WHISTLER

MINUTES

REGULAR MEETING OF FOREST AND WILDLAND ADVISORY COMMITTEE
October 10, 2018, STARTING AT 3:00 – 5:00 P.M.
In the Flute Room
4325 Blackcomb Way, Whistler, BC V0N 1B4

PRESENT:

Name	Meetings to Date: 9
Present:	
Council, Cathy Jewett	7
AWARE, Claire Ruddy, Co-Chair	8
Member at Large, Arthur DeJong	8
Member at Large, Johnny Mikes	6
Member at Large, Trevor Burton	4
Member at Large, Candace Rose-Taylor	4
Recording Secretary, Heather Beresford	9
Regrets:	
Member at Large, Derek Bonin, Chair	7
Member at Large, Colin Rankin	5
WORCA	6
Member at Large, Mac Lowry	4
Member at Large, Kathi Bridge	4

ADOPTION OF AGENDA

Moved by A. DeJong
Seconded by J. Mikes

That the Forest and Wildland Advisory Committee adopt the Forest and Wildland Advisory Committee Agenda of October 10, 2018.

CARRIED

ADOPTION OF MINUTES

Moved by T. Burton
Seconded by C. Jewett

That the Forest and Wildland Advisory Committee adopt the Forest and Wildland Advisory Committee Minutes of September 12, 2018.

CARRIED

PRESENTATIONS/DELEGATIONS

Updates

Council:

- OCP passed first reading
- October 16 is last meeting of current council
- Discussion re: pros and cons of appointing the same councilor to FWAC appointment and CCF Board
- Discussion re: concerns that FWAC input is inconsistently conveyed and reviewed by the entire Council

AWARE:

- Report writing season
- Hosted all-candidates meeting, candidate survey posted online

RMOW:

- OCP – meshing OCP policies with bylaws, procedures
- Kadenwood fuel thinning project underway until weather closes in
- Budget process underway

Trail Planning Working Group:

- Next meeting in November

Cheakamus Community Forest:

- Fuel thinning almost completed on Callaghan road, CCF5 (cemetery) and Alpine Meadows sites
- Open House scheduled for Tuesday, November 27 from 4:30 – 6:30 at Whistler Arts Centre. Presentation at 5:00 p.m.

RMOW Wildfire Program

A presentation by H. Beresford, Environmental Stewardship Manager, was given regarding the municipal wildfire program and a discussion was held.

- Overview
  - 2018 was BC's worst wildfire season
  - Whistler experienced significant smoke in August
- Wildfire Fuel Reduction Projects
  - Kadenwood: 50% of 24 hectares completed in 2018, remainder completed in spring 2019
  - Alpine Meadows/CCF 5 projects completed with CCF. (22 hectares)
  - Callaghan Road completed with CCF
  - CCF will begin thinning along Cheakamus Lake Road through winter 2018/19
  - Prescription development stage for ~120 hectares surrounding Rainbow neigbhourhood
  - Whistler Fire Rescue Service thinning around priority critical infrastructure
- FireSmart Public Education & Support Program
  - Chipper days oversubscribed, public interest high
  - 3 person crew

  - Many stratas requesting FireSmart assessments and conducting thinning work on property
  - FireSmart promotion in July
- RMOW Policy:
  - Wildfire DPA added to OCP
- Planning & Next Steps
  - Plan being prepared for next 3-5 years of work
  - Province launched new funding program in September: Community Resiliency Investment Program; replaces Strategic Wildfire Prevention Initiative

A. DeJong left at 3:54 p.m.

CCF Annual Field Trip

A presentation by H. Beresford, Environmental Stewardship Manager, was given regarding the FWAC field trip and a discussion was held.

- Discussion re: prescription requirement to clean forest floor to 1 km/m2. Very labour intensive and expensive. Could CCF leave more debris on floor and clear more hectares over all? Need more information from fire specialist. Consider having a variable thinning regime based on proximity form ignition sources (road side), for example. Invite Bruce Blackwell to speak to FWAC in new year. Suggestion that RMOW hold a wildfire community information session.

FWAC CCF Annual Report – Appendix A

Moved by C. Jewett
Seconded by C. Rose-Taylor

That the Forest and Wildland Advisory Committee adopt the 2017 annual Cheakamus Community Forest report as amended.

CARRIED

C Jewett left at 4:25 p.m.

FWAC Membership Terms

Johnny Mikes – full term completed November 2018.
Candace Rose-Taylor – will attend November meeting then step down.
Arthur DeJong – term expires in 2019 but wait for election results.
Derek Bonin and Trevor Burton – request 1 year extension

ACTION: H. Beresford advertise for new members and take administration report to Council in new year with applicants and extension requests.

OTHER BUSINESS

- Reviewed upcoming agenda items
- E-bike policy – discussion re: policy; trail designations; increased maintenance; increased rescue requests; need for clear management direction

MOTION TO TERMINATE

Moved by J. Mikes
Seconded by C. Rose-Taylor

That the Forest and Wildland Advisory Committee Meeting of October 10, 2018 be terminated at 4:40

CARRIED

Chair, Claire Ruddy	Recording Secretary, Heather Beresford

APPENDIX A

FOREST & WILDLAND ADVISORY COMMITTEE ANNUAL REPORT ON 2017 CHEAKAMUS COMMUNITY FOREST HARVESTING

Photo Credit: Bob Brett

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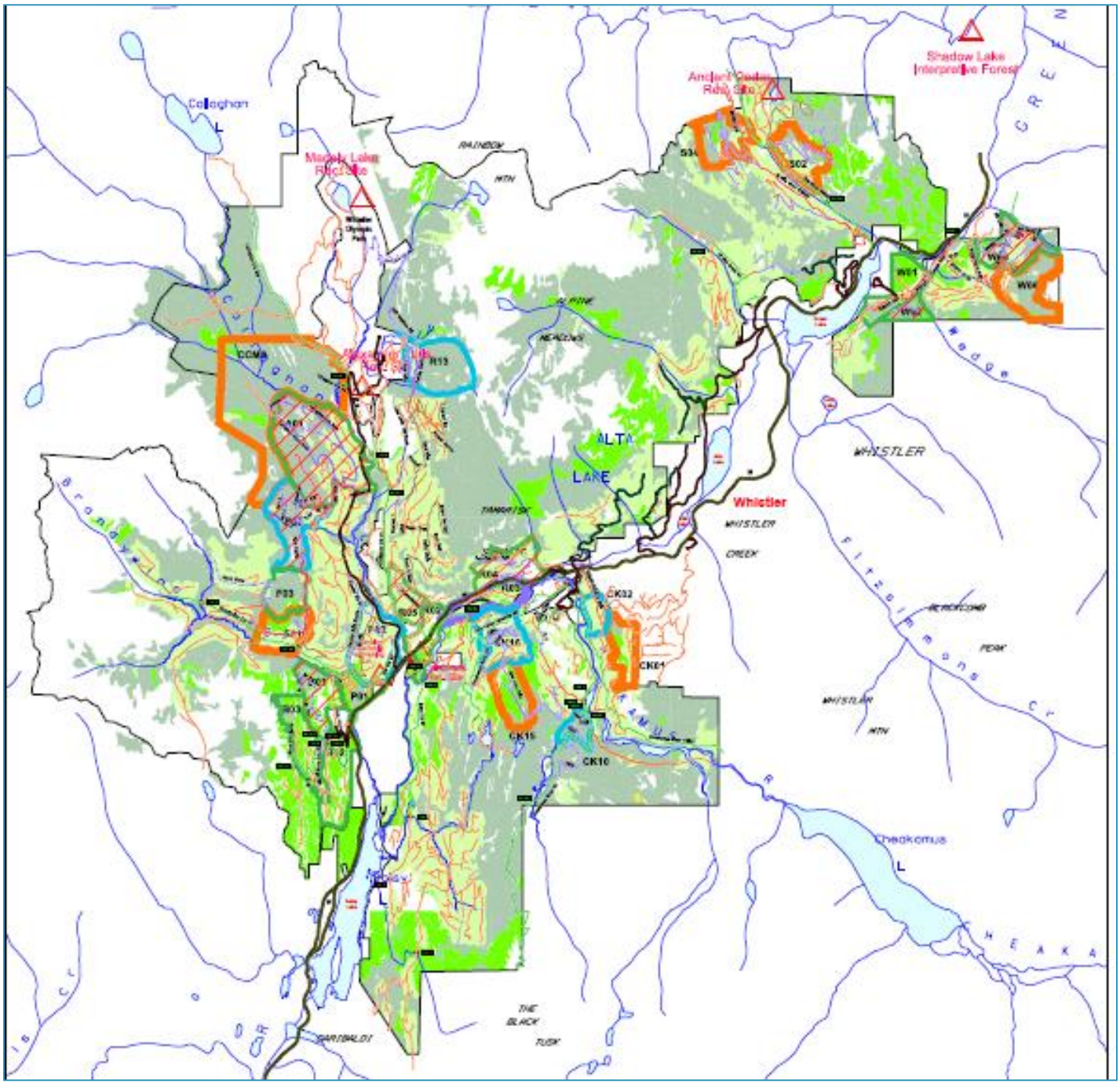


2. Introduction and Summaries of Harvesting Information, Key Comments and Recommendations

2.1 Introduction

The Cheakamus Community Forest (CCF) operates under the K3V forest license and is one of 60 community forests in British Columbia. Situated on more than 33,000 hectares surrounding Whistler, the CCF was established in 2009, when the Lil'wat Nation, Squamish Nation and Resort Municipality of Whistler (RMOW) jointly signed a 25-year tenure with the provincial Ministry of Forests and Range. Together, these three equal partners oversee the management and operation of the forest under the auspices of the Cheakamus Community Forest Society, an independent not-for-profit organization.

The purpose of the Forest and Wildland Advisory Committee's (FWAC) annual report is to provide recommendations for forest management improvements to the RMOW Council, the CCF Board of Directors and forestry manager, and to the forestry operations contractor. Field observations are drawn from a field trips held on October 26, 2017 and May 17, 2018.

2.2 Summary of Harvesting Information

Table 1: Harvesting Summary 2017 (Source: Cut Control Statement 2017)

LFV = Lil'wat Forestry Ventures; SF – Sqomish Forestry; OFT = Operational Fuel Thinning

Unit	FWAC site visit	Silviculture Strategy	Purpose	Area	Age Class	Contractor	Planned Harvest (m3)	Cubic Metres Harvested
Wedge 08 T2A, T2B	Yes	Partial retention	OFT	1.8 ha & 0.7 ha	2nd growth	LFV	All W08: 1700	All W08: 2528.6
Wedge 08 C4	Yes	Partial retention	OFT	3.2 ha	2nd growth	LFV		
Wedge 08 C8	Yes	Partial retention	OFT	1.4 ha	2nd growth	LFV		
Quad North - R05 (ATV Trail) Mechanical	Yes	Shaded fuel break	OFT	0.8 ha		SF	Negligible	
Quad North - R05 (ATV Trail) Manual	Yes	Shaded fuel break	OFT	3.0 ha		SF	Negligible	18.6
Wedge 02		Partial retention	Harvest	~8 ha	Mixed	LFV	4550	6551.7
R01								101.3
Powder 02	Yes	Moderate retention	Harvest	7.9 ha	Mixed	SF	400	392.5
Cheak 16	2017					LFV		933.8

A01		Low – moderate retention	Harvest	6.5+ ha	Old	SF	7000	4415.2
N01 (Alpine Meadows)		Shaded fuel break	OFT	15 ha	75 years	LFV	2850	2509.2
TOTAL								**17,451**

The annual allowable cut (AAC) for the CCF is 20,000 cubic meters (m3) per year. The current 5-year control period is 2014 - 2018 for a total of 100,000 m3. The volume harvested that is counted towards the AAC is primarily the logs scaled (sold) but also includes the waste (billable) remaining at the harvesting unit. Additional wood residue (non-billable) remaining at the harvesting unit is not counted towards the AAC. As of December, 2017 the CCF has harvested 51,764 m3 or 51.76% towards the current cut control period. See Table 2.

FWAC recognizes the operational challenges with weather conditions and fluctuating market conditions that influence the volume harvested each year. FWAC encourages the CCF to reduce waste and utilize more residue by harvesting marginal logs and marketing minor forest products. This greater wood utilization will contribute more volume towards the AAC. In addition, FWAC encourages the CCF to commercial thin second growth stands to make up the balance of the AAC. Both of these strategies will reduce the forest fire fuel loading and complement the wildfire mitigation strategies that are implemented in the forests surrounding the RMOW.

Table 2: Cut Control Information as per MFLNRO Cut Control Statement, year end 2017

	2015 (m^3)	**2016 (m^3)**	**2017 (m3)**
Cut Control Period 2014 - 2018			
Harvested Timber (Billed)	2571	8085	14999
Timber Wasted or Damaged	2502	0	1615
Unbilled Timber Scaled	1385	168	837
Credit Previous year Unbilled Scaled	(529)	(1385)	(168)
Volume of Timber Harvested	5929	6869	17283
Total Volume of Timber Harvested to Statement Year End		34480	51764
Overcut/Undercut Carry Forward		0	0
Total Volume Attributed to Licensee for Cut Control Period		34480	51764
Cumulative AAC to Year End		60000	80000
Percent of Harvest to Year End		57.5%	64.7%
Percent Harvest of Cut Control Period			51.76%

2.3 Summary of Key Questions and FWAC Comments

The Forest & Wildland Advisory Committee considered six key questions in its analysis and associated comments, listed in Table 4 below.

Table 3: Summary of Key Questions and FWAC Comments

Key Questions	FWAC Comments	Community Concerns
1. Is the CCF using best management practices to respect ecological principals and maintain biodiversity?	Concerns regarding logging of old growth forests continue to be expressed in the community (letters to editor in Pique, open house and individual comments to FWAC members). - CCF Ecosystem Based Management (EBM) Plan (Dec 2012) includes monitoring and reporting on area of old forest logged. - CCF logging development plans are heavily dependent on logging of old forest types (i.e., old growth) – with no clear timeframe for transition to logging of second growth forests – leaving the CCF open to continued negative comments from community members. CK01 – harvesting deferred due to concerns over old growth and recreation values. CCF seeking additional input from WORCA and others.	Old growth forests have a high value for the public.
2. Do the CCF operations match the annual harvesting plans and other guiding documents?	Annual harvest volume has been well below allowable annual cut for several years. - CCF could consider review of cut levels relative to economic costs, ecosystem values and economic values of unlogged areas (i.e., associated with tourism & recreation) for potential revision. - Comments on harvesting plans for individual compartments provided in body of this report. Due to concerns over harvesting plans for CK01, the CCF deferred until more public input received	Public would like to see more definitive multi-year harvesting plans.

Key Questions	FWAC Comments	Community Concerns
3. Are the harvesting operations sensitive to visual impacts? And were other measures applied to minimize impacts on the shared use of the forest, particularly regarding tourism?	- CCF does visual analysis of proposed harvesting areas.	Any visible operation will be a public concern without the education and interpretation rationale
4. Does the fuel management harvesting bring the CCF closer to community FireSmart objectives?	The framework of the fire management objectives needs to be reviewed to significantly increase the areas treated. Implement the Blackwell report recommendations more quickly. Harvesting plans need to accelerate wildfire mitigation objectives.	Public is growing more concerned about the risk of forest fire and is generally supportive of fuel management operations.
5. Does the harvesting balance access with protecting habitat and managing species of special concern?	- Road-based access management plan is completed. - An access management plan that includes road head parking and signage, trail types and uses, existing and potential trail proposals, proposed campsites and other recreation infrastructure – within a natural and EBM values framework – is needed for the Whistler area -	Habitat protection is a high priority. Maintaining current public recreation access whenever possible is also a priority. Increasing public access through new roads or re-activating roads is not as desirable due to impacts on wildlife habitat.
6. Does the harvesting maintain other values (e.g., water, recreation, GHG emissions, fuel management)?	Additional measures during operations could be employed to protect other values (e.g., to lessen footprint and impacts of machinery on ground cover and water values). CK01 – CCF deferred harvesting decision until further public input (particularly WORCA) is received and considered.	

2.4 Overall Comments and Recommendations

Comments:

Economic return to partner communities, employment, harvesting quotas as well as impacts on values such as recreation, tourism, and biodiversity values, influence management assumptions and harvesting plans. The CCF should continue to share information about why we are harvesting timber in the CCF, as well as "what, how much and where." The rationale needs to be explicit and communicated among CCF partners and community stakeholders.

The CCF's forest resources provide direct value to the community from the sale of logs and carbon credits. This needs to be documented in an open and transparent manner to illustrate the value of operating the CCF to the public. In addition, non-monetary values generated from the CCF need to be accounted for.

Trends, economic context and community interests that should be integral to CCF plans and activities include continued limited market and low prices for different timber types within CCF; alternative employment and training opportunities for CCF partners (including thinning, fuel management and forest-based tourism); increasing attention to fuel management and FireSmart strategies; increasing recreation and tourism demand and use along the Sea to Sky corridor and CCF region; and continued community concern for natural values, including old growth timber and wildlife.

The utilization of logs from the fuel treatment areas to help offset the costs of the treatments and contribute to the annual allowable cut is positive. The landscape fuel treatments that retain approximately 250 - 300 stems per hectare (sph) rather than higher sph are a more effective fuel management strategy by more significantly reducing the crown cover.

The fuel hazard is generally lower in riparian areas therefore these areas can be omitted from treatment which will also help to maintain biodiversity.

2017 Recommendations:

Resolve the policy disconnects in the CCF tenure between fuel management and regular harvesting, and other activities on the ground managed by other agencies.

Retention and planting of deciduous species on skid trails will assist in maintaining a lower fuel hazard.

Skid trails should avoid crossing streams or at a minimum remove excess slash from channel during skid trail restoration. Small cable logging methods can minimize the need for temporary skid trails.

Long term monitoring plots should be installed to evaluate the effectiveness of the fuel treatments over time to learn what works best for future prescriptions.

Fuel thinning treatments should be planned in the context of an overall management regime that projects well into the future. This can provide a timeline for subsequent future thinning and optimum target tree densities for each thinning over the life of the stand.

FWAC supports the wildfire fuel reduction programs and encourages the RMOW and CCF to continue and even increase the amount of area treated each year. A proposed method for these thinning operations is to have contractors use cable-based rather than ground-based systems in order to reduce damage to trees and soil. In addition, FWAC recommends that more deciduous trees such as black cottonwood be retained and planted when possible to reduce the fire hazard.

The CCF silviculture plan does not include spotted owl requirements and should consider adding a reference.

Table 4: Recommendations and Outcomes from 2016 Annual Report

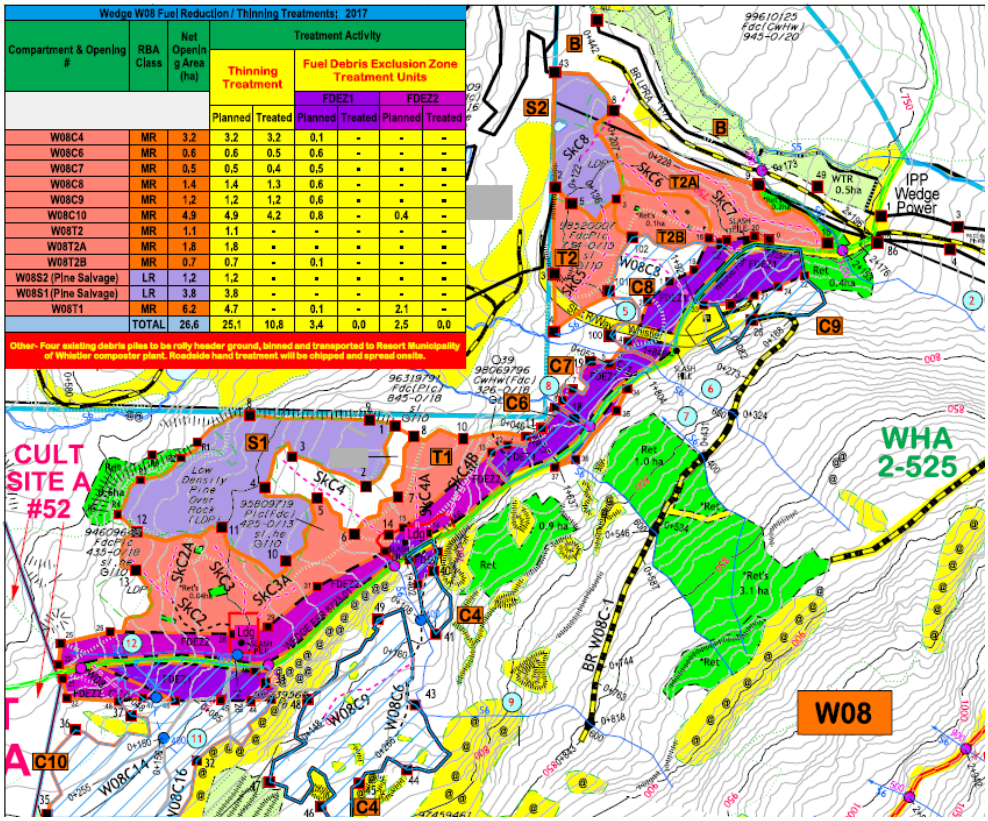
2016 Recommendation	Outcome
1. FWAC recommends that CCF review its annual harvesting against the 1-3 and 4-10 year plans created in 2015 and report on any changes or differences.	Not completed yet.
2. FWAC recommends that the CCF update its long term plans to show recent harvesting.	Plans and harvested areas are updated in FLRNO's RESULTS records management and mapping system. Not available to public though.
3. FWAC recommends that the CCF assess the pros and cons of meeting AAC targets and to consider a more realistic AAC if CCF is continually undercutting. FWAC understands that the AAC is a legal agreement with the province but appears to still be too high given the CCF's harvesting history. FWAC also recommends that for such an analysis, recreation/tourism economic values are taken into consideration when weighing off against the value of logging.	CCF has not undertaken a re-assessment.
4. FWAC is encouraged to see cooperative wildfire fuel reduction projects being undertaken between CCF and RMOW. FWAC recommends a formal assessment, and if appropriate development, of a strategic harvesting plan that blends fuel reduction with meeting the AAC (i.e., incorporates thinning associated with fuel reduction measures into AAC calculations). For the fuel reduction projects to reduce costs and extend the return cycle of the project, more stems could be removed to open up the canopy, further reduce crown fire hazard and increase opportunity for costs to be offset by the removal of some merchantable wood. The public seems to be more positive about wildfire management and FireSmart work, and RMOW/CCF could likely thin more than currently.	CCF and RMOW continue to partner on projects and follow Blackwell & Associates' priority areas and incorporate into harvesting plans.
5. Harvesting practices in CCF appear to be tied to legacy (i.e., heavy footprint)	CCF still uses the same equipment.

equipment. FWAC recommends review of options for harvesting that have potential for thinning of second growth stands and/or have lower impact for mixed older forest types. This could involve: 1) specifying lower impact practices (i.e., machine types and harvesting methods) in harvesting requirements; and 2) including more comprehensive second growth thinning (in association with fuel reduction strategies) in harvest development plans.	

3. Wedge 08

3.1 Overview

Figure 1: Wedge 08 Logging Plan Map



Wedge W08 Fuel Reduction / Thinning Treatments: 2017

Compartment & Opening #	RBA Class	Net Opening Area (ha)	Treatment Activity					
			Thinning Treatment		Fuel Debris Exclusion Zone Treatment Units			
					FDEZ1		FDEZ2	
			Planned	Treated	Planned	Treated	Planned	Treated
W08C4	MR	3.2	3.2	3.2	0.1	-	-	-
W08C6	MR	0.6	0.6	0.5	0.6	-	-	-
W08C7	MR	0.5	0.5	0.4	0.5	-	-	-
W08C8	MR	1.4	1.4	1.3	0.6	-	-	-
W08C9	MR	1.2	1.2	1.2	0.6	-	-	-
W08C10	MR	4.9	4.9	4.2	0.8	-	0.4	-
W08T2	MR	1.1	1.1	-	-	-	-	-
W08T2A	MR	1.8	1.8	-	-	-	-	-
W08T2B	MR	0.7	0.7	-	0.1	-	-	-
W08S2 (Pine Salvage)	LR	1.2	1.2	-	-	-	-	-
W08S1 (Pine Salvage)	LR	3.8	3.8	-	-	-	-	-
W08T1	MR	6.2	4.7	-	0.1	-	2.1	-
	TOTAL	26.6	25.1	10.8	3.4	0.0	2.5	0.0

Other- Four existing debris piles to be roll header ground, binned and transported to Resort Municipality of Whistler composter plant. Roadside hand treatment will be chipped and spread onsite.

(Note: RBA Class refers to retention level: Moderate Retention (MR); High Retention (HR); Low Retention (LR); Very High Retention (VHR))

The Wedge 08 harvesting units are located on the north branch of the Wedge Forest Service Road. FWAC visited Wedge 08, T2a, T2b, C4 and C8 in October 2017 and yielded 4415.2 m3. FWAC first viewed the Wedgemount Estates pine salvage on its private land. The work along the road was done in January 2017 in

the snow, using ground based equipment to remove the dead pine and reduce fire risk. Trees were thinned to approximately 230 stems per hectare (sph).

The CCF prepared a fuel thinning prescription for the adjacent area to submit to the Forest Enhancement Society of BC (FESBC) funding program in November. FESBC funding will also include clean up of areas in Wedge that the CCF has already treated. This area forms the northern fuel break for the Whistler valley.

The CCF is choosing to thin in this area because it is identified in the fire model as high priority plus it's an opportunity to create a larger fuel break by adding to the run-of-river penstock clearing and the Wedgewoods salvage project. The CCF will recover what merchantable timber that it can, and stack, pile and burn the remaining debris. FWAC discussed possibility of partnering with run-of-river project to provide a water system to help suppress fire.

3.2 Wedge 08 (T2A) (T2B)

Units T2A and T2B were selectively harvested in the past and currently present no continuity of forest type. The plan is to treat 80% of the area, thin to 450 sph, and retain option for additional future passes.

Unit T2A is a patch of more merchantable timber. The plan is to thin to 300 sph, remove the understory and some larger pine and create a shaded fuel break with crown closure of 40%. Generally, the plan is remove the smaller dead/dying trees. Thinning to a lower density takes out more merchantable timber and helps offset costs. Merchantable timber is considered to be over 17cm at the stump, and four inches at the top. The interior BC mills can use smaller diameter trees because its whole system is set up for small wood.

3.3 Wedge 08 (C8)

Location: FWAC parked at side of road by large debris pile. This is in the purple Fuel Debris Exclusion Zone 1, opening C8 in Figure 1.

The project was funded through the sale of logs but this zone requires fine fuel debris to be cleaned up to meet prescription standards of 1 kg/m^2 within 15 metres of the road, while debris will be piled and burned from 15-30 metres from road. FWAC noted that roadside manual fuel reduction may be more efficient by dragging slash away from road versus chipping. Decay and herbaceous growth over time will also reduce this perceived road side fuel hazard. The CCF is hiring a contractor to chip the material to determine the cost of chipping and trucking to Callaghan composter site.

The area was thinned to 230 sph with manual treatment and recovered 200m^3/hectare over the 10 hectares treated. Some blowdown has occurred.

FWAC discussed the idea that the province should consider blending and streamlining fuel management and regular logging, and have FESBC pay for clean up to fuel prescription standards. This way more area could be treated and all volume could go toward the AAC. All logged areas could be considered as fuel management sites.

Research is needed on response of forest treatments at various densities and the time span before treatment is needed again. FWAC suspects that thinning to 250 – 300 sph is needed or else crown will close within approximately 15 years and create the need to re-treat the site sooner. Goal is to extend efficacy of treatment before needing to re-treat. This would save costs and effort in the long run.

Trees at this site will now gain diameter faster, but not grow taller any faster. In theory, the CCF could come back in the future to remove more trees depending on the state of young regen.

3.4 Wedge 08 (C4)

This is the third site visited and is across the road from the debris pile. Fuel Debris Exclusion Zone 2 is 30m alongside the road down to the cultural site boundary. Conifers will be removed and deciduous retained. The site consists of very mixed forest which is costly to thin it to a shaded fuel break. This could be solved by taking a "patchy" approach and leave 20% of the site untreated. Again, debris within 15 metres will be dragged to the road, and debris 15 – 30 metres will be burned.

The debris becomes biomass once it's chipped and needs to be measured and paid for. The debris pile was surveyed and sampled by FLNRO to determine waste which was at $8m^3$/hectare. If waste is under $10m^3$/ha, the CCF doesn't have to pay a waste levy. The government is concerned that wood is not being accounted for or paid for properly. The CCF must follow forest regulations but they are made for logging, not fuel treatment. FP Innovations is working with Lil'wat Forestry Ventures to determine the best, most cost effective way to manage debris. CCF can now use the results from this site for other similar sites.

FWAC discussed the costs of removing debris. The CCF is taking debris to the Callaghan composter when possible. The RMOW waives tipping fees but costs are substantially higher than the RMOW is currently paying to its regular supplier. Burning on site is more cost effective because less labour and trucking is involved, but doesn't address other values (e.g. air quality and biomass recovery). The CCF has secured funding from FESBC to conduct a trial project to grind the debris and truck to composter. The CCF will use the trial to establish costs of getting material to the composter.

FWAC then walked up the old skid road where the debris was brought down and then deactivated on the upper reaches. In upper C4, FWAC viewed a three hectare portion of the 10.1 hectare block. It was thinned to 200 sph using mechanical methods. Hand falling would leave more uniformity and not leave a swath for the machine to move through but the costs are significantly higher.

FWAC discussed the value and need to monitor the fuel thinning sites to understand the forest response to various density and treatment approaches. FWAC recommends reviewing thinning regime (sph) against regeneration, blow down, crown closure rates, tree growth rates, etc. This will also give CCF an idea of future maintenance costs as part of a long term maintenance fuel management plan. FWAC suggests that CCF could connect with post-secondary forestry students to develop models of future forest scenarios.

FWAC also discussed issues with fuel management work from a forest ecology point of view.

- Coarse woody debris – need clarity on amounts of CWD to be left behind.
- Fuel thinning creates another forest type, another niche.
- Debris left in a linear pattern on ground is better than patches for predators to find prey (research is available)
- Organic matter on a site will decline over time because material is being removed from the site. This has effects on soil quality.

The CCF is accountable for maintaining the stands through its Forest Stewardship Plan, Spotted Owl regulations and other government regulations.
FWAC identified that coordination is lacking between various government agencies. For e.g., the run-of-river project, water line being cleared nearby, CCF plans. Suggested that province should be looking holistically at the land rather than managing different aspects in isolation.

3.5 Spotted Owl Management

Wedge 08 (C4) and Cheakamus 16 are in a spotted owl management zone. It is not current spotted owl habitat but must be managed so that if spotted owls returned in the future, the remaining habitat would be suitable.

The northern spotted owl (Strix occidentalis) is designated as Endangered by COSEWIC and is Red-listed by the B.C. Wildlife Branch. In May 1997 the provincial government approved the Spotted Owl Management Plan for the Chilliwack and Squamish forest districts. The long-term management of the species will occur within 21 areas that total approximately 363,000 hectares distributed throughout the range of spotted owls in the Chilliwack and Squamish Forest Districts.

For more information, see the Government Actions Regulation, Order – Wildlife Habitat Areas
http://www.env.gov.bc.ca/wld/documents/wha/SPOW_2-494-510_Order.pdf

3.6 Access Management Principles

The CCF's Road-based Access Management Plan is a good planning document for the CCF and other commercial or public users. The plan will evolve over time to include a wider range of access opportunities and constraints. The document can facilitate prioritizing funds and cost sharing with agencies to maintain road infrastructure.

3.7 CCF Silviculture Plan

The CCF silviculture plan does not include spotted owl requirements and should consider adding a reference. The CCF appears to be following CCF silviculture plan in Wedge 08 but the logging method generates excessive disturbance and unnecessary riparian impacts.

The CCF needs to have a long term plan for managing multiple values, and provide ongoing investment into the stand for monitoring, to thin regrowth to meet wildfire management goals and for the carbon project.

4. Callaghan Road Wildfire Fuel Thinning

4.1 Overview

Generally, creation of landscape-scale fuel breaks has been limited in its use by local governments in BC as a measure to protect communities from the threat of wildfire. Fuel treatments within municipalities are generally limited to urban green spaces, and high hazard fuels directly adjacent to homes. While effective at limiting fire behaviour locally, these treatments may have little impact in the event of a catastrophic landscape-level wildfire, where communities are threatened by ember showers from fires that may be kilometers away.

The objective of the Callaghan project is to provide a landscape-scale, linear fuel break in an area identified through quantitative modeling as a high priority for treatment. This fuel break will be created by converting the existing stand fuel type from high hazard to a condition that will significantly reduce potential fire growth, rate of spread and size (fire behaviour potential). In addition, the treatment unit (TU) location adjacent to the Callaghan Forest Service Road will improve access and safety for firefighting crews, should a wildfire burn through this area.

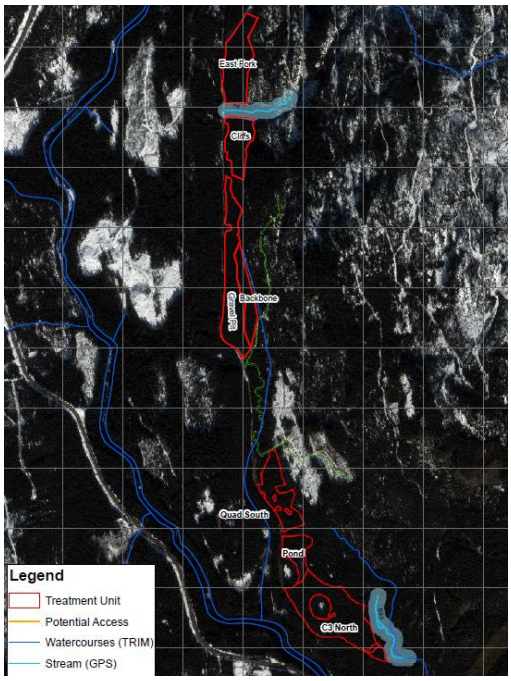
The RMOW and CCF are continuing operational fuel thinning along the Callaghan FSR. The lower units were treated starting in 2014 and sporadically til present time. Figure 1 illustrates the treatment units along

Callaghan FSR. Units C3 North, Pond and Quad South were treated in the past few years. Since the Figure 1 map was made, R05 was added to fill in the gap between Quad South and Gravel Pit units. R05 covers an ATV trail operated by Canadian Wilderness Adventures (green line on map) and after negotiation, an agreement was reached on how fuel thinning could be done over the trail. Funding was received by the CCF from the Forest Enhancement Society of BC to pay for 75% of the fuel thinning with the RMOW providing the remaining 25%. It is planned to complete the remaining units in 2018.

Table 5: Callaghan Road Wildfire Fuel Thinning Units

Unit	Size	Treatment Specs	Status
C3 North	9.7 ha	Thin from below to a target density of 350 sph (+/- 50 sph).	Complete
Pond	2.0 ha	Thin from below to a target density of 400 sph.	Complete
Quad South	3.9 ha	Thin from below to a target density of 350 sph (+/- 50 sph).	Complete
Quad North - R05 (ATV Trail) Mechanical	0.8 ha	Thin from below to a total target density of 350 sph (+/- 50 sph) or to a dbh maximum of 42.5 cm. This represents an average intertree distance of ~ 5.75 m. It is estimated that ~ 250 m3/ha of merchantable volume may be cut.	Underway
Quad North - R05 (ATV Trail) Manual	3.0 ha	Thin from below to a total target density of 550 sph (+/- 100 sph) or to a dbh maximum of 27.5 cm maintaining a variable density within this unit with the highest density near the ATV trail.	Underway
Gravel Pit/Backbone	8.8 ha	Gravel Pit: Thin from below to a target density of ~ 350 sph (+/- 50 sph). Total volume estimated to be removed under the cutting specifications is ~110-120 m3/ha. Backbone: Thin from below to a target density of ~ 450 sph (+/- 50 sph). This treatment should retain all trees ≥17.5 cm DBH.	2018
Cliff	3.2 ha	Thin from below to a target density of approximately 600 sph (+/- 50 sph). A high retention target is set for this unit due to operability concerns. No trees over 17.5m shall be cut as part of this treatment.	2018
East Fork	4.9 ha	Thin from below to a target density of approximately 350 sph (+/- 50 sph). It is estimated that between ~110-120 m3/ha of merchantable volume may be cut as part of this fuel treatment.	2018
Total Hectares	36.3 ha		

Figure 2: Callaghan Road Wildfire Fuel Thinning Locations



4.2 Callaghan Quad North – ATV Trail

Callaghan Quad North R05 unit contains the Canadian Wilderness Adventures (CWA) ATV trail. CWA was concerned that fuel thinning would detract from the forested feel of the trail surroundings and required negotiation to get agreement on thining parameters for the area.

The unit is a 40 year old plantation site. The thinning work can only be done manually by hand, no machines, and thinning is restricted to trees less than 20 cm dbh. The understory is removed and three quarters of trees were pruned up 3 metres. Some crown connectivity remains, but there is little ground fuel left and all fine fuels less than 15 cm are burned. While not the most effective treatment, some widlfire risk reduction is achieved.

The Whistler Olympic Park weather station provides hourly updates and is used to guide burning decisions. Crews start at 6:00 a.m., stop adding material to fires at noon and then do other work for two hours while checking fires. The site is also checked on the weekends. Firepits are out of sight of the trail. The province advised that due to current weather conditions, burning will only be allowed for one more week unless weather changes.

Chippers cost $600 per day and are useful when there is road or trail access, otherwise all material must be brought to it which increases the manual labour component. In this case, it made more economical sense to burn.

Tom Cole, CCF Forest Manager, described challenges with using the same Wildfire Urban Interface (WUI) threat sheet provided by the UBCM funding program in the broader landscape. He suggested that guidelines on the amount of fuel that can be left on the ground are too low for landscape fuel breaks compared to WUI locations and result in higher than necessary costs while not reducing fire risk significantly.

4.3 Old Growth

A sub-committee of the Cheakamus Community Forest Board of Directors and staff was formed to complete several major projects. These include the establishment of Old Growth Management Areas, the Integrated Resource Mapping Project (IRMP) in 2015, and creating an Access Management Plan in 2016. These projects provide clear direction for the CCF and the public on future plans.

See the Integrated Resource Mapping Project final report for more information on how the CCF manages old growth. http://www.cheakamuscommunityforest.com/wp-content/uploads/Integrated_Resource_Mapping_Final_Report.pdf

The CCF's carbon project discourages harvesting trees that are less than 100 years old. This impacts how long the CCF has to continue to harvest old growth by extending the rotation age of trees. The CCF can still do commercial thinning that targets second growth and avoids old growth.

FWAC noted some damage to remaining trees but were advised that old Douglas firs are resistant. They act as legacy or wildlife trees and are not targets for future harvesting.

5. Carbon Project

A carbon offset is an independently verified credit for net greenhouse gas reductions achieved by one party that can be used to compensate (or offset) the emissions of another party. Carbon offsets are typically measured in tonnes of carbon dioxide-equivalents (or CO2e), transacted through carbon registries, and bought and sold for voluntary or regulated emissions reductions.

The carbon offsets generated by the Cheakamus Community Forest project are created by improved forest management actions on the 33,000 hectares it manages. They are quantified with the BC Forest Carbon Offset Protocol, and verified to the BC Emissions Offset Regulation. These actions are guided by the community forest's Ecosystem Based Management plan, and delivered on the land through reduced harvest volumes, extended harvest rotations, expanded reserves, and protection of old growth forests and other important wildlife habitat. These voluntary actions go above and beyond regulatory requirements.

See Brinkman Climate's Cheakamus Community Forest carbon offsets brochure: http://ecotrust.ca/wp-content/uploads/2015/05/Briefing_CheakamusCarbon.pdf

The CCF generated 47,192 tonnes of CO2 equivalent (tCO2e) for the 2009 – 2013 tranche, and 38,559 tCO2e for the 2014 – 2018 tranche. The tonnes were sold at an average price of $18. The verification process for the next tranche is underway over the winter/spring of 2018/19.

6. Fuel Management Objectives

The objectives of the prescriptions are to:

- Reduce fire risk to residences, infrastructure and forest ecosystems by reducing ignition potential and fire behaviour within the Wildland Urban Interface upland forests;
- Demonstrate the principles and practices of FireSmart and vegetation management to community members and the public;
- Improve natural barriers that reduce the continuity of fuel loads and wildfire risk;
- Retain the natural character of the forest; and provide for ecosystem restoration and enhancement potential;
- Minimize negative impacts to, and where possible enhance, the many values of the treated stand, including recreation, public safety, aquatic and wildlife habitat, and privacy.

6.1 Fuel Management Strategies

The fuel management objectives will be achieved using the following strategies:

- Maximize retention of dominant and codominant canopy trees to maintain a cool, moist, and dark understorey microclimate;
- Thin from below (i.e. smallest trees first) to reduce ladder fuels and crown bulk density;
- Reduce crown continuity to a target of 40% crown closure to reduce the risk of crown fire spread;
- Prune retained trees to a minimum height of 2m or maximum 60% tree height to reduce ladder fuels and risk of crown fire
- Remove ladder fuels on mature trees to prevent candling;
- Reduce fine surface fuel loading and flammable understorey vegetation to reduce the risk and behaviour of surface fire;
- Retain and encourage deciduous tree species and shrubs to reduce fire behaviour and provide wildlife habitat; and
- Minimize the creation of surface fuel by chipping of treatment slash, and pile burning where feasible;
- Rehabilitate disturbed areas upon project completion

7. Access Management

FWAC has provided a document, Whistler Management Planning Principles to the CCF and are appended to the CCF's Access Management Plan. The goal of this document states:

> All forms of access are planned and managed in a coordinated manner to meet overall community interests so that a range of community values - environmental, First Nations cultural and spiritual, public safety, historic and neighbourhood - are maintained while allowing appropriate levels of public and commercial recreation,and industrial use.

Specific concerns of future road construction have been expressed by FWAC. The road construction to extend the Dority Main should include careful planning including terrain stability assessments, and best management practices during construction to minimize slope and soil erosion. The proposal to reestablish and extend the Basalt Valley road should be evaluated against the existing road access on the Cheakamus West Main.