

## A. PROJECT IDENTIFICATION

A. PROJECT IDENTIFICATION	
PROJECT ID AND UNIT ID: <b>CRI #280</b> <b>"707" Treatment Area</b>	LAND OR TENURE HOLDER: <b>Regional District of Nanaimo</b> <b>Municipal Park</b>
LATITUDE/LONGITUDE: <b>49° 10' 0.4836" N</b> <b>123° 48' 43.4916" W</b>	GEOGRAPHIC DESCRIPTION: <b>707 Community Park</b> <b>Gabriola Island, Regional District of Nanaimo</b>
HIGHER-LEVEL PLAN(S): <b>707 Community Park Management Plan (2010)</b>	MAP REFERENCE NUMBER: <b>092G.101</b>

## B. PROJECT DESCRIPTION

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OBJECTIVE:	PUBLIC SAFETY <input type="checkbox"/>	RANGE IMPROVEMENT <input type="checkbox"/>
	ECOSYSTEM RESTORATION <input type="checkbox"/>	RECREATION <input type="checkbox"/>
	WILDLIFE HABITAT <input type="checkbox"/>	OTHER: <b>Wildfire Risk Reduction</b>
	DESCRIPTION: The primary goal of this Fuel Management Prescription (FMP) is to reduce the wildfire risk to homes located adjacent the treatment area.	
STRATEGIES:	Wildfire risk will be reduced by reducing wildfire threat. This will be achieved through modification of the vegetation inside the treatment unit. The effectiveness of the treatment will be quantified through modelling of pre and post treatment wildfire behavior. Target for vegetation modification include: <ol style="list-style-type: none"> <li>1. Increase Fuel Strata Gap to 5m.</li> <li>2. Reduce stand density to 600 SPH</li> <li>3. Remove dead/dying and suppressed trees.</li> </ol>	
<p>METHODS: This area of 707 Community Park is dominated by extremely dense mix of native coniferous and deciduous trees recovering from intensive harvesting in the early 1990s. The highest risk portions of the park are targeted in this treatment area. These are the areas of highest conifer density and closest to the highest density of structures and homes outside the park.</p> <p>The treatment area consists of a Douglas-fir leading stand at a density of 5000 Stems Per Hectare (SPH), with crowns extending near ground. There is near continuous horizontal and vertical fuel within the treatment area. Treatment will focus on creating horizontal and vertical fuel separation of conifers to reduce the likelihood of crown fire and fire intensity. Retention will be at 600 SPH, with the aim of creating a shaded fuel break to reduce regeneration and maintaining soil moisture levels. Pruning lower branches to 5m crown base height will establish a vertical fuel gap. Due to the unnatural forest conditions created by historic intensive harvesting, there is considerable uncertainty regarding post-treatment vegetation response. There may be a response of coniferous tree regeneration, that may require a follow up treatment. . Post-treatment monitoring guidelines have been included accordingly. Deciduous trees will be retained where possible within operational constraints. Treatment will be mechanical. Surface fuel loading is currently low, and treatment will maintain these low levels to preserve habitat and surface diversity. Post treatment critical surface intensity will be below the critical surface fire intensity threshold under 90<sup>th</sup> percentile weather conditions. Modelled wildfire will be a surface fire (67% probability) under 90<sup>th</sup> percentile weather conditions.</p>		

## C. TREATMENT UNIT (TU) SUMMARY

C. TREATMENT UNIT (TU) SUMMARY							
TU*	NET AREA (ha)	GROSS AREA (ha)	LEAVE AREAS (ha)	NP (ha)	NAR (ha)	TREATMENT REGIME (i.e. PRU, THIN, PIL, BURN)	GENERAL DESCRIPTION
1	9.84	9.84	-	-	-	TFB, PRU, DDO	30 year old Fd-leading forest with a mix of other conifers and Ra as minor component. Overstocked at 5000 SPH, stagnant growth due to stem density. Average height approximately 10m, low CBH and continuous crowns. Excellent access and good operability with old roads. Trailside treatment extending 20m from trail edge. This is the maximum that can be reached with conventional machinery without creation of new permanent trails.
2	61.79	61.79	-	-	-	TFB, PRU, DDO	Similar attributes as TU1. Treatment unit can be accessed using Old Centre Road and Ricki Road trails, but treatment will require temporary trails throughout. Closest proximity to houses and structures.
3	23.94	23.94	-	-	-	TFB, PRU, DDO	Similar attributes as TU1. Treatment unit can be accessed using Old Centre Road and Ricki Road trails, but treatment will require temporary trails throughout. Stratified for ease of phased implementation.
TOTALS	95.57	95.57	-	-	-	-	Treatment units have been ordered by priority. Treatment unit 1 involves lowest level of disturbance due to size and existing access.

CT: Commercial Thin, TFB: Thin from Below, PRUNE: lift prune, SFR: Surface Fuel Removal, CHIP: chip, PIL: build piles, DDO: Dispose of debris off-site, HTR: Hazard Tree Removal.

## D. SITE CHARACTERISTICS

D. SITE CHARACTERISTICS							
TU	CFFBPS FUEL TYPE	TIMBER TYPE *	BGC SUBZONE, VARIANT & SITE ASSOC.**	ELEVATION RANGE (m)	SLOPE POSITION	SLOPE RANGE (%)	ASPECT
1	C-5	Fd9DrHwRa	CDFmm01	100-150	Top	0-5%	-
2	C-5	Fd9DrHwRa	CDFmm01	100-150	Top	5-40%	N
3	C-5	Fd9DrHwRa	CDFmm01	100-150	Top	0-5%	-
FUEL TYPE DETERMINATION		The treatment area is comprised of coastal Douglas-fir with similar attributes to the FBP C-3 fuel type. The BCWS fuel typing layer identified most of the treatment area as C-5 with low confidence. Field threat assessment determined C-3 is more representative of this area. A fuel type change form has been submitted for the affected areas.					

\*Fd – Douglas-Fir, Dr – red alder, Hw – Western hemlock, Ra - Arbutus

\*\*CDFmm01 – Coastal Douglas-fir moist maritime – zonal site

## E. SOIL CHARACTERISTICS

E. SOIL CHARACTERISTICS							
TU	SOIL TEXTURE*	DUFF DEPTH (cm)	COARSE FRAGMENTS (%)	SOIL DISTURBANCE LIMIT (%)	SOIL HAZARD RATING		
					Compaction	Erosion	Displacement
1	LS	3	70	10	L	M	L
2	LS	3	70	10	L	M	L
3	LS	3	70	10	L	M	L

\*\*LS - Loamy Sand

## F. VALUES – FOREST AND RANGE PRACTICES ACT

<b>F. VALUES – FOREST AND RANGE PRACTICES ACT</b>				
<b>RIPARIAN &amp; LAKESHORE AREAS</b> - Forest Planning and Practices Regulation (FPPR) division 3, Government Action Regulation (GAR) section 6, Forest and Range Practices Act (FRPA) sections 180 and 181				
Is the proposed cutting, modification or removal of trees, or site preparation, in an area that contains streams, lakes or wetlands?	Yes	<b>No</b>	The treatment area is not in an area that contains streams, lakes, or wetlands.	
<b>RIPARIAN MANAGEMENT AREAS (RMAs)</b> - FPPR sections 51 and 52				
STREAM, LAKE, WETLAND ID	CLASS	RRZ (m)	RMZ (m)	SPECIFICATIONS FOR RIPARIAN OR LAKESHORE MANAGEMENT AREAS
N/A	N/A	N/A	N/A	N/A
<b>TEMPERATURE SENSITIVE STREAMS</b> - FPPR section 53, GAR section 15, FRPA sections 180 and 181				
Are there temperature sensitive streams or direct tributaries to temperature sensitive streams within or adjacent to the proposed treatment area?	Yes	<b>No</b>	There are no temperature sensitive streams or direct tributaries to temperature sensitive streams within or adjacent to the proposed treatment area.	
<b>ROAD CONSTRUCTION IN RIPARIAN MANAGEMENT AREAS</b> - FPPR section 50				
Is road construction proposed in riparian management areas within the treatment area or an associated road permit (RP)?	Yes	<b>No</b>	No road construction is proposed in this prescription. Existing roads will be used for hauling material off-site.	
<b>STREAM CROSSINGS</b> - FPPR section 55				
Will stream crossings be constructed within the proposed treatment area or a road permit road providing access to the treatment area?	Yes	<b>No</b>	No stream crossings are proposed in this prescription.	
<b>MAINTAINING STREAM BANK AND CHANNEL STABILITY ON S4, S5, and S6 STREAMS</b> - FPPR section 52 (2)				
Is the proposed treatment in the RMZ of an S4, S5 or S6 stream that is directly tributary to an S1, S2 or S3 stream and the activity is likely to contribute significantly to the destabilization of the stream bank or the stream channel?	Yes	<b>No</b>	There are no streams within the treatment area.	
<b>DOMESTIC WATER LICENCES</b> (inside or outside of community watershed) - FPPR section 59				
Does the proposed treatment area contain water sources that are diverted for human consumption by a licensed waterworks?	Yes	<b>No</b>	iMap BC Spatial layers were reviewed on May 12, 2021. No water sources were identified within or adjacent the treatment area.	

<b>LICENCED WATER WORKS</b> (inside or outside of a community watershed) - FPPR section 60				
Does the proposed treatment include areas that are within 100m of a licensed waterworks?	Yes	<b>No</b>	iMap BC Spatial layers were reviewed on May 12, 2021. The treatment area is not within 100m of a licensed waterworks.	
<b>FISHERIES SENSITIVE WATERSHED</b> - GAR section 14, FPPR section 8.1				
Are any activities proposed within a fisheries sensitive watershed?	Yes	<b>No</b>	There are no fisheries sensitive watersheds within or adjacent the treatment area.	
<b>COMMUNITY WATERSHED</b> - GAR section 8, FPPR section 8.2, 61, 62 and 84				
Does the proposed treatment area include areas that are within a community watershed?	Yes	<b>No</b>	iMap BC Spatial layers were reviewed on May 12, 2021. No community watersheds were identified within or adjacent the treatment area.	
Will this project require road construction or deactivation within a community watershed?	Yes	<b>No</b>	No road construction or deactivation is proposed in this prescription.	
<b>WATERSHED ASSESSMENT CONSIDERATIONS</b> - FRPA section 180 areas with "significant watershed sensitivity"				
Does the proposed treatment area include areas that have watershed assessment considerations?	Yes	<b>No</b>	This prescription does not include areas that have watershed assessment considerations.	
<b>SOIL DISTURBANCE AND PERMANENT ACCESS STRUCTURES</b> - FPPR sections 35 and 36				
Treatment Unit	Proposed Max. Allowable Soil Disturbance (%) (5% or 10%)	Proposed Max. Soil Disturbance for Roadside Work Areas (%)	Proposed Max. Permanent Access Structures (%)	Comments
1	10	10	0	Trailside treatment will not require any Permanent Access Structures. Trail is suitable for use by machinery. Minor expansion may be required for loading.
2	10	10	0	Existing roads can be used for access, loading, and trucking. Temporary trails will be required for machinery access. No Permanent Access Structures are prescribed.
3	10	10	0	Existing roads can be used for access, loading, and trucking. Temporary trails will be required for machinery access. No Permanent Access Structures are prescribed.
Do the proposed Permanent Access Structures exceed 7% of the total area?	Yes	<b>No</b>	There are no new Permanent Access Structures proposed in this prescription.	
<b>LANDSLIDES AND TERRAIN STABILITY</b> - FPPR section 37				
Does the proposed treatment area include areas where terrain stability is a concern?	Yes	<b>No</b>	This prescription does not include areas where terrain stability is a concern.	
<b>SUITABLE SECONDARY STRUCTURE</b> - FPPR section 43.1				

Does the proposed treatment area include a “targeted pine leading stand”?	Yes	<u>No</u>	This is not applicable to the treatment area.
<b>UNGULATE WINTER RANGE</b> - GAR section 12, FRPA sections 180 and 181, FPPR section 69			
Does the proposed treatment area include areas within an Ungulate Winter Range?	Yes	<u>No</u>	iMap BC Spatial layers were reviewed on May 12, 2021. No UWR was identified within or adjacent the treatment area.
<b>WILDLIFE HABITAT AREA</b> - GAR section 10, FRPA sections 180 and 181, FPPR section 69			
Does the proposed treatment area include any wildlife habitat areas (WHA)?	Yes	<u>No</u>	iMap BC Spatial layers were reviewed on May 12, 2021. No overlap was identified within the treatment area.
<b>OBJECTIVES SET BY GOVERNMENT FOR WILDLIFE</b> - FPPR section 7			
Does the proposed treatment area include areas to which objectives for wildlife under FPPR section 7 apply?	Yes	<u>No</u>	iMap BC Spatial layers were reviewed on May 12, 2021. No WHAs were identified within or adjacent the treatment area.
<b>OBJECTIVES SET BY GOVERNMENT FOR BIODIVERSITY OBJECTIVES (Landscape Level)</b> - FPPR section 9			
Does the proposed treatment area include areas to which objectives for landscape level biodiversity under FPPR section 9 apply?	Yes	<u>No</u>	Scattered trees with higher wildlife value were encountered during field work. These are at a very low density (<10 SPH). These trees will be retained in the prescription unless identified as unsafe by the implementation contractor.
<b>OBJECTIVES SET BY GOVERNMENT FOR BIODIVERSITY OBJECTIVES (Stand Level)</b> - FPPR section 9.1			
Are considerations for maintaining stand structure (wildlife trees, wildlife tree reserves, etc.), coarse woody debris, and maintaining tree and vegetation species composition incorporated into this prescription?	<u>Yes</u>	No	Coarse woody debris targets have been outlined to ensure long term habitat for invertebrates and small mammals. See Section H for more details.
<b>RECREATION FEATURES</b> - FRPA section 56 and 149, FPPR section 70			
Does the proposed treatment area contain interpretive sites, recreation trails, recreation sites, recreation facilities that are considered to be of significant recreation value and are designated a resource feature?	<u>Yes</u>	No	Several recreational trails overlap with the treatment area. Treatment specifications are designed to minimize trail disturbance, and any damage to trails must be rehabilitated post-treatment.
<b>VISUAL QUALITY OBJECTIVES</b> - GAR section 7, FRPA sections 180 and 181, FPPR section 9.2			
Is the proposed treatment within a scenic area?	Yes	<u>No</u>	The treatment area has no established visual quality objectives.
<b>ARCHAEOLOGICAL RESOURCES/CULTURAL HERITAGE RESOURCES</b> - FPPR section 10			
Are there any known archaeological sites or cultural heritage resources that are important to First Nations within the proposed area?	Yes	<u>No</u>	An archaeological request was sent to the Provincial Arch Branch with the treatment area supplied, and a response was received on June 12, 2021. No sites were identified within the treatment area.

<b>INVASIVE PLANTS - FRPA section 47 and FPPR section 17</b>			
Is the introduction and spread of invasive plants likely as a result of the proposed treatment?	Yes	<b>No</b>	<p>An occurrence of Tansy Ragwort was identified overlapping the site using iMap spatial layers. This occurrence was recorded in 2008, and was not identified during field work. No other invasives were identified during site visits.</p> <p>All machinery must be thoroughly pressure-washed prior to each initial entry into the treatment unit and prior to leaving.</p>
<b>NATURAL RANGE BARRIERS - FRPA section 48, FPPR section 18</b>			
Are there natural range barriers within the proposed treatment area that are likely to be removed or rendered ineffective?	Yes	<b>No</b>	<p>There are no natural range barriers in the vicinity of the treatment area.</p>
<b>LAND USE OBJECTIVES (Higher Level Plans and objectives set by Government under the <i>Land Act</i>)</b>			
Are there land use objectives (higher level plans or objectives under the <i>Land Act</i> ) that apply to the proposed treatment area or a Road Permit necessary to provide access to the treatment area?	Yes	<b>No</b>	<p>There are no objectives from higher level plans or under the <i>Land Act</i> for this area. A Road Permit is not necessary to provide access to the treatment area.</p>
Do the proposed activities conflict with land use objectives (higher level plans or objectives under the <i>Land Act</i> )?	Yes	<b>No</b>	<p>The 707 Community Park Management Plan (2010) was reviewed in preparation of this prescription. A goal of this plan is to implement a fire reduction program to reduce the risk of fire (6.3.2), and this prescription supports that goal. This prescription has been designed to accelerate natural succession processes to promote the creation of a lower wildfire risk forest and aims to be as consistent as possible with the management goal of “allowing natural successional change to be the dominant restorative force” (6.1.3). This prescription will also enhance emergency access, as per goal 6.3.3. Finally, no distinct ecological or cultural areas and features will be damaged through treatment, as per goal 6.1.4.</p>

## G. OTHER CONSIDERATIONS AND REQUIREMENTS

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CONSULTATION – FIRST NATIONS			
FIRST NATION		CONCERNS IDENTIFIED AND MEASURES TO ADDRESS	
Stz’uminus First Nation		Information letter sent June 14, 2021. No response was received.	
Snaw-naw-as First Nation		Information letter sent July 19, 2021. No response was received.	
Snuneymuxw First Nation		Information letter sent July 19, 2021. No response was received.	
First Nations consultation complete?	Yes	<u>No</u>	No response was received following the delivery of information sharing letters. It is recommended that a follow up letter be sent prior to implementation of this prescription.
CONSULTATION – GENERAL			
<p>No response to information sharing letters was received. It is recommended that a follow up letter be sent prior to implementation of this prescription.</p> <p>Consultation occurred with RDN Parks staff in the creation of this prescription. A draft review was conducted by RDN Parks staff to ensure consistency with 707 Parks Management Plan goals.</p> <p>Two public open houses were held prior to finalization of this prescription. Due to the COVID-19 pandemic, these were held virtually.</p>			
EXISTING TENURE HOLDERS (Forest, Range, Guide Outfitters, Trappers)			
Tenure Holder	Concerns		Measures proposed to address licensee's concerns
Darren Deluca (Guiding Cert # 100677)			Hunting is not permitted on RDN Park land. This tenure does not apply in the 707 Park.
PRIVATE PROPERTY			
Does private property border the proposed treatment area?	<u>Yes</u>	No	Approximately 30 parcels border the treatment area. A legal survey is required to establish and mark property lines prior to treatment.
SMOKE MANAGEMENT			
Does a smoke management plan exist for the proposed treatment area?	Yes	<u>No</u>	No smoke management plan applies to this region, however burn permits are required for burn piles > 0.5m <sup>3</sup> . These are issued through the Gabriola Volunteer Fire Department. This prescription does not prescribe burning as a method of waste disposal.
SAFETY			
Have any specific safety concerns been identified in or adjacent to the proposed treatment area?	<u>Yes</u>	No	Area experiences frequent public recreation use. A key safety concern is limiting access to public during implementation, discussed below in Access Control.
UTILITIES			
Are utilities located in or adjacent to the proposed treatment area? i.e. power lines, gas lines, etc.	Yes	<u>No</u>	No utilities are located in the treatment area. There are discussions regarding installing water lines for fire suppression. If water lines are installed, consultation must occur with RDN public works to ensure that prescription implementation will not damage these utilities.

ACCESS CONTROL			
Are there any foreseen issues with access and access control during and post treatment?	<u>Yes</u>	No	Due to the high public use of this area, access must be restricted during treatment. Site will be accessed from South Road onto the Old Centre Road Access. Note that this access crosses private land on an existing logging road. Permission for access for operations will be required prior to implementation and should be coordinated by the RDN.
TRAFFIC CONTROL			
Is traffic control required at any point during operations?	Yes	<u>No</u>	Public vehicles are restricted from the treatment area by existing locked gates at Old Centre Road and Ricki Avenue. Keys to this gate will be provided by RDN staff. Signage will be posted at access locations to identify working site and large turning vehicles
OTHER			

## H. STAND AND STOCK TABLE

H. STAND AND STOCK TABLE								
All treatment units								
Species and Diameter Class	Average Crown to Base Height (m)	Average Tree Height (m)	STEMS PER HECTARE (sph)			VOLUME PER HECTARE (m <sup>3</sup> /ha)		
			Existing	Cut	Leave	Existing	Cut	Leave
<b>Layer 1 (&gt; 45 cm dbh)*</b>								
Cw	1	19	4	0	4	4	0	4
Total Dead Potential	-	-	-	-	-	-	-	-
Total Live	1	19	4	0	4	4	0	4
Total All Species	1	19	4	0	4	4	0	4
Total Conifer	1	19	4	0	4	4	0	4
<b>Layer 1 (35-45 cm dbh)*</b>								
Fd	10	18.5	10	0	10	7	0	7
Total Dead Potential	6	19	4	0	4	4	0	4
Total Live	10	18.5	10	0	10	7	0	7
Total All Species	8.7	19.8	14	0	14	11	0	11
Total Conifer	8.7	18.5	10	0	10	7	0	7
<b>Layer 1 (&gt;27.5-35 cm dbh)*</b>								
Cw	1.3	16	22	0	22	9	0	9
Fd	6	20	7	0	7	4	0	4
Hw	0.1	17	9	0	9	3	0	3
Total Dead Potential	-	-	-	-	-	-	-	-
Total Live	2	17	38	0	38	16	0	16
Total All Species	2	17	38	0	38	16	0	16
Total Conifer	2	17	38	0	38	16	0	16
<b>Layer 1 (&gt; 22.5 cm - 27.5 cm dbh)*</b>								
Fd	1	16	22	0	22	5	0	5
Total Dead Potential	-	-	-	-	-	-	-	-
Total Live	1	16	22	0	22	5	0	5
Total All Species	1	16	22	0	22	5	0	5
Total Conifer	1	16	22	0	22	5	0	5
<b>Layer 1 (&gt; 17.5cm dbh - 22.5 cm dbh)</b>								
Fd	1	15	93	0	93	14	0	14
Total Dead Potential	-	-	-	-	-	-	-	-
Total Live	1	15	93	0	93	14	0	14
Total All Species	1	15	93	0	93	14	0	14
Total Conifer	1	15	93	0	93	14	0	14

Layer 1 (≥ 12.5 cm - 17.5 cm dbh)								
Dr	5	10	50	0	50			
Fd	1	15	279	0	279			
Hw	1	15	57	0	57			
Ra	5	8	21	0	21			
Total Dead	1	8	14	0	50			
Total Live	3	12	407	0	407			
Total All Species	2.6	11	421	0	421			
Total Conifer	3	15	336	0	336			
Total Layer 1								
Total Layer - All Species	3.1	16.4	592	0	592	50	0	50
Total Layer - Conifers Only	2.8	16.4	503	0	503	46	0	46
Layer 2 (≥ 7.5 - 12.5 dbh)								
Dr	0.1	8	114	114	0			
Fd	0.1	8	371	371	0			
Hw	0.1	8	114	114	0			
Ra	0.1	8	236	236	0			
Total Dead	0.1	8	57	57	0			
Total All Species	0.1	8	892	892	0			
Total Conifers	0.1	8	485	485	0			
Layer 3 (≥ 1.3 cm - 7.5cm dbh)								
Bg	0.1	5	71	71	0			
Cw	0.1	5	36	36	0			
Dr	0.1	5	71	71	0			
Fd	0.1	5	1686	1686	0			
Hw	0.1	5	421	421	0			
Ra	0.1	5	307	307	0			
Total Dead	0.1	5	493	493	0			
Total Live	0.1	5	2592	2592	0			
Total All Species	0.1	5	3085	3085	0			
Total Conifer	0.1	5	2214	2214	0			
Layer 4 (<1.3 cm dbh)								
Bg	0.1	1	50	50	0			
Cw	0.1	1	7	7	0			
Fd	0.1	1	86	86	0			
Hw	0.1	1	57	57	0			
Total Dead	0.1	1	100	100	0			
Total Live	0.1	1	200	200	0			
Total All Species	0.1	1	300	300	0			
Total Conifer	0.1	1	200	200	0			

SURFACE FUEL LOADING AND BASAL AREA TARGETS		
</=7cm SURFACE FUEL LOADING (kg/m <sup>2</sup> )	Existing: 0.5 kg/m <sup>2</sup> Distribution: Scattered	Target: 0.5 kg/m <sup>2</sup> Distribution: Fine woody debris should be scattered.
	Method used to measure: Photoload Sampling Technique	
>7cm SURFACE FUEL LOADING (kg/m <sup>2</sup> )	Existing: 0.5 kg/m <sup>2</sup> Distribution: Clumpy – mostly found in remnant slash piles.	Target: 0.5 kg/m <sup>2</sup> Distribution: Scattered (See Biodiversity and Forest Health section below)
	Method used to measure: Photoload Sampling Technique	
Basal Area	Existing: 11 m <sup>2</sup> /ha	Target: 11 m <sup>2</sup> /ha
BIODIVERSITY AND FOREST HEALTH CONSIDERATIONS AND TARGETS		
COARSE WOODY DEBRIS (CWD) RETENTION TARGET - sph and Distribution	CWD provides important wildlife habitat. There is currently very little CWD (<25 pieces/ha) within the treatment area, aside from scattered remnant slash piles. Treatment should aim to recruit CWD (if possible) from remnant slash piles. Limit for CWD is 100 pieces /ha, scattered discontinuously throughout all TUs. This will only be possible by recruiting and spreading from existing, remnant slash piles. Preference is for larger pieces (>25 cm diameter at narrow end), >5m in length. Existing CWD with class 3 decay or higher should be retained. CWD with a decay class 4 or above will not be counted in the 100 pieces/ha limit.	
WILDLIFE TREE RETENTION TARGET	No large snags were identified during field work. However scattered larger (>35 cm DBH) trees remain at a very low density (approximately 15/ha) throughout the treatment area. These higher wildlife value trees should be retained unless dangerous. High wildlife value tree criteria is discussed in the Wildlife/Danger Tree Assessor's handbook.	
FOREST HEALTH	All remaining standing dead trees should be removed, unless they have high wildlife potential and are safe to retain. No accumulations of debris are permitted. Danger trees will be cut or retained at the discretion of a qualified Wildlife Danger Tree Assessor.	

TREATMENT SPECIFICATIONS SUMMARY	
TU	TREE REMOVAL/RETENTION STRATEGY BY SIZE/SPECIES (Summarize specifications identified in table above)
All treatment areas	<b>Thin from below to remove live and dead conifers up to 12.5 cm DBH.</b> Target retention of 600 SPH of trees >10 cm on average across all treatment areas. Spacing will be uneven due to the extreme density of the current forest and access constraints for machinery. Deciduous trees are preferred for retention, but this will likely not be possible given the density of the stand. Prune retained trees to achieve an average CBH of 5m. Post treatment conditions will likely consist of patches of retention with small trails throughout.
TREATMENT SPECIFICATION RATIONALE (See notes to assist)	
<p>The objective of this fuel prescription is to reduce wildfire threat by reducing high and extreme wildfire behaviour potential. This will subsequently reduce wildfire risk within the treatment units, as well as to adjacent residences. This will also create improved likelihood of success in suppression for BCWS and Gabriola Volunteer Fire Department ground firefighting.</p> <p>Pre- and post-treatment conditions were modelled using the BCWS Critical Surface Intensity (CSI) worksheet and the FBP Red Book (RedApp), as well as the Crown Fire Initiation and Spread (CFIS) model. Models were run under 90<sup>th</sup> percentile weather conditions using the nearest BCWS station, "Cedar". Since all treatment units have the same characteristics and treatment, one model was used for all treatment units. Post-treatment wildfire conditions are modelled at 324 kW/m, which is less than the modelled CSI (1773.2 kW/m). CFIS modelling of pre-treatment conditions showed an 84% likelihood of crown fire, with a rate of spread (ROS) of 23 m/min. Post treatment wildfire behaviour was modelled as 17% likelihood of crown fire, with no crown rate of spread. Full modelling inputs are summarized in Appendix 4. Below is a short summary of the CSI and Redapp calculations.</p> <p>Weather inputs from Cedar: FPMC 91.3, BUI 176.65, ISI 8.7.            Redapp ROS for C3 fuel type = 2.2 m/s.            BCWS CSI: Inputs of ROS = 2.2, 0.5 kg fine fuel: Critical Surface Fire Intensity = 324            BCWS CSI Post-Treatment conditions (CBH = 5m, EFFM = 95%) = 1773.2 kW/m</p>	

## I. TREATMENT DESCRIPTION

I. TREATMENT DESCRIPTION
MERCHANTABLE TIMBER HARVEST
ROADS, LANDINGS AND TRAILS: Old Centre Road and Ricki Road, currently used as trails, bisect the treatment area. These have been field assessed as suitable for use by logging trucks and equipment. No new roads will be required. Old landing sites remain on these roads which will be reused for loading. Trails will be required for accessing TU 2 and TU 3.
FELLING: Felling will be mostly mechanical. Manual felling may be required for trees to minimize soil disturbance from machinery. No tree >10 cm is prescribed for removal.
YARDING/SKIDDING: Material will be yarded by machine to roadside for processing and removal from site.
LOADING AND HAULING: Loading will occur on existing roads. Due to limited space at landings, loading and hauling will likely need to occur concurrently with felling, yarding, and skidding.
SLASH DISPOSAL: Slash must be removed from site. <b>No dispersing on-site is permitted. Any chipped material must be removed from the site.</b>
SITE DISTURBANCE: Soil disturbance during felling, debris hauling, and equipment operation must be limited to 10% as per this prescription. Machine access trails should be mapped and documented (with photos). Non-linear trails are preferred where possible. Rehabilitation/mitigation of these access trails may be required to achieve 10% soil disturbance target. Established recreation trails in the treatment area must be maintained. If impacted, these trails must be restored to their pre-treatment condition.
SPECIAL MEASURES: none prescribed
STAND MODIFICATION TREATMENTS
MERCHANTABLE TIMBER UTILIZATION: Was commercial timber harvest considered? Yes <b>No</b> If commercial timber harvest not prescribed, explain: There are very little merchantable trees on the site, all of which are recommended for retention.
BRUSHING: Not prescribed
PRUNING: Prune retained conifers to achieve an average CBH of 5m. This is measured from the ground to the lowest tip of a branch of crown. Ensure pruning cuts are flush to stem but outside of the branch collar. Ensure no damage occurs to retained tree stems from pruning. Pruning to this height is challenging, therefore the CBH is measured as an average of all retained trees. No trees should have crowns below 3m. Note that isolated branches above a height of 4m are acceptable.
THINNING: Remove all trees below 12.5 cm DBH. While deciduous trees are preferred for retention at all cutting levels, this is not practical given the operational constraints. Trees above this cutting limit are only permitted for removal if unsafe or if necessary for access, as determined by Wildlife Danger Tree Assessor and site supervisor. Due to access requirements, the post treatment condition will likely not be homogenous, but will have narrow strips of removal. These cleared access routes should average 20% per treatment area. Note that the 10% soil disturbance limit applies, which may require mitigation/rehabilitation of some of these access routes post-treatment.
DEBRIS PILING: Not prescribed.
PILE BURNING: Not prescribed.
MULCHING: Debris may be mulched but must be transported off-site and not dispersed on the site.
MASTICATION: Not prescribed
GRINDING: Roadside tub grinding may be a method of debris disposal. This is at the discretion of the implementation contractor. Contractor can dispose of debris as they see fit, provided debris is removed from site.
PRESCRIBED FIRE: Not prescribed
PLANTING: Not prescribed
OTHER: (Optional) Chips will be made available for local use. Chips must be used for activities that do not contribute to increased wildfire risk.
AUTHORIZATION AND TIMBER TENURE
FRPA Section 52: N/A
Forestry Licence to Cut (FLTC): N/A

Park Use Permit: N/A
Road Permit or Road Use Permit: N/A
Other (i.e. local government, utilities, etc.): N/A

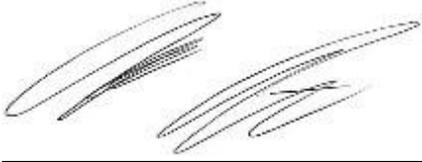
## J. POST TREATMENT

J. POST TREATMENT												
<p>EXPECTED VEGETATION RESPONSE: Crown closure is 40-50%. Vegetation response is uncertain, but access trails may see increased regeneration due to site disturbance. Reassessment is required in 5 years to assess extent of regeneration, thresholds for re-treatment are provided below.</p>												
<p>ADDITIONAL TREATMENTS OR MAINTENANCE: It is recommended that the site be reassessed in 5 years after treatment. Retreatment is recommended if any of the following thresholds are met:</p> <ul style="list-style-type: none"> <li>• &gt;20% mortality in retained trees</li> <li>• Fine surface fuel loading (&lt;= 7 cm) exceeds 1.0 kg/m<sup>2</sup></li> <li>• Coarse surface fuel loading (&gt; 7 cm) exceeds 1.0 kg/m<sup>2</sup></li> <li>• Regeneration (L4 trees &lt;1.3 m in height) occurs at density of &gt;800 SPH</li> </ul>												
<p>SILVICULTURE OBLIGATIONS: Do silvicultural obligations apply to the treatment area? Yes <b>No</b></p>												
<p>PLANTING: Is planting a treatment identified in this prescription or required as a legislative obligation? Yes <b>No</b></p>												
<p>STOCKING STANDARDS: No official stocking standards are in place for Regional District park lands.</p>												
TU	Stocking Standard ID	Pref. Spp.	Acc. Spp.	Well Spaced Stem/ha				Minimum Height (m)			Regen Delay	Free Growing (years)
				TSS	MSS		MITD	PI	Others	RTH (%)		
					Pref. & Acc.	Pref.						

## K. OUTSTANDING WORKS

K. Outstanding Works
<ol style="list-style-type: none"> <li>1. Develop site access safety plan.</li> <li>2. Send follow up information sharing letters with implementation scheduling information to First Nations identified in Section G.</li> <li>3. If work is proposed during bird breeding season (May 1 – Aug 1), an assessment by a QEP (qualified environmental professional) will be required which may include monitoring. There also may be modifications to this prescription required based on the findings of the QEP’s bird assessment.</li> <li>4. A professional survey of adjacent private land boundaries must be conducted.</li> <li>5. Marking of treatment boundaries. Boundaries have not been marked with boundary ribbon, but have been traversed. Note that changes to boundaries are expected to be minimal, and this update will primarily be to ensure sufficient ribboning for operations.</li> <li>6. Written permission for access from owner of parcel ID #006655254, using existing road that connects Old Centre Road with South Road.</li> </ol>
<p>Optional: A third party supervising QEP may be retained at the discretion of the RDN to ensure all outstanding works are completed, as well as that the prescription specifications are met during implementation.</p> <p>An additional open house and media campaign is recommended prior to implementation to ensure public is kept informed of operations and park access limitations.</p>

**L. ADMINISTRATION**

<b>L. ADMINISTRATION</b>	
<b>PREPARATION</b>	
<p><u>Conor Corbett, RPF</u> <u>Matt Shields, RPF</u></p>	
<p>FOREST PROFESSIONAL NAME (<i>Printed</i>)</p> <p><u>Conor Corbett</u></p>	<p>FOREST PROFESSIONAL SIGNATURE</p>  
<p>MEMBER NUMBER</p> <p>5105</p>	<p>DATE</p> <p>April 19, 2022</p>

## M. ATTACHMENTS

M. ATTACHMENTS			
MAPS :	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	FIELD DATA CARDS:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
WUI WTA Plots and Photos:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	CRUISE DATA:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
AIR PHOTOS/IMAGERY:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	BURN PLAN:	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
MODELING/DATA ANALYSIS:	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	OTHER: Cutting Specifications, Photos,	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
TERRAIN STABILITY ASSESSMENT	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	VISUAL IMPACT ASSESSMENT	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
ARCHAEOLOGY IMPACT ASSESSMENT	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	BIOLOGIST ASSESSMENT	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
ADDITIONAL COMMENTS:			

Appendix 1 Location and Treatment Maps

## Regional District of Nanaimo Fuel Management Prescription

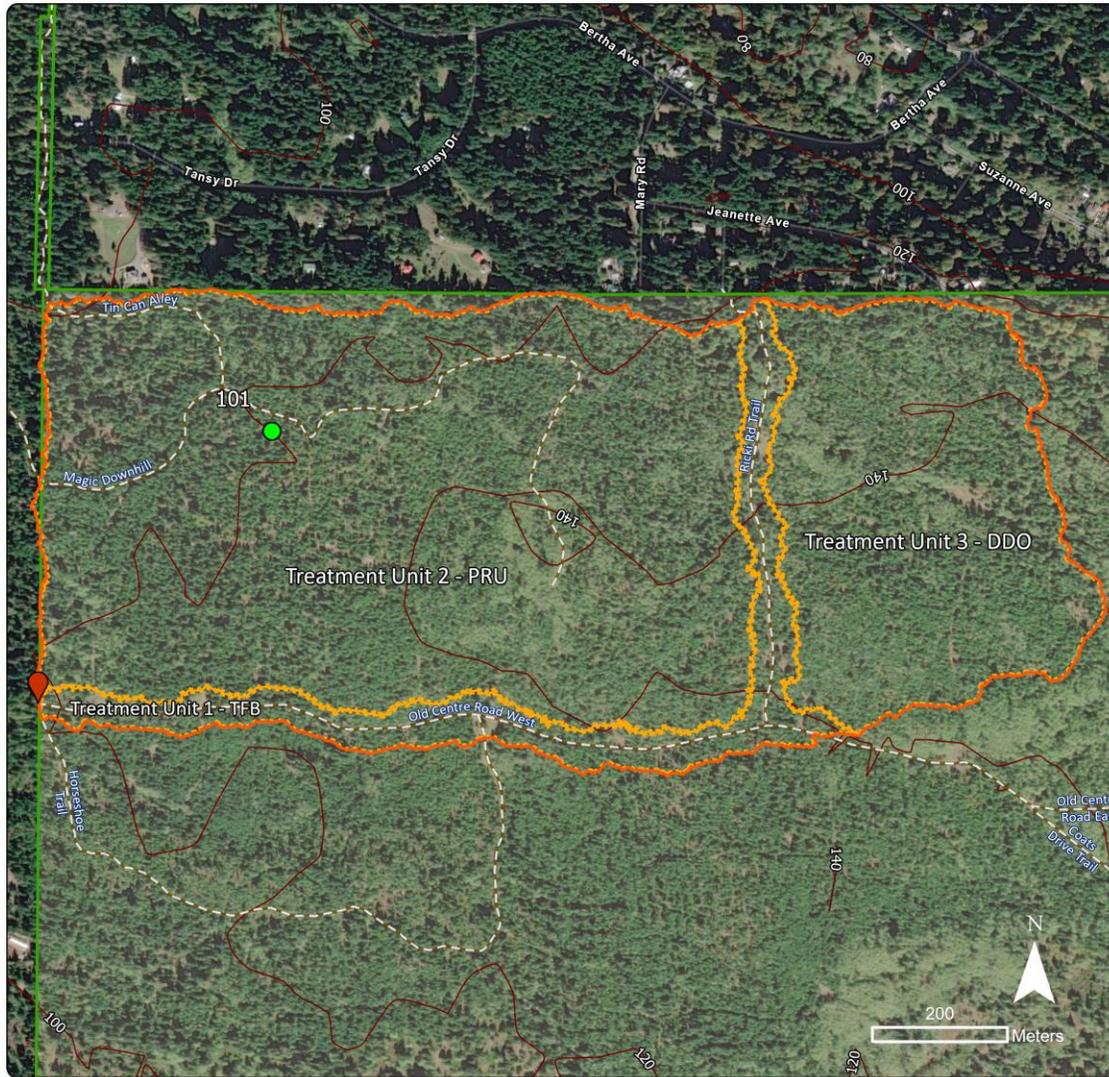
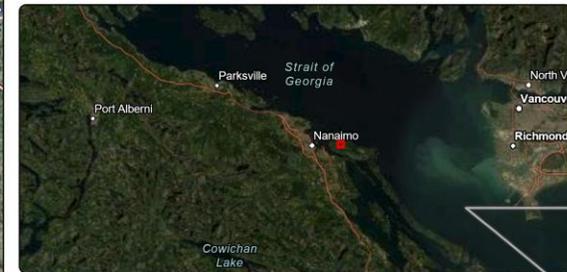
### Treatment Map 707 Community Park Fuel Management

CRI Project Number: CRI #280  
 Proponent Name: Regional District of Nanaimo  
 Consultant Name: Diamond Head Consulting  
 Date: April 07, 2022

Treatment Unit	Area (ha)	Treatment Regime
1	9.84	TFB, PRU, DDO
2	61.79	TFB, PRU, DDO
3	23.94	TFB, PRU, DDO
<b>Net Treatment Area</b>	<b>95.57</b>	

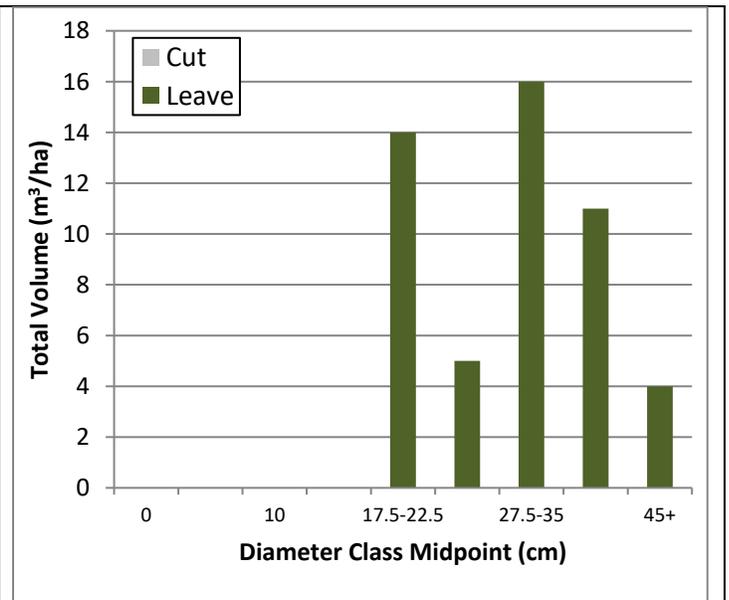
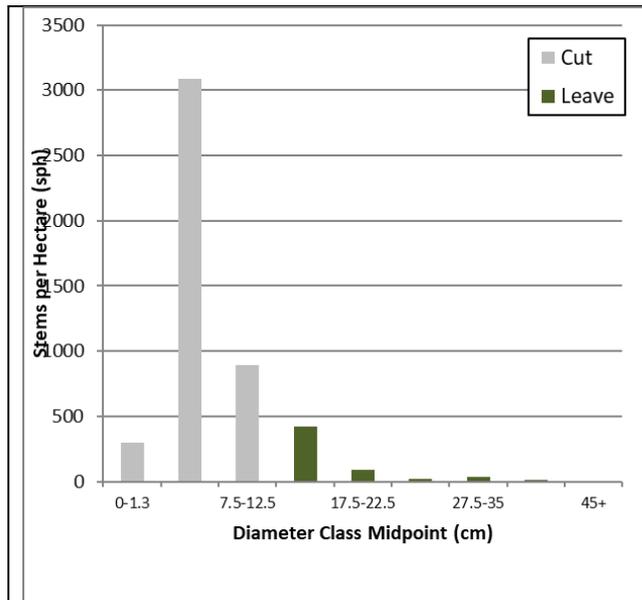
#### Legend

-  Treatment Unit
-  Project Boundary
-  707 Community Park
-  Municipal Ownership
-  Roads
-  Contours
-  Access
-  Threat Plot



**Appendix 2 Cutting Specifications**

Stand Layer	DBH Class Midpoint	Species							Cutting Specs	Cut	Leave
		Bg	CW	Dr	DU	Fd	Hw	Ra			
L4	0-1.3	50	7		100	86	57		100%	300	0
L3	1.3-7.5	71	36	71	493	1686	421	307	100%	3085	0
L2	7.5-12.5			114	57	371	114	236	100%	892	0
L1	12.5-17.5			50	14	279	57	21	0%	0	421
	17.5-22.5					93			0%	0	93
	22.5-27.5					22			0%	0	22
	27.5-35		22			7	9		0%	0	38
	35-45				4	10			0%	0	14
	45+		4							0%	0
<b>Totals</b>										<b>4277</b>	<b>592</b>



Appendix 3 Wildfire Threat Assessment Card

Wildfire Threat Assessment Guide and Worksheets | 2020

Appendix B – Wildfire Threat Assessment Worksheets

<b>Wildfire Threat Assessment Worksheet - Fuel Assessment (Site Level)<sup>1</sup></b>		<b>Plot #</b>	
Location: 707 Community Park, Gabriola Island	Date: July 13, 2021	Assessor/ Professional Designation:	Matt Shields, RPF
Coordinates (Lat/Long – Degrees/Decimal minutes): 49° 10' 9.4332" N, 123° 49' 35.7132" W			

Component/ Sub-Component	Levels/Classes				
	Forest Floor and Organic Layer				
1. Depth of organic layer (cm)	1- < 1	2- < 5	5- < 10	10-20	> 20
	1	3	5	3	2

Surface and Ladder Fuel (0.1 – 3.0 meters in height)					
2. Surface fuel composition	Moss, herbs, deciduous shrubs	Lichen, conifer shrubs	Dead fines fuel <sup>2</sup> (<1 cm)	Pinegrass	Sagebrush, Bunch grass, Juniper, Scotch broom
	4	6	8	10	15
3. Dead and down material continuity (< 7cm)	Absent	Scattered < 10% coverage	10-25% coverage	25-50% coverage	> 50% coverage
	0	3	4	12	15
4. Ladder fuel composition	Deciduous/ None	Mixedwood	Other conifer	Elevated dead fuel	Spruce, Fir, Pine
	0	5	8	10	15
5. Ladder fuel horizontal continuity	Absent	Sparse < 10% coverage	Scattered 10-50% coverage	Patchy 40-60% coverage	Uniform > 60% coverage
	0	2	8	10	15
6. Stem/ha (understorey) <sup>3</sup>	< 500	501-800	801-1,200	1,2501-1,5,000	> 1,500
	2	4	6	8	10

Stand Structure and Composition (Dominant and co-dominant stems)					
7. Overstorey composition/ Crown Base Height (CBH)	Deciduous (< 25% conifer) All CBH	Mixedwood (% conifer) 25% 50% 75%	Conifer with high CBH (> 30m)	Conifer with moderate CBH (5-30m)	Conifer with low CBH (< 4m)
	0	0 1 3	3	4	5
8. Fuel strata gap <sup>4</sup> (m)		> 10	0-9	1-6	< 1
		0	1	3	3
9. Stems/ha (overstorey) <sup>5</sup>	< 400	401-600	601-900	901-1,200	> 1,200
	0	2	3	4	5
10. Crown closure	< 20% 0	20-40% or deciduous Overstorey (any closure)	41-60%	61-80%	> 80%
		1	2	3	4
11. Dead and dying (% of dominant and co-dominant stems)		standing dead/ Partial down < 20%	standing dead/ Partial down 21-50%	standing dead/ Partial down 51-75%	standing dead/ Partial down > 75%
		2	3	4	10

Total Score <sup>6</sup> :	62
Eco Province scoring used:	Coast
Fuel Assessment Rating: (low, high etc.)	High

**Comments:**  
Park edge in fuel management area. High density conifer led by Fd with Hw and Cw minor components. Little to no crown separation vertically, some open patches and trails with reduced horizontal continuity, but overall high horizontal continuity as well.

# Wildfire Threat Assessment Guide and Worksheets 2020

Updated March 2017

**Wildfire Threat Assessment Worksheet – Priority Setting Scoring (complete one for entire proposed treatment area)**

Location: 707 Community Park, Gabriola Island      Date: July 13, 2021      Assessor/ Professional Designation: Matt Shields, RPF

Coordinates (Lat/Long – Degrees/Decimal Minutes): 49° 10' 9.4332" N, 123° 49' 35.7132" W

PSTA Threat: Moderate      FBP Fuel Type: C3

Assessor's FBP Fuel Type: C3      Ownership: Municipal

Assessor's Fuel Type Rationale<sup>1</sup>: Matches characteristics of C3 as per BC Fuel Typing Discussion Paper: Dense stand (crown closure of 80%) of Fd, approx 25 years old, 5000 SPH.

Value Description (include type of value and distance to the value from the proposed treatment area):

Landscape Assessment					
Proximity of fuel treatment area to value (m)	0-100	101-500	501- 1,000	1 000-2,000	> 2,000
	25	20	15	5	0
Existing Fuel Mgmt. treatment area in place between the proposed treatment area and the value(s)	Yes 5	No 0			
Treatment Placement: using the predominant wind direction/ fire spread pattern, what is the treatment location in relationship to the value(s) location?		Downwind 0	270° offset to prevailing wind/ highest ISI values 7	90° offset to prevailing wind/ highest ISI values 10	Upwind/ highest ISI values 15
Distance to nearest vehicle access (m)		0-200 5	201-400 3	401- 1,000 1	> 1,000 0
Distance to non-fuel / treated <sup>2</sup> area near the assessment area (m)		0-200 5	201-400 5	401- 1,000 1	> 1,000 0

Topographical Factors					
Topography: Slope	< 20% 0	21-30% 1	31-45% 3	45-60% 4	> 60% 5
Topography: Aspect (> 20% slope)		North 0	East/West 5	West 4	South 5
Slope position of value (only applies if slope is > 20%)		bottom of slope/ valley bottoms 0	Mid slope - bench 1	Mid slope - continuous 3	Upper 1/3 of slope 5

Total Score: 53

**Comments:**  
Dense stand recovering from logging adjacent residences. Gabriola Island is heavily forested with minimal good non-fuel areas and no treated areas to build off. High human use due to trail network, higher probability area of ignition.

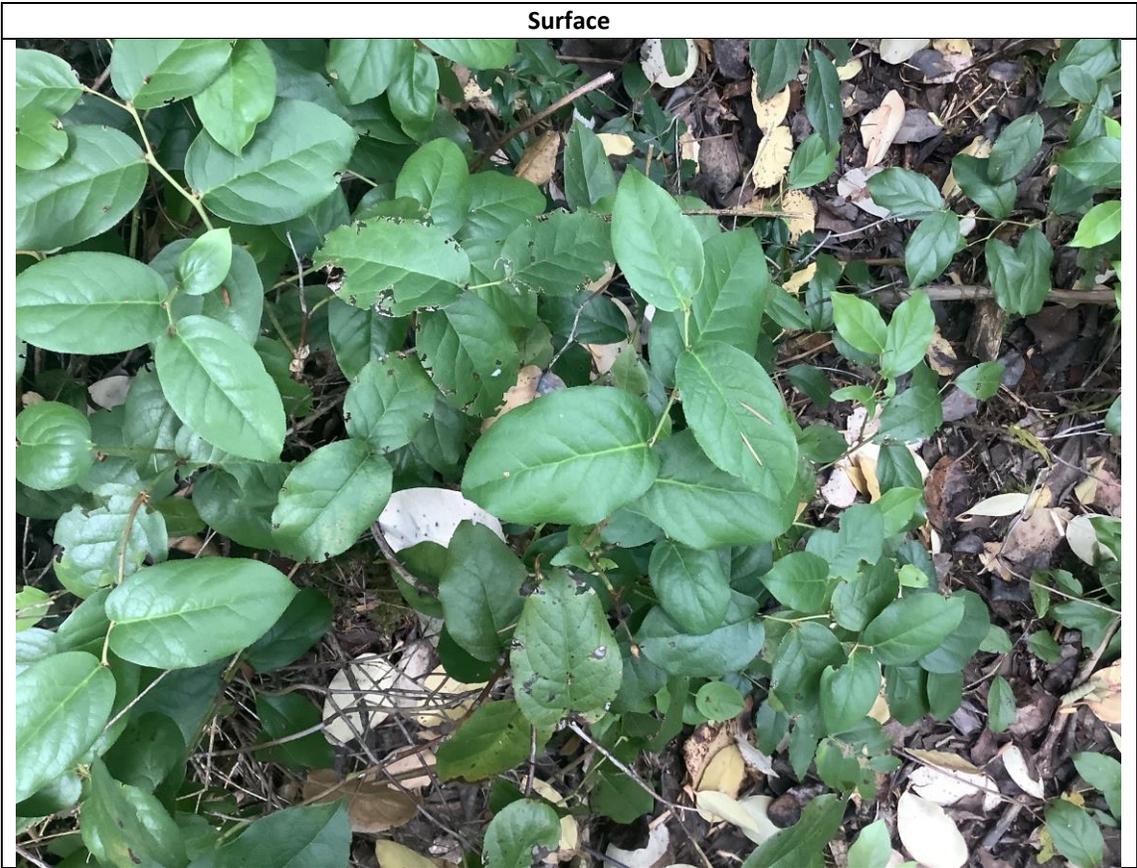
<sup>1</sup> Must include three photos for each plot (one of forest floor, one of surface and ladder fuel, one of overstory)  
<sup>2</sup> Fuel management type treatment where wildfire threat has been mitigated

**Appendix 4 Photos**

**SITE INFORMATION**

**707– Plot# 101**

**Date Sampled:** July 13, 2021  
**Coordinates: General Location:** 49° 9' 56.667" N  
123° 48' 57.785" W  
**Photo Direction:** West  
**FBP Fuel Type:** C3  
**Slope (%):** 5  
**Aspect (deg.):** 0  
**Elevation (m):** 135  
**Canopy Closure (%):** 70  
**Average Forest Floor Depth (cm):** 2



**Ladder**



**Crown**



**Appendix 5 Wildfire Modelling**

**Fire Weather – 2010-2018**

<b>Cedar</b>	<b>90th percentile</b>
Wind speed	13.5
FFMC	91.3
ISI	8.7
Temp	26.1
BUI	176.7

**Canopy Fuel Stratum Characteristics**

	<b>SPH</b>	<b>Basal Area</b>	<b>CBD kg/m2 output</b>
Pre-treatment	3000 (max value)	11	0.27
Post-treatment	600	11	0.11

**Crown Fire Initiation and Spread Model**

Version 4.0 M.G.Cruz -CSIRO, Canberra, Australia (formerly ADAI), A.M.G.Lopes - ADAI, Coimbra, Portugal, M.E.Alexander - University of Alberta, Edmonton, AB, Canada (formerly FERIC Wildland Fire Operations Research Group)

	<b>PRE TREATMENT</b>	<b>POST TREATMENT</b>
<b>Inputs</b>	90th	90th
Fuel Strata Gap	0.1	5
10m wind km	13.5	13.5
Air Temperature	26.1	26.1
Relative Humidity	37	37
Month	June	June
Time	1300-1500	1300-1500
Aspect	North/flat	North/flat
Slope	<30	<30
Shading	>51%	>51%
EFFM	8	8
SFC Class (<7cm diam)	<1	<1
CBD	0.27	0.11
<b>Outputs</b>		
Probability of CF occurrence	84%	17%
Type of crown	Active Crown	-
Crown ROS m/min	23	-

## Critical Surface Intensity

All information was obtained using the FBP97 guidebook and the Fuel Treatment Design Wildfire Intensity Tool provided by BCWS. Our inputs and findings are summarized in below table.

Station used	Cedar
Percentile Weather	90 <sup>th</sup>
Years used	2010-2018
FFMC	91.28
BUI	176.65
ISI	8.67
10m Wind	13.5 km
Fuel Type	C3
FBP Rate of Spread	2.2 m/s
Weight of fuel	0.5 kw/m <sup>2</sup>
Wildfire Intensity	324
Live Crown Base Height	5m
Foliar Moisture Content	95%
Critical Surface Intensity	1733.2 kw/m

Note: These fire behaviour predictions are subject to the limitations of the models and data available. Diamond Head Consulting Ltd. (“Diamond Head”) makes no guarantee, representation, or warranty (express or implied) regarding these model inputs or outputs.