **largely** unsuccessful in initiating mass-attacks and producing successful broods.
- 6) A companion monitoring system can be used on nearby trees that were attacked the previous year to give additional confidence in the above numbers. Phloem samples should be taken on PI to assess brood development on both the south and north sides of trees. The total number of larvae, pupae and new adults should be recorded and compared twice per week to help

assess flight commencement and cessation. A substantial increase in the percentage of newly developing adults should trigger the ban on hauling and milling of infested wood.

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Attachment 2

A monitored temperature approach to increasing flexibility to haul and mill MPB-infested wood.

Determining the period of high beetle flight (described in Attach. 1) will normally reduce the usual 12 week “no-haul/milling” window to a 6 week period. This period can be further reduced to approximately 3 weeks if hauling and milling is regulated using the “**monitored temperature approach**” as per Table 2. This approach is based on the knowledge that temperatures can be accurately predicted up to 48 hours in advance by qualified weather technicians, and that MPB have a flight threshold of 18°C.

If the temperature is predicted to be less than 18°C on a particular day, then hauling and milling of MPB-infested wood can occur unimpeded through that day. If the temperature is predicted to range from 18° - 25° C, then hauling and milling should only occur between 2300 and 0800 hours, and no infested wood should be stored after this period. If the temperature is predicted to exceed 25° C, then no hauling or milling of infested wood should occur on that day because 18° C can be exceeded during the night. It is important that if actual temperatures exceed predictions, particularly in the mill yard, then operations should be aligned with the actions outlined in Table 2. If the proponent uses the monitored temperature approach then he/she must monitor the temperature at the mill yard.

Table 2. Temperature restrictions for hauling & storage MPB-infested wood

Daily maximum predicted temperature	Action
< 18° C	Store & Mill All Day
18° – 25° C	Hauling and Milling only between 2300 - 0800 hrs.
25° C +*	No hauling or milling

The above approach will reduce the risk of MPB escapes in a more satisfactory manner than past practices of limiting hauling and storage to only certain times of the day (e.g., prior to noon).

The above temperature data may be obtained from the following sources:

- 1-900-565-2255 for the *Environmental Canada* line to talk to a weather technician. There is a charge for the service; and *weatheroffice.com* on the internet.

Attachment 3

A proposed method for licensees to monitor and track infested wood throughout the flight period.

Licensees should track the following information:

- 1 A list of the volumes by cutting permit and forest licence that will be hauled and milled during the flight.
2. Document the reasons/benefits that may be derived (see Section II). Remember that the benefit(s) should clearly outweigh the risks.
3. Address the following factors and consider how they will be managed during the period:

- On-block sorting and harvest management of infested wood;

Forest susceptibility and attack status along the haul routes and mill yard;

Private or First Nations reserves near these areas;

Pre-existing inventories of infested wood in the mill yard and how the actions in 1) will affect this wood;

Costs to the licensee of the traditional no-haul/storage/milling restrictions;

- Scaling of infested wood, and
- Any other relevant factors that may affect the decision

Describe how the above or any other factors combine to increase the risk for future MPB spread.

4. Clearly describe the detection and treatment measures that your company will implement within 400 m of the haul route and/or around the mill yard.
5. Outline operational procedures and constraints that you will adopt to guide hauling and milling activities to minimize the risk throughout the flight period. Specify the methodology for monitoring the flight and explain whether or not the “monitored temperature approach” will be adopted.

APPENDIX 3

MITIGATIVE FACTORS

To reduce the risk and liability of hauling to and milling of beetle infested wood at a processing plant during the beetle flight, the Licensee may choose any of the following contingencies or combination of contingencies depending on the level of risk associated with the mill-site or storage area.

HAULING

If beetle infested wood is hauled during the beetle flight, transportation operators are instructed to ensure un-interrupted transportation from the block to the mill-site or storage area.

2. If an interruption occurs, due to a vehicle breakdown or for any other reason, the mill owner is notified and plans are in place to assess the extent of possible beetle escapement. Treatment plans are formulated to address the additional risk associated with the incident.
- 3 If beetle infested wood is transported outside the Forest District boundary, the Forest Districts enroute to, and the receiving Forest District, must be consulted prior to commencement of transport to ensure related concerns are addressed.

MILLING

4. During winter operations, beetle infested wood is sorted out. Non-infested volumes are decked for transport during the beetle flight, **and/or**
- 5 Infested wood is not stored in the mill-yard (except for watered wood) during the beetle flight, **and/or**
6. All decked beetle infested wood at storage sites is processed prior to the beetle flight unless mitigative strategies are employed, **and/or**
7. Priority milling is placed on inventories and summer cut-blocks which are identified as having the highest levels of beetle attack. This should result in inventories of lesser level attacked wood remaining during the beetle flight, **and/or**
8. Infested wood is hauled and milled in accordance with the "Monitored Temperature Approach" as described in the "Guideline for Licensees Contemplating Hauling and Milling Beetle-Infested Wood During Flight Periods within the Emergency Bark Beetle Management Area", **and/or**
9. Summer beetle attacked volume is aggressively hot milled, **and/or**

- 10 During peak bark beetle flight periods, non-infested and/or non-host species is transported and milled, **and/or**
11. "Watered Wood" is transported and milled during beetle flight. It is accepted that a high percentage of brood die when submerged in the water for a period of time. Studies should be undertaken to determine the optimum storage time for effective brood mortality, **and/or**
12. Sprinkling of water on mill-yard decks is conducted prior to and during the beetle flight to cool the beetle infested decks sufficiently to prevent the flight of the beetles. Studies should be undertaken to determine the effectiveness of this practice. Excessive sprinkling of most mill yards may not be practical for un-paved mill yards, **and/or**
13. The temperature of log inventories is reduced by packing decks with snow during winter operations. This may be an effective way to retard brood development. As well, placement of infested inventories at the bottom of non-infested decks could alter the beetle brood's normal development cycle, **and/or**
14. Meetings are convened with adjacent stakeholders to convey the risk and probable consequences of beetle escapement, **and/or**
15. A plan is developed, as part of the risk assessment strategy, to detect and treat spill-over attacks within 3 km. of each mill-yard or storage area.

The Decision-maker will consider the varying levels of risk associated with each mill site or storage area. Use of a combination of Mitigative Factors should address the risk levels described below. The following are **examples of options** for each general level of risk.

High Risk : The mill site or storage area is within a Suppression B.M.U. that has adjacent high stand susceptibility and/or other values which may be at risk. Currently, little beetle activity exists within 10 km. of the mill site or storage area. Considerable private lands or parks exist within 10 km. of the sites. Aggressive direct attack tactics may be jeopardized should additional beetles be introduced to this area.

Mitigative Factors Recommended: 1/2/3/4/5/6/7/8/9/10/11/12/13/14/15

Moderate Risk : The mill site or storage area is within a Maintain Low or Holding B.M.U. that has a moderate stand susceptibility and/or other values which may be at risk. All of the Licensee's cut is directed toward beetle infested stands.

Mitigative Factors Recommended: 1/2/3/4/5/7/8/9/10/11/12/13/14/15

Low Risk : The mill site or storage area is within a Holding or Salvage B.M.U. within which the bark beetle is well established. No level of direct attack activities will have a measurable effect on the current beetle population.

Mitigative Factors Recommended: 1/2/3/7/9/15