

Workshop Synopsis

Forests for Tomorrow (FFT) Planning and Delivery Workshop

Sponsored by
Resource Practices Branch
BC Ministry of Forests, Lands and Natural Resource Operations



Workshop Organizers:

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Resource Practices Branch

Assembled by:

Terje Vold, Contractor, LBIS Project Support

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Reminder of Workshop Agenda

Land Based Investment Strategy (LBIS): Forests for Tomorrow (FFT) Planning and Delivery Workshop <u>Location:</u> Parkside Lounge, Sandman Centre (home of the Kamloops Blazers) 300 Lorne Street, Kamloops, BC	
	DAY ONE: TUESDAY, OCTOBER 4th, 2016 Program delivery
8:30 am	<i>Coffee/tea available – meet and greet</i>
9:00 am	Meeting Logistics – Nigel Fletcher Welcome and Introduction of the Chief Forester – Jennifer Davis
9:15 am	Chief Forester’s Direction for FFT – Diane Nicholls
10:00 am	<i>Coffee break</i>
10:15 am	Session 1: 2017/2018 Annual Operating Plan – Current Reforestation and Timber Supply Mitigation Review; Activities, Priority Filtering and Budget Review; Numbers Compiled to Date – Matt LeRoy w/Neil Hughes, Monty Locke and Nigel Fletcher
11:30 am	Session 2: 2016 Fires and Section 108 – Nigel Fletcher
12:00 pm	<i>Lunch – provided, Archaeological Impact Assessments</i> – Bert Williams (guest speaker)
1:00 pm	Session 3: Panel Discussion – Three Programs and their Investment Targets – Lorne Bedford (moderator) -FFT - Jennifer Davis -FEP/FES – Dan Peterson -Climate Plan – James Sandland / Brendan Brabender
2:30 pm	Session 4: Integrated Silviculture Strategies (Landscape Level Planning) – Bryce Bancroft
3:00 pm	<i>Coffee break</i>
3:30 pm	Session 5: BCTS Seed and Seedling Services, Sowing Guidance, Stock Type and Other Nursery Considerations – Al Rasmussen
4:30 pm	Day One wrap-up – Jennifer Davis and Neil Hughes
4:45 pm	<i>Adjourn</i>

	DAY TWO: WEDNESDAY, OCTOBER 5th, 2016 Program Operations
7:30 am	<i>Coffee/tea available – meet and greet</i>
8:00 am	Recap on Safety Procedures - Housekeeping Items from Day One – Nigel Fletcher
8:15 am	Session 6: GAR Update, Budgets, RESULTS Reporting – Matt LeRoy and Dan Turner
9:15 am	Session 7: Forest Health – Spruce Beetle, Douglas-fir beetle, what’s coming – Tim Ebata and Dr. Lorraine MacLauchlan
10:00 am	<i>Coffee break</i>
10:15 am	Session 8: Safety – Dave Cornwell
11:00 am	Session 9: ITSL Updates – John Hopper and Mike Madill
12:00 am	<i>Lunch provided</i>
1:00 pm	Session 10: Dead Pine Inventory – Neil Hughes w/ presentations from Districts in the dead pine areas
2:00 pm	Session 11: Current Reforestation and FRPA Section 108 Review – Dennis Sabourin
3:00 pm	Session 12: FFT – Program Review, District and Regional Feedback – Nigel Fletcher
3:30 pm	Workshop wrap-up and evaluation – Jennifer Davis and Matt LeRoy Recap meeting action items Please complete the Workshop Evaluation Form before leaving
3:40 pm	<i>Adjourn and thanks for you participation!!</i>

Purpose of this Synopsis

At least 60 individuals, including BC Ministry of Forests, Lands and Natural Resource Operations (FLNR) staff the Ministry of from Districts, regions, BC Timber Sales (BCTS) and branches, and staff from other organizations, that are involved or interested in the Forests for Tomorrow (FFT) program attended a Workshop held October 4th to 5th, 2015 in Kamloops, British Columbia (BC). Workshop participants including presenters are listed in Appendix 1.

The purpose of this Synopsis is to provide a summary of discussion highlights and action items from the Workshop for participants, and others that may be interested who were unable to attend.

The Workshop Workbook and this Workshop Synopsis will be posted on the following hyperlinked [LBIS FFT Updates](#) website. So as not to repeat material already compiled, this Synopsis should be used in conjunction with the Workbook that was prepared to guide the Workshop.

Day One – Program Delivery

Meeting Logistics

Nigel Fletcher led delivery of the Workshop agenda and described meeting logistics including safety considerations.

Welcome and Introductions

Jennifer Davis, Director, Resource Practices Branch (RPB or ‘Branch’), welcomed participants to the Workshop. She thanked Nigel for his efforts to organize the Workshop. Jennifer is proud to work in RPB and support FFT. She extended a big thank you to staff, including those participating in the Workshop, who are the power behind delivering FFT by or in the Districts, and for making FFT a success since it started in 2005.

Jennifer noted how important FFT is to the Minister and Ministry. LBIS funds FFT and 14 investment categories overall. There is always more pressure on the LBIS than there is funding. But there is never a debate about the funds FFT is to receive - the program is the primary purpose for LBIS.

Jennifer asked participants to introduced themselves.

She then introduced Diane Nicholls who has been Chief Forester since 2014. Diane joined government in 2006 after working in industry and as a consultant. The Chief Forester is also now an Assistant Deputy Minister (ADM) with Diane being the Executive lead on several files including Timber Supply Review, research, silviculture, forest health and climate change.

Chief Forester's Direction for FFT

Chief Forester Diane Nicholls has been ADM since February 2016. Her Division includes Tree Improvement Branch, and Forest Analysis & Inventory Branch; staff work in offices in 14 different locations across the province with several in the Southern Interior.

There is a key link between the Allowable Annual Cut (AAC) and FFT. FFT reforests areas that licensees don't reforest. AACs are being lowered in several areas impacted by the Mountain Pine Beetle (MPB). Reductions in available wood supply may lead to mill closures in some areas. We are in a unique period where we are facing potential significant reductions in the AAC. Prior to the MPB epidemic, the AAC over time was generally relatively sustainable and stable. We knew that the AAC, after uplifts to salvage harvest dead pine stands, was going to go down but perhaps not everyone was prepared for it.

There are stands that are assumed to contribute to the AAC that licensees can't afford to harvest now – as the shelf life has deteriorated the quality of the dead pine stands. Licensees took the wood that they could afford to take such as those relatively close to mills.

Some of the unharvested dead pine stands impacted by the MPB are regenerating naturally, but some are not. FFT can help mitigate the mid-term timber supply drop by reducing impacts in the long-term and by shortening the length to reaching long-term timber supply. A key consideration in salvaging the dead pine is assessment of impacts on other values.

As we priority rank FFT investments through a planning process, we need to focus FFT on the right management units, and on high sites with a good return on investment (ROI).

There are two new investment programs starting up. The Forest Enhancement Society (FES) is just now starting implementation. The Forest Carbon Initiative (FCI) is still before Treasury Board so we are not sure how much money will be invested yet.

With the three investment initiatives, there is clear interest in government wanting to re-build our forests – to make it happen, and not wait for natural processes. Wildfire protection and carbon sequestration will be a big part of FES and FCI, respectively. We will need to learn as we go, and use foundational information e.g. knowing what research is telling us. It is important for staff to learn from the older folks about the land base they help manage, and for the older folks to learn from the younger ones about new technologies. Licensees are also transitioning to younger staff.

If investments are being made in the Interior Douglas-fir (IDF) zone, we need to ask: who are the experts in the IDF? There may not have been a lot of experience harvesting in the IDF before, but now there are plans to do so – what is the right practice? Find out what you can find out, and identify knowledge gaps.

Question (Q): Can FFT help with spruce/balsam beetle killed stands?

Answer (A): We now need to open up FFT to look at that - or use other investment initiatives. We need clear criteria for FCI, FES and FFT to avoid duplication.

Q: What is happening on climate change?

A: There are two processes: one federal and one provincial. The pan-Canadian framework includes 4 Working Groups who were formed in April 2016: (i) clean energy; (ii) mitigation; (iii) adaptation; and (iv) carbon pricing. The 4 Working Groups are preparing plans for federal consideration regarding what could be funded and implemented. There are BC representatives on all of the Working Groups. The provincial process included the Climate Leadership Team recommendations that are being considered by Cabinet. Phase 1 of the Climate Leadership Plan was focused on mitigation that includes our role in forest carbon. Phase 2 is being worked on now and has an adaptation focus with linkages to FLNR's Climate Change Steering Committee.

Q: In MPB impacted areas, what about hardwood management?

A: First Nations, Ministry of Environment, and oil & gas sector include mention of the role of hardwoods. I would like to see balanced forests. Species reports show not so much new monoculture stands, and that deciduous species are coming in. The role of hardwoods may be important in the wildland urban interface where there is interest to reduce wildfire risk. First Nations have expressed a cultural interest in hardwoods e.g. in Quesnel, First Nations use birch sap to make a health drink.

Q: It was noted that FFT has never ranked the Southern Interior as a high priority ranking, but given impacts to other values and ROI, would prefer to change the ranking system.

A: Time to re-look at that. Also FES and FCI may help increase investments in new areas.

Action #1: Time to re-visit FFT priority ranking system and criteria.

Q: There are 3 investment initiatives now and there appears to be some crossover; how are practitioners going to determine what program to turn to?

A: We need to celebrate the opportunities the 3 programs provide. Need planning to reduce duplication. Lorne Bedford, Dan Peterson and others are working to determine criteria; they are working to provide clarity. There is well-defined criteria for FFT; now we need that for the other 2 programs. It is admittedly confusing now since the 2 other programs are so new. The challenge for us is: How to make it work? We want to retain these program opportunities and avoid pitfalls that might kill the programs. The decision was quick to form FES and to get the work done on the ground. As you plan, as you learn from doing, you get better in delivery.

Session 1: 2017/18 Annual Operating Plan (AOP)

Matt LeRoy began the session by reminding participants of the Vision and Mission of FFT as stated in the FFT Strategic Plan 2013-2017, and asking if the still resonate:

Vision: *The impacts of catastrophic disturbances and constrained timber supplies are: (a) identified, prioritized and communicated to government to support investment decisions; and (b) consistent with those decisions, the impacts are effectively and efficiently mitigated by exemplary stand tending and reforestation activities that enhance forest values and support forest resilience.*

Mission: *FFT optimally utilizes available funding to reforest and manage productive forest land through the use of best science, and in consideration of all forest values and changing factors.*

FFT, nested within LBIS, has two delivery programs:

- Current Reforestation (CR), and
- Timber Supply Mitigation (TSM).

FFT ministerial commitments include:

- Plant >20 million seedlings, and 28 million by 2019/20
- Plant 25 million seedlings in 2017/18
- Fertilize 20,000 ha.

The Service Plan Performance Measure #6: ‘Timber volume gain from silviculture investments’ accounts for FFT investments in spacing, fertilization, and reforestation using select seed. FFT represents about 10% of the planting in BC. Matt showed a graph showing the volume gain from various FFT activities.

‘Silviculture Funding Criteria 2016/17 to 2020/21’ identifies priority management units to invest in CR and TSM activities. The objective is to fund priority units first. Given funding levels for CR, we are funding all the units with proposed activities. Priority units has a bearing on TSM investments as available funding is not sufficient to support all proposed activities.

Q: What is percent overstory removal by BCTS?

A: Not sure. For example, Fort St. James is not using BCTS.

FFT investment principles that are provided in the ‘Silviculture Funding Criteria’ guides the development of the 2017/18 plan; for example, what is the magnitude of the impact, and consider climate change.

In 2016/17, about 17.9 million seedlings were planted which reforested about 12,000 ha. About 50,000 ha impacted by MPB had survey work. We are generally surveying 4-5 ha for every 1 ha that we treat. There was about 12,000 ha of site preparation.

The 2016/17 AOP, which is now on-line, shows 20.8 million seedlings sown, yet SPAR indicates only 6 million in sowing requests – why the large difference is a concern.

What does Resource Practices Branch carry the budget for?

- BCTS sowing costs for FFT trees grown
- Operational seed purchase (current year)
- Future seed purchase
- ITSL development costs (as per MOU)
- Fertilizer purchase.

For 2017/18, the CR budget is expected to be \$39 million, and the TSM budget is anticipated to be \$9 million (same as 2016/17). The draft AOP for 2017/18 for CR is \$39.8 million – which is in the ballpark of the expected budget.

Matt showed a graph comparing reported and forecast planting. It was noted that some Districts are doing some direct seeding. Matt responded that in general we should discourage direct seeding, but if it is here to stay, we need to report on it.

Regarding species diversity, about 58% of seedlings planted are lodgepole pine using high densities. Some larch is being planted, and a bit of western white pine.

Although the 5 year AOP shows planting #'s declining in 2018/19, a participant noted that they have not filled this information out yet as they are focused on 2017/18.

FFT CR has a >70% pine and >70% dead criteria; although we need to revisit this, we need to do so cautiously so that FFT does not harvest stands that may represent mid-term timber supply.

FFT criteria prepared 10 years ago; while we revisit the criteria, we need to ask: What are we leaving behind? What are we treating?

During discussions, the Chief Forester noted that licensees are pulling back from some pine stands as they can no longer afford to salvage them; this will create new opportunities for FFT. Need licensee commitment that they are not going to harvest a stand.

A participant noted that economics can change things quickly (e.g. price of gas, China market demand); for some pine stands we are sitting on the fence given shelf life degradation of dead pine.

That said, the Chief Forester indicated that for some units, licensees have indicated that they are prepared to commit to no longer being able to harvest some dead pine stands.

A participant noted that there is an issue with Non-Replaceable Forest Licence (NRFL) holders who are concerned about FFT harvesting and reforesting stands that may represent a potential opportunity for them. The Chief Forester indicated that if NRFL holders are not doing harvesting for 2+ years in a unit, then we need to consider a rule that FFT can treat stands even if NRFL holders raise a concern.

Matt conveyed a stewardship message about the use of western white pine. About 65% of the select seed is rust resistant; although some risks with its use, it is important that FFT lead the way. About 100,000 western white pine planted by FFT out of the 20 MM trees planted overall. There is FFT guidance on the use of western white pine. It was suggested that it is important to get western white pine included in the Integrated Silviculture Strategies (ISSs); and that is up to the ISS group to consider its use – with FFT guidance helping that effort.

It was noted that the site index increases substantially with western white pine use, which in turn improves ROI; white pine's use increases species diversity which can increase future forest resilience in light of climate change.

There was a comment from District staff that use of larch and western white pine is sometimes met with resistance from First Nations – as they are concerned about putting a new species in the landscape.

During discussions, it was mentioned that orchard 352 has western gall resistant seed, and orchard 211 has weevil resistant spruce stock.

Direct seeding, more commonly done by industry, has potential niche with FFT – such as sites where it is unsafe to plant; shallow, rocky sites; marginal sites; and where natural seed on ground is not viable. The downside of direct seeding is the increased regeneration delay that impacts timber supply, the lack of A class seed use, and the costs of fill planting. FFT doing a little direct seeding, and need to monitor this use.

Another stewardship message provided by Matt is to connect with researchers. The Timber Intended Outcomes (IO) research projects need to be identified by the end of October. Kamloops does not have silviculture researcher, but is trying to make the business case for one.

It was noted that site preparation alternatives in the wet, cold ESSF is addressed in Extension Note 65.

Climate change and species guidance are found in a number of documents including:

- Integrated Silviculture Strategies (ISS)
- Tree Species Selection Tool
- Regional Climate Action Plans
- FFT species guidance
- Chief Forester Stocking Standards.

FFT can take steps also to move forward on Climate Based Seed Transfer.

Matt showed a graph that displayed area burnt by year, with 360,000 ha burnt in 2014; nearly all of the THLB area burnt in 2016 was in the Peace.

Matt noted coarse-filter tools available to staff to help find treatable areas:

- FFT potential opportunities maps (for wildfire)
- Dead pine inventory maps
- Digital camera
- ISS and Type 4 SS where they are at the polygon level.

Based on the LEAN FFT business road map, staff should be showing the FFT program for next fiscal year to their District Manager in December 2016; the District Manager is supposed to then show the program to their Regional Executive Director (RED).

Neil Hughes and Lorne Bedford spent a lot of time last December to Spring to discuss the FFT program with operations staff.

Question was asked: If significant changes occur to the program, when do we need to go back to RPB?

Action #2: If District is shifting >10% of allocated funding within CR (or TSM) category, then need to contact Neil Hughes and Matt LeRoy – who will in turn discuss with Jennifer Davis for decision.

Monty Locke provided update on FFT Timber Supply Mitigation (TSM). 2017/18 target is 20,000 ha, about 14,000 ha is targeted for fertilization in the Interior, and 6,000 ha for Coast; the 70/30 split is based on the AACs for the Interior MPB impacted areas and the non-catastrophic impacted areas on the Coast, Northwest and Southeast. TSM also funds surveys and prescriptions for future years. Currently in the AOP we have a request for 48,000 ha of surveys with a cost of \$1 million. . We are trying to stabilize the fertilization program funding level from year to year by completing a five-year fertilization strategy, and budgeting some funds for fertilizer purchase at the end of the year.

Spacing projects, at this time, are only being considered for projects submitted in the AOP by Woodlot Licensee and Community Forest tenure holders. If TSM has surplus funds, additional spacing projects will be considered.

The draft 2017/18 AOP has identified 30,000 ha for fertilization, but our budget target is 20,000 ha. Prince George and Quesnel have been strong players in fertilization in the Interior over the last three years. Twelve (12) Districts are proposing fertilization for 17/18. We will work with regions and districts on how best to align the proposed treatment requests with the target. We will also consider the needs identified in silviculture strategies. With existing funding, all Interior Priority 1 units can be funded, but not so with Priority 2 and 3 units. Additional commitments (i.e. Okanagan, Merritt) that we have made in lower priority areas will also need to be incorporated into the planning process for 2017/18.

Fertilization and other values such as water and wildlife are being discussed more frequently. We are doing some pre-treatment water quality monitoring at White Lake. The impacts of fertilization on water quality have been identified as an area we need to do more work in. Although considerable water quality monitoring has been done previously on the Coast, it would be good to undertake water sampling in another 2-3 watersheds to update previous findings. It was mentioned that Rita Winkler is good contact on potential impacts of fertilization.

It was noted that the Minister for the first time said that 20,000 ha target for fertilization per year is the commitment – and recognizes the need to stabilize the program.

There is a Spacing Review Project underway which is looking at previous FFT investments starting in 2010, types of stands being treated, treatment objectives, and linkages to silviculture strategies. The project will lead to updates in the funding criteria.

TSM next steps:

- November/December: align fertilization requests in draft AOP with ISS and Type 4 SS, the 20,000 ha target, and priority units (before major licensees were primary delivery agents for fertilization, but now there is interest by Woodlot Licensees and Community Forests as well as Districts)
- January/February: purchase fertilizers using FFT budget and surplus funds
- March: confirm areas to treat.

Fertilization tracked in RESULTS for treated areas and yield gains are based on research findings. From discussions, it was noted that we need more research on the incremental gains for fertilization of cedar stands.

It was noted that there is no legal way to prevent licensees to pre-maturely harvest sites that have been fertilized. Ideally, best to wait 7 to 8 years after fertilization before harvest. Look for stands that are close to the rotation age as candidates for fertilization. Through a review of fertilized stands, there was only an issue in Fraser TSA where a large area was treated and then pre-maturely harvested; in the review it was determined that the licensee had no other choice but to do so.

There was a question regarding fertilization treatment for carbon sequestration. There is varied feedback on the amount of carbon gain from fertilizer. Some feel there is little carbon gain overall with fertilization, but other material indicates a benefit from fertilization.

It was noted that the Community Forests and Woodlot Association projects are in the FFT AOP. In 2011, the Deputy Minister directed that these projects be part of LBIS FFT. Initially these projects were managed at the Branch level, but now the planning process is integrated with the local FFT planning. The projects are normally small and varied, with total funding for all projects ranging between \$1 to \$2 million per year. We recognize the additional work load on FFT staff for these projects and have encouraged Woodlot Licensees and Community Forests tenure holders to submit multi-year projects e.g. survey in 17/18, and treat in 18/19 to reduce the number of individual projects. The provincial roll-up of these projects goes to Districts and regional contacts for review and to include acceptable projects into the AOP.

Monty stressed to Community Forests and Woodlot Licensees that all proposed projects don't necessarily get funded. We encourage them to provide survey data before they propose treatments so the treatable area is identified before funds are allocated for treatment. Monty said if FFT staff is not clear from project description as to stand characteristics then staff can put a comment in the AOP that the proposal needs field review where applicable.

Monty noted that the purpose of the priority setting process for TSM is to focus investments in areas with the greatest need. There are two tables: one for areas impacted by the MPB, and one for areas not impacted by MPB. Both tables use comparisons of AAC, annual harvest, long-run sustained yield (LRSY), to mid-term timber supply – looking at both percent and volume change. The FFT 'Silviculture Funding Criteria' document provides the details.

For MPB units, indicators are ranked 1, 2 and 3; and the priority units are based on the number of ranked indicators. The priority setting process has not changed, but we update the numbers each year. The process uses publicly documented numbers. As AACs decline, the difference between the AAC and mid-term timber supply is not as great as when we had AAC uplifts; consequently, we may have to re-visit the process.

For non-MPB units, we use TSR1 as the baseline to assess changes in the THLB, and review changes to the AAC relative to TSR1 to the current AAC. Filters for secondary screening are THLB age class distribution and percent revenue to the Crown.

During discussions, it was noted that the indicators may need to be reviewed to identify units where there is greatest need, now that we are in the mid-term in several units. In some Districts, stakeholder such as guide outfitters want input into TSM investment decisions. As noted earlier, concern has been raised about impacts on water. As we get more questions about planned TSM activities, it takes more work to respond.

Neil Hughes said they are getting Tom Sullivan to work on impacts on wildlife as we need to be knowledgeable about the impacts. It seems moose prefer browsing in areas that have been fertilized.

The need to address other values speaks to need for planning, and also to ramp up communications with the public.

Action #3: RPB (Monty) to provide a prescription template for fertilization, and a fertilization template contract

Session 2: 2016 Fires and Section 108

Given the time spent on Session 1, Nigel provided a brief overview of his intended presentation so that the agenda could get back on track time-wise and given that lunch has arrived. There were few fires in 2016 so financial impact on Section 108 funding not likely to be significant. About \$3 million of Section 108 funds were spent on 2015 fires. As staff approve Section 108 funding, it is important to check that the claimed costs are within the industrial norm. Dennis Sabourin will be speaking more about Section 108 in Session 11.

Lunch Guest Speaker: Archaeological Impact Assessments

Rachael Pollard introduced guest speaker Bert William. Bert, an archaeologist, is the Cultural Heritage Manager with the Bonaparte Indian Band. The Band is located west of Cache Creek. The purpose of Bert's presentation was to increase awareness about archaeology and the importance of involving First Nations in the work we are delivering on the landbase. Bert shared a video made about 5 years ago about the archaeological findings he and others have made, and clues to look for in the field that suggest cultural heritage use has occurred in the past. If you are interested in viewing the video, Matt LeRoy has copies he can share. An 8 km by 5 km Arrowstone quarry located north of Cache Creek was a major First Nations' site. The stones at the quarry were used to make arrows. The video noted that you time travel as you dig down a site where the artifacts near the top are more recent relative to the older ones further down. You can see how the hunting arrow shapes have changed over time. First Nations put larger rocks at the bottom of roasting pits. Evidence from flint knapping indicates that First Nations have been at the sites for about 8000 years. Thompson bluff site indicates occupancy for 10,000 years. Different First Nation bands arrived in the area at different times.

Information from archaeological findings are used by the Band council to determine whether development, forest harvesting, or other activities can take place. Clues to determine if a site has artifacts include:

- Observing visible tools
- Burial sites (hard to find) and mounds
- Culturally modified trees (CMTs)
- House pit
- Roasting pit – often with a 2-5 m depression.

There is evidence of local First Nations trading with First Nations in what is now Washington, Oregon and Alberta.

Bert is involved in lots of archaeological assessments associated with development activities. The question was asked – what about with forestry? Bert felt that licensees seem to forget First Nations concerns but this is getting better. First Nations are concerned about sharing sensitive archaeological information with licensees; therefore it is important that First Nations provide input to forestry to address any concerns they may have. Key learning is to reach out early when you are planning FFT deliverables.

A participant noted the Forest & Range Evaluation Program (FREP) has a cultural heritage monitoring website that includes field forms and protocols.

Rachael kindly thanked Bert for his presentation. Bert brought some artifacts where Workshop participants could see several archaeological findings.

Session 3: Panel Discussion: 3 Programs & their Investment Targets

The panel session addressed the Forest Enhancement Society (FES), FFT and the brand new Forest Carbon Initiative (FCI).

Forest Enhancement Society (FES)

Glen Anderson started the panel session; Glen is the Executive Director of the FES. FES manages an \$85 million investment fund. Glen was a manager in the former Invermere Forest District, and has 35 years' provincial government experience.

The BC provincial government announced FES on February 26, 2016. The first intake of projects occurred on August 19, 2016. November 4, 2016 is the deadline for 2017 projects.

The purposes of FES as laid out in its Constitution are:

- Preventing and mitigating the impact of wildfires
- Improving damaged or low value forests
- Improving habitat for wildlife
- Supporting the use of fiber from damaged and low value forests
- Treating forests to improve the management of greenhouse gases.

Funding parameter is that investments can only be made on Crown land. FES can partner with others to expand the program e.g. BCTS logging revenues from FES funded projects. FES will be subject to annual financial audits.

Why a society?

- Ability to deliver multi-year program
- Can better align with communities
- Can leverage outside funding with others.

Progress to date:

- Governance done
- \$85 million secured
- New office in Kamloops close to District office
- FES has a logo
- FES' website should be turned on next week.

To be clear:

- FES is not a land manager
- FES has a project selection and delivery focus
- Highest priority projects identified by Districts that meet the purposes of FES will be the focus; in some Districts, it will be reduction of wildfire risk, in others it might be forest rehabilitation or improving wildlife habitat. FES recognizes that there is a capacity issue in Districts to assist.

Eligible applicants include provincial agencies such as FLNR, First Nations, Community Forests and Woodlot Licensees. Not sure at this time if major forest licensees will be eligible.

Eligible costs include planning costs, prescription contracts, consultation contracts, and treatment costs.

Forest Carbon Initiative (FCI)

James Sandland, Director, Competitiveness and Innovation Branch (C&IB), introduced the brand new FCI that is going to Treasury Board. As part of the Pan-Canadian Framework, the province is working with the federal government on a Climate Plan. The FCI is not an offset program. Cap and trade can lead to offsets¹. The 'Protocol for the Creation of Forest Carbon Offsets in BC' requires third party verification.

FCI's goals are to:

- Increase carbon storage in forests
- Increase rate of replanting and fiber recovery
- Reduce/avoid emissions from forest operations.

FCI is tentatively expected to begin April 2017. Carbon benefit is the indicator; projects can be in or out of the THLB. There are few restrictions expected on how FCI can be invested as long as there is a carbon benefit. An example would be increasing carbon sinks by reforesting disturbed areas. C&IB has a suite of tools that you can use to determine if a proposed project would result in carbon benefit.

FCI's core components are to:

- Increase reforestation
- Increase utilization (and reduce slash burning)
- Track increased carbon from FES and FFT investments.

During discussions it was noted that sowing requests need to occur 2 years before we plant.

Integrating the Programs

Dan Peterson's role in FLNR is to help integrate the programs. Dan reports to ADM Richard Manwaring. How do the funds flow? What is role of FLNR? What is role of FES? How do program investments impact cut control? and revenue? What are interfaces with area vs volume based tenures? Dan has meetings later in the week to discuss these and other issues.

The wildfire prevention and mitigation investments stemming from the Filmon Report led to UBCM holding the funds, with FLNR's wildfire services reviewing projects. The First Nations Emergency Support Society (FNESS) program can apply for funds outside reserve lands from UBCM to get funding. Larry Price is a contact for the FNESS program.

When delivering the programs there needs to be a lens on cumulative effects on the landscape and impacts on wildlife. First Nations consultation on proposed projects needed including those where projects are delivered by third parties.

¹ Cap and trade commits a region or country to responsible limits on global warming emissions and gradually steps down those limits over time. It's use of offsets is limited, well-regulated, and shrinks over time. To reduce the costs of meeting the cap and to encourage emissions reductions outside of the cap, polluters may pay non-regulated emitters to cut their GHGs or via carbon sequestration such as in forests.

Regarding FES, how can FLNR help given capacity? FES funds cannot be added as base to government, and how does delivery link with performance measures? Roles and responsibilities matrix needed on how FLNR helps FES, and how to pay for the increased workload.

There are other programs too, such as the BC Rural Dividend funds. We need integrating thinking about outcomes you want to see. We want the land manager to do the right thing and be the land manager.

Jennifer Davis noted that with the 3 programs, we are in a transformation. We need your help as you are the experts. How do we effectively deliver the 3 programs, stay engaged and help out? Although the attention can be on the newer program, with lots of announcements, we still need to ensure FFT gets delivered.

Discussion

The panel members noted that they have a corporate responsibility to help deliver the 3 programs. We need to stay together to make it work. FFT needs to continue to deliver while helping colleagues in the other 2 programs. It is ok to be critical and identify problems; that way we can find solutions to help make it work. The overall positive goal is make all 3 programs work individually and collectively.

Q: FFT doesn't count the benefits of its investments for carbon; how can we account for this?

A: The new FCI program can count carbon benefits. That said, since FFT has been around for 10 years, it may be viewed as 'business as usual', and not an incremental benefit. We therefore need to be careful what to count.

Q: RPB and BCTS have Service Agreement to deliver FFT; will BCTS be main delivery agent for other programs?

A: FES is looking at an Agreement with BCTS.

Q: Can FLNR/BCTS deliver projects?

A: Greg noted FES may not be able to give funds to government; may have to be recipient delivered. That said, Dan noted we want Districts to know about and support the projects.

Q: Is there a 'pinchpoint' on sowing and planting with FCI?

A: James said the concern has been raised with government. Jennifer also noted the challenge delivering big goals.

Q: Who is going to do the contract administration given capacity issues at District?

A: James realizes this is an issue; his Branch can do the carbon accounting. Dan noted we can get a third party to administer the contracts [PwC does so for many FFT projects], but it still takes time for District review of proposed projects.

Q: Can FCI or FES investments support grasslands?

A: FCI: We don't have much science about soil carbon in grasslands. FES: We need to tick the eligible boxes, does the investment, for example, improve habitat for wildlife?

Q: It was noted that FCI are dusting off FFT surveys; the surveyed area may not have been suitable to treat for FFT, but it may work for carbon. Is coordinated planning needed?

A: Coordinated planning is key to integrated the activities and to putting trees in the ground.

Q: Can investments be made on ALR Crown lands? First Nations treaty lands? Conservation lands? Small area-based tenures?

A: ALR is not at the top of the list but can look at it; for example there are large tracts of ALR on Crown land in the North that are viewed as forest land.

Q: What about multi-year projects? There are fire-damaged stands near Port Alberni and First Nation interest if multi-year.

A: Yes, FCI can be multi-year. FES expects to provide multi-year opportunities in future, but has been conservative for this first year. A Ministry of Aboriginal Relations & Reconciliation program hopes to piggy-bank with FCI, for example, to increase First Nations capacity in nurseries.

Q: Request to keep the application process simple.

A: That's the goal of FES.

Q: How to get FES word out?

A: There has been a news release about FES. Letters were sent to Regional Executive Directors, First Nations, Community Forests and Woodlots about the November 4th intake of applications. There are other streams where interest can be made such as UBCM going to the FES board.

Q: Concern expressed that additional cutting in the THLB can impact constraint areas. There is also need for First Nations consultation on projects that will impact staff workload.

A: It is clear that the District and Regional capacity issue needs resolution.

Session 4: Integrated Silviculture Strategies

Bryce Bancroft delivered the presentation on Integrated Silviculture Strategies (ISS); Bryce works on contract for Paul Rehsler. The ISS process provides guidance and brings people together. ISS has linkages with the Chief Forester Leadership Team, and to FFT and other silviculture investment programs.

ISS – the process:

- Forest level modeling exercise
- Not land use planning; rather it makes land use plans operational
- Alternative scenarios are developed
- Integrates and aligns with other processes
- Transparent and collaborative
- There are lots of 'silos', ISS is a 'de-silo' process
- Tactical plans and maps prepared.

The Steering Committee for ISSs is lead by the Chief Forester and the ADM, Resource Stewardship Division. About 4 TSAs are picked per year to undertake ISS.

ISS has linkages to:

- THLB stabilization (Coast focus given declining THLB area)
- FSP determinations
- AAC determinations
- GAR Order decisions
- Harvesting plans and silviculture investments.

ISS have links to Chief Forester focus areas, and to provincial and local direction. Inputs to ISS are things such as problem forest types, stocking standards, and identified wildlife management strategy. ISS are evolving towards forest management planning at the landscape level. ISS use the Timber Supply Review base case. The ISS base case then develops scenarios for harvesting, retention and silviculture. The chosen preferred scenarios then lead to a harvest plan, retention plan, and silviculture plan.

When building and assessing the scenarios, considerations and challenges include:

- Equivalent Clearcut Area (ECAs) modeled over time
- What are the important values and indicators?
- How to build on FREP and Cumulative Effects Assessment indicators?
- MPB shelf life – how to model?
- Impact of spruce bark beetle given that it has a lower shelf life than lodgepole pine
- Impacts of MPB on ponderosa pine given its very low shelf life
- Minimum harvest criteria – given need to harvest a larger area to get same volume
- Retention – larger harvest patches mean larger area for retention needed
- Building reserve strategy around riparian areas on Coast to reduce impacts on THLB
- Access management
- Wildfire – Provincial Strategic Threat Analysis, and fire stocking standards
- Stand rehabilitation – where can we identify stands that licensees won't harvest
- Fertilization
- Enhanced silviculture e.g. going from 1200 stems per ha (sph) to 1800 sph due to forest health risks in order to improve timber supply (going to Treasury Board to see if we can get allowances to help pay for higher stocking densities).

ISS program is pushing for one canvass – one set of mapping layers that all use.

Session 5: BCTS Seed and Seedling Services

Al Rasmussen with BCTS provided this presentation; Al works for Timber Sales Branch out of Vernon. The four main topics covered are:

- Who Seedling Services Are
- Stock Type Recommendations
- 2015 Pine Mortality in Nursery
- Seed Planning.

Who Seedling Services Are

Mark Hay is the Manager, Seedling Services and works out of Prince George. Where are we? Art Moeller and Al are based in Vernon. Scott Ruzyllo and John Van Geloven are based in Prince George. Bob Merrell and Lauchlan Glen are based in Surrey. And Babita Bains is our planning officer out of Victoria.

What do we do?

- Seedling management between sowing request and seedling pick-up
- Seed planning and procurement for BCTS
- Seedling data management
- Extension services as required.

We handle seedling growing contracts, and pre-lift assessments of nursery crops. The seedling tender process is for 60 to 75 million seedlings annually. This is awarded in four separate tenders. The last tender is in late November for pine. About 10 million seedlings are hot lifted with shipment directly to the planting site. Most seedlings are frozen or cold stored.

There is a Nursery Contract Review Board and Nursery Rating System for planting contracts. The rating is a factored in awarding contracts - contracts are not just awarded to lowest bid.

Stock Type Recommendations

AI distributed a one-pager entitled: “BCTS Recommended Seedling Stock Type Selection – Interior Species” (see Appendix 4). Using consistent stock types keeps costs low. The nurseries were consulted about the list of stock types by species; ultimately the prescribing forester needs to determine the best stock types. If you deviate from the stock type recommendations, your seedling costs could increase by 50%. The recommended copper root pruning for spring planting stock increases costs by a relatively small amount given the volume of seedlings requested.

Frozen seedlings (popsicles) can be planted frozen; all western larch orders are frozen. One company’s entire planting program uses frozen seedlings. Although there is not a lot of research planting frozen seedlings, we are not hearing concerns from operational projects. That said, we could use some research on this.

We tend to under-utilize western larch; there are micro-sites on a harvest block such as dry, exposed sites, where planting larch makes sense. We have rust and disease resistant stock. Western white pine, where it fits the site, is really good to use.

2015 Pine Mortality in Nursery

Warm September followed by an arctic outbreak in late October lifted the pine resulting in about 2 million lost seedlings – many seedlings were for FFT. The seedlings are grown outside as it is less expensive than growing inside.

Q: Why the delay in telling FFT staff of the mortality?

A: We were not sure in the Fall if the seedlings were lost; the seedlings were tested at UNBC in February, at which time we knew of the extent of the mortality. This was a 1 in 20 year weather event, but with climate change this could happen more frequently.

Q: Who pays the costs associated with the dead pine seedlings?

A: That issue is in the courts. Nursery practices are trying to adjust to these unusual weather events.

Seed Planning

The Forest Genetics Council of BC (FGC), and their Technical Advisory Committees such as for the Interior (ITAC), undertakes seed planning. BCTS does seed planning to meet its needs. There would be value in combining seed planning efforts, or at least be consistent when doing seed planning. Class A seed represents a significant financial asset; about 80% of the seedlings planted by BCTS are from Class A seed.

Q: Is hardwood seed available?

A: Is it in SPAR? Other option is to collect hardwood seed.

Q: Why not pull government needs for multi-year seed supply?

A: One government agency can't request seed from another due to policy; seed transfer can only be for one year.

Q: There was a financial question about paying for seedlings

A: Nigel said payment is in two installments: one for sowing, and one for delivery of the seedlings.

Other

Seedling Services can provide a Workshop on sowing and stock handling, and provide contract administration advice, if there is interest.

Action #4: Let Seedling Services know as early as possible if you need more seedlings, and if you have a surplus – so that the seedlings can be moved to where they are needed

There are only separate transportation costs with hot lift seedlings; for cold storage seedlings, the planting contractor picks up the seedlings so transportation costs are built in to the planting contract.

Sowing request deadline is October 15th in order to get the tenders to be competitive. In the past late FFT requests resulted in higher cost bids given declining nursery space. When lumber prices are relatively low, there tends to be a greater reliance on natural regeneration and use of small seedlings that frees up nursery space. BC nurseries are currently providing seedlings to Alberta.

Where are FFT trees grown? FFT seedlings are grown in 23 nurseries, including in Alberta; this is by design to reduce risk.

Day One wrap-up

Neil Hughes provided the Day One wrap-up. He thanked the Districts for their efforts to build the AOP, and acknowledged how the AOP is now on-line. Panel discussion on the 3 programs helped provide us with information on their purpose and scope.

Neil noted that the ISS presentation fits in so well with the different programs as it does the planning needed to identify silviculture opportunities. BCTS' Seedling Services does a great job supporting FFT.

Q: Can we get copies of the presentation slides?

A: We normally do that and post them on the FFT update website

Action #5: Branch [Nigel] will get copies of presentation slides and make available to FFT contacts

Day Two – Program Operations

Matt LeRoy introduced and welcomed Mary Lester with Certes, Dan O'Brien with PwC, and Brendan Brabender with Competitiveness and Innovation Branch. Matt noted that FFT delivery is about 1/3 by Districts, 1/3 by BCTS, and 1/3 via PwC. PwC contracts have ranged from as low as \$1500 to about \$1.5 million; that said normally \$10 K is the minimum size contract they would administer. PwC does the contract administration and communication with Community Forests and Woodlot FFT projects.

Session 6: GAR Update, Budgets, RESULTS Reporting

Matt LeRoy provided an update on FFTs role in addressing the impacts of *Government Actions Regulation* (GAR) orders that implemented government decisions to protect caribou. Government and licensees reached an agreement on how to mitigate licensees on development costs they incurred where new ungulate winter ranges (UWRs) and wildlife habitat areas (WHAs) were established under GAR. Licensees were relieved of their reforestation obligations in some areas to offset licensee development costs. FFT now manages these 'GAR' openings. The vast majority of FFT activities have been conducting free-growing surveys. The total mitigation amount is about \$10 million.

For those Districts with GAR openings, make sure they are in RESULTS with planned activities and costs; very few openings are still outstanding. Most of the openings are in the Cariboo, Selkirk, 100 Mile House and Chilcotin area.

About \$2.6 million has been spent to date, with about \$4 million planned in RESULTS. You can estimate future costs for planned activities from several sources: appraisals; discussions with BCTS; FFT benchmark costs; and RESULTS activity reports.

About 1500 ha are being addressed in 2017 – most activities being free-growing surveys. There are presently 2998 openings in total, with about 200 more openings to come after negotiations with one licensee are completed. The area of all the openings is about 76,000 ha that now need to be addressed by FFT. Each District was sent a letter indicating the openings that apply to them; need to ensure submissions in RESULTS matches those letters.

Action #6: RPB (Matt) to provide AGOL Caribou GAR link to staff

Q: Can District count their time as costs when walking through the stand to confirm it is free-growing?

A: No. Make sure your free-growing findings get to the forest inventory.

Q: What if survey shows more activities needed?

A: We need to do them and incur those costs

The AOP is on the SharePoint and Nigel downloads it every week to capture new District submissions. AOP on-line can readily track unique openings, and completed and planned

activities, for s. 108, GAR openings, and BCTS led activities. Districts should contact RPB if they have any questions on how to use AOP on-line.

During discussions, it was noted that maps can't be created with RESULTS submissions; that this capability is needed and exists in GENUS. Nigel noted that for now keep it in RESULTS, and we will flag that issue with Matt – do we make leap to GENUS?

Why are FFT RESULTS submissions important?

- Timber Supply Review – to capture fertilization, spacing, planting density, genetic worth, forest cover, free-growing declarations, and denundations
- Tracking obligations managed by FLNR
- Annual Service Plan reporting
- Tracking field delivery of FFT
- Enabling stakeholders to track management of Crown land.

Action #7: Determine whether free growing declarations should be a mandatory submission in RESULTS

Third party RESULTS quality assurance monitoring tracks 11 issues:

- About 2.3% of major tenure holder submissions have issues
- About 2.3% of FFT submissions now have issues (down from 4.4% in January)
 - About 3% of District FFT submissions have issues
 -
 - None of the BCTS FFT submission have issues
 - Only 1.3% of licensee FFT submissions have issues (thanks in part to PwC holdbacks).

There are discrepancies between FFT planned AOP seedlings vs SPAR requested that need to be reconciled.

We have silviculture reporting support through the quality assurance contract with Certes in getting Mary Lester to assist staff, particularly those new to FFT, to make RESULTS submissions. The advice is to check with Mary after doing a couple of submissions to help ensure they are done correctly before completing the submissions. If you package the submission data, Certes can enter it for you. In addition to the quality assurance work, Certes have completed submissions for some Districts, and can provide ad hoc support to District by addressing any questions you may have.

Action #8: District staff should let RPB (Dan Turner) know if you want Certes to enter FFT data in RESULTS

Session 7: Forest Health – spruce beetle, Douglas-fir beetle, what’s coming

Tim Ebata led the presentation followed by Dr. Lorraine Maclauchlan. Lorraine received the ABCFP’s highest honour as Distinguished Forest Professional award in 2016.

Tim Ebata

2015 Aerial Overview Survey (AOS): We have a 100-year record of doing AOS with Canadian Forest Service (CFS) doing the AOS until 1995, and then the province stepped to undertake the AOS as CFS withdrew that service. The AOS involves fixed wing sketch mapping by two observers with some ground sampling. An annual written summary report is prepared entitled “Forest Health Conditions in BC”.

The 2015 AOS covered about 86% of the province; with smoke due to fires and clouds preventing coverage for some areas. The main challenge for the 2016 AOS were the wet summer conditions in NE BC.

Mountain Pine Beetle: From the 2015 AOS, the MPB annual red-attack is back down to endemic levels – with 326,408 ha attacked. There is still evidence of red-attack in the Chilcotin. Regarding MPB management, there is still suppression treatments in SE BC. There was a study of the efficacy of single-tree treatments, and benefit-cost estimate showed a very high return on investment.

Douglas-fir Beetle: This beetle has expanded throughout its range, such as in the Williams Lake area, and also on the Coast. The beetle prefers old-growth Douglas-fir which in the Interior may represent mule deer winter range. Treatments include MCH repellents (which are expensive), trap trees, and sanitation harvest.

Spruce Beetle: This primarily occurs in the Omineca region with about 300,000 ha impacted in 2016. This is the last major outbreak since the Bowron. It is difficult to determine what can be salvage harvested, and what can be sanitation harvested, since the beetle has often left to other trees before there is visual sign of damage. An Omineca Spruce Beetle Initiative is addressing the outbreak with Heather Wiebe as coordinator. The first public advisory committee (PAC) meeting was held that included several former FLNR managers. The local MLA is very engaged. We are waiting to assess the findings from the 2016 AOS. Guidance for special management zones is being provided such as avoid large openings and consider other values.

Drought: The Chief Forester requested a Drought Monitoring Initiative where Craig DeLong’s drought risk tool is being used and examined. So far have not heard of seedling damage. Some tree damage on poor sites with bedrock, but not a lot of damage overall.

Pathology: The Gall Rust Impact Model (GRIM) and the Comandra Rust Impact Model (CRIM) are designed to account for the timber supply impacts from these rusts.

Other: Minimum height standards are being updated to address forest health issues. We are also looking at the economics of stumping.

Lorraine Maclauchlan

Lorraine provided her thoughts on trends in BC. There was the MPB outbreak in the 1980's where 500,000 ha were attacked at the peak, so the 300,000 ha attacked now may not be endemic. The western balsam bark beetle is at high levels, and the western spruce budworm will likely return in 2-3 years along with other defoliators.

Douglas-fir pests include the Douglas-fir beetle, Douglas-fir tussock moth, western spruce budworm and Armillaria root rot.

Young pine terminal weevil is an issue more so in the Interior given the warm summer. There is seed resistant stock. Lorraine recommends high density planting to account for the damage. Stem rusts such as Comandra and western gall rust, along with damage by animals e.g. rabbits, bear scratchings – can cause damage.

The Douglas-fir beetle is showing the highest attack since 2000, and is the biggest pest issue currently in the Cariboo region mainly around Williams Lake. The MPB is still a big concern in Lillooet. The spruce beetle impacts cause spruce to often go directly from green to dead; some attacked trees do not show the red fade. Trap trees work on the spruce beetle before they fly in early Spring (April). The spruce beetle is quite prevalent in Wells Gray Park. In the Lillooet area there are lots of different beetle attacks occurring. Western balsam bark beetle will likely result in increased tree mortality with climate change.

For young stands, a critical issue is density management. Mix-up the densities and species. Most pest issues are on dry sites. Use better seedlings, more seedlings, and different species. Monitoring results from young pine stands found that about 20% of the pine seedlings had no pests, but most seedlings had more than one pest.

Discussion

Tim noted the work on young stand monitoring, and that they are working with inventory staff and modelers to better address forest health impacts on young stands.

Q: Can the Douglas-fir beetle spread to the Coast?

A: It is already in the Coast, around Powell River, on Vancouver Island, mainly in isolated patches.

The questions in the Workbook were addressed:

7.1. What forest health factors do we need to consider before spacing in immature stands?

What densities should we plant to manage for resilient stands?

A: There is guidance on planting densities on the website that provides stocking standards; we may need to put this on the FFT website. There was an issue in Lakes TSA about using low densities.

7.2. Proactive vs reactive management. Where should we spend the money and make the effort?

A: Normally we are reactive to forest health impacts; however for young stands we can be proactive by planting high densities.

7.3a. Assessment – whether aerial digital photography service can be included as part of the Forest Health - Aerial Assessments.

A: Some digital aerial photos have been taken to support bark beetle management, but this is generally expensive. However the photos could be useful to other users.

7.3b. Acquiring Aerial Photography – while covering the Districts landbase at a minimal cost.

A: This is covered by FLNR's inventory program. The ministry has access to high resolution (10 cm) DigitalGlobe satellite images; ask Geo BC.

7.4. Would be interested in any future predictions as far as areas impacted and time lines, of spruce beetle?

A: Big old spruce are the primary target of the spruce beetle. We have susceptibility ratings and maps. The spruce beetle should not be an issue for the fertilization program as the beetle are attacking older trees.

7.5. Will fertilization treatment criteria be updated to include consideration of swiss needle cast incidence?

A: This is a coastal issue, not sure if update is planned. Ask Stefan Zeglen, forest pathologist for the Coast. This cast was a big concern in Washington and Oregon.

7.6a. Can we expect to see more guidance related to risk associated with species – lodgepole pine for example. Lorraine mentioned that 'risk ratings' - perhaps in map form – were due out with new biogeoclimatic updates in the near future.

A: Yes and soon.

7.6b. Wondering specifically about Pli – whether we can expect to see 'hazard maps' that provide information related to damage agent risk for this species throughout the Okanagan.

A: Yes, David Rusch and Lorraine are putting this together.

7.7 Are there fire related pathogen out breaks, and do we have access to entomologists to treat?

A: Black Army Cutworm and Rhizina are pathogens that cause damage after fire. See Jennifer Burleigh's September 2013 FFT presentation on 'Forest Health Factors in Burned Areas – Black Army Cutworm, Rhizina' which is posted on the FFT Updates website. This is mainly an Interior fire issue; not heard of pathogens being a Coastal fire issue.

7.9. Is there any collaboration between forest health folks and those working on climate change and impacts or changes in stocking standards?

A: Yes, this is being done in collaboration with Kathy Hopkins at Competitiveness and Innovation Branch.

7.10a. Presently BCTS does not have many tools for sbb suppression besides holding and clearcutting. Options for smaller scale suppression using BCTS should be considered.

A: Use trap trees (use row felling), dedicated detection of green attack, and sanitation harvest. Ken White, the research entomologist based in Smithers, is a good contact on this.

7.10b. How will FFT manage other beetle kill, is there specific criteria already developed?

A: This is mainly being managed through licensees' salvage harvesting beetle killed stands.

There were additional questions from the floor:

Q: Would there be value in a spruce beetle ArcGIS on-line for to get crowd sourcing to help provide data to Districts and region?

A: We have bar codes on traps and getting ground data.

Q: Some Cariboo FFT reforestation efforts on 2009/10 burnt stands where 2000 sph were planted are seeing possibly 50% forest losses, and we seeing essentially no ingress.

A: Lorraine suggests planting to even higher densities such as 2500 to 3000 sph. Tim noted FSP renewal discussions in the Lakes regarding rust impacts; everyone finally agreed that planting densities had to go up.

Q: What is status of Zellaria disease on young pine stands?

A: The Zellaria defoliator has declined in areas within the Kamloops TSA but is still active and spreading throughout the Cariboo Region; it impacts the height and growth of young pine.

Lorraine will provide more information on status in her more detailed "2016 Overview of Forest Health Conditions in Southern BC".

Session 8: Safety

Dave Cornwell led this session by opening with a key point that you hire qualified contractors. In 2004, the Forest Safety Task Force prepared a document entitled "A Report and Action Plan to Eliminate Deaths and Serious Injuries in BC's Forests". The report is posted on the BC Forest Safety Council website.

As of April 2017, you can only hire SAFE certified contractors. The BC Forest Safety Council's website has a list of SAFE certified companies. We are in transition to this new mandatory requirement. If you have an existing contract with an option to renew clause, the requirement does not apply April 2017.

FLNR's Safety Management System can be accessed on the intranet site. Getting SAFE certified should not be an issue for planting contractors.

Dave addressed questions provided in the Workbook from the pre-Workshop survey, and questions from the floor:

8.1. What contractors need to be SAFE certified? Which do not.

A: Basically anything dealing with forestry. There is a list of activities on the BC Forest Safety Council website. If you are seeking an exemption from FLNR's April 2017 SAFE certified requirement, you will need to go to your Executive Director and make a compelling case.

8.2. Would be interested to see the risk reduction value for dollar. Do we have any statistics on that? That is, how many injuries are prevented by going through the exercise and how much does the exercise/program cost?

A: Benefits are for important qualitative reasons – to reduce injuries and death. Contractors need to have a good safety plan. If they can't manage safety, how can we count on them to do the work? There are levels of costs for SAFE certification from the BASE (Basic Audit Safety Evaluation) for larger contractors that costs about \$1200 to IOO (Independent Owner Operator) companies that costs about \$125.

8.3. FFT approach to Ministry implementation of SAFE program – April 2017: how to implement. Contract documents/templates – FFT standards need to be updated

A: Contract templates are being revised to include requirement for SAFE certification. FFT will follow FLNR's safety standards.

Q: What about third party delivery contracts via PwC?

A: These don't require SAFE certification, for example, for fertilization but most such contractors are SAFE certified.

Q: Can we expect an increase in bid costs?

A: Probably will be a bit higher initially but likely go back down later.

Q: Could we pay contractors more who have an option to renew to be SAFE certified?

A: We should not pay for it, this is their cost. We have the transition piece in place to address option to renew.

Q: What is our role in monitoring?

A: BC Forest Safety Council conducts audits. What we do is to review the contractor's Safety Plan to exercise their work; you need to review the plan to help ensure it meets your requirements. We need an individual working for the contractor on site that's appropriately trained. SAFE certification costs not just in getting registered, but in providing increased documentation (such as the Safety Plan) and getting trained people on the site.

8.4. Does FFT have any different safety requirements than those generally standard for the Ministry? If not, then no questions.

A: No. Note that the FFT contractor could be the prime contractor in the area for safety (e.g. where several contractors are working in the area).

8.5a. Implications of FLNR's 'safe certification' Does this apply to First Nations' contractors?

A: Yes. District Manager could provide an exemption; see website on how to get an exemption.

8.5b. Multi-year contracts exempt if started before this 2017?

A: Yes; as discussed if there is an option to renew on an existing contract, the SAFE certification requirement does not apply April 2017.

8.6. Wildlife/danger tree assessments, could there be a group introduction to the topic? (especially the value of wildlife trees for cavity nesting birds, who might keep beetles down to endemic, rather than epidemic levels)

A: Wildlife trees should be saved with a marked out safety zone.

8.7. How does FFT prepare its non safe certified contractors for this transition? Do we need a communication strategy?

A: Notice to contractors in effect. Communication strategy being developed.

8.8. Recently Tim Sheldon announced that FLNR is a SAFE-certified organization. Related communication indicates that starting April 1, 2017, FLNR contracts will require SAFE Certification for parties bidding on silviculture contracts. A number of our competent First Nations (and non-First Nations) contractors are not SAFE-certified – as a standard contract requirement we have had them develop and adhere to internal safety plans/procedures. These companies are often barely solvent, and advise that the cost of seeking and holding SAFE certification would be the last straw. To what degree has FLNR taken into consideration the financial burden of SAFE certification, and the barrier this poses to First Nations involvement in FFT delivery?

A: FLNR staff should not take the role as advisors to the contractors. If contractors have questions, they should go to the Minister of Labour to get help on WorkSafe BC registration. Be cautious about seeking any exemption from the SAFE certification requirement.

8.9. How much responsibility will ministry staff have with respect to Safe Certified Companies? Will we have some additional training to ensure we are not missing anything.

A: Need to ensure contractor is SAFE certified. See ‘Client Interaction Guide’.

What’s coming next? BC Forest Safety Council will focus on ensuring that competency standards and evaluations for forest workers are up to par with the ‘Forest Workforce Initiative Recruitment Competency Standards Project’ e.g. ensuring certified drivers that get workers to the work site.

Session 9: ITSL Updates

John Hopper (Kamloops BA) and Mike Madill led this session that provided an update on the 2016 FFT/BCTS Salvage Program using Innovative Timber Sale Licences (ITSLs). About 30% of John’s time is focused on helping other BAs get involved in FFT using ITSLs. Topics covered include:

- Performance
- Moving outside BCTS operating areas
- FEP/FCI opportunities
- 2000 sph
- BCTS challenges
- Key strategies to expand the program.

Performance

Around 7500 ha salvage harvested using ITSLs in 2015. From 2009 to 2016, ITSL salvage harvestings has ranged 3300 to 9581 ha just in Kamloops Business Area (BA). Cariboo and Kamloops BAs are where the bulk of the salvage harvest has occurred. Prince George BA is coming on board and in fact had the highest volume salvage harvested using ITSLs in 2015/16 followed by Kamloops and Cariboo BA.

Q: How much did not meet FFT funding requirements/criteria?

A: About 20-30% of the stands don't meet FFT criteria, as we are good at focusing on FFT eligible stands. We had just a few (about 6) no bids; then reduced costs to bidders by covering development costs to get bids submitted.

Moving outside BCTS operating areas

BCTS operating area is only 20% of the Kamloops TSA; we are not operating in the remaining 80% due to concerns and challenges raised by holders of NRFLs and licensees – they are looking for compensation. At the TSA Steering Committee level, there was agreement in-principle to go to the 80%. We have identified about 15,000 ha in three TSAs (Kamloops, Merritt, 100 Mile House) that our potentially eligible stands outside BCTS' operating area. We have shared this information with the planners. One possible quick win is to pay licensee to salvage harvest, and FFT takes on reforestation. Some NRFL holders are requesting to go into BCTS operating areas. There was a comment from the floor that resolving these issues may require legislation so we can get past the referral stage. BCTS harvested volumes in the 80% would go against BCTS' apportionment.

FEP/FCI opportunities

FFT stand requirements can be too restrictive therefore we are looking to expand ITSL salvage harvesting from these other investment programs. We will continue to do FFT restoration work, but address other stands too. As we move forward, who should be submitting a FES proposal? District? BCTS? Jointly?

Q: Why not change the FFT criteria?

A: Neil Hughes said that FFT criteria is 10 years old, so we may need to re-visit the criteria while continuing to address mid-term timber supply.

It was noted that it costs FFT about \$1300/ha to pay for the removal of the overstory; using ITSLs there is no cost. With a Forest Licence to Cut, the holder oftent can't sell the wood, so they just pile and burn – resulting in carbon emissions. In Kamloops we are therefore only doing ITSLs so the wood can be utilized.

2000 sph

We prepared a rationale for why the 2000 sph should be the minimum planting density; the rationale was needed as there was concern that 2000 sph was a high cost option. We have observed knotty branches in young stands planted at 1400 sph. We are doing at least 2000 sph for all FFT openings, and encouraging these densities for all BCTS operations in pine.

BCTS challenges

- Multiple BCTS staff and varying positions on FFT file
- TSLs being developed in MPB areas with FFT potential not being recognized or pursued
- Potential eligible TSLs selling below Total Cost Upset (TCU²) or no bids
- Going outside BCTS' operating area.

Key strategies to expand the program

² TCU means BCTS' total estimated costs associated with planning, developing, auctioning, administering and reforesting a given TSL, including BCTS headquarters and BA overheads. BCTS generally attempts to avoid below TCU TSLs.

- New MOU provides tools and flexibility
- Expand outside of BCTS' operating area (e.g. in Kamloops, 100 Mile House and Merritt TSAs with potential also in Lillooet)
- Identify projects to confirm eligible areas for entire TSA
- Reimbursement of development costs having positive impact (new in MOU)
- Put post-flight opportunity map on Google Earth to discuss with licensees with photos of stand
- Designated key BCTS positions to be on FFT file
- Develop partnerships with FFT contact e.g. John Hopper/Mike Madill
- Have a purchase agreement with licensees outside BCTS' operating area; they have conducted surveys of stands they can't afford to harvest that may be FFT eligible
- Ensure staff/contractors pursue FFT criteria
- Identify potential sites at a reconnaissance level, survey early, and on marginal stands, group blocks with good access
- Survey all TSLs that meet FFT criteria regardless of volume and piece size (don't guess the market)
- If >70% dead due to both MPB and spruce beetle, we are going there under FFT.

Q: Can you speak to the Clearwater pilot?

A: There are two decadent cedar hemlock stands with negative volume growth due to decay that we harvesting using ITSLs.

There was a comment that the pilot seems to be moving us into problem forest types, and that we should be careful; if the stands are still green, they could represent future mid-term timber supply.

It was noted that FES has a role for decadent cedar hemlock as one criteria is 'improving damaged or low value forests'.

In ITSL administration, we include the complete approval package including written rationale for any deviation from eligibility criteria.

Q: What is link to non-sawlog fibre use?

A: That's huge; if we can market the fibre that increases the chance of the timber sale proceeding. Many ITSLs include a non-sawlog component. ITSL's are a lump sum sale, so there is less waste. The successful bidder has pre-paid for the wood – as opposed to harvesting that is subject to scaling. With FLTC, it costs too much to take it, so lots of wood left behind as waste.

Q: How does bidder know the type of wood that are bidding on?

A: Most bids are based on a full cruise.

During discussions, it was noted that some OGMAs on the Coast could use reforestation (under-planting) under FCI.

The questions in the Workbook were addressed:

9.1. Do we need to open up the ITSL criteria to expand the amount of eligible stands?

A: We could under-plant with FCI using this new source of funding.

9.2. Is there consideration for ITSL's on the Coast given the wildfires of 2015?

A: Yes – ITSLs could be used on Coast for this. There are also low value birch stands.

9.3. Are any planned for the Coast?

A: Yes

Lorne Bedford noted that FFT has a target of treating at least 20,000 ha per year to 2025 for MPB. The 70/70 rule [at least 70% pine and at least 70% dead] was meant to protect stands that might contribute to mid-term timber supply; so we need to be careful changing criteria prematurely.

Session 10: Dead Pine Inventory

Neil Hughes opened the session off by asking: How much rehabilitation will really be needed? How healthy is the regeneration in MPB attacked stands? He noted the Vegetation Resource Inventory (VRI) is 10-15 years old in some area. The VRI is showing some stands as >70% pine and >70% dead, yet they are green when visited on the ground. There are VRI updates underway for Morice, Lakes, Fort St James, Vanderhoof and Quesnel. New digital photos are being acquired for Prince George and Merritt; Merritt is also getting LiDAR. Neil asked staff to describe the situation in their District.

Nadina District (Lakes and Morice TSAs)

Carolyn Stevens provided an update for her District. The annual available harvest is about 2.3 million m³ in the Lakes TSA – with about 1.65 million m³ occurring outside Community Forests and Woodlots. We are anticipating a large decrease in the AAC as we transition to the mid-term. In the southern portion of the TSA, most of the available FFT eligible stands require expensive barge access. In the northern portion of the TSA, most eligible stands already harvested except the corridors. A licensee purchased NRFLs that were held by First Nations. There is likely going to be competition for the declining wood supply. We have issued FLTC to knock the overstory down so we could reforest eligible stands; even with a pellet plant nearby, they could not afford to take the wood.

Prince George District

Ljiljana Knezevic provided update for Prince George. The worst stands to remediate are when the MPB attack is old, site conditions are in drier/poorer BEC subzones, and where there has been wind damage. The better stands are in moister/richer BEC subzones, and where there are alternative species in the stand. Overall, the Prince George District does not have a massive inventory of MPB attacked stands that may be FFT eligible. Supply Block F is remote with little activity. Other supply blocks, there is interest where pine and spruce are in stands. There is potential given bio-energy/pellet industry, but they want it for free and close to plant.

We have completed all young stand rehabilitation work, and need to move to older AC4+ stands to salvage harvest the overstory. An appraisal change is needed where harvesting is for fibre and not sawlogs. Blowdown areas are also a priority for FFT in our area.

Quesnel District

Lee-Ann Puhallo provided District update. They have a May 2016 Quesnel TSA Timber Supply Analysis Discussion Paper. About 1 million ha are in the THLB. About 70% of the THLB is pine with about 50% of it dead. About 28% of THLB (286,000 ha) have never been harvested.

About 205,000 ha are projected to not achieve minimum harvest volumes after shelf life expires. From 2010 to 2015, 84% of the harvest volume was pine and 85% of that pine was dead. The MPB attack crashed in 2005 – the 15-year assumed shelf life appears to be about right. Licensees still focusing on dead pine and have not been going after green wood.

There are two pellet producers: one with tenure but not active, and other looking for tenure. They are looking for free fibre or for District to look after reforestation. Lots of NRFLs – they still believe they can harvest. BCTS ITSLs represent about 1200 ha per year, and are not unduly impacting non-timber values.

What is helpful is new VRI, ground sampling of candidate stands, and a FES fuel reduction/fibre recovery project in the wildland urban interface.

Central Cariboo/Chilcotin District

Kerri Howse provided update. There are lots of pine stands remaining and a 50% dead tree AAC partition. Licensees and BCTS are making concerted efforts to stay in pine stands sometimes harvesting down to 50 m³/ha. That said the inventory doesn't always reflect what is on the ground. For most BCTS ITSLs harvests, the main factors for success are merchantable volume (100 m³/ha), cycle time (6 hours), and piece size. It is getting more difficult to sell MPB killed wood. There is a pellet plant and a biomass energy plant. Regarding rehabilitation opportunities, there is competition to harvest stands with higher site index. Licensees are currently operating in stands that meet FFT criteria.

There is need to re-visit FFT criteria as the percent dead not a stable number, and consider minimum stand volumes (e.g. less than 60 m³/ha).

100 Mile House District

Rob Martin noted there is good cooperation with licensees, and a short cycle time (2-3 hours) for most of the TSA. They have Type 4 SS Tactical Plans. They have identified a rehabilitation opportunity for FES. There is an OSB plant. A challenge is First Nations who are opposed to harvesting in their asserted territory. The District has a fairly large BCTS ITSL program, and have identified about 8000 ha outside the BCTS operating area – but licensees have expressed interest in all of those areas. We may need purchase agreements with licensees to harvest those stands. During discussions it was suggested that RPB needs to work with the Chief Forester to push the operating area issue.

During discussions it was noted that First Nations concerns about issuing new cutting permits are with respect to impacts on moose populations; a potential solution is to rehabilitate or deactivate some roads to help mitigate impacts of additional harvesting.

Session 11: Current Reforestation and FRPA s. 108 Review

Nigel introduced Dennis Sabourin, the consultant working for RPB on the review, who made the presentation. Nigel noted that auditors typically ask if we are checking to see if we are meeting the objectives of the program – the review is intended to support FFT should that question be asked by an auditor.

Dennis prepared a 2011 report that assessed the stocking status of FFT treated areas between 2004 and 2009. 75 sites were randomly selected representing a 2298 ha area. 67% of the sites were impacted by wildfire and 32% by the MPB. 71% of the sites were satisfactorily restocked, 18% were borderline, and 11% were not-satisfactorily restocked. 67% were on-track to free-growing, 18% were potentially on-track to free-growing, and 15% were not on track to free-growing.

Dennis made 13 recommendations in his 2011 report with 6 being a high priority; with three profiled at the session:

- Need current stocking survey [still an issue]
- 1.0 m minimum inter-tree distance [2011 findings were 2.0 m]
- Underplanting MPB and wildfire stands not recommended [success rate about 25%] – get ITSL to clear overstory, or chip, or bunch and pile for firewood

The 2016 review is reassessing 50 sites that were assessed in the 2011 report plus 20 new sites. He noted that it is hard to find original planting density in RESULTS. He doesn't always agree with the silviculture survey recommendations e.g. to aerial spray when you could manually treat. He felt that several sites were under-reviewed even with reconnaissance. For some s.108 projects, was planting necessary given natural ingress.

He noted some of the reasons why underplanting is a problem:

- Planted trees have slower growth rates given overstory
- Planted trees are browsed by hare as the overstory effectively blocks raptors
- Planted trees are vegetation pressed and/or have suppressed grows rates from competing vegetation.
- Planted trees are damaged or deformed from falling dead trees.

The s. 108 report will be based on an assessment of 25 sites, which is a very small sample size. Some preliminary findings include:

- Only 72% of the sites had planned activities in RESULTS
- Only 57% had activity maps
- In some cases there are too many surveys for the s. 108 area
- There was unnecessary disc trenching on one site, but it did lead to the seedlings growing better.

During discussions it was noted that Districts are not obligated to report surveys in RESULTS, so if they are not there, Dennis would not know if they exist. We are supposed to report planned activities for s. 108.

Dennis noted that some CR activities have not worked, and trying to re-treat those problem sites may be too difficult or costly – and if so should not be done.

Session 12: FFT: Program Review, District and Regional Feedback

Nigel went over some of the feedback received such as:

- “Flagship” – don’t like term
- No one knows what FFT is doing; need outreach/extension
- Need to increase species diversity and density
- Consider direct seeding on rocky sites
- Can some 70/70 sites provide mid-term timber supply?
- Does FFT fall under Chief Foresters Standards for Seed Use
 - Although no obligation, the standards should be followed
- How to encourage licensees do enhanced plant densities
 - Get it in forest health/silviculture strategy
- How is PwC paid for services?
 - Dave Cornwell noted the payment is based on the incremental delivery funds they administer
 - Contact Dave if you would like PwC assistance to deliver projects
- District’s actions for Branch
 - Improve website for contract templates
 - Clearly articulate FFT and TSM objectives [this may be on website already]
 - Look to planning system e.g. Cengea (formerly GENUS) used by BCTS.

Nigel will be doing further review of District and regional feedback; more to come on this.

Workshop Wrap-Up and Evaluation

Lorne Bedford provided a Wrap-up of Day 2 sessions:

- Forest health – good to see the 2000 sph – provides further rationale for these planting densities
- GAR – shows we are a ‘go to program’ as we deal with about 3000 openings
- RESULTS – the Auditor General and the Forest Practices Board reviewed the quality of the submissions a few years ago and found several errors
 - FFT had about 15% errors before and now we are down to 2.3% - a significant achievement
- Safety – SAFE certification is coming and we need to be ready for that
- ITSLs – this collaboration with BCTS has meant about 1 million m³ of wood have been utilized – major accomplishment
 - In 5 years, where does the FFT program go?
- Dead pine inventory – great to get the reports from Districts
 - Getting harder to find areas; stands less viable
 - Reluctance of tenure holders to allow treatment of stands outside BCTS operating areas
 - Pellet industry not able to pay for fibre removal
 - Need to consider other values
 - Revisit FFT criteria e.g. less than 60 m³ minimum volume

- Dennis' session – recommendation we not do underplanting
 - Tom Sullivan recommended against that
- S. 108 was designed to be easy to administer, but need to ensure good delivery

Lorne extended a big thanks to Nigel, other Workshop organizers, the presenters, and all of you who attended.

Nigel asked attendees to complete the Workshop Evaluation Form. The results from the completed evaluations are provided in Appendix 2.

Thanks again for your participation!

Appendix 1: List of Workshop Participants

An attendance list was distributed but some participants may not have received it and may have been inadvertently overlooked in the list below.

Name	Organization
Greg Anderson	Forest Enhancement Society
Tracy Andrews	South Island District
Tanja Armstrong-Whitworth	BCTS Cariboo-Chilcotin
Bryce Bancroft	Contract support
Lorne Bedford	Resource Practices Branch
Brendan Brabender	Competitiveness and Innovation Branch
Kerri Brownie	BC Timber Sales Branch
Scott Byron	BCTS Stuart-Nechako
Dave Cornwell	Resource Practices Branch
Mike D'Aloia	Fort Nelson District
Jennifer Davis	Resource Practices Branch
John DeGagne	Stuart Nechako District
Joanna deMontreuil	BC Timber Sales
Kevin Derow	Okanagan Shuswap District
Kari Doyle	BC Timber Sales
Tim Ebata	Resource Practices Branch
Nigel Fletcher	Resource Practices Branch
Richard Garner	BCTS Okanagan-Columbia
Sheri Harnden	BCTS Kamloops
John Hopper	BCTS Kamloops
Kerri Howse	Central Cariboo/Chilcotin
Neil Hughes	Resource Practices Branch
Paul Inden	Stuart Nechako District
Candice Kawaguchi	Thompson Rivers District
Ljiljana Knezevic	Prince George District
Matthew LeRoy	Resource Practices Branch
Mary Lester	Certes
Darcy Lillico	BCTS Cariboo-Chilcotin
Monty Locke	Resource Practices Branch
Lorraine Maclauchlan	Thompson/Okanagan Region
Heather MacLennan	Thompson Rivers District
Mike Madill	Thompson/Okanagan Region
Rob Martin	100 Mile House District
Leith McKenzie	Thompson/Okanagan Region
Ted McRae	Okanagan Shuswap District
Diane Nicholls	Chief Forester & ADM Office of the Chief Forester Division
Dan O'Brien	PwC - PricewaterhouseCoopers
Ross Pavan	BCTS Kootenay
Dan Peterson	Forest Enhancement Program
Rachael Pollard	Thompson Rivers District
Gord Pratt	Thompson Rivers District

Lee-Ann Puhallo	Quesnel District
Tim Qureshi	Thompson Rivers District
Al Rasmussen	BC Timber Sales Branch
Katherine Rogers	BCTS Babine
Dennis Sabourin	Consultant
James Sandland	Competitiveness and Innovation Branch
Katrina Sigloch	Thompson Rivers District
Andrew Snetsinger	Cascades District
Carolyn Stevens	Nadina District
Jack Sweeten	Chilliwack District
Kevin Telfer	Coast Region
Dan Turner	Resource Practices Branch
Ron Van der Zwan	Thompson Rivers District
Kona Van Diest	BCTS Kamloops
Mary Viszlai-Beale	Fort Nelson District
Terje Vold	Contract support
Craig Wickland	Coast Region
Ian Wiles	Selkirk District
Bert William	Bonaparte Indian Band

Appendix 2: Workshop Evaluation

Workshop Sessions	Not useful	Partially useful	Useful	Very useful
Chief Forester's Direction for FFT	0	2	15	12
1. 2017/18 Annual Operating Plan	0	7	17	7
2. 2016 Fires and Section 108	2	10	8	5
Archaeological Impact Assessments (AIA)	4	9	15	3
3. Panel Discussion: 3 Programs & Investment Targets	0	3	19	10
4. Integrated Silviculture Strategies	0	9	15	7
5. BCTS Seed and Seedling Services	0	2	20	10
6. GAR Update, Budgets, RESULTS Reporting	0	6	24	3
7. Forest Health-Spruce Beetle, Df Beetle, What's Coming	0	3	11	19
8. Safety	2	13	15	4
9. ITSL Updates	2	6	19	6
10. Dead Pine Inventory	1	6	18	7
11. Current Reforestation and S. 108 Review	2	14	15	1
12. FFT – Program Review, District and Regional Feedback	0	5	18.5	1.5
Any Comments on Particular Sessions?				
General <ul style="list-style-type: none"> • Great job by presenters! • First day was great overall • Sessions 3, 4, 5, 7 and 11 were very interesting • Relatively new to FFT so all speakers' presentations were useful and informative • Very good wrap-up by Lorne • Well organized • 'Partially useful' were good presentations, just are not relevant to me • Great location; interested to know, in the coming years, what opportunities exist on the Coast for FFT (ITSL?) • Presentations were pine centered! 				
<u>Chief Forester:</u> <ul style="list-style-type: none"> • Chief Forester was great • Chief Forester discussion was very relevant • Chief Forester's discussion didn't answer any submitted questions 				
<u>#1:</u> <ul style="list-style-type: none"> • More detailed discussion and review of the 2017/18 AOP forecast. Would have been good to have data broken down to the delivery agent level. Would have been good to have reported out the actual activity accomplishments vs planned numbers. Also would like to see a summary of actual treatment costs. 				
<u>AIA:</u> <ul style="list-style-type: none"> • Archaeological talk very informative • Difficult to see the tie to the FFT program; would like to see how FFT is working toward reconciliation with First Nations • [not useful] but interesting 				
<u>#3:</u> <ul style="list-style-type: none"> • Good to hear about the newer programs such as FESBC and FCI but no clear information on targets and process for the District level and what this means in terms of collaboration between 				

the 3 programs

- Panel presentation less helpful (not information dense)
- Would have been ‘very useful’, but at this time they don’t have enough information/direction on how to move forward
- 3 program investment targets were not clear, it appears there are opportunities but how to put proposals forward is confusing. Knowing the criteria for each program was useful but actual getting and delivering proposals or projects was not clear. Also is this the best use of staff time.
- I do not want to have to compete for my budget! We are seeing more “programs” that require specific applications that may not be successful. Don’t give me more application-based programs. If government wants the work done, it should make available the budget through regular budgeting processes. If the application process is too onerous, we will not do it.

#4:

- ISS – seems like a prerequisite to any further decision-making; under-sold

#7:

- Very area centric. Would like to hear more about what province is actually doing to deal with forest health issues across province
- Forest health was very focused on Interior – very little mention of Coast

#10:

- Not relevant to Coast
- Interesting, I’m from a District that isn’t really impacted by MPB
- [not useful] but interesting

#11:

- More discussion on result of “Audit” and less about process would have been more informative
- Too long!!
- Standing on a road and taking pictures of stand and making assumptions from this is not a professional assessment
- Sampling from the road creates some certainty issues with recommendations/trends!
- Less time and emphasis on his background
- Too much detail on field card
- Too much detail on methodology regarding current reforestation presentation
- Overly detailed! Could have reduced the slides by half.

#12:

- Need some feedback time on this, more Q & A
- Will want to hear more

Workshop Logistics	Satisfied	Not Satisfied	Comment
Workshop organization	30.5	0.5	-Great job! -Workshop was well organized, stayed on time and on topic – good job! -Excellent Workshop -Organization and Noble Pig was great though car crash problematic -Need to manage time better – allow for more Q & A -Agenda was slow getting out to people not part of FFT
Workshop venue (meeting room, refreshments/lunch)	29.5	1.5	-Great food, nice scenic venue -Lunch and treats were great–thanks, Nigel! -Nice to be out of the city

)			<ul style="list-style-type: none"> -Great space and OK acoustics -Refreshments and lunch were good -Nice venue, lots of room, good sound -Great venue; lots of room; good food -Good food and snacks -Food was OK -Room was a bit cold the morning of the 2nd day -Good -[Satisfied] meeting room; [not satisfied] food; let people know food will not meet all dietary needs or ask if people have food restrictions -Could have asked staff who needs special foods; meeting room was great/coffee awesome
Workshop agenda	31	0	<ul style="list-style-type: none"> -Pretty good -Well rounded agenda with enough time for side discussions -Create more opportunities to stretch -Would rather have lunch to network rather than listen to another speaker -Some changes - fine
Other (please specify)	6.5	0.5	<ul style="list-style-type: none"> -Well done, Nigel! -Great job on all fronts -Good job Nigel!!! -Have mikes available through-out room so that we can hear audience questions -Need better computer/presentation coordination -Kamloops difficult to get to, as we lost a day either side flying from island -Flights can be hard to organize from smaller centres -Kamloops is painful for Northern folks to access; go back to Richmond -Location very time consuming to get to -An extra notes page after each session in the Workbook would be helpful

Appendix 3: Workshop Action Items

Action #1: Time to re-visit FFT priority ranking system and criteria.

Action #2: If District is shifting >10% of allocated funding within CR (or TSM) category, then need to contact Neil Hughes and Matt LeRoy – who will in turn discuss with Jennifer Davis for decision.

Action #3: RPB [Monty] to provide a prescription template for fertilization, and a fertilization template contract.

Action #4: Let Seedling Services know as early as possible if you need more seedlings, and if you have a surplus – so that the seedlings can be moved to where they are needed.

Action #5: Branch [Nigel] will get copies of presentation slides and make available to FFT contacts

Action #6: RPB (Matt) to provide AGOL Caribou GAR link to staff.

Action #7: Determine whether free growing declarations should be a mandatory submission in RESULTS.

Action #8: District staff should let RPB [Dan Turner] know if you want Certes to enter FFT data in RESULTS.

Appendix 4: BCTS Recommended Seedling Stock Type Selection



BCTS Recommended Seedling Stock Type Selection Interior Species

Sx		Ht (cm)	Min RCD (mm)	Cost Relativity	# Box	Stock Type
Small	410	12 - 27	2.6	47%	315	PSB 410 1+0
Medium	412A	13 - 35	3	67%	210	PSB 412A 1+0
Large	512A	14 - 40	3.3	100%	120	PSB 512A 1+0
Pli / Py		Ht (cm)	Min RCD (mm)	Cost Relativity	# Box	Stock Type
Small	310B	6 - 16	2.1	51%	360	PCT 310B 1+0
Medium	410	7 - 20	2.6	71%	315	PCT 410 1+0
Large	412A	8 - 22	2.8	100%	210	PCT 412A 1+0
• Copper root pruning (PCT) recommended for spring plant stock						
Fdi		Ht (cm)	Min RCD (mm)	Cost Relativity	# Box	Stock Type
Small	412B	13 - 28	2.6	57%	315	PSB 412B 1+0
Medium	412A	15 - 34	3	81%	210	PSB 412A 1+0
Large	512A	15 - 40	3.3	100%	120	PSB 512A 1+0
Lw		Ht (cm)	Min RCD (mm)	Cost Relativity	# Box	Stock Type
Small	410	12 - 28	2.5	45%	315	PSI 410 1+0
Medium	412A	14 - 32	2.8	65%	210	PSI 412A 1+0
Large	512A	15 - 40	3.2	100%	120	PSI 512A 1+0
Cw		Ht (cm)	Min RCD (mm)	Cost Relativity	# Box	Stock Type
Small	410	16 - 35	2.2	45%	315	PSB 410 1+0
Medium	412A	18 - 42	2.5	71%	210	PSB 412A 1+0
Large	512A	20 - 50	2.8	100%	120	PSB 512A 1+0
Pw		Ht (cm)	Min RCD (mm)	Cost Relativity	# Box	Stock Type
Small	410	12 - 27	2.6	51%	315	PSB 410 1+0
Medium	412A	8 - 22	2.8	75%	210	PSB 412A 1+0
Large	512A	9 - 24	3.1	100%	120	PSB 512A 1+0
BI		Ht (cm)	Min RCD (mm)	Cost Relativity	# Box	Stock Type
Small	310B	7 - 12	2	58%	360	PSB 310B 1+0
Medium	411B	7 - 17	2.3	65%	315	PSB 411B 2+0
Large	412A	10 - 20	3.3	100%	210	PSB 412A 2+0
* Summer plant stock - RCD min reduced 0.2 mm, large stock not recommended, For all Pli PSB is recommended						

Seedling Services Website - <http://www.for.gov.bc.ca/nursery/headqtrs/contract.htm>