BRITISH COLUMBIA FireSmart

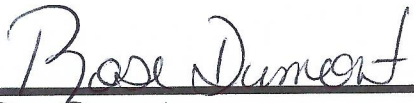
COMMUNITY WILDFIRE RESILIENCY PLAN

T'Sou-ke First Nation
March 2025

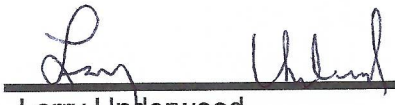
T'SOU-KE NATION

Two Eyed Seeing
Consulting CCC Inc.

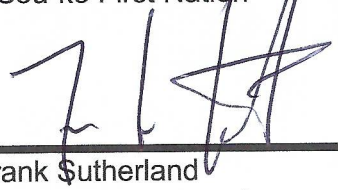
Community FireSmart Resiliency Committee



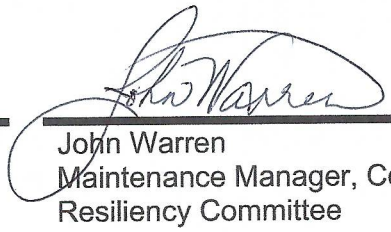
Rose Dumont
Health Manager, Community FireSmart Resiliency Committee
T'Sou-ke First Nation



Larry Underwood
Forestry and Environment Manager, Community FireSmart Resiliency Committee
T'Sou-ke First Nation

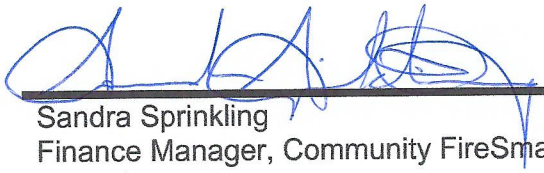


Frank Sutherland
Fisheries Manager, Community FireSmart Resiliency Committee
T'Sou-ke First Nation



John Warren
Maintenance Manager, Community FireSmart Resiliency Committee
T'Sou-ke First Nation

Michelle Thut
Administrator, Community FireSmart Resiliency Committee
T'Sou-ke Nation



Sandra Sprinkling
Finance Manager, Community FireSmart Resiliency Committee
T'Sou-ke Nation

Debbie Ridley
Social Development, Community FireSmart Resiliency Committee
T'Sou-ke First Nation

Wayne Kennedy
Fire Chief, Community FireSmart Resiliency Committee
District of Sooke

Madison Crawford
Fire Protection Services, Community FireSmart Resiliency Committee
District of Sooke

T'Sou-ke Nation Chief and Council

Larry Underwood
Chief, T'Sou-ke First Nation

Rose Dumont
Councillor, T'Sou-ke First Nation

Bonnie Hill
Councillor, T'Sou-ke First Nation

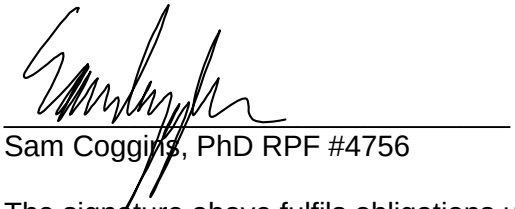
Debbie Lazzar
Councillor, T'Sou-ke First Nation

Registered Professional Forester

Parts of this plan need to have been completed by a Registered Professional forester in good standing with the Forest Professionals of British Columbia.

The Registered Professional Forester completed all the work contained in this Community Wildfire Resiliency Plan, unless identified otherwise. The Registered Professional Forester supervised all aspects of the plan.

I certify that the work described herein fulfils the standards expected of a registrant of Forest Professionals British Columbia and that I did personally supervise the work.



Sam Coggins, PhD RPF #4756

Date:

The signature above fulfils obligations under Forest Professionals of British Columbia: Bylaw 8.

Table of Contents

Tables and Figures

Figures

Tables

1. Acknowledgments

We would like to acknowledge this plan was guided and directed by members of the Community FireSmart Resiliency Committee including T’Sou-ke Nation administrative staff, First Nations Emergency Services Society, and the District of Sooke Fire Service. The plan was greatly improved by input from the Citizens of T’Sou-ke Nation. Furthermore, we are grateful to Colleen Ross, RPF BIT AFE, of CRProfessional for providing initial guidance and advice about wildfire management and mitigation. We also acknowledge that Louis Orieux of BA Blackwell and Associates completed field work and analysis to inform the wildfire threat assessment. Last, this project would not have been possible without funding provided by the Union of British Columbia Municipalities through the Community Resiliency Investment (CRI) Program.

T'SOU-KE COMMUNITY WILDFIRE RESILIENCY ACTION PLAN

PURPOSE & GOALS

- PROTECT PEOPLE & PROPERTIES PRESERVE WILDLIFE & HABITAT
- INCREASE FIRESMART KNOWLEDGE TO REDUCE WILDFIRE HAZARDS & RISK
- MAINTAIN ACCESS TO LANDS FOR TRADITIONAL PRACTICES & PROMOTE REGROWTH OF VEGETARIAN

EDUCATION

- CREATE AND FUND A FIRESMART COORDINATOR
- PROMOTE FIRESMART ON T'SOU-KE NATION LANDS
- SHARE RESOURCES FROM PROVINCE & DISTRICT

VEGETATION MANAGEMENT

- COMPLETE FIRESMART CANADA
- NEIGHBOURHOOD RECOGNITION PROGRAMS T'SOU-KE & SIAOSUN
- APPLY FOR FUNDING TO CONDUCT PRESCRIBED BURNING

CROSS-TRAINING

- TRAIN 2-4 PEOPLE/RESERVE IN STRUCTURAL AND WILDLAND AND FIRE FIGHTING
- TRAIN 2 PEOPLE TO BECOME LOCAL FIRESMART REPRESENTATIVES
- REACH OUT TO CAPITAL REGIONAL DISTRICT FOR SUPPORT OF THESE RECOMMENDATIONS

INTERAGENCY COOPERATION

- UPDATE THE FIRE SERVICE AGREEMENT BETWEEN T'SOU-KE & DISTRICT OF SOOKE
- PARTICIPATE IN REGULAR MEETINGS WITH BC WILDFIRE SERVICE, INTER-AGENCY FIRE RESPONSE & PREPAREDNESS WORKING GROUP
- PURCHASE WILDFIRE FIGHTING EQUIPMENT CONTINUE REGULAR MEETINGS OF T'SOU-KE COMMUNITY FIRESMART RESILIENCY COMMITEE
- INITIATE A REGION-WIDE INTERAGENCY FIRE RESPONSE & PREPAREDNESS WORKING GROUP

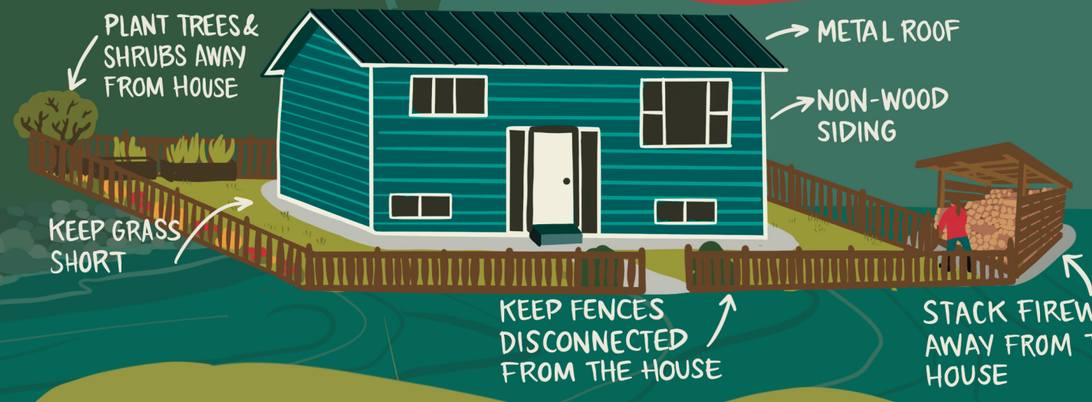
FIRE RISK

- THE CHANCE A FIRE MAY START BASED ON ON PROXIMITY TO HOMES

FIRE THREAT

- THE BUILD UP OF FUELS IN AN AREA

GOOD PRACTICES



GOOD PRACTICES

SHOVEL & BUCKET

LEGISLATION & PLANNING

- STRENGTHEN & UPDATE THE BACKYARD BURNING REGULATION
- COMPLETE HOME ASBESTOS INSPECTIONS
- COMPLETE FIRESMART CANADA NEIGHBOURHOOD RECOGNITION PROGRAMS

EMERGENCY PLANNING

- UPDATE T'SOU-KE NATION COMMUNITY OPERATIONS DISASTER PLAN
- COLLABORATE WITH THE DISTRICT OF SOOKE ON THE COMMUNITY OPERATIONS DISASTER PLAN
- COMMUNICATE EMERGENCY PREP PLANNING WITH HOUSEHOLDS
- GATHER INFORMATION ABOUT PEOPLE WITH BARRIERS TO EVACUATION
- PROMOTE USE OF ALTERTABLE SMART PHONE APP TO RESIDENTS
- PURCHASE 72 HOUR EMERGENCY KITS
- CONDUCT ANNUAL EMERGENCY OPERATIONS CENTRE ACTIVATION DRILLS
- CHECK & REPAIR T'SOU-KE 1 FIRE GATE ANNUALLY

KARA SIEVEWRIGHT
MAKEROFNETS.CA

T'SOU-KE COMMUNITY WILDFIRE RESILIENCY ACTION PLAN

2. Frequently Used Acronyms

AOI	Area of Interest
BC	British Columbia
BCWS	British Columbia Wildfire Service
BEC	Biogeoclimatic Ecosystem Classification
BUI	Build Up Index
CFRC	Community FireSmart Resiliency Committee
CRD	Capital Regional District
CRI	Community Resiliency Investment
CWRP	Community Wildfire Resiliency Planning
DC	Drought Code
DMC	Duff Moisture Code
DOS	District of Sooke
EOC	Emergency Operations Centre
FPB	Fire Behaviour Prediction
FFMC	Fine Fuel Moisture Code
FNESS	First Nations Emergency Services Society
FTL	Fuel Type Layer
FWI	Fire Weather Index
GrpS	Structure Protection Group Supervisor
HIZ	Home Ignition Zone
ISI	Initial Spread Index
KPI	Key Performance Indicator
PSTA	Provincial Strategic Threat Assessment
UBCM	Union of British Columbia Municipalities
VAR	Values at Risk
VRI	Vegetation Resource Inventory
WTA	Wildfire Threat Assessment
WUI	Wildland Urban Interface

A glossary of terms is provided in Appendix 1.

3. Executive Summary

3.1 Purpose and Goals

T’Sou-ke Nation has developed a Community Wildfire Resiliency Plan (CWRP), supported by Two Eyed Seeing Consulting CCC Inc. The purpose of the CWRP is to identify priority activities that will lead to increased wildfire resilience for T’Sou-ke Nation reserve lands and infrastructure and to reduce the risk and hazards to catastrophic wildfires that could negatively impact T’Sou-ke Nation.

The goals determined in the CWRP are:

- Protect people and properties.
- Preserve wildlife and wildlife habitat.
- Increase FireSmart knowledge to reduce wildfire hazards and risk.
- Maintain access to lands for traditional practices (harvesting and gathering) and promote regrowth of vegetation

3.2 Relationship to Other Plans

The CWRP describes the relationship to CWRPs (District of Sooke and Capital Regional District) and relevant plans in other nearby jurisdictions. T'Sou-ke Nation’s CWRP has identified recommended actions from the other plans that will be relevant to T’Sou-ke Nation community. The CWRP identifies possibilities for collaboration based on these recommendations throughout this plan. Other plans discussed include: Climate Action Plan, Sooke Emergency Response Plan, Sooke Emergency Operations Centre Manual, Fire Department Master Plan, Regional District Regional Water Supply Master Plan and Regional Supply Strategic Plan. There are also T’Sou-ke Nation plans that are relevant to wildfire: Land Code, draft Comprehensive Community Plan, draft Environmental Management Plan, Operations Disaster Plan, and Land Use Plan.

3.3 Community Description and Information

The Area of Interest (AOI) and Wildland Urban Interface (WUI) is limited to the boundaries of the reserve lands administered by T’Sou-ke Nation under its Land Code, ratified in 2006. The AOI and WUI are collectively 75.6 hectares, bounded by the reserve boundaries. TSouke 1 is approximately 27 hectares and contains commercial lands and residential lands. The commercial interests include a gas station, restaurant, greenhouses and warehouse, and is under development for T’Sou-ke Nation’s new administration and health centre complex. Siaosun (IR#2) is 48 hectares and contains residential properties and a large area of forest. There is also an area that is undergoing construction. T’Sou-ke Nation community lands are home to 271 people.

T'Sou-ke Nation lands contains infrastructure that provides services to residences and commercial buildings. T’Sou-ke Nation is reliant on the DOS and the Capital Regional District for services, including RCMP, fire service, and ambulance. Services provided within the community include: residential water supply, sewerage, electricity, and communications. Critical infrastructure has been determined and assessments of the administration building and health centre completed.

3.4 Values At Risk

Values at Risk were aligned with the goals of the CWRP, these include: people and infrastructure, culture and archaeology, vegetation, and fish and wildlife. The implications of disruptions to any of these values or combinations thereof can impact T’Sou-ke Nation lands and its citizens.

3.5 Wildfire Risk Assessment

The CWRP provides a summary of local wildfire environment and fire history and provide an overview of data available that describes wildfire threat and risk classifications. Two important concepts are described: risk and threat. Wildfire risk describes the probability of a fire occurring and the characteristics of wildfire behaviour, and the impacts or consequences of the fire. Wildfire threat describes the ability of a wildfire to ignite, spread, and consume organic material (trees, shrubs, and other organic materials) in the forest.

Fire behaviour is predominantly influenced by three variables: fuels, weather, and topography. These variables were assessed as part of the plan and are reported on in section 7.3 Local Wildfire Environment and Fire History Summary. A registered professional forester completed fuel typing and wildfire threat assessment on community lands. The majority of the fuels were classified as mixedwood, non-fuel, or deciduous. The work was completed using several fuel data plots placed at random throughout both parts of the community.

3.6 Local Wildfire Environment and Fire History Summary

The weather in and around T'Sou-ke Nation lands is generally classified as Mediterranean climate. Temperature and precipitation data are available from an Environment Canada weather station located at Sheringham Point. Variables examined included temperature, precipitation, and wind direction and speed. Typically, temperatures are cooler in the winter months, transitioning to warmer temperatures in summer, before decreasing again. At the same time as temperatures are warming, the amount of precipitation decreases. Winds typically blow south to north in the region likely pushing flames away from T'Sou-ke Nation lands but also dries fuels. Last, Tsouke1 is located in the Sooke Basin. The topography near the shoreline is comparatively flat, although rises sharply. Slopes are southwest facing. In comparison, Siaosun is relatively flat.

In an area approximately 15 km outside of T'Sou-ke Nation reserve lands, wildfire records indicate that fires were more frequent during the first half of the 20th Century (15,564 hectares: 1919 to 1968), abruptly ceasing in the 1980s with far less area burned during the latter half of the 20th Century and beginning of the 21st Century (415 hectares: 1969 to 2023). The decrease in area burned is likely due to increased suppression efforts by the province of British Columbia. Fires have typically been caused by people, 155 of the fires were determined to have been caused by people with the remaining fires caused by lightning.

3.7 Risk Framework

A local risk assessment was completed that incorporated fuels, weather, and topography, and the WUI risk class. The assessment methodology is summarized as:

- **Fuel type attribute assessment**: ground truthing/verification and updating as required to develop a local fuel type map
- **Consideration of the proximity of fuel to the community:** recognizing that fuel closest to the community usually represents the highest hazard
- **Analysis of predominant summer fire spread patterns:** using wind speed and wind direction during the peak burning period using ISI Rose(s) from weather station(s). Wind speed, wind direction, and fine fuel moisture condition influence wildfire trajectory and rate of spread.
- **Consideration of topography in relation to values:** slope percentage and slope position of the value are considered, where slope percentage influences the fire's trajectory and rate of spread and slope position relates to the ability of a fire to gain momentum uphill.
- **Stratification of the WUI:** according to relative wildfire threat based on the above considerations, other local factors, and field assessment of priority wildfire risk areas.

T'Sou-ke Nation community lands were found to mostly be in the low risk category meaning that lands do not support significant wildfire spread. Some land is also classified as moderate, meaning that surface fires are

potentially threatening to homes and structures, depending on their adherence to FireSmart landscaping and construction materials principles.

WUI Risk is quantified when the Wildfire Threat is assessed as high or extreme, causing potential for unacceptable wildfire risk when near communities and developments. Following assessment, T'Sou-ke Nation lands were determined to be in the moderate, low, or very low fire behaviour category. This being said, T'Sou-ke Nation community should implement FireSmart around homes to prevent fires that may damage properties and homes or businesses.

3.8 FireSmart Disciplines

The last section of the CWRP includes information about seven FireSmart disciplines, which are provided along with recommendations that form an action plan. The FireSmart disciplines include (Sections 9 to 15):

- Education: Public education and outreach efforts help community members learn about wildfire and its potential impacts to their communities. In addition, these efforts should be designed to help individuals understand their role in taking action to reduce risk. Education and outreach activities are designed for all groups to benefit, including elected officials, community planners, residents, visitors, businesses, land managers, first responders, and more.
- Legislation and Planning: Legislation and Regulation can be a very effective tool for reducing wildfire risk on provincial crown lands and within the administrative boundaries of a local government or First Nation communities. Provincial acts and regulations provide the means for local governments and First Nation communities to implement wildfire risk reduction actions through bylaws.
- Development Considerations: Development decisions, such as land use types, structure density, road patterns, and other considerations, shape the built and natural environments. These decisions can bring lasting impacts to the WUI and wildfire risk by affecting public and first responder safety and survivability of homes, critical infrastructure, and other community features. Considering these factors early in the development process can reduce wildfire risk to life safety and property.
- Interagency Cooperation: It takes the collaborative efforts of multiple stakeholders working together to achieve a fire resilient community. These people include the local fire departments, local government staff, elected officials, First Nations representatives, industry representatives and provincial government residents in your area. Individually they are responsible to their own organizations, but all of the stakeholder organizations are dependent upon each other to develop an effective Community Wildfire Resiliency Plan and undertake a successful wildfire response.
- Cross-training: Wildland-Urban Interface resiliency planning and incident response draw on many different professions who do not typically work in wildfire environment. Cross-training of fire fighters, public works staff, utility workers, local government and First Nations administration, planning and logistics staff, and other key positions will help support the development of comprehensive and effective wildfire risk reduction planning and activities, as well as a safe and effective response.
- Emergency Planning: Community preparations for a wildfire emergency requires a multi-pronged approach. Individuals and agencies need to be ready to react by developing plans, mutual-aid agreements, resource inventories, training and emergency communication systems. All of these make it possible for a community to respond effectively to the threat of wildfires as a whole.
- Vegetation Management: The general goal of vegetation management is to reduce the potential wildfire intensity and ember exposure to people, infrastructure, structures and other values through manipulation of both the natural and cultivated vegetation that is within or adjacent to a community. A well-planned vegetation management strategy that is coordinated with development, planning, legislation and emergency response wildfire risk reduction objectives can greatly increase fire suppression effectiveness and reduce damage and losses to structure and infrastructure.

The risk assessment work identified the areas of the community that would benefit from wildfire mitigation actions. Actions have been identified and are included in a plan (provided below) that results from the analysis of the FireSmart disciplines. These actions help local governments and First Nations understand where to start and what steps to take on the way to community wildfire resiliency.

3.9 Action Plan

Recommendations made following analysis of the FireSmart disciplines were collated into an action plan that if undertaken will help to improve wildfire resiliency and reduce risks posed by wildfires. Recommendations are provided with information about the jurisdiction that provided the recommendation (given the potential for collaboration with the Capital Regional District and District of Sooke), who will implement the recommendation, the priority level, and the funding source. Priority was assigned according to:

- High: implement as soon as possible or already underway.
- Medium: implement within the next 3 to 6 months following approval of the CWRP
- Low: implement 6 months to 1 year following approval of the CWRP.

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
FireSmart Discipline: Education					
T'Sou-ke Nation	Create and fund a FireSmart Coordinator position	T'Sou-ke Nation Administration	High	Create position	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Train two people to become Local FireSmart Representatives	T'Sou-ke Nation Administration	High	Two people to take training	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Complete Home Ignition Zone Assessments	T'Sou-ke Nation Administration	High to Medium	20 HIZ assessments complete	FNESS funds
T'Sou-ke Nation	Complete home fire safety – self-inspection checklists	FireSmart Coordinator	High to Medium	20 checklists complete	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Use FireSmartBC teaching resources in Sum-SHA-thut Lellum PreK program	T'Sou-ke Nation early childhood educator and T'Sou-ke Nation Administration	Medium	Educational resources included in curriculum	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Promote FireSmart activities in T'Sou-ke Nation lands and share resources promoted by District of Sooke	FireSmart Coordinator	High	Completed through	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Continue to provide information via T'Sou-ke Nation's website, newsletter, and others from provincial, municipal, and other	FireSmart Coordinator	High	Ongoing	UBCM CRI program and FNESS funds

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
	sources to citizens of T'Sou-ke Nation				
T'Sou-ke Nation	Organize community clean up days	FireSmart Coordinator	Medium	Clean up day completed	FNESS funding and Earth Day funds through treaty association
T'Sou-ke Nation	Circulate promotional FireSmart material	FireSmart Coordinator	Medium	Ongoing	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Share the CWRP on our website	T'Sou-ke Nation Administration	High	CWRP on website	FireSmart Coordinator salary
T'Sou-ke Nation	Provide open access to a computer for citizens to take FireSmart101	T'Sou-ke Nation Administration	High to Low	10 people have taken FireSmart101	FireSmart Coordinator salary
T'Sou-ke Nation	Erect signage banning campfires on beachfronts	T'Sou-ke Nation Administration	High	Beachfront signs erected	UBCM CRI program and FNESS funds
District of Sooke	Promote information about adverse impacts of yard waste dumping	FireSmart Coordinator	High to Low		
District of Sooke	Host all-hazard emergency preparedness workshops for residents, including T'Sou-ke Nation.	FireSmart Coordinator	Medium		
Capital Regional District	Promote FireSmart Neighbourhood Planning in neighbourhoods at relative risk.	FireSmart Coordinator	Low		
FireSmart Discipline: Legislation and Planning					
T'Sou-ke Nation	Incorporate FireSmart and other wildfire mitigation language into future law development	T'Sou-ke Nation Administration and legal counsel	Medium	Ongoing	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Strengthen and update the Backyard Burning Regulation	T'Sou-ke Nation Administration and legal counsel	High	Regulation updated	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Work with the CRD to ensure T'Sou-ke	FireSmart Coordinator	Low	Confirmation from CRD that	Included in FireSmart

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
	Nation citizens are included in the program to reduce or eliminate green waste tipping fees at Hartland landfill			the program applies to T'Sou-ke Nation citizens	Coordinator salary
FireSmart Discipline: Development Considerations					
T'Sou-ke Nation	Incorporate FireSmart and other wildfire mitigation language into future law development	T'Sou-ke Nation Administration and legal counsel	Medium	Ongoing	UBCM CRI program and FNESS funds
T'Sou-ke Nation	When designing future development, incorporate FireSmart Disciplines	T'Sou-ke Nation Administration	Medium	Ongoing	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Complete asbestos inspections on homes	FireSmart Coordinator	High	20 homes inspected	Determine funding source
T'Sou-ke Nation	Complete FireSmart Canada Neighbourhood Recognition Programs for TSouke1 and Siaosun	FireSmart Coordinator	High	Both communities recognized under the Program	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Determine opportunities to work with CRD on wildfire risk in multi-owner environments	FireSmart Coordinator	Medium	Develop relationship	UBCM CRI program
CRD	Improve understanding of wildfire risk in multi-ownership environments	CRD	Medium		
FireSmart Discipline: Interagency Cooperation					
T'Sou-ke Nation	Update the Fire Service Agreement between T'Sou-ke Nation and District of Sooke	T'Sou-ke Nation Administration and District of Sooke	High	Agreement completed	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Take part in regular meetings with BC Wildfire Service during fire season to understand fire	FireSmart Coordinator	High	Regularly attends meetings	UBCM CRI program and FNESS funds

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
	situation on South Island.				
T'Sou-ke Nation	Purchase equipment that can be stored in both communities to be utilised in the event of a wildfire	FireSmart Coordinator	High	Equipment purchased	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Attend the Wildfire Resiliency and Training Summit	FireSmart Coordinator and other CFRC staff (up to 2 people)	Medium	2 people attend Summit	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Continue regular meetings of T'Sou-ke Nation's Community FireSmart Resiliency Committee	T'Sou-ke Nation Administration with District of Sooke, Min. of Emergency Mgmt and Climate Readiness, and BC Wildfire Service	High	Hold meetings	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Take part in the Interagency Fire Response and Preparedness Working Group	FireSmart Coordinator	High	Contact CRD Attend meetings	UBCM CRI program and FNESS funds
District of Sooke	Establish a regular schedule of meetings for the District of Sooke Community FireSmart Resiliency Committee.	Lands Manager (alternative representative: FireSmart Coordinator)	Medium		
CRD	Initiate a region-wide Interagency Fire Response and Preparedness Working Group	CRD Protective Services	High		
FireSmart Discipline: Cross-Training					
T'Sou-ke Nation	Train two to four people on each reserve in structural and wildland fire fighting	FireSmart Coordinator	High	Four people trained in S-100, S-185, S231, task force leader, and Structure Protection Group Supervisor	UBCM CRI program and FNESS funds

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
T'Sou-ke Nation	Train two people to become Local FireSmart Representatives	FireSmart Coordinator	High	Two people trained	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Reach out to Capital Regional District to determine how they can support T'Sou-ke Nation with these recommendations	FireSmart Coordinator	High	Outreach completed	FireSmart Coordinator salary
T'Sou-ke Nation	Two to four people to train with District of Sooke Fire Service	FireSmart Coordinator	Medium	Two to four people training with District of Sooke Fire Service	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Train two people to be danger tree assessors	FireSmart Coordinator	Medium	Two people trained to be assessors	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Train two people to become Home Partners Mitigation Specialists	FireSmart Coordinator	Low	Two people trained	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Complete Emergency Operations Centre training and refreshers	Emergency Management Committee lead	Medium	Conduct training	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Complete Emergency Operations Centre scenario and response drill annually (in collaboration with District of Sooke)	Emergency Management Committee lead and District of Sooke Fire Service	Medium	Complete scenario and response drill	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Conduct annual training exercises with T'Sou-ke Nation equipment and on T'Sou-ke Nation land to fight wildfire and provide structural protection	FireSmart Coordinator and District of Sooke Fire Service	Low	One training exercise completed	UBCM CRI program and FNESS funds
District of Sooke	Conduct annual training with mutual aid partners	FireSmart Coordinator	Medium		
District of Sooke	Expand Emergency Operations Centre	FireSmart Coordinator	Medium		

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
	training for municipal staff				
District of Sooke	Organize a schedule for practice and training with BCWS, using wildland equipment	FireSmart Coordinator	Low		
District of Sooke	Maintain or expand wildfire-specific training for members	FireSmart Coordinator	Low		
Capital Regional District	Support local fire departments to access additional training on future CRI funding applications	FireSmart Coordinator	Low		
Capital Regional District	Support local fire department members to become Local FireSmart Representatives	FireSmart Coordinator	Low		
Capital Regional District	Host a neighbourhood champion training workshop for interested community members.	FireSmart Coordinator	Low		
FireSmart Discipline: Emergency Planning					
T'Sou-ke Nation	Update T'Sou-ke Nation Community Operations Disaster Plan	Emergency Management Plan Committee Lead	High	Plan prepared	Unknown
T'Sou-ke Nation	Collaborate with the District of Sooke on the Community Operations Disaster Plan	Emergency Management Plan Committee	High	Plan prepared	Unknown
T'Sou-ke Nation	Communicate emergency preparedness planning with households	FireSmart Coordinator	High	Resources shared with households	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Gather information about people who may not be able to easily evacuate	FireSmart Coordinator	High	Database created	FireSmart Coordinator salary

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
T'Sou-ke Nation	Promote the use of the Alertable smart phone app to all residents	Emergency Management Plan Committee Lead	High	At least 75% of residents have app installed	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Purchase 72 hour emergency kits	Emergency Management Plan Committee Lead	High	Kits purchased and distributed to homes	FNESS funds
T'Sou-ke Nation	Ensure fire gate on T'Sou-ke 1 can be opened, check lock, and repair as necessary each year (before fire season).	FireSmart Coordinator	High	Gate and lock checked, repairs completed	FireSmart Coordinator salary
District of Sooke	Maintain or expand the number of community spaces that can be used as cooling centres during extreme heat events and fresh air spaces during poor air quality events.	FireSmart Coordinator			
District of Sooke	Conduct Emergency Operations Centre activation drills annually.	Emergency Management Plan Committee Lead			
District of Sooke	Promote resident registration to the Alertable app notification system.	FireSmart Coordinator			
District of Sooke	Seek funding to a build weather station in Sooke.	FireSmart Coordinator			
Capital Regional District	Continue and expand tabletop scenario exercises with the members of the proposed Fire Response and Preparedness Working Group.	FireSmart Coordinator			
Capital Regional District	Continue and expand community information sessions about emergency preparedness and evacuation during a wildfire.	FireSmart Coordinator			

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
Capital Regional District	Create an emergency preparedness guidebook for local residents.	FireSmart Coordinator			
FireSmart Discipline: Vegetation Management					
T'Sou-ke Nation	Develop and implement fuel treatments	FireSmart Coordinator	Medium	Treatments implemented or completed	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Complete FireSmart Canada Neighbourhood Recognition Programs for TSouke1 and Siaosun	FireSmart Coordinator	High to Medium	FireSmart Neighbourhood Plan completed for both parts of the community	FireSmart Coordinator funds
T'Sou-ke Nation	Apply for funding to conduct prescribe burning.	FireSmart Coordinator	High	Funding application completed	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Conduct burns in treatment areas 1 and 2.	FireSmart Coordinator (with support from BC Wildfire Service)	Medium	Burns completed	UBCM CRI program and FNESS funds
District of Sooke	Continue to fund and promote Scotch broom removal events in Sooke	FireSmart Coordinator	Medium		
District of Sooke	Seek funding to waive tipping fees at the transfer station for yard waste and woody debris	FireSmart Coordinator	Medium		

4. Introduction

T’Sou-ke Nation has developed a Community Wildfire Resiliency Plan (CWRP), supported by Two Eyed Seeing Consulting CCC Inc. Wildfire management for small communities in British Columbia has become increasing necessary. Wildland fires have increasingly burned larger areas and encroached on or burned through urbanized areas on the edge of larger cities or through entire towns. This has led to provincial government-led reports that have stressed the need for community wildfire preparedness and mitigations to build resiliency.

Community wildfire planning was first contemplated in the British Columbia Auditor General report: Managing Interface Fire Risk. Community wildfire planning was initially recommended and addressed by the provincial government of British Columbia in 2003 as a result of the Firestorm report commissioned following the Okanagan Mountain Park wildfire. This resulted in Community Wildfire Protection Plans which have since evolved into CWRP’s. CWRPs is help communities develop a comprehensive, and science-based approach toward wildfire risk reduction that reflects local priorities and provincial goals for wildfire prevention and mitigation.

Many First Nations in British Columbia have a history of co-existing with fire on the landscape and/or using fire for various reasons. However, provincial and federal laws have prevented traditional practices from continuing into the present day. Western-led fire management has largely focussed on suppression to extinguish fires when they start which has caused fuels to build up resulting in large-scale, hot fires. The reinvigoration of Indigenous practices has benefits to all Canadians to help build resilient landscapes and once again co-exist with wildfires.

4.1 Purpose and Goals

The purpose of the CWRP is to identify priority activities that will lead to increased wildfire resilience for T’Sou-ke Nation reserve lands and infrastructure and to reduce the risk and hazards to catastrophic wildfires that could negatively impact T’Sou-ke Nation.

The goals for the plan were created in consultation with T’Sou-ke Nation during regular Community FireSmart Resilience Committee meetings and two T’Sou-ke Nation community meetings. Feedback received at these meetings were synthesised into three distinct goals to guide the CWRP. The plan has a list of recommendations and actions that if completed will lead to greater resiliency for T’Sou-ke Nation.

The goals determined in the CWRP are:

- Protect people and properties.
- Preserve wildlife and wildlife habitat.
- Increase FireSmart knowledge to reduce wildfire hazards and risk.
- Maintain access to lands for traditional practices (harvesting and gathering) and promote regrowth of vegetation

The audience for this plan is threefold, T’Sou-ke Nation staff and Leadership, T’Sou-ke Nation citizens, and external jurisdictions that have ongoing relationships with T’Sou-ke Nation. This includes:

- T’Sou-ke Nation Leadership and government staff will have greater understanding of the wildfire hazard and risks to the T’Sou-ke Nation community, from both within the reserve and from plans that have been created in jurisdictions adjacent to T’Sou-ke Nation lands (e.g., through the District of Sooke and Capital Regional District CWRP).

- Through this CWRP T'Sou-ke Nation citizens are provided with educational materials to protect their properties from wildfires via the FireSmart disciplines and can further understand the threats facing the community
- External jurisdictions further understand the risks faced and how wildfire management may be coordinated between T'Sou-ke Nation and external parties.

4.2 Plan Development Summary

The entire plan describes current circumstances related to the potential for wildfire in and around T'Sou-ke Nation lands. However, parts of the plan are likely more relevant to some readers than others. This summary describes specific sections of the plan for readers, along with section numbers provided for reference.

1) To inform the plan a Community FireSmart Resilience Committee was formed to guide and direct the plan process and to review outcomes.
2) T'Sou-ke Nation, District of Sooke, First Nations Emergency Services Society, Capital Regional District, British Columbia Wildfire Service, and wildfire experts have each had input into the plan to determine expectations for wildfire management and to resolve community concerns.
3) Section 5 describes linkages to relevant plans, especially those that determine existing emergency response and wildfire management mechanisms.
4) Section 6 describes the area of interest and wildland urban interface, community information, and values at risk.
5) Section 7 provides a wildfire risk assessment based on historical information and then provides an overview of information available from the province.
6) Section 8 provides information based on 7 Firesmart Disciplines:
    - Education (Section 9): provides information for T'Sou-ke Nation citizens based on FireSmart activities.
    - Legislation and Planning (Section 10): Describes the current legal framework regarding wildfire management in the province of British Columbia and for the lands covered under this CWRP.
    - Development Considerations (Section 11): factors in development methods that may be considered to reduce wildfire risk.
    - Interagency Cooperation (Section 12): Describes the relationships that govern jurisdictions outside T'Sou-ke Nation's lands, federal/provincial government agencies, and how they interact with T'Sou-ke Nation.
    - Cross-Training (Section 13): Describes the need to build an understanding of each of the disciplines involved in wildfire response and planning, and provides information about training that could be taken.
    - Emergency Planning (Section 14): Describes the types of planning, agreements, resources, training, and communications required to facilitate effective responses to wildfire.
    - Vegetation Management (Section 15): Provides methods to reduce potential wildfire intensity and ember exposure through the manipulation of vegetation to reduce damage and losses to structure and infrastructure.
7) Last, an action plan has been developed for T'Sou-ke Nation that focuses on the seven FireSmart principles (Section 16). These will help support wildfire resilience for lands and community to meet the goals of this CWRP.

This plan was developed by a Community FireSmart Resiliency Committee (CFRC) that was comprised of senior staff from T'Sou-ke Nation Administration including: the Administrator, Chief Financial Officer, Forestry and Environment Manager, Fisheries Manager, Social Development Manager, Health and Wellness Manager, and Lands Manager. It also included representatives from the District of Sooke Fire Service as well as First Nations Emergency Services Society. The Committee met six times and actively participated over the course of the plan development. The project charter for the CFRC and the CWRP is included in Appendix 2.

The CWRP was developed in consultation with T'Sou-ke Nation Citizens. A community event was held to determine Values At Risk and which values were important to people. A fire ecologist led an event explaining wildfire processes and examining potential treatment areas. The draft CWRP was presented at a community meeting that included dinner, access to FireSmart promotional items, an overview of the draft plan, and a screening of the documentary: The Test. Citizens were given two months to provide review and comment on the CWRP. Last, the CFRC signed and approved the CWRP followed by approval and signature by Chief and Council.

5. Relationship to Other Plans

T'Sou-ke Nation lands are adjacent to the District of Sooke (DOS). The DOS is within the Capital Regional District (CRD)·both of these jurisdictions have recently (since 2023) completed CWRPs. These plans do not apply directly to T'Sou-ke Nation reserve lands. Given the comparatively small size of T'Sou-ke Nation's lands and the reliance on the District of Sooke and Capital Regional District for services it is necessary to draw linkages between the CWRPs and others documents so as to effectively establish communications and responses in the event of a wildfire (Table 1). We provide a description of CWRPs from both jurisdictions below and describe recommendations that have been included in both plans.

T'Sou-ke Nation will identify possibilities for collaboration based on these recommendations throughout this plan.

5.1 District of Sooke CWRP

The plan was written and approved by the DOS in 2023 and replaces the previous Community Wildfire Protection Plan. The area of interest for the plan is the DOS's municipal boundary. The plan identifies the interface wildfire risk in the District of Sooke and gives the community an understanding of the threats to human life, infrastructure, and values at risk from wildfire.

The DOS CWRP was provided to T'Sou-ke Nation for review and comment. T'Sou-ke Nation made several suggestions with the aim to increase collaboration between jurisdictions. The CWRP provide several recommendations that could be extended to T'Sou-ke Nation lands and help provide the Nation with resources to also fight wildfires. These recommendations form an action plan as recommendations are labelled high, medium, or low priority, and when actioned will mitigate wildfire risk to the District.

T'Sou-ke Nation is mentioned in the plan several times, including several of the recommendations:

- Acknowledgment of reserve lands adjacent to the DOS.
- An MOU was signed in 2007 between both governments acknowledging interest to protect heritage sites and provide cultural protection.
- DOS and T'Sou-ke Nation are each represented on each other's Community FireSmart Resilience Committee's, and also includes CRD and DOS Fire Service.
- Continuation of relationship building between the DOS and T'Sou-ke Nation.
- Recommendations that include T'Sou-ke Nation include:

    Education:
    - Promote information about adverse impacts of yard waste dumping.
    - Host all-hazard emergency preparedness workshops for residents.

    Interagency Cooperation:
    - Engage with T'Sou-ke First Nation to update the existing Fire Services Agreement.

Cross-Training:

- Conduct annual training exercises with mutual aid partners.
- Expand Emergency Operations Centre training for municipal staff.
- Organize a schedule for practice and training with BCWS, using wildland equipment.
- Maintain or expand wildfire-specific training for members.

Emergency Planning

- Maintain or expand the number of community spaces that can be used as cooling centres during extreme heat events and fresh air spaces during poor air quality events.
- Conduct Emergency Operations Centre activation drills annually.
- Update the Emergency Response and Business Continuity Plan, with a focus on: a) identifying key EOC positions and municipal staff positions that could fill these roles; b) adding evacuation route and procedures information; and, c) an Emergency Communications Plan component.[1]
- Promote resident registration to the Alertable app notification system.
- Seek funding to a build weather station in Sooke.

Vegetation Management:

- Continue to fund and promote Scotch broom removal events in Sooke.
- Seek funding to waive tipping fees at the transfer station for yard waste and woody debris.

5.2 Capital Regional District CWRP

The Capital Regional District CWRP was written in 2023 and focusses on specific areas within T'Sou-ke Nation territory but does not overlap reserve land. While DOS lands are adjacent to T'Sou-ke Nation reserves, the CRD operates regional parks, green spaces, and trails within DOS municipal boundaries.

The CRD CWRP acknowledges that the CRD includes lands within T'Sou-ke Nation (and other First Nations) territory. The CWRP has an action plan that includes several recommendations that could be completed in collaboration with T'Sou-ke Nation (and the DOS):

Education:

- Promote FireSmart Neighbourhood Planning in neighbourhoods at relative risk.

Legislation and Planning:

- Create a program to reduce or eliminate green waste tipping fees for FireSmart projects at the Hartland regional landfill.

Development Considerations:

- Improve understanding of wildfire risk in multi-ownership environments.

Interagency Cooperation:

- Initiate a region-wide Interagency Fire Response and Preparedness Working Group.
- Provide cultural sensitivity training to Protective Services staff to support positive partnerships with Indigenous people and communities.

Cross Training:

- Support local fire departments to access additional training on future CRI funding applications.
- Support additional CRD staff or local fire department members to become Local FireSmart Representatives.
- Host a neighbourhood champion training workshop for interested community members.

[1] Residents of T'Sou-ke First Nation to be considered in evacuation planning.

Emergency Planning:

- Continue and expand tabletop scenario exercises with the members of the proposed Fire Response and Preparedness Working Group.
- Continue and expand community information sessions about emergency preparedness and evacuation during a wildfire.
- Create an emergency preparedness guidebook for local residents.

5.3 Other Plans

Both the District of Sooke and the T'Sou-ke Nation to align with these plans.

TABLE 1: KEY PLANS AND RELATIONSHIP TO CWRP

Plan	Description	Relationship to CWRP
District of Sooke		
CWRP	Identifies the interface wildfire risk in the DOS and gives the community an understanding of the threats to human life, infrastructure, and values at risk from wildfire. The plan provides recommendations to mitigate potential wildfire impacts.	Recommendations from the DOS CWRP will be incorporated throughout this plan. Provides information about education and training, interagency cooperation, emergency management, and vegetation management. These are to be applied within the District, but also have application on T'Sou-ke Nation lands. This applies to sections 9 to 15 of this plan.
Climate Action Plan	Describes strategic-level mitigations and adaptations to climate change that will be undertaken. These include specific mitigations/adaptations for wildfires.	The relationship to the strategies and mitigations are addressed in the DOS CWRP. Provides information that has been incorporated into DOS CWRP recommendations, specifically for FireSmart, vegetation management, education, and emergency management.
Emergency Response Plan	This Plan is used to manage resources for the purpose of emergency response and recovery.	Provides emergency management procedures outside of T'Sou-ke Nation lands that need to be followed. Parts of the Plan need to be incorporated into this CWRP in emergency management (Section 14).
Emergency Operations Centre Manual	This Plan is intended to be used with the Emergency Response Plan. It provides guidance to the DOS during disaster response and recovery.	T'Sou-ke Nation have a similar plan. Both plans need to be related to each other to ensure conflicts among the plans are avoided (section 14).
Fire Department Master Plan	This Plan describes the services provided by Sooke Fire Service.	Sooke Fire Service provides emergency response to the T'Sou-ke Nation. In order to combat fires T'Sou-ke Nation needs to understand available resources in the event of a fire. T'Sou-ke Nation also needs to collaborate with Sooke Fire Service to receive training and qualifications.
Capital Regional District		
CWRP	Identifies the interface wildfire risk in the CRD and gives the community an understanding of the threats to human life, infrastructure, and values at risk from wildfire. The plan provides recommendations to mitigate potential wildfire impacts.	Recommendations from the CRD CWRP will be incorporated throughout this plan. Provides information about education and training, interagency cooperation, emergency management, and vegetation management. These are to be applied within the District, but also have application on T'Sou-ke Nation lands. This applies to sections 9 to 15 of this plan.
Regional Water Supply Master Plan	This Plan provides information about water supply, future demand, treated water storage, and water transmission systems.	The CRD provides drinking water and for fire hydrants to T'Sou-ke Nation. This applies to section 6.2 of this plan.

TABLE 1: KEY PLANS AND RELATIONSHIP TO CWRP		
Plan	**Description**	**Relationship to CWRP**
Regional Water Supply Strategic Plan	This Plan describes the commitments, strategic priorities, and actions for water supply by the CRD.	The CRD provides drinking water and for fire hydrants to T'Sou-ke Nation. This applies to sections 6.2 of this plan.

T'Sou-ke Nation has several other plans that require inclusion in this CWRP. These are described below along with the relationship of the plan to this CWRP (Table 2).

TABLE 2*: RELATIONSHIP OF CWRP TO T'SOU-KE NATION PLANS*		
Plan Type	Description	Relationship to CWRP
Land Code	A First Nation's Land Code is a step towards self-governance. It removes 32 sections of the *Indian Act* and sets out the principles and administrative structures that apply to T'Sou-ke Nation lands and authority over those lands.	Land Code is a governance document that enables CWRP priorities to be implemented. Specific sections of Land Code that may influence the CWRP are: - Part 2: First Nation Legislation - Part 4: Protection of Land.
Draft Comprehensive Community Plan	Provides a long-term Plan for First Nation's governments that provides goals and objectives of several departments.	T'Sou-ke Nation's Comprehensive Community Plan is still in draft. However, it provides information that has been compiled with community input on: - Cultural, riparian, and environmentally sensitive areas. - Protection and restoration of aquatic and terrestrial habitats and species. - Architectural design of buildings. - Standards for signage. - Landscaping (including irrigation).
Draft Environmental Management Plan	The Environmental Management Plan was prepared to protect and improve the quality and productivity of the natural and human environments of T'Sou-ke Nation lands.	The Environmental Management Plan provides information relevant to this CWRP: - Responses to environmental emergencies (including wildfires). - Fuel use and storage. - Natural resources management. - Fish and fish habitat protection. - Community quality.
Operations Disaster Plan	The Plan establishes an Emergency Operations Centre (EOC), provides structure and operational guidelines for an EOC, and gives several checklists in the event of an emergency.	The Operations Disaster Plan provides checklists for wildland and interface fires, and for urban and rural fires.
Land Use Plan	Captures the community vision for Siaosun (IR#2), and outlines clear objectives and priorities with a clear strategy for (residential) development of IR#2.	Provides land zoning and describes provision of services to Siaosun (IR#2). Services described include sewerage, roads, and shared services.

6. Community Description

6.1 Area of Interest and Wildland Urban Interface

The Area of Interest (AOI) and Wildland Urban Interface (WUI) is limited to the boundaries of the reserve lands administered by T'Sou-ke Nation under its Land Code, ratified in 2006. The AOI and WUI are collectively 75.6 hectares, bounded by the reserve boundaries; beyond these are ocean and the District of Sooke (Figure 1). Also shown on the map are lands owned in fee simple by T'Sou-ke Nation that could be subject to management activities to protect these lands from wildfires. Fee simple lands add 120 hectares to the AOI, although these were not included in the risk assessment as they are covered under CWRPs written for the District of Sooke and the Capital Regional District.

The WUI is determined by a 1 km buffer that extends beyond T'Sou-ke Nation's community lands boundaries, the portions of the WUI that fall outside community lands are within the District of Sooke, and covered off under the District's CWRP.

TSouke1 is approximately 27 hectares; it is intersected east to west by Highway 14. Land to the south of the highway is residential (approx. 18 hectares), while the land to the north (approx. 9 hectares) is commercial. The commercial lands contain a gas station, restaurant, greenhouses and warehouse, and is mostly under development for T'Sou-ke Nation's new administration and health centre complex. The residential portion contains forested areas as well as homes and T'Sou-ke Nation's administration offices, health centre, and a school.

Siaosun (IR#2) is 48 hectares. This part of the community is home to the majority of T'Sou-ke Nation citizens who live on reserve. Despite the number of homes, there is a large area of forest situated on the northern portion of the reserve. This forested area is currently under development to provide additional housing (see section 7.2) and future plans include additional clearing and development to convert the forest to residential areas.

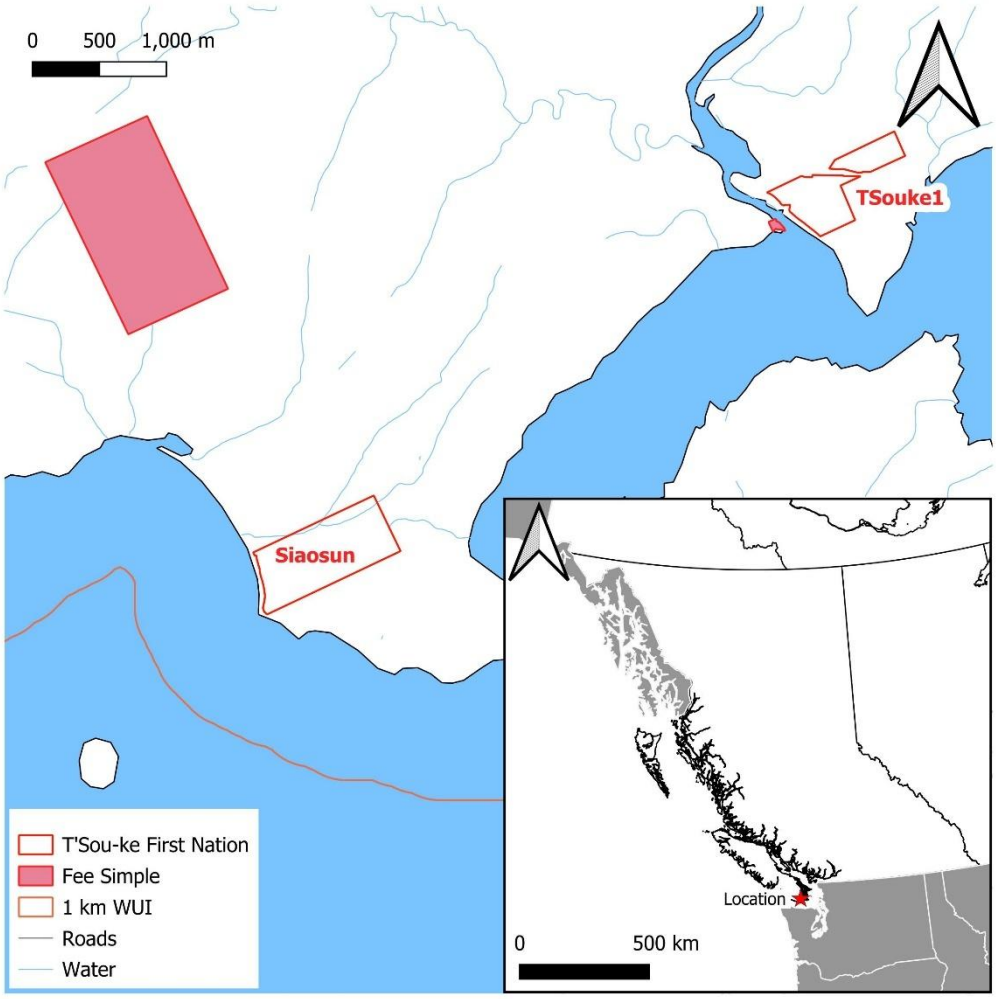


Figure 1: Location of T’Sou-ke Nation lands on Vancouver Island and within the District of Sooke and the Capital Regional District.

6.2 Community Information

For thousands of years, the T’Sou-ke Nation has resided in its territory on southern Vancouver Island, a history that has left an indelible mark on the surrounding landscape. The District of Sooke and various geographical features, such as Sooke harbour, basin, and highway, bear anglicised versions of the Nation's name. The origin of their name traces back to the SENĆOŦEN word for stickleback, a type of fish found in the Sooke River estuary.

As part of the Coast Salish people, T’Sou-ke Nation speaks a dialect of the Coast Salish language, SENĆOŦEN, shared with neighboring First Nations on southern Vancouver Island, the Gulf Islands, Vancouver, and the north coast Olympic Peninsula in the modern-day United States.

Established in 1877, the Nation has two reserves spanning 76 hectares. Positioned along the ocean, Sooke Basin, and the Sooke River estuary in the Strait of Juan de Fuca, these lands mostly consist of urban environments with interspersed forests. Recent land clearing activities have reduced the treed areas to make way for on-reserve housing.

Despite being adjacent to other communities, including the District of Sooke and within the larger Capital Regional District, the reserves are isolated within the District of Sooke (Figure 1).

Both reserves are both populated. Land uses on reserve are typically urban and forested. Urban areas contain a network of paved roads with widely space homes. Some of the homes are separated by forested land. The Nation's housing infrastructure comprises 91 homes accommodating a population of 271 people on reserve, including renters. Over the past decade, there has been a notable increase of over 100 people choosing to move onto the reserve.

T'Sou-ke Nation is reliant on the DOS and the Capital Regional District for services, including RCMP, fire service, and ambulance.

Under its Land Code T'Sou-ke Nation has the ability to make laws in similar fashion to other municipalities (e.g., enforcement services). A public health building is located on TSouke1 that offers similar services to a public health clinic (counselling, health management, fitness programs, immunizations, reflexology, foot care, acupuncture, administrative health services, and health professionals). T'Sou-ke Nation's health clinic refers patients to hospitals in the Greater Victoria area.

T'Sou-ke Nation lands contains infrastructure that provides services to residences and commercial buildings (Figures 2 and 3).

Residential Water Supply: Drinking water and for household use is provided via pump stations, located on the boundary of each reserve. The pump stations are operated, maintained, and owned by the CRD. This water supply also services hydrants on both reserves. Hydrant flow testing is carried out on both reserves by certified maintenance technicians and contractors.

T'Souke Nation shares the same community watershed (Sooke Lake Reservoir) with the Capital Regional District and the DOS. The watershed and the CRD provides unfiltered, treated (with chlorine, ammonia, and ultraviolet) residential water. Despite a projected warmer climate, the CRD Water Supply Master Plan indicates the current water supply will be within its safe yield capacity until at least 2045 (possibly longer) and that the watershed can safely supply an additional increase of 40% in annual demand. Additional options are being considered to draw more water from deeper parts of the existing watershed or from other watersheds nearby.

Projections are that residential water levels are adequate to support additional demand, especially during a warming climate. Despite this, Vancouver Island by July 2023 was experiencing the highest level of drought (level 5) defined for British Columbia and was reportedly months ahead of historic patterns. The Minister of Emergency Preparedness and Climate Change urged people to observe and adhere to water restrictions[2]

Sewerage: All houses and offices on the reserves are serviced by septic tanks with drain fields. In 2023, T'Sou-ke Nation began construction on Siaosun to provide connect sewer for most of the houses in that part of the community to the municipal wastewater treatment system.

Electricity: Hydroelectric power is mostly provided by connection to the provincial electrical grid, although some power is generated by solar panels mounted to the roof of buildings and from a solar panel array; the administration buildings located on TSouke1 are powered this way. Power poles are located throughout the reserve lands, most of which are wooden. The power poles also support streetlights for the

[2] https://vancouver.citynews.ca/2023/07/13/bc-drought-water-conservation/#:~:text=On%20a%20six%2Ddegree%20scale,ecosystem%20values%20are%20almost%20certain.%E2%80%9D

community. BC Hydroelectric Power Authority holds a lease for the powerlines and poles located on reserve and operate a maintenance program to supply power to homes and buildings on T'Sou-ke Nation's lands.

Communications: Telephone and internet services are provided on the power poles on reserve. Cellular phone service is also available via Telus, Rogers, and Freedom mobile cell towers located near Tsouke1, and in and around Siaosun. In 2023, service was improved along Highway 14 between Sooke and Port Renfrew that has enabled cell service along the highway.

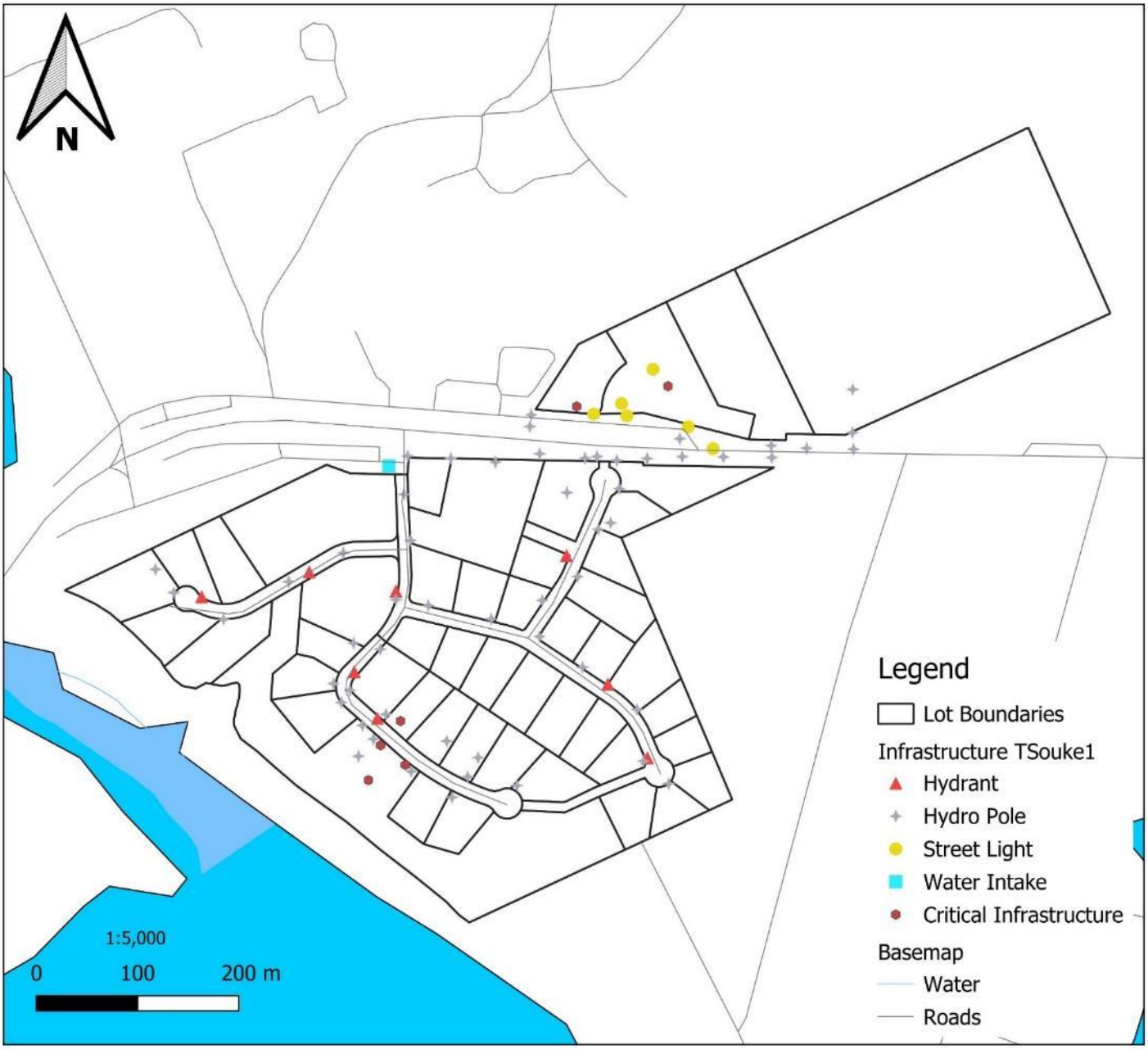


Figure 2: Map of Infrastructure on TSouke1.

Figure 3: Map of Infrastructure on Siaosun.

6.3 Critical Infrastructure

Critical infrastructure are buildings and infrastructure that are essential to the health, safety, security or economic wellbeing of the community. These must be First Nation's owned buildings that are designated to support effective emergency response to a wildfire event[3]. The water pump stations and BC Hydro

[3] https://www.ubcm.ca/sites/default/files/2023-01/LGPS_CRI-FCFS_2023ApplGuide%20Jan-23%20Update.pdf

infrastructure is not included as critical infrastructure as these are not owned by T'Sou-ke Nation. However, T'Sou-ke Nation will initiate correspondence with the CRD and BC Hydro to ensure maintenance programs address wildfire risk reduction.

These also include buildings that may provide effective functioning of government services during and after wildfire events (e.g., those that serve as emergency operations centres). These are shown on Figure 2 along with other risks that wildfire may pose to these.

- Administration offices including community hall: provides a location to stage emergency services.
- Health centre: provides basic medical services if required during a wildfire.

Water supply and electrical power that supplies these buildings and infrastructure may be disrupted by wildfires. Backup power should be considered and implemented to power buildings prior to a wildfire event. If water supplies are interrupted alternative sources can be sourced via mobile units to provide drinking water and washing facilities.

A Local FireSmart Representative will undertake critical infrastructure assessments to determine necessary mitigations that will protect this valuable infrastructure. The assessments will determine future treatments that may be required and in the landscape around buildings and infrastructure.

6.4 Values at Risk

Values at Risk (VAR) describes the human or natural resources that may be impacted by wildfires. For context, T'Sou-ke Nation's territory was once abundant in clams, wild game (deer, sea mammals), aquatic plants, roots and berries, as well as salmon. Many of these species formed the diet of T'Sou-ke Nation prior to contact with Europeans. Nowadays, much of this abundance has dwindled. The cultural and archaeological impact of T'Sou-ke Nation in the region has a long history, chipped stone tools have been dated back to 10,000 years before present.

T'Sou-ke Nation is committed to the preservation and reinvigoration of values within its reserve land and territory. Each these values have the potential to be impacted by wildfire. T'Sou-ke Nation is able to influence the severity of impacts on reserve lands, while in the territory T'Sou-ke Nation can work with other jurisdictions to ensure the preservation of values held by T'Sou-ke Nation citizens. These jurisdictions include: CRD and DOS.

6.4.1 People and Infrastructure

T'Sou-ke Nation's most important value is represented by the people in our community. Almost 300 people live on TSouke1 and Siaosun. T'Sou-ke Nation can mitigate the impacts of wildfires by proactively preparing the land and people for a wildfire event by implementing recommendations made in this plan. T'Sou-ke Nation can support its citizens by providing resources to control fuels on their properties and by mitigating fuels on both reserves.

Fuel management can reduce wildfire threat, although extreme fires may still force the evacuation of citizens to safe locations. This plan and T'Sou-ke Nation's emergency management plan provide information about safe routes of egress

T'Sou-ke Nation can also mitigate the impacts to people from other effects of wildfires. While a fire may not directly impact its citizens, the smoke caused by fires elsewhere can create health issues for people at higher risk of health problems when exposed to wildfire smoke[4]. Those at risk include:

- Elders

[4] https://www.canada.ca/en/environment-climate-change/services/air-quality-health-index/wildfire-smoke.html

- Pregnant people
- People who smoke
- Infants and young children
- People who work outdoors
- People involved in strenuous exercise
- People with existing illness(es) or chronic health conditions: e.g., cancer, diabetes, lung or heart conditions

When heavy smoke is present, everyone is at risk. Provincial and federal governments have provided notices that advise people to take part in strenuous exercise and to stay indoors when smoke becomes hazardous to the health of all people.

Aside from the health of people, houses and other infrastructure within T'Sou-ke Nation's communities are important to protect. Houses lost during wildfires typically take a long time to rebuild, potentially forcing people to find accommodations elsewhere.

As well as homes, other buildings that are critically important to the function of T'Sou-ke Nation government services can be impacted. These include Sum-SHA-thut Lellum PreK school, administration offices, and health centre. Section 6.3 provides further information about critical infrastructure.

Other infrastructure and services that may be interrupted during a wildfire include water, electricity, and communications. There is likely little impact to sewer systems as most of these are below-ground septic tanks with drain fields attached to single homes or office buildings. Electricity and communications are attached to wooden poles in the community. There is potential for communications and power to be interrupted during and following a wildfire. T'Sou-ke Nation is provided drinking water from the CRD watershed, in the event of a fire in the watershed, T'Sou-ke Nation's drinking water may be disrupted. Wildfires that cause the loss of trees and/or vegetation around the watershed can lead to increased erosion and sedimentation in water. Other effects of vegetation loss can lead to hydrological impacts that affect flow timing and peak flows as vegetation is not present to regulate the flow of water into the reservoir. There is a potential this may lead to water quality notifications from First Nations Health Authority[5] that include: do not use, do not consume, boil water notices, and water quality advisories.

6.4.2 Culture and Archaeology

The people of T'Sou-ke Nation have occupied the region for thousands of years and have contributed to archaeological values in the area in and around both reserves. These values provide evidence of T'Sou-ke Nation's occupation in the region. Given this importance management in the territory of archaeological values is provided in a Memorandum of Understanding between the DOS and T'Sou-ke Nation. Signed in 2007, the MOU committed both parties to work together on areas of mutual interest including protection of heritage sites and cultural protection. Furthermore, archaeological values are protected by the *Heritage Conservation Act*. Archaeological values determined outside of reserve lands are more commonly being registered in the Remote Access to Archaeological Data database.

On reserve there are many recorded archaeological values on both T'Sou-ke 1 and Siaosun. These are actively managed through T'Sou-ke Nation's comprehensive community plan and T'Sou-ke Nation's Land Code (Part 4: Protection of Lands, Heritage Sites). The comprehensive community plan has a key planning principle of cultural and heritage values. Under Land Code no development is allowed on any site designated as a heritage site.

[5] https://www.fnha.ca/what-we-do/environmental-health/drinking-water-advisories

There are several known areas of cultural and archaeological significance on T'Sou-ke Nation lands that need to be protected. These include several archaeological sites and areas of potential archaeological significance. Typically, the locations of archaeological values cannot be shared due for confidentiality reasons, instead these will be identified when wildfire management activities are undertaken. T'Sou-ke 1 contains many areas of high archaeological potential and one recorded archaeological site. In addition, there is a small graveyard north of Hwy 14. Siaosun also contains areas of high archaeological potential. There is one recorded archaeological site near the reserve, on District of Sooke lands.

While there are many recorded archaeological values on T'Sou-ke Nation lands, these do not reflect the full extent of archaeological values as surveys are usually only completed for projects. To date there has not been an extensive archaeological survey completed on T'Sou-ke Nation's reserves. That being said when archaeological values are determined they are recorded, although some may not have been entered into the provincial Remote Access to Archaeological Data database.

There is risk to archaeological values from fires (Figure 4). High severity fires burn into the ground; these may damage or remove archaeological features in soils. Assessments can be conducted by First Nations in collaboration with qualified professionals (e.g., forester, biologist, and/or archaeologist) to determine risks and prescribe treatments to reduce impacts. Wildfire risk reduction treatments can then be deployed to decrease the potential impact of a wildfire on these values. And by doing so reduce potential impacts to cultural and archaeological values, and preserve culturally modified trees, traditional dwellings, burials sites, and ceremonial sites.

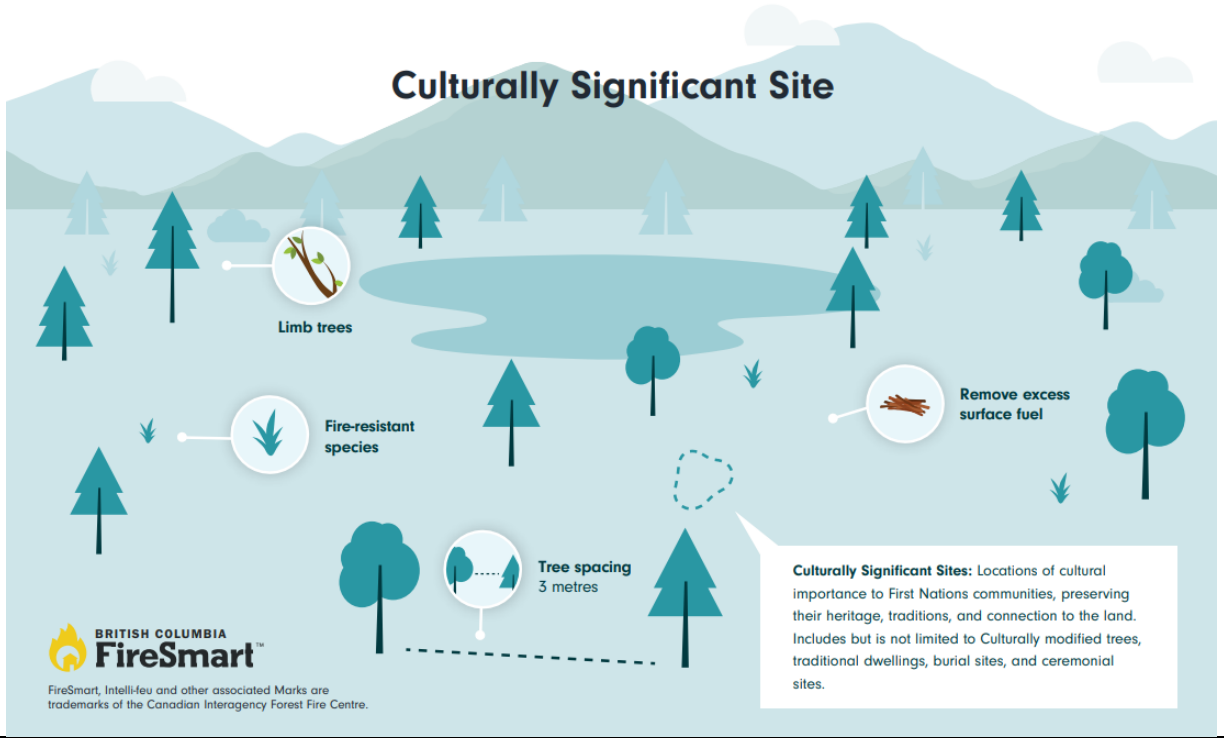


Figure 4: Culturally significant site assessment evaluation criteria to reduce impacts of a wildfire.

6.4.3 Vegetation

The lands on T'Sou-ke Nation's reserves, while mostly urbanized have a component of grasses, scrub land, and mixed forests containing deciduous and coniferous trees. The reserves are located in the Coastal Western Hemlock Biogeoclimatic Ecosystem classification zone, albeit in different phases of the very dry maritime. T'Souke 1 is located within the CWHxm1; very dry maritime, variant: eastern; whereas Siaosun is located within the CWHxm2: very dry maritime, variant: western.

The CWH zone is typical of forests on British Columbia's coast, it covers the majority of Vancouver Island. Forests within the Coastal Western Hemlock zone typically consist of western hemlock trees, but can also contain amabilis fir, western red cedar, yellow-cedar, lodgepole pine (otherwise called shore pine), grand fir, mountain hemlock, Douglas-fir, western white pine, Sitka spruce, big leaf maple, red alder, and black cottonwood. These species are dependent on soil moisture regimes, climate (temperature and precipitation regimes), and elevation ranges, where individual tree species or combinations thereof require a combination of these conditions for growth.

Most of the forests tend to be old as disturbances are limited to individual or small groups of trees. It is the rainiest of the BEC zones in British Columbia, it receives an annual average precipitation of 2200 mm (+/- 1200 to 3300 mm). CWH forests grow between 300 m to 1050 m. Mean annual temperature is about 5.5°C and ranges from 2.4 to 9.3°C. The coldest months tend have been reported as 0.2°C, ranging between -6.6 to 4.7°C among the subzones[6].

The biogeoclimatic ecosystem classifications provide broad details about the potential vegetation. Given the relatively small area included in this CWRP it is necessary to describe additional plant species that are present on the lands. Some of these are not indigenous to the ecosystems and include: scotch broom and Himalayan blackberry. Tree species include mixed wood forest including conifers expected in the CWH. Stands also contain deciduous components including maple and alder. Woody shrubs and ferns populate the understorey as well as food plants like elderberry.

Soils on both reserves are classified as Fairbridge silt loam and Dashwood gravelly loamy sand[7]. The former is well drained, with a fine-textured marine sediments as parent materials. In the latter, drainage ranges from excessive to moderate while permeability varies from rapid to moderate. The parent material is very coarse textured marine sediments underlain by glacial till or marine clay.

These forests are within Natural Disturbance Type 2 which are characterized as ecosystems with infrequent stand-initiating events. Wildfire behaviour usually results in areas of 20 to 1000 hectare burns, although due to sheltering provided by land forms and higher moisture, produce patchworks of unburned areas[8]. Typically fires occur after period of drought and have a mean return interval of about 200 years. Recent droughts brought on by warmer annual temperatures in the region are creating conditions more conducive to shorter return intervals for wildland fires. These have created periods of severe fire hazard in the summer months.

6.4.4 Fish and Wildlife

Wildlife holds great value for T'Sou-ke Nation. People have and continue to use animal meat as a means for subsistence. T'Sou-ke Nation recognizes that all wildlife form an integral part of ecosystem function and that removal of wildlife can result in negative impacts that have ongoing effects. Therefore, wildlife habitat as well as the animals, birds, insects, etc., that reside within that habitat are of great value.

[6] https://cfcg.forestry.ubc.ca/resources/cataloguing-in-situ-genetic-resources/cwh-zone/
[7] https://www.for.gov.bc.ca/hfd/pubs/docs/mr/scanned-rn/rn034-rn066/Rn056.pdf
[8] https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/frep/frep-docs/biodiversityguidebook.pdf

The reserves are home to large mammals like black bear, deer, and cougar that either occupy or travel through Siaosun and TSouke1. The reserves are also located adjacent to watercourses. TSouke1 is adjacent to Sooke Basin, and the western shore is adjacent to Sooke River. Siaosun is adjacent to the ocean and Nott Brook traverses the northern part of the reserve.

Sooke River contains several fish. Provincial and federal records contain observations of Steelhead, Cutthroat Trout (anadromous and non-anadromous), Rainbow Trout, Coho Salmon, Chinook Salmon, Prickly Sculpin, Coastrange Sculpin, and western pearlshell mussel.

The area in around Nott Brook is critical habitat for western painted turtle (*Chrysemys picta bellii*; Pacific Coast population), a federally list species at risk.

Blue heron, a blue-listed species in BC[9] and SARA Schedule 1[10], have nests located 250 m from the south-east corner of TSouke1 and 350 m from the south east edge of the boundary of Siaosun on Whiffin Spit Road. The heron near Siaosun have nested in the area since the 1960s and have moved frequently. Siaosun contains mixed species woodland that may be suitable for heron nests.

Both reserves and the Sooke area in general are suitable habitat for two bat species: northern myotis (*Myotis septentrionalis*) and little brown myotis (*Myotis lucifugus*). The general population and critical habitat for both species is distributed across several Universal Trans Mercator grids (these measure 50 km^2).

[9] Blue listed species are of special concern and maybe especially sensitive to human-caused and/or natural disturbances. They may also include species that are recovering from being threatened or endangered.

[10] These are species that are extirpated, endangered, threatened, or a special concern.

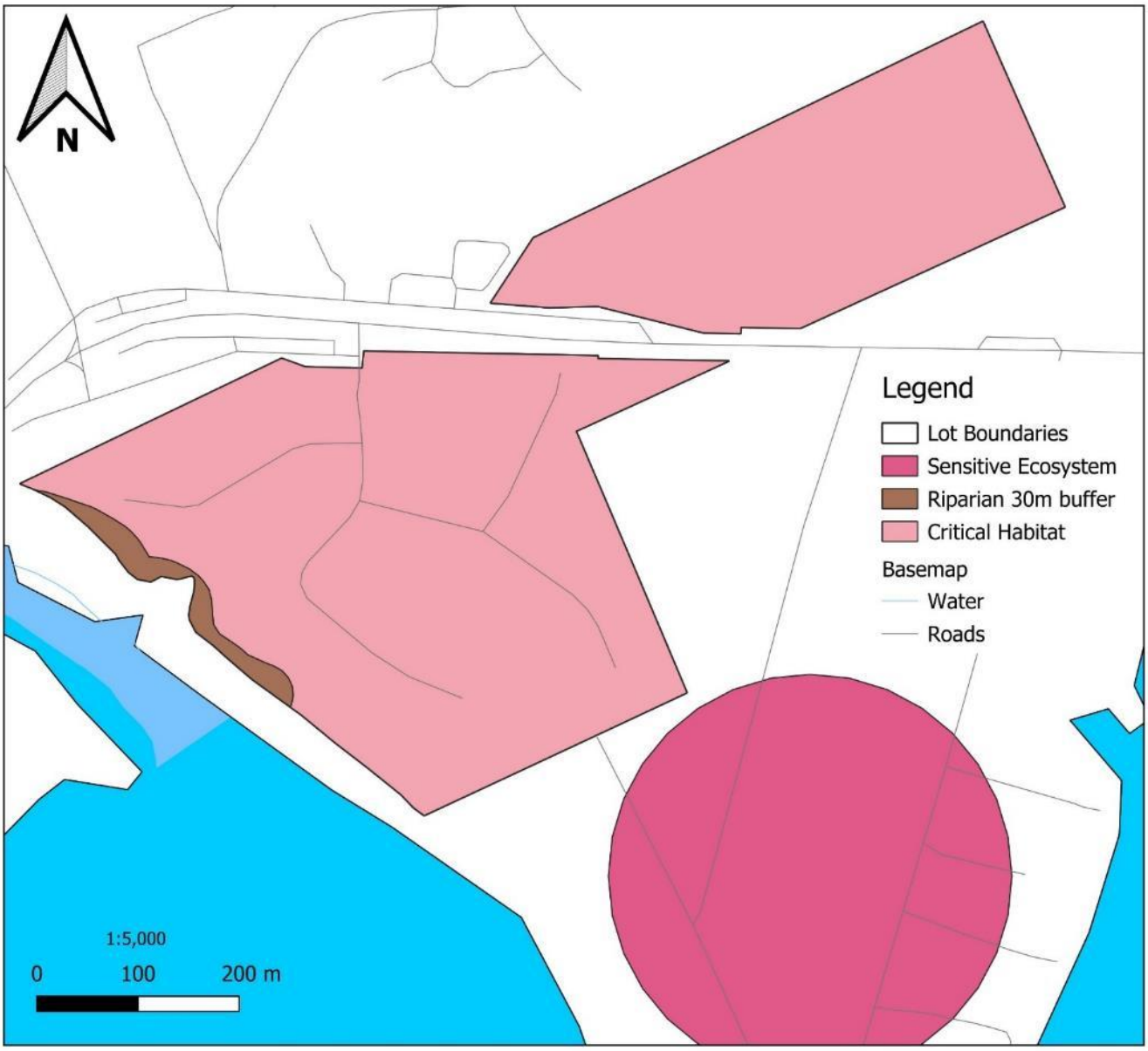


Figure 5: Wildlife values on or near TSouke1.

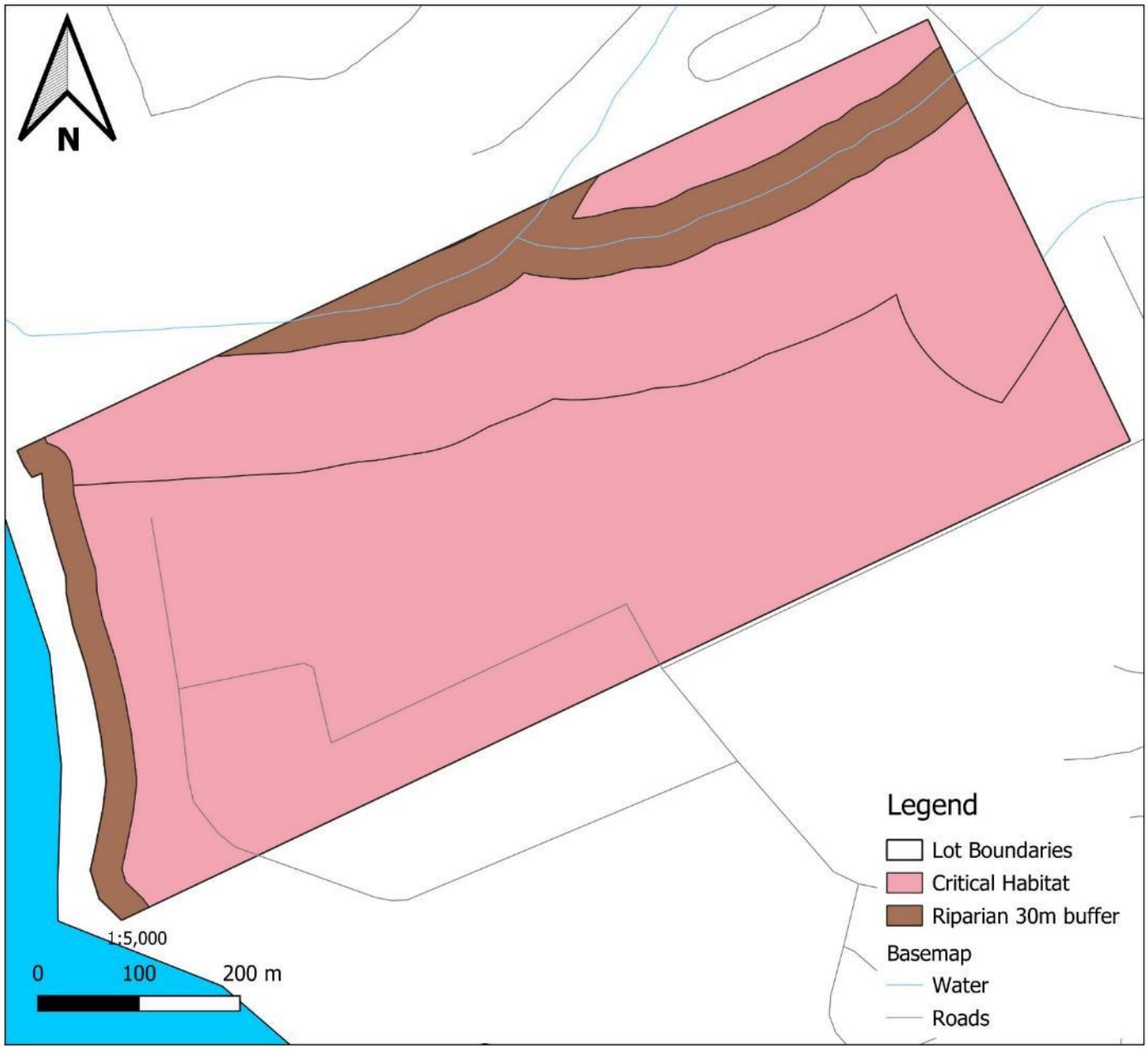


Figure 6*:* Wildlife values on or near Siaosun.

6.4.5 Implications of Disturbances to Values At Risk

The implications of disruptions to any of these values or combinations thereof can impact T'Sou-ke Nation lands and its citizens.

In regard to the Values At Risk defined above, wildfires may cause:

- Health impacts to T'Sou-ke Nation citizens that may have short-term effects or require ongoing treatment;
- Impacts to homes or loss of homes requiring homes to be repaired or rebuilt;

- Loss of services following wildfire events (e.g., health and government) that can impact the ability to assist citizens post-wildfire;
- Interruptions or loss of services during and after wildfire events: drinking and residential water supply, electrical power, and communications (cell phone and internet). This may limit the ability to properly communicate during the wildfire and to run an emergency operations centre (e.g., due to power loss or lack of water). There are secondary options for these, as discussed in Section 6.3: Critical Infrastructure;
- Partial or full destruction of archaeological values that may erode T'Sou-ke Nation's values and identity on the land. Protecting these resources is critical to preserve the Nation's history;
- Loss of vegetation and wildlife habitat from wildfires may lead to a need to reinvigorate vegetation that provides habitat for wildlife and for a need to encourage wildlife to repopulate an area;
- Impacts to wildlife that reside in and around T'Sou-ke Nation lands. Typically following wildfires some animals experience mortality and others may be injured and require care to nurse them to full health.

The implications of these impacts have immediate and ongoing effects to T'Sou-ke Nation citizens. Some of the Values At Risk can be mitigated by treating fuels in and around the AOI. For example, impacts to homes, buildings, and other infrastructure, to archaeological values, and to vegetation and wildlife may be resolved through FireSmart treatments. Health impacts to citizens are less easy to mitigate, although Health Canada provides suggestions to alleviate risks that are shared later in this plan (see section 9: Education).

The efficacy of FireSmart treatments may be overcome if a large wildfire burns in and around the AOI. However, treatments should provide relief from smaller fires and prevent catastrophic losses to Values At Risk. Mitigations are suggested in Section 15: Vegetation Management to avoid severe impacts to values held by T'Sou-ke Nation.

7. Wildfire Risk Assessment

7.1 Purpose

The purpose of this section is to provide a basic understand of wildfire terminology, provides a summary of local wildfire environment and fire history, and provide an overview of data available that describes wildfire threat and risk classifications.

Overall, wildland fires are an ecological process that have distinct geographic and temporal scales. Wildfires are often expressed in terms of area or in terms of rate of spread (e.g., hectares[11] or the time it takes for the fire to spread on the landscape, usually measured in metres per second or kilometres per hour). This ranges from a single flame to a fire that affects a few dozen hectares or spreads to thousands of hectares on the landscape (Figure 7).

Wildfire also operate in temporal scales (over specific time periods). Ignitions are usually from a single point, either human or lightning caused. Once an ignition is triggered fire requires oxygen, heat, and fuel to continue burning. This process can last a seconds to minutes, while once a wildfire is established it can burn for hours, days, or months depending on weather, topography, and fuel. Fire regimes are used to describe areas that experience repeat patterns of fire where ignitions, vegetation, and climate conditions interact to produce repeated patterns on the landscape[12].

[11] One hectare measures 100 m x 100 m.

[12] https://www2.gov.bc.ca/gov/content/safety/wildfire-status/wildfire-response/what-causes-wildfire

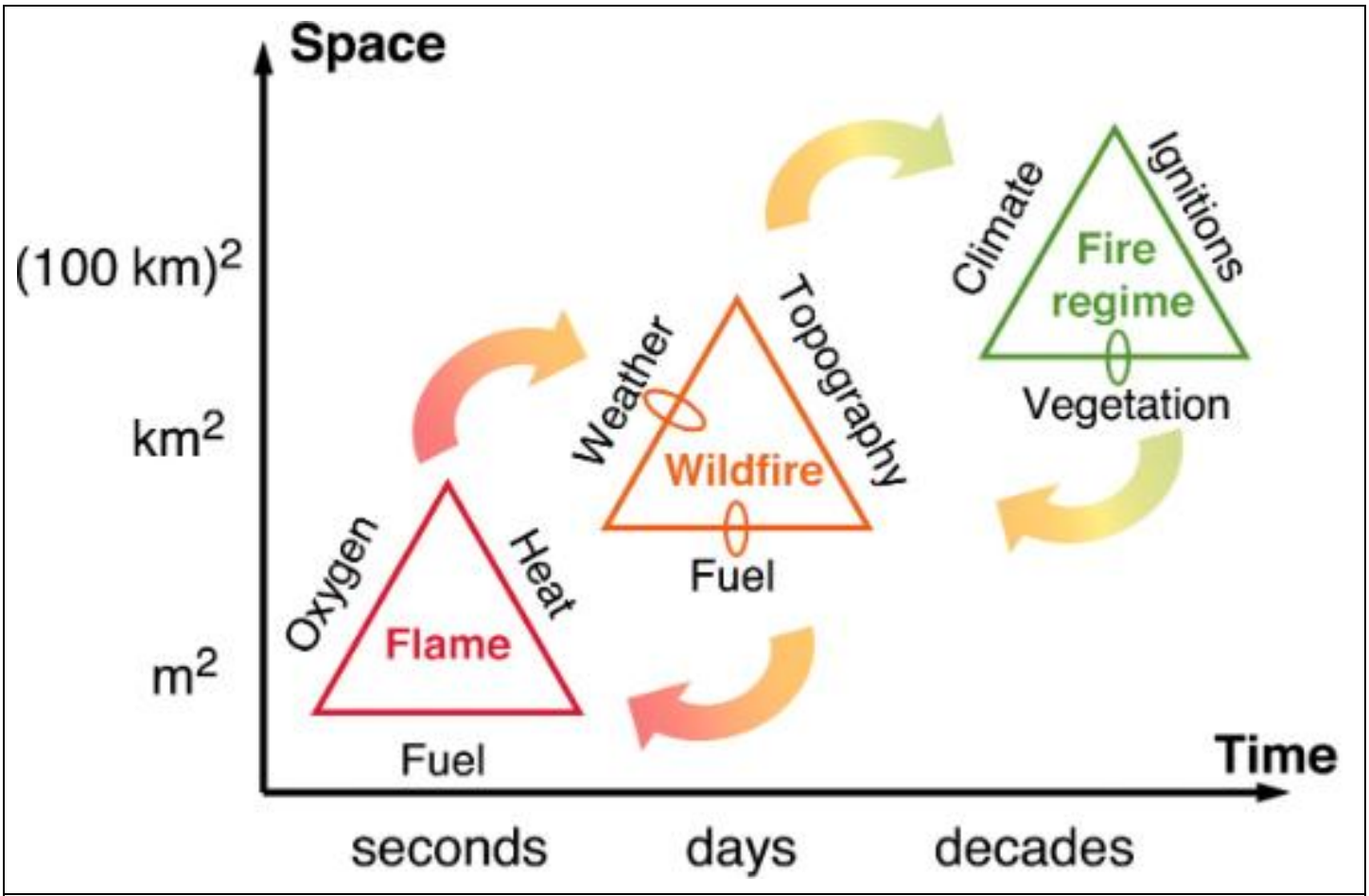


Figure 7: Processes that control wildfire interact over multiple scales of space and time (Moritz et al., 2005[13])

7.2 Wildfire Risk and Threat

To support the understanding of data provided later in this section it is necessary to define terminology relating to wildfire risk and threat, and to provide context of these terms for wildfire planning.

In summary, wildfires can be assessed as a function of risk and threat whereby risk is defined in terms of probability and consequence.

Wildfire Risk = Probability x Consequence

This equates to risk meaning that fire consequences play an important role in determining risk ratings. Therefore, fire consequences need to be thoroughly understood when estimating risk. Probability describes the likelihood of wildfire ignition and the ability of a fire to spread and consume fuels (the wildfire threat). Consequences indicate the impacts if a fire occurs in areas that are populated, contain homes, critical infrastructure, and contain important values held by communities (Tutsch et al., 2010[14]).

[13] https://www.pnas.org/doi/epdf/10.1073/pnas.0508985102
[14] https://cdnsciencepub.com/doi/abs/10.1139/X10-159?mobileUi=0&journalCode=cjfr

7.2.1: Wildfire Risk

Wildfire risk describes the probability of a fire occurring and the characteristics of wildfire behaviour, and the impacts or consequences of the fire. Risk can be described in terms of whether a fire starts, when it happens, where fire occurs, and how a fire may grow (Olivera *et al*., 2021[15]).

Whether a fire starts: Between 1950 to 2023, lightning caused 60% of the wildfires in British Columbia, with the rest caused by humans[16]. When lightning strikes the ground it creates enough heat to set light to the ground and to surrounding vegetation, including trees. Lightning-caused fires are difficult to predict and prevent. Human-caused fires are more likely in areas that are subject to higher human traffic, e.g., highway corridors and within the wildland urban interface. Human-caused fires have decreased since the 1980's in part due to extensive public education programs. In both cases preventative measures can be used to reduce fuels in areas using either manual methods (e.g., directly removing fuels) or using techniques like prescribed burning.

When a fire happens: Fires typically occur when fuel, heat, and oxygen exist in combinations that allow ignitions to persist and to enable combustion. These elements are commonly shown in as a fire triangle (Figure 7), where each element represents one side of a triangle. If any single one of the elements are removed a wildfire will be prevented.

Oxygen: Typically, oxygen is always present in the atmosphere. For fires to be prevented requires either heat or fuel to be removed.

Heat: Heat is controlled by climatic factors such as temperatures which may not be preventable at the time a fire starts, although water applied to a fire can have a cooling effect which will extinguish the fire. Heat also refers to heat transferred om the fire environment:

- Convection: the energy transferred by molecular motion.
- Conduction: energy transferred by direct contact.
- Radiation: energy transferred by electromagnetic waves.

Fuel: Fuels can be removed to prevent fires from starting, although it depends on the type of fuel present. Typically large coarse debris are less likely to ignite and continue to burn than small branches and coniferous foliage (e.g., needles). Fuels with high moisture content may not ignite easily, further preventing wildfires.

Fires usually happen once fuels have sufficiently cured in spring and summer months, completing two sides of the fire; once heat is introduced through lightning or another source of ignition a wildfire may occur.

Where a fire occurs: Fires usually happen when dry fuels are present in combination with heat and oxygen, and a source of ignition. This requires depends on a combination of fuel and weather characteristics to create conditions conducive to a fire starting in a location. Increased fuel loading is used as an indicator to determine the higher repercussions near areas containing human populations than if fuels are treated or contain naturally lower or unsuitable fuels for fires (e.g., in wetter climates).

How a fire will grow: Also referred to as spread, whether the fire grows or the speed by which the fire grows is dependent on fuels, weather and topography. These are further described below in section 7.4.2 Local Threat Analysis.

[15] https://www.sciencedirect.com/science/article/abs/pii/S2468584421000465
[16] https://www2.gov.bc.ca/gov/content/safety/wildfire-status/wildfire-response/what-causes-wildfire

7.2.2 Wildfire Threat

Wildfire threat describes the ability of a wildfire to ignite, spread, and consume organic material (trees, shrubs, and other organic materials) in the forest. Wildfire threat is further subject to:

- Fuel: loading, size and shape, arrangement (horizontal and vertical), compactness, chemical properties, and fuel moisture
- Weather: temperature, relative humidity, wind speed, wind direction, and rainfall.
- Topography: slope and aspect.

7.2.3 British Columbia Wildfire Hazard and Risk Rating

The BC Fire Weather Index System is a numeric rating system that determines the potential for a wildfire occurrence[17]. There are six standard components that are frequently used by fire experts in British Columbia to describe potential fire conditions:

1) Fine Fuel Moisture Code (FFMC): A numeric rating of the moisture content of litter and other cured fine fuels. This code indicates the relative ease of ignition and the flammability of fine fuel.
2) Duff Moisture Code (DMC): A numeric rating of the average moisture content of loosely compacted organic layers of moderate depth. This code indicates the potential fuel consumption in duff layers[18] (2-4 inches) deep and medium-sized woody material.
3) Drought Code (DC): A numeric rating of the average moisture content of deep, compact organic layers. This code indicates the effects of seasonal drought on forest fuels and the amount of smouldering that may occur in deep duff layers and within large logs.
4) Initial Spread Index (ISI): A numeric rating of the expected rate of fire spread. It is based on wind speed and the FFMC.
5) Buildup Index (BUI): A numeric rating of the total amount of fuel available for combustion on the landscape. It is based on the DMC and DC and takes into account the moisture content of medium-sized to large-sized woody material as well as seasonal drought effects on forest fuels. The BUI is used in combination with current and forecasted weather conditions and available firefighting resources to determine open fire prohibitions.
6) Fire Weather Index (FWI): A numeric rating of fire intensity, it is based on the ISI and BUI. It is used as a general index of fire danger throughout forest areas in British Columbia.

7.3 Local Wildfire Environment and Fire History Summary

7.3.1 Local Wildfire Environment

This section provides information about possible wildfire behaviour in the AOI. Fire behaviour is predominantly influenced by three variables: fuels, weather, and topography. As such, this section provides information about each of those variables. This will provide information about wildfire risk and threat in T'Sou-ke Nation reserve lands and enable consideration of fuel treatments in these areas (see section 15: Vegetation Management).

[17] https://www2.gov.bc.ca/gov/content/safety/wildfire-status/prepare/weather-fire-danger/fire-weather/fire-weather-index-system

[18] "The layer of partially and fully decomposed organic materials lying below the litter and immediately above the mineral soil. It corresponds to the fermentation (F) and humus (H) layers of the forest floor. When moss is present, the top of the duff is just below the green portion of the moss." https://www.for.gov.bc.ca/hfd/library/documents/glossary/Glossary.pdf

7.3.1.1 Fuels

Fuels encompass vegetation and biomass structure, biomass loading, dominant vegetation species, and other characteristics and forest health issues[19]. These collectively indicate the likelihood of the flammability and availability of biomass in ecosystems for combustion.

In British Columbia fuel types have been determined for the Fire Behaviour Prediction (FBP) System which is a component of the Canadian Forest Fire Danger Rating System. This system provides 17 classifications based on vegetation types: coniferous forests, deciduous forests, mixed wood, slash, and grass. It also describes non-fuel types and water. This system is in use across all of Canada to provide a standardised approach to fuel typing for fire management agencies.

Fuel type is defined as "*an identifiable association of fuel elements of distinctive species, form, size, arrangement, and continuity that will exhibit characteristic fire behaviour under defined burning conditions*". Apart from describing characteristics of fuels, fuel type can also provide a means to understand the types of equipment that may be needed in the event that a wildfire to fight the fire and to provide suppression. Fuel types can also be used to determine the types of preparedness that a community needs to undertake before a fire happens.

Fuel types have been determined for all of British Columbia. This information is provided by the province of British Columbia in spatial data files also known as the BC Wildfire Service Provincial Fuel Type Layer (FTL). The layer was used to determine the fuel types for T'Sou-ke Nation reserve lands and was verified and refined during field work (Figures 8 and 9). Information about fuels was collected at several fuel data plots. Wildfire threat assessment (WTA) plots were used to determine wildfire threat throughout both reserves.

The predominant fuel type on T'Sou-ke Nation lands is Mixedwood, followed by Deciduous, and Conifer (C-5). The percentage of conifer composition in the Mixedwood fuel type was determined via field surveys where higher percentages indicate increased wildfire risk. A small portion of T'Sou-ke Nation lands were identified as grass (O-1a/b) that represented unmowed grass as well as areas dominated by Scotch broom. In mid-summer, in dense enough thickets Scotch broom poses a fire risk. Areas of non-fuels (N) were also identified, although these attributed to structures, mowed grass, roads, etc. Mowed grass poses little wildfire risk (Table 3).

Table 3: Fuel type and areas on T'Sou-ke Nation lands

Fuel Type	**Provincial Area (hectares)**	**Verified Area (hectares)**
Mixedwood 1/2	43.53	35.27
Deciduous 1/2	30.80	14.08
C-5	0.79	5.50
O-1a/b	0	1.83
N	0.47	18.92
W	0.02	0
Total	**75.61**	**75.60**

[19] https://www2.gov.bc.ca/assets/gov/farming-natural-resources-and-industry/forestry/wildfire-management/fire-fuel-management/bcws_bc_provincial_fuel_type_layer_overview_2015_report.pdf

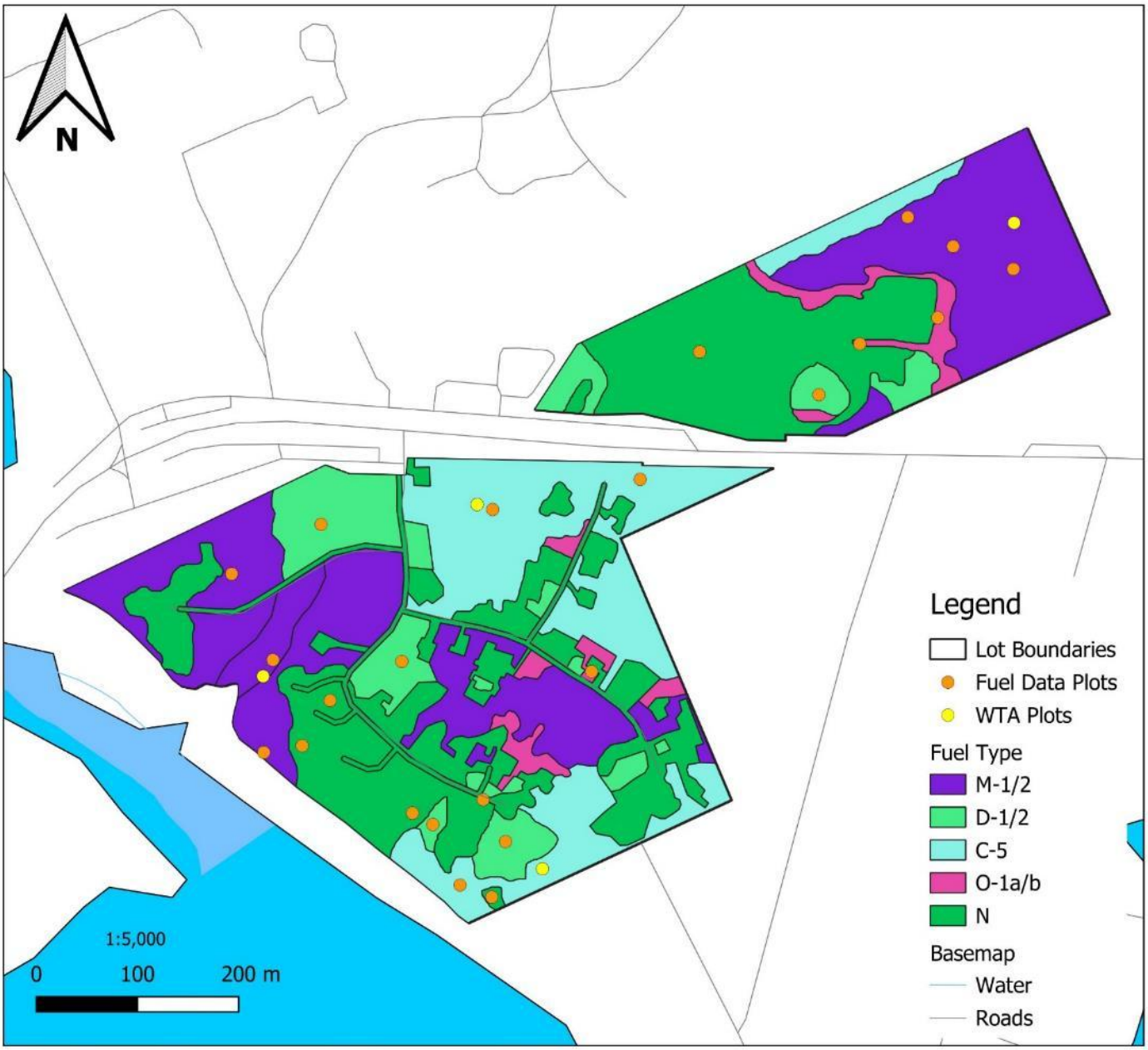


Figure 8: Map of fuel types on TSouke1

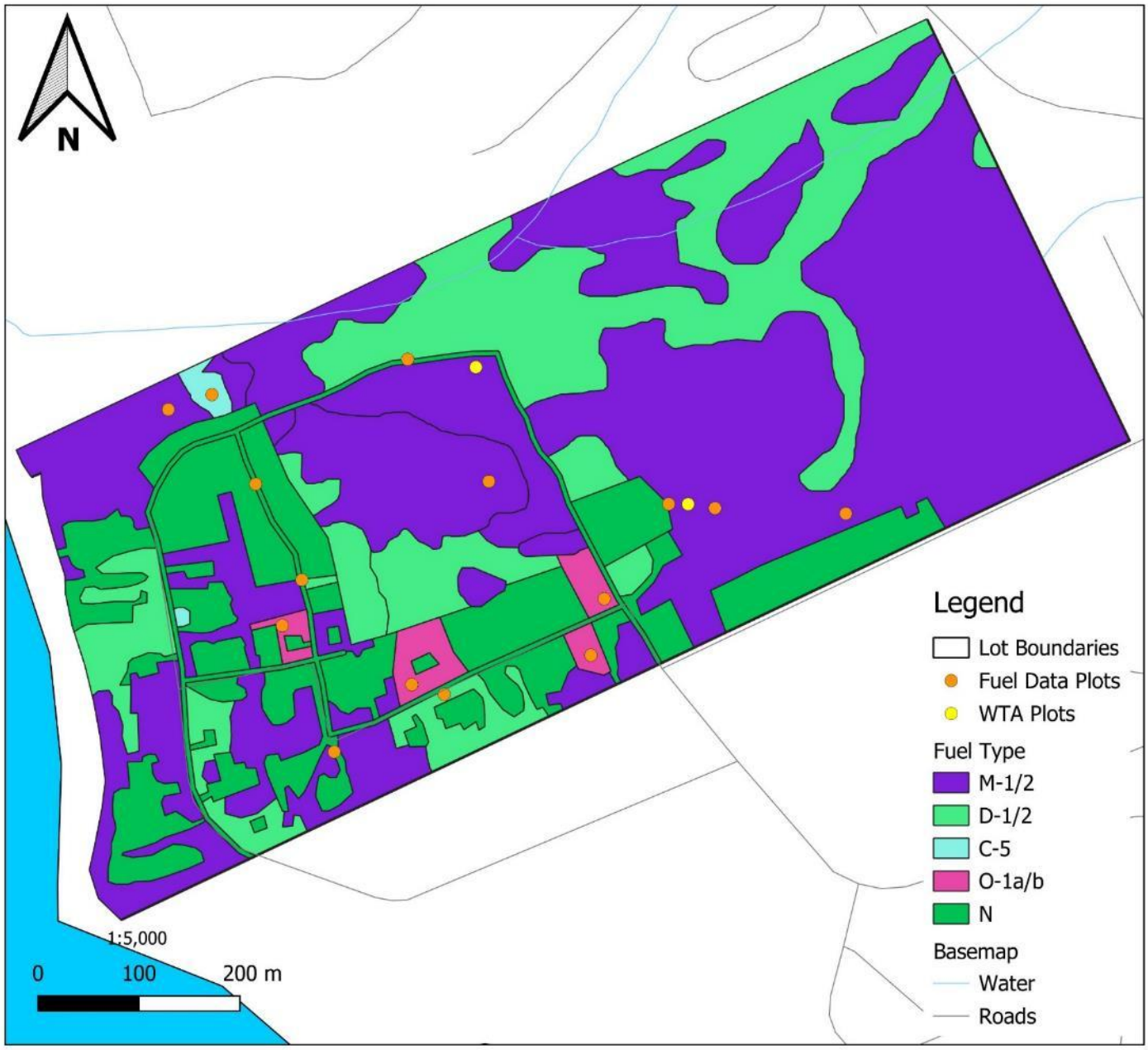


Figure 9*:* Map of fuel types on Siaosun.

The characteristics of these fuel types are described in terms of forest floor and organic layer, surface and ladder fuels, and stand structure and composition (Table 4)[17]. Descriptions of the type of forests found on T'Sou-ke Nation lands is provided in section 6.4.3: Vegetation.

Table 4: Characteristics of fuel types found on T'Sou-ke Nation lands

Fuel Type	Forest Floor and Organic Layer	Surface and Ladder Fuels	Stand Structure and Composition
Boreal Mixedwood (M-1 and M-2)	Continuous leaf litter in deciduous portions of stands; discontinuous feather moss and needle litter in conifer portions of stands; organic layers shallow, uncompacted to moderately compacted.	Moderate shrub and continuous herb layers; low to moderate dead, down woody fuels; conifer crowns extend nearly to ground; scattered to moderate conifer understorey.	Moderately well-stocked mixed stand of boreal conifers (e.g., black/white spruce, balsam/subalpine fir) and deciduous species (e.g., trembling aspen, white birch). Fuel types are differentiated by season and percent conifer/deciduous species composition.
Leafless Aspen and Green Aspen (D-1 and D-2)	Continuous leaf litter; shallow, uncompacted organic layer.	Moderate medium to tall shrubs and herb layers; absent conifer understorey; sparse, dead, down woody fuels.	Moderately well-stocked trembling aspen stands; semimature; leafless (i.e., spring, fall or diseased).
Red and White Pine (C-5)	Continuous needle litter; moderately shallow organic layer.	Moderate herb and shrub (e.g., hazel); moderate dense understorey (e.g., red maple, balsam fir); tree crowns separated from ground.	Moderately well-stocked red and white pine stands; mature; associated species: white spruce, white birch, and aspen.
Open Grassland, matted or standing (O-1a/b)	Continuous dead grass; organic layer absent to shallow and moderately compacted.	Continuous standing grass (current year crop). Standard loading is 0.3 $kg/m^{3,}$ but other loading can be accommodated; percent cured or dead must be estimated. Sparse or scattered shrubs and down woody fuel. Subtypes for both early spring matted grass and later summer standing or cured grass are included.	Scattered trees, if present, do not appreciably affect fire behaviour.

7.3.1.2 Weather

The weather in and around T'Sou-ke Nation lands is generally classified as Mediterranean climate. Temperature and precipitation data are available from an Environment Canada weather station located at Sheringham Point. The nearest fire weather stations in the region are located up to 15 kilometres inland and may not accurately represent conditions on T'Sou-ke Nation lands. The land is heavily influenced by climatic conditions on the ocean front that include temperature, precipitation (mostly rain, with only a few days of snow), and wind direction and speed. Collectively each of these elements can influence wildfire activity and behaviour in combination with fuel type and fuel loading.

Daily average, minimum and maximum temperatures for the region were collated for each year between 2014 and 2023, representing the last 10 years (Figure 10). These indicate temperatures are cooler in the winter months, transitioning to warmer temperatures in summer, before decreasing again. At the same time as

temperatures are warming, the amount of precipitation decreases (Figure 11). Last, wind direction and speed also influence climatic conditions in the region. Typically, winds blow south to north in the region likely pushing flames away from T'Sou-ke Nation lands but also dries fuels (Figure 12). The wind rose diagram shows the number of hours per year the wind blows from the indicated direction.

In combination with fuel loading, higher temperatures, lower precipitation, and winds blowing inland leads to drying of fuels. This combination influences many elements of the Wildfire Hazard and Risk Rating (see section 7.2.3) and creates conditions that are easier for wildfires to ignite and spread as fuels dry and winds then fan flames. While temperature, precipitation, and winds influence fuels, fires are ignited by two causes in British Columbia: human or lightning. While the latter is reasonably infrequent in Sooke, human-caused ignitions are more likely. This is further discussed below in section 7.3.3.

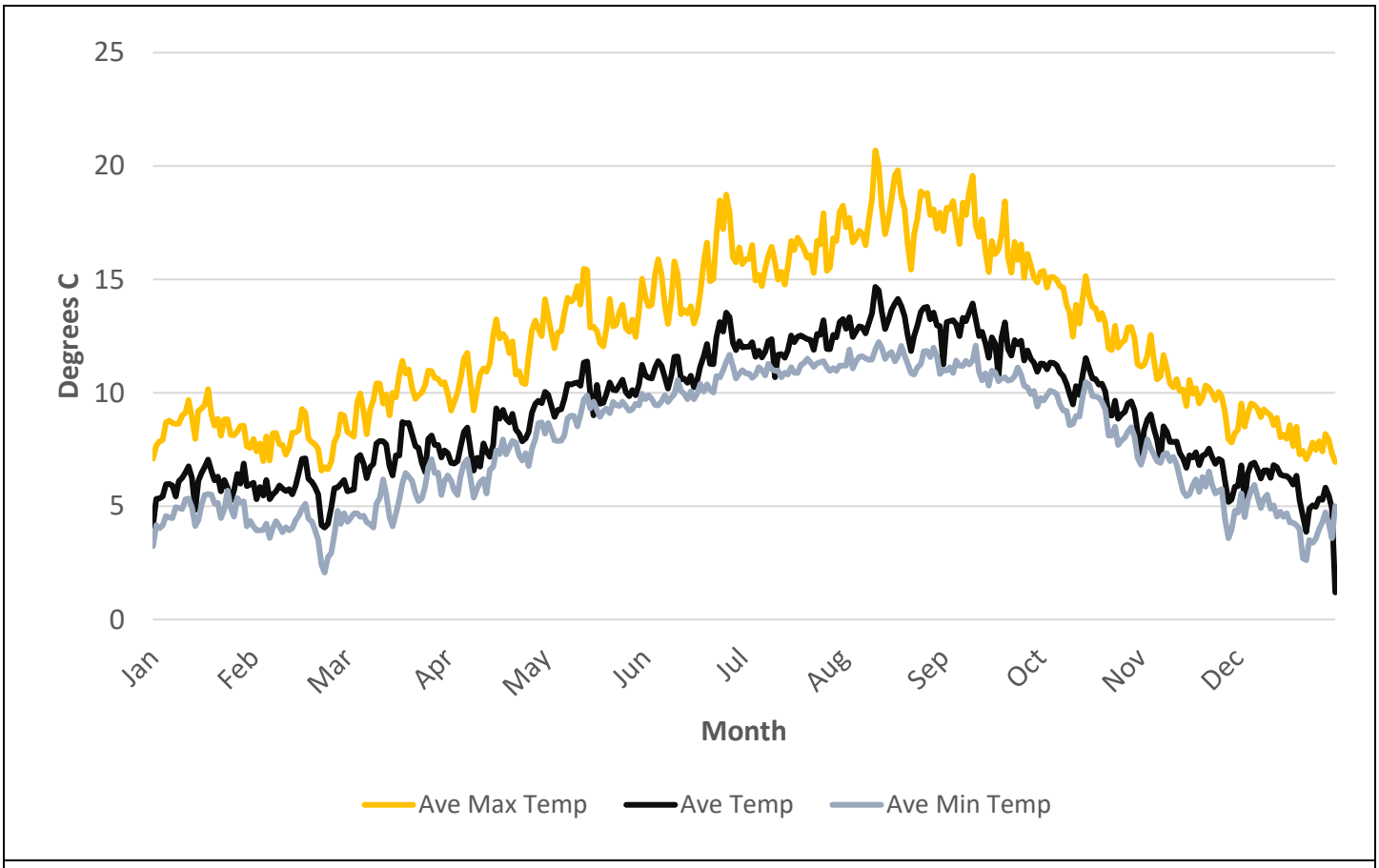


Figure 10: Average temperatures (minimum and maximum) and the average temperature (2014 to 2023), recorded at Sheringham Point weather station in Jordan River.

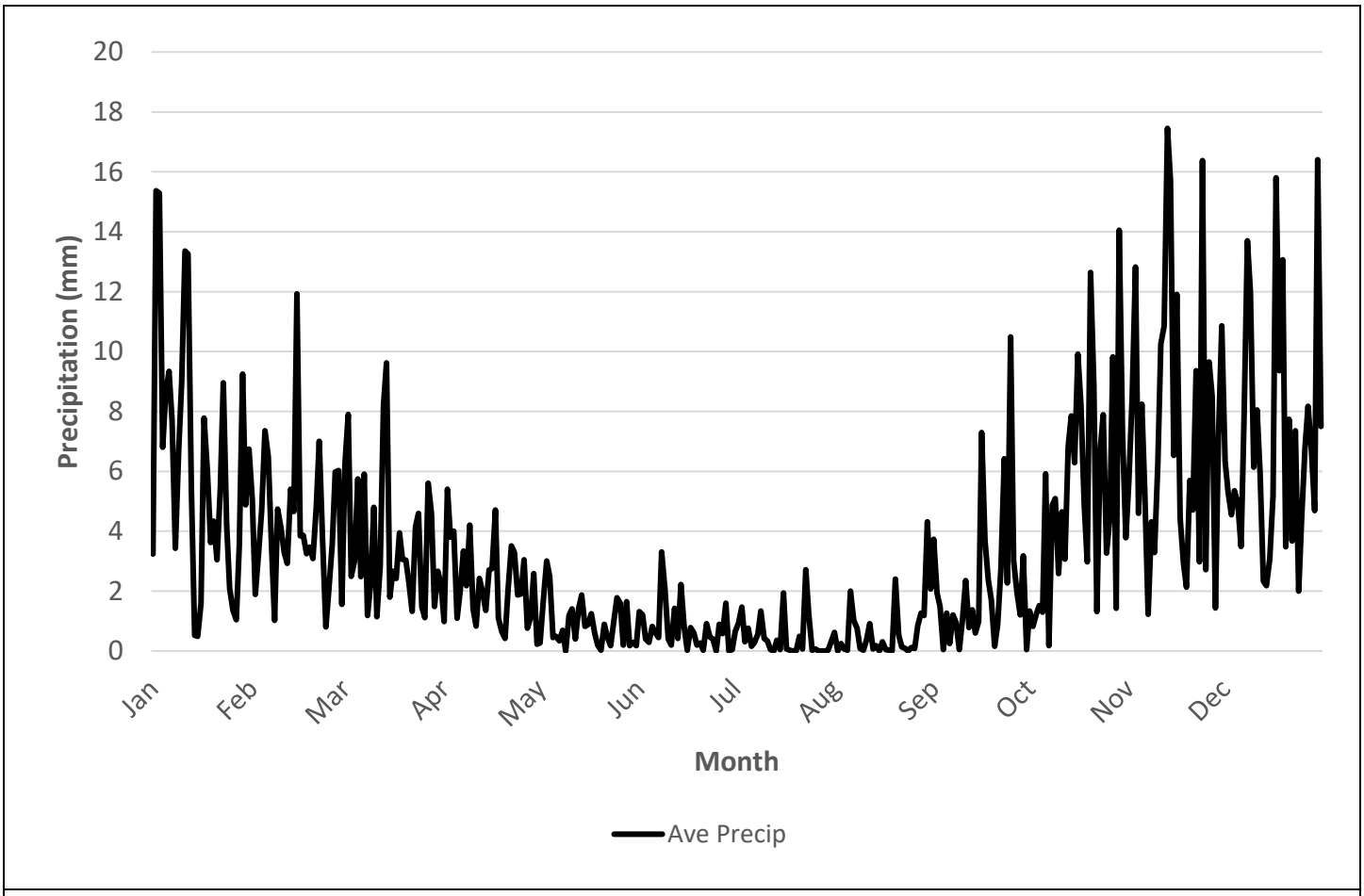


Figure 11: Average maximum precipitation (2014 to 2023), recorded at Sheringham Point weather station in Jordan River.

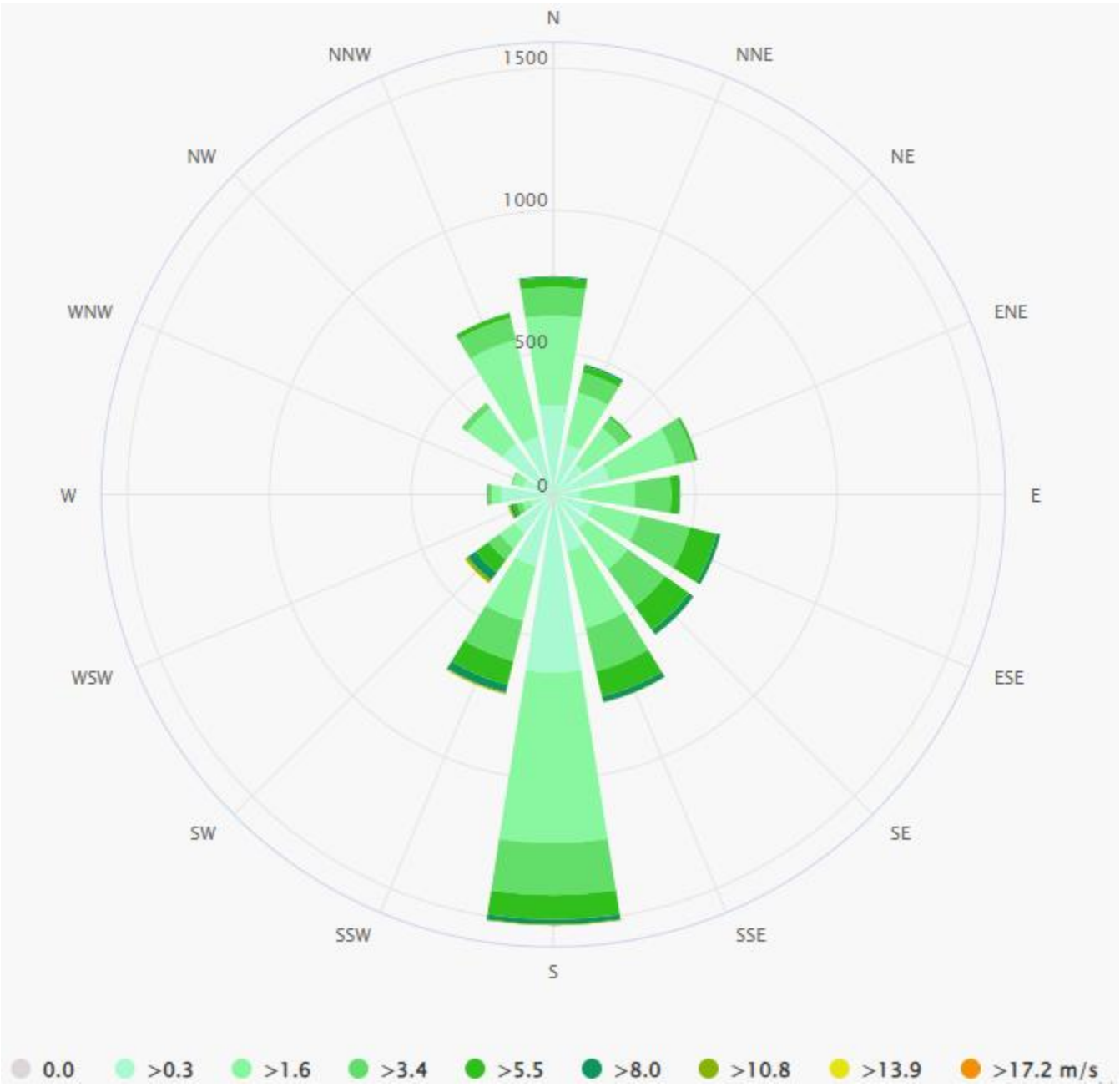


Figure 12: Wind rose diagram, Sheringham Point weather station in Jordan River.

7.3.1.3 Climate Change

Climate change is providing an influence on fire behaviour in the region containing T'Sou-ke Nation lands. Yearly temperature has increased from 9.9°Celsius in 1979 to 10.3°Celsius in 2023, indicating an overall warming trend[20]. Precipitation has increased over the last 44 years, annual precipitation in 1979 was 1034.1 mm and in 2023 was 1058.4. This indicates that the region is slightly wetter.

[20] Climate Change Sooke - meteoblue

Overall trends in British Columbia indicate that wildfire seasons are starting earlier and becoming longer, and that fires are burning larger areas and are occurring more frequently[21]. In addition when fires ignite they are burning with greater severity and intensity than previously. If these trends continue, they will likely create conditions that are more conducive to wildfires and create environments where fires will have increased impacts.

7.3.1.4 Topography

Topography can influence fuel moisture, the types of fuels, and fire spread. Typically north and east facing slopes will experience less sunlight as they face away from the sun. More shade-tolerant and moisture dependent plant and tree species populate these slopes. By comparison, south and west facing slopes are drier as they face the sun, as such fuels dry faster. As such plants and trees that require less moisture are typically found on south and west facing slopes.

The gradient of topographical features also influences fire spread. Fire travels uphill more readily than downhill or flat ground.

Tsouke1 is located in the Sooke Basin. The topography near the shoreline is comparatively flat, although rises sharply. Slopes are southwest facing. In comparison, Siaosun is relatively flat.

7.3.2 Fire History

The area now known as British Columbia has a long history of wildfire, historical records show very large areas burned. Wildfires have steadily become more impactful, especially with drier spring and fall weather in parts of the province.

In an area approximately 15 km outside of T'Sou-ke Nation reserve lands, wildfire records indicate that fires were more frequent during the first half of the 20th Century (15,564 hectares: 1919 to 1968), abruptly ceasing in the 1980s with far less area burned during the latter half of the 20th Century and beginning of the 21st Century (415 hectares: 1969 to 2023). The decrease in area burned is likely due to increased suppression efforts by the province of British Columbia.

The decreases in area burned (Figure 13) may coincide with increased wildfire suppression as well as improved education of the general public. Wildfires have ranged in size from less than a hectare to over 1000 hectares (Table 5). The majority of the large fires recorded occurred prior to the 1950's, while the last fire over 1000 hectares was recorded in 1967.

While large areas have been burned none of these fires overlapped with T'Sou-ke Nation reserve lands (Figure 14).

[21] https://jem-online.org/index.php/jem/article/view/152/107

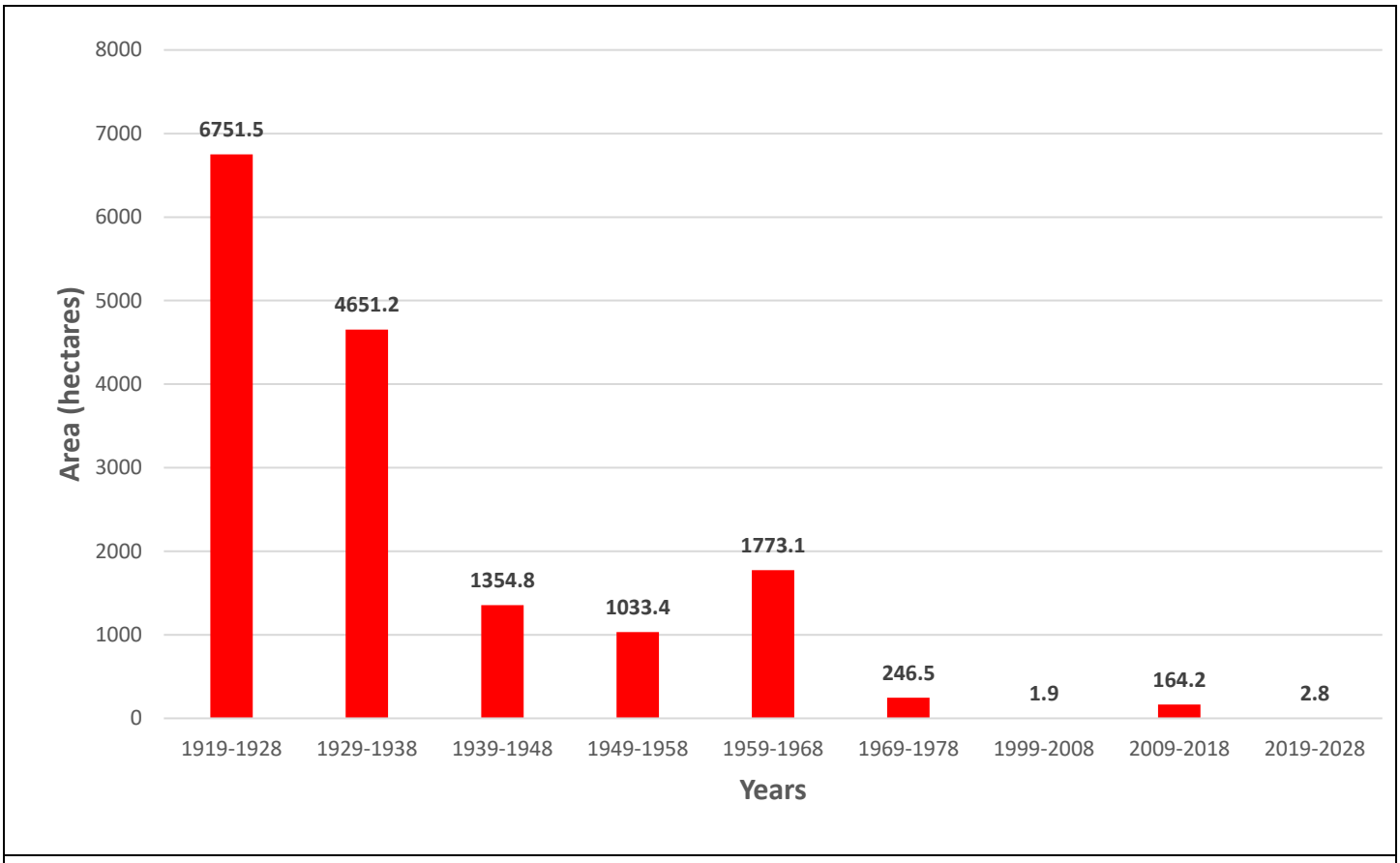


Figure 13: Area burned in each decade.

Table 5*:* Number of fires according to fire size

Size (Hectares)	Number of Fires
<1	7
1 to 50	91
50.1 to 100	24
100.1 - 150	13
150.1 - 200	7
200.1 - 250	2
250.1 - 300	4
300.1 - 350	2
350.1 - 400	0
400.1 - 450	0
450.1 - 500	2
>500	6
Total	**158**

Fires have typically been caused by people, 155 of the fires were determined to have been caused by people with the remaining fires caused by lightning.

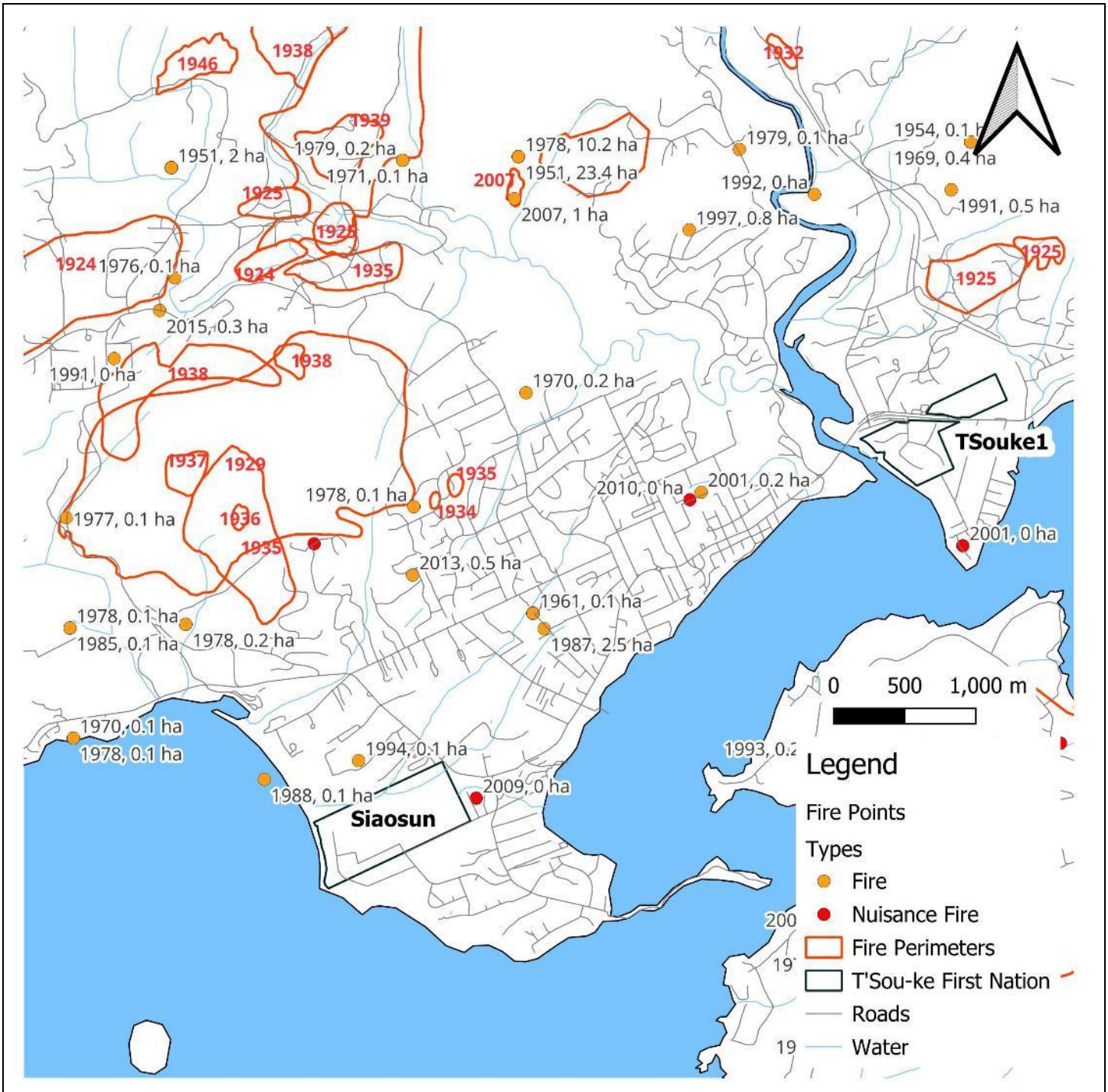


Figure 14: Map of fire locations and perimeters showing the year that fires were initiated, and the hectares burned.

7.4 Risk Framework & Risk Class Maps[22]

7.4.1 Overview

There are two main components of this local risk assessment: the *wildfire behaviour threat class* (fuels, weather, and topography sub-components) and the *WUI risk class* (structural sub-component). The local wildfire threat assessment process includes several key steps as outlined in Appendix 3: Local Wildfire Risk Assessment Process and summarized as follows:

- **Fuel type attribute assessment**: ground truthing/verification and updating as required to develop a local fuel type map
- **Consideration of the proximity of fuel to the community:** recognizing that fuel closest to the community usually represents the highest hazard
- **Analysis of predominant summer fire spread patterns:** using wind speed and wind direction during the peak burning period using ISI Rose(s) from weather station(s). Wind speed, wind direction, and fine fuel moisture condition influence wildfire trajectory and rate of spread.
- **Consideration of topography in relation to values:** slope percentage and slope position of the value are considered, where slope percentage influences the fire's trajectory and rate of spread and slope position relates to the ability of a fire to gain momentum uphill.
- **Stratification of the WUI:** according to relative wildfire threat based on the above considerations, other local factors, and field assessment of priority wildfire risk areas.

7.4.2 Wildfire Threat Class Analysis

Classes of the wildfire threat class analysis are as follows:

- **Very Low:** Waterbodies with no forest or grassland fuels, posing no wildfire threat;
- **Low:** Developed and undeveloped land that will not support significant wildfire spread;
- **Moderate:** Developed and undeveloped land that will support surface fires that are potentially threatening to homes and structures, depending on their adherence to FireSmart landscaping and construction materials principles;
- **High:** Landscapes or stands that are continuous forested fuels that will support candling, intermittent crown fires, or continuous crown fires. These landscapes are often steeper slopes, rough or broken terrain and/or south or west aspects.
- **Extreme:** Continuous forested land that will support intermittent or continuous crown fires.

Table 6: Wildfire threat summary for the AOI/WUI

Wildfire Threat		
Threat Class	**Hectares**	**Percentage (%) of AOI/WUI**
Extreme	0.0	0%
High	0.0	0%
Moderate	10.5	14%
Low	65.1	86%
Very Low/No Threat (Water)	0.0	0%

[22] The work in this section was completed by a Registered Professional Forester from BA Blackwell & Associates. The forester completed the CWRP for the District of Sooke.

In this analysis, WUI Risk is quantified when the Wildfire Threat is assessed as high or extreme, causing potential of unacceptable wildfire risk when near communities and developments. WUI Risk Classes are described below:

- **Low**: The high or extreme threat is sufficiently distant from developments, having no direct impact of the community and is located over 2 km from structures;
- **Moderate**: The high or extreme threat is sufficiently distant from developments, having no direct impact of the community and is located 500m to 2 km distance from structures;
- **High**: The high or extreme threat has potential to directly impact a community or development and is located 200m to 500m from structures; and
- **Extreme**: The high or extreme threat has potential to directly impact a community or development and is located within 200m from structures.

Table 7: WUI threat class ratings

WUI Risk		
Risk Class	**Hectares**	**% of Entire WUI**
Extreme	0.0	0%
High	0.0	0%
N/A (Moderate, Low, Very Low Fire Behavior)	75.6	100%

The WUI Risk Class for T'Sou-ke Nation lands is: Risk Class 1. TSouke1 has a mixed threat class of low and moderate (Figure 15).while Siaosun is classed as low threat (Figure 16).

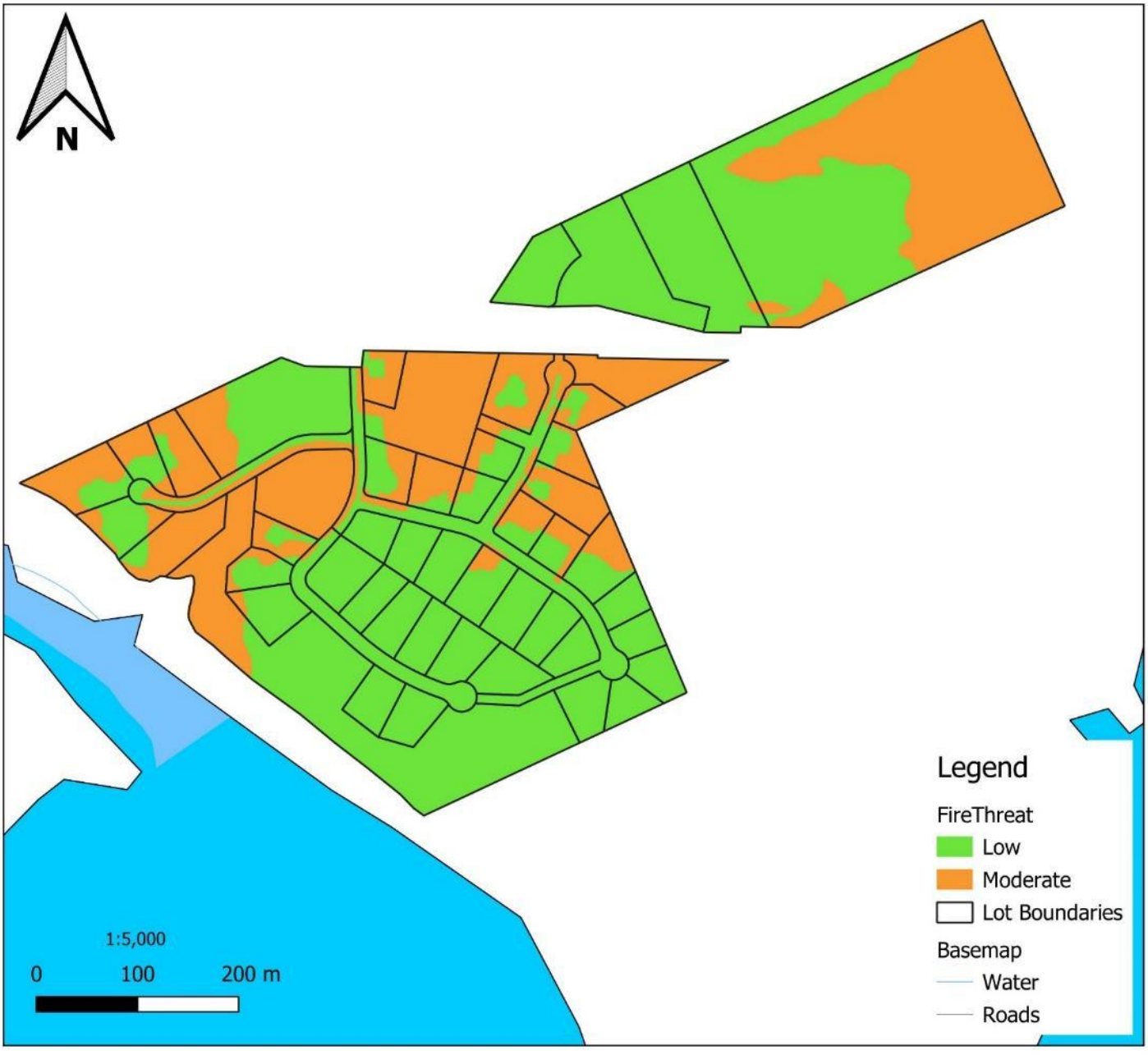


Figure 15: Local Fire Threat for TSouke1.

Figure 16: Local Fire Threat for Siaosun.

7.4.3 Hazard, Risk and Vulnerability Assessment

A hazard, risk, and vulnerability assessment was not included in the application. Rather T'Sou-ke Nation will hire a FireSmart Coordinator and will be updating its emergency response plan. As such, T'Sou-ke Nation will to complete the assessment at a later date.

8. FireSmart Disciplines

FireSmart is a Canada-wide program to mitigate the harmful effects of wildfires in communities. The disciplines aim to take a proactive approach towards wildfire by introducing risk reduction and resilience measures before wildfires create impacts. FireSmart in British Columbia is administered by FireSmartBC with assistance from the First Nations Emergency Services Society and BC Wildfire Service.

There are seven FireSmart disciplines that are described in the following sections (with section number):

9) Education
10) Legislation and Planning
11) Development Considerations
12) Interagency Cooperation
13) Cross-training
14) Emergency Planning, and
15) Vegetation Management.

The risk assessment work completed in Section 7 identified the areas of the community that would benefit from wildfire mitigation actions. The action plan that results from the analysis of the FireSmart disciplines will help local governments and First Nations understand where to start and what steps to take on the way to community wildfire resiliency.

Accordingly, the FireSmart discipline sections are written with several audiences in mind: community members, for T'Sou-ke Nation government, and for emergency services and BC Wildfire Service. FireSmartBC provides many useful resources to further understand FireSmart. The following sections however, are written so as to become standalone sections that can be provided to T'Sou-ke Nation citizens for information to reduce the risk of wildfire and to create resiliency. These sections provide easy access to information and resources to support T'Sou-ke Nation citizens and administration. Direct linkages to CWRPs produced by the District of Sooke and Capital Regional District are also provided to determine areas of mutual agreement where each jurisdiction has agreed to work together. Further information about FireSmart is available at firesmartbc.ca.

Each FireSmart section below includes the following:

- Description of what each FireSmart discipline is intended to address.
- Analysis of challenges and opportunities to consider in the CWRP planning process, including any considerations unique to the discipline, such as specialized expertise required.
- Recommended actions that T'Sou-ke Nation need to implement, as well as references to relevant recommendations from the Capital Regional District and District of Sooke that require collaboration.
- Resources and information sources, as applicable.

Recommendations made are collated in the action plan that if undertaken will help to improve wildfire resiliency and reduce risks posed by wildfires. Recommendations are provided with information about the jurisdiction that provided the recommendation (given the potential for collaboration with the Capital Regional District and District of Sooke), who will implement the recommendation, the priority level, and the funding source. Priority will be assigned according to:

- High: implement as soon as possible or already underway.
- Medium: implement within the next 3 to 6 months following approval of the CWRP
- Low: implement 6 months to 1 year following approval of the CWRP.

9. Education

Public education and outreach efforts help community members learn about wildfire and its potential impacts to their communities. In addition, these efforts should be designed to help individuals understand their role in taking action to reduce risk. Education and outreach activities are designed for all groups to benefit, including elected officials, community planners, residents, visitors, businesses, land managers, first responders, and more.

The purpose of the Education discipline is to increase awareness of wildfire resiliency and risk reduction through community outreach. This section provides guidance for T'Sou-ke Nation citizens and administration, as well as local municipal governments.

Concerns about the use of the term "FireSmart" were voiced at the 2024 Wildfire Resiliency and Training Summit in Prince George. For many First Nation's people and communities "FireSmart" is a western term that is new to most people. To effectively achieve the desired results, T'Sou-ke Nation citizens and staff will be provided with information about FireSmart as a steady introduction to concepts.

Little has been done to date to implement wildfire resiliency and to reduce risks on T'Sou-ke Nation lands. Impacts from wildfire has not yet impacted to the community, although residents are aware of impacts due to media attention given to wildfires on Vancouver Island and in British Columbia.

Thus far, wildfire information has been provided in the community newsletter with reminders of wildfire danger ratings throughout periods of high and severe fire danger. Apart from this, T'Sou-ke Nation is beginning to implement wildfire resiliency, although at this time significant effort will be required to educate and implement a program. Wildfire is likely new to many citizens who are likely more familiar with the danger posed from tsunamis and earthquakes.

T'Sou-ke Nation needs to undertake an education program with on-reserve citizens to raise awareness related to wildfire mitigations and improve resiliency of homes and lands to wildfires. Citizens can expect further information to be provided via T'Sou-ke Nation's monthly newsletter and social media outlets (e.g., Facebook group).

Information about wildfire mitigation activities to build resiliency and reduce risk will be provided to people to assist them to protect and prepare homes.

- T'Sou-ke Nation will identify staff to take Local FireSmart representative training, one of these people to become a FireSmart Coordinator for the community. This position will become the spokesperson for community on wildfire, with backing by Chief and Council and Administration.
- Provide FireSmart information from FireSmartBC to T'Sou-ke Nation citizens and have information on hand to give out.
- Host citizens to take FireSmart 101.
- There is also opportunity to purchase FireSmart promotional materials to raise awareness of the program.
- T'Sou-ke Nation will hold community events to introduce this plan to citizens and to host an event for citizens to understand the wildfire efforts being undertaken in District of Sooke, by Capital Regional District, invite BCWS, FireSmartBC, and Ministry of Emergency Management and Climate Readiness.
- Hold community clean ups and wildfire preparedness days.
- Continue to promote FireSmart through community newsletters and on website.

- Complete Home Ignition Zone assessments for homes owned by T'Sou-ke Nation, based on voluntary requests, and for higher risk homes. These assessments need to be completed with the homeowner or resident of the home so they understand the hazards and risks and are able to participate in a conversation about reducing or mitigating wildfire hazards and risks.
- Homeowners can also participate in the Home Partners Program. With some insurance providers, this may offer small discounts on home insurance.
- Improve home signage e.g., reflective number signs to improve visibility of homes.
- Have community fire danger signage on both reserves.

The District of Sooke is also planning several events that, given proximity of the communities, T'Sou-ke Nation could participate in. These include: community information sessions, print media, community clean-up days, wildfire preparedness days, and pop-up booths at community events.

Resources that can be promoted to provide further information about wildfires include:

- Fire Danger rating: provided as a map or as a numerical rating based on a scale of very low (1) to extreme (5).
- BC Wildfire Dashboard: a website that provides information about weather forecasts, the number of fires burning in the province, the locations of fires, and other information about fires. Information about
- Environment Canada weather: Provides weather information from the nearest weather station to Sooke BC.
- Firesmoke.ca: A website that provides forecasts about the spread of smoke from wildfires in Canada and the United States of America. This can be useful so that citizens know where smoke is coming from and can help alleviate concerns about fires as the presence of smoke is interpreted as a nearby wildfire.
- Air quality health index: provides air quality information from the provincial government, not related to only wildfires (including measurements from Victoria, BC). A separate source of air quality data is also available from PurpleAir, including an air sensor located on T'Sou-ke Nation's administration building.
- Weather alerts: provided by Environment Canada that includes air quality and severe weather warnings.
- Drought maps: provided by the province of BC, provides information about current drought conditions.
- Island Health health notices: provides information about health alerts shared with communities on Vancouver Island.
- Educational resources: FireSmartBC.ca provides education packages that households can use to learn more about wildfire.
- FireSmartBC.ca provides many educational resources, including a kindergarten program that could be used in T'Sou-ke Nation's school. Children are likely to go home and talk about FireSmart with their parents which will raise awareness.
- FireSmartBC.ca also provides factsheets that can be shared via the newsletter.
- A self-inspection checklist has been compiled by FNESS, this addresses home safety features (e.g., smoke/CO detectors, fire extinguishers, fuel storage, among others), household habits related to home fires (e.g., cooking, placement of heaters, use of candles and smoking materials), and escape planning. These could be completed together with home ignition zone assessments.
- Additional FNESS home safety resources are available here.

There are several levels of water advisories, it is important to understand the difference between each type of advisory. T'Sou-ke Nation will alert its citizens if boil water advisories are provided by First Nation's Health Authority.

Information about water quality advisories and current advisories are available from First Nations Health Authority:

- Monthly summary of advisories.
- Information about drinking water advisories.

The analysis involved with the Education Discipline provides the opportunity to make recommendations for T'Sou-ke Nation (Table 8). These are provided along with recommendations from the District of Sooke and the Capital Regional District CWRPs that T'Sou-ke Nation can be completed in collaboration.

Table 8: Recommendations for the Education FireSmart Discipline with corresponding priority, key performance indicator (KPI) and suggested funding source.

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
T'Sou-ke Nation	Create and fund a FireSmart Coordinator position	T'Sou-ke Nation Administration	High	Create position	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Train two people to become Local FireSmart Representatives	T'Sou-ke Nation Administration	High	Two people to take training	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Complete Home Ignition Zone Assessments	T'Sou-ke Nation Administration	High to Medium	20 HIZ assessments complete	FNESS funds
T'Sou-ke Nation	Complete home fire safety – self-inspection checklists	FireSmart Coordinator	High to Medium	20 checklists complete	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Use FireSmartBC teaching resources in Sum-SHA-thut Lellum PreK program	T'Sou-ke Nation early childhood educator and T'Sou-ke Nation Administration	Medium	Educational resources included in curriculum	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Promote FireSmart activities in T'Sou-ke Nation lands and share resources promoted by District of Sooke	FireSmart Coordinator	High	Completed through	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Continue to provide information via T'Sou-ke Nation's website, newsletter, and others from provincial, municipal, and other sources to citizens of T'Sou-ke Nation	FireSmart Coordinator	High	Ongoing	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Organize community clean up days	FireSmart Coordinator	Medium	Clean up day completed	FNESS funding and Earth Day funds through treaty association

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
T’Sou-ke Nation	Circulate promotional FireSmart material	FireSmart Coordinator	Medium	Ongoing	UBCM CRI program and FNESS funds
T’Sou-ke Nation	Share the CWRP on our website	T’Sou-ke Nation Administration	High	CWRP on website	FireSmart Coordinator salary
T’Sou-ke Nation	Provide open access to a computer for citizens to take FireSmart101	T’Sou-ke Nation Administration	High to Low	10 people have taken FireSmart101	FireSmart Coordinator salary
T’Sou-ke Nation	Erect signage banning campfires on beachfronts	T’Sou-ke Nation Administration	High	Beachfront signs erected	UBCM CRI program and FNESS funds
District of Sooke	Promote information about adverse impacts of yard waste dumping	FireSmart Coordinator	High to Low		
District of Sooke	Host all-hazard emergency preparedness workshops for residents, including T’Sou-ke Nation.	FireSmart Coordinator	Medium		
Capital Regional District	Promote FireSmart Neighbourhood Planning in neighbourhoods at relative risk.	FireSmart Coordinator	Low		

10. Legislation and Planning

Legislation and Regulation can be a very effective tool for reducing wildfire risk on provincial crown lands and within the administrative boundaries of a local government or First Nation communities. Provincial acts and regulations provide the means for local governments and First Nation communities to implement wildfire risk reduction actions through bylaws.

The Framework Agreement on First Nation Land Management is a government-to-government agreement signed in 1996, that was ratified by Canada to become the *First Nations Land Management Act* in 1999. It enables First Nations who sign onto the agreement to opt out of 44 section of the *Indian Act.* The framework agreement enables First Nation's to take a step towards self-governance. First Nation's who are signatories to the framework and the Act are provided with Land Code. This allows Nation's to make laws to govern environment and lands on reserve lands.

T'Sou-ke Nation achieved Land Code in 2006. This allows T'Sou-ke Nation to make its own laws and bylaws relating to lands and environment. Currently, there have been few laws created, although a Subdivision Development and Servicing law is in final stages prior to ratification by Leadership. This law provides opportunity to limit the materials used in the construction and cladding on homes and provide minimum standards for vegetation management.

T'Sou-ke Nation created several bylaws prior to the adoption of Land Code. One bylaw is relevant to wildfire control and management:

Bylaw #3: Removal and Punishments of Persons Trespassing on Reserve and the Prevention of Disorderly Conduct and Nuisances. This bylaw governs acts of nuisance on reserve land. The definition of nuisance includes:

- The abandonment of cars, household appliances or furniture, or parts of cars, house hold appliances, or furniture.
- The storage of cars, household appliances or furniture, or parts of cars, house hold appliances, or furniture.
- The dumping or storage of tires, garbage or other refuse.
- **The burning of tires, grass, garbage, leaves or other refuse.**
- The discharge of any substance in to the air or water.
- Noise.

Under this bylaw the RCMP or any other person "charged with the duty to preserve and maintain public peace, and any person appointed by Council for the purpose of maintaining law and order on the reserve" has power to enforce the bylaw. The Lands Manager has been designated by BCR to act as an Officer under the bylaw. This provides the authority to provide orders to people who violate the bylaw, further action can be taken if T'Sou-ke Nation takes offenders to court.

In 2016 T'Sou-ke Nation ratified a *Backyard Burning Regulation* that regulates burning, provides burning windows, ensures cooperation with ventilation indices, prohibits the use of burn barrels and incinerators, and provides a list of items banned from burning. Under the regulation burning is only permitted during daylight

hours from October 1st to April 30th when venting for Southern Vancouver Island is rated GOOD. Backyard burning is only allowed in small piles (6 ft x 6 ft x 3 ft, for properties up to 2 acres).

- The regulation requires people to use the Environment Canada venting index. However, venting indices are likely more accurate for British Columbia. Provincial venting indices can be found in a two places:
    - An interactive map or,
    - For Southern Vancouver Island in a text version.

Other than these T'Sou-ke Nation reserve lands are not subject to provincial or municipal laws and bylaws. A fire service agreement is under negotiation, which may allude to compliance with municipal bylaws. Otherwise wildfires outside of T'Sou-ke Nation lands may lead to water quality advisories, especially if forests in the watershed are impacted by wildfires.

T'Sou-ke Nation has the opportunity to develop laws under its Land Code to address wildfire risk reduction at on T'Sou-ke Nation land and to address wildfire mitigations in laws, regulations, and policy.

The analysis involved with the Legislation and Planning Discipline provides the opportunity to make recommendations for T'Sou-ke Nation (Table 9). These are provided along with recommendations from the District of Sooke and the Capital Regional District CWRPs that T'Sou-ke Nation can be completed in collaboration.

Table 9*:* Recommendations for the Legislation and Planning FireSmart Discipline with corresponding priority, key performance indicator (KPI) and suggested funding source.

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
T'Sou-ke Nation	Incorporate FireSmart and other wildfire mitigation language into future law development	T'Sou-ke Nation Administration and legal counsel	Medium	Ongoing	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Strengthen and update the Backyard Burning Regulation	T'Sou-ke Nation Administration and legal counsel	High	Regulation updated	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Work with the CRD to ensure T'Sou-ke Nation citizens are included in the program to reduce or eliminate green waste tipping fees at Hartland landfill	FireSmart Coordinator	Low	Confirmation from CRD that the program applies to T'Sou-ke Nation citizens	Included in FireSmart Coordinator salary

11. Development Considerations

Development decisions, such as land use types, structure density, road patterns, and other considerations, shape the built and natural environments. These decisions can bring lasting impacts to the WUI and wildfire risk by affecting public and first responder safety and survivability of homes, critical infrastructure, and other community features. Considering these factors early in the development process can reduce wildfire risk to life safety and property.

T'Sou-ke Nation is developing a Subdivision Development and Services law under its Land Code. This provides the opportunity for T'Sou-ke Nation to incorporate FireSmart elements into development. In addition, to meet housing demands T'Sou-ke Nation is developing a section of land on Siaosun and will connect houses in this part of the community to municipal sewer provided by the District of Sooke. There are future plans to develop the reserve to add more houses.

The Development Considerations discipline recognizes the relationship between the built environment and the natural environment in terms of where and how a community is or will be developed. For example, high-density, clustered development with forest or grassland on the fringe might be managed differently compared to low-density, large lot development that is interspersed throughout a forest or grassland.

Wildfire mitigations can include factors that will reduce the susceptibility of new development to wildfires and thereby create safer communities. These factors include:

- Location of development, including hazardous or vulnerable land uses, in
- relation to high threat forested vegetation, steep slopes, and other
- geographical features that contribute to extreme fire behaviour;
- Access and circulation patterns;
- Availability and adequacy of water supply;
- Type of construction materials on structures and attachments;
- Lot size and structure density;
- Design guidelines and architectural standards;
- Addressing and street signage;
- Landscaping, screening, and buffering; and
- Temporary land uses that determine the type of use and quantity of people.

These factors need to be built into the Subdivision and Development Services law or a regulation. Prior to doing so, developments can utilise construction materials and community planning to mitigate risks of wildfires. More information is available in factsheets provided by FireSmartBC that address elements of homes.

FireSmartBC have developed a Development Guideline that can help determine how to mitigate the impacts on homes from wildfire. A summary of the Guideline is provided below, please refer to it for further details:

- Roofing material and design: non-combustible materials (e.g., not untreated wood).

- Siding, vents and openings: fibre cement, stucco, or brick are considered optimal siding materials (vinyl and wood are present highest risk). Vents and opening should be filled with 3 mm mesh screen to prevent embers entering the home.
- Gutters and eaves: Boxed in or soffited eaves prevent embers and sparks from entering the home, regularly maintained gutters constructed from non-combustible materials (e.g., metal).
- Decks and porches: slotted deck surfaces, non-combustible railings as well as furniture and decorations, flashing if siding is combustible, and no debris or combustibles under the deck.
- Fencing: not attached to house or outbuilding walls, made of non-combustible materials, or those that have gaps (that would allow embers to become lodged in the fence).
- Landscaping: choose fire-resistant plants, landscape within 10 metres, keep grass mowed: shorter than 10 cm, pile firewood away from the house, no chips or mulch within 10 metres, have fire tools on hand (shovels, axes, rakes, etc.).

The two most important factors that impact homes as a result of wildfire are the condition and materials used in roofing and decks. On brief inspection, many of the houses have asphalt shingles, some in poor condition; combustible gutters, open vents, vinyl or wood siding; homes in generally poor condition; ground-to-siding clearances of less than 15 cm's; single pane windows; open spaces beneath decks; lack of non-combustible zone around the home; nearby coniferous forest (or conifers growing within the immediate zone); many outbuildings and sheds; fences that join homes; among other items (e.g., proximity of propane tanks to homes).

Home ignition zone assessments need to be completed greater understanding of the risks to homes will be further understood.

Furthermore, many of the homes may have been constructed out of materials that will be hazardous to the health of people exposed to a home fire or remain hazardous once the fire has been extinguished (e.g., asbestos). T'Sou-ke Nation is building new homes and buildings and should consider fire resistant materials when completing these projects. The cost of retrofitting a 2000 sq ft home can cost up to USD$100,000, or for simple changes to the exterior of homes: USD$10,000 to USD$15,000[23].

In addition to recommendations provided in the Education FireSmart Discipline, T'Sou-ke Nation can complete FireSmart Canada Neighbourhood Recognition programs for each of TSouke1 and Siaosun. This program will help T'Sou-ke Nation meet community-wide goals to work towards the goals and objectives identified in this plan.

Last, the CRD has promoted understanding of wildfire risks in multi-owner environments. The CRD has infrastructure for water distribution in each of T'Sou-ke Nation's communities. T'Sou-ke Nation will attempt to work with the CRD to appropriately manage these infrastructure.

The analysis involved with the Development Considerations Discipline provides the opportunity to make recommendations for T'Sou-ke Nation (Table 10). These are provided along with recommendations from the District of Sooke and the Capital Regional District CWRPs that T'Sou-ke Nation can be completed in collaboration.

[23] Wildfire_Retrofit_Report_20240624.pdf (headwaterseconomics.org)

Table 10: Recommendations for the Development Considerations FireSmart Discipline with corresponding priority, key performance indicator (KPI) and suggested funding source.

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
T'Sou-ke Nation	Incorporate FireSmart and other wildfire mitigation language into future law development	T'Sou-ke Nation Administration and legal counsel	Medium	Ongoing	UBCM CRI program and FNESS funds
T'Sou-ke Nation	When designing future development, incorporate FireSmart Disciplines	T'Sou-ke Nation Administration	Medium	Ongoing	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Complete asbestos inspections on homes	FireSmart Coordinator	High	20 homes inspected	Determine funding source
T'Sou-ke Nation	Complete FireSmart Canada Neighbourhood Recognition Programs for TSouke1 and Siaosun	FireSmart Coordinator	High	Both communities recognized under the Program	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Determine opportunities to work with CRD on wildfire risk in multi-owner environments	FireSmart Coordinator	Medium	Develop relationship	UBCM CRI program
CRD	Improve understanding of wildfire risk in multi-ownership environments	CRD	Medium		

12. Interagency Cooperation

It takes the collaborative efforts of multiple stakeholders working together to achieve a fire resilient community. These people include the local fire departments, local government staff, elected officials, First Nations representatives, industry representatives and provincial government residents in your area. Individually they are responsible to their own organizations, but all of the stakeholder organizations are dependent upon each other to develop an effective Community Wildfire Resiliency Plan and undertake a successful wildfire response.

The CWRP development process offers an opportunity for individual organizations to work together and develop strong interagency and interdepartmental working relationships well ahead of an emergency response. The goal is to breakdown jurisdictional silos to adopt a single jurisdiction-based approach to a risk-driven, multi-agency, and multi-scalable approach. This increases the ability of individual organizations to plan effectively, coordinate efforts, and ultimately work efficiently together during an emergency response.

This CWRP was guided and directed by T'Sou-ke Nation's Community FireSmart and Resiliency Committee. It consisted of representatives from the District of Sooke Fire Service as well as several departments from T'Sou-ke Nation: Health, Social, Lands, Forestry and Environment, Guardians, Fisheries, Administration, Housing, and Finance. This Committee will continue to help guide and direct FireSmart activities and to implement recommendations identified during the creation of this plan. Furthermore, T'Sou-ke Nation's Lands Manager has been identified in the District of Sooke's CWRP as a member of their Community FireSmart and Resiliency Committee and will take an active role so as to coordinate planning and implementation measures associated with the recommendations included in this CWRP and the District of Sooke's CWRP.

Having provided guidance and direction to this CWRP, T'Sou-ke Nation's Community FireSmart and Resiliency Committee will continue to provide input as the CWRP is implemented. The Committee will:

- Track progress of recommendations made in this CWRP
- Make suggestions to increase community wildfire resiliency in laws, regulations, and bylaws
- Increase its membership to include representatives from Capital Regional District, BC Wildfire Service, and the Ministry of Emergency Management and Climate Readiness.
- Provide input to future funding requests to UBCM and Indigenous Services Canada regarding wildfire initiatives.
- Continue to learn about wildfire initiatives elsewhere in the province and from federal agencies.

T'Sou-ke Nation has begun to actively collaborate with the District of Sooke and is proactively working to implement FireSmart activities together and to increase wildfire resiliency together for T'Sou-ke and in Sooke. With respect to fire fighting equipment, the District of Sooke Fire Rescue Service maintains an equipment and vehicle inventory with the following forestry and wildfire-related components that could be used in event of a wildfire or structure fire on T'Sou-ke Nation lands. Given the proximity of the District of Sooke to T'Sou-ke Nation lands the District provides fire-fighting services to the Nation (training opportunities are discussed under the Cross Training FireSmart Discipline).

Three large apparatuses that carry forestry equipment:

- ‘Engine 12’, which meets the standard for Type 1 engine deployment in British Columbia.
- ‘Brush 1’ and ‘Tender 1’ carry forestry equipment.
- Structural Protection Unit Type 2 trailer that meets 2021 BC Wildfire Service specifications.
- Utility Terrain Vehicle and trailer (with hand tools, hose).
- Spare equipment (sprinklers, pump, hand tools, etc.)
- Personal Protective Equipment (intended for members deployed to BC Wildfire Service incidents)

Sooke Fire and Rescue is well equipped to respond to structural and small interface fires within its response area (which includes T’Sou-ke Nation as per agreement). In addition to District of Sooke equipment, BC Wildfire Service is stationed in Cobble Hill, approximately 1 hour drive from T’Sou-ke Nation lands. BC Wildfire Service may provide other heavy equipment (e.g., water bombers and helicopters) for wildfire support.

T’Sou-ke Nation needs to purchase fire-fighting equipment that could be utilized for structural fire response and protection as well as for wildfire. Items to purchase could include, but not be limited to:

- Fire hose and couplings to fit existing hydrants.
- Ribbon to cordon areas off to prevent access and warn people of ongoing work in areas or on properties.
- Road signage to post warnings about workers on site.
- First aid kits.
- Personal protective equipment appropriate for fire-fighting and crowd control.

The District of Sooke and T’Sou-ke Nation have been working together since at least 2016 on a Fire Service Agreement. Discussions will be continued to finalize the agreement.

The analysis involved with the Interagency Cooperation Discipline provides the opportunity to make recommendations for T’Sou-ke Nation (Table 11). These are provided along with recommendations from the District of Sooke and the Capital Regional District CWRPs that T’Sou-ke Nation can be completed in collaboration.

Table 11: Recommendations for the Interagency Cooperation FireSmart Discipline with corresponding priority, key performance indicator (KPI) and suggested funding source.

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
T’Sou-ke Nation	Update the Fire Service Agreement between T’Sou-ke Nation and District of Sooke	T’Sou-ke Nation Administration and District of Sooke	High	Agreement completed	UBCM CRI program and FNESS funds
T’Sou-ke Nation	Take part in regular meetings with BC Wildfire Service during fire season to understand fire situation on South Island.	FireSmart Coordinator	High	Regularly attends meetings	UBCM CRI program and FNESS funds
T’Sou-ke Nation	Purchase equipment that can be stored in both communities to be utilised in the event of a wildfire	FireSmart Coordinator	High	Equipment purchased	UBCM CRI program and FNESS funds

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
T’Sou-ke Nation	Attend the Wildfire Resiliency and Training Summit	FireSmart Coordinator and other CFRC staff (up to 2 people)	Medium	2 people attend Summit	UBCM CRI program and FNESS funds
T’Sou-ke Nation	Continue regular meetings of T’Sou-ke Nation’s Community FireSmart Resiliency Committee	T'Sou-ke Nation Administration with District of Sooke, Min. of Emergency Mgmt and Climate Readiness, and BC Wildfire Service	High	Hold meetings	UBCM CRI program and FNESS funds
T’Sou-ke Nation	Take part in the Interagency Fire Response and Preparedness Working Group	FireSmart Coordinator	High	Contact CRD Attend meetings	UBCM CRI program and FNESS funds
District of Sooke	Establish a regular schedule of meetings for the District of Sooke Community FireSmart Resiliency Committee.	Lands Manager (alternative representative: FireSmart Coordinator)	Medium		
CRD	Initiate a region-wide Interagency Fire Response and Preparedness Working Group	CRD Protective Services	High		

13. Cross-Training

Wildland-Urban Interface resiliency planning and incident response draw on many different professions who do not typically work in wildfire environment. Cross-training of fire fighters, public works staff, utility workers, local government and First Nations administration, planning and logistics staff, and other key positions will help support the development of comprehensive and effective wildfire risk reduction planning and activities, as well as a safe and effective response.

CWRP planning requires many different professions who may not typically work in a wildfire environment to collaborate, understand other disciplines as well as wildfire management planning objectives, and come together. Cross-training firefighters, public works staff, utility workers, administration staff, planning and logistics staff, and other key positions support the development of comprehensive and effective CWRP activities, including a safe and effective wildfire response.

Cross training is required for each discipline to understand each other. As such, this Discipline includes recommendations for communities to undertake the following training:

- Basic wildland fire training
- Structural protection training
- Incident Command System training
- Local FireSmart Representative training
- FireSmart Home Partners Mitigation Specialist training
- FireSmart Community Champion training
- Training exercises

Under this Discipline, the District of Sooke has identified the need to:

- Conduct annual training exercises with mutual aid partners.
- Expand Emergency Operations Centre training for municipal staff.
- Organize a schedule for practice and training with BC Wildfire Service, using wildland equipment.
- Maintain or expand wildfire-specific training for members.

The CRD has identified the need to:

- Support local fire departments to access additional training on future CRI funding applications.
- Support additional CRD staff or local fire department members to become Local FireSmart Representatives.
- Host a neighbourhood champion training workshop for interested community members

While T'Sou-ke Nation is not a mutual aid partner at this time, it could participate in annual training with the District of Sooke and the District's Fire Service. T'Sou-ke Nation's emergency management plan committee and those people and positions identified as integral to

the Emergency Operations Centre could train in collaboration with the District to ensure during an emergency event (e.g., evacuation) that both jurisdictions are coordinated and know how to communicate with each other. T'Sou-ke Nation would also join the training and practice involving wildland fire equipment with BC Wildfire Service. Furthermore, T'Sou-ke Nation will identify appropriate wildfire-service training for a select few citizens to provide initial suppression for structural fires and wildfires.

In the event of structure fires there will be a need for people trained to cordon off buildings, crowd control, post-event trauma counselling, first responders, and first aid, in addition to a FireSmart Coordinator. Nobody at T'Sou-ke Nation is currently trained in these disciplines, there is no fire department and only basic equipment is available. Wildfires and structural fires caught and fought early (before District of Sooke Fire Service arrive on reserve land) can help prevent catastrophic losses to values at risk and to dwellings.

Training to consider: Complete training to ensure that a group of people on each reserve can begin initial fire suppression activities in event of a wildfire or structure fire.

- FireSmart 101 for citizens to understand the need for FireSmart
- Local FireSmart Representative for two staff at T'Sou-ke Nation
- Danger tree assessor course (fire suppression)
- ICS-100 (introduction to effective system for command, control, and coordination of response at an emergency site; available online)
- S-100 Basic fire suppression and safety (basic fire suppression training for contract crews) and S-100A (annual refresher)
- S-185 Fire entrapment avoidance and safety (general knowledge course on wildfire safety and entrapment avoidance for local governments, contract crews, and First Nations)
- S-231 Engine Boss (training for structure protection program in a WUI event)
- WSPP-115 (training for structure protection unit crews)
- Task force leader (for structure protection only)
- Structure Protection Group Supervisor (GrpS) (for structure protection only)

Training could be done in collaboration with the District of Sooke (as provided for in recommendation in their CWRP), BC Wildfire Service, and CRD. Hopefully this will approach will encourage collaboration when the different groups are familiar with each other and will ensure courses that have minimum attendance requirements will be able to run.

T'Sou-ke Nation could work with District of Sooke and other nearby jurisdictions to coordinate Emergency Operations Centre's in the event of wildfire or other emergencies (e.g., flood, tsunami, etc.). Given the proximity of the District of Sooke, the District's emergency response procedures should be reviewed and incorporated into training efforts. An emergency response drill should be completed annually in conjunction with District of Sooke to ensure information between both jurisdictions are aligned.

The analysis involved with the Cross-Training Discipline provides the opportunity to make recommendations for T'Sou-ke Nation (Table 12). These are provided along with recommendations from the District of Sooke and the Capital Regional District CWRPs that T'Sou-ke Nation can be completed in collaboration.

Table 12: Recommendations for the Cross-Training FireSmart Discipline with corresponding priority, key performance indicator (KPI) and suggested funding source.

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
T'Sou-ke Nation	Train two to four people on each reserve in structural and wildland fire fighting	FireSmart Coordinator	High	Four people trained in S-100, S-185, S231, task force leader, and Structure Protection Group Supervisor	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Train two people to become Local FireSmart Representatives	FireSmart Coordinator	High	Two people trained	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Reach out to Capital Regional District to determine how they can support T'Sou-ke Nation with these recommendations	FireSmart Coordinator	High	Outreach completed	FireSmart Coordinator salary
T'Sou-ke Nation	Two to four people to train with District of Sooke Fire Service	FireSmart Coordinator	Medium	Two to four people training with District of Sooke Fire Service	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Train two people to be danger tree assessors	FireSmart Coordinator	Medium	Two people trained to be assessors	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Complete Emergency Operations Centre training and refreshers	Emergency Management Committee lead	Medium	Conduct training	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Complete Emergency Operations Centre scenario and response drill annually (in collaboration with District of Sooke)	Emergency Management Committee lead and District of Sooke Fire Service	Medium	Complete scenario and response drill	UBCM CRI program and FNESS funds

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
T'Sou-ke Nation	Conduct annual training exercises with T'Sou-ke Nation equipment and on T'Sou-ke Nation land to fight wildfire and provide structural protection	FireSmart Coordinator and District of Sooke Fire Service	Low	One training exercise completed	UBCM CRI program and FNESS funds
District of Sooke	Conduct annual training with mutual aid partners	FireSmart Coordinator	Medium		
District of Sooke	Expand Emergency Operations Centre training for municipal staff	FireSmart Coordinator	Medium		
District of Sooke	Organize a schedule for practice and training with BCWS, using wildland equipment	FireSmart Coordinator	Low		
District of Sooke	Maintain or expand wildfire-specific training for members	FireSmart Coordinator	Low		
Capital Regional District	Support local fire departments to access additional training on future CRI funding applications	FireSmart Coordinator	Low		
Capital Regional District	Support local fire department members to become Local FireSmart Representatives	FireSmart Coordinator	Low		
Capital Regional District	Host a neighbourhood champion training workshop for interested community members.	FireSmart Coordinator	Low		

14. Emergency Planning

Community preparations for a wildfire emergency requires a multi-pronged approach. Individuals and agencies need to be ready to react by developing plans, mutual-aid agreements, resource inventories, training and emergency communication systems. All of these make it possible for a community to respond effectively to the threat of wildfires as a whole.

Introduction:
Wildfires offer significant threats to all communities in British Columbia, although have disproportionately affected Indigenous communities. Wildfire emergency planning consists of preparing community in the event of wildfire to reduce hazards and impacts, to provide guidance and protocol in the event of a wildfire and prepare people to return to community following a wildfire. Individuals and agencies need to be ready to react by developing plans, mutual-aid agreements, resource inventories, training, and emergency communication systems. All of these make it possible for a community to respond effectively to the threat of wildfires.

Previous sections of this Plan provide information about wildfire mitigation and preparedness. If recommendations are funded and implemented these will prepare T'Sou-ke Nation to reduce the potential threats of wildfires and improve the Nation's ability to suppress structural fires and small wildfires that occur on T'Sou-ke Nation lands.

This section does not replace or act instead of a Community Disaster Plan, rather it provides resources and information that can be built into a Plan.

Emergency Response Planning:
T'Sou-ke Nation has a Community Operations Disaster Plan, written in 2016. The Plan established an Emergency Operations Centre and establishes a sequence of events for emergency procedures based on type of emergency (including wildfire). It also includes contact information for local emergency services, provides roles and responsibilities for EOC Team Positions and describes who is assigned to which Team Position. There appears to be a focus on pandemic response (developed for the COVID-19 pandemic) and tsunami with separate booklets in the plan for those. The Plan also provides a home hazard specific response guideline.

Other aspects of emergency response planning are typically included:

- The potential emergencies and disasters within its jurisdiction.
- The relative risk of occurrence and potential impact on people and property.
- Procedures for accessing resources such as personnel, equipment, facilities, and finance.
- Procedures for implementing the plan.
- Procedures to notify affected peoples of an impending disaster.
- Procedures to coordinate the provision of food, clothing, shelter, transportation, and medical services.
- Priorities for restoring essential services provided by the local authority and by other service providers.
- Considerations for transient populations within parks and protected areas, travelers in hotels/motels, and private campgrounds.
- A training and exercise program for staff and agencies assigned responsibilities in the plan.
- A procedure for periodic review and update of the plan.

- Procedures for how guidance and direction is provided to the emergency management organization.

The hazards that may affect T'Sou-ke Nation could include: earthquakes, tsunami, severe weather, and wildfires[24].

Other considerations include those associated with: logistics, operations, and planning.

Logistics

- Base camp locations
- Road, trails (including limitations)
- Utilities
- Communications (radio and frequencies, telephone)

Operations

- Heli-spot, heli-base locations, flight routes, restrictions, water sources
- Control line locations
- Natural barriers
- Safety zone options
- Staging area locations
- Fuel caches
- GPS locations for helicopter access

Planning

- Community base map
- Topographic maps
- Infrared imagery
- Vegetation/fuel maps
- Hazard locations (ground and aerial)
- Archeological/cultural base map
- Endangered species critical habitats
- Sensitive plant populations
- Water sources
- Land status
- Priority zoning
- Access/Egress points and routes

A wildfire response plan should be tested and practiced through tabletop and live simulation exercises:

- Escape Fire Situation Analysis (if appropriate)
- Pre-positioning needs
- Draft delegation of authority
- Management constraints
- Interagency agreements
- Structural protection needs
- Closure procedures

Emergency management requirements are provided in the Community Operations Disaster Plan. An update to the Plan needs to be completed in collaboration with the District of Sooke, with particular reference to the District's Emergency Response Plan as T'Sou-ke Nation's current plan does not extend beyond reserve boundaries. For example, evacuation routes need to expand from the edge of the reserve boundary into Sooke and provide residents with safe routes of egress from the area.

There are many resources available that discuss emergency response and that could be incorporated into an updated plan. For example, the First Nation Wildfire Evacuation Partnership has developed a guide for communities and external agencies: First Nations Wildfire Evacuations (available via UBC Press). This publication provides information about:

- Deciding to evacuate
- Putting a plan in motion
- Troubleshooting transportation

[24] https://www2.gov.bc.ca/gov/content/safety/emergency-management/preparedbc/know-your-hazards/hazard-map

- Taking care of evacuees
- Returning home.

Preparing for an Emergency:
Ideally households are prepared for emergency events and to evacuate on short notice. There are several resources available to assist with emergency preparedness through Emergency Management BC. First Nations Emergency Services Society provides 5 steps to prepare in the event of a wildfire emergency:

- Make an emergency plan
- Make grab and go bags and/or purchase 72-hour emergency kits[25]
- Protect your home (e.g., FireSmart)
- Know your evacuation stages
- Download Prepared BC's Wildfire Preparedness Guide
- T'Sou-ke Nation should determine who provides information about a fire that may impact community and the best way to disseminate that information.
- T'Sou-ke Nation should create an issues briefing note for Leadership to use when addressing questions about a wildfire.

The Emergency Operations Centre needs to train to complete new courses or take refreshers and then complete scenario training drills.

Evacuations:
Salient points of emergency preparedness and response are provided below. Further information is provided in T'Sou-ke Nation's Community Operations Disaster Plan. The information below should be incorporated into a new version of that Plan.

In the event of an emergency that requires evacuation, there are three stages that will be communicated:

- Evacuation alert: Essentially means prepare to leave your home and the area on short notice. This requires families and households to be prepared prior to an emergency.
- Evacuation order: You are at risk and need to leave the area, choosing to remain puts you and others (e.g., emergency responders) in danger.
- Tactical evacuation: These are usually coordinated by RCMP or local police with assistance from other agencies. This happens when a sudden threat to life requires immediate action.
- Evacuation rescind (or all clear): Once the danger has passed people under evacuation order can return home.

Evacuation processes will usually begin with an evacuation alert that will prepare people to be ready for an evacuation. An evacuation order can be provided via a website, on a smart phone app, or by other means. In some cases the evacuation alert and order can be issued very close together. There are distinct risks and dangers associated with not evacuating. These are described by Emergency Management BC:

- Receiving an Evacuation Order can be an emotional experience. You may be reluctant to leave your home and community.
- However, choosing to remain in an area that is under an Evacuation Order puts yourself, your family, and first responders in danger:
    - Evacuation routes can change or become impassible
    - Services, utilities and businesses that you rely on daily may be shut down

[25] For example: https://www.costco.ca/in-case-of---4-person-deluxe-72-hour-emergency-kit.product.100014281.html

    - Help may not be able to reach an evacuated area because of a risk to their own safety or access is blocked
- In other jurisdictions, fatalities have occurred when people chose to remain behind or waited too long to leave.

For example, according to a report from Australia's Bushfire and Natural Hazards Cooperative Research Centre, 31% of the 552 wildfire-related fatalities in that country from 1956 to 2008 were the result of people evacuating too late after an evacuation order was issued. Another 26% of the deaths were related to people attempting to defend properties against an advancing wildfire.

It is useful to collect information about people who cannot evacuate easily, those who are elderly and/or have mobility concerns. In a small community like T'Sou-ke Nation it is possible for administration to keep confidential records on which households may need assistance with evacuations.

Emergency Management BC provides additional information about evacuations, below is a selection relevant to wildfires:

- Terms to know.
- What to do when evacuated.
- Recovery resources.

Part of recovery may be for people to immediately take holiday to recover from the evacuation effort. Some people may need to process strong emotions including fear, anxiety, depression, and loss after being separated from their land and homes. In particular children may need more attention and reassurance.

In the event of power loss there may need to a period required to collectively help clean up, in particular to clean out fridges and freezers. It may be necessary to hold a community celebration starting with an event to welcome people back. It is important to also recognize lasting impacts and also to look back at what worked and what could be improved in the event of future evacuations. There may also need to be significant financial repercussions of returning from evacuation, new homes may need to be built, and people may need financial assistance to support their return. More information about returning home is available through Emergency Management BC.

Recommendations:
The analysis involved with the Emergency Planning Discipline provides the opportunity to make recommendations for T'Sou-ke Nation (Table 13). These are provided along with recommendations from the District of Sooke and the Capital Regional District CWRPs that T'Sou-ke Nation can be completed in collaboration.

Table 13: Recommendations for the Emergency Planning FireSmart Discipline with corresponding priority, key performance indicator (KPI) and suggested funding source.

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
T'Sou-ke Nation	Update T'Sou-ke Nation Community Operations Disaster Plan	Emergency Management Plan Committee Lead	High	Plan prepared	Unknown
T'Sou-ke Nation	Collaborate with the District of Sooke on the Community	Emergency Management Plan Committee	High	Plan prepared	Unknown

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
	Operations Disaster Plan				
T'Sou-ke Nation	Communicate emergency preparedness planning with households	FireSmart Coordinator	High	Resources shared with households	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Gather information about people who may not be able to easily evacuate	FireSmart Coordinator	High	Database created	FireSmart Coordinator salary
T'Sou-ke Nation	Promote the use of the Alertable smart phone app to all residents	Emergency Management Plan Committee Lead	High	At least 75% of residents have app installed	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Purchase 72-hour emergency kits	Emergency Management Plan Committee Lead	High	Kits purchased and distributed to homes	FNESS funds
T'Sou-ke Nation	Ensure fire gate on T'Sou-ke 1 can be opened, check lock, and repair as necessary each year (before fire season).	FireSmart Coordinator	High	Gate and lock checked, repairs completed	FireSmart Coordinator salary
District of Sooke	Maintain or expand the number of community spaces that can be used as cooling centres during extreme heat events and fresh air spaces during poor air quality events.	FireSmart Coordinator			
District of Sooke	Conduct Emergency Operations Centre activation drills annually.	Emergency Management Plan Committee Lead			
District of Sooke	Promote resident registration to the Alertable app notification system.	FireSmart Coordinator			
District of Sooke	Seek funding to a build weather station in Sooke.	FireSmart Coordinator			

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
Capital Regional District	Continue and expand tabletop scenario exercises with the members of the proposed Fire Response and Preparedness Working Group.	FireSmart Coordinator			
Capital Regional District	Continue and expand community information sessions about emergency preparedness and evacuation during a wildfire.	FireSmart Coordinator			
Capital Regional District	Create an emergency preparedness guidebook for local residents.	FireSmart Coordinator			

15. Vegetation Management

The general goal of vegetation management is to reduce the potential wildfire intensity and ember exposure to people, infrastructure, structures and other values through manipulation of both the natural and cultivated vegetation that is within or adjacent to a community. A well-planned vegetation management strategy that is coordinated with development, planning, legislation and emergency response wildfire risk reduction objectives can greatly increase fire suppression effectiveness and reduce damage and losses to structure and infrastructure.

Appropriate management vegetation techniques can greatly influence wildfire behaviour. Techniques can be completed through either FireSmart or with wildfire fuel management. In either instance, mitigations can be applied that reduce hazards in order to improve the probability that homes and other infrastructure survive wildfires or provide longer egress times for evacuation routes.

Mitigations are typically provided on the lands near to homes via FireSmart programs or at a broader scale via wildfire mitigation treatments in the wildland urban interface on lands up to 2 km away from homes and community infrastructure.

FireSmart and similar programs
FireSmart treatments are typically conducted around homes while fuel management treatments are wildfire hazard reductions in the wildland-urban interface. The latter may involve removing vegetation close to homes, but typically will not venture on residential properties, rather it focusses on larger areas.

For FireSmart there are two programs that can influence the vegetation management:

1) FireSmart Canada Neighbourhood Recognition Program. This program requires that a neighbourhood:
    a. Identify a Local FireSmart Representative to work with the community on a wildfire hazard assessment,
    b. Establish a neighbourhood committee,
    c. Create a neighbourhood mitigation plan,
    d. Complete FireSmart work,
    e. Invest a minimum of $2 per capita (including volunteer time), and
    f. Provide an annual report.
2) FireSmart: a Local FireSmart Representative completes a home ignition zone assessment that identified issues within 3 distinct zones around the home, each with a defined radius from the home and outbuildings (Figure 17):
    a. Immediate: 0 - 1.5 m
    b. Intermediate: 1.5 – 10 m
    c. Extended: 10 – 30 m

Figure 17: Home ignition zones under the FireSmart program.

The Home Partners Program can also be used, this is a more in-depth survey and can be used to provide insurance discounts for people that implement actions determined by a Wildfire Mitigation Specialist. The difference being that the FireSmart program through home ignition zone assessments enable home owners to make a start to begin to understand risks to their homes from wildfires and to mitigate issues in short order.

Wildfire Mitigation Treatments

Wildfire treatments are applied at the broader scale based on the results of the wildfire threat assessment work completed under Section 7.4.

The threat assessment resulted in the identification of required treatments in several locations (Table 14). The spatial locations of these are shown in community (Figures 18 and 19).

Table 14: Description of treatment areas.

FTU # and Stratum	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat (Hectares)			Overlapping Values / Treatment Constraints	Treatment Rationale
			Extreme / High	Moderate	Low		
1	1	Remove ladder fuels, prune tree branches within 2 m of ground, prescribe burn		1		Highway egress, adjacent to homes, critical infrastructure	In an area of increased ignition. Is required to maintain egress route and to prevent spread of fire to homes.
2	0.5	Remove ladder fuels, prune tree branches within 2 m of ground, prescribe burn		0.5		Highway egress, adjacent to homes, critical infrastructure	In an area of increased ignition. Is required to maintain egress route and to prevent spread of fire to homes.
3	0.3	Remove Scotch Broom, prune tree branches within 2 m of ground		0.3		Adjacent to homes	Identified as an area containing flammable fuels. Treatment will prevent spread of fire to homes.
4	1.3	Remove ladder fuels, prune branches within 2 m of ground			1.3	Adjacent to homes and critical infrastructure.	Treatment to protect area of high value to T'Sou-ke First Nation.
5	1.2	Remove ladder fuels, prune branches			1.2	Highway egress, adjacent to homes and	Treatment required to maintain egress route

FTU # and Stratum	Total Area (ha)	Treatment Unit Type / Objective	Local Fuel Threat (Hectares)			Overlapping Values / Treatment Constraints	Treatment Rationale
			Extreme / High	Moderate	Low		
		within 2 m of ground				critical infrastructure.	and to prevent spread of fire to homes.
6	0.7	Remove ladder fuels, prune branches within 2 m of ground		0.7		Highway egress, adjacent to homes	Treatment required to maintain egress route and to prevent spread of fire to homes.
7	33.8	Remove ladder fuels, prune branches within 2 m of ground			33.8	Adjacent to homes, critical infrastructure, and egress from the community.	Treatment required to maintain egress route and to prevent spread of fire to homes.

Figure 18: Map of wildfire mitigation areas on TSouke1. Numbers in parentheses correspond to fuel treatment units in Table 12.

Figure 19: Map of wildfire mitigation areas on Siaosun. Numbers in parentheses correspond to fuel treatment units in Table 12.

The wildfire treatment areas will be subject to activities as described below. Detailed descriptions are expected during the development of specific prescriptions, although this is beyond the scope of this plan.

TSouke1 Treatment Areas:

Treatments 1 and 2: These represent areas that are adjacent to Highway 14, the main east-west egress route for T'Sou-ke Nation and the District of Sooke (Figures 20 and 21). Furthermore, T'Sou-ke Nation's gas station is located opposite these treatment areas. As well, T'Sou-ke Nation's new administrative offices are being

constructed opposite these treatment areas. These areas are also adjacent to homes and other buildings on reserve as well as schools in the District of Sooke. Treatments in both areas would include pruning of tree branches below 2 metres and removal of ladder fuels. A screen along the highway could be left to maintain privacy for the occupants of TSouke1. Prescribed burning offers an opportunity to reduce fuel loading and could be used to demonstrate Indigenous use of fire to manage fuels in collaboration with the District of Sooke Fire Service, the Capital Regional District, First Nations Emergency Services Society, and BC Wildfire Service. Following treatment ground fuels would need to be monitored over time and treated again if fuel loading increases.

Figure 20: Treatment area 1, example of fuels.

Figure 21: Treatment area 2, example of fuels.

Treatment 3: This treatment area is a narrow piece of land between houses that is inundated with Scotch broom. Treatments would include broom removal from the ground and then transport to local sites that can accept invasive plant waste. Work after treatment would involve regular monitoring to determine regrowth or ingress of broom and further treatments applied as necessary.

Treatment 4: This treatment area contains land adjacent to homes and critical infrastructure (Figure 22). While it is in an area that has been classified low fire threat, this threat classification is accurate for current conditions. As the climate warms there is a risk that the threat classification may change over time. Therefore, proactive treatment would reduce risks to the community.

The area contains dense deciduous and coniferous saplings. Given the location of the treatment area, a dense screen would be left so as not to change the aesthetic values for the community. Beyond the screen, saplings can be thinned and/or pruned. These could be piled and burned or chipped given the relatively small area associated with the treatment. Ground vegetation would then need to be monitored over time and treated again if fuel loading increases.

Figure 22: Treatment area 4, example of fuels.

Treatments 5 and 6: The treatment areas are adjacent to either Highway 14 or the main egress route out of TSouke1. Both are also adjacent to homes. It is worth noting that treatment area 5 is classified as low fire threat. As the climate warms there is a risk that the threat classification may change over time. Therefore, proactive treatment would reduce risks to the community.

Trees in the area are mostly deciduous, although coniferous trees are growing in the understorey. In these areas, ladder fuels need to be removed, understorey fuels thinned, and trees pruned up to 2 metres. Given the proximity to roads and relatively small size of the treatment areas the ladder fuels and other waste could be chipped or could be piled and burned. Monitoring would need be required over time and vegetation managed as necessary.

Siaosun Treatments

Treatment 7:

The treatment area is adjacent to most of the homes in this part of the community as well as main points of egress for most of the homes. It is worth noting that treatment area 7 is classified as low fire threat. As the

climate warms there is a risk that the threat classification may change over time. Therefore, proactive treatment would reduce risks to the community.

Trees in the area are mostly deciduous with portion of coniferous trees (Figure 23). In most of the area the differentiation between canopy and ground vegetation is distinct. Ladder fuels need to be removed, understorey fuels thinned, and trees pruned up to 2 metres. Waste would need to be piled and burned. Monitoring would need be required over time and vegetation managed as necessary.

Figure 23: Treatment area 7, example of fuels.

Recommendations:
The analysis involved with the Vegetation Management Discipline provides the opportunity to make recommendations for T'Sou-ke Nation (Table 15). These are provided along with recommendations from the District of Sooke and the Capital Regional District CWRPs that T'Sou-ke Nation can be completed in collaboration.

Table 15: Recommendations for the Vegetation Management FireSmart Discipline with corresponding priority, key performance indicator (KPI) and suggested funding source.

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
T’Sou-ke Nation	Develop and implement fuel treatments	FireSmart Coordinator	Medium	Treatments implemented or completed	UBCM CRI program and FNESS funds
T’Sou-ke Nation	Apply for funding to conduct prescribe burning.	FireSmart Coordinator	High	Funding application completed	UBCM CRI program and FNESS funds
T’Sou-ke Nation	Conduct burns in treatment areas 1 and 2.	FireSmart Coordinator (with support from BC Wildfire Service)	Medium	Burns completed	UBCM CRI program and FNESS funds
T’Sou-ke Nation	Complete FireSmart Canada Neighbourhood Recognition Programs for TSouke1 and Siaosun	FireSmart Coordinator	High to Medium	FireSmart Neighbourhood Plan completed for both parts of the community	FireSmart Coordinator funds
District of Sooke	Continue to fund and promote Scotch broom removal events in Sooke	FireSmart Coordinator	Medium		
District of Sooke	Seek funding to waive tipping fees at the transfer station for yard waste and woody debris	FireSmart Coordinator	Medium		

16. Action Plan & Implementation

The CWRP identifies actions that can be taken to further improve wildfire resiliency in communities. The action plan in this CWRP identifies the jurisdiction that has made recommendations, what the recommendation is, who is going to lead it or liaise on the recommendation, provides the priority level, establishes a measurable key performance indicator, and identifies where funding will come from to complete the recommendation (Table 16).

Collectively recommendations support the establishment of a FireSmart Coordinator role to build capacity at T'Sou-ke Nation. Recommendations are specific to T'Sou-ke Nation having been identified through work completed for the CWRP. The District of Sooke and CRD included recommendations within their recent CWRPs that offer opportunities for T'Sou-ke Nation. These are included in the action plan, with the expectation that either the new FireSmart Coordinator will liaise with either the District or the CRD or will follow their lead and ensure that initiatives are brought to T'Sou-ke Nation.

Regular tracking and recording is required to ensure that tasks in the action plan are being completed in a timely manner or to provide amended timelines. This table will be amended so that progress and completed actions can be recorded. Columns can be added to provide comments, feedback, and to record the date comments are made and actions completed.

Progress on the action plan items will be monitored, initially on a monthly basis, and then every six months with the CFRC and FireSmart Coordinator. The progress will be tracked as described in the paragraph above. The entire plan will be revisited in 5 years and updated.

Table 16: Action plan of recommendations in FireSmart disciplines analysis

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
FireSmart Discipline: Education					
T'Sou-ke Nation	Create and fund a FireSmart Coordinator position	T'Sou-ke Nation Administration	High	Create position	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Train two people to become Local FireSmart Representatives	T'Sou-ke Nation Administration	High	Two people to take training	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Complete Home Ignition Zone Assessments	T'Sou-ke Nation Administration	High to Medium	20 HIZ assessments complete	FNESS funds
T'Sou-ke Nation	Complete home fire safety – self-inspection checklists	FireSmart Coordinator	High to Medium	20 checklists complete	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Use FireSmartBC teaching resources in Sum-SHA-thut Lellum PreK program	T'Sou-ke Nation early childhood educator and T'Sou-ke Nation Administration	Medium	Educational resources included in curriculum	UBCM CRI program and FNESS funds

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
T'Sou-ke Nation	Promote FireSmart activities in T'Sou-ke Nation lands and share resources promoted by District of Sooke	FireSmart Coordinator	High	Completed through	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Continue to provide information via T'Sou-ke Nation's website, newsletter, and others from provincial, municipal, and other sources to citizens of T'Sou-ke Nation	FireSmart Coordinator	High	Ongoing	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Organize community clean up days	FireSmart Coordinator	Medium	Clean up day completed	FNESS funding and Earth Day funds through treaty association
T'Sou-ke Nation	Circulate promotional FireSmart material	FireSmart Coordinator	Medium	Ongoing	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Share the CWRP on our website	T'Sou-ke Nation Administration	High	CWRP on website	FireSmart Coordinator salary
T'Sou-ke Nation	Provide open access to a computer for citizens to take FireSmart101	T'Sou-ke Nation Administration	High to Low	10 people have taken FireSmart101	FireSmart Coordinator salary
T'Sou-ke Nation	Erect signage banning campfires on beachfronts	T'Sou-ke Nation Administration	High	Beachfront signs erected	UBCM CRI program and FNESS funds
District of Sooke	Promote information about adverse impacts of yard waste dumping	FireSmart Coordinator	High to Low		
District of Sooke	Host all-hazard emergency preparedness workshops for residents, including T'Sou-ke Nation.	FireSmart Coordinator	Medium		
Capital Regional District	Promote FireSmart Neighbourhood Planning in	FireSmart Coordinator	Low		

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
	neighbourhoods at relative risk.				
FireSmart Discipline: Legislation and Planning					
T'Sou-ke Nation	Incorporate FireSmart and other wildfire mitigation language into future law development	T'Sou-ke Nation Administration and legal counsel	Medium	Ongoing	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Strengthen and update the Backyard Burning Regulation	T'Sou-ke Nation Administration and legal counsel	High	Regulation updated	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Work with the CRD to ensure T'Sou-ke Nation citizens are included in the program to reduce or eliminate green waste tipping fees at Hartland landfill	FireSmart Coordinator	Low	Confirmation from CRD that the program applies to T'Sou-ke Nation citizens	Included in FireSmart Coordinator salary
FireSmart Discipline: Development Considerations					
T'Sou-ke Nation	Incorporate FireSmart and other wildfire mitigation language into future law development	T'Sou-ke Nation Administration and legal counsel	Medium	Ongoing	UBCM CRI program and FNESS funds
T'Sou-ke Nation	When designing future development, incorporate FireSmart Disciplines	T'Sou-ke Nation Administration	Medium	Ongoing	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Complete asbestos inspections on homes	FireSmart Coordinator	High	20 homes inspected	Determine funding source
T'Sou-ke Nation	Complete FireSmart Canada Neighbourhood Recognition Programs for TSouke1 and Siaosun	FireSmart Coordinator	High	Both communities recognized under the Program	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Determine opportunities to work with CRD on wildfire risk in multi-owner environments	FireSmart Coordinator	Medium	Develop relationship	UBCM CRI program
CRD	Improve understanding of	CRD	Medium		

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
	wildfire risk in multi-ownership environments				
FireSmart Discipline: Interagency Cooperation					
T'Sou-ke Nation	Update the Fire Service Agreement between T'Sou-ke Nation and District of Sooke	T'Sou-ke Nation Administration and District of Sooke	High	Agreement completed	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Take part in regular meetings with BC Wildfire Service during fire season to understand fire situation on South Island.	FireSmart Coordinator	High	Regularly attends meetings	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Purchase equipment that can be stored in both communities to be utilised in the event of a wildfire	FireSmart Coordinator	High	Equipment purchased	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Attend the Wildfire Resiliency and Training Summit	FireSmart Coordinator and other CFRC staff (up to 2 people)	Medium	2 people attend Summit	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Continue regular meetings of T'Sou-ke Nation's Community FireSmart Resiliency Committee	T'Sou-ke Nation Administration with District of Sooke, Min. of Emergency Mgmt and Climate Readiness, and BC Wildfire Service	High	Hold meetings	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Take part in the Interagency Fire Response and Preparedness Working Group	FireSmart Coordinator	High	Contact CRD Attend meetings	UBCM CRI program and FNESS funds
District of Sooke	Establish a regular schedule of meetings for the District of Sooke Community FireSmart Resiliency Committee.	Lands Manager (alternative representative: FireSmart Coordinator)	Medium		

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
CRD	Initiate a region-wide Interagency Fire Response and Preparedness Working Group	CRD Protective Services	High		
FireSmart Discipline: Cross-Training					
T'Sou-ke Nation	Train two to four people on each reserve in structural and wildland fire fighting	FireSmart Coordinator	High	Four people trained in S-100, S-185, S231, task force leader, and Structure Protection Group Supervisor	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Train two people to become Local FireSmart Representatives	FireSmart Coordinator	High	Two people trained	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Reach out to Capital Regional District to determine how they can support T'Sou-ke Nation with these recommendations	FireSmart Coordinator	High	Outreach completed	FireSmart Coordinator salary
T'Sou-ke Nation	Two to four people to train with District of Sooke Fire Service	FireSmart Coordinator	Medium	Two to four people training with District of Sooke Fire Service	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Train two people to be danger tree assessors	FireSmart Coordinator	Medium	Two people trained to be assessors	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Train two people to become Home Partners Mitigation Specialists	FireSmart Coordinator	Low	Two people trained	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Complete Emergency Operations Centre training and refreshers	Emergency Management Committee lead	Medium	Conduct training	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Complete Emergency Operations Centre scenario and response drill annually (in	Emergency Management Committee lead and District of Sooke Fire Service	Medium	Complete scenario and response drill	UBCM CRI program and FNESS funds

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
	collaboration with District of Sooke)				
T'Sou-ke Nation	Conduct annual training exercises with T'Sou-ke Nation equipment and on T'Sou-ke Nation land to fight wildfire and provide structural protection	FireSmart Coordinator and District of Sooke Fire Service	Low	One training exercise completed	UBCM CRI program and FNESS funds
District of Sooke	Conduct annual training with mutual aid partners	FireSmart Coordinator	Medium		
District of Sooke	Expand Emergency Operations Centre training for municipal staff	FireSmart Coordinator	Medium		
District of Sooke	Organize a schedule for practice and training with BCWS, using wildland equipment	FireSmart Coordinator	Low		
District of Sooke	Maintain or expand wildfire-specific training for members	FireSmart Coordinator	Low		
Capital Regional District	Support local fire departments to access additional training on future CRI funding applications	FireSmart Coordinator	Low		
Capital Regional District	Support local fire department members to become Local FireSmart Representatives	FireSmart Coordinator	Low		
Capital Regional District	Host a neighbourhood champion training workshop for interested community members.	FireSmart Coordinator	Low		
FireSmart Discipline: Emergency Planning					
T'Sou-ke Nation	Update T'Sou-ke Nation Community Operations Disaster Plan	Emergency Management Plan Committee Lead	High	Plan prepared	Unknown

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
T'Sou-ke Nation	Collaborate with the District of Sooke on the Community Operations Disaster Plan	Emergency Management Plan Committee	High	Plan prepared	Unknown
T'Sou-ke Nation	Communicate emergency preparedness planning with households	FireSmart Coordinator	High	Resources shared with households	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Gather information about people who may not be able to easily evacuate	FireSmart Coordinator	High	Database created	FireSmart Coordinator salary
T'Sou-ke Nation	Promote the use of the Alertable smart phone app to all residents	Emergency Management Plan Committee Lead	High	At least 75% of residents have app installed	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Purchase 72 hour emergency kits	Emergency Management Plan Committee Lead	High	Kits purchased and distributed to homes	FNESS funds
T'Sou-ke Nation	Ensure fire gate on T'Sou-ke 1 can be opened, check lock, and repair as necessary each year (before fire season).	FireSmart Coordinator	High	Gate and lock checked, repairs completed	FireSmart Coordinator salary
District of Sooke	Maintain or expand the number of community spaces that can be used as cooling centres during extreme heat events and fresh air spaces during poor air quality events.	FireSmart Coordinator			
District of Sooke	Conduct Emergency Operations Centre activation drills annually.	Emergency Management Plan Committee Lead			
District of Sooke	Promote resident registration to the Alertable app notification system.	FireSmart Coordinator			
District of Sooke	Seek funding to a build weather station in Sooke.	FireSmart Coordinator			

Jurisdiction	Recommendation	Lead	Priority	KPI	Funding
Capital Regional District	Continue and expand tabletop scenario exercises with the members of the proposed Fire Response and Preparedness Working Group.	FireSmart Coordinator			
Capital Regional District	Continue and expand community information sessions about emergency preparedness and evacuation during a wildfire.	FireSmart Coordinator			
Capital Regional District	Create an emergency preparedness guidebook for local residents.	FireSmart Coordinator			
FireSmart Discipline: Vegetation Management					
T'Sou-ke Nation	Develop and implement fuel treatments	FireSmart Coordinator	Medium	Treatments implemented or completed	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Complete FireSmart Canada Neighbourhood Recognition Programs for TSouke1 and Siaosun	FireSmart Coordinator	High to Medium	FireSmart Neighbourhood Plan completed for both parts of the community	FireSmart Coordinator funds
T'Sou-ke Nation	Apply for funding to conduct prescribe burning.	FireSmart Coordinator	High	Funding application completed	UBCM CRI program and FNESS funds
T'Sou-ke Nation	Conduct burns in treatment areas 1 and 2.	FireSmart Coordinator (with support from BC Wildfire Service)	Medium	Burns completed	UBCM CRI program and FNESS funds
District of Sooke	Continue to fund and promote Scotch broom removal events in Sooke	FireSmart Coordinator	Medium		
District of Sooke	Seek funding to waive tipping fees at the transfer station for yard waste and woody debris	FireSmart Coordinator	Medium		

17. Appendices

Appendix 1: Glossary of Terms

The terms provided below represent commonly used terms and their meaning when referring to wildfire. These terms have been used throughout this CWRP or will be commonly used by media and emergency operations when dealing with wildfires.

Aspect – The direction a slope is facing.

Fire danger – A general term used to express an assessment of both fixed and changeable factors of the fire environment that determine the ease of ignition, rate of spread, difficulty of control, and fire impact.

Fire hazard –

1. the risk of fire starting, and
2. the hazard associated with an industrial activity; and
3. if a fire were to start,

- the volatility of the fire's behaviour,
- the difficulty of controlling the fire, and
- the potential threat to values at risk

Fire risk – Fire risk is a term that combines the probability of fire occurrence with the expected impacts from a fire. It can be defined quantitatively in economic terms or used more generally in a comparative sense; for example, given a similar probability of fire occurrence and spread between different landscapes; *the fire risk at X is greater than the fire risk in Y*.

Although the impacts of fire can be positive, such as when considering the ecological effects or fuel reduction benefits of a wildfire, this term is generally used to suggest negative consequences of fire.

Fire season – The period(s) of the year during which fires are likely to start, spread, and damage values-at-risk sufficient to warrant organized fire suppression; a period of the year set out and commonly referred to in fire prevention legislation.

Fuel - Fuel is any organic matter, living or dead, in the ground, on the ground, or in the air that can ignite and burn.

- **Available fuel** - The quantity of fuel (in a particular fuel type) that would actually be consumed under specified burning conditions.
- **Fine fuels** - Fuels that ignite readily and are consumed rapidly by fire (e.g. cured grass, fallen leaves, needles, small twigs). Dead, fine fuels also dry very quickly.
- **Ground fuels** - All combustible materials below the litter layer of the forest floor that normally support smouldering or glowing combustion associated with ground fires (e.g. duff, roots, buried punky wood, peat).
- **Ladder fuels** - Fuels that provide vertical continuity between the surface fuels and crown fuels in a forest stand, thus contributing to the ease of torching and crowning (e.g. tall shrubs, small-sized trees, bark flakes, tree lichens).

- **Medium fuels** - Fuels too large to be ignited until after the leading edge of the fire front passes, but small enough to be completely consumed.
- **Surface fuels** - All combustible materials lying above the duff layer between the ground and ladder fuels that are responsible for propagating surface fires (e.g. litter, herbaceous vegetation, low and medium shrubs, tree seedlings, stumps, downed-dead roundwood).

Fuel break – a barrier or a change in fuel type or condition (to one that is less flammable than that surrounding it), or a strip of land that has been modified or cleared to prevent fire spread. In the event of fire, may serve as a control line from which to carry out suppression operations.

Fuel management – Fuel management is the modification of forest structure to reduce forest fuel accumulations available to burn in a wildfire. The main goal of fuel management is improving public safety. This may include treatments such as thinning, spacing and pruning trees, and removal of needles and woody debris from the forest floor.

Fuel type – An identifiable association of fuel elements of distinctive species, form, size, arrangement, and continuity that will exhibit characteristic fire behaviour under defined burning conditions.

Ignition – The beginning of flame production or smouldering combustion; the starting of a fire.

Initial attack – The action taken to halt the spread or potential spread of a fire by the first firefighting personnel to arrive at the fire.

Interface fire – Fires that have the potential to involve buildings and forest fuel or vegetation simultaneously.

Litter – The uppermost part of the forest floor consisting of freshly fallen or slightly decomposed organic materials.

Mineral soil – The layer of the soil profile immediately below the litter and duff. Mineral soil contains very little combustible material.

Mop-up – The act of extinguishing a fire after it has been brought under control.

Prescribed fire – The knowledgeable and controlled application of fire to a specific area to accomplish planned resource management objectives. These fires are managed in such a way as to minimize the emission of smoke and maximize the benefits to the site.

Rate of spread (ROS) – The speed at which a fire extends its horizontal dimensions, expressed in terms of distance per unit of time, usually metres per minute (m/min) and kilometres per hour (km/h). Generally thought of in terms of a fire's forward movement or head fire rate of spread, but also applicable to backfire and flank fire ROS.

Relative humidity (RH) – The ratio of the amount of moisture in the air to the total amount of moisture the air can hold at a given temperature and atmospheric pressure. This amount of moisture in the air affects the level of moisture in the fuels. Dry air (low relative humidity) will tend to dry out fine fuels, while moist air (higher relative humidity) will tend to add moisture to fine fuels.

Risk from wildfire – The exposure to the chance of loss from wildfire. For example*, there is a 25% chance that a value at risk will be destroyed by a wildfire sometime in the next 50 years*. Risk can also be calculated by multiplying damage (or loss) by uncertainty.

Slash – Debris left as a result of forest and other vegetation being altered by forestry practices and other land use activities (e.g. timber harvesting, thinning and pruning, road construction, seismic line clearing). Slash includes material such as logs, splinters or chips, tree branches and tops, uprooted stumps, and broken or uprooted trees and shrubs.

Smoke management – Scheduling and conducting a prescribed burning program under conditions that will minimize the adverse impacts of the resulting smoke production in smoke sensitive areas.

Spot fire – A spot fire is one that is less than 0.01 hectares (10 metres by 10 metres).

Spotting – A wildfire produces burning embers called firebrands. These firebrands are carried by the surface wind, a fire whirl and/or convection column that fall beyond the main fire perimeter and result in spot fires.

Values-at-risk – The specific or collective set of natural resources and man-made improvements/ developments that have measurable or intrinsic worth and that could of may be destroyed or otherwise altered by fire in any given area.

Wildfire – An unplanned fire - including unauthorized human-caused fires - occurring on forest or range lands, burning forest vegetation, grass, brush, scrub, peat lands, or a prescribed fire set under regulation which spreads beyond the area authorized for burning.

Wildland – An area in which development is essentially non-existent, except for roads, railroads, power lines, and similar transportation facilities. Structures, if any, are widely scattered.

Wildland urban interface – The wildland urban interface (WUI) is any area where combustible forest fuel is found adjacent to homes, farm structures or other outbuildings. This may occur at the interface, where development and forest fuel (vegetation) meet at a well-defined boundary, or in the intermix, where development and forest fuel intermingle with no clearly defined boundary.

These terms have been adapted from the BC Wildfire Service glossary of terms.

Appendix 2: CFRC Project Charter

-DRAFT-

T’Sou-ke Nation
Community Wildfire Resiliency Plan – Project Charter

Purpose:
The project charter will provide an overview of the community wildfire resilience plan (CWRP) application and project. The project charter provides the steps that will be undertaken by T’Sou-ke Nation to complete a community wildfire resilience plan for reserve lands.

Project Charter Overview:
This project charter will help guide the planning process and ensure the CWRP meets its objectives. It follows the recommended topics provided in the CWRP Instruction Guide. It is of utmost importance that this project results in a plan that encompasses T’Sou-ke Nation values and provides realistic and achievable recommendations.

Project Members:

Project members will guide and direct a team that will complete field and office-based work to meet the purpose outlined above. Members will consist of:

- T’Sou-ke Nation Emergency Management Plan Committee
- Project Leads – Sam Coggins, RPF (Two Eyed Seeing Consulting CCC Inc) and Larry Underwood (Forestry and Environment, T’Sou-ke Nation)
- Other agencies: First Nations Emergency Services Society (FNESS) and District of Sooke (DOS)
- BC Wildfire Service and Capital Regional District will join meetings on request but have had to decline to join the CFRC.

The project will establish a Community FireSmart Resilience Committee, consisting of T’Sou-ke Nation staff, consultants, and representatives from agencies in and around T’Sou-ke Nation territory.

Member Roles and Responsibilities:

Team Position / Role	Name	Affiliation	Responsibilities
Co-Project Lead/CFRC Member	Larry Underwood	T’Sou-ke Nation	

Team Position / Role	Name	Affiliation	Responsibilities
Co-Project Lead/Chairperson	Sam Coggins, RPF	Two Eyed Seeing Consulting CCC Inc	Provide advice and support to lead the committee through the CWRP process
CFRC Member (Internal)	Rose Dumont	T'Sou-ke Nation	Provide guidance and direction to Project Leads
CFRC Member (Internal)	Michelle Thut	T'Sou-ke Nation	
CFRC Member (Internal)	Sandra Sprinkling	T'Sou-ke Nation	
CFRC Member (Internal)	Frank Sutherland	T'Sou-ke Nation	
CFRC Member (Internal)	Debbie Ridley	T'Sou-ke Nation	
CFRC Member (Internal)	John Warren	T'Sou-ke Nation	
CFRC Member (External)	Ashlene Aktarian	DOS	Provide linkage to District of Sooke CWRP
CFRC Member (External)	Cathy Mackenzie	FNESS	Provide guidance and oversight on CWRP

CFRC Chairperson Roles and Responsibilities:

- Lead meetings, present information, and provide updates from the CFRC
- Provide advice to the CFRC members on the direction of the plan
- Provide information about tasks to undertake and progress reports
- Receive advice from the CFRC members and incorporate into plan, where necessary
- Prepare the draft CWRP

CFRC Member Roles and Responsibilities:

The CFRC members will contribute information, expertise, and advice to guide and direct the CWRP from concept to finalization. By doing so the CWRP will be informed by the best available information from citizens and staff of T'Sou-ke First Nation and from adjacent governments. FNESS' role will ensure the plan is completed to the standards required by the funding administrator and will be crucial to the plan approval.
In summary the CFRC roles and responsibilities are:

- Advise on tasks to be undertaken by the project leads
- Provide information to inform plan
- Review the completed CWRP draft
- Authorize final version of the CWRP

Additional roles will be assumed by Amanda Mobley (Lands and Referrals Clerk, T'Sou-ke Nation) and Pearl Penner (Two Eyed Seeing Consulting CCC Inc). Amanda will coordinate some of the activities throughout the life of the project and Pearl will assist with writing and research.

Plan Audiences:

Internal Audience

The internal audience will consist of T'Sou-ke Nation Leadership and staff who implement plan recommendations as well as FNESS and District of Sooke. In return people in these groups will receive a table of recommendations resulting from the work completed during this project. Groups will also understand to a greater extent the wildfire threat on reserve and in the adjacent District of Sooke (through the District's CWRP).

External Audience

The external audience will, most importantly, include the T'Sou-ke Nation community. It will also include additional agencies to those listed in the Internal Audience. Additional agencies will include: Capital Regional District and BCWS. The external audiences will learn the extent of wildfire threat facing T'Sou-ke Nation, the challenges facing an urban First Nation regarding emergency response, and initiate learning opportunities for FireSmart.

Goals:

The overarching goal of the CWRP is to identify priority activities that will lead to increased wildfire resilience for T'Sou-ke Nation reserve lands and infrastructure, and to reduce the risk and hazards to catastrophic wildfires that could negatively impact T'Sou-ke Nation. Also, the plan will serve as a resource to community in the event of a wildfire (in conjunction with T'Sou-ke Nation's emergency management plan).

Seven FireSmart disciplines have been identified that if followed will achieve the overarching goal. These are:

1. Education: Promote FireSmart activities, provide educational resources, and basic wildfire principles. Discuss these in the context of reducing hazard and risk to values in community and create buy-in for future hazard reduction treatments.
2. Legislation and Planning: Describe applicable federal, provincial, and T'Sou-ke Nation legislation, regulations, and bylaws that address wildfire management.
3. Development Considerations: Describe in broad terms general issues that may impact the survivability of infrastructure (e.g., homes, offices, and critical infrastructure) on T'Sou-ke Nation lands.
4. Interagency Cooperation: Provide description of agencies that could provide support and are open to collaboration to increase wildfire resiliency. Provide contact information in event of a wildfire (e.g., local fire departments and BCWS).
5. Cross-Training: To identify training opportunities to ensure that individuals at T'Sou-ke Nation can be trained to fight structural and wildland fires, and to build capacity in community for FireSmart.
6. Emergency Planning: Build on and/or develop emergency planning strategies from T'Sou-ke Nation's emergency management plan to tackle wildfires in the T'Sou-ke Nation community (e.g., pre-incident planning). Given the small extent of lands compared to surrounding jurisdictions it will be especially important to ensure emergency planning is collaborative with and complementary to District of Sooke and Capital Regional District.

7. Vegetation Management: Identify vegetation management strategies to reduce the potential of wildfire intensity and ember exposure to people, infrastructure, structures, and other values. This may be achieved by manipulating vegetation to decrease wildfire hazard, which is completed through a vegetation management strategy that considers wildfire.

Scope:

The CWRP will focus on T'Sou-ke Nation reserve lands at T'Souke 1 and Siaosun (IR#2). The District of Sooke has recently written a draft CWRP that encompasses all surrounding lands to T'Sou-ke Nation. The T'Sou-ke Nation CWRP will focus on the community lands and will be written to complement and collaborate with the District's plan.
BCWS and FNESS will be consulted when and where is necessary as the plan activities progress, with a goal to ease a draft plan through the approval process.

Considerations:

Community consultation will be imperative to the success of the plan. To ensure the plan is successful T'Sou-ke Nation citizens need to be included throughout. Initial activities will be undertaken to discuss possibilities for wildfire management and to introduce the concepts of the CWRP and of FireSmart. Community will be provided with the plan for review prior to submission. These activities will be necessary to raise awareness of work being undertaken by T'Sou-ke Nation Administration, generate confidence in future fuel reduction treatments, improve knowledge of wildfire hazard and risk reductions, and overall achieve the goal of increasing wildfire resiliency on T'Sou-ke Nation Lands.

Plans:

Key plans to review will include (but are not limited to):

1. T'Sou-ke Nation Emergency Management Plan
2. T'Sou-ke Nation Comprehensive Community Plan
3. T'Sou-ke Nation Land Use Plan
4. DOS draft CWRP
5. Capital Regional District CWRP

Budget:

The project is funded by the Community Resilience Investment fund, administered by the Union of BC Municipalities. It is separated into two distinct parts: 1) FireSmart Activities, and 2) CWRP. The former provides funding for community meetings and training to support T'Sou-ke Nation staff. The latter is provided to draft the CWRP. Funding requested through the fund is:

6. FireSmart Activities: $28,739.05
7. CWRP: $33,020.00

Total funding: $61,759.05

Schedule:

Key activities for the T'Sou-ke Nation CWRP project are (in accordance with the CWRP funding application):

Activity	Date
FireSmart Activities:	
1. Hold community gathering to discuss wildfire management with fire ecologist	Jul 2022
2. Purchase FireSmart resources	Jan 2023
3. Hold community meeting about CWRP and FireSmart	Mar 2023
4. Hold CFRC Meetings: 1. Meeting 1: Introduce project 2. Meeting 2: Project charter overview 3. Meeting 3: CWRP field work update 4. Meeting 4: CWRP draft 5. Meeting 5: CWRP draft 6. Meeting 6: CWRP draft plan review and approval	 Jun 2023 Nov 2023 Mar 2024 May 2024 Jul 2024 Sep 2024
5. FireSmartBC Conference and WUI Symposium	May 2024
6. Local FireSmart Representative Training and FireSmart 101	Nov 2023
New CWRP:	
1. Planning Process	Dec 2023
2. FireSmart Disciplines	Jul 2024
3. Wildfire Risk Assessment (eligible WUI only)	Mar 2024
4. Fuel Management Treatment Unit identification (eligible WUI only)	Jun 2024
5. Template Development	Sep 2024

The project leads will use the CWRP template and CWRP Instruction Guide provided by the Community Resiliency Investment (CRI) to complete T'Sou-ke Nation's CWRP.

Further description of the tasks described is provided below:

FireSmart Activities:

1: Community Gathering:

a. Retain a certified fire ecologist to meet with community to discuss potential wildfire treatments and raise awareness of "good" fire.
b. Hold community gathering with CFRC and T'Sou-ke Nation citizens.

2: Purchase FireSmart Resources:

a. Purchase t-shirts, guidebooks, pamphlets, etc., from FireSmart website.
b. Required prior to community meeting.

3: Hold Community Meeting:

a. Review concepts of wildfire management.
b. Review CWRP project
c. Introduce concept of FireSmart

4: Hold Six CFRC Meetings:

a. Introduce project and review the Community Resiliency Investment application.
b. Provide draft project charter.
c. Provide an overview of field work completed and results.
d. Provide update on draft CWRP completed thus far.
e. Provide update on draft CWRP completed thus far.
f. Review final plan with committee, seek approval for draft CWRP prior to submission.

5: FireSmartBC Conference and WUI Symposium:

a. Send T'Sou-ke Nation staff member to conference in Prince George

6: Provide Training:

a. Local FireSmart Representative training for 2 T'Sou-ke Nation staff
b. Two staff members to complete FireSmart 101 and Wildfire Risk Reduction training.

New CWRP:

1. Planning Process:

a. Create project charter and determine plan audience.
b. Identify and collate plans.
c. Determine and download data sets.
d. Create and invite members to CFRC (including entities external to T'Sou-ke Nation).
e. Determine final plan format and distribution strategies.

2. FireSmart Disciplines (see previous sections of project charter for fulsome description):

a. Provide overview of FireSmart, challenges and opportunities, potential action to be taken, and provide resources and information.
b. Education: provide resources to increase awareness of wildfire management.
c. Legislation: Describe legal framework.
d. Development Considerations: Describe community planning and land use planning in the context of wildfire management.
e. Interagency Cooperation: Describe agencies involved in emergency management.
f. Cross-Training: Determine training already provided and undertaken, determine gaps.
g. Emergency Planning: As per T'Sou-ke Nation's Emergency Response Plan, describe incident command hierarchy (including District of Sooke and Capital Regional District as well as BCWS), pre-incident planning, and provide available infrastructure to support emergency actions.
h. Vegetation Management: Describe how vegetation will be managed to reduce wildfire hazard and risk reduction.

3. Wildfire Risk Assessment:

a. Describe wildfire terminology.
b. Obtain weather data information and create descriptions of wind roses, monthly temperature averages, historical temperature summaries, and precipitation tables.
c. Describe climate of the area, topography, slope, elevation, orientation, aspect, wind direction, and significant features.
d. Provide overview of fire behaviour, fuel types (as per Canadian Fire Behaviour Prediction System), natural disturbance type, and fire return interval.
e. Describe fire history: gather historical information from BCWS.
f. Discuss the influence of climate change on fire behaviour.
g. Create maps of fuel types from Provincial Strategic Threat Analysis data.
h. Determine fuel types on aerial imagery (e.g., in Google Earth).
i. Complete ground verification/confirmation using Wildfire Threat Assessment.
j. If needed, refine the Provincial Strategic Threat Analysis data.

4. Fuel Management Treatment Unit Identification:

a. Determine treatment areas during field reconnaissance and delineate in GIS.
b. Generate a map of treatment polygons.
c. Consult with District of Sooke to determine wildfire treatments on adjacent lands.
d. Generate general treatment descriptions.

5. Template Development:

a. Complete cover page, tables of: contents, figures, tables.
b. Write executive summary.
c. Complete acknowledgments and acronyms.
d. Provide overview section of document to serve as a roadmap for easy navigation.
e. Describe relationship to other plans.
f. Describe T’Sou-ke Nation community.
g. Describe values at risk.
h. Describe critical infrastructure.
i. Write up action plan.
j. Provide table of recommendations.
k. Compile appendices.
l. Format plan.
m. Compile GIS data.
n. Submit to CFRC for review.
o. Submit to T’Sou-ke Nation community and FNESS for review, complete edits.
p. Submit final document and GIS data.

Appendix 3: Local Wildfire Risk Assessment

The Local Wildfire Threat Assessment results that are described in in this Plan were obtained through a process consisting of the following steps:

1. Updating fuel typing through in-situ verification (field work) and orthophotography.
2. Updating structural data using in-situ verification, spatial data, and orthophotography.
3. In-situ observations of wildland fuels and completion of Wildfire Threat Assessment worksheets.
4. Wildfire threat spatial analysis to produce mapping and statistics described in Section **Error! R eference source not found.**4, using updated fuel typing, updated structural data, and Wildfire Threat Assessment worksheet results.

This appendix provides methodological information for each of the above steps to produce the Wildfire Threat Assessment, as follows:

- Further details on fuel typing update methodology are provided in Appendix 4: Fuel Typing Methodology and Limitations.
- Wildfire Risk Assessment plot worksheets are provided in Appendix 7: Wildfire Threat Assessment Worksheets and Photos.
- Wildfire threat spatial analysis methodology to produce results reported in Section 7.4 is detailed in the following sections:
    - Appendix 5: Wildfire Fire Threat Spatial Analysis Methodology, and
    - Appendix 6: WUI Risk Spatial Analysis Methodology.

Appendix 4: Fuel Typing Methodology and Limitations

The Canadian Forest Fire Behaviour Prediction System outlines five major fuel groups and sixteen fuel types based on characteristic fire behaviour under defined conditions.[26] Fuel typing is recognized as a blend of art and science. Although a subjective process, the most appropriate fuel type was assigned based on research, experience, and practical knowledge; this system has been used within BC, with continual improvement and refinement, for over 20 years.[27]

There are significant limitations with the fuel typing system which should be recognized:

1. The fuel typing system is designed to describe fuels which sometimes do not occur within the area of interest.
2. Fuel types cannot fully, and accurately capture the natural variability within a polygon.
3. The data used to create initial fuel types, also has limitations.[27]

Given these limitations, the following should be considered when using fuel type maps and information, to plan community wildfire resiliency projects:

- Fuel typing further from the developed areas of the study generally has a lower confidence.
- Fuel typing should be used as a starting point for more detailed assessments and as an indicator of overall wildfire risk, not as an operational, or site-level, assessment.
- Forested ecosystems are dynamic and change over time: fuels accumulate, stands fill in with regeneration, and forest health outbreaks occur.

Regular monitoring of fuel types and wildfire risk assessment should occur every 5-10 years to determine the need for updated assessments.

[26] Forestry Canada Fire Danger Group. (1992). *Development and Structure of the Canadian Forest Fire Behavior Prediction System: Information Report ST-X-3.*

[27] Perrakis, D.B., Eade G., and Hicks, D. (2018). Natural Resources Canada. Canadian Forest Service. *British Columbia Wildfire Fuel Typing and Fuel Type Layer Description* 2018 Version.

Appendix 5: Wildfire Fire Threat Spatial Analysis Methodology

Source Data

As part of the CWRP process, spatial data submissions are required to meet the defined standards in the Program and Application Guide. Proponents completing a CWRP can obtain open-source BC Wildfire datasets, including Provincial Strategic Threat Analysis (PSTA) datasets from the British Columbia Data Catalogue. Wildfire spatial datasets obtained through the BC Open Data Catalogue used in the development of the CWRP include, but are not limited to:

- PSTA Spotting Impact
- PSTA Fire Density
- PSTA Fire Threat Rating
- PSTA Lighting Fire Density
- PSTA Human Fire Density
- Head Fire Intensity
- WUI Human Interface Buffer (2 km buffer from structure point data)
- Wildland Urban Interface Risk Class
- Current Fire Polygons
- Current Fire Locations
- Historical Fire Perimeters
- Historical Fire Incident Locations
- Historical Fire Burn Severity
- Fuel Type

As part of the program, proponents completing a CWRP are provided with a supplementary Structure point dataset from BC Wildfire Service.

The provided PSTA data does not transfer directly into the geodatabase for submission, and several PSTA feature classes require extensive updating or correction. In addition, the Wildfire Threat determined in the PSTA is fundamentally different than the localized Wildfire Threat feature class that is included in the Local Wildfire Theat map required for project submission. The Wildfire Threat in the PSTA is based on provincial scale inputs - fire density, spotting impact; and head fire intensity; while the spatial submission Wildfire Threat is based on the components of the Wildland Urban Interface Threat Assessment Worksheet.

Spatial Analysis

Not all attributes on the WUI Threat Assessment form can be determined using a GIS analysis on a landscape/polygon level. To emulate as closely as possible the threat categorization that would be determined using the Threat Assessment form, the variables in Table 17 were used as the basis for building the analytical model. The features chosen are those that are spatially explicit, available from existing and reliable spatial data or field data, and able to be confidently extrapolated to large polygons.

Table 17. Description of variables used in spatial analysis for WUI wildfire risk assessment

WUI Threat Sheet Attribute	Used in Analysis?	Comment
Fuel Subcomponent		
Duff depth and Moisture Regime	No	Many of these attributes assumed by using ‘fuel type’ as a component of the Fire Threat analysis. Most of these
Surface Fuel continuity	No	
Vegetation Fuel Composition	No	
Fine Woody Debris Continuity	No	
	No	

WUI Threat Sheet Attribute	Used in Analysis?	Comment
Live and Dead Coniferous Crown Closure	No	components are not easily extrapolated to a landscape or polygon scale, or the data available to estimate over large areas (VRI) is unreliable.
Live and Dead Conifer Crown Base height	No	
Live and Dead suppressed and Understory Conifers	No	
Forest health	No	
Continuous forest/slash cover within 2 km	No	
Weather Subcomponent		
BEC zone	Yes	Although included, these are broad classifications, meaning most polygons in the Study Area will have the same value
Historical weather fire occurrence	Yes	
Topography Subcomponent		
Aspect	Yes	
Slope	Yes	Elevation model was used to determine slope.
Terrain	No	
Landscape/ topographic limitations to wildfire spread	No	
Structural Subcomponent		
Position of structure/ community on slope	No	Too difficult to quantify – this is a relative value.
Type of development	No	Too difficult to analyze spatially.
Position of assessment area relative to values	Yes	Only distance to structures is used in this analysis, being above, below or sidehill too difficult to analyze spatially.

The other components are developed using spatial data (BEC zone, fire history zone) or spatial analysis (aspect, slope). A scoring system was developed to categorize resultant polygons as having relatively low, moderate, high or extreme Fire Threat, or Low, Moderate, High or Extreme wildfire threat class. Table 18 below summarizes the components and scores to determine the Fire Threat.

Table 18. Fire Threat Class scoring components

Attribute	Indicator	Score
Fuel Type	C-1	35
	C-2	
	C-3	
	C-4	
	M-3/4,>50% dead fir	
	C-6	25
	M-1/2, >75% conifer	20
	C-7	
	M-3/4, <50% dead fir	

Attribute	Indicator	Score
	M-1/2, 50-75% conifer	15
	M-1/2, 25-50% conifer	10
	C-5	
	O-1a/b	
	S-1	
	S-2	
	S-3	
	M-1/2, <25% conifer	5
	D-1/2	0
	W	0
	N	0
Weather - BEC Zone	AT, irrigated	1
	CWH, CDF, MH	3
	ICH, SBS, ESSF	7
	IDF, MS, SBPS, CWHsds1 & ds2, BWBS, SWB	10
	PP, BG	15
Historical Fire Occurrence Zone	G5, R1, R2, G6, V5, R9, V9, V3, R5, R8, V7	1
	G3, G8, R3, R4, V6, G1, G9, V8	5
	G7, C5, G4, C4, V1, C1, N6	8
	K1, K5, K3, C2, C3, N5, K6, N4, K7, N2	10
	N7, K4	15
Slope	<16	1
	16-29 (max N slopes)	5
	30-44	10
	45-54	12
	>55	15
Aspect (>15% slope)	North	0
	East	5
	<16% slope, all aspect	10
	West	12
	South	15

Limitations

There are obvious limitations in this method, most notably that not all components of the threat assessment worksheet are scalable to a GIS model, generalizing the Fire Behaviour Threat score. The Wildfire Threat Score is greatly simplified, as determining the position of structures on a slope, the type of development and the relative position are difficult in an automated GIS process. Structures are considered, but there is no consideration for structure type (also not included on threat assessment worksheet). This method uses the best available information to produce accurate and useable threat assessment across the study area in a format which is required by the UBCM CRI program.

Appendix 6: WUI Risk Spatial Analysis Methodology

To determine the WUI Risk score, only the distance to structures is used. Buffer distance classes are determined (<200m, 200m-500m and >500m) but only for polygons that had a 'high' or 'extreme' Fire Threat score from the previous, assessment. To determine WUI Risk, polygons within 200 m of structures are rated as 'extreme', within 500 m are rated as 'high', and within 2 km are 'moderate'. Distances over that are rated 'low.' WUI Risk Classes and associated assumed scores are summer below in Table 19..

Table 19. WUI Risk Classes and their associated summed scores

WUI Risk Class	Score
Very Low	0
Low	0-35
Moderate	35-55
High[28]	55-65
Extreme	>65

[28] WUI risk is only assessed for polygons with wildfire threat ratings of high or extreme.

Appendix 7: Wildfire Threat Assessment Worksheets and Photos

Wildfire Threat Assessment Worksheet ~~– Fuel Assessment~~ (Site Level) **Plot #** TSOUKE-1

Location: Other (Specify in Comm | Date: 6/13/24 | Assessor/ Professional Designation: L. Orieux RPF

Coordinates (Lat/Long – Degrees/Decimal minutes): ~~48°23'01.5" N, 123°41'42.6" W~~

Crown Species Composition (species %): Cw60Fd20Hw20

Ladder Fuel Species Composition (species %): Cw50Decid50

	Component/ Sub Component	Levels/ Classes				
	Forest Floor and Organic Layer					
1	Depth of Organic layer (cm)	1–<2 1	2–<5 3	5–<10 5	10–20 3	>20 2
	Surface and Ladder Fuel (0.1 – 3.0 meters in height)					
2	Surface fuel composition	Moss, Herbs and Deciduous Shrubs 4	Lichen, Conifer Shrubs 6	Dead fines (Leaves, Needles or fine branch material) fuel (<1 cm) 8	Pinegrass 10	Sagebrush, Bunchgrass, Juniper Scotch broom 15
3	Dead and Down material Continuity (<7cm)	Absent 0	Scattered <10 coverage 4	10 -25% coverage 8	26-50% coverage 12	>50% Coverage 15
4	Ladder fuel composition	Deciduous 0	Mixwood 5	Other conifer 8	Elevated dead fuel 10	Spruce/ Fir/ Pine 15
5	Ladder fuel horizontal continuity	Absent 0	Sparse <10% coverage 2	Scattered 10 – 39% coverage 8	Patchy 40-60% coverage 10	Uniform >60% coverage 15
6	Stem/ha (understory)[3]	<500 2	501-800 4	801-1200 6	1201-1500 8	>1500 10
	Stand Structure and Composition (Dominant and Co- Dominate stems)					
7	Overstory Composition/ CBH (Crown Base Height)	Deciduous (< 25% conifer) 0	Mixwood (% Conifer) 25% 0 50% 2 75% 3	Conifer with high CBH (>10m) 3	Conifer with moderate CBH (5-9M) 4	Conifer with low CBH (<4m) 5
8	Crown Closure	< 20% 0	20 -40% (Or Deciduous) 1	41-60% 2	61-80% 5	>80% 4
9	Fuel Strata Gap[4] (m)		> 10 0	6-9 1	3-6 3	<3 5
10	Stems/ha (overstory) live/ grn dom & codom	<400 0	401-600 2	601-900 3	901-1 200 4	>1 200 5
11	Dead and Dying (% of dominant and co-dominant stems)		Standing Dead/ Partial down <20% 2	Standing Dead/ Partial down 21-50% 5	Standing Dead/ Partial down 51- 75% 8	Standing Dead/ Partial down >75% 10

Ecoprovince	Threat Assessment	WTA Total
Coast and Mountains, Georgia Depression (0/42/58/70)	High	60

Comments:

Plot Location: TSOUKE IR 1

Comments: Very small pocket C-5 stand at edge of IR, separated from houses by a larger patch of deciduous and lower risk C-5 stands. Cw dominant. Surface fuel moderate to high. Not a high priority due to small size and distance from structures. Good to identify for potential representative purposes.

[3] Understory is considered ladder and suppressed stems in this category (distinct break between these stems and overstory)

[4] Fuel Strata Gap – Distance from top of ladder fuel to live crown base height of overstory

PROJECT:

PROJECT:

British Columbia Wildfire Service - Photo Guide

SITE INFORMATION Date Sampled: 6/13/24

Plot # TSOUKE-1

General Location: Other (Specify in Comme

Coordinates: 48°23'01.5" N, 123°41'42.6" W

FBP Fuel Type: C-5

Slope (%): 0

Aspect (deg.): 999

Elevation (m): 10

Canopy Closure (%): 80

Average Forest Floor Depth (cm): 8

Photo comment:

Theodolite

SURFACE FUELS:

Theodolite

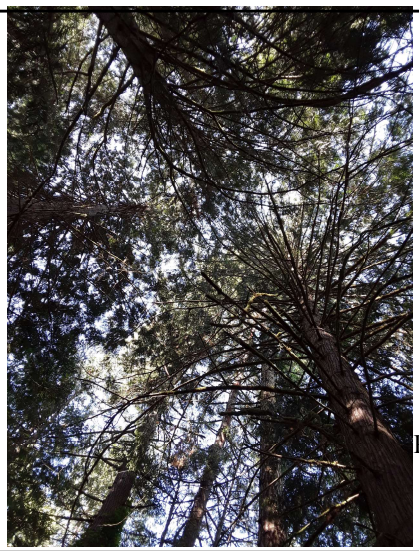
LADDER FUELS

Photo Comment:

CROWN FUELS:

Theodolite

Photo Comment:



Wildfire Threat Assessment Worksheet – ~~Fuel Assessment~~ (Site Level) **Plot #** TSOUKE-2

Location: Other (Specify in Comm | Date: 6/13/24 | Assessor/ Professional Designation: L. Orieux RPF

Coordinates (Lat/Long – Degrees/Decimal minutes): ~~48°23'08.0" N, 123°41'55.8" W~~

Crown Species Composition (species %): Cw60Mb20Fd10Hw10

Ladder Fuel Species Composition (species %): Cw50Decid50

	Component/ Sub Component	Levels/ Classes				
	Forest Floor and Organic Layer					
1	Depth of Organic layer (cm)	1–<2 1	2–<5 3	5–<10 5	10–20 3	>20 2
	Surface and Ladder Fuel (0.1 – 3.0 meters in height)					
2	Surface fuel composition	Moss, Herbs and Deciduous Shrubs 4	Lichen, Conifer Shrubs 6	Dead fines (Leaves, Needles or fine branch material) fuel (<1 cm) 8	Pinegrass 10	Sagebrush, Bunchgrass, Juniper Scotch broom 15
3	Dead and Down material Continuity (<7cm)	Absent 0	Scattered <10 coverage 4	10 -25% coverage 8	26-50% coverage 12	>50% Coverage 15
4	Ladder fuel composition	Deciduous 0	Mixwood 5	Other conifer 8	Elevated dead fuel 10	Spruce/ Fir/ Pine 15
5	Ladder fuel horizontal continuity	Absent 0	Sparse <10% coverage 2	Scattered 10 – 39% coverage 8	Patchy 40-60% coverage 10	Uniform >60% coverage 15
6	Stem/ha (understory)[3]	<500 2	501-800 4	801-1200 6	1201-1500 8	>1500 10
	Stand Structure and Composition (Dominant and Co- Dominate stems)					
7	Overstory Composition/ CBH (Crown Base Height)	Deciduous (< 25% conifer) 0	Mixwood (% Conifer) 25% 0 50% 2 75% 3	Conifer with high CBH (>10m) 3	Conifer with moderate CBH (5-9M) 4	Conifer with low CBH (<4m) 5
8	Crown Closure	< 20% 0	20 -40% (Or Deciduous) 1	41-60% 2	61-80% 5	>80% 4
9	Fuel Strata Gap[4] (m)		> 10 0	6-9 1	3-6 3	<3 5
10	Stems/ha (overstory) live/ grn dom & codom	<400 0	401-600 2	601-900 3	901-1 200 4	>1 200 5
11	Dead and Dying (% of dominant and co-dominant stems)		Standing Dead/ Partial down <20% 2	Standing Dead/ Partial down 21-50% 5	Standing Dead/ Partial down 51- 75% 8	Standing Dead/ Partial down >75% 10

Ecoprovince	Threat Assessment	WTA Total
Coast and Mountains, Georgia Depression (0/42/58/70)	Moderate	46

Comments:

Plot Location: IR 1

Comments: Riparian area, mature forest, Cw leading mixed wood stand. Strip of forest between two home development areas. Cw with limbs to ground. Score is the low end of moderate risk. Potential area to prune Cw/other conifers, but this is low priority. Priority should be on FireSmart zone vegetation management.

[3] Understory is considered ladder and suppressed stems in this category (distinct break between these stems and overstory)

[4] Fuel Strata Gap – Distance from top of ladder fuel to live crown base height of overstory

PROJECT:

PROJECT:

British Columbia Wildfire Service - Photo Guide

SITE INFORMATION Date Sampled: 6/13/24

Plot # TSOUKE-2

General Location: Other (Specify in Comme

Coordinates: 48°23'08.0" N, 123°41'55.8" W

FBP Fuel Type: M-1/2

Slope (%): 40

Aspect (deg.): 280

Elevation (m): 10

Canopy Closure (%): 60

Average Forest Floor Depth (cm): 5

SURFACE FUELS:

Photo comment:

Theodolite

Theodolite

LADDER FUELS

Photo Comment:

CROWN FUELS:

Theodolite

Photo Comment:

Wildfire Threat Assessment Worksheet – ~~Fuel Assessment~~ (Site Level) **Plot #** TSOUKE-3

Location: Other (Specify in Comm | Date: 6/13/24 | Assessor/ Professional Designation: L. Orieux RPF

Coordinates (Lat/Long – Degrees/Decimal minutes): 48°23'13.3" N, 123°41'45.2" W

Crown Species Composition (species %): Fd70Cw20Bg5Decid5

Ladder Fuel Species Composition (species %): Cw50Decid50

	Component/ Sub Component	Levels/ Classes				
	Forest Floor and Organic Layer					
1	Depth of Organic layer (cm)	1–<2 1	2–<5 3	5–<10 5	10–20 3	>20 2
	Surface and Ladder Fuel (0.1 – 3.0 meters in height)					
2	Surface fuel composition	Moss, Herbs and Deciduous Shrubs 4	Lichen, Conifer Shrubs 6	Dead fines (Leaves, Needles or fine branch material) fuel (<1 cm) 8	Pinegrass 10	Sagebrush, Bunchgrass, Juniper Scotch broom 15
3	Dead and Down material Continuity (<7cm)	Absent 0	Scattered <10 coverage 4	10 -25% coverage 8	26-50% coverage 12	>50% Coverage 15
4	Ladder fuel composition	Deciduous 0	Mixwood 5	Other conifer 8	Elevated dead fuel 10	Spruce/ Fir/ Pine 15
5	Ladder fuel horizontal continuity	Absent 0	Sparse <10% coverage 2	Scattered 10 – 39% coverage 8	Patchy 40-60% coverage 10	Uniform >60% coverage 15
6	Stem/ha (understory)[3]	<500 2	501-800 4	801-1200 6	1201-1500 8	>1500 10
	Stand Structure and Composition (Dominant and Co- Dominate stems)					
7	Overstory Composition/ CBH (Crown Base Height)	Deciduous (< 25% conifer) 0	Mixwood (% Conifer) 25% 0 50% 2 75% 3	Conifer with high CBH (>10m) 3	Conifer with moderate CBH (5-9M) 4	Conifer with low CBH (<4m) 5
8	Crown Closure	< 20% 0	20 -40% (Or Deciduous) 1	41-60% 2	61-80% 5	>80% 4
9	Fuel Strata Gap[4] (m)		> 10 0	6-9 1	3-6 3	<3 5
10	Stems/ha (overstory) live/ grn dom & codom	<400 0	401-600 2	601-900 3	901-1 200 4	>1 200 5
11	Dead and Dying (% of dominant and co-dominant stems)		Standing Dead/ Partial down <20% 2	Standing Dead/ Partial down 21-50% 5	Standing Dead/ Partial down 51- 75% 8	Standing Dead/ Partial down >75% 10

Ecoprovince	Threat Assessment	WTA Total
Coast and Mountains, Georgia Depression (0/42/58/70)	Moderate	46

Comments:

Plot Location: IR 1

Comments: Mature Fd leading with mature Mb. Low amounts of fine surface fuel. Scattered understory and overstory Cw with branches to the ground. Pruning of Cw would be only recommendation. Low end of moderate score. Moderate priority for treatment due to adjacency to homes, treatment area size (for efficacy), and adjacent to highway (ignition source; egress route).

[3] Understory is considered ladder and suppressed stems in this category (distinct break between these stems and overstory)

[4] Fuel Strata Gap – Distance from top of ladder fuel to live crown base height of overstory

PROJECT:

PROJECT:

British Columbia Wildfire Service - Photo Guide

SITE INFORMATION Date Sampled: 6/13/24

Plot # TSOUKE-3

General Location: Other (Specify in Comme

Coordinates: 48°23'13.3" N, 123°41'45.2" W

FBP Fuel Type: C-5

Slope (%): 5

Aspect (deg.): 180

Elevation (m): 40

Canopy Closure (%): 60

Average Forest Floor Depth (cm): 5

SURFACE FUELS:

Photo comment:

Theodolite

Theodolite

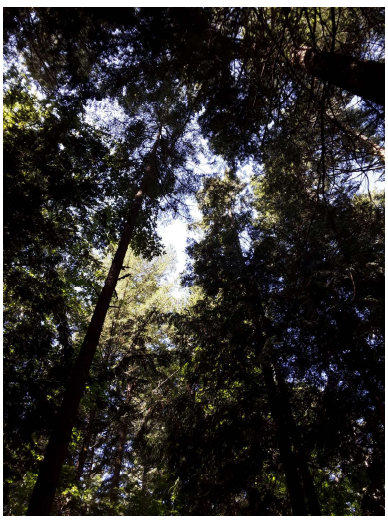
LADDER FUELS

Photo Comment:

CROWN FUELS:

Theodolite

Photo Comment:



Wildfire Threat Assessment Worksheet ~~– Fuel Assessment~~ (Site Level) **Plot #** TSOUKE-4

Location: Other (Specify in Comm | Date: 6/13/24 | Assessor/ Professional Designation: L. Orieux RPF

Coordinates (Lat/Long – Degrees/Decimal minutes): ~~48°23'21.8" N, 123°41'19.0" W~~

Crown Species Composition (species %): Mb40Cw30Hw20Bg10

Ladder Fuel Species Composition (species %): Decid80Cw20

	Component/ Sub Component	Levels/ Classes				
	Forest Floor and Organic Layer					
1	Depth of Organic layer (cm)	~~1–<2~~ 1	2–<5 3	5–<10 5	10–20 3	>20 2
	Surface and Ladder Fuel (0.1 – 3.0 meters in height)					
2	Surface fuel composition	Moss, Herbs and Deciduous Shrubs 4	Lichen, Conifer Shrubs 6	Dead fines (Leaves, Needles or fine branch material) fuel (<1 cm) 8	Pinegrass 10	Sagebrush, Bunchgrass, Juniper Scotch broom 15
3	Dead and Down material Continuity (<7cm)	Absent 0	Scattered <10 coverage 4	10 -25% coverage 8	26-50% coverage 12	>50% Coverage 15
4	Ladder fuel composition	Deciduous 0	Mixwood 5	Other conifer 8	Elevated dead fuel 10	Spruce/ Fir/ Pine 15
5	Ladder fuel horizontal continuity	Absent 0	Sparse <10% coverage 2	Scattered 10 – 39% coverage 8	Patchy 40-60% coverage 10	Uniform >60% coverage 15
6	Stem/ha (understory)[3]	<500 2	501-800 4	801-1200 6	1201-1500 8	>1500 10
	Stand Structure and Composition (Dominant and Co- Dominate stems)					
7	Overstory Composition/ CBH (Crown Base Height)	Deciduous (< 25% conifer) 0	Mixwood (% Conifer) 25% 0 50% 2 75% 3	Conifer with high CBH (>10m) 3	Conifer with moderate CBH (5-9M) 4	Conifer with low CBH (<4m) 5
8	Crown Closure	< 20% 0	20 -40% (Or Deciduous) 1	41-60% 2	61-80% 5	>80% 4
9	Fuel Strata Gap[4] (m)		> 10 0	6-9 1	3-6 3	<3 5
10	Stems/ha (overstory) live/ grn dom & codom	<400 0	401-600 2	601-900 3	901-1 200 4	>1 200 5
11	Dead and Dying (% of dominant and co-dominant stems)		Standing Dead/ Partial down <20% 2	Standing Dead/ Partial down 21-50% 5	Standing Dead/ Partial down 51- 75% 8	Standing Dead/ Partial down >75% 10

Ecoprovince	Threat Assessment	WTA Total
Coast and Mountains, Georgia Depression (0/42/58/70)	Low	40

Comments:

Plot Location: IR 1

Comments: Mature, mixed wood stand. Heavy deciduous shrub and sword fern understory. Cw have branches down to ground, but they are scattered/generally well-spaced. No treatment recommended.

[3] Understory is considered ladder and suppressed stems in this category (distinct break between these stems and overstory)

[4] Fuel Strata Gap – Distance from top of ladder fuel to live crown base height of overstory

PROJECT:

PROJECT:

British Columbia Wildfire Service - Photo Guide

SITE INFORMATION Date Sampled: 6/13/24

Plot # TSOUKE-4

General Location: Other (Specify in Comme

Coordinates: 48°23'21.8" N, 123°41'19.0" W

FBP Fuel Type: M-1/2

Slope (%): 0

Aspect (deg.): 999

Elevation (m): 60

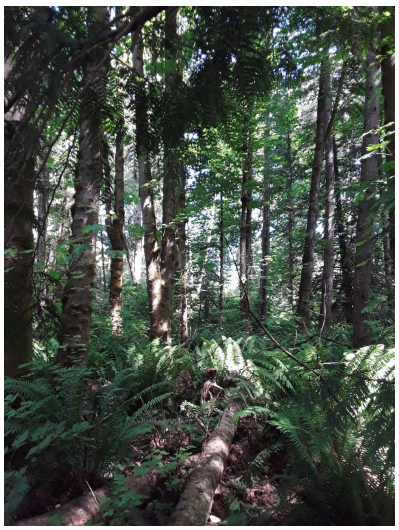
Canopy Closure (%): 50

Average Forest Floor Depth (cm): 5

SURFACE FUELS:

Photo comment:

Theodolite



Theodolite

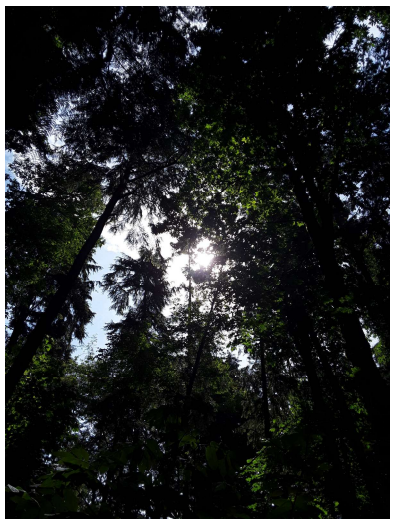
LADDER FUELS

Photo Comment:

CROWN FUELS:

Theodolite

Photo Comment:



Wildfire Threat Assessment Worksheet – ~~Fuel Assessment~~ (Site Level) **Plot #** TSOUKE-5

Location: Other (Specify in Comm | Date: 6/13/24 | Assessor/ Professional Designation: L. Orieux RPF

Coordinates (Lat/Long – Degrees/Decimal minutes): ~~48°21'49.6" N, 123°44'53.8" W~~

Crown Species Composition (species %): Dr75Hw20Mb10Sx5

Ladder Fuel Species Composition (species %): Decid100

	Component/ Sub Component	Levels/ Classes				
	Forest Floor and Organic Layer					
1	Depth of Organic layer (cm)	1–<2 1	2–<5 3	5–<10 5	10–20 3	>20 2
	Surface and Ladder Fuel (0.1 – 3.0 meters in height)					
2	Surface fuel composition	Moss, Herbs and Deciduous Shrubs 4	Lichen, Conifer Shrubs 6	Dead fines (Leaves, Needles or fine branch material) fuel (<1 cm) 8	Pinegrass 10	Sagebrush, Bunchgrass, Juniper Scotch broom 15
3	Dead and Down material Continuity (<7cm)	Absent 0	Scattered <10 coverage 4	10 -25% coverage 8	26-50% coverage 12	>50% Coverage 15
4	Ladder fuel composition	Deciduous 0	Mixwood 5	Other conifer 8	Elevated dead fuel 10	Spruce/ Fir/ Pine 15
5	Ladder fuel horizontal continuity	Absent 0	Sparse <10% coverage 2	Scattered 10 – 39% coverage 8	Patchy 40-60% coverage 10	Uniform >60% coverage 15
6	Stem/ha (understory)[3]	<500 2	501-800 4	801-1200 6	1201-1500 8	>1500 10
	Stand Structure and Composition (Dominant and Co- Dominate stems)					
7	Overstory Composition/ CBH (Crown Base Height)	Deciduous (< 25% conifer) 0	Mixwood (% Conifer) 25% 0 50% 2 75% 3	Conifer with high CBH (>10m) 3	Conifer with moderate CBH (5-9M) 4	Conifer with low CBH (<4m) 5
8	Crown Closure	< 20% 0	20 -40% (Or Deciduous) 1	41-60% 2	61-80% 5	>80% 4
9	Fuel Strata Gap[4] (m)		> 10 0	6-9 1	3-6 3	<3 5
10	Stems/ha (overstory) live/ grn dom & codom	<400 0	401-600 2	601-900 3	901-1 200 4	>1 200 5
11	Dead and Dying (% of dominant and co-dominant stems)		Standing Dead/ Partial down <20% 2	Standing Dead/ Partial down 21-50% 5	Standing Dead/ Partial down 51- 75% 8	Standing Dead/ Partial down >75% 10

Ecoprovince	Threat Assessment	WTA Total
Coast and Mountains, Georgia Depression (0/42/58/70)	Low	40

Comments:

Plot Location: IR 2

Comments: Plot location in the WUI of soon-to-be constructed homes. Deciduous dominated stand. Deciduous shrub dense understory. Low surface fuel amounts. Conifers have low CBH, but these are scattered and well spaced. Low risk. No treatment recommended.

[3] Understory is considered ladder and suppressed stems in this category (distinct break between these stems and overstory)

[4] Fuel Strata Gap – Distance from top of ladder fuel to live crown base height of overstory

PROJECT:

PROJECT:

British Columbia Wildfire Service - Photo Guide

SITE INFORMATION Date Sampled: 6/13/24

Plot # TSOUKE-5

General Location: Other (Specify in Comme

Coordinates: 48°21'49.6" N, 123°44'53.8" W

FBP Fuel Type: M-1/2

Slope (%): 0

Aspect (deg.): 999

Elevation (m): 20

Canopy Closure (%): 75

Average Forest Floor Depth (cm): 7

SURFACE FUELS:

Photo comment:

Theodolite

Theodolite

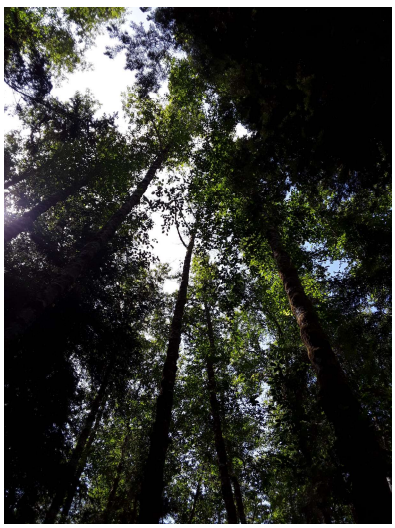
LADDER FUELS

Photo Comment:

CROWN FUELS:

Theodolite

Photo Comment:



Wildfire Threat Assessment Worksheet – ~~Fuel Assessment~~ (Site Level) **Plot #** TSOUKE-6

Location: Other (Specify in Comm | Date: 6/13/24 | Assessor/ Professional Designation: L. Orieux RPF

Coordinates (Lat/Long – Degrees/Decimal minutes): 48°21'45.0" N, 123°44'43.8" W

Crown Species Composition (species %): Hw30Ss20Dr50

Ladder Fuel Species Composition (species %): Decid90Hw10

	Component/ Sub Component	Levels/ Classes				
	Forest Floor and Organic Layer					
1	Depth of Organic layer (cm)	1–<2 ○ 1	2–<5 ○ 3	5–<10 ● 5	10–20 ○ 3	>20 ○ 2
	Surface and Ladder Fuel (0.1 – 3.0 meters in height)					
2	Surface fuel composition	Moss, Herbs and Deciduous Shrubs ● 4	Lichen, Conifer Shrubs ○ 6	Dead fines (Leaves, Needles or fine branch material) fuel (<1 cm) ○ 8	Pinegrass ○ 10	Sagebrush, Bunchgrass, Juniper Scotch broom ○ 15
3	Dead and Down material Continuity (<7cm)	Absent ○ 0	Scattered <10 coverage ○ 4	10 -25% coverage ● 8	26-50% coverage ○ 12	>50% Coverage ○ 15
4	Ladder fuel composition	Deciduous ● 0	Mixwood ○ 5	Other conifer ○ 8	Elevated dead fuel ○ 10	Spruce/ Fir/ Pine ○ 15
5	Ladder fuel horizontal continuity	Absent ○ 0	Sparse <10% coverage ○ 2	Scattered 10 – 39% coverage ○ 8	Patchy 40-60% coverage ○ 10	Uniform >60% coverage ● 15
6	Stem/ha (understory)[3]	<500 ● 2	501-800 ○ 4	801-1200 ○ 6	1201-1500 ○ 8	>1500 ○ 10
	Stand Structure and Composition (Dominant and Co- Dominate stems)					
7	Overstory Composition/ CBH (Crown Base Height)	Deciduous (< 25% conifer) ○ 0	Mixwood (% Conifer) 25% ○ 0 50% ● 2 75% ○ 3	Conifer with high CBH (>10m) ○ 3	Conifer with moderate CBH (5-9M) ○ 4	Conifer with low CBH (<4m) ○ 5
8	Crown Closure	< 20% ○ 0	20 -40% (Or Deciduous) ○ 1	41-60% ● 2	61-80% ○ 5	>80% ○ 4
9	Fuel Strata Gap[4] (m)		> 10 ○ 0	6-9 ○ 1	3-6 ● 3	<3 ○ 5
10	Stems/ha (overstory) live/ grn dom & codom	<400 ○ 0	401-600 ● 2	601-900 ○ 3	901-1 200 ○ 4	>1 200 ○ 5
11	Dead and Dying (% of dominant and co-dominant stems)		Standing Dead/ Partial down <20% ● 2	Standing Dead/ Partial down 21-50% ○ 5	Standing Dead/ Partial down 51- 75% ○ 8	Standing Dead/ Partial down >75% ○ 10

Ecoprovince	Threat Assessment	WTA Total
Coast and Mountains, Georgia Depression (0/42/58/70)	Moderate	45

Comments:

Plot Location: IR 2

Comments: Plot is located adjacent to existing and soon-to-be constructed homes. Mature, mixed wood stand with dense deciduous shrub understory. Hw with low branches, but are these are scattered and well spaced. Low side of moderate score. No treatment recommended. Focus should be on FireSmart vegetation management and materials.

[3] Understory is considered ladder and suppressed stems in this category (distinct break between these stems and overstory)

[4] Fuel Strata Gap – Distance from top of ladder fuel to live crown base height of overstory

PROJECT:

PROJECT:

British Columbia Wildfire Service - Photo Guide

SITE INFORMATION Date Sampled: 6/13/24

Plot # TSOUKE-6

General Location: Other (Specify in Comme

Coordinates: 48°21'45.0" N, 123°44'43.8" W

FBP Fuel Type: M-1/2

Slope (%): 0

Aspect (deg.): 999

Elevation (m): 35

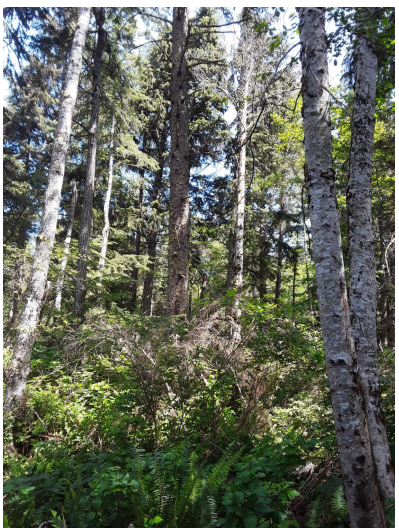
Canopy Closure (%): 50

Average Forest Floor Depth (cm): 7

SURFACE FUELS:

Photo comment:

Theodolite



Theodolite

LADDER FUELS

Photo Comment:

CROWN FUELS:

Theodolite

Photo Comment: