KALESNIKOFF

TIMBER INSPIRES

Akokli Creek and Boswell Face Douglas-fir Beetle Suppression Proposed Harvest Plan and Feedback Form

March 29, 2019

Kalesnikoff Lumber Company has developed a proposed cutting permit (CP K077) within our Akokli Creek operating area. This CP will be applied for under our forest license (FL) A30172, which provides timber rights on Provincial Crown lands. We are sharing this plan with stakeholders and the local community to provide information about key factors we've identified and considered, the proposed harvest areas and other identified forest values, and to seek your input on other information you believe should be considered in our plans.

Please review the proposed CP and related information in the section marked "**For Information**" in the upper right-hand corner of each page, and then provide your input in the section marked "**Feedback Form**" by April 29, 2019. Your Feedback Form can be provided to us through an online survey which will be posted to our website on April 1st, 2019. It can also be completed and emailed to referrals@kalesnikoff.com, mailed to PO Box 3000 Hwy 3A, Thrums BC, V1N 4N1 or dropped off at our main office at 2090 Hwy 3A in Thrums. You can also share your input by emailing your comments to the same address or by calling our office at 1-250-399-4211, extension 231 for Gerald Cordeiro, our Forest Development Manager.

If you'd like to receive ongoing email updates regarding this proposal and plan, plus our other activities in your area, please provide your email address and contact info in the Feedback Form, or email it to referrals@kalesnikoff.com. Please tell us briefly who you are, and advise if you hold a water license or other tenure rights on Crown land, plus any other information you think could be important. Thank you.

Who We Are:

About Kalesnikoff:

Kalesnikoff Lumber Company is a local, fourth-generation family-owned company based in Thrums, B.C. We have lived and worked in the west Kootenays for 80 years and care about our local communities and our employees, contractors and suppliers who we consider extended family.

We create our plans and make decisions based on local knowledge of our forests, environment, communities, and on evolving best practices in sustainable forestry. We live here, and our forestry and business practices reflect our ongoing pride in our legacy of taking care of the land and people in our area. We are committed to making the most of every tree we plant, harvest and process — striving to create the most benefit for our employees, the community and our customers.

We're trying to improve how we work with local communities in advance of a harvest to better understand their priorities, concerns and interests, and we develop our final harvest plans based on community input as well as technical, regulatory and environmental considerations.

Our Commitment:

Kalesnikoff will:

a) adhere to government regulations and guidelines when planning and conducting forest harvesting activities.
b) adhere to the results and strategies described within our approved Forest Stewardship Plan, available on our website.
c) carefully consider the various risks of our harvesting activities and seek the advice of third-party Qualified Registered Professionals as necessary through our planning process.
d) utilize the most up-to-date imagery and technology available to help draft operational plans.
e) prepare detailed drainage plans where warranted.
f) use modern road building practices with attention to maintaining natural drainage patterns.
g) use environmentally sound timber harvesting practices.
h) carry out monitoring and maintenance of roads and structures on a regular basis to avoid issues that may be caused by weather events or improperly functioning drainage structures.
i) carry out reforestation of harvested areas in a timely fashion, with an appropriate species mix which considers site-specific conditions and climate change variables.
j) operate in a manner that limits environmental impact, prevents pollution, and protects the health and safety of our employees, contractors and the public.
k) incorporate scientific discovery, government direction, public feedback, and local knowledge to reduce our environmental footprint and help further the public interest by continuously improving the sustainability of our operations over time.
l) engage with local communities and the public in an open and transparent manner.

About the proposed Akokli Creek/Boswell harvest plan:

Timber rights — where and how much we can harvest — are determined by the Province of British Columbia. Kalesnikoff Lumber Company has been allocated rights to harvest in the Akokli Creek/Boswell area and, consequently, proposes to harvest CP K077 shown in orange on the Referral Map below.

Kalesnikoff is committed to minimizing and mitigating harvesting impacts in all areas where we operate. Our forestry activities are carefully planned and implemented by experienced forestry workers and registered professionals. We follow the recommendations of qualified geotechnical, hydrological and other third-party professionals where necessary to minimize the potential for negative impacts to important community and non-timber values such as drinking water and wildlife habitat.

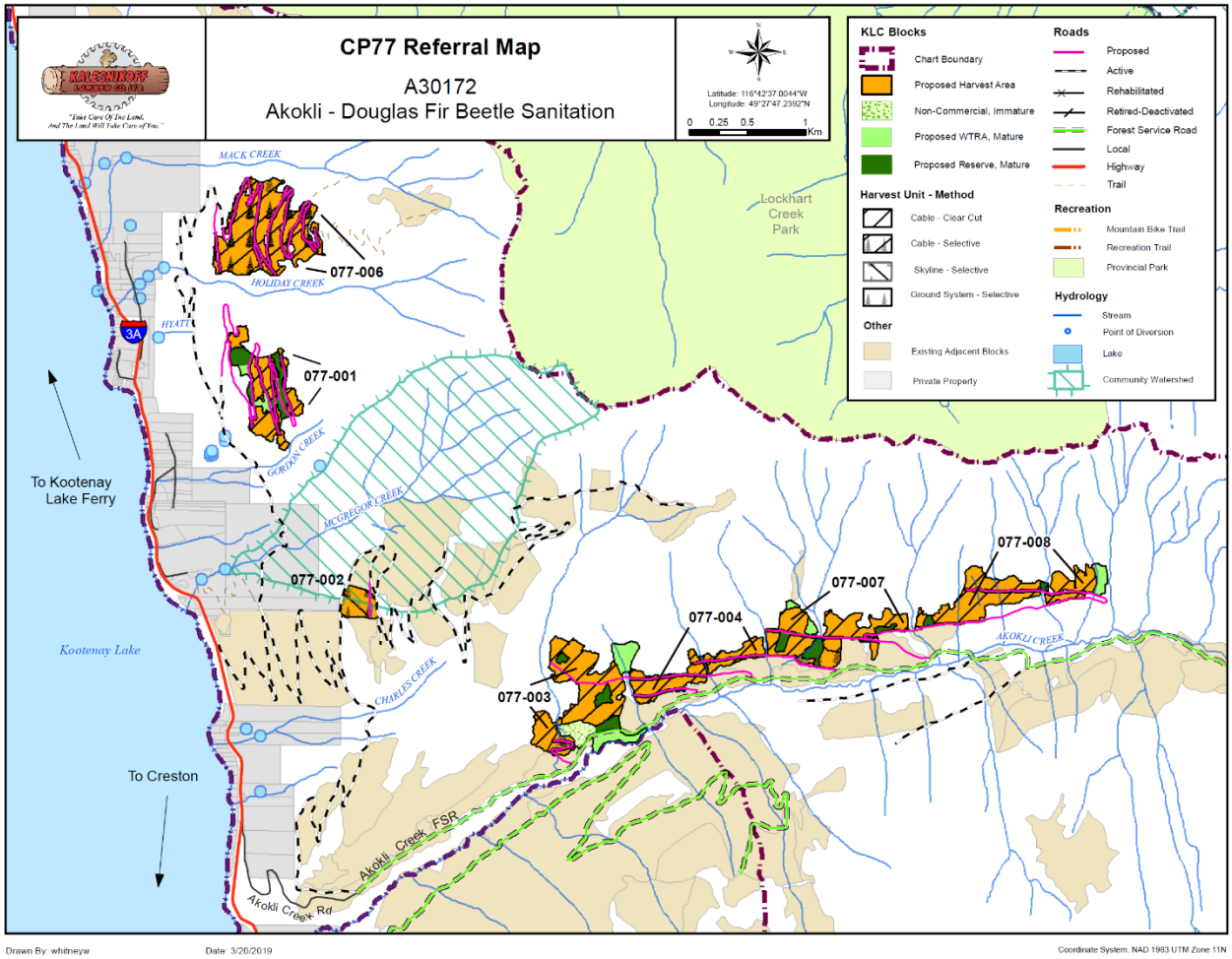

Figure 1: Referral map for CP K077

Introduction:

During the summer and fall of 2017, Kalesnikoff completed overview flight reconnaissance of our operating areas on the east shore of Kootenay Lake. This reconnaissance consisted of LiDAR data capture (which gives high-precision 3D elevation models) and aerial photography. When we received the data and photographs in winter of 2017/18 and began to review these areas it became apparent that a significant and active Douglas-fir bark beetle infestation is occurring in the forests above Boswell and in the Akokli Creek drainage. Dead trees are clearly visible on the photographs in various stages of decline. Sample photos of some of the infest sites are included in this document and will be posted to our website for reference.

Given the sharp increase in the incidence of this insect both locally and throughout the province over the past few years, The Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD) has advised that timber licensees, public land stewards, and private land owners be aware of the potential for this pest to cause significant forest health impacts across the land base. Below are a few links to Provincial Government information regarding Douglas-fir beetle.

Province of British Columbia Forest Health Website, Douglas-fir Beetle Page
http://www2.gov.bc.ca/gov/content/industry/forestry/managing-our-forest-resources/forest-health/forest-pests/bark-beetles/douglas-fir-beetle

Douglas-fir Beetle Fact Sheet, Forest Health Pamphlet #2
https://www.for.gov.bc.ca/rsi/foresthealth/pdf/dfbpamphlet.pdf

Due to the high level of infestation in the Boswell/Akokli area, we prioritized our efforts to form a strategy aimed at suppression of beetle populations and completed field work during the summer of 2018. Details of the planning process are described below. The intent of this proposal is first to target currently infested, dead and dying timber for salvage, with a focus on greatly reducing the beetle population to a more manageable level. After the first round of harvesting, remaining timber in CP K077 will be pheromone baited and strategically harvested over several years in an attempt to bring local populations back to a more natural endemic level. This strategy is intended to reduce the spread of the beetle over the larger landscape, thereby mitigating the overall loss of timber and other resource values.

This harvest plan document gives details of the planning process and a further description of the proposed strategy. It is intended to be an information sharing tool which can be used to inform the public and other stakeholders, as well as to solicit feedback from interested parties. Additional materials, including georeferenced pdf maps, will accompany this document on our website to add clarity regarding the areas described. You can access all of the materials at the following address:

http://www.kalesnikoff.com/public-stakeholder-engagement/

Background, Recent Douglas-fir Beetle Activity Within the Selkirk Resource District:

Douglas-fir bark beetle (Dendroctonus pseudotsugae, and often abbreviated as IBD) is a naturally-occurring insect which inhabits B.C.'s forests. Under normal conditions, the insects will move from host tree to host tree, generally killing the trees in fairly small numbers (often from one to five trees per instance each year, within a localized area). In 2016, infest sites within the Selkirk Resource District were noted in several areas where previous government overview surveys had not shown significant

populations. In 2017, beetle populations were estimated to have increased approximately threefold from the previous year. 2017 and 2018 forest health overview flights conducted by the FLNRORD indicate significant outbreaks in the Boswell and Sanca areas. The provincial strategy for this insect continues to be 'suppression', and government-recommended activities to manage populations include sanitation and salvage harvesting, trap trees, post-harvest mop-up, baited funnel traps, and the use of anti-aggregation pheromones.

Figure 2: Close-up photograph of an adult Dendroctonus pseudotsugae, Douglas-fir Bark Beetle. The adult beetle is approximately 6mm long.

The Planning Process:

When the scale of the Akokli Creek infestation became apparent, Kalesnikoff began an extensive field work program to assess the infestation on the ground and design an aggressive suppression strategy. Having conducted a similar operation in our Selous Creek operating area near Nelson B.C. recently with apparent success, we will propose to employ a similar strategy using the appropriate management tools to suppress this rapidly spreading beetle population.

We identified several key considerations and constraints to standard sanitation harvesting. These are detailed as follows:

- **Visual Quality Objectives:** The area of Crown Land within Kalesnikoff's planning chart above Boswell and in much of the Akokli Creek drainage falls under a Visual Quality Objective (VQO) category of 'partial retention'. In partial retention areas, allowable harvesting-related alterations may be 'easy to see, small to medium in scale, and natural or not rectilinear or geometric in shape'. Visible alterations to a given landform are generally not to exceed 7% of the landform area in perspective view from a significant public viewpoint. Due to the highly visible nature of these landforms from various locations on Kootenay Lake, coupled with the existing harvest areas from a previous third-party licensee, it will be difficult to meet the partial retention VQO while also effectively suppressing the beetle infestation. While the harvest areas will be much less apparent from the east shore of Kootenay Lake, viewers on the west shore or on the water will be able to easily see the alterations.

  Kalesnikoff will employ various strategies to minimize the visual impact such as partial cutting, strategic placement of timber reserves, and prompt reforestation/replanting. Preliminary visual impact assessments indicate we will require a temporary exemption to the established VQO's in order to successfully conduct the suppression strategy. Extensive computer modeling and visual simulations are being undertaken to ensure the visible alterations to the landforms are minimized to the greatest extent practicable. These simulations will be posted to Kalesnikoff's website.

Figure 3: Simulated post-harvest view of Boswell Face as seen from Kootenay Lake. Blocks 1, 2, and 6 will be visible from this perspective. Due to pre-existing cutblocks on the landform, the visual quality objective will be temporarily exceeded. The full-sized simulation will be posted to our website.

- **Terrain Constraints:** Significant portions of the identified infestation occur on moderately steep to steep slopes where conventional ground-based harvesting is not possible. As such, a cable yarding system will be required to remove trees from the majority of the harvest area. While cable yarding is an efficient and effective method of harvesting, it makes individual tree selection and retention a challenge due to the requirement of having adequately wide, straight corridors to safely pull the trees up or down to the nearest road. The result is that some trees which would normally be retained will need to be felled in order to safely remove infested trees. A qualified registered professional terrain stability expert has been retained to review steep areas and proposed roads to ensure potential risks are identified and addressed prior to harvest. The initial professional assessment indicates a low risk and the final reports will also be posted to our website.

- **Community and Domestic Watersheds:** McGregor Creek is a Community Watershed and requires a high level of stewardship as it supplies drinking water to a number of residents below. While a number of small infest sites have been detected within the McGregor Creek basin, much of the terrain there is very steep and gullied, making access to timber difficult. As such, only 2.8ha of the 383ha watershed is proposed for harvest (0.7% of the watershed area) under this plan. This block (Block 2) lies on the margin of the watershed with the intent to bait insects out of the gully and onto more benign terrain. Additionally, there are a number of other high quality domestic use watersheds affected in this area. Terrain stability assessments conducted by a qualified registered professional and drainage planning using LiDAR data will ensure risks to all domestic water sources are minimized to the greatest extent possible. Letters have been sent to licensed water users in the area notifying them of this proposal.

- **Timing of Operations:** Because the Douglas-fir beetle produces a new generation of offspring each year (and sometimes two generations per year), timing is critical when conducting suppression activities. In order to most effectively reduce the insect population, trees attacked within the most recent season of activity are targeted as first priority because they contain live beetles and their larvae. The beetles fly in the spring and summer months, leaving their hosts to find new trees to attack each year. Trees attacked the previous year generally die the following summer. Timber quality degrades rapidly after that. Due to this biological cycle, operations must be timed appropriately and infested timber removed from site and milled prior to the next flight, otherwise the beetles will escape and infest a new set of host trees. The intent of this project is to first target the most easily accessible stands with live insect populations, then to bait and trap residual populations over several years. Priority will also be given to salvaging timber which has already been killed.

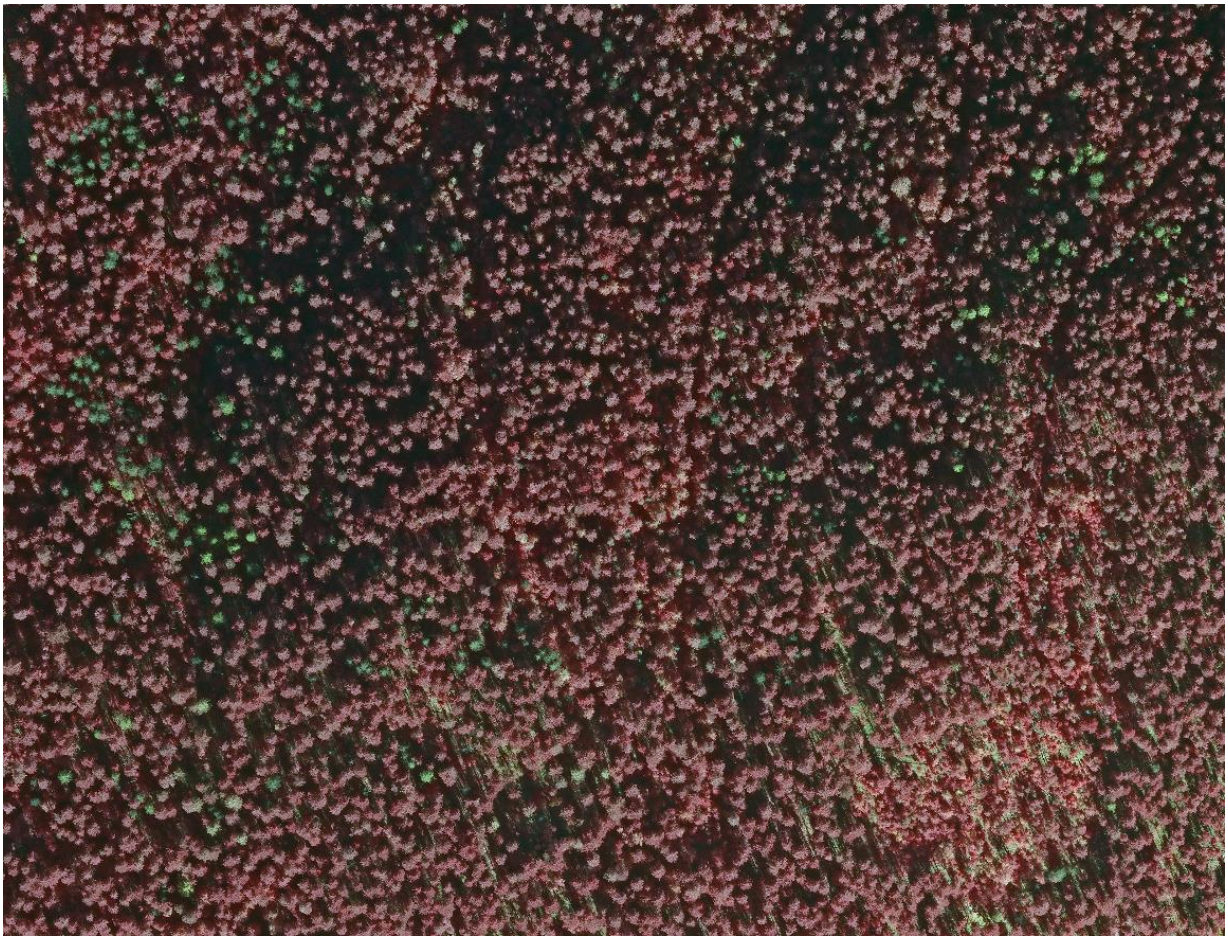

Figure 4: Infrared overview image of an area within Block 6 showing dead trees as blue-grey in contrast to healthy trees showing as pink. This image is from the fall of 2017, so the 2017 and 2018 green attacked trees are not evident in the image.

Additional Planning Considerations:

Additional considerations in the planning process have included archaeological potential, old growth management areas (OGMA's), species at risk, guide and trapper tenures, riparian management, migratory birds, hydrology, and wildfire risk. Further information regarding planning considerations will be posted to our website. Kalesnikoff would like to engage with the local community further to investigate the potential for provincial funding to reduce the local wildfire threat. We will seek input from the community, Regional District of Central Kootenay (RDCK), BC Wildfire service, and others in order to assess potential next steps toward risk reduction in the area.

Block Summaries:

- **Block 1:** Located between Gordon and Holiday Creeks, Block 1 lies on generally rocky terrain, where narrow benches lie between short steep pitches. Due to the rocky soils, terrain is quite stable on this landform. The net harvest area for Block 1 is 16.7ha, with 5.5Km of new road construction. Due to the steep slopes, a cable yarding system will be utilized to harvest the timber. Stand-level biodiversity will be maintained in a series of wildlife tree retention areas (WTRA's) and timber reserves. Some individual tree retention will occur where feasible and safe to do so with the cable yarding system, however the broken terrain makes extensive individual tree retention problematic.

- **Block 2:** This block lies on the boundary of the McGregor Creek Community Watershed. The harvest area for Block 2 is 6.1ha, 2.8ha of which are in the Community Watershed. This represents 0.7% of the 383ha watershed. 300m of new road construction is proposed, approximately 230m of which will be within the Community Watershed. Block 2 will be selectively harvested using a cable yarding system. The intent is to leave as many trees of other species as possible. Due to the use of a skyline cable system and more uniform slopes, individual leave tree retention will be feasible so stand-level biodiversity and visual quality will be maintained by retaining a range of tree sizes and species throughout the block.

- **Block 3:** The first block going up the Akokli mainstem, Block 3 has a net harvest area of 35.2ha, with 2.8Km of new road construction. Due to the very high Douglas-fir component in this block, it will be one of the primary stands to use as a trap area for harvest over several years. Most of the block is on relatively steep terrain and a cable yarding system will be employed. The flat area in the south part of the block has a higher tree species diversity and will be harvested with conventional ground-based equipment using a partial cut system. Stand level biodiversity will be maintained in a number of timber reserves plus a WTRA which protects valuable riparian habitat adjacent to Akokli Creek.

- **Block 4:** This block contained significant gray, red, and green attack in 2018. Block 4 lies on an elevation band between younger mixed stands below and very steep and rocky slopes above. The area above the block is at risk of severe infestation since the terrain is generally inoperable and much of it is covered by open fir forests where drought stress is likely due to the steep, south-facing rocky aspect. The beetles are able to detect stressed trees and preferentially target them, as they will be more likely to overcome the tree's pitch-out defense if it is already having health issues. Block 4 has a harvest area of 18.2ha and requires 1.8Km of new road construction. Stand level biodiversity will be maintained in a WTRA which covers two forested draws that link the stand to ridges above and which provide travel corridors for ungulates and other species. Some individual trees will be retained as well to provide shade, seed, and vertical structure within the harvest area.

- **Block 6:** This is where the largest infestation has been found to date within the area, and the stand currently hosts significant populations of live insect broods in very large trees. Block 6 covers a portion of the face unit above Boswell between Holiday and Mack Creeks. Above the relatively recent Canfor/Wynnwod cutblock, a very old logging road makes its way up the face toward the ridge high above. Much of this old road may be upgraded and used to harvest Block 6. The block has a 48.9ha harvest area and 5.7Km of road construction, including the upgrade of the old road. While the majority of the block is dominated by Douglas-fir, there are also mixed stands with good species diversity. The intent is to partial cut, leaving as much timber of other species as possible standing within the safety constraints of the cable yarding system. Stand level biodiversity will be maintained with the individual and grouped leave trees, totalling on average 30 stems per hectare over the block. The leave trees will provide shade, seed, and structure while helping to retain visual quality. Block 6 provides a good opportunity for a strategic landscape-level fuel break, tying into an existing cutblock and proposed treatment areas identified in the draft Community Wildfire Protection Plan (CWPP) for RDCK Electoral Area A. Kalesnikoff intends to work with the RDCK and local communities to further explore the potential for provincial funding to help reduce the wildfire hazard in this area, and will seek to find synergies between our harvest plans and risk reduction objectives.

- **Block 7:** Similar to Block 4, this stand occupies the elevation band between younger mixed stands below and steep rocky slopes above. Block 7 has a net harvest area of 27.8ha, with 1.3Km of new road to construct. The fir-dominated types in this block are significantly affected by the beetle at this time. Stand level biodiversity will be maintained in several timber reserves and WTRA's, plus individual trees. Areas with slopes that permit ground-based harvest will be more selectively harvested, retaining other species to the greatest extent possible. Cable yarding areas will have single tree or group retention of species other than fir, plus some smaller and less susceptible fir trees.

- **Block 8:** This block follows the same elevation band as Blocks 4 and 7. Many of the larger trees in this stand have already been killed. The harvest area is 30.5ha, and 3.7Km of new road will be required to access the timber. This block will be harvested using a cable yarding system. Individual leave trees will be retained to give shade and provide seed and structure. Stand level biodiversity will be maintained in a WTRA which contains a rich diversity of tree species, including yew, as well as some of the largest trees observed in the area so far.

Community Engagement:

Kalesnikoff is committed to communicating with and engaging local stakeholders and residents throughout the planning, road and harvest operations, and silviculture phases of our woodlands program. We will share updates on our website and by email with those who provide their contact information. While engagement and referral periods for specific projects may have dates specified in order to receive timely feedback, the public is welcome to contact us at any time with questions, concerns, or comments related to our activities. We will strive to respond to individual queries in a prompt and comprehensive manner.

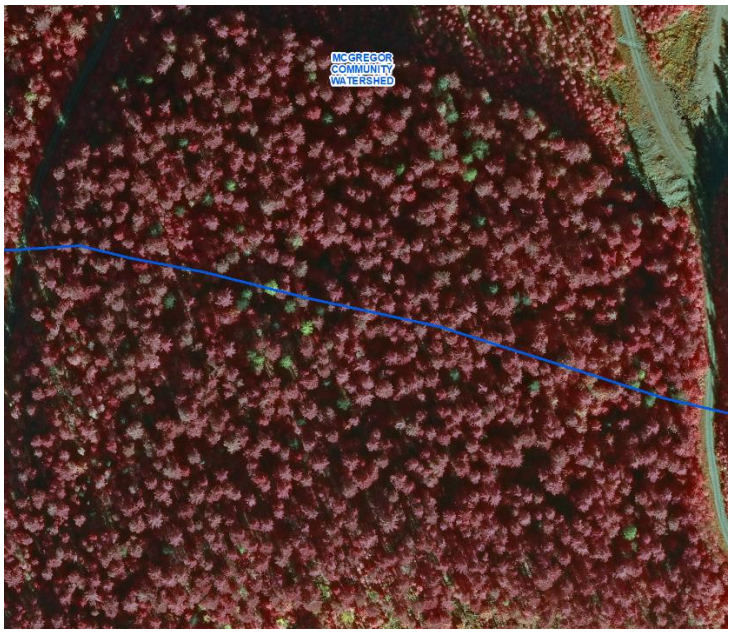

Figure 5: 2017 Infrared Image of the Stand in Block 2. The north portion of this block is within the McGregor Community Watershed

Feedback Form:

Kalesnikoff is seeking public feedback with respect to our cutting permit K077 proposal in the Akokli Creek and Boswell area. We intend to begin operations within this area in 2019.

We are seeking input from local stakeholders and residents regarding what you think we should know and consider as we move forward in finalizing our plans. We'd like to hear from you about:

1. Infrastructure (buildings, roads, fencing)
2. Natural features or important resource values not identified in our proposed plan.
3. Wildfire hazard abatement in your community.
4. Other information you would like to receive.
5. How you would prefer to be kept informed.
6. Any other questions, comments or concerns you may have.

We've also provided an opportunity to provide any additional comments and to sign-up for ongoing updates at the end of this Feedback Form.

Topic 1: Existing and Proposed Infrastructure:

Consistent with our commitments, we will use modern road building practices with attention to drainage control and will monitor and maintain roads and structures on a regular basis to avoid issues that may be caused by improperly functioning drainage structures.

1. ***Are there any key pieces of infrastructure (roads, buildings, fencing, gates, etc.) that you think we should know more about? (Ongoing road maintenance issues, siltation problems, seasonal issues etc.) Is there any other infrastructure we should be aware of?***

Deadline to submit completed Feedback Form: April 29, 2019

Topic 2: Natural or Significant Features

Kalesnikoff consistently adheres to government regulations and guidelines when planning and conducting forest harvesting activities, including those protecting or maintaining features of environmental, social or historical significance. Whenever possible, we also respect significant local and informal features and landmarks of importance to the community.

2. ***Are there any key environmental, social or historical features that were not identified in our proposed harvest plan that should be considered? Please provide a <u>description and location of each feature</u>.***

Topic 3: Wildfire Hazard Abatement

As our collective understanding of climate change and the increased potential for devastating wildfires grows, there is a need for further discussion as to how we may best approach and mitigate this problem. Forest licensees are viewed as a key component to this process as we hold tenure rights to cut trees on Crown land and have a high level of interest in maintaining forest cover over the landscape through proactive forest health management. There is a growing consensus that Provincial funding will not be able to cover the entire cost of fuel reduction treatments due to the vast scope of the issue, and that some amount of timber harvesting near and adjacent to communities can help to reduce the wildfire risk. This type of work requires collaboration and careful consideration in the planning process. Kalesnikoff is committed to working with communities where we operate to come up with locally supported decisions around tackling this important issue. Please help begin the conversation by giving us some input to consider.

3. ***Are you in favor of wildfire hazard mitigation treatments around your community? Do you own property that is at risk, or which may currently be in a condition that contributes to the risk? Please give us your thoughts.***

Deadline to submit completed Feedback Form: April 29, 2019

Topic 4: Other information

We are committed to ongoing community engagement and communications to help ensure local communities are aware of our harvest and related activities. We will communicate with local stakeholders and residents throughout and beyond our harvest planning processes.

4. What other information, if any, would you like to receive?

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Topic 5: Preferred Method of Communication

5. Please check your preferred form of communication:

You can get in touch with us at any time using the contact information listed above. Please let us know how you would like to receive information from us. You can be removed from our mailing list if you like by checking the third box.

☐ **Email** ☐ **Kalesnikoff website** ☐ **I know enough. I don't want more information**

If you chose "Email", please provide yours here: _____

Topic 6: Other Related Input

6. Please provide any other questions, comments or concerns you may have regarding our proposed harvest plans.

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Deadline to submit completed Feedback Form: April 29, 2019

How Public Input Will Be Used:

Your feedback is important to us. Input received through this community consultation will be compiled, reviewed and considered by Kalesnikoff Lumber Company along with technical, environmental and social considerations in planning for this harvest. We'll do our best to alleviate any concerns and incorporate public input into our plans.

How you can return your Feedback Form:

1. Participate in our digital survey, available after April 1, at the following link:
   - https://www.surveymonkey.com/r/AkokliBeetleApril2019
2. Mail your response to:
   - Woodlands Team
     Kalesnikoff Lumber Company
     PO Box 3000 Hwy 3A
     Thrums, BC V1N 4N1
3. Drop your Feedback Form off at our office:
   - 2090 Hwy 3A
     Castlegar, BC
4. Scan and email your completed Feedback Form to: referrals@kalesnikoff.com
5. Provide a written submission by email or regular mail (address above).

To sign-up for Updates:

Email address: _____
Name (optional): _____
Phone # (optional): _____
Address (optional): _____
Postal Code (optional)*: _____

*If you don't wish to enter your address, you may still identify your neighborhood by entering a postal code only.

Deadline to submit completed Feedback Form: April 29, 2019