

CSF



Collaborative
Stewardship
Forum

S'ólh Téméxw Stewardship Alliance-BC Collaborative Stewardship Forum

Annual Report 2020-21 - Living Document



S'ólh Téméxw Stewardship Alliance (STSA)-BC Collaborative Stewardship Forum (CSF) Annual Report 2020-21

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Introduction

The objective of this report is to provide an update on our Collaborative Stewardship Forum (CSF) outcomes from the 2020-2021 fiscal year. Building on the S'ólh Téméxw Stewardship Alliance (STSA) – BC Collaborative Stewardship Forum (CSF) Progress Report that was developed following the 2019-2020 fiscal, it is recommended that the current report be considered as an addendum to the previous year's for a more comprehensive understanding of the CSF. This includes the background, the parties involved, relationship development, approaches to shared decision-making, incorporation of Stó:lō Indigenous World View, and individual project backgrounds. This report aims to provide the following:

- a status update with current and future objectives for our CSF,
- collaborative recommendations for change, including changes to legislation, policies, management approaches, and information,
- individual project reports, and,
- an STSA-BC CSF Forum budget update.

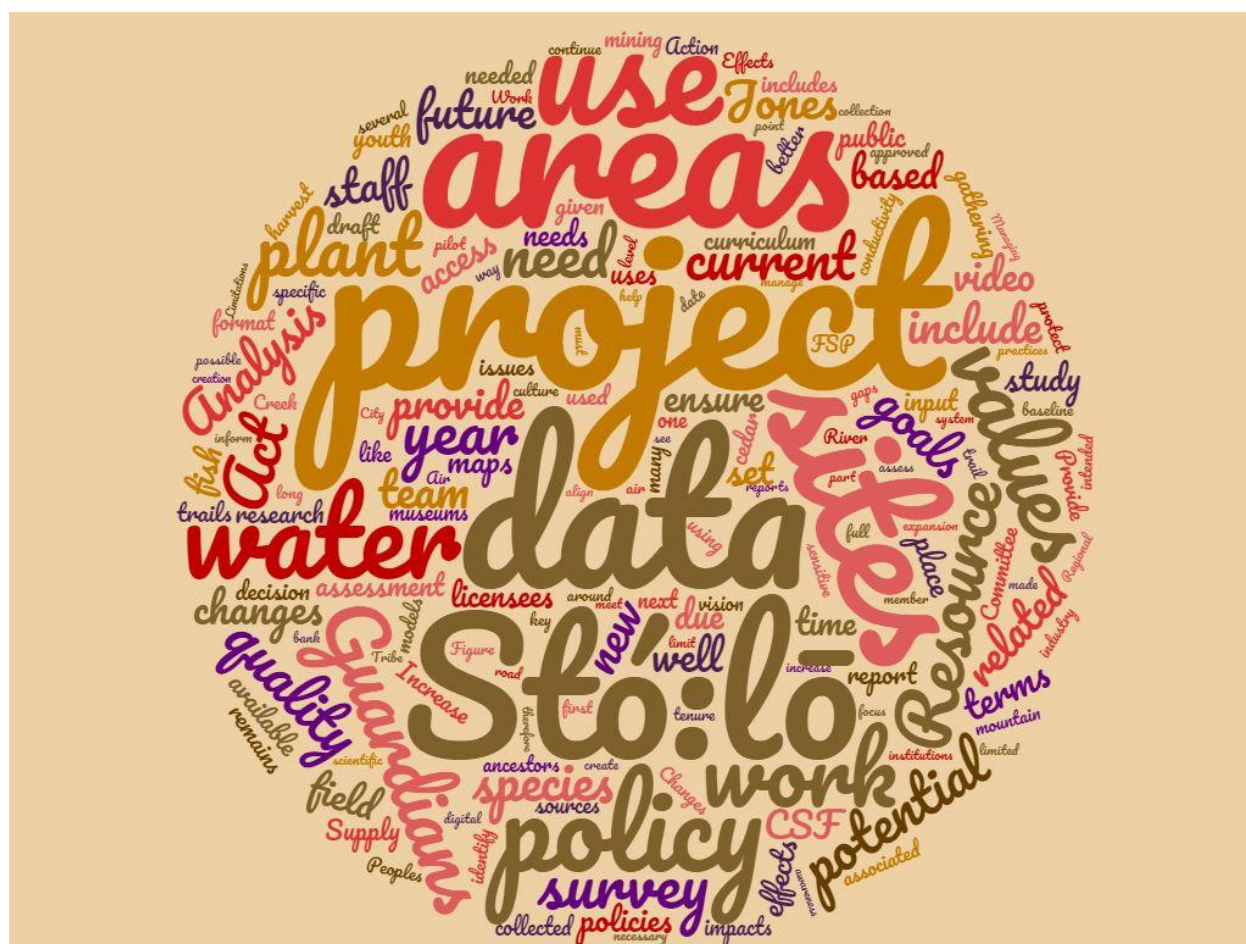


Figure 1: Word Cloud created from text from all project reports.

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Who Are We?

The STSA is a group of 15 Stó:lō First Nations, including Chawathil First Nation, Cheam First Nation, Kwaw'Kwaw'Apilt First Nation, Scowlitz First Nation, Skawahlook First Nation, Sumas First Nation, Yale First Nation each on their own behalf, and Aitchelitz First Nation, Shxwhá:y First Nation, Skowkale First Nation, Soowahlie First Nation, Squiala First Nation, Tzeachten First Nation, and Yakwekwioose First Nation, as represented by Ts'elxwéyeqw Tribe.

The STSA-BC Collaborative Stewardship Forum includes the Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD), the Ministry of Indigenous Relations and Reconciliation (MIRR), the Ministry of Environment and Climate Change Strategy (MoE) and the Ministry of Energy, Mines and Low-carbon Initiatives (MEMLI). Greater detail about the Forum's organizational structure will follow in the report. Please visit www.thestsa.ca for more information on the STSA and our forum.

The STSA-BC CSF provides 17.5 Full Time Equivalent hours across 87 staff and contractors through the STSA as well as 2.5 to 3 Full Time Equivalent hours across 20 staff for the government of BC. Our organizational structure and membership consist of the following:

Co-chairs: Facilitating body consisting of a representative from BC and Stó:lō. Responsible for forum oversight and overall implementation of objectives and principles as agreed upon. Government liaisons with First Nations and the Province.

Team Members:

Dave Schaepe, Ph.D., Director, Stó:lō Research and Resource Management Centre (SRRMC); Leonard Feldes, Resource Manager, Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD)

Lets'emó:t Committee (LC): The is the STSA-BC working group consisting of representatives from BC, the STSA, and other First Nations organizations.

Voting Members: Keri Ardell, Ts'elxwéyeqw Tribe Management Ltd (TTML); James Leon, Sq'éwlets First Nation; Carrielynn Victor, Cheam First Nation; Steven Patterson, Tiyt Tribe; Murray Ned, Semá:th First Nation, Lower Fraser Fisheries Alliance (LFFA). Leonard Felds; Cat Charman, FLNRORD; Mathew MacLean, Ministry of Energy, Mines, and Low-carbon Innovation (EMLI); Sarah Henderson (EMLI); Yvette Lizee, MIRR; Jim Jensen, MIRR; Jennie Aikman, BC Parks; Dawn Smith, BC Parks; Jessica Ruskin, FLNRORD; Heather Chia, FLNRORD; Kevin Haberl, FLNRORD

Roster: Colin Green, SRRMC; Dionne Bunsha, LFFA; Ian Hamilton, LFFA; Jack Sweeten, FLNRORD; Jade Victor; Jillian Spies, SRRMC; Tom Johnson, FLNRORD; Karen Brady, SRRMC; Kevin Webber, TTML; Kierstin Dolata, SRRMC; Lana Baptiste, SRRMC; Matt McGinity, People of the River Referrals Office (PRRO); Shana Roberts, SRRMC; Tana Mussell, Seven Generations; Uwe Spremberg, LFFA; Rob Wilson, BC Parks; Veronica Cadden, MIRR; Ashlee Prevost, LFFA; Tannis Tommy, PRRO.

Lets'emó:t Implementation Team (LIT): This is the steering team consisting of forum co-chairs, coordinators, technical staff and other identified representatives. Minor decisions are based on

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recommendations from leadership, the working group and/or technical teams. The role is to oversee the smooth implementation of the project and operationalize concepts/plans.

Co-chairs: Jillian Spies, SRRMC; Cat Charman, FLNRORD

Team Members: Dave Schaepe; Leonard Feldes; Carrielynn Victor, Jim Jensen; Keri Ardell; Kierstin Dolata, SRRMC, Sukh Kaeley, MIRR, Uwe Spremberg, LFFA, James Leon; Lana Baptiste, SRRMC; Tana Mussell, Seven Generations; Shana Roberts, SRRMC; Rob Wilson, BC Parks, Karen Brady, SRRMC; Jack Sweeten, FLNRORD; Dionne Bunsha, LFFA, Dawn Smith; Colin Green, SRRMC; Kevin Webber TTML; Tannis Tommy, PRRO.

Status Report: Current and Future Objectives

With the majority of projects being firmly established in the 2019-2020 fiscal year, workplans had already been developed and budgets set for the 2020-2021 fiscal year. However, due to the COVID-19 pandemic, project teams had to significantly adapt their workplans to achieve project goals.

Teams have been working remotely with meetings occurring using video-conferencing platforms such as Zoom and Skype. Fieldwork aspects have included smaller numbers practicing safe social distancing and engagement has primarily been moved online or been postponed. Delays in equipment delivery has slowed progress and other setbacks include the inability to travel as required or hold in-person meetings for some projects. Some aspects of the work initially expected to be completed in this fiscal year have been postponed into the next fiscal until pandemic restrictions have eased.

Regardless, teams have adapted exceptionally well to the challenges brought on by COVID-19. With representation from all BC agencies currently involved and many Stó:lō organizations our Lets'emó:t Committee and Lets'emó:t Implementation Team have continued to meet monthly, though now virtually rather than in person. Coordinators have maintained a schedule of weekly or bi-weekly calls. Regularly meeting with the option of communicating face-to-face, albeit virtually, has helped us continue to work towards Lets'emó:t even during the pandemic.

While some projects are nearing completion, others have identified additional opportunities and have significant work that remains to be carried out. Many would benefit from long-term funding and being more permanently established. Bridging funding has been provided to carry the CSF through the next year and we are looking forward to a long-term strategy for extension of the CSF.

Currently, 23 projects are underway including, CSF Project Planning, Communications Strategy Development, Cumulative Effects Methodology Comparison, Impact Analysis Framework (Jones Creek Watershed Pilot), Bank Stabilization and Flood Management, Water Quality Monitoring, Air Quality Monitor, S'ólh Téméxw Plant Inventory, Mining Inventory and Analysis, Sxótsaqel – Chilliwack Lake Park Plan, Forestry Operational Guidelines for STUP, Managing Natural Values, Recreational Use Impact Management, HCA S.4 Pilot Establishment and Implementation, HCA Legislative and Policy Changes, Cultural Heritage Impact Assessment (CHIA)/ Overview Assessment (CHOA) Review, Repatriation, S'ólh Téméxw Guardians Program, Resource Revenue Sharing, Xá:ytem Curriculum Development, Two-Way Training (Policy and Procedures, Education/Cultural), Stó:lō Leadership and Education.

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Crossover Between Projects

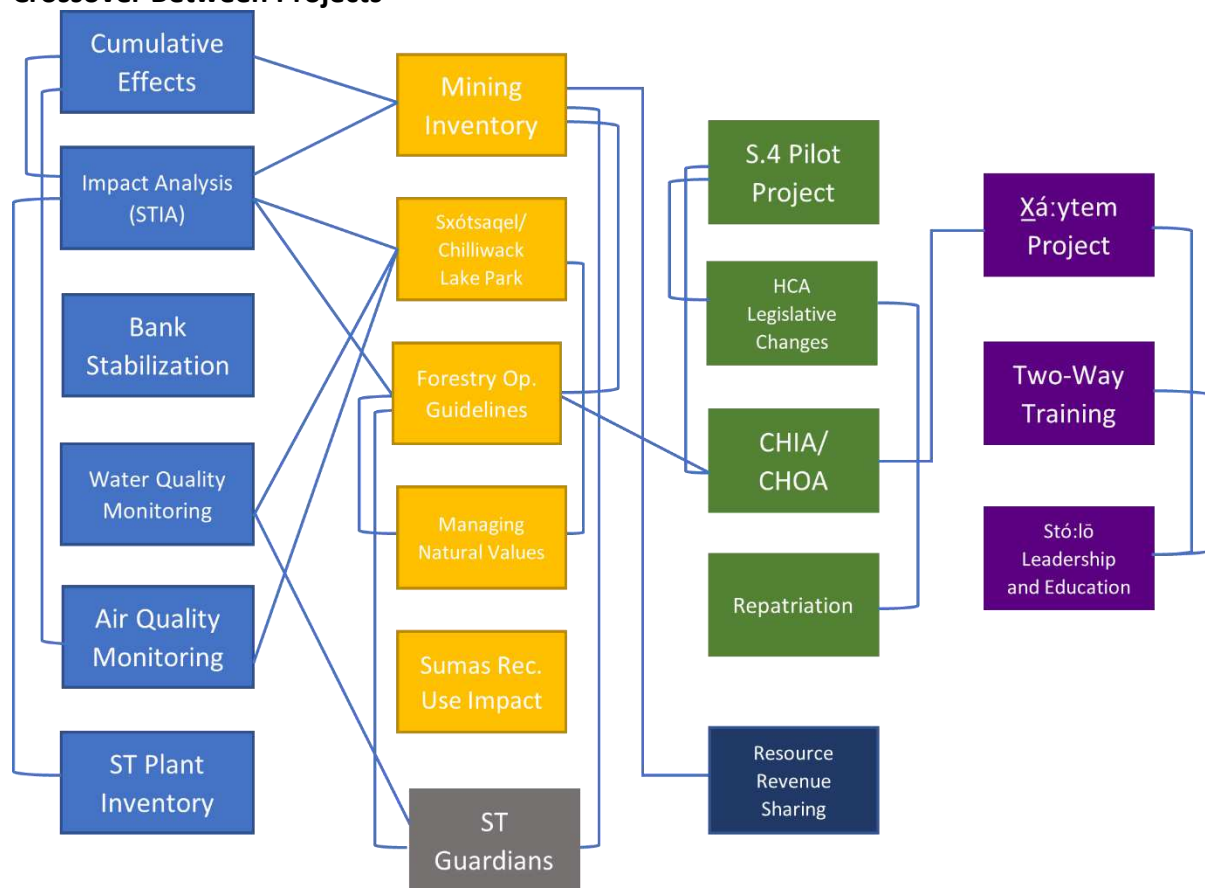


Figure 2 Crossover Between Projects placeholder images

Collaborative Recommendations for Change – Legislation, Policies, Management Approaches, and Information

Throughout the duration of the CSF, opportunities for change have been collaboratively identified. Our STSA-BC CSF agreement has a key goal of co-developing recommendations for the possible application, amendment, or creation of provincial legislation, policies, management approaches relating to environmental stewardship, and shared decision-making processes.

Two key achievable and priority project specific recommendations that were identified are presented in Table 1.

Table 1: Project Specific Recommendations

Key Recommendations	Project
Release the Forestry Operational Guidelines for the S'ólh Téméxw Use Plan document to licensees as guidelines for forestry operations in S'ólh Téméxw	Forestry Operational Guidelines for the S'ólh Téméxw Use Plan

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Make changes to the process for registering a claim in accordance with the Mineral Tenures Act. Currently a person only needs to be over 19 years of age, in possession of a credit card, and have access to a computer to register a claim. Changes are needed to allow for greater transparency with the STSA and to better align the legislation with the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), in particular the inherent right to Free Prior Informed Consent, and the Truth and Reconciliation Commission Calls to Action.	Mining Inventory and Analysis
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Individual project reports (see Appendix A) contain detailed lists of recommendations identified by project teams. Within these recommendations five recurring themes were identified which include:

1. Increased/continued collaboration between First Nations and provincial agencies and industries.
2. Incorporation of Indigenous Knowledge into legislation and policy development, management approaches relating to environmental stewardship and shared, and decision-making processes stewardship and shared, and decision-making processes.
3. Alignment of policies, practices, and legislation with UNDRIP/Calls to Action
4. Creation of Indigenous protected and conserved areas
5. Increased/sustained funding sources.

These are presented in Table 2 below which displays overlap between projects and the recommendations that were identified in each.

Table 2: Recommendations and Overlapping Projects

Recommendation	Projects
Increased/Continued Collaboration between First Nations and Provincial Agencies and Industries	STSA Governance re: Stewardship & Collaboration
	Cumulative Effects (CE) Methodology Comparison
	Bank Stabilization and Flood Management
	Mining Inventory and Analysis
	Sxótsaqel - Chilliwack Lake Park Plan
	Recreational Use Impact Management
	HCA s4 Pilot Establishment and Implementation
	Cultural Heritage Impact Assessment (CHIA)/Overview Assessment (CHOA) Review
	Stó:lō Leadership and Education
Incorporation of Indigenous Knowledge into legislation	Cumulative Effects (CE) Methodology Comparison
	S'ólh Téméxw Plant Inventory
	Sxótsaqel - Chilliwack Lake Park Plan
	Forestry Operational Guidelines for STUP

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and policy development, management approaches relating to environmental stewardship and shared, and decision-making processes.	Managing Natural Values
	HCA s4 Pilot Establishment and Implementation
	Cultural Heritage Impact Assessment (CHIA)/Overview Assessment (CHOA) Review
	Mining Inventory and Analysis
Alignment of policies, practices, and legislation with UNDRIP/Calls to Action	Recreational Use Impact Management
	Repatriation Policy and Practice
	Mining Inventory and Analysis
Creation of Indigenous protected and conserved areas	Sxótsaqel - Chilliwack Lake Park Plan
	Recreational Use Impact Management
	HCA s4 Pilot Establishment and Implementation
	HCA Legislation and Policy Changes
Increased/sustained funding sources	Recreational Use Impact Management
	Repatriation Policy and Practice
	S'ólh Téméxw Guardians Program

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For further details on project-specific recommendations, refer to Appendix A: *Individual Project Reports*, section 8, *Collaborative Recommendations for Change*.

Appendix A: Individual Project Reports

This section of the report provides detailed information on each of the projects, including:

1. Project Name
2. Project Theme
3. Team Members
4. Project Goals
5. Methodology
6. Status Reports and Achievements
7. Challenges/Identified Areas of Opportunity
8. Collaborative Recommendations for Change
9. Future Project Goals/Vision

The following projects have seen significant updates during the last fiscal year and, therefore, no individual project report has been included:

- Communications Strategy
- Resource Revenue Sharing
- Two-Way Training (Policy & Procedures, Education/Cultural)

For more comprehensive project reports, including project backgrounds and outcomes of relationship development, as well as the three excluded reports mentioned above, refer to the 2019-2020 S'ólh Téméxw Stewardship Alliance - BC report.

S'ólh Téméxw Stewardship Alliance, Governance Development Project Update:

Project Theme

G2G Organizational Structure & Relations

Team Members

- **Carrielynn Victor, Coordinator, Ayelstexw Consulting, Project Lead**
- **Jade Victor, Researcher, University of Fraser Valley, Stó:lō community member, Team member**
- **Jillian Spies, Project Coordinator, Stó:lō Research and Resource Management Center, team member**
- **Dr. Dave Schaepe PhD., Lead, Stó:lō Research and Resource Management Center, team member**
- **STSA Board, Stó:lō Elected Leadership and Appointed Representatives**

Project Goals

Primary:

To clarify the internal relations between Stó:lō First Nation members of STSA, other Stó:lō First Nations and non Stó:lō First Nations/ Nations regarding stewardship (roles, responsibilities) serving to establish a clarified foundation for G2G relationships with BC.

Secondary:

Advance our understanding of Indigenous stewardship within S'ólh Téméxw and enhanced ability to implement UNDRIP and Draft 10 Principles.

Methodology

- Two 2-day Facilitated Strategic Planning Sessions, via Zoom ¹
- Online survey, with focus on internal reflection of success and needs, as well as priority areas for the future
- Round table discussions at monthly STSA meetings, via Zoom
- STSA meeting witnessing by Stó:lō student research assistant, gathering and compiling input specifically related to CSF project secondary goal
- Interview question research and development, interviews conducted and thorough discussion with Siya:m

Status Reports and Achievements

- Collaboratively developed strategy to reflect synergies between existing Stó:lō engagement mechanisms
- July 2020, STSA leadership provided direction to launch the Guardian Program, a full time Stó:lō Guardian was hired. Training, operations, and program development are on-going.

¹ Four Directions Consulting, S'ólh Téméxw Stewardship Alliance Strategic Planning Summary Report, Feb.2021

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- Development of cross reference document, aligning Stó:lō Declaration content and DRIPA Articles related to rights, responsibilities, and self-determination.
- Identification of current need for collaborative, Stó:lō led, working group that brings together Stó:lō communities to work with the Province in the DRIPA Action Plan
- Recognition of capacity in Stó:lō communities beyond limited funding opportunities, and centralized technical and political supports
- Researcher for secondary project objective fully funded by SASET and supportive administration by Cheam Enterprises, and Ayelstexw Consulting

Crossover with Other Projects

- Revenue Sharing will be an important crossover as more data is compiled that reflects integrity of lands, water and air within S'ólh Téméxw
- S'ólh Téméxw Guardians: STSA Leadership direction informs STSA member community decision making capacity

Challenges/Identified Areas of Opportunity

- Further identification of implications of DRIPA in relation to Stó:lō Rights and Responsibilities
- Opportunity to provide clarity regarding differences between UNDRIP Articles and DRIPA Articles
- Challenge Limitations of BC Implementation of DRIPA to the extent of Section 35.1.
- Work to further clarify internally by the Stó:lō, Articles 4 and 7 of DRIPA

STSA Internal, as heard in Interviews by Jade:

- Opportunity to improve the effectiveness of STSA , deeper communal communications
- Cooperative collaboration and active listening among STSA members and staff
- Active participation from youth representatives
- Positive feedback that is inclusive and thorough

Collaborative Recommendations for Change

- Reflection of aligned declaration language in Provincial Action Plan, ongoing collaborative development of DRIPA Action Plan
- Provincial development of mechanism by which to receive and apply recommendations for change

Future Project Goals/Vision

Increase Organizational/Communal Capacity in the areas of:

- Environmental research, and technicians
- Communications, staff and strategy development
- Guardians
- Funding, continued efforts needed to diversify funding opportunities

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- Review of STSA Terms of Reference to expand participation from non-member Stó:lō communities, and increase inclusivity
- Increase education about benefits and implications of DRIPA within STSA members, including a thorough analysis and presentation of the implications
- Recognition of Stó:lō Lets'emó:t Principle, in collective
- Increased formality of use of Xwelmxw Skwi:x and active witnessing in order to bring traditional governance to the STSA Board table and communities.
- Increased access to Stó:lō Declaration

S'ólh Téméxw Integrity Analysis

Team Members

- **Dr. Dave Schaepe, PhD., Director, Stó:lō Research and Resource Management Centre, Project Lead**
- **Carrielynn Victor, Manager, Ayelstexw Consulting LP, team member**
- **Cat Charman, Land and Resource Specialist, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Project Lead**
- **Colin Green, GIS Manager, Stó:lō Research and Resource Management Centre, team member**
- **Karen Brady, Land Stewardship Manager, Stó:lō Research and Resource Management Centre, team member**
- **Keri Ardell, Executive Director, Ts'elxwéyeqw Tribe Management Limited, team member**
- **Leonard Feldes, Resource Manager, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, team member**
- **Shana Roberts, Special Projects Manager, Stó:lō Research and Resource Management Centre, team member**
- **Uwe Spremberg, Project Coordinator, Lower Fraser Fisheries Alliance, team member**
- **Jillian Spies, Project Coordinator, Stó:lō Research and Resource Management Centre, project coordinator**
- **Tana Mussell, Manager, Seven Generations, team member**

Introduction, Objectives, Methods... A Foundation

Report by the S'ólh Téméxw Integrity Analysis Project Team:

David M. Schaepe, Catherine Charmaine, Leonard Feldes, Jillian Spies, Keri Ardell, Carrielynn Victor, Colin Green, Shana Roberts, Tana Mussell, Uwe Spremberg and Karen Brady

(with graphic recording by Melissa Kendzierski; this text is based on the narration transcription by Nicola Campbell)

This presentation is about the S'ólh Téméxw Integrity Analysis (STIA) and it provides an objectives, introduction and outcome foundation for out of work that's been ongoing throughout the course of our pilot collaborative stewardship forum between the S'ólh Téméxw Stewardship Alliance (STSA) and British Columbia. This project arises from a backstory of research into what aspects of stewardship and what sorts of research in the field of stewardship can be carried out in support of reconciliation.

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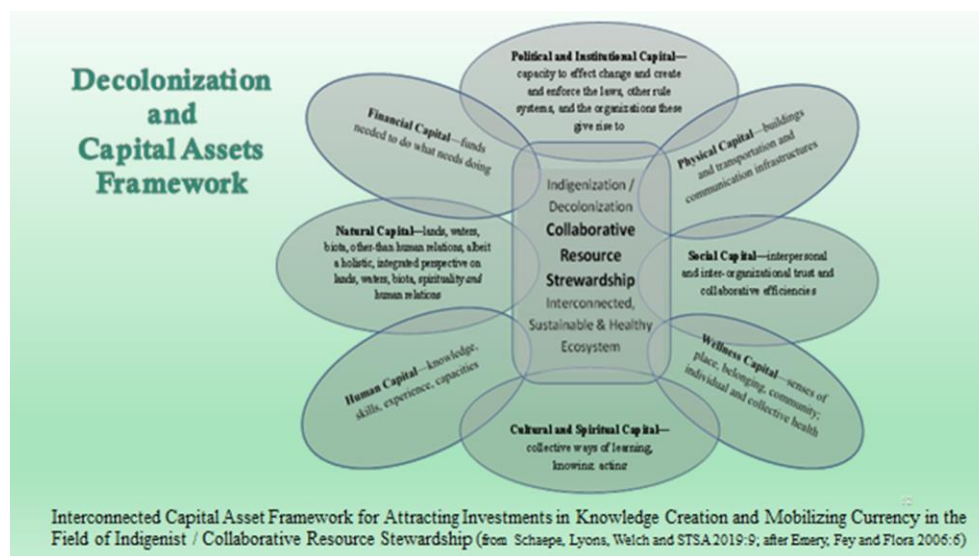


Figure 3: Interconnected Capital Asset Framework for Attracting Investments in Knowledge Creation and Mobilizing Currency in the Field of Indigenist / Collaborative Resource Stewardship.

This image in Figure 3 arises from an outcome of prior work in 2019 that included the STSA and focused on gaining input from leadership and knowledge holders in addressing collaborative stewardship as a factor of reconciliation. This project addressed to approach to collaborative stewardship in terms of what is needed to include Stó:lō perspectives, to Indigenize and decolonize this field of stewardship practice(s) that have tremendous value in an interconnected and sustainable, healthy ecosystem; one linked to a wide array of capital asset connections and to institutions within our world around us. Outcomes of this work, identifying means of Indigenizing and decolonizing collaborative stewardship, are fundamentally embedded in all of the STSA-British Columbia Collaborative Stewardship Forum projects including this one, the S'ólh Téméxw Integrity Analysis project itself. *That is the backstory.*

The STIA itself occupies a central place in and amongst the seven thematic areas of work and 20-plus projects of our overall collaborative stewardship forum (see <https://thetsa.ca/stsa-operations/csf/>). It is intended to create a foundational perspective and methodology incorporating Stó:lō Indigenous worldview and perspectives, integrated with western scientific practices, applied to a very fulsome perspective on land stewardship which we call this the S'ólh Téméxw Integrity Analysis project. In particular we are focusing on the Jones Creek Watershed in the Central Fraser Valley as a pilot project.

S'ólh Téméxw means 'our world' or 'our land' in Halq'eméylem. The Integrity Analysis itself is intended to develop a methodology for assessing the well-being of S'ólh Téméxw, in its various elements, again including Indigenous Stó:lō-Coast Salish, Xwélméxw worldview, principles, theories and practices. The understanding and perspective presented here is informed by Stó:lō knowledge holders including: Steven Point, Herb Joe, Dalton Silver, Sonny McHalsie, Gwen Point and many of the Old People. Many others living today also contributed their understanding of how to approach taking care of what belongs to Stó:lō Peoples and applying that to land stewardship. We embrace relevant Western scientific practices and bring them together with Indigenous worldview and practices. We take a holistic, interconnected,

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intergenerational and cumulative approach to relationships, that constitute S'ólh Téméxw on a watershed-based scope. We draw from work by Ken Lertzman (Lertzman and MackInnon 2013) and others who focused on the watershed as a unit of study, and unit of an ecosystem, as applied here.

We developed a five-step process of integrity analysis, as laid out in Figure 2. In this image we show S'ólh Téméxw, the Lower Fraser River watershed, and home of Stó:lō Peoples. We show the Jones Watershed Pilot Area, a watershed running northwards into the Fraser River, the Stó:lō, in the Central Fraser Valley, a drainage originating in the western Cheam Range of the North Cascades... a living range of transformed people and *sxwōxwiyám*. This image also represents the interconnected, holistic relationships of air and water that are fundamental to the structure and integrity of this and other watershed systems.

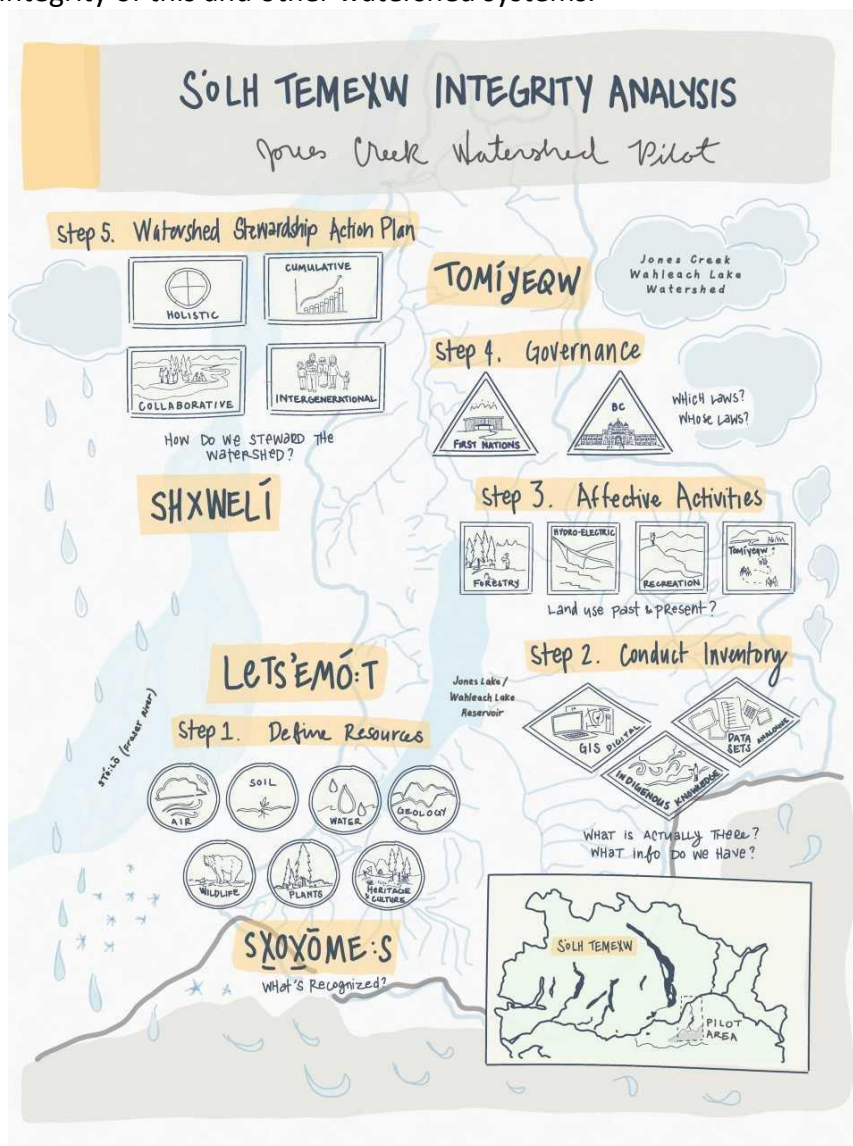


Figure 4: S'ólh Téméxw Integrity Analysis Plan: Jones Creek Watershed Pilot

Pilot Methodology:

- Indigenous Stó:lō-Coast Salish / XwelmeXw Worldview (Principles, Theory and Practices)

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- Western Scientific Practices
- Holistic / Interconnected / Intergenerational / Cumulative Relations
- Watershed-based Scope
- 5-Step Process of Integrity Analysis: Define Sxoxōme:s / Resources; Conduct Inventory; Affective Activities; Governance; Watershed Stewardship Action Plan

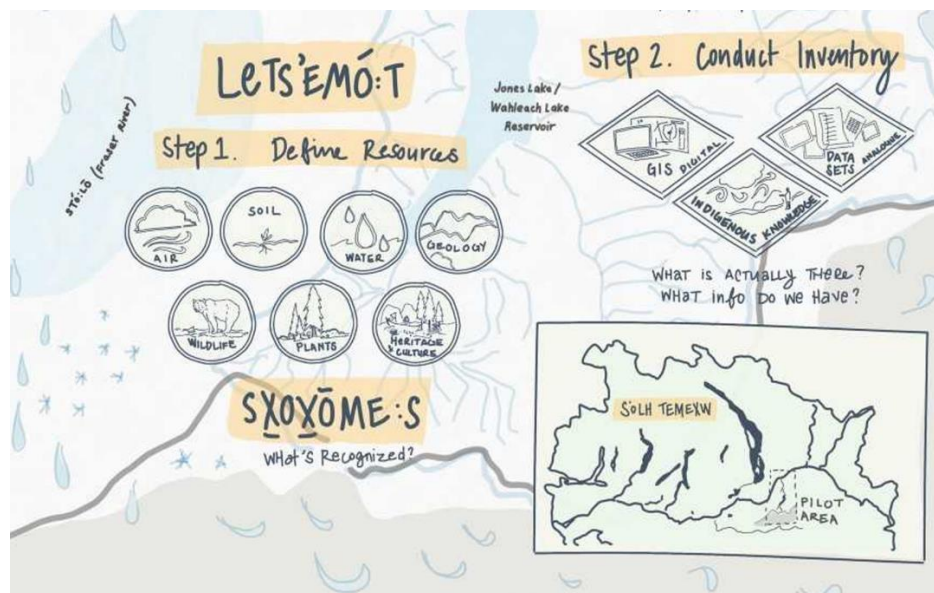


Figure 5: The first two steps of our integrity analysis process.

We begin the review of our process with Steps 1 and 2 (Figure 5):

- **Step 1** Being defining resources or otherwise we're using the term, Sxoxōmes, rather than resources. Sxoxōmes as gifts of the Creator. What's recognized out there, within this system. And we work in Lets'emó:t, as a principle, of collaboration, a collaborative process working together as one team, and being of one mind. In what we're doing, independent of, no matter who, you are, where you're coming from. We've worked on this under and within the concept of Lets'emó:t.
- **Step 2** is to conduct an inventory. What's actually there. What information do we have? Building on the definition of Sxoxōmes and what we recognize as elements of the watershed. Then we go and inventory. At that point, and at this point of our work, its necessary to establish a foundation for understanding Sxoxōmes and the construct of the watershed as a natural living being.

The image in Figure 6 comes from what Mark Point (Skowkale First Nation, Ts'elxwéyeqw Tribe) shared with us as "The Hierarchy of Man." This comes from Stó:lō sxwōxwiyám (the oral history of the distant past; narratives and time of the distant past when the world was mixed up; time, narratives and actions of the Transformers) in which humans were placed here last in the process of the world being created by Chíchelh Siyá:m (the Creator). Humans were placed here last and were also the weakest of all things. So this image shows the Sxoxōmes

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framework, with *Sxoxōmes* meaning 'Gifts of the Creator' – all those things that Chíchelh Siyá:m provided as gifts in the process of creating the world. All of these gifts are alive and interconnected, including humans as part of this system and relations of being.

We portray the watershed as the anatomy of a *natural living being* (Figure 4). There are two scales, extending from the centre of the sphere in this diagram. The centre is what was established first by Chíchelh Siyá:m, which is least dependent on everything else and which everything else is most dependent upon. At the middle of this set of circular connections is the sun. Beyond that, the order of creation and dependence, points of dependence by other realms are the earth, the air, the water. Beyond that, the microbes, the soils, the insects, the flora, the fish, amphibians, the birds, the animals and, lastly, human beings. All of these gifts exist on an array of increasing dependency, from the sun to humans. Across this array of inhabitants, of *Sxoxōmes*, extends our foundation of interdependency and interconnectedness. No one thing is independent of the other. There is no separation. Everything is dependent in some way on everything else, although some have a greater degree of dependency. Human beings, placed here last as the weakest of all things are the most dependent element of this system.

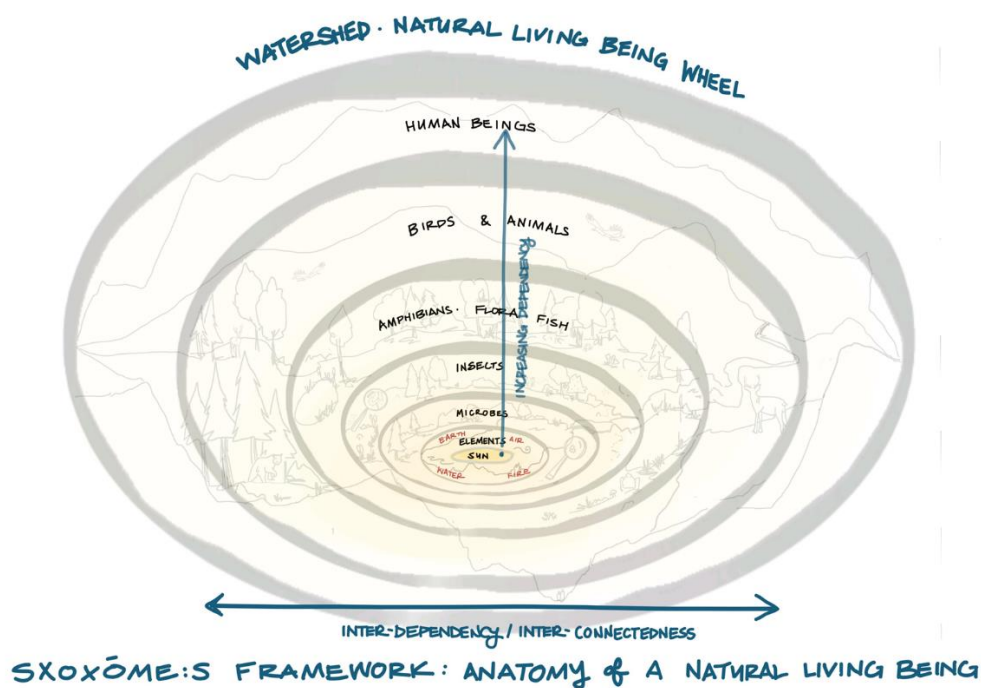


Figure 6

"The Hierarchy of Man...
Humans were placed here last,
as the weakest of all things."
– Mark Point, Skowkale FN

Descartes, "I think therefore I am."

Different than Western scientific perspective: Descarte and the Cartesian Paradigm (17th Century)

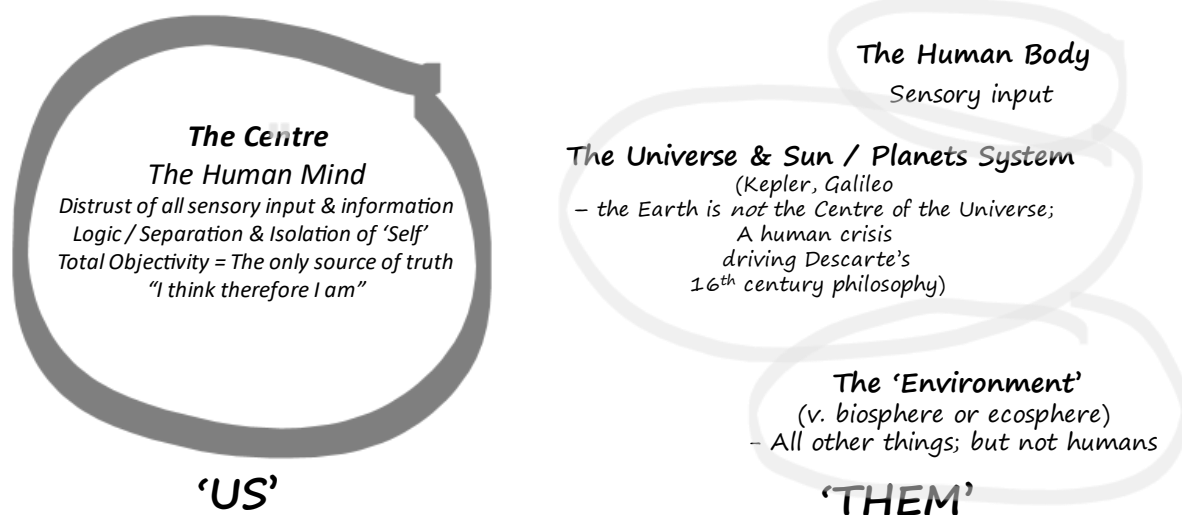


Figure 7: Descartes's philosophy and the Western Cartesian Scientific Paradigm

The elements and header in Figure 5 set out a foundation for understanding and approaching the S'ólh Téméxw integrity analysis, which (in reference to Figure 4) is contrary and different from a common core of current Western perspective and scientific paradigm. It is different from the paradigm carried with us today, from the 16th-17th century stemming from the philosophy of Descartes and the Cartesian approach to understanding and exploring the world around us. That expression of Western paradigm defines an 'us' and 'them' relationship -- not one of interconnectedness, but one of separation. Rather than the sun being at the centre, in fact, the centre of this world is the human mind. The mind holds an isolated place distrusting all sensory input and information. It is based on a foundation of logic, meaning to separate and isolate itself, as a 'self,' from even its own body. It applies and works on a basis of total objectivity that is perceived to be the only source of truth. This is included and encapsulated in this famous statement by Descartes, *"I think therefore I am."* It excludes and isolates the human mind from the human body and all aspects of sensory input, from the sun, and the universe and the system of planets that were found by Kepler and Galileo to be actually different previously thought; where the earth is not the centre of the universe. This realization created a sort of human crisis, driving Descartes's 17th century philosophy. The environment, itself, is a term that implies disconnection as opposed to connection. The mind is distinct from the environment. This differs from the concept of a biosphere or an ecosphere, and it separates the mind, as the 'us' from the 'them' which includes all things, but not humans, even in that view. So an outcome of Descartes's 17th Century thinking is that man is put at the centre of all things, is the priority, is above all things. Perhaps only subject to god. And from a Stó:lō perspective, then we revert back to the model that was initially put forward. And in our work, we aim to inventory Sxoxōmes: The Gifts of the Creator.

Sxoxōme:s Inventories in progress:

- Water Quality – lower, mid-, high-elevation testing (throughout S'ólh Téméxw)
- Air Quality – mid-elevation (in process – Jones, Sxótsaqel, Canyon)
- Plant Inventory
- LiDar Inventory – (compiled for S'ólh Téméxw; new data – Jones, Sxótsaqel, Canyon)
- Cultural Heritage Inventory
- Targeted to be done:
 - Soil / Fungi (mycelium)
 - Tree mycorrhizae ('wood wide web' – eg, Suzanne Simard et al)
 - Forest Age Class and Composition / Old Growth Cedar
 - Salmon / fish habitat and populations
 - Mountain Goat / Wildlife
 - Glacial ice coring / air-water quality history

Figure 8: Sxoxōmes: Inventories in Progress

We as people, placed here last, are actually doing the work to understand our place in the world. Through these inventories that we currently have in progress. Looking at water quality and air quality, as two key interconnected elements to the cycle of relationships. Plant inventories light our digital mapping inventories using contemporary technology to give us insights into the lay of the land. We're also looking at Cultural Heritage Inventory work. And, we're targeting work to be done in the realm of mycorrhizal, connections between fungal root systems in the soil, mycelium fungi, and other types of fungi. But, their connections and connecting tissues, to tree roots and other plant roots to create this system of connectedness and interconnectedness and relational aspects of reciprocity that Suzanne Simard, and others have called the wood wide web. We look at age, class and composition, salmon, wildlife, mountain goat, and do more high-elevation, historical air and water quality testing through glacial ice core testing.

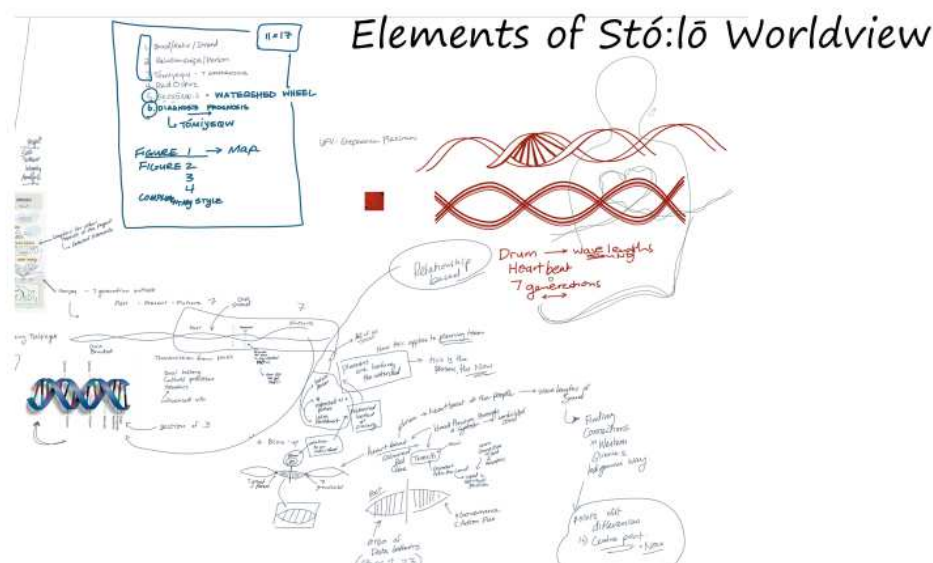


Figure 9: A preliminary project ‘mind-map’ including elements of Stó:lō Worldview

We bring this together, how? And for what purpose? And for that purpose of working to develop a baseline of information, to look at the now of the world around us. And to place that in the context of a Stó:lō worldview. In particular, establishing a model, using *tómiyeqw*. The seven generational outlook, and term describing the relationships seven generations past to now and seven generations future to now. And the now, is the foundation of that inventory. What's out there today, and placing it in the *tómiyeqw* model. And the *tómiyeqw* model we're drawing here, as representing the relationship between strands of time, DNA. The vibration of a heartbeat, the vibration of a drumbeat. Things that are foundational to our lives and represent generational connections. We put together like this. So, we stand at the now, middle point, as the always middle point of the seven generational outlook. With the principal of caring for our future generations, knowing the connectedness to our past generations and that we today carry this connection, and have been impacted. Not only today, but actually back in time, if you think about it that way, and also forward in time. Through the actions that we take and how we work with our land and our people, in the realm of stewardship. So knowing what's out there now, allows us to connect us with the heartbeat of the natural living being that we're working with here, and to look through our system. To then add more information on top of that inventory of today. All these aspects of *Sxoxōmes*.

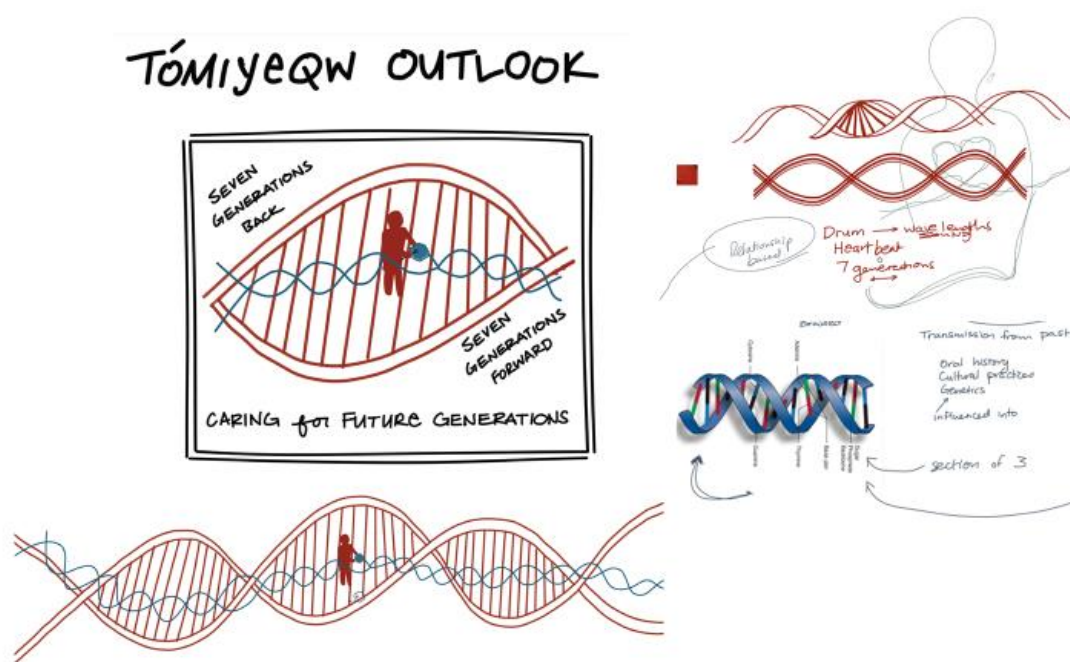


Figure 10: A *Tómiyeqw Outlook* as an element of our project paradigm and methods.

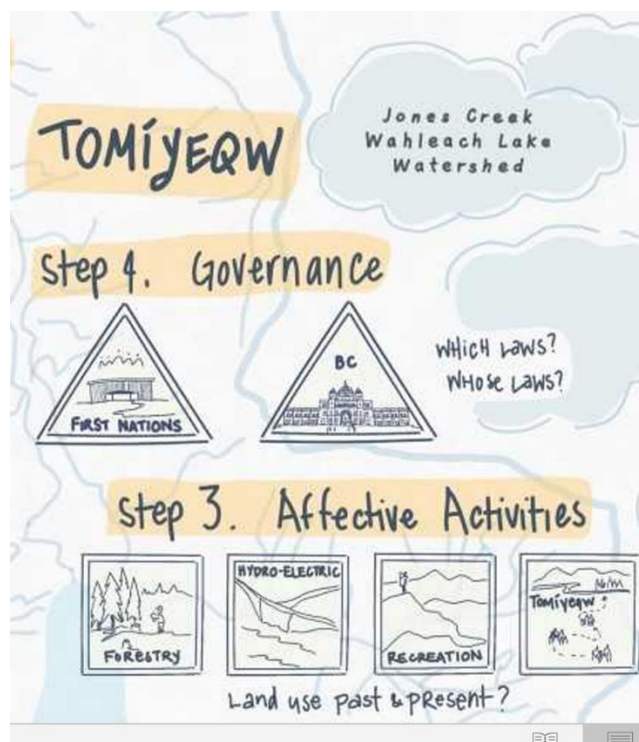


Figure 11: Steps 3 and 4 – Affective Activities and Governance

We also need to understand how we got to this point. From the effective activities of land use, both past and present. So, what's occurred, to have affected what we are seeing out there today. We also want to know, who's responsible for those activities? Who's laws? Which laws? What foundations of governance, looking at this in the long-term? For perhaps thousands of affective activities, and the governance of those affective activities. Coming to now, through the contact period of what was prior an Indigenous foundation solely. To the relationship to the land, now coming into a position and relationship that incorporates a colonial foundation of governance that's housed within British Columbia and also the Federal Government systems in relationship to First Nations and Stó:lō who are still here today. And continue to exist, and assert and apply their governing systems, now in relationship to those of the province and federal governments. All of this comes into play in this counter (form), in tómíyeq̓w. Are steps towards inventorying and understanding the affective activities and our governance inventories are in progress. Looking at legislative inventories, across provincial and federal systems, as they are applied and affective within the Jones Creek Watershed. We're looking at land status and interest analysis, provincial and federal as well.

Who is out there on the land? Who are the agents of change through the various activities linked to land use? And who has access, and actual interest and rights to any degree, in the land and how are they established? Whether through a license, lease or tenure, or through a system of names, established through an Indigenous governing [prophecies?], or through family-based rights to access and use, and take care of areas out there on the land. We address, in this way, governance, through all of the systems that exist and we address, Stó:lō, First Nations, and Tribal lands in areas of interest and activity as well through understanding those systems of governance (Figure 8). What we've targeted to be done is the extrapolation of past activities

from current Sxoxōmes inventories. And also, look to develop a better understanding of the Indigenous laws of the land through Sxwōxwiyám. And foundation of governance and law, which then leads to inform peoples behavior on the land. Again, coming from the land itself, in many cases in the constitution of Stó:lō laws and principles established through the transformative actions of Xexá:ls, that are set out in the period distant past and the actions of transformers accounting for Sxwōxwiyám and Stó:lō Snoweyelh (teachings; laws of the land) – per Steven Point of Skowkale First Nation ‘a constitution written in stone.’

Affective Activities / Governance Inventories in progress:

- Legislative inventory – provincial and federal
- Land status and interests analysis – provincial and federal
 - Identification of effective agents and activities links to a view back in time
- Addressing Stó:lō First Nation and Tribal lands and areas of interest and activity
- Targeted to be done:
 - Extrapolation of past activities from current Sxoxōme:s inventories (e.g., forest age)
 - Indigenous laws of the land (Sxwōxwiyám)

Figure 12: Affective Activities and Governance: Inventories in Progress and Planned



Figure 13: Step 5 of the Process: the Watershed Stewardship Action Plan and Shxwelí

Shxwelí is effectively a shared spirit and a shared lifeforce and is a key Halq'eméylem term and element of Stó:lō worldview and system of well-being that is foundational to the paradigm and methods of this integrity analysis (Figure 9). Shxwelí is the basis of system of interconnectedness that is bundled into all parts of this project in its holistic, cumulative,

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collaborative, and intergenerational approach to the watershed stewardship action plan. Step 5, the development of an action plan (or plans), in this final step and objective of our work, currently.

So Tómiyeqw (Figure 6) is a key principle link to the natural living being, interconnectedness, shared spirit, shxwelí and putting that together into understanding how things are today. The integrity analysis part.

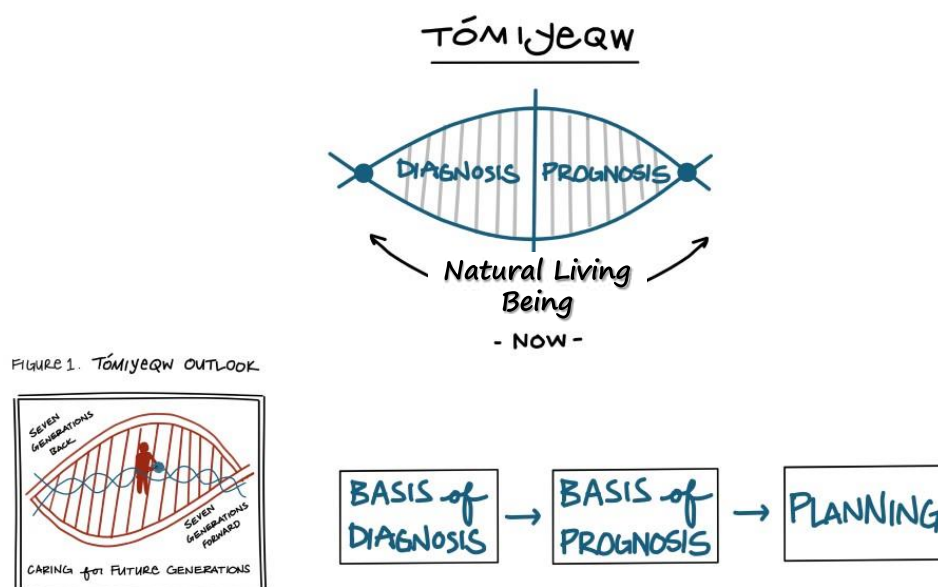


Figure 14

And we've set up a method for doing this by looking at a basis of diagnosis, a basis of prognosis, leading to planning. And the key part is working with the watershed as a natural living being and treating that being in a manner that a doctor would treat a patient in a sense, although that's the wrong analogy. This living being is by no means, a patient of ours. But ultimately a living being that we're dependent upon to be in good order, to be healthy for our wellbeing and everyone else's wellbeing. So, treating that with the huge respect. It's a sacred being, that we want to find out how they're doing, and this is the way to approach it.

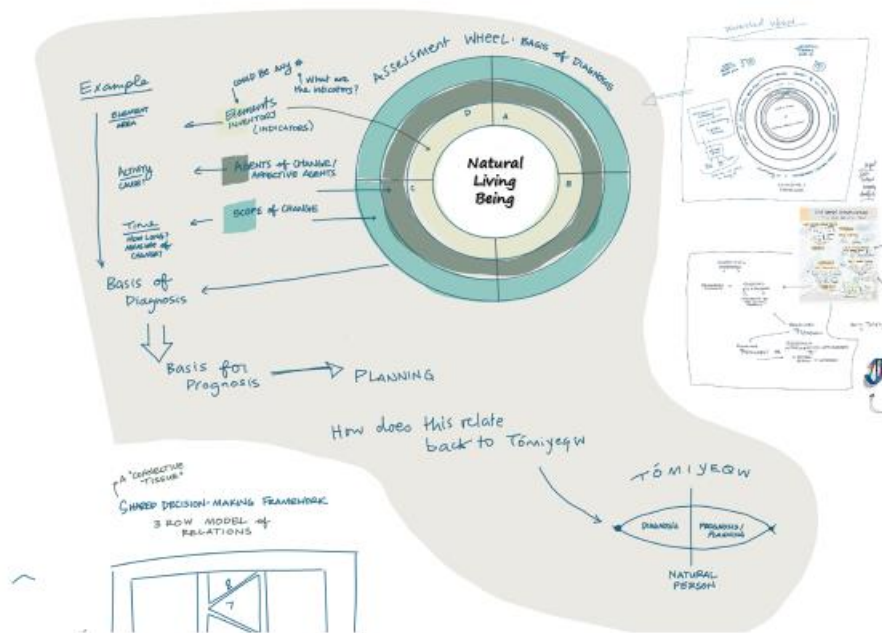


Figure 15

These are conceptual plans that formulated into something more specific through an assessment wheel as a basis for diagnosis. At the centre reproducing the natural living being, in its various elements that includes us, again humans as the last to be established and the weakest of all things, back to the hierarchy of man. And establishing spheres around that core. That represent elements, indicators of inquiry could be one or many, as a subject area. Beyond that, agents of change. The affective agents as activities and causes of change through time.

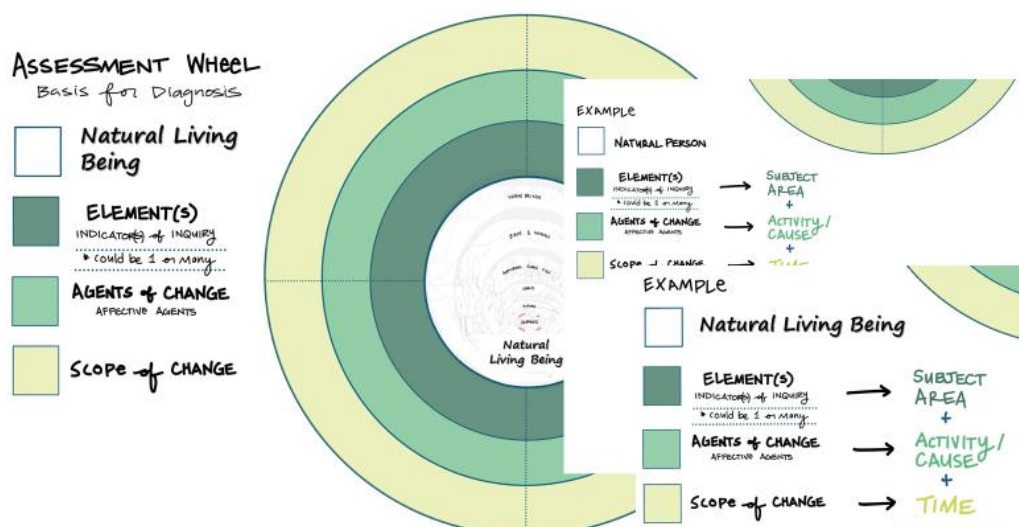


Figure 16

And then the scope of change. So you can see how we're putting together our plan. We start with this understanding of relations, we move to examine and understand the elements of the system, inventories are aspects of change, the scopes of change. So that for any particular thing, water, air, wildlife, plants, fungi, we can assess the wellbeing of that aspect of this natural living being through the implementation of this assessment wheel.

Leads to a plan – Next Steps:

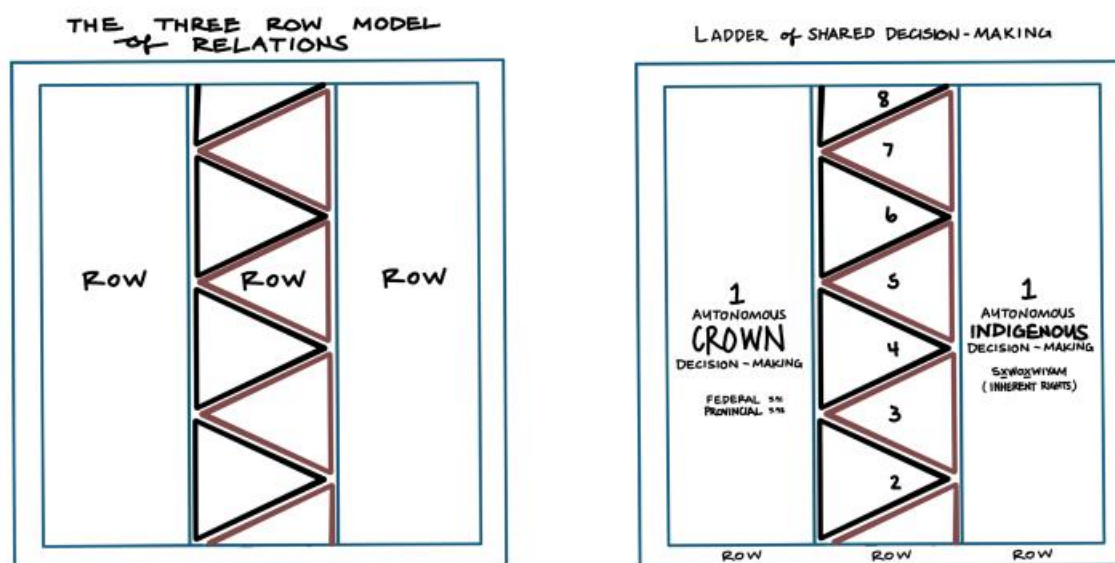
- *Long Term 7-Generational Outlook*
- *1,000 year view- needed to regenerate Old Growth Cedar*
- *Ongoing monitoring and assessment of keystone species (e.g, salmon)*
- *AND... Changes in Governance Relationships*

Which leads to a plan as a “next steps.” And we are taking this methodology that we've established as a foundation, and looking to apply it, pilot it, within the context of a long-term seven generational outlook. In fact, a thousand-year view is needed to establish our goals here, fully. Including the regeneration of old-growth cedar, which we know has been vastly diminished in the past 150-200 years through logging practices that were applied in the region. We want to re-establish the well-being of this being, and we know that one area of impact is specific to the loss of old-growth cedar. And we intend to develop ongoing monitoring and assessment of key-stone species, including salmon, as a “next-steps.” -- looking at changes in governance relationships. This brings us to shared decision-making.

We developed a ‘spectrum’ of shared decision-making processes as a focused element of our project. We set these out in a sequence of images (Figure 17, Figure 18). The first of these is the Three-Row Model of Relations and is a depiction of a model of relations that was recently been developed (Schaepe 2018). This is derived from a foundation in the Haudenosaunee Two Row Wampum belt which, in 1613, set out a foundation or Native-Newcomer relations between sovereign nations. It has two rows, one representing the Crown (in this case) and one for the Indigenous Peoples, each having and maintaining their own customs, laws and beliefs, unaffected by the other. The Three-Row Model adds a central row (Figure 17a) that establishes a arena of ‘shared decision-making’ linked to the co-occupation of place and decision-making that serves to mitigate the imbalanced and uncontrolled colonial relationship the overcame the two-row model. The experience of colonialism points to the need for a mitigative factor in the relationship. This is placed within a context and stewardship founded on the need to reconcile centuries of unilateral Crown-based land and resource use, and now placed within a framework for collaborative stewardship and shared decision-making. The design elements in our Three-Row Model figure are based on a design that comes from Terry Horne, a well-known carver and from the Yakwekwioose First Nation of the Ts'elxwéyew Tribe. So a swōqw'elh (traditional

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woven blanket) design of interconnected triangles and colors (black and red), that are common to Stó:lō design elements and cultural knowledge produced specifically to represent this model specifically in a Stó:lō way.



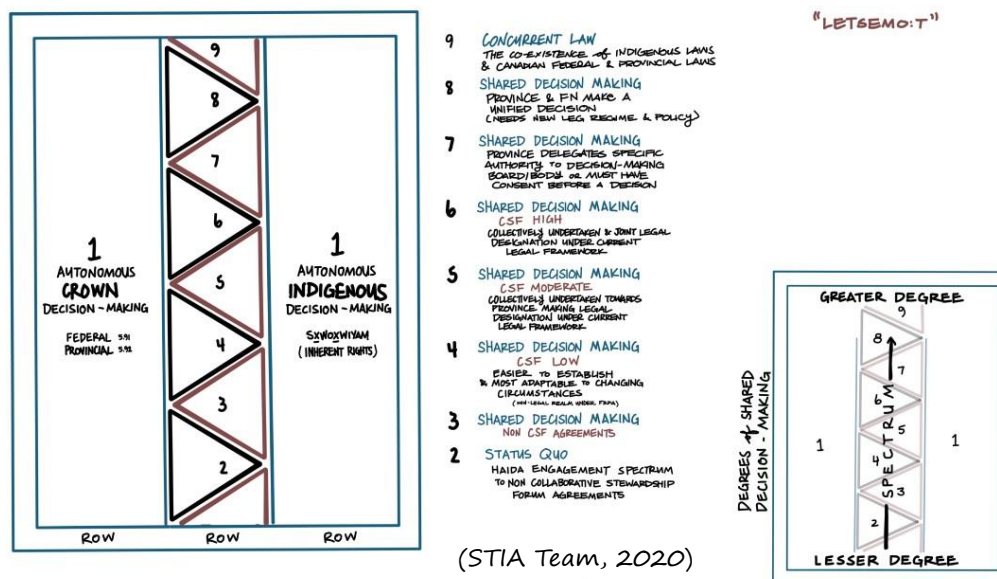
(After Schaepe 2018; blanket design by Terry Horne)

Figure 17 a and b: A Three Row Model of Relations

Figure 17 shows the three rows articulated in a bit more detail. The two outer rows in this model are areas of autonomous societal being and self-governance, and in affect, elements of autonomous decision-making. The third row is the novel element in this model. This 'third row' makes space for connecting relationships while yet maintain the autonomy and separation of nations. This is the space for establishing a 'new' relationship. That row was conceived of on a foundation of shared decision-making, as an emerging field that can mediate the relationships between the societies that now co-occupy a place. Western Canadian Society and Stó:lō Indigenous Peoples occupy the same place but have different views of the land and uses of the land, what's appropriate? how to proceed? what the foundations for thinking are? The third row brings Peoples, Governments, and Nations together. Our Collaborative Stewardship Forum, with this work and in other areas of our work, are models for how to proceed in developing, co-occupying, and collaboratively working together within that 'third row'.

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GOVERNANCE SPECTRUM (SHARED DECISION MAKING)



(STIA Team, 2020)

Figure 18

In its fullest conceptual form to date, we developed the image in Figure 18 which fleshes out elements of that third row, in the form of a 'ladder'. It can also be viewed as a 'spectrum'. No matter which way you turn it or look at it, it still works the same way. In this image, the run ladder / spectrum runs vertically from the base of the ladder as the status quo (e.g., engagement-consultation-accommodation processes), as some form of connectedness and link to decision-making. At this level, there is some debate about what actually establishes the entry-level wrung in the middle row of shared decision-making. In this instance, we start there. Through that ladder, though, various aspects or versions of collaborative stewardship occupy a single level or multiple parts of the ladder including 'steps' four, five and six perhaps. Beyond those levels in the model, we move up and beyond into to shared decision-making that is established through a relationship of laws and policies. This includes the delegation of laws and decision-making under provincial systems or federal systems, all the way up the ladder to number nine, the top of the ladder as we understand it -- Concurrent Law. It is at this point of Concurrent Law where each party (Federal, Provincial, Indigenous) has their own law-making powers that *relate* to one another in a system of concurrency; rather than exclude one another. Exclusion represents the isolated rows of autonomous or unilateral governance and decision-making. Inclusion and concurrency occupies a pinnacle of shared decision-making at the 'top' end of the shared middle row in this Three-Row Model of Relations. All of the third or middle row in this model is a matter of Lets'emót: working together; being of one mind. What this model represents, as we have populated the middle row or relations, is that there are multiple ways of approaching shared decision-making; that it is not just one thing. This perspective and understanding was developed through the S'ólh Téméxw Integrity Analysis Team, as what we perceive as one of our significant outcomes. This brings us to where we are now in this project, having established a foundation for our next phases of work. And wrapping

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this up now, gives us a basis to develop plans for where we go from here to continue building and aim to pilot the work we've established and that's coming in the near future. Our project is 'to be continued.'

On behalf of the S'ólh Téméxw Integrity Analysis Team... K'was Hoy

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Shared Decision-Making

Shared decision-making (SDM) and collaborative processes established within Government-to-Government (G2G) relationships between Indigenous peoples and the provincial Crown sit against a historical landscape. For these processes to be meaningful, this historical landscape must be fully explored so that a common understanding is held by both parties. Some critical elements to consider in this exploration are:

- The integrity of the natural resources. Starting with pre-contact, the change in resource integrity over time can be tracked by drawing from both Indigenous knowledge and

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Crown-led resource monitoring programs. Gaps in this resource integrity picture need to be identified and acknowledged.

- The resource management decision-making processes in place to date. How past decisions were made and by whom needs to be documented, including the legislative, regulatory, and operational settings in place at the time. Most past decisions will have been made unilaterally by the Crown. It is important to ask whether Free, Prior, and Informed Consent (FPIC) was given by Indigenous Nations in relation to these past resource management decisions and if any accommodations were provided by the Crown. Understanding how these decisions have impacted Indigenous Nations is necessary, e.g. the decision by the government of British Columbia to install flood protection infrastructure was made unilaterally without engagement with Indigenous Nations resulting in many First Nation Reserves being on the “wrong side” of dyke structures, the presence of which has changed the local hydrology and increased the flood risk carried by Indigenous Nations.

Ideally, SDM and collaborative processes established are co-designed and co-developed by both parties from the outset, with financial resources provided for substantive involvement by Indigenous Nations. However, the reality is that often the idea for SDM or collaborative processes is first considered internally by the Crown and programs are created and parameterized in isolation (e.g. the Environmental Stewardship Initiative and Collaborative Stewardship Framework). By the time Indigenous Nations learn about these programs, they have already entered the role of reactor/responder/participant rather than co-designer/developer/creator. An honest appraisal of whether such programs can ever be truly collaborative is needed.

In situations where Indigenous Nations are invited to collaborate or participate in initiatives that were developed unilaterally by the Crown, time and financial support must be provided to support the Indigenous Nations in “catching-up” with the process. This includes, among other things, funding to build operational and technical capacity within Indigenous Nations.

Project Goals

- Measure the integrity of S'ólh Téméxw
- Air and Water Quality Monitoring
 - Identify existing monitoring programs and locations; BC Hydro, Provincial, and Federal
 - Identify locations, pair locations where possible with Air Quality Monitoring station locations
 - Determine gaps in existing data, suggested data gathering locations
 - Determining historical data timeline, gathering existing data, quantitative and qualitative
 - Plan and implement air quality monitoring program; wind speed, particulate matter, temperature, urban heat island effect etc.

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- Plan and implement water quality monitoring program: volume, velocity, pH, dissolved oxygen, turbidity, conductivity, temperature, nitrates and heavy metal analysis
- Install, implement and monitor data gathering stations and programs
- Coordinate program with youth and the BC Ministry of Environment
- Identify data collection stations that are currently not connected to programs, but have potential for revitalization
- Provide insight and professional knowledge pertinent to establishing long-term water quality baseline data, monitoring integrity of each monitored watershed and its ecological health indicator components within S'ólh Téméxw
- Detection documentation and graphical analysis of naturally and anthropogenically caused environmental impacts based on the obtained and continuously monitored water quality data within each watershed.
- Accumulate, house and preserve data for future generations pertaining to climate change analysis within S'ólh Téméxw and ensure free, public data sharing
- Plant inventory
 - Scientific information gathered will be derived from both digital sources, and from field surveys
 - Data gathered will be utilized in determining values and harvest rates for upholding Provincial Ministerial duties have been traditionally conducted by the Province, or Provincially contracted sources
 - Address issue of lack of ecosystem maps that serve Stó:lō organizations and community, information sharing protocols developed to provide available comprehensive ecosystem maps and reports
 - Developing protocols for processes to create or enhance databases that reflect a more fulsome understanding of plant populations
 - Stó:lō oversight of data gathering for this project will build trust and strengthen relationships between parties involved. Creating a more unified sense of ownership over data and in turn, decisions stemming from data gathered

Status Reports and Achievements

- Water
 - Permanent installation of monitoring equipment: purchased and installed
 - On-going hourly water quality readings in 5 different creek locations uploading to HydroVu
 - Schkam Creek
 - Ruby Creek
 - Yale Creek
 - Texas Creek
 - Jones Creek
 - Data collected to assess water health and collect baseline data to observe potential effects of climate change: pH changes, dissolved oxygen,

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temperature, oxidation reduction potential, turbidity (Schkam vs Texas), conductivity, nitrates

- Water quality monitoring on 4 different glacial sites
 - Frozen Lake
 - Upper Hanging Lake
 - Williams (2 sites; stagnant and flowing)
 - Data collected to assess water health and collect baseline data to observe potential effects of climate change: pH changes, dissolved oxygen, temperature, oxidation reduction potential, turbidity, conductivity
 - temperature, oxidation reduction potential, turbidity, conductivity
- Air Quality Monitoring
 - Purchased monitors
 - Painted monitors
 - Location for Sxótsaqel chosen (RWDI hired to choose this location)
 - Installation in Sxótsaqel pending weather conditions and Special Use Permit issuance
 - Scoping in spring/summer for other two locations for a summer installation
- Plant inventory
 - Some inventories completed
 - Mapping produced
 - Some analysis completed
- LiDAR
 - Inventory of available data at project start and gap analysis
 - A study of available LiDAR datasets was begun to get an idea of coverage and identify and prioritize gaps. The Stó:lō Research and Resource Management Centre (SRRMC) had coverage sourced from both the City of Chilliwack, and the Fraser Valley Regional District (Figure 19). This was focused mainly on the Fraser Valley, from east of Sumas Mountain to Hope.

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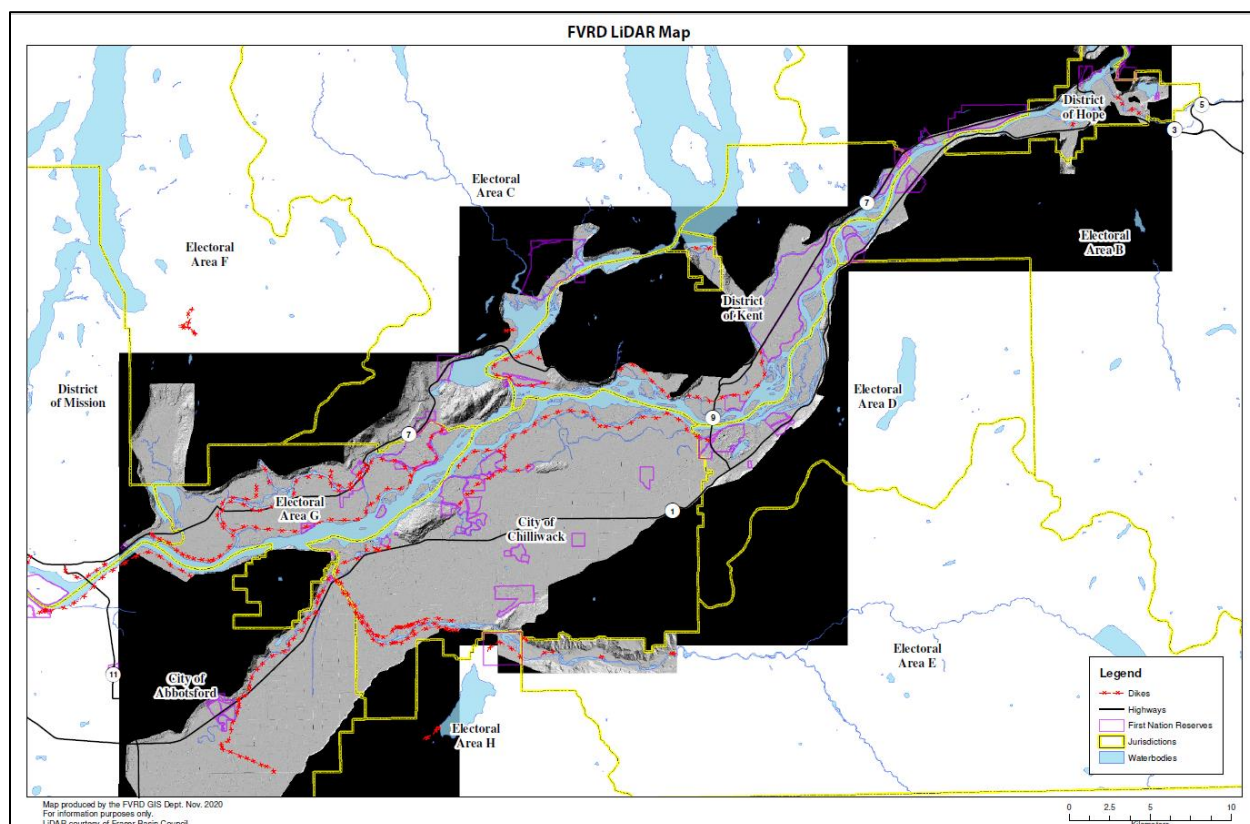


Figure 19: Available LiDAR datasets at beginning of project.

- We sourced data from Emergency Management BC and BC Timber Sales
- The potential coverage for these new sources is shown in Figure 20 below, with the Emergency Management coverage in red hatching and BCTS in green, labelled A through E. The existing SRRMC coverage is shown in grey

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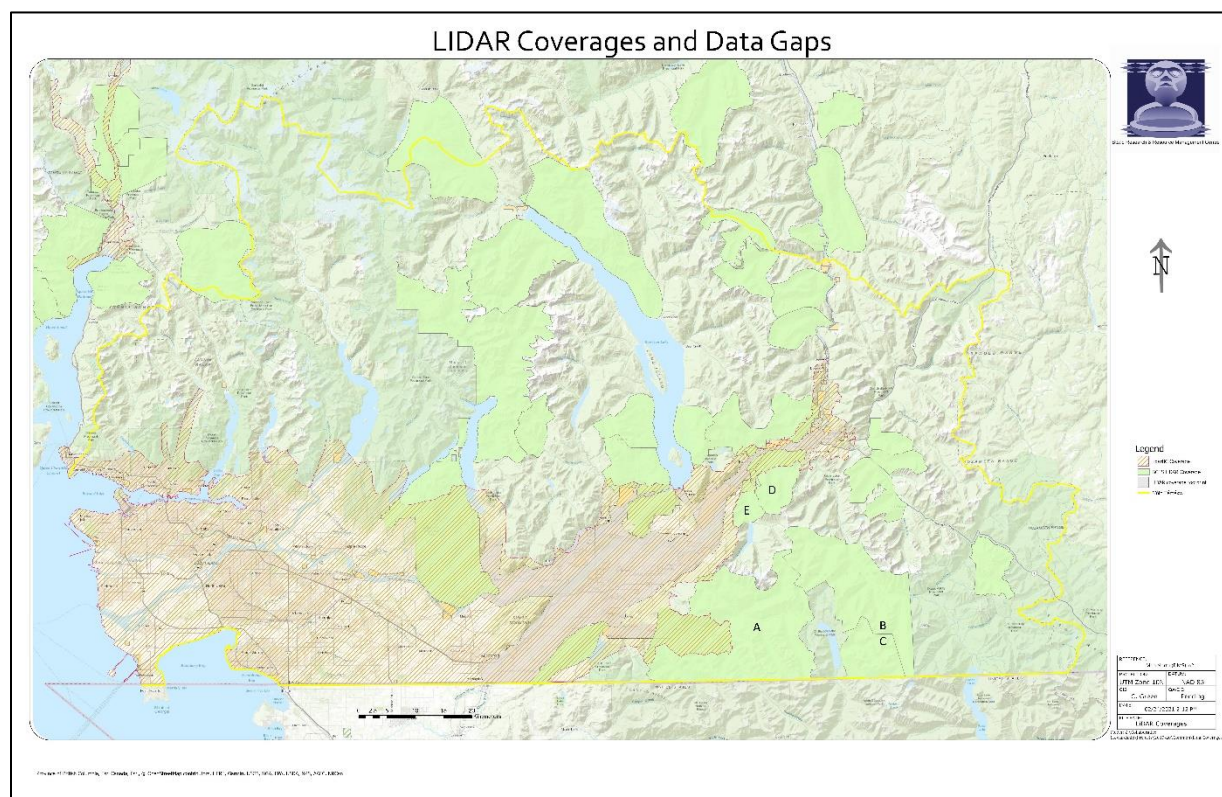


Figure 20: LiDAR coverages and data gaps

- Based on available data and our project priorities, we designed and flew three LiDAR surveys (Sxótsaqel/Chilliwack Lake Park, Jones Lake, 5 Mile Canyon). See Figure 21 below.

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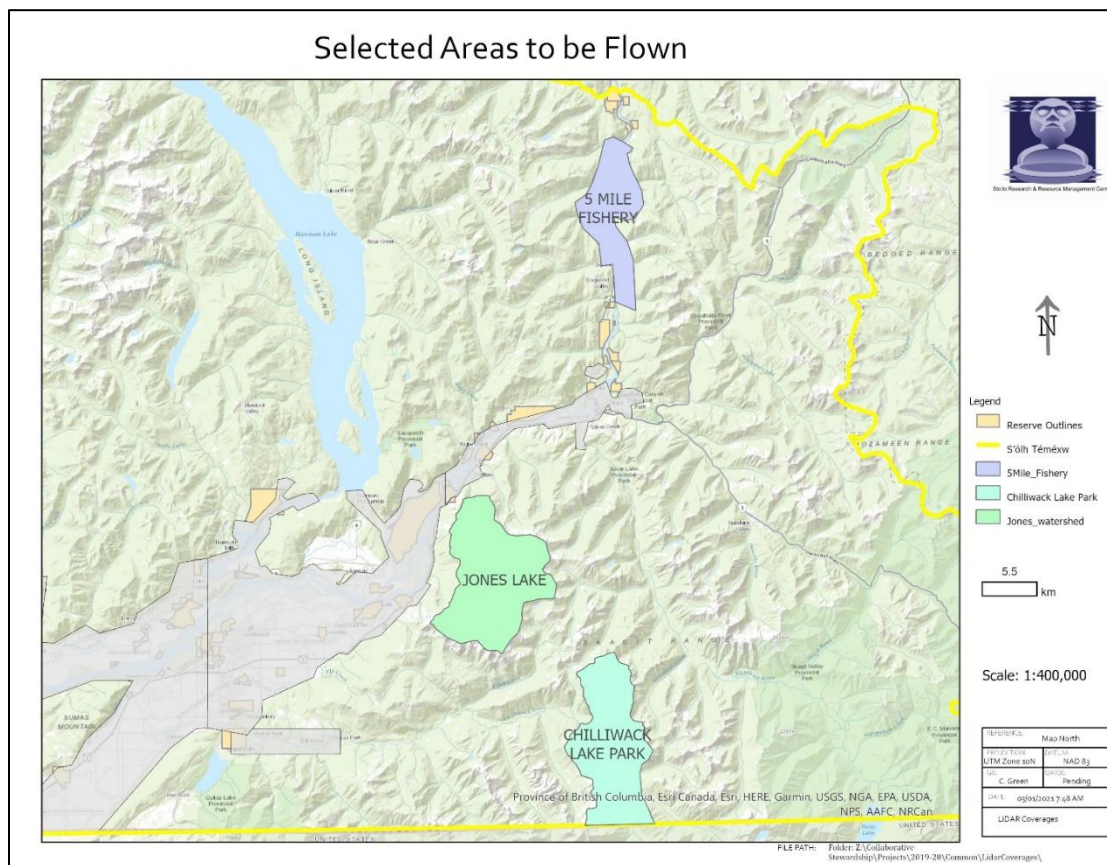


Figure 21: Priority areas selected to acquire LiDAR data

- Final data is in hand (tiles leveled, move to external hard drives for sharing)
- **LiDAR and LiDAR derived deliverables**
 - Calibrated, unclassified point cloud – .LAS format - delivered in compressed .LAS format (laz)
 - Classified point cloud – (0) unclassified, (2) ground, (7) low noise, (9) buildings – .LAS format - delivered in compressed .LAS format (laz)
 - 0.25m grid Bare-earth (DEM) surface file – .asc
 - 0.25m grid Digital Surface model (DSM – 1st returns) – .asc
 - 0.25m grid DEM Hillshade – .asc format
 - 0.25m grid DSM Hillshade – .asc format
 - Normalized 25cm intensity images – .TIF format
- **Imagery Deliverables**
 - georeferenced ortho-rectified imagery 25cm GSD in .TIF files and mosaiced
 - raw 16-bit imagery, geotif format AeroTriangulated but not color balanced or pan sharpened. This is used for developing spectral indices for plant/inventory predictions in future work.

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- Stereo Models for compatible with DATEM/Summit Lite 3D workstations. This can be used for inventory/quality control of plant predictions in future work.
- Aerial surveys were split into separate LiDAR and imagery missions. This allowed more efficient data collection (i.e. not holding up LiDAR for sun angle conditions needed for the imagery) as well as provides for 4-band CIR imagery to be collected and lower imagery acquisition/processing costs.
- Delivery of data from flight crews took 1 week from time of acquisition. Post processing includes calibration of LiDAR to surveyed ground control, GPS/IMU processing (LiDAR and imagery) and processing imagery from Vexcel raw image format to industry standard 4 band TIFF files.
- Classification of the LiDAR to bare-earth, buildings, low noise, and unclassified point classes required approximately 2 weeks.
- Once the LiDAR bare-earth was ready, the imagery will undergo enhanced georeferencing utilizing the airborne GPS/IMU, ground control and points derived from the .LAS LiDAR point cloud. This will ensure the imagery/stereo models and resulting ortho-imagery are congruent with the LiDAR data. Georeferenced images will be ortho-rectified using the bare-earth derived LiDAR surface, color balanced and mosaiced for form a seamless 25cm image of each area.
- Data dictionary/ compilation of existing data
 - As part of the STIA project, the SRRMC GIS group began listing and categorizing available data layers as part of a Data Dictionary item. This was to be a resource for the Integrity Analysis, to show the layers that could be used for analysis and added to maps, as well as a Gap Analysis, to identify areas and categories that needed further data sources. The layers included in the dictionary were a mix of internally sourced and housed data, and external data that was either downloaded and housed internally, or had the external source identified so it could be retrieved as needed.
 - Data layers were classed according to project defined categories to align with the project terms of reference. Data sources were identified, and if external, were checked for current viability and any outdated or broken links were removed. The descriptive portions of the Stó:lō Heritage Database (SHeD) were included as a separate tab, as they are a vital part of the inhouse datasets.
 - This is very much an ongoing process, but the current Dictionary is included as an Excel Sheet (*GIS Layer Data Dictionary-March2021.xlsx*) appended to this report.
 - Interests and government agencies lists
 - Using the Jones Watershed as a pilot, an Interest analysis was run using the SRRMC Interest Module web portal. While the portal was purpose built for the ongoing Stó:lō Xwexwilmexw Treaty Association (SXTA)

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Treaty negotiations, it is a powerful tool for this type of analysis. SRRMC, in conjunction with our long-time web developers Culture Code, have made some improved functionality for these sorts of non-Treaty specific analyses, and this was one of the first live uses of that new capability.

- The watershed was exported as a GIS shape file, and imported to the Interest Module (Figure 22).

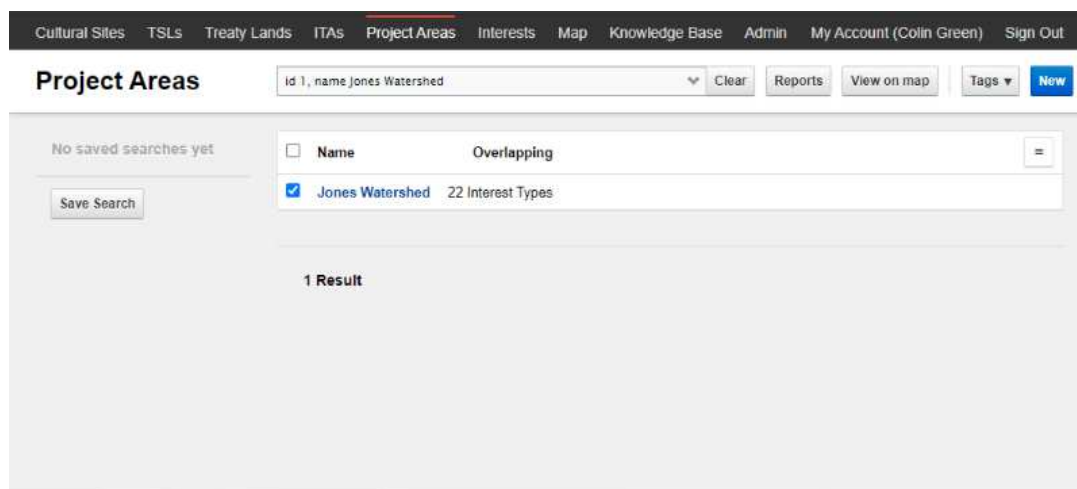


Figure 22: Jones watershed interest module

- The analysis shows 22 Types, and a total of 205 overlapping interests, covering the entire watershed (Figure 23).

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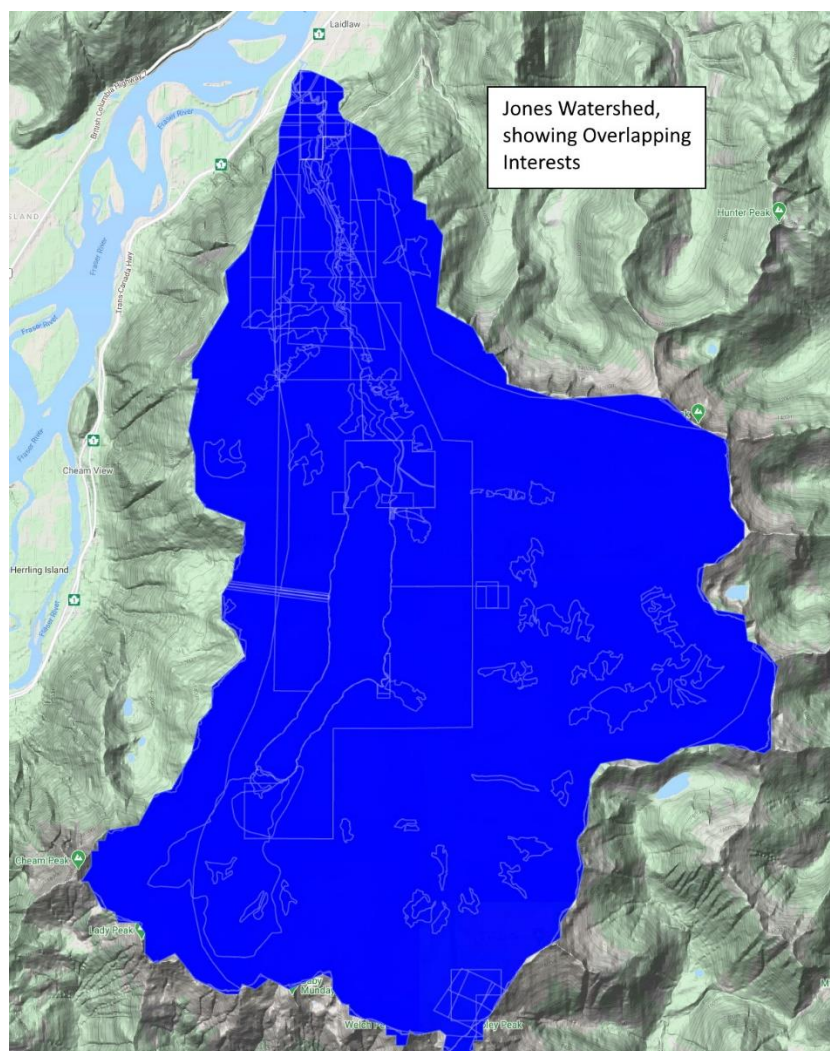


Figure 23: Overlapping Interests on the Jones Creek Watershed

- A listing of types of interests and Ministries involved and a count of each is shown below in Table 3; the full report is appended on page 152 of this report. It also includes a listing of the BC and Federal data layers that are queried by the Interest Module during the analysis.

Table 3: Interest Type

Ministry	Details	Count
Environment	ENV Water Protection and Sustainability Branch Ground Well	3
Forests, Lands, Natural Resource Operations, and Rural Development (FLNRORD)	FLNRO Archaeology Branch Archaeological Site	1

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FLNRORD	FLNRO ENV Science and Information Branch Community Watershed	1
FLNRORD	FLNRO Forest Tenures Branch Gravel Pit	1
FLNRORD	FLNRO Forest Tenures Branch Road Section Forest Service Road	9
FLNRORD	FLNRO Forest Tenures Branch Cut Block Forest Licence Cut Block	5
FLNRORD	FLNRO Forest Tenures Branch Free Use Permit	3
FLNRORD	FLNRO Forest Tenures Branch Map Notation Polygon Miscellaneous	1
FLNRORD	FLNRO Forest Tenures Branch Road Section	32
FLNRORD	FLNRO Forest Tenures Branch Timber Licence	1
FLNRORD	FLNRO GeoBC Crown Tenure -various uses	10
FLNRORD	FLNRO GeoBC Surveyed Parcel Subdivision	12
FLNRORD	FLNRO GeoBC Surveyed Parcel Primary	16
FLNRORD	FLNRO GeoBC Right of Way	1
FLNRORD	FLNRO Recreation Sites & Trails	4
FLNRORD	FLNRO Resource Management Objectives Branch OGMA	43
FLNRORD	FLNRO Water Management Branch	10
Integrated Cadastre Information Society	ICIS Land Parcel	22
Energy and Mines	MEM Mineral Titles and Policy Branch Mining Tenure Mineral / CLAIM	12
Environment	Ministry of Environment Ecosystems Branch Wildlife Habitat	3
Environment	Ministry of Environment Fish and Wildlife Branch Trapline	6
	Nearby (within 100m of boundary of watershed)	22

Forestry tenure allocation, specifically in the Chilliwack Natural Resources District

- Presentation by Cat Charman
- **General Overview of Forestry Authorizations**
 - Forestry Acts and Regulations
 - Forest Act
 - Outlines the policy
 - Primarily addresses rights to log Crown timber.
 - Provides authority for allocation and administration of crown timber by ministry officials and BC Timber sales (BCTS).

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- Requires the Chief Forester to determine an allowable annual cut for crown timber in each timber supply area (TSA) (excluding crown timber in area-based tenures).
- Provides for the establishment of designated areas in support of government land use and treaty initiatives.
- Forest and Range Practices Act
 - Outlines how all forest and range practices and resource-based activities are to be conducted on Crown Land in BC
 - Identifies 11 Resource values:
 - Biodiversity, **Cultural Heritage**, Fish/Riparian, Forage & Assoc. Plant Communities, Recreation, Resource Features, Soils, Timber, Visual Quality, Water Quality, Wildlife.
 - All Forest and range licensees' activities are governed by FRPA and it's regulation during all stages of planning. Road building , logging, reforestation and/or grazing.
 - Requires a Forest Stewardship Plan (FSP) or Woodlot License Plan (WLP) be approved before harvesting of timber or road construction.
- Forest Planning and Practices Regulation
 - Provides the details on how to implement the policy set out in the Acts.
 - FPPR sect 10 – **Objectives set by government for cultural heritage resources**
 - “ 10. The objective set by government for cultural heritage resources is to conserve an, or, if necessary, protect cultural heritage resources that are:
 - (a) The focus of a traditional use by an aboriginal people that is of continuing importance to that people, and
 - (b) Not regulated under the Heritage Conservation Act.”
 - FPPR sect 20 – **Providing Notice**
 - “ 20(2). For the purposes of subsection (1), the period during which persons have the opportunity to review a FSP or an amendment to one begins on the date the notice is first published and ends (a) 60 days after that date if no greater or lesser number of days is determined...”
 - “ 21(10(a). Must make reasonable efforts to meet with First Nation groups affected by the plan to discuss the plan.”
- **Forest Stewardship Plan (FSP) & Woodlot License Plan (WLP)**

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- Is a legal document outlining how the Licensee will manage for the 11 objectives set by government (including CHR)
 - These are developed by each FSP/WLP holder and will have differing strategies.
- The FSP/WLP describes how the Licensee will manage the Cultural Heritage Resources and how they will information share with First Nation communities.
- FRPA – sec 18. *“ A person responsible for preparing a FSP, a WLP or an amendment to either, if required by the regulations and then in accordance with the regulations, must make the plan or amendment publicly available for (a) review, and (b) comments before submitting the plan or amendment to the minister for approval.”*
- Forestry Authorizations
 - **Timber Supply Review /AAC determination**
 - Is the determination of the allowable annual cut (AAC), or the amount of timber that can be harvested, for a timber supply area (TSA) or Tree Farm License (TFL). This is determined by the chief forester based on the information provided during the Timber Supply Review (TSR).
 - **License**
 - Provides the holder the right to harvest timber
 - Can be volume based (anywhere in the Timber Supply Area i.e. Forest License (FL), Non-Replaceable Forest License (NRFL)) or area based (confined to a determined area i.e. Woodlot (WL), First Nations Woodlands License (FNWL))
 - **Forest Stewardship Plan/ Woodlot License Plan**
 - Is required to be approved before any primary forest activities can be conducted under a license.
 - **Cutting/Road Permit**
 - Is a permit applied for by the license holder to harvest timber and build roads for a defined area(s). This activity must align with the approved FSP and have the appropriate assessments completed.
 - **Other**
 - Include Free Use Permits (FUP), Forest License to Cut (FLTC), Occupant License to Cut (OLTC), Special Use permits (SUPs)
- **Other Authorizations that do not require an FSP/WLP**
 - Forest License to Cut (FLTC) - - is a relatively small forest tenure that allows harvesting in a specific area over a relatively short period of time. A FLTC is not a replaceable tenure because it is not intended to provide a forest company with an ongoing supply of timber. An FLTC is also not intended to be used like a timber sale license to provide an ongoing stream of competitive timber harvesting opportunities. A FLTC can grant

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harvesting rights for a number of purposes that cannot be addressed by larger licenses or the timber sale license program. (Forest Act sec 47.6)

- Free Use Permits (FUP) – conveys the right to remove minor volumes of Crown timber for purposes including personal use (e.g., firewood, Christmas tree, traditional or cultural activity), developing land for agriculture, and using timber to develop a mining claim. (Forest Act sec 48)
- Occupant License to Cut (OLTC) – authorizes a company/individual to cut and deck or remove timber from land that they occupy or own, where they otherwise do not have the right to harvest crown timber. An OLTC may only be issued to a company/individual that has a valid tenure giving them the right to occupy the land. (Forest Act sec 47.5)
- Special Use Permits (SUP) - gives non-exclusive authority to a company or an individual to occupy and use an area of Crown Land, within the Provincial Forest, when they have demonstrated to the District Manager that the intended use is in accordance with the Provincial Forest Use Regulation and related legislation.
- **Charting/ Operating Areas**
 - Major licensees have Forest Licenses that are volume base and are restricted to crown land within the Chilliwack Natural Resource District/ Fraser Timber Supply Area.
 - Over the last few years, the District and Licensees have been working to clarify chart areas to adapt to the shifts on the land base.
 - Chart areas are a “handshake” agreement between Licensees. The licensee can harvest in areas outside their chart areas, but they would need to have discussions with the overlapping License holder.
 - New licenses, whether they are area based or volume based require a mandate in order for the province to move ahead with discussions regarding the license.
 - Consultation on the license occurs after a mandate has been given.
 - This has proven to raise concerns specifically to area-based tenures such as was raised for Union Bars’ proposed woodlot W2103.
 - It raises the questions of when should consultation occur?
- **Allocation in Jones Lake**
 - Forest License Operating area – Area around and including Jones Lake was set as a Prospective First Nations Operating Area.
 - was designated as part of the Bill 28 (Forestry Revitalization Act) volume take back that redistributed volume available to First Nations.
 - Currently there are 4 First Nations that have actively harvested in the Jones Lake area within the last 10 years.
 - Cheam, Skwah, Shxw'ōwhámél, Peters

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- Numerous other First Nations have operating areas that overlap the Jones Lake area but do not harvest in the area due to distance from their community or as a response to other community concerns of harvesting in neighboring First Nation's areas.
- Authorizations held in this area are Non-replaceable Forest Licenses (NRFL).
- NRFLs are volume based but the license holders have area restricted the operating areas to their community's territory.
- CP/RP Issuance in Jones Lake
 - As mentioned, the license provides the holder with the right to primary harvesting activities if they have an approved FSP.
 - Current practices for CP/RP issuance is for the Province to review and make sure that the submitting Professional signs off that the appropriate assessments have been completed and resources/values have been managed according to their approved FSP.
 - A review of the licensee information sharing with First Nations is also reviewed to make sure that appropriate consideration has been made to any comments/concerns brought forward.
 - The primary harvest activities are based on Professional Reliance and the signing Professional Forester.

Crossover with Other Projects

- The project has connections to CSF Project Planning and the STSA Governance Project, in that it has examined some shared decision-making models
- Managing Natural Values
- Sxótsaqel – Chilliwack Lake Park Planning Project

Challenges/ Identified Areas of Opportunity

- Due to the data gaps, collecting data has taken a long time and a huge effort
- Information and data sharing and data storage for a large amount of data has been challenging
- Weather issues with collecting the glacial lake data and getting clear skies for flying LiDAR surveys
- Vandalism of water quality monitors at Sasin Creek- no longer collecting data there because of this
- Many areas of opportunity for expansion

Collaborative Recommendations for Change

This project has a wide scope, and as such, we recommend broad changes such as the incorporation of considerations of climate change and opportunities for change with a Stó:lō Worldview in mind.

Future Project Goals/Vision

The future goals of the STIA project include finalizing data collection, the analysis phase, identifying options, and set targets for future objectives

- Air quality project will include expansion into other areas

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- Water
 - Project expansion to areas within S'ólh Téméxw that are likely to be negatively impacted by anthropogenically caused activities that are reflected in measurable water quality values. Thorough documentation of those changes compared with values collected upstream.
 - Change point detection analysis within negatively impacted watersheds
- STIA – draft implementation plan to achieve desired future objectives. Consider options both non-legal and legal to support these objectives.
 - Non legal realm -MOU for cut level for area of interest initially (within 1 to 1.5 years)
 - Engage Province in Modern Land Use Planning (MLUP) as a pilot and move to completion (in 1 to 2 years)
 - Seek approval with Province on establishing agreement of final outcomes of completed MLUP (in 3 to 4 years); Government Action Regulation, Sec 7 DRIPA, or multi community partnership under an area-based forest tenure
 - Expand to other drainages within STUP and repeat process and incorporate new tools as available (within 3- 5 years)

Cumulative Effects Assessment Project Report

Project Theme

S'ólh Téméxw Integrity Analysis

Team Members

- **Shana Roberts, Special Projects Manager, Stó:lō Research and Resource Management Centre, Project lead**
- **Uwe Spremberg, Project Coordinator, Lower Fraser Fisheries Alliance, Project coordinator**
- **Tana Mussell, Manager, Seven Generations, Team member**
- **Veronica Villar-Singh, Land and Resource Specialist, Government of British Columbia, Team member**
- **Monica Pearson, Land and Resource Section Head, Team member**
- **Julian Gonzalez, Senior Project Engagement and Relationship Lead, BC Hydro, Team member**
- **Tom Appleby, BC Hydro, Team member**

Project Goals

- Literature review of cumulative effects assessment
- Develop Cumulative Effects Assessment Framework and Policy for integration in the S'ólh Téméxw Integrity analysis
 - Identification of activities within Jones Lake

Methodology

- Review of cumulative effects assessment policy by First Nations through online and other resources
- Create a comparative analysis of the literature for inclusion into the cumulative effects framework and draft policy
- Develop cumulative effects framework and draft policy through the lens of the Stó:lō World View and environmental protection and environmental assessment processes and draft policies
 - Review of activities within Jones Lake
- Review cumulative effects assessment through the lens of industry and government policy

Status Reports and Achievements

- Cumulative Effects Assessment literature review and comparative analysis completed
- Cumulative Effects Assessment framework and draft policy completed with the understanding of the following:
 - Baseline data for
 - species of interest, i.e. salmon
 - water quality analysis

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- air quality analysis
- Plant inventory
- Species-at-risk
- Inclusion of climate change principles
- Review of activities within Jones Lake area, which include the following:
 - Cheam First Nation logging
 - BC Hydro roads
 - Railway
 - Highway
 - Trans Mountain storage yard
 - Trans Mountain camp
 - 5 cultural sites
 - Wahleach pump station
 - Pipeline through Jones Creek
 - Land slides
 - Jones Lake intake tunnel
 - Old and deactivated logging road, culverts
 - Debris flows
 - Recreational activities
 - Gates owned by BC Hydro
 - East Jones Lake including garbage/debris, noise, recreational activities

Crossover with Other Projects

- S'ólh Téméxw Integrity Analysis

Challenges/ Identified Areas of Opportunity

- Continued work with BC Hydro and Government of British Columbia for indicators
- Continued work in cumulative effects assessment throughout S'ólh Téméxw beyond Jones Lake
- There is a need to monitor, respond to, and mitigate activities in the Jones Lake area

Collaborative Recommendations for Change

Increased collaboration with the Government of British Columbia and industries' inclusion of Stó:lō principles and world view within cumulative effects assessment. Inclusivity in cumulative effects assessment is critical in understanding regional effects and impacts on Stó:lō Rights and Title.

Cumulative effects assessment can be expanded beyond the environmental aspect and include cultural sites, infrastructure, and be developed in conjunction with individual STSA First Nation communities.

Future Project Goals/Vision

- Finalize cumulative effects assessment framework and policy through the inclusion of
 - Air quality results
 - Water quality results
 - Plant inventory and indicators of health

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- Species at Risk habitat and indicators of health

Bank Stabilization and Flood Management Project Update

Project Theme

S'ólh Téméxw Integrity Analysis

Team Members

- **Councilor Murray Ned, Semá:th First Nation, Project Lead**
- **Richard Hall, Governance and Natural Resource Manager, Semá:th First Nation, Team Member**
- **Carrie Milsop, Environmental Compliance and Regulatory Officer, Semá:th First Nation, Team Member**
- **Ian Hamilton, Lower Fraser Fisheries Alliance, Team Member**
- **Ashlee Prevost, Lower Fraser Fisheries Alliance, Team Member**
- **Gillian Fuss, Lower Fraser Fisheries Alliance, Team Member**
- **Dionne Bunsha, Lower Fraser Fisheries Alliance, Team Member**
- **Karen Brady, Land Stewardship Manager, Stó:lō Research and Resource Management Centre, Team member**
- **Cher King-Scobie, Manager – Flood Safety, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Team Member**
- **Uwe Spremberg, Lower Fraser Fisheries Alliance, Team member**

Project Goals

- Implementation of fisheries abundance study to establish baselines and anticipate the impact(s) of 18 spurs on fish harvest, especially to Chinook, Sockeye, Coho, Chum, Pink, Eulachon, and Sturgeon populations in the Ridgedale area.
- The study will seek to answer two main questions:
 1. What species are using these areas and how will construction affect/impact habitat use?
 2. What are the potential impacts of spur implementation on First Nation traditional drift and set net fisheries?
- Reporting out the overall study that addresses both fish habitat use and fisheries to incorporate results into Matsqui Dike erosion protection planning and decision-making.
- Participation in legislative reviews and policy recommendations following the project and provide technical support, research and reports as needed.

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Secondary Goals & Objectives

- Distribution of recommendations and project outcomes for potential use/application in other management areas.
- Improved, iterative G2G planning processes for bank stabilization and flood management along the Fraser River.
- Outreach and support for First Nations communities
- Engagement with the Lower Mainland Flood Management Strategy (LMFMS) process to stay apprised of projects that require scientific research, biological support, or habitat assessments
- Provide input into development of a Lower Fraser First Nations strategic habitat restoration plan for the region, including gather existing information, identifying risks and threats in the Lower Fraser River, and recruiting potential partners to implement projects
- Bank Stabilization and Flood Management

Methodology

Throughout the past year the LFFA has designed and implemented the fisheries component of the Bank Stabilization and Flood Management project. However, due to the rejection of our scientific permit application, fishing did not occur this year and we only collected data for the fish and fish habitat portion of the project (See Challenges identified section). The fish and fish habitat study entails deploying our ARIS Explorer 1800 (a sonar hydro-acoustic system) at five equidistant sites (~500m), about 4-6 days per month for a 36-month period (2020-2023). Sites were selected based on traditional use, habitat type and feasibility of ARIS deployment (Figure 1). Many of the areas where back eddies form are locations that were previously used by the Semá:th First Nation and are of great importance to the community. With the traditional knowledge of the Semá:th people and modern technology used by the engineers, we were able to locate these five index sites to survey.



Figure 24 The Proposed construction site (indicated by Bank Stab Start and End) along the Matsqui Dike, Ridgedale.

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During surveys, the ARIS system was deployed from the shore to assess fish presence in back-eddies (Figure 2 and 3). A given site was surveyed for 6-8 hours a day. The sight range of the ARIS and frequency was set at the highest setting that the device allows to ensure that fish can be seen from 22-35 meters from shore. During these surveys, the ARIS was attached to a survey tripod and remained in a fixed position for 2 hours. Once the 2 hours of survey time was completed the ARIS viewpoint was shifted horizontally to the left and vertically tilted up or down (depending on the site) to ensure that potential fish presence within a site can be surveyed accordingly. Most fish migrate upriver; therefore, the first aim was directed upriver (to most right horizontal position) and shifted to left for the second aim (down river) to ensure that fish are not counted twice. Furthermore, given the varying tidal regimes in the construction site, the position of the ARIS in relation to the water level was assessed regularly to ensure that the sonar was always submerged. If the ARIS tripod was repositioned, due to changes in tidal regimes and water level, a GPS coordinate was taken from the new point and distance from the center of the tripod from the shoreline was measured.



Figure 25. The ARIS Explorer 1800 tripod set up



Figure 26: The ARIS Explorer 1800 deployed from the shore at a given site.

Status Reports and Achievements

In terms of the project deliverables highlighted in the TOR, throughout the planning process the LFFA participated in working group meetings and has given feedback during these meetings as well as advocated for traditional fisheries, habitat requirements and endangered fish species with regards to engineer plans (NHC), given updates regarding the fish program, and provided biological technical insight.

Furthermore, in terms of the fish and habitat program, we successfully conducted 19 field survey days since October 16th, 2020, and are on track to complete 13 more (weather dependent) until the end of fiscal (March 31st, 2021), which is a total of 32 prospective field days.

Throughout the 19 survey days, we collected ARIS hydro-acoustic data from 5 index sites, 3 to 4 times a month and acquired 5-8 hours of footage per site per survey event. The ARIS data will be formally analyzed over the course of the upcoming months, but preliminary observations indicate that there are several salmonid species (potentially Chum and Coho) and white sturgeon migrating and dispersing throughout these sites. Since we started surveys in mid-October most of the earlier salmon run had already occurred and densities of salmonid species were extremely low. In terms of sturgeon, we have seen several moving past the sonar on many occasions, some of which have remained in a sedentary position for several minutes at a time. The formal data analysis will indicate the number of fish species that have been captured during surveys, the length of these fish species and basic habitat variables that have been measured on a given survey day. We also collected basic habitat variables and river discharge

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from the Mission gage on a given survey day to understand if these factors are influencing fish presence within the construction sites.

This is a long-term project, that is set to be conducted until fiscal 2023. With the long-term data collection, we hope to acquire more information on fish abundance and habitat use before, during and after spur construction. This includes surveying fish during peak and low seasons to document trends over time and in relation to the phases of construction.

Project Deliverables

- Recommendations to the Working Group based on the overall study, which addresses both fish habitat use and fisheries, for placement of spurs along Matsqui Dike.
- Report on the overall study, including the results from both the fish habitat use and fisheries study in the Ridgedale bank area.

Measures of Success

- Improved baseline aquatic species data to incorporate into planning and decision-making around bank stabilization and flood management in the Ridgedale bank area specifically and the Fraser River generally.
- Incorporation of Stó:lō community values related to seasonal practices and sustainable availability for future generations into planning and decision-making around bank stabilization and flood management.
- Contribution to collaborative planning between Semá:th First Nation, the City of Abbotsford, and the Province to reduce the need for emergency works.
- Preservation and protection of fishing sites and fisheries

Crossover with Other Projects

NA

Challenges/Identified Areas of Opportunity

There were several challenges throughout the past year. First and foremost, we started late due to issues related to the global pandemic. Overall, during the early phases of the project, when the pandemic started, like with many organizations, safety protocols and new procedures needed to be devised to ensure the safety of our staff and team members. Furthermore, due to COVID, we postponed our ARIS training sessions to end of the summer, as the manufacturer was not offering online services initially.

Other issues included the rejection of our scientific license to conduct our fishing study. The LFFA was in discussion with the Department of Fisheries and Oceans from February 2020 to July 2020, regarding our scientific permit application to conduct the fishing portion of the project. However, given the poor return of salmonid species from the previous year, the scientific permit to fish was denied. Therefore, we did not complete our fishing portion of the study. Environmental issues also played a role in the delay of surveys. This year, freshet caused extremely high-water levels that did not allow us to start ARIS surveys until late summer. Finally, there were ARIS equipment issues. While the LFFA acquired our brand-new ARIS in April of 2020, it became evident upon various field trials that the ARIS had mechanical issues that

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needed to be addressed by the manufacturer. This occurred twice and therefore, pushed our surveys back to October. Once the ARIS mechanical issues were addressed, we have been consistently deploying the ARIS to collect data.

An area of opportunity that can be highlighted is the addition of another index site and longer survey times to get a better indication of fish presence and use (see below in future project goals).

Collaborative Recommendations for Change

The LFFA in partnership with Semá:th First Nation leads the Bank Stabilization fish and fisheries project. However, in terms of the various aspects of construction of spurs (bank armoring), the LFFA and Semá:th collaborate with governmental (Province of BC and City of Abbotsford) organizations, consultants (PGL) and engineers (Northwest Hydraulic consultants). Overall, the collaboration between all groups has allowed for planning of the spur construction as well as protection of fish habitat/fisheries along the Matsqui Dike.

Future Project Goals/Vision

The project is expected to run until fiscal 2022/23. However, this is highly dependent on funding time for a biologist to conduct the work. Currently, our funding arrangement for biologist time and salary has not been renewed for the upcoming year, which may be challenging for the time spent conducting this work.

In terms of project goals, if biologist funding time is renewed and we can conduct the surveys, we would like to deploy the ARIS for 24 hours at a given site and add a 6th site. This will allow us to acquire more information on a given day at each site to assess presence and abundance. Furthermore, we would also like to re-apply for scientific permits to conduct the fishing study once again to ensure that we address fishing related questions given the bank stabilization initiatives.

Water Quality Project Update

Project Theme

S'ólh Téméxw Integrity Analysis

Team Members

- **Shana Roberts, Environment and special Projects Manager Stó:lō Research and Resource Management Centre, Project Lead**
- **Tana Mussel, Manager, Seven Generations, Team member**
- **Uwe Spremberg, R.P. Biologist, Lower Fraser Fisheries Alliance, Project Coordinator**
- **Colin Green, GIS Manager, Stó:lō Research and Resource Management Centre, Team member**
- **Deanna Rach GIS Technician, Stó:lō Research and Resource Management Centre, Team member**

Project Goals

- Establishing long term base line water quality data, pertaining to watersheds within S'ólh Téméxw
- Recording and subsequent detection of seasonal changes and the effect on water quality related values, impurities and any natural or anthropogenic impacts on the integrity of each, monitored, drainage
- Comparing data of least negatively impacted sections of the same watershed to data recorded downstream in the vicinity of agriculture and infrastructures. Here, focusing especially on impact indicators such as oxidation reduction potential (ORP), nitrates, turbidity and heavy metals
- Developing a data library and ensure public data sharing through Hydrovu server
- Relating provincially collected current and historical data to CSF collected data

Achievements

- Successfully installed continuously monitoring water quality measuring devices in Schkam, Peach, Texas, Ruby, Jones, Yale,
- Transferred all data points to Hydrovu server
- Statistically analyzed relevant data and produced useful visualization of key parameters as indicators of seasonal changes and integrity of monitored drainages
- Collected and analysed glacial water, in October 2020, with Expert Drew Brayshaw at several locations—Williams lake, Frozen Lake, Upper Hanging lake
- Produced detailed map, depicting water quality measuring stations within S'ólh Téméxw with great support of GIS technical team

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Crossover with Other Projects

- Sxótsaqel/Chilliwack Lake Park project
- S'ólh Téméxw Guardians project
- Cumulative effects project

Challenges/Identified Areas of Opportunity

Vandalism appeared to be one of the most significant challenges identified for water quality measuring device placement. Therefore, some previously chosen water quality measuring locations had to be revised or abandoned. Likewise, the risk of tampering with equipment and subsequent damage, or even loss prevented our team from installing telemetry units that bear large solar panel units in remote and non-supervised areas. As a result, our team has to manually retrieve data on a monthly schedule, which has proven helpful for instrument check-up, battery change intervals and software upgrade schedules.

In addition, the global pandemic impacted the start and pace of the entire project. Shipping and receiving of special equipment took much longer than anticipated as well as needed technical onsite support from the water quality measuring manufacturer.

In discussing key areas of monitoring, we have been able to identify the areas of opportunity for the locations of the water quality monitoring stations that meet the STSA member First Nations' needs. The unforeseen, and non-mitigative, challenge was that of the weather and the factor that the water quality monitoring equipment cannot rest in any frozen or potentially freezing water bodies.

Collaborative Recommendations for Change

Some of the areas of collaboration that could have possible application in Cumulative Effects Assessment, Climate Change mitigation, water protection and pollution thresholds, and identification of up-stream impacts and impacts from different resource extractions and developments that will provide information for legislation and regulations for resource extraction and future developments. Additional there is opportunity for watershed management within the Fraser Valley and continued information and monitoring programs providing holistic data across the watershed, which may contribute to future research, such as waterborne disease, species at risk and endangered species, water health and protection.

Future Project Goals/Vision

- This project intended to continue as we see great value, unceasingly, in the constant accumulation of relevant baseline data within S'ólh Téméxw
- Provide two-way training for indigenous communities in S'ólh Téméxw for independent monitoring of their own watersheds in the future and implement in Guardians program
- Expansion of project to other regions, further downstream of already monitored, pristine watersheds that provide good baseline data and apply change point detection analysis.

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- Expand nitrate detection and heavy metal testing to areas in vicinity of infrastructure and agriculture

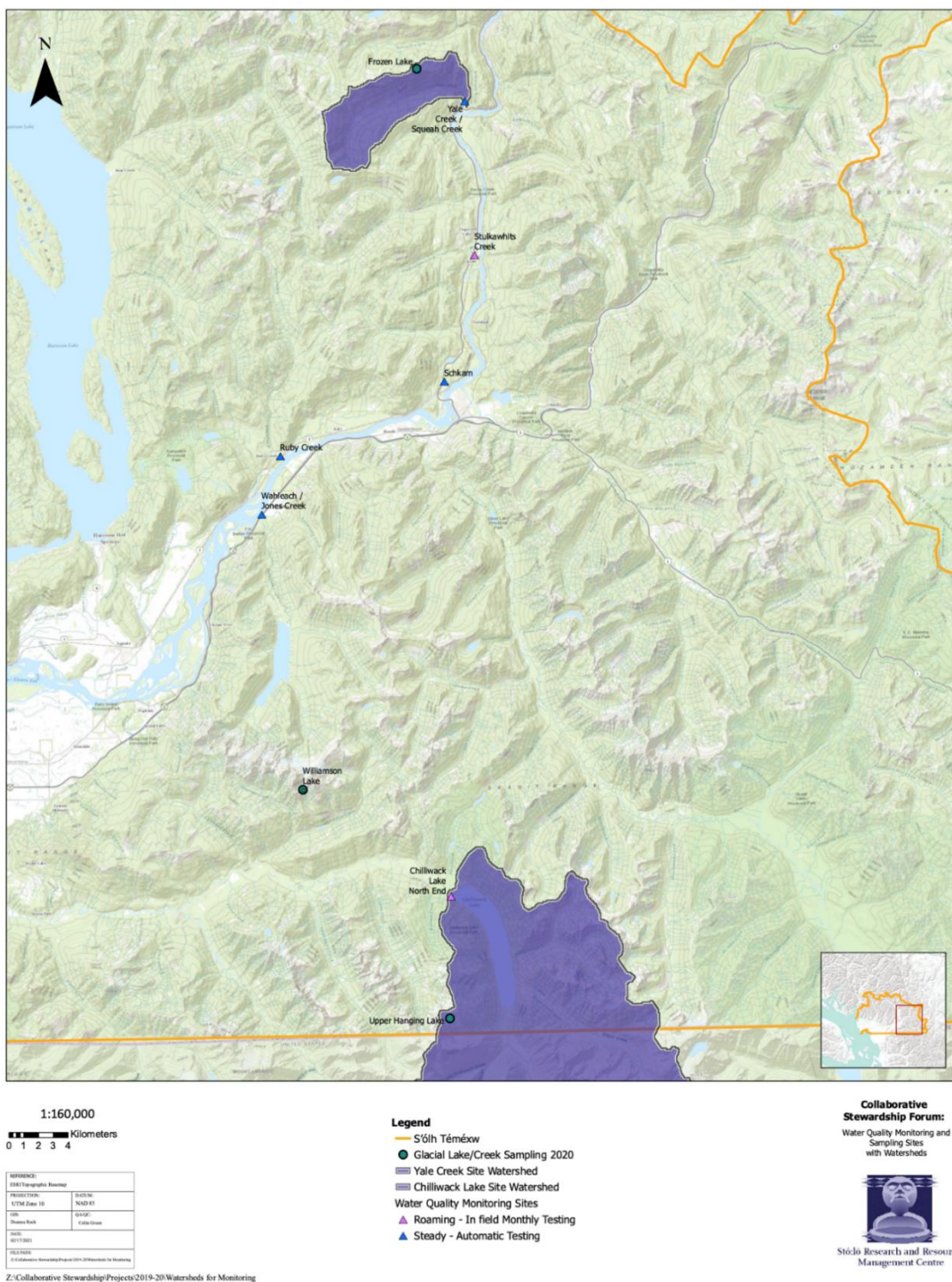


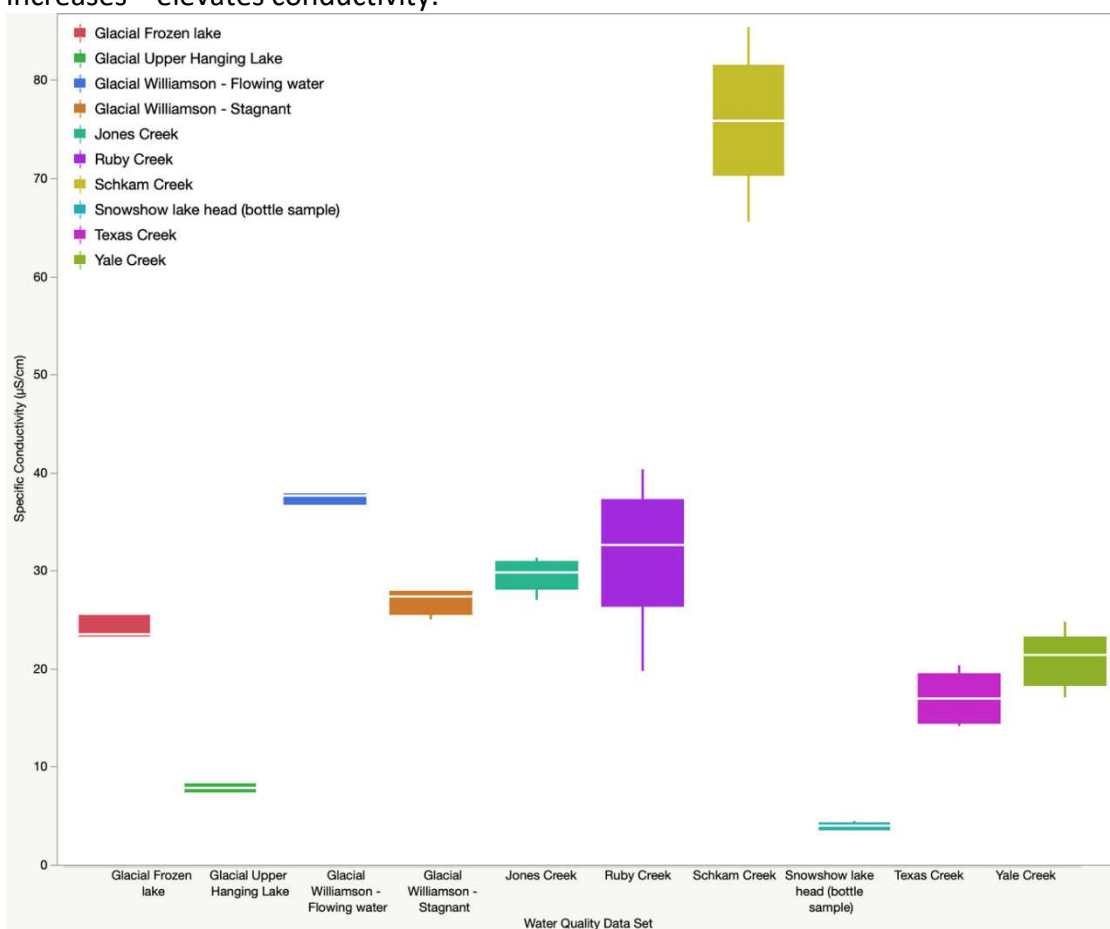
Figure 27. Map depicting Water quality measuring stations

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Figure 28. Graph representing specific conductivity.

Results

Figure 28. Specific conductivity: In the here depicted graphical analysis, we are displaying conductivity data from five stationary water quality monitoring sites and three sets of data collected during glacial sampling in the alpine region of S'ólh Téméxw. Conductivity plays a crucial role as one of the water health indicators values and is therefore a standard measure of water quality—as an ability of water passing an electrical current. However, conductivity tends to be rather constant within a particular watershed. Thus, remarkable, and sudden changes in conductivity could serve as a very strong indicator of some sort of pollution entering a drainage. Further, it is common to encounter additional negative water quality health indicators in watersheds with elevated conductivity readings. Dissolved solids from human disturbance increases—elevates conductivity.



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In addition to conductivity, there were also relevant findings associated with nitrate levels. Elevated Nitrate concentrations are usually associated with fertilizers or explosives—both rich in Nitrogen. Given our findings, we can eliminate mining/blasting agents as a source, but should focus on a possible use of fertilizers in the area, likely related to forestry. Our findings at Ruby, although slightly but surely, exceed the maximum acceptable levels 32.8 mg/L and recommended levels of 3.0 mg/L, as shown in Figure 29. These findings will likely affect the integrity of the aquatic ecology within this region of S'ólh Téméxw.

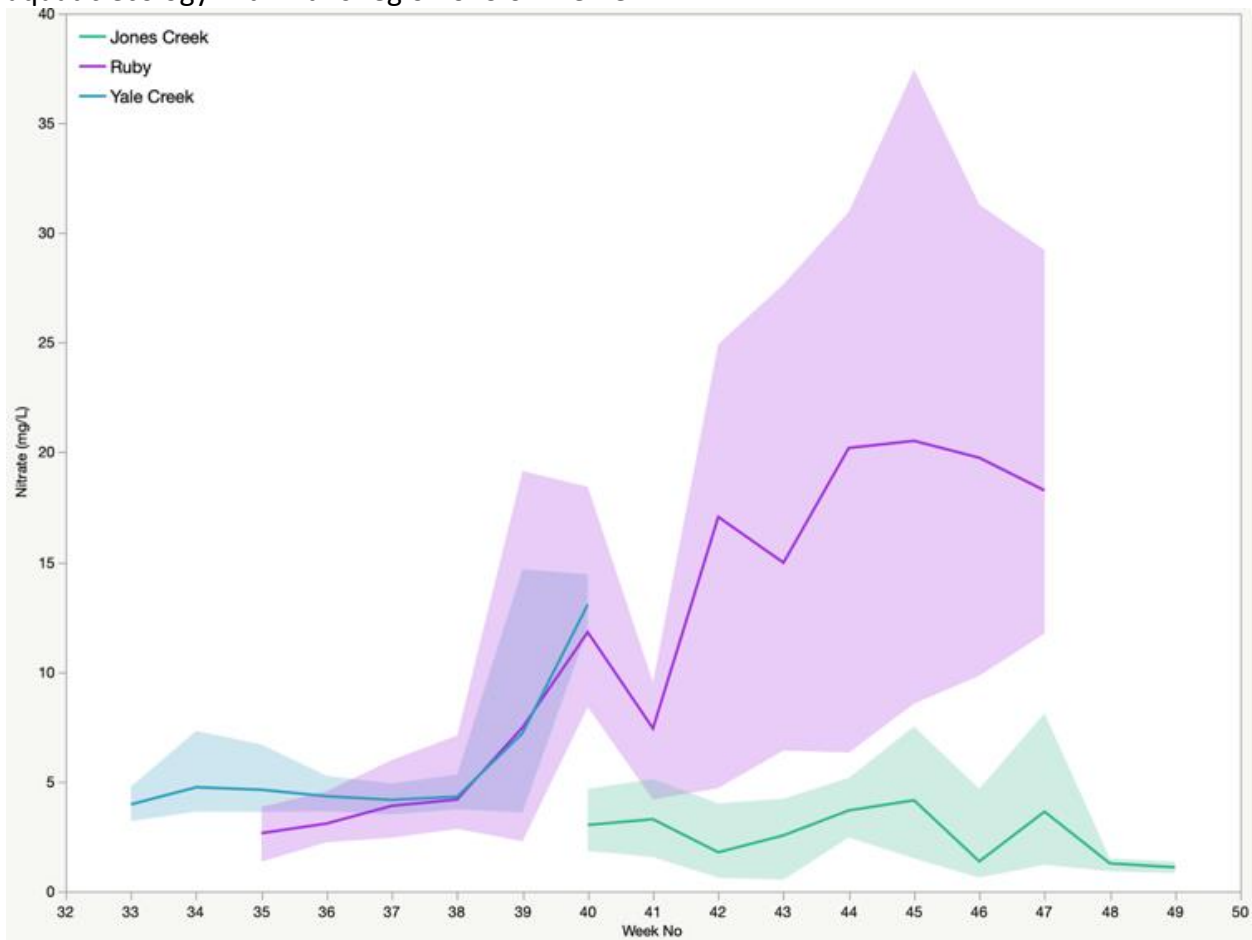


Figure 29: Nitrate levels in Jones Creek, Ruby Creek, and Yale Creek in 2020

Jones Lake Plant Inventory Project Update

Chíxó:tsa, Jones Lake Plant Inventory, Cultural & Medicinal Plants: Predictive Modeling Pilot (Jones Creek Watershed), 2020 project work was a continuation of work from late fall of 2019, where late timing of project initiation and snow cover prohibited collection of plant information at middle and high elevations in the Project area. A road system that provided access to high elevations in 2019 was also restricted due to active harvesting. Field work in fall of 2020 was accessed by helicopter (gentle ridges). These areas were confirmed to well represent the type of ecosystems that are common at high elevations within the Jones Lake Watershed. Sixty-six field plots were completed in 2020/2021. Sampling routes were selected based on routes that were deemed safe to navigate, with daily drop-off and pickup locations confirmed from the helicopter. Surveys were completed with the objective of sampling as many different ecosystem types as possible.

Project Theme

Land Use Planning

Team Members

- **Carrielynn Victor, Ayelstexw Consulting, Lead/Coordinator Stó:lō Ethnocultural Specialist**, project lead and coordinator
- **Leonard Feldes, RPF, Co-lead, Resource Manager Chilliwack Forest Dist. FLNRORD**, project lead
- **Scott Hawker, RPBio, Ecora Engineering & Resource Group Ltd.**, team member
- **Shikun Ran, MSc, RPF, Ecora Engineering & Resource Group Ltd.**, team member
- **Max Tougas, GIS, Ecora Engineering & Resource Group Ltd.**, team member

Project Goals

- Acquiring a range of existing source data and inventory information, and assessing its utility to meet the project's objectives,
- Determining the culturally significant species for inventory and mapping,
- Acquiring traditional knowledge of the selected plants and related habitats,
- Conducting a field program to collect site, soil, vegetation and habitat attribute data,
- Generating model input data from various sources, and
- Developing and validating plant models using advanced machine learning technology
- Scientific information gathered derived from both digital sources, and field surveys
- Data gathered utilized in determining values and harvest rates for upholding Provincial Ministerial duties have been traditionally conducted by the Province, or Provincially contracted sources,

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- Address issue of lack of ecosystem maps that serve Stó:lō organizations and community, information sharing protocols developed to provide available comprehensive ecosystem maps and reports
- Developing protocols for processes to create or enhance databases that reflect a more fulsome understanding of plant populations
- Stó:lō oversight of data gathering for this project will build trust and strengthen relationships between parties involved. Creating a more unified sense of ownership over data and in turn, decisions stemming from data gathered.

Methodology

- Field data collection: site attribute and occurrence / percent cover information were recorded for all vegetation species within a field plot, enabling the assessment of additional plant species in the future.
- Attribute development: existing inventories, digital elevation models (DEM) and remote sensing images were used to develop environmental, structural and landform (input) data attributes.
- Model development and validation: advanced machine learning (ML) technology (i.e. algorithms) was used to develop and validate plant species models.
- Abundance class output: In addition to species occurrence, the predicted abundance for each target plant was provided in the resultant. The abundance values are something that most plant habitat models (based on simple likelihood of occurrence) do not address.
- Existing Data – literature review and information assembly, Archival and elder knowledge, compiled and incorporated into study. Sxwōxwiyám & historical snapshot – timelines utilized in order to gather historical context to use as reflection of intact ecosystem.
- Area ID – based on existing plant indicator species, and cultural services
- Field sampling – *40-50 total samples estimated. Design in proposal. (2019/2021) – 66 plots in fall of 2020, 138 plots in fall of 2019. Total of 204 field plots established within the Project area. GPS coordinates and detailed site and vegetation information recorded at each one.
- Data compilation, analysis and modeling (2020/2021)
- Model development and validation – plant prediction models will be updated following completion of the additional high elevation field plots in 2020.
- Predictive Resource Analysis – given the level of inventory and mapping experience brought in by the proposed project team members, we are confident in proposing this new method, which includes the following key features.
- Mapping the plants through a biophysical mapping method with particular focus on soil moisture modelling and successional stages.

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- Plant species are grouped based on similar or the same habitat requirement. The accurate mapping of one leading plant species (so called 'umbrella' species) would lead to many other associated plant species.
- Advanced remote sensing technology will be fully explored in the inventory process with particular focus on LiDAR and spectral indices where LiDAR is available. LiDAR was subsequently purchased for the Project area under a separate program.
- Advanced machine learning technology being used for knowledge base processing and attributes selection.
- Representative field sampling that accounts for all significant strata and variations.
- Second phase of project includes Ecora for Inventory, and for analysis, 2020 Inventory and analysis is primarily for baseline data gathering, planning for analysis models, gathering inventory. While 2020 is continuation of 2019 efforts, it also includes a fieldwork component

Status Reports and Achievements

Primary Deliverables:

1. Project derived key input data layers;
2. Plant species models with assessed model accuracy;
3. Field data in digital format; and
4. Project documentation and metadata report.
5. High Quality field photos and community catalogue
6. Site specific and regional plant inventory reports

Secondary achievements:

- Data maps produced are available for Stó:lō and Provincial needs
- Supply and demand-based estimates that can be utilized in decision making
- Incorporation of Living Landforms
- Document traditional plant associations
- Capacity building in Stó:lō businesses and community

Crossover with Other Projects

- S'ólh Téméxw Integrity Analysis, Jones Lake Pilot
- Air Quality
- Water Quality
- Forestry Operations and Guidelines STUP
- Integrity Analysis
- S'ólh Téméxw Guardians

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Challenges/Identified Areas of Opportunity

- The delivery of funds and subsequent delayed launch of 2020 project activities created challenges, in that, plants in the Alpine had completed their flowering stage for the Spring and Summer Seasons.
- The Youth harvesting camp, data collection training and harvest trip was cancelled due to COVID related gathering restrictions.
- The research and delivery of a collaboratively developed, BC/Stó:lō plant value-based classification category document was not achieved
- Community engagement, awareness and participation was limited due to Covid related gathering restrictions, and lack of flexibility in the work plan to cater to digital communications.
- Community engagement was limited due to many communities closing their access to non-members. Project communications planning did not adapt to engage with Stó:lō plant harvesting communities in digital format, within the budget and timeframe.
- With the provincial commitment for bridge funding this next fiscal year, some or many of these barriers/opportunities may be considered for completion partially or fully in 2021/22. Digital engagement platforms, such as the one that the City of Vancouver is using, “Bang the table” may be explored to potentially help with engagement under the public health order restrictions of Covid-19.

Collaborative Recommendations for Change

- Incorporate Indigenous knowledge and rare plant information including cultural plant inventory information into the full spectrum of natural resource planning, initiatives, and policy development. These include but are not limited to:
- Better manage forestry development (road and blocks) and practices and ensure the health and vitality of known rare and slow growing communities.
- Enhance the diligence for referral applications and process for major projects both provincially and federally under the Land Act and other legislation (e.g. pipeline, gondola etc.). This also may include policy changes to consider this level of important input.
- Commercial and non-commercial recreation use activities and tenures authorizations especially with motorized recreation vehicles in alpine or in areas of sensitive ecosystems or rare plant species
- Key consideration with Pesticide Use Permit application process with Ministry of Environment for applications and permit issuance, especially with identified rare ecosystems or habitat. Each stage of forest succession offers a variety of plants for ecosystem and harvesting values, to lessen or end the use of chemical treatments such as glyphosate
- As an input for cumulative effects projects pertaining to the status of ecosystem and plant abundance and distribution

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- A data layer for Modern Land Use Planning and objective development across a watershed or drainage
- Inclusion of inventory data to management unit planning for forest tenures and management and working plan or site plan considerations
- For inclusion in wildlife management or recovery plans for regional or endangered species management and associated policies
- Plants of known cultural value that are indicators, are recognized as indicators of ecosystems that serve Stó:lō community with their food, medicinal and other values
- Mitigations are developed for areas of high-density values, to the known members or communities

Future Project Goals/Vision

- The study methodologies are transferrable, it is the vision of the project team to see studies like this or similar, replicated throughout S'ólh Téméxw
- LiDAR incorporation into data sets and update models

Mining Inventory and Analysis

Project Theme

Land Use Planning

Team Members

- **Karen Brady, Land Stewardship Manager, Stó:lō Research and Resource Management Centre, Project lead**
- **Matthew MacLean, Director, Southwest Region, Ministry of Energy, Mines, and Low-carbon Innovation, Project lead**
- **Mike Goold, Federal Engagement Liaison, Stó:lō Research and Resource Management Centre, Team member**
- **Jillian Spies, Project Coordinator, Stó:lō Research and Resource Management Centre, Project coordinator**
- **Keri Ardell, Executive Director, Ts'elxwéyew Tribe Management, Ltd, Team member**
- **Steve Patterson, Natural Resources, Lands and Economic Development Manager, Yale First Nation, Team member**
- **Colin Green, GIS Manager, Stó:lō Research and Resource Management Centre, Team member**

Project Goals

- Designing and implementing a real time database of mineral tenure and mining activities within S'ólh Téméxw to benefit the People of the River Referrals Office (PRRO) and S'ólh Téméxw Stewardship Alliance (STSA) member communities.
- Providing direction and advice for leadership regarding mining tenure policies
- Using the inventory to better understand areas of harmony and discord between mining activities and cultural values expressed through the S'ólh Téméxw Use Plan (STUP.)

Status Reports and Achievements

- Mapping achievements and work identifying where shortcomings are from data sharing from BC to STSA
- Collaborative conversations with Mark Messmer, Chief Gold Commissioner
- A Mineral Titles 101 presentation, presented by Mark Messmer
- Two-way learning from Stó:lō to the Ministry of Energy, Mines, and Low-Carbon Innovation (EMLI) by project participants and team meetings, such as education on the STUP
- Good relationship building – EMLI is unlike FLNRORD where there were lots of existing collaborative projects before the CSF, so this is a building block in this relationship piece!
 - This project represents connections between three branches in EMLI – Regional Operations Branch, Claims and Tenures branch, and Compliance and Enforcement Branch

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- This is a way to leverage more connections going into the future – i.e. the pipeline branch from EMLI, potential BC Hydro and Clean BC connections

Crossover with Other Projects

- S'ólh Téméxw Guardians- exploring training and job shadowing opportunities within EMLI
- Forestry Operational Guidelines for the STUP - potential to act as an example for how to develop guidelines for mining proponents to consider the STUP in the planning and implementation of their activities within S'ólh Téméxw
- S'ólh Téméxw Integrity Analysis- looking at impacts of mining on the health and wellbeing of S'ólh Téméxw
- Resource Revenue Sharing- better understanding of what is being mined in S'ólh Téméxw and what the monetary value of that might be
- Cumulative Effects Assessment – once this project advances beyond a literature review, there will be adaptive feedback loops connecting every project that deals with resource extraction and changes to the landscape

Challenges/ Identified Areas of Opportunity

There have been challenges identified around the IT system design for mining titles and tenures in BC, and the resulting capacity for sharing

To have successful collaboration, there needs to be full understanding of available data and trust in the data. There is room for improvement in data sharing between BC and the STSA, and we have identified many gaps and needs.

Collaborative Recommendations for Change

- Make changes to the process for registering a claim in accordance with the Mineral Tenures Act. Currently a person only needs to be over 19 years of age, in possession of a credit card, and have access to a computer to register a claim. Changes are needed to allow for greater transparency with the STSA and to better align the legislation with the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), in particular the inherent right to Free Prior Informed Consent, and the Truth and Reconciliation Commission Calls to Action.
- Add the S'ólh Téméxw Use Plan (STUP) as a data layer within the Mineral Titles Online system to ensure more proactive and high-level planning when registering claims (Mineral Tenures Act) and processing Notices of Work (Mines Act).
- Further develop current IT systems so that speak to each other and data can be shared in real time (STSA to BC)
- Further research is needed to understand how placer mining interacts with highly significant cultural areas such as the Fraser River and Harrison Lake and whether the establishment of “no-go” zones is required.

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Future Project Goals and Vision

- Collaboratively develop a mining operational guidelines document / policy, using the S'ólh Téméxw Use Plan (STUP) as the framework.
- Develop specific guidance around S'ólh Téméxw reclamation goals (end land use, planting prescriptions relevant to Stó:lō values) to improve on what the province and industry are currently doing in reclamation. This can tie into the work of the S'ólh Téméxw Guardians including environmental restoration and protection of culturally significant ecosystems and the First Peoples Cultural Council Climate Change project
- Exploring more IT solutions, such as information and data sharing: STSA's and Indigenous organizations' ability to access notice of work, assessment reports, and transparency on how and what operators are doing
 - This can improve referrals and consultation – promotes efficiencies if PRRO/BC sees these things at the same time
 - Give communities ability to consider acquiring mineral tenures or examine creating no-registration zones
- Promotion of the STUP can happen more on the STSA and Province's side
 - Some communities engage with proponents before the government, but the government can do a better job promoting it and resourcing the STUP
- Collaboratively explore the new verbiage in the Mines Act around inspections and the capacity for joint inspections

Sxótsaqel / Chilliwack Lake Park Project Update

Project Theme

Land Use Planning

Project Name

Sxótsaqel / Chilliwack Lake Park Management Plan Project

Team Members

- **Keri Ardell, Executive Director, Ts'elxwéyeqw Tribe, Project Lead**
- **Dawn Smith, Planning Section Head, Lower Mainland – South Coast Region, BC Parks, Project Lead**
- **Kierstin Dolata, Project Coordinator, Stó:lō Research and Resource Management Centre, Coordinator**
- **Laurie Benton, Project Coordinator / Researcher, Ts'elxwéyeqw Tribe, Team member**
- **Damodar Khadka, Land & Resource Officer, Ts'elxwéyeqw Tribe, Team member**
- **Dr. David Schaepe PhD., Director, Stó:lō Research and Resource Management Centre, Team member**
- **Rob Wilson, Area Supervisor, BC Parks, BC Parks, Team member**
- **Advisory Team, Members include: Community Engagement Officer, PPA Section Head, Conservation Specialist, Recreation Section Head**
- **Ts'elxwéyeqw Advisory Committee**
- **Community members, Cultural practitioners**
- **Technical Team**
- **Other consultants and technical experts as required.** May include: Archaeologist, GIS Specialist, Historian, Archivist
- **Engagement consultant**
- **Ts'elxwéyeqw Board of Directors**
- **Ts'elxwéyeqw decision makers**
- **Leadership from each of Ts'elxwéyeqw member communities**

Project Goals

- Collaboratively develop a vision and management plan for Sxótsaqel / Chilliwack Lake Park by Ts'elxwéyeqw Tribe and BC Parks
- Rename Chilliwack Lake Park to Sxótsaqel / Chilliwack Lake Park through amendment to the Protected Areas of British Columbia Act in consultation with First Nations, Local Stakeholders, FVRD, City of Chilliwack, and other Ministerial approval in final stages
- Install signage at main gate of Park with both Ts'elxwéyeqw and BC Parks logo

Methodology

The Methodology for this project will be aligned with the following: *The S'ólh Téméxw Use Plan Policy*, Stó:lō Nation; *Strategic Management Planning Policy for Ecological Reserves, Parks,*

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Conservancies, Protected Areas and Recreational Areas, BC Parks; Protected Area Management Planning Process Manual, BC Parks and guided by Ts'elxwéyeqw Board vision and traditional knowledge.

Achievements

- Successfully renamed Chilliwack Lake Park to Sxótsaqel / Chilliwack Lake Park via amendment to the Protected Areas of British Columbia Act to reflect its Halq'eméylem place name in 2021



Figure 30. STSA-BC G2G Gathering 2019

- Co-developed and installed seven interpretive signs throughout Sxótsaqel / Chilliwack Lake Park in Spring 2020 speaking to the history of Ts'elxwéyeqw Tribe, resident animal populations, historical trail systems, importance of water quality, and more.

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- Collaboratively developed Sxótsaqel / Chilliwack Lake Park vision



Figure 31. Sxótsaqel / Chilliwack Lake Park Visioning Session

- Currently drafting the co-developed park management plan for Sxótsaqel / Chilliwack Lake Park which includes input from BC Parks and Ts'elxwéyeqw Tribe leadership, cultural / traditional knowledge holders, and advisory committee members from the onset of plan creation rather than a consultative process

Crossover with Other Projects

For air and water quality reporting in Sxótsaqel / Chilliwack Lake Park, reference can be made to data gathered in the CSF Air and Water Quality Monitoring projects.

The managing Natural Values Cedar Strategy and the S'ólh Téméxw Integrity Analysis projects all cover aspects of the park.

Challenges/Identified Areas of Opportunity

The following known management issues and (or) opportunities have been addressed in the management plan:

- Ts'elxwéyeqw heritage
- Spiritual and cultural values
- Ecological integrity
- Air and water quality

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- Management of recreational uses
- Climate change adaption
- Land administration / adjacent land use affecting park values

Sxótsaqel / Chilliwack Lake Park is a popular and easily accessible destination for residents and tourists with 212,789 visitors attending the park in 2020. The park has been put under intense pressure over the past 10 years through a substantial increase in recreation use. The COVID-19 pandemic has exacerbated this pressure with the shift in public appreciation and use of parks. The area must continue to be protected to conserve pristine natural values and a new strategy must be developed that considers the increased use and degradation of the land/water/air which has occurred.

One of the last pristine waterbodies in the area, Sxótsaqel is considered sacred in its relationship to S'ól:mexw [Sawl-muxh] – Water Babies – spiritual beings that require clear, clean water in which to live. Ts'elxwéyeqw Tribe leadership and advisory committee members state that there should be careful management of motorized boating on the lake, with a focus on environmentally friendly and historically aligned uses such as canoeing and kayaking.

Approximately 100 hectares or 1% of the park is zoned as Intensive Recreation, including land suited for campground, day-use, and park operations facilities. The Tribe believe that recreation use should be focused on the north end of the lake with potential realignments of existing recreation facilities to ensure protection of cultural sites, with road access limited along the lake itself, to protect the ecological areas on the south side of the lake. Maintenance of a largely undisturbed natural environment where appropriate non-vehicular recreation opportunities occur is a primary management objective in the Natural Environment zone. This can include biking, horseback riding, walking, hiking, kayaking, canoeing, etc. The largest portion of the park, some 8000 hectares or 87% including the valley slopes encompassing Chilliwack Lake, is zoned as Natural Environment.

Collaborative Recommendations for Change

- BC Parks Management planning framework – this plan could provide an opportunity to examine how collaboration could be embedded into management planning frameworks moving forward in the future. Engagement from the onset rather than review of a plan that has already been developed without Indigenous knowledge, perspectives, or values.
- Changing legislation to facilitate park renaming.
- Park Act to change to mean that parks can be renamed to traditional names without involving a year-long legislative process. Geographical place names process does not require such a complex process.
- Park Act amendment to recognize cultural values for parks, similar to conservancies.
- Planning and zoning – cultural protection areas, no go areas (such as for spiritual use) that still protect indigenous knowledge yet inform the public.

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- Data sharing of protected data – addressing how to protect information internally within agency and BC Parks, enduring beyond any pilot or current employees.
- Revenue sharing linked to user fees – visitor fees, percentage of user fees get earmarked towards community, guardians' program, sustaining funds for management of the park beyond campground which includes community.
- Expanding park boundary – opportunities for park boundary expansion.
- Management and capacity limits of motorized boating on the lake to ensure the health of Sxótsaqel, which is home to S'ó:lméxw [Sawl-muxh] – Water Babies, who depend on its healthy environment.
- Establishment of natural park carrying capacity aligned with Indigenous values and uses.

Future Project Goals/Vision

- Ts'elxwéyeqw leadership, traditional knowledge holders and spiritual practitioners wish to keep Sxótsaqel pristine. This includes limiting road access to the south side of the lake, at the earliest possible location, and the careful management of motorized boating on the lake.
- A vision for the park is to restore its ecological integrity to promote the return of wildlife.
- The Tribe wish to establish a cultural use area within the park including the development of a longhouse or other sites, including the lake, for ceremony and practice.
- Community and Stakeholder consultation will be completed in 2021 to inform the draft management plan.
- The draft management plan is currently being developed and the project will continue into the next fiscal year (2021-2022).

Forestry Operational Guidelines for the S'ólh Téméxw Use Plan Status Project Update

Project Theme

Land Use Planning

Team Members

- **Karen Brady, Land Stewardship Manager, Stó:lō Research and Resource Management Centre (SRRMC), Project Co-chair**
- **Leonard Feldes, Resource Manager, Ministry of Forests, Lands, Natural Resource Operations and Rural Development (FLNRORD), Project Co-chair**
- **Jillian Spies, Project Coordinator, SRRMC, Project Coordinator**
- **Mike Goold, Federal Engagement Liaison, People of the River Referrals Office (PRRO) Project Advisor**
- **Tom Johnson, Woodlands Manager for Chinook BA, British Columbia Timber Sales (BCTS), FLNRORD, Project Advisor**
- **Catharine Charman, Land and Resource Specialist, FLNRORD, Project Advisor**
- **Keri Ardell, Executive Director, Ts'elxwéyeww Tribe Management Ltd (TTML), Project Advisor**
- **Kevin Webber, Forestry Manager, TTML, Project Advisor**

Project Goals

By creating forestry operational guidelines, the project will:

- identify issues, including knowledge gaps, in relation to shared values and specific stewardship concerns.
- develop solutions that seek to address specific stewardship concerns of importance within S'ólh Téméxw.
- apply shared capacity to generate trusted information regarding relevant elements of stewardship.
- collaboratively develop and implement joint stewardship activities to mitigate impacts to values of importance for environmental sustainability within S'ólh Téméxw.
- inform natural resource activities and decision-making processes.
- provide a methodology for how similar analysis work could be done in other projects.

Methodology

- Review the STUP, including policy document and shapefiles/map.
- Understand the objectives for each STUP zone.
- Determine the guidelines application area, i.e. overlap of the Chilliwack Natural Resource District and S'ólh Téméxw.
- Build a matrix of operational considerations.

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- Craft a draft set of guidelines that integrates Indigenous knowledge and Western science.
- Import assumptions from Timber Supply Review.
- Distribute draft guidelines to forestry licensees for initial feedback.
- Review and assess forestry licensee feedback, and modify and revise the draft guidelines;

Communication:

- Respond to forestry licensees with comments / develop a general FAQ / request additional feedback;
- Report out to BC and STSA leadership on guidelines;
- Beta test the guidelines;
- Approval of guidelines from executive leadership (BC and STSA) (STSA approval is currently pending)
- Implement the guidelines;
- Monitor success: are the guidelines achieving what we set out to do?;
- Guideline training for PRRO staff and BC ministry staff.

Status Reports and Achievements

In 2020, the team drafted FOG STUP Guidelines for implementation pending STSA executive approval.

These guidelines will be communicated under an expectation letter (potentially cosigned) for forest licensees in the Fraser Timber Supply Area. These guidelines will allow new considerations for early forestry operational planning with the goal of protecting and mitigating industrial impacts to sensitive or important cultural zones and activities across S'ólh Téméxw. In addition, this will also help guide future decisions (by both BC and the STSA) on resource development and planned authorizations.

Crossover with Other Projects

Next Fraser Timber Supply Area - Timber Supply Review (2025)

The implementation of the guidelines will allow demonstration of a new forest practice. This is planned to be tabled or submitted as an input of “current” forest practice for the next Fraser Timber Supply Area determination. The associated timber supply net downs should be weighed beyond a sensitivity run consideration to an actual net down, like any other current practice. Recommend that STUP is reviewed and updated, if necessary, before start of this project, to ensure that Timber Supply Review has most current data layer. Recommend that considerations from the STIA project are also included in this Timber Supply Review.

This project will begin as early as 2023

Mining Inventory and Analysis

- FOG STUP can inform a methodology for this project

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Managing Natural Values (Red Cedar Inventory)

- Cedar recruitment strategy and old growth recruitment for the long term, ties in well to this project
- This plan will be developed and integrated with other analysis projects including wildlife recovery and management

S'ólh Téméxw Integrity Analysis

- As baseline health status is determined through the STIA, this could inform reconsiderations of assumptions for the FOG STUP project
- the STIA inventories cultural information to formulate a “netdown” for landscape/strategic timber analysis

CHIA/CHOA

- Connection to CHIA/CHOA assessment that is more clearly identified through the guidelines

Guardians

- Guardians can be a potential backend connection to the FOG STUP. Guardians can assess risk for a monitoring plan using the FOG STUP guidelines
- post development field reviews to assess the outcome of the development compared to cultural interests and values.

Challenges/ Identified Areas of Opportunity

- These guidelines may then be used as a model to expand the scope to potentially develop guidelines other sectors such as lands or mining etc. as a path of opportunity.
- It is a challenge to provide general guidance for complex planning scenarios
- All parties need to be open to adaptive and innovative solutions
- Licensees and decision makers being asked to move away from their “business as usual” situations

Collaborative Recommendations for Change

- Greater sensitivity over cultural aspects for forestry planning process
- General policy change for the full spectrum of resource management (such as wildlife planning and recovery, old growth management, mining)
- Changes to future decisions like timber supply inputs and considerations
- Future natural resource legislation – the integration of indigenous knowledge and cultural values needs to be at the forefront

Future Project Goals/Vision

The remaining goals, once STSA executive approves guidelines, are to move to full implementation phase in the new fiscal year 2021/22, as follows:

- Implement and communicate the guidelines to the forest tenure holders;
- Monitor success: are the guidelines achieving what we set out to do? Under a Guardians model;
- Train PRRO staff, BC ministry staff and licensees/practitioners on the new guidelines

Managing Natural Values Project Update

Project Theme

Land Use Planning

Team Members

- **Jack Sweeten, Title, Ministry of Forests, Lands and Natural Resource Operations and Rural Development (FLNRORD), Project Lead**
- **Kevin Webber, Forestry Manager, Ts'elxwéyeqw Tribe Management Ltd (TTML), Project Lead**
- **Leonard Feldes, Resource Manager, FLNRORD, Team member**
- **Jillian Spies, Project Coordinator, Stó:lō Research and Resource Management Centre (SRRMC), Project Coordinator**
- **Keri Ardell, Executive Director, TTML, Team member**
- **Karen Brady, Land Use Planning Manager, SRRMC, Team member**
- **Mike Goold, Federal Engagement Liaison, People of the River Referrals Office, Team member**
- **Catherine Charman, Land and Resource Specialist, FLNRORD, Team member**
- **Tom Johnson, Woodlands Manager for Chinook BA, British Columbia Timber Sales (BCTS), FLNRORD, Team member**

Project Goals

Assess what the natural values are throughout S'ólh Téméxw, how we can manage them best and prepare for a future state. This team will create goals for managing cedar with input from licensees, SRRMC staff and provincial staff.

Methodology

- Inventory of cedar “products” and use (what’s the current need, what the supply, what’s the future need)
- Individual Tree Inventory using LiDAR and aerial imagery truthing
- Supply and gap analysis- community engagement and accessibility assessment (roads, bridges, etc. and the lifespan of that access)
- Strategy development and presentation (community and leadership) – management strategies for red cedar
- Final management plan and implementation (looking and treatment and funding available, and outline for an implementation plan)

Status Reports and Achievements

This year, the team has solidified a project plan and determined that they best way to complete an inventory of standing cedar in the Chilliwack River Valley would be to do an individual tree

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inventory. The team hired Forsite Consultants Ltd. to complete this for us, and the estimated date of completion is May 2021.

Crossover with Other Projects

The Managing Natural Values project can help determine where redcedar is located in the Chilliwack River Valley, which can provide information for the Sxótsaqel – Chilliwack Lake Park Planning project.

Challenges/Identified Areas of Opportunity

- Competing interests in the Chilliwack River Valley mean that there are potential challenges to developing a red cedar management strategy.
- Including climate change predictions into red cedar management strategy will be a challenge.

Collaborative Recommendations for Change

To recommend change, the team would like to find mechanisms within existing policies to manage forest long term, and identify areas where change is necessary.

There should be better ways to connecting communities to areas in a more supportive way. The team would like to look into developing a mechanism to improve coordinating bark stripping locations with stressors on cedar.

Changes could include allowances for cedar to grow for a long time in accessible areas.

A cedar management strategy could be developed with FLNRORD that can be implemented in the Chilliwack River Valley. The strategy should include short- and long-term cedar strategies (1-1000 years). These strategies can include developing and promoting a mandate for regeneration of cedar close to roads.

Future Project Goals/Vision

- Finish work with Forsite Consultants Ltd.
- Develop cedar management strategy
- Examine options to do an Individual Tree Inventory in other areas

Sumas Mountain Study Project Update

Project Theme

Land Use Planning

Team Members

- **Carrielynn Victor, Ayelstexw Consulting LP, Project Coordinator/Co-Lead CSF**
- **Catherine Berris, Urban Systems, Project Co-Lead, Consultant**
- **Alisha Khliestkova, Urban Systems, GIS, team member**
- **Rhonda Maskiewich, Urban Systems, Biologist, Team member**
- **Alex Miller, Urban Systems, Communications and Engagement, Team member**
- **Clare Dolan, Urban Systems, Graphic Designer, Team member**
- **Andrew Cuthbert, Urban Systems, Planner, Team member**
- **Dave Flanders, Urban Systems, Planner, Team member**
- **Meghan Jackson, Fraser Valley Regional District, Team member**
- **David Urban, Fraser Valley Regional District, Team member**
- **Tom Blackbird, BC Rec Sites and Trails, Project partner**
- **City of Abbotsford, Team member**
- **Stó:lō Research and Resource Management Centre (SRRMC) GIS, GIS services**

Project Goals

- **Protect and enhance environmental resources**
 - Identify environmentally sensitive areas, including areas with high biodiversity, threatened species, and sensitive habitats
 - Work across jurisdictions to establish appropriate mechanisms for protection of environmentally sensitive areas
- **Limit the impacts of other land uses on environmental, cultural, and recreation resources**
 - Work across jurisdictions to set limits on quarry expansion and identify potential opportunities for quarry reduction
 - Work across jurisdictions to manage logging and to ensure site restoration of logged areas
 - Work with the City of Abbotsford to coordinate lands to be protected within future developments
- **Protect the cultural resources**
 - Identify culturally sensitive areas, including traditional and current ceremonial use sites and areas
 - Work with Indigenous communities on management strategies for improving access for spiritual uses

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- Work with Indigenous communities on management strategies for improving awareness and understanding of cultural resources and activities
- Establish an overall plan for recreation use
 - Identify and designate recreation activities and locations
 - Prepare a trail plan that designates trails for all uses
 - Establish design standards for the various trail types
 - Prepare and circulate a map of recreation sites, trails, and amenities
- Improve infrastructure to support recreation use with an increase in safety and reduction in environmental impacts
 - Provide more toilets and solid waste management facilities
 - Plan for and establish wayfinding, regulatory, and interpretive signage
 - Establish an access management plan that considers parking and gates
 - Establish and post codes of conduct, including a plan for dog management and need for quiet after set hours
- Coordinate and increase management and monitoring of recreation activities
 - Provide information on the environmental and cultural values on signs and various media
 - Establish a monitoring program to inform visitors of appropriate behavior
 - Identify locations where conflicts occur and develop strategies and monitoring to address these
- Increase operations and maintenance to support gradual and respectful increases in use
 - Improve the design of gated access points and timing of gate openings for better access and safety
 - Establish an approval process for trail building in designated locations by skilled groups following accepted design standards

Methodology

- Stó:lō member led, community engagement . Meetings on the mountain, youth workshop indoors and on the land, Ceremonial longhouse engagement, Elected leadership review
- Review of StoloConnect web portal and existing Stó:lō policy, for use in recommendations for specific sites on Sumas Mountain
- Collaboration, team meetings, frequency and according to work plan, site visits, collaborative report development
- Tools: collaboratively developed interactive public survey with feedback summary distributed to the public.
- Infrared trail counters installed and connected to existing FVRD monitoring software,
- Video conferencing
- -Literature review; STUP, SHP, TOR for CSF project, FVRD OREIA and RGS

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Status Reports and Achievements

- 6 Counters, added and shared responsibility
- Agency collaboration
- Engagement with mountain users, survey response outcomes
- Community engagement with Sumas FN community members, in spite of pandemic restrictions, and person to person connections related to land uses on the mountain. *An engagement report is attached to the comprehensive report from Urban Systems*

Final Report Executive Summary

One outcome of this project is a final report entitled Sumas Mountain Study. It can be found on thestsa.ca. Here is the executive summary from the report:

This project arose out of the S'ólh Téméxw Stewardship Alliance (STSA). Rooted in the recognition of the importance of Kw'ekw'e'i:qw (Sumas Mountain) within S'ólh Téméxw, the Sumas Mountain Study was initiated in 2019. The Collaborative Stewardship Forum and the Province - Recreation Sites and Trails BC, with technical support from the Fraser Valley Regional District (FVRD) and City of Abbotsford, are excited to be working together towards a strategy for Sumas Mountain.

The purpose of this project is to better understand recreation and culture activities on Sumas Mountain so that a new management framework can be implemented to protect and manage the multiple uses and values. A key goal is to integrate a cultural lens throughout the project. This study is the first step towards achieving a plan for Sumas Mountain.

The process involved compilation of map information from multiple sources, small group meetings and tours with Sumas First Nation members, a public online survey for the broader community, and a report that describes guiding principles, existing resources and use, and future directions. The latter includes vision and values, challenges and opportunities, and goals, objectives and strategies.

The following is the proposed vision for Sumas Mountain, describing how participants hope it will be considered in the future:

Kw'ekw'e'i:qw (Kw-ewkweeuwkw) (Sumas Mountain) is a place where recreation, cultural practices, and all other activities occur with respect for and stewardship of environmental and cultural values. The following key values for Sumas Mountain were generated from the community survey and endorsed by the Project Team:

- Peaceful enjoyment
- Recreation
- Biodiversity, wildlife, and environmental protection
- Cultural practices and information
- Scenic views

The following are the goals generated through the community survey:

1. Protect and enhance the environmental resources

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2. Limit the impacts of other land uses on environmental, cultural, and recreation resources
3. Protect the cultural resources
4. Establish an overall plan for recreation use
5. Improve infrastructure to support recreation use with an increase in safety and reduction in environmental impacts
6. Coordinate and increase management and monitoring of recreation activities
7. Increase operations and maintenance to support gradual and respectful increases in use

One of the greatest challenges to management is the complexity of jurisdictions. Options are provided for a new integrated management regime for Sumas Mountain (potentially excluding the residential areas) as a way to coordinate management. A plan for the mountain is needed to achieve the objectives identified. The S'ólh Téméxw Stewardship Alliance has started a guardians program, which will in time include a role in monitoring and managing areas for cultural use. This program aims to gather and share information to improve stewardship of the collective territories of the Stó:lō people. The next steps will require collaboration of the same groups involved in this study. The steps fall within the following categories:

- Take actions that can be considered “quick wins”
- Explore options for the management regime
- Pursue funding and proceed with the preparation of a Sumas Mountain Plan

Crossover with Other Projects

- Guardians: collaborative management will include monitoring and reporting
- Mining Impact Analysis: 4 active surface mines are operating on Sumas Mountain
- STSA Governance: Implementation of DRIPA 2019 will change the landscape of management and governance on Sumas Mountain
- SLED Curriculum Development: new educational opportunities and place-based learning work well with governance education and k-12 education

Challenges/Identified Areas of Opportunity

- The privacy restrictions in place to protect the cultural use information of individuals both creates challenges and ensures security. In developing maps, Carrielynn Victor had intimate access to information from existing maps and interviews as well as personal accounts from Sumas members. With careful consideration, the project team worked together to create maps that identify cultural use areas without providing detailed access or use information.
- Pandemic Limitations restricted all in person gathering opportunities, however, the collaborative development of the public survey and response to the survey went exceptionally well, with 430 responses provided.

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Project Study Challenges and Opportunities Chart

Challenges are based on input from the community survey and initial analysis

Table 4: Sumas Mountain Project Study Challenges and Opportunities

Key Challenges	High-level Opportunities
<p><i>Disrespectful human activities</i></p> <ul style="list-style-type: none"> • Illegal dumping • Human waste • Partying • Unsanctioned trail building 	<ul style="list-style-type: none"> • Increase in recreation management • Increase in recreation infrastructure • Increase information on environmental values and codes of ethics
<p><i>Insufficient Environmental Protection</i></p> <ul style="list-style-type: none"> • Need to protect biodiversity and sensitive habitats • Need to establish conservation areas • Need to limit logging and ensure site restoration • Need to limit new housing developments • Motorized uses are damaging trails and causing erosion 	<ul style="list-style-type: none"> • Increase in environmental protection and restoration • Potential new management regimes for environmental protection • Increase in monitoring of use • Collaborate with City of Abbotsford on areas to protect within new neighborhoods
<p><i>Industrial activities</i></p> <ul style="list-style-type: none"> • Aggregate / quarry activities interrupting trails, affecting the environment, and disturbing the peace • Requests for new quarries • Forestry activities 	<ul style="list-style-type: none"> • Collaborate among jurisdictions to establish common goals and responses in relation to potential industrial uses
<p><i>Insufficient Recreation Infrastructure</i></p> <ul style="list-style-type: none"> • Trails lack connectivity within the mountain and to surrounding communities • Trail connections have been interrupted by quarries and other uses • Need more mountain biking infrastructure • Trails need improvement, not built to design standards • Some trails on public domain websites no longer exist, which can lead to safety concerns • Need more parking, toilets • Need road improvements 	<ul style="list-style-type: none"> • Increase in recreation infrastructure • Improvements to recreation infrastructure

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<ul style="list-style-type: none"> • Insufficient signage – wayfinding and regulatory 	
<p><i>Insufficient Cultural Protection</i></p> <ul style="list-style-type: none"> • Need to protect cultural resources • Need to protect Indigenous culture and activities 	<ul style="list-style-type: none"> • Collaborate with Indigenous communities on cultural measures • other challenges appear to address cultural use challenges as well as their opportunities ?
<p><i>Insufficient Recreation Management</i></p> <ul style="list-style-type: none"> • There are conflicts on trails, especially between motorized and non-motorized uses • Need better gate management • Need more information, e.g., there is no official trail map • Need an inclusive approval process to build trails • Need better dog management • Need management of noise and parking near residences 	<ul style="list-style-type: none"> • Increase in recreation management • Increase in monitoring of use • Increase information on environmental values, codes of ethics, and recreation trails and amenities
<p><i>Other Requests</i></p> <ul style="list-style-type: none"> • Provide hiking trail for separation from mountain biking trails *are these word for word? it sounds like this doesn't align with existing mixed-use trails on the mountain • Build bike skills/ jump park for kids • Establish launch site for parasailers • Provide opportunities for motorized recreation • Education opportunity at Chadsey Lake on Indigenous history and culture • Protect old growth forest • Add designated campsites at Chadsey Lake 	<ul style="list-style-type: none"> • Some of these are covered by challenges and opportunities above • Others are relevant to future phases of planning

Collaborative Recommendations for Change

One of the greatest challenges to management is the complexity of jurisdictions. A new integrated management regime for Sumas Mountain (potentially excluding the residential areas) could provide a way to coordinate management. The following are potential approaches for addressing this:

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- Establish an Indigenous Protected and Conserved Area such as a Tribal Park, of which there are several examples in BC <https://davidsuzuki.org/wp-content/uploads/2018/08/tribal-parks-indigenous-protected-conserved-areas-lessons-b-c-examples.pdf>
- Establish a park that is co-managed by more than one entity, of which there are several examples in BC, e.g., Black Mountain - Sntsk'il'ntən Regional Park that is co-management by the Regional District of Central Okanagan and Westbank First Nation
- Establish a new type of designation specifically for Sumas Mountain, e.g., EcoCultural Reserve
- Establish an inter-jurisdictional group that coordinates management of Sumas Mountain through existing roles and responsibilities

Semá:th Councillor, Murray Ned provided a number of recommendations towards the current study, and continued work stemming from the study:

- List the jurisdictions that may impact or influence Sumas Mountain, and associated regulations (i.e. Water Sustainability Act, Mining Acts, etc.) and laws that Sumas and other Nations may encounter. Just high level.
- Alignment of UNDRIP / DRIPA(2019) / Semá:th Declaration(2017) , followed by a requirement for Government to Government engagement, reconfiguring systems for lands management and decision making on Sumas Mountain
- Identify a place at the table for Stakeholders and local jurisdictions
- Clearly identify a need for a strategic plan driven by Stó:lō First Nation(s) and Government
- Identify potential partnerships – Mining: Impact Benefit Agreements, Recreational Groups
- Need for Funding alignment with government to get the best return on investment with habitat restoration, reforestation, remediation and accommodations

A reference table has been developed for this report, to connect culture and heritage sites on Sumas Mountain and the associated Stó:lō Heritage Policy Management Measures

Future Project Goals/Vision

- 1.) Lands managers are needed to engage the plan, and carry directives forward, in an effort to manage recreational uses on the mountain
- 2.) A Sumas Mountain Plan

A plan for the mountain is needed to achieve the objectives identified. The plan for Sumas Mountain needs to include the following at a minimum in keeping with the S'ólh Téméxw Use Plan Policy:

- Cultural protection and use plan and strategies
- Environmental protection plan and strategies
- Recreation use plan and strategies for recreation sites, staging areas, and trails

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- Land use management strategies for residential and industrial areas
- Capital improvements for recreation infrastructure
- Management, operations, and maintenance strategies
- Monitoring plan
- Continued collaboration with identified partners, objectives of working relationship, and possible dispute resolution
- Shared access to maps and studies by lands managers *limitations?
- Enhanced protections for
- Gate management
- Collaboratively developed public trails map with a feature on Sumas Mountain
- IMBA and relevant Trail construction standards
- BioBlitz, SAR and other, specific species values
- Leq'á:mel FN coordination
- Guardians, on Sumas Mountain
- Identify leads and supports for co management strategy initiatives
- Goals and objectives

HCA Section 4 Pilot Establishment & Implementation Project Update

Project Theme

Cultural Site Protection

Team Members

- **Dr. David Schaepe PhD., Director, Stó:lō Research and Resource Management Centre, Project Co-lead**
- **Matt Austin, Assistant Deputy Minister, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Co-lead**
- **Jessica Ruskin, Archaeology Branch Director, Project Co-lead**
- **Kierstin Dolata, Stó:lō Research and Resource Management Centre, Project coordinator**
- **Carrielynn Victor, Manager, Ayelstexw Consulting LP, Team member**
- **Keri Ardell, Project & Operations Manager, Ts'elxwéyeqw Tribe, Team member**
- **Karen Brady, Land Use Planner, Stó:lō Research and Resource Management Centre, Team member**
- **STSA-BC SEA Working Group on Heritage Conservation, Team members**
- **Leonard Feldes, Resource Manager, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Team member**
- **Yvette Lizee, Ministry of Indigenous Relations and Reconciliation, Team member**

Project Goals

- Complete negotiation of the S4 Pilot Agreement
- Successfully complete the Provincial approval process leading to submission to Cabinet
- Introduction and approval of the agreement by BC Cabinet – (target Fall/Winter 2020).
- Announce at the 2021 Leadership Gathering in November as an achievement, in potential connection to the Declaration on the Rights of Indigenous Peoples (DRIPA) Action Plan.
- Implement the yearlong pilot project.
- Develop recommendations based on the implementation.
- Advance shared decision making over heritage stewardship in BC.
- Assist with the alignment of Provincial/First Nation laws and policies.

Secondary Goals & Objectives

- Inform the proposed changes to the HCA as per the related project.
- Narrow the gap between Provincial and Stó:lō views of heritage recognition and protection.
- Inform and facilitate the S4 process for other First Nations.

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Methodology

See the SRRMC/ STSA S4 Pilot Project proposal (2016).

Status Reports and Achievements

- Maintained final Agreement in Principle draft
- BC has completed First Nations engagement as of December 2020
- BC completing Land Status Analysis – February completion date expected

Crossover with Other Projects

- This ties into the HCA Legislative and Policy Changes project as aspects of change are looking to see the outcomes of the first year of the pilot.
- CHIA/CHOA (Cultural Heritage Impact Assessment & Cultural Heritage Overview Assessment) Review and Education Enhancement project
 - Limitations of the HCA are discussed in the video produced from the CHIA/CHOA project as well as the Stó:lō Heritage Policy manual which provides greater protection to sites that would be included within the Section 4 Pilot project

Challenges/Identified Areas of Opportunity

Initially intended to be implemented in 2016, the project has faced several challenges noted by BC and STSA team members that have served to substantially slow the process of developing the agreement, including the following:

- The relationship with the Ministry of the Attorney General (MAG) whose foundation is dated, constraining, and limiting.
- Issues with recognition of indigenous organizations relative to their rights holding status (e.g. Ts'elxwéyeqw Tribe/TTML).
- The lack of continuity resulting from the appointment of new staff (e.g. Director of the Archaeology Branch).
- The successful implementation and establishment of the project will provide significant opportunities both throughout the duration of the pilot and in the long term. Examples of these opportunities include, but are not limited to:
 - Bringing visibility to Indigenous heritage to the government of BC.
 - Recognizing, defining, and protecting Indigenous heritage sites and heritage objects of spiritual, ceremonial, or other cultural value, as unique and significant aspects of British Columbian heritage.
 - Protecting the confidentiality of sensitive Indigenous Heritage Information.
 - Reconciling the relationship of lands and land uses in BC with Indigenous Heritage, through effective and efficient stewardship and mitigation of potential conflicts between interests.

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- Advancing reconciliation between First Nations and the Province.

Collaborative Recommendations for Change

The following recommendations for change are applicable to all heritage conservation related projects in the STSA-BC Collaborative Stewardship Forum:

- Making changes of legislation that support delegated decision-making (shared decision-making) by First Nations (e.g. amending section 20.1 of the Heritage Conservation Act).
- Legislative change that broadens the scope of recognition for First Nations' sacred sites to include burials/cemeteries.
- Legislative authority to implement First Nations' heritage policies and permitting systems.
- Revising policy that sets out parameters for site designation and protection (e.g. burials).
- Continuing to advance the collaborative development of repatriation policy and procedures to incorporate First Nations' protocols and related needs.

Guided by Lets'emó:t, collaborators have made every effort to reconcile differences and incorporate both Stó:lō and Western worldviews and knowledge systems. We as individuals can continue in our commitment to work under the guiding principle of Lets'emó:t, however, it is difficult when the values of the institution do not align with those of the Province and provincial policies prevent action and progression. We do not and cannot deal with these issues the way we would deal with personal relationships, therefore, when representing conflicting policy in our institutions, there is a need for dispute resolution processes to be in place.

Future Project Goals/Vision

Primary goal of project is successful implementation and establishment of the Section 4 Pilot project, outcomes of which can be reviewed and evaluated and anticipatedly be used in negotiation of additional section 4 agreements between the Province and other First Nations. The content of section 4 matches what is proposed in the Declaration Act (UNDRIP legislation) and may help to pilot this if it goes ahead by helping to inform the process of cultural heritage. More immediate project goal is successfully advancing through Provincial approval process including Deputy Ministers Committee and Environment and Land Use Committee (ELUC) leading to submission to BC Cabinet for approval in 2021.

Expected completion 2021

HCA Legislative and Policy Changes Project Update

Project Theme

Cultural Site Protection

Team Members

- **Dr. David Schaepe PhD., Director, Stó:lō Research and Resource Management Centre, Project Co-lead**
- **Matt Austin, Assistant Deputy Minister, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Project Co-lead**
- **Jessica Ruskin, Archaeology Branch Director, Team member**
- **Kierstin Dolata, Research Assistant, Stó:lō Research and Resource Management Centre, Project coordinator**

Project Goals

Plan for the implementation of approved transformative changes to the HCA anticipating follow up needs including additional relationship agreements between the STSA and BC over recognition of Stó:lō Heritage Policy and permitting/ shared decision making.

Methodology

As per the engagement plan being developed for this project.

Status Reports and Achievements

- Completed Analysis of Distribution of First Nations' Burials and Ancestral Remains in British Columbia: Relations to Fee Simple and Crown Lands report in collaboration with Archaeology Branch
- Ongoing participation in Joint Working Group on First Nations Heritage Conservation (JWG FNHC) with identification of the Heritage Conservation Act (HCA) as priority piece of legislation to align with the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and include on Provincial Action Plan
- Participation in work with First Nations Leadership Council (FNLC) Tier One work

Crossover with Other Projects

Section 4 Pilot Establishment and Implementation project

- Aspects of change are looking to see the outcomes of the first year of the Section 4 Pilot CHIA/CHOA (Cultural Heritage Impact Assessment & Cultural Heritage Overview Assessment) Review and Education Enhancement project
- Limitations of the HCA are discussed in the video produced from the CHIA/CHOA project as well as the Stó:lō Heritage Policy manual which provides greater protection to sites that would be included within the Section 4 Pilot project

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Challenges/Identified Areas of Opportunity

Similarly to the HCA Section 4 Pilot Project, this project has faced the following challenges:

- The relationship with the Ministry of the Attorney General (MAG) whose foundation is dated, constraining and limiting;
- Satisfying the complicated Provincial process necessary to make changes to policy and legislation.
- The need for First Nations to be involved in drafting new legislation. There has been a request put forward, but nothing has resulted to date.

Identified areas of opportunity include:

- Supporting changes to policy, procedure and legislation in regards to heritage conservation through First Nations engagement.
- The Declaration Act, introduced in October 2019, mandates a review of legislation in view of the rights of Indigenous Peoples. The work associated with this project is in line with the Declaration Act will help advance reconciliation between First Nations and the Province.

Collaborative Recommendations for Change

The following recommendations for change are applicable to all Cultural Site Protection projects in the STSA-BC Collaborative Stewardship Forum:

- Making changes to legislation that support delegated decision-making (shared decision-making) by First Nations (e.g. amending section 20.1 of the Heritage Conservation Act);
- Legislative change that broadens the scope of recognition for First Nations' sacred sites to include burials/cemeteries;
- Legislative authority to implement First Nations' heritage policies and permitting systems;
- Revising policy that sets out parameters for site designation and protection (e.g. burials);
- Continuing to advance the collaborative development of repatriation policy and procedures to incorporate First Nations' protocols and related needs.

Guided by Lets'emó:t, collaborators have made every effort to reconcile differences and incorporate both Stó:lō and Western worldviews and knowledge systems. We as individuals can continue in our commitment to work under the guiding principle of Lets'emó:t, however, it is difficult when the values of the institution do not align with those of the Province and provincial policies prevent action and progression. We do not and cannot deal with these issues the way we would deal with personal relationships, therefore, when representing conflicting policy in our institutions, there is a need for dispute resolution processes to be in place.

Future Project Goals/Vision

The primary goal of this project is to facilitate a successful approval of proposed legislative changes following a successful approval by Cabinet in 2020. However, outstanding at this time

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is the development of a First Nations Engagement Process initially meant to be in Fall/Winter 2019-2020 that has yet to begin.

Secondary goals include planning for the implementation of approved transformative changes to the HCA anticipating follow up needs, including additional relationship agreements between the STSA and BC over recognition of Stó:lō Heritage Policy and permitting and shared decision-making.

This project will continue into the next fiscal year with the addition of the following project goals:

- Potentially increased activity in Joint Working Group of First Nations Heritage Conservation
- Completing a burial analysis of S'ólh Téméxw, similar to that completed for British Columbia but with different methodology
- LiDAR Mapping of select areas within S'ólh Téméxw with localized follow up

Cultural Heritage Impact Assessment/ Cultural Heritage Overview Assessment Review and Education Enhancement Project Update

Project Theme

Cultural Site Protection

Team Members

- **Cara Brendzy, Heritage Stewardship and Archaeology Manager, Stó:lō Research and Resource Management Centre, Project Lead**
- **Kierstin Dolata, Researcher, Stó:lō Research and Resource Management Centre, Project coordinator**
- **Dr. Dave Schaepe, PhD., Director, Stó:lō Research and Resource Management Centre, Team member**
- **Janna Bucsis, Archaeologist, Stó:lō Research and Resource Management Centre, Team member**
- **Naxaxalhts'i (Sonny McHalsie), Cultural Advisor, Stó:lō Research and Resource Management Centre, Team member**
- **Carrielynn Victor, CSF Project Coordinator, Ayelstexw Consulting, Team member**
- **Matthew McGinity, Manager, People of the River Referrals Office, Team member**
- **Tannis Tommy, People of the River Referrals Office, Team member**
- **Shannon Enns, Archaeologist, Stó:lō Research and Resource Management Centre, Team member**
- **Kevin Webber, Forestry Manager, Ts'elxwéyeqw Tribe, Team member**
- **Nikki LaRock, Team Member**
- **Stó:lō Heritage Trust Society, Team member**
- **Bear Image Sandra Bonner, Owner/Operator Bear Image Productions, Film project development and production**

Project Goals

Provide clarity and education about Cultural Heritage Impact Assessment/ Cultural Heritage Overview Assessment (CHIA/CHOA) necessity and process to:

- Local government staff and leadership
- Industry staff and ownership
- Stó:lō staff and leadership

Secondary Goals & Objectives

- Develop education materials (video) related to SRRMC Departmental process
- Respond to industry, increase transparency, strengthen relationships

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Methodology

Updates made

- New document drafted, reviewed, agreed upon
- Development of short informative video
- The video will be finalized and prepared for use as education tool uploaded on the STSA website in April 2020
- Draws heavily upon Stó:lō Heritage Policy Manual and Stó:lō world view to create educational material

Status Reports and Achievements

Achievements throughout 2020-2021 fiscal year included:

- Meeting with Sandra and crew from Bear Images to discuss plan for fiscal year
- Developing first draft of video script
- Revising workplan with intention of completing project within shorter timeline than initially expected Finished scripting video and sent out to participants and team members for review
- Working with Sandra from Bear Image to finalize plans and share script
- Completing filming all sections
- Finalizing the CHIA/CHOA video March 2021

Crossover with Other Projects

Xá:ytem

- shots of the CHIA/CHOA video were filmed at the Xá:ytem site and briefly discuss the importance of the site to Stó:lō

HCA Legislative and Policy Changes

- Heritage Conservation Act and its shortcomings in the protection it provides Indigenous Cultural Heritage sites is discussed in the CHIA/CHOA video

S.4 Policy

- Limitations of the HCA are discussed in the video produced from the CHIA/CHOA project as well as the Stó:lō Heritage Policy manual which provides greater protection to sites that would be included within the Section 4 Pilot project

Challenges/Identified Areas of Opportunity

A challenge is conveying the importance of protecting Heritage sites that are often poorly understood by non-indigenous community members (e.g., Place Names and Cultural Landscape Features). It can be challenging to express to members of the intended audience that these sites merit the same respect and protection as material culture sites (archaeological sites), particularly when they are currently not afforded this protection by the *Heritage Conservation Act*.

Overcoming these obstacles creates opportunities for culture sharing and worldview education. This would serve not only proponents but community members, internal staff, provincial staff, and anyone involved in the referral process.

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Completion of the video will provide an excellent opportunity for sharing the importance of conducting Cultural Heritage Overview Assessments (CHOAs) and Cultural Heritage Impact Assessments (CHIAs) not only for local government staff and leadership and industry staff and ownership, but also for Stó:lō staff and leadership. How these assessments differ from Archaeological Overview Assessments (AOAs) and Archaeological Impact Assessments (AIAs) and why they are essential is often questioned. The video provides a short but informative explanation that can create clarity and transparency and therefore encourage more willing participation in the processes and respect for their outcomes.

Provincial representatives would be better equipped to support cultural heritage assessment processes once they have a greater understanding of not only the processes, but also the uniqueness of Stó:lō Cultural Heritage sites. The materials produced as a result of this project will facilitate the referral process.

Collaborative Recommendations for Change

Training and educating provincial representatives to be better equipped to support CHIA and CHOA processes and on how Indigenous Cultural Heritage differs from non-Indigenous Cultural Heritage is essential if they are to convey the importance and necessity of these processes and to industry proponents.

Upon completion of the Section 4 Pilot project it is hoped there can be expansion beyond the pilot study area resulting in the protection of additional cultural heritage sites. Having the Province support CHOAs and CHIAs specifically with regard their recommendations would provide the protection to cultural sites/areas that is afforded to material culture sites (archaeological sites).

Future Project Goals/Vision

The CHIA/CHOA video has been finalized and the project is considered complete.

Repatriation Policy and Practice Project Update

Project Theme

Cultural Site Protection

Team Members

- **Dr. David Schaepe PhD., Director, Stó:lō Research and Resource Management Centre (SRRMC), Project Lead**
- **Kierstin Dolata, Researcher, (SRRMC), Project coordinator**
- **Sonny McHalsie, Cultural Advisor, (SRRMC), Team member**
- **Stephen Shurgold, Librarian/Archivist, (SRRMC), Team member**
- **Nicola Campbell, Researcher, Team-member**
- **Carrielynn Victor, CSF Project Coordinator, Ayelstexw Consulting, Team member**
- **House of Respect Caretaking Committee**

Project Goals

- Support repatriation efforts throughout S'ólh Téméxw including creation of infrastructure for stewardship of Stó:lō ancestral remains.
- Visit the Royal BC Museum to explore collections for possible Stó:lō ancestral remains and belongings, and discuss repatriation policy development.
- Taking care of Stó:lō ancestors and organizing next steps on their journey home.
- Inventorying Stó:lō and Coast Salish ancestral remains and associated belongings around the world
- Continuing to seek funding to support House of Respect caretaking committee
- Inventorying Stó:lō and Coast Salish ancestral remains and associated belongings around the world
- Influencing development of museum repatriation policies

Methodology

The Stó:lō Xyolhmet S'olhetawtxw Sq'é'ip (Stó:lō House of Respect Care Taking Committee – the Committee), composed of leaders, elders, spiritual practitioners, and cultural knowledge holders from Stó:lō communities, including Yale, Shxw'ōwhámel, Sumas, Chawathil, Scowlitz and XwChiyó:m (Cheam) First Nations and the Ts'elxwéyeqw Tribe, was formed under the auspices of Stó:lō Nation and Stó:lō Tribal Council and is supported by the Stó:lō Research and Resource Management Centre (SRRMC). It provides input, guidance and direction on all aspects of repatriating (qà:qwèl stexw) and caring for Stó:lō heritage, appropriate sharing of cultural information, and the administration and implementation of the Stó:lō Heritage Policy.

In our Stó:lō culture “tómiyeqw”, a Stó:lō principle, which translates into English as both “great-great-great-great-grandparent” and “great-great-great-great-grandchild”, expresses the responsibility that we have to our seven generations past and those seven generations in the

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future. The connection between the two rests with those of us living today. “Mi t'ekw'stexw ye si:walelh tset”, “We are bringing our ancestors home”, is an essential step in caring for those ancestors and guides the work carried out within this project.

Status Reports and Achievements

- Design for Grave House has been approved by HORCC and will be painted in Spring/Summer 2021
- Drafted repatriation letter for national/international museums to identify which hold Stó:lō Ancestral Remains/belongings which includes map, key search terms, and relevant Borden numbers to assist museums in compiling inventory
- Sent letters to multiple national and international museums requesting inventory of Stó:lō Ancestral Remains
- House of Respect Caretaking Committee have continued to meet virtually after pandemic restrictions put in place
- Drafted information sharing letter for other Nations who's ancestral remains we learn about through correspondence with museums (have identified over 500 ancestors from neighboring Nations)
- Project team members established communication and have met with representatives from neighboring First Nations to share information received from museums on ancestral remains from their territories
- Have started developing an inventory of Stó:lō ancestral remains in museums and identified 3 museums HORCC members would like to visit in 2021/2022– CMH in Quebec, Field Museum in Chicago, and NMAI in Washington
- Successfully applied for Repatriation grant from the BC Museums Association to help fund additional work
- Working with RBCM to plan visit with HORCC when pandemic restrictions ease

Crossover with Other Projects

This project was previously combined with the HCA Legislative and Policy Changes project. Future work to be included in the HCA project, including the proposed inventory of burial sites and review of associated archaeological site forms within S'ólh Téméxw may support identification of which museums Stó:lō ancestors were sent to after being excavated.

Challenges/Identified Areas of Opportunity

Recently developed repatriation policy by the Royal BC Museum and Archives is committed to continuous dialogue and collaboration with Indigenous communities surrounding the active repatriation and cooperative management of Indigenous collections, ancestral remains and 138 burial belongings in the museum's care. This provides an opportunity not only for the repatriation of Stó:lō ancestral remains and belongings, but also an opportunity to influence the development of future policies by taking advantage of this continued dialogue and collaboration.

Collaborative Recommendations for Change

When repatriating ancestral remains from museums, onus is primarily placed on Indigenous communities to locate ancestors, prove their connection, familiarize themselves with repatriation policies/legislation, and find the capacity/funding to support bringing ancestors home. Holding museums accountable for what were often unethically collected and still unethically held collections and creating policies/legislation that places more responsibility on these institutions would ease the burden for Indigenous communities who wish to bring ancestors home.

The *Native American Graves Protection and Repatriation Act* (NAGPRA) in the United States is an example of such legislation that requires institutions to do an inventory of collections and provide disclosure of what they have in possession, however, no additional funding for institutions is provided for work to be carried out. Internal capacity issues must be considered, and adequate funding must also be provided so creation of new policies/legislation can successfully effect change.

Practical mechanisms must be developed that include Indigenous perspectives and leadership that assert UNDRIP's repatriation principles affirmed especially in Articles 11,12, and 31. An example of such is Australia's Aboriginal Advisory Committee for Repatriation which allows Elders to provide guidance and policy direction and financial assistance is provided by the Australian government to Indigenous communities throughout the repatriation process.

Future Project Goals/Vision

The project will continue into the next fiscal year with the following goals:

- HORCC members to visit RBCM to meet with staff and discuss repatriation policy and practice
- Complete painting of Grave House
- Develop Stó:lō Repatriation Policy
- Continue creating inventory of Stó:lō ancestral remains held in museums nationally and internationally
- Relocate previously repatriated ancestors to newly constructed Grave House on Coqualeetza Grounds
- Continue regular meetings with HORCC
- Organize repatriation gathering/workshop with First Nations throughout British Columbia to share experience and knowledge and create collaborative work plans to avoid duplication of efforts

S'ólh Téméxw Guardians Project Update

Project Theme

Monitoring and Enforcement Theme

Team Members

- **Dionne Bunsha, Lower Fraser Fisheries Alliance, Project Lead**
- **Jillian Spies, Stó:lō Research and Resource Management Centre (SRRMC), Project Coordinator**
- **Karen Brady, Land Stewardship Manager, SRRMC, Team member**
- **Dr. Dave Schaepe, PhD., Director, SRRMC, Team member**
- **Ray Douglas, SRRMC, Team member**
- **Keri Ardell, Executive Director, Ts'elxwéyeqw Tribe Management, Ltd., Team member**
- **Carrielynn Victor, Manager, Ayelstexw Consulting LP, Team member**
- **Jim Jensen, Senior Resource Coordination Officer, Ministry of Indigenous Relations and Reconciliation, Team member**
- **Rob Wilson, Area Supervisor, BC Parks and Protected Areas, Team member**
- **Jenni Martin, Compliance and Enforcement, Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Team member**
- **Tana Mussell, Manager, Seven Generations, Team member**
- **James Leon, Aboriginal Rights and Title, Sq'éwlets First Nation, Team member**
- **Don Stahl, Conservation Officer, Ministry of Environment and Climate Change Strategy, Team member**
- **Shana Roberts, Special Projects Manager, SRRMC, Team member**
- **Steven Patterson, Yale First Nation, Team member**

Project Goals

- Develop a S'ólh Téméxw Guardians constituency of STSA board and community members
- Create funding group- sub-committee who can lay out funding options
- Provide stewardship of traditional territory (air, land, water) and protection of values and traditional knowledge through presence on the land and real-time monitoring and enforcement.
- Bring youth back to the land, support youth obligations to the land, water, air
- Provide training, employment, capacity building for S'ólh Téméxw Guardians
- S'ólh Téméxw Guardians work will support other CSF projects in terms of understanding baselines, integrating cultural knowledge, and maybe enforcement
- Provide support for the creation of a S'ólh Téméxw Guardians curriculum
- All work done includes cultural and traditional knowledge

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- Address long term sustainability of Guardian's work; make S'ólh Téméxw Guardians a career path
- Create room for growth/ spectrum within S'ólh Téméxw Guardians program (air, water and wildlife fields, management and technical roles, and mentoring aspects)

Methodology

- **Building and strengthening relationships:** Establish new and strengthen existing partnerships with the Lower Fraser Fisheries Alliance, Department of Fisheries and Oceans, Natura Resources Canada, the Ministry of Forests, Lands, Natural Resources Operations and Rural Development, the Ministry of Energy, Mines and Low-carbon Initiatives, the Ministry of Indigenous Relations and Reconciliation, the Ministry of the Environment, Youth groups, the First Nations Health Authority, Stó:lō Xwexwilmexw Treaty Association, Matriarchal Society, and more
- **Training:** S'ólh Téméxw Guardians to participate in job shadowing and training opportunities
- **Education:** Development of S'ólh Téméxw Guardians curriculum
- **Engagement:** S'ólh Téméxw Guardians to engage with STSA member First Nations to determine environmental restoration needs/ hotspots/ areas of concern
- **Funding:** On-going efforts to secure complementary funding to support S'ólh Téméxw Guardians program development
- **Program planning and implementation:** Creation of policies, procedures, and data management structures to support the S'ólh Téméxw Guardians program

Status Reports and Achievements

- Hired the first S'ólh Téméxw Guardian (Ray Douglas)
- Training:
 - BC Parks Law and Its Administration (PRKS 1010) course at BCIT
 - 3 months job shadowing at Cultus Lake with BC Parks
 - H2S Alive course completion to be certified to attend spill sites
- Relationship Building:
 - BC Ministry of Energy, Mines and Low-carbon Initiatives
 - Regional Operations Branch: Matt MacLean
 - Claims and Tenures Branch: Mark Messmer
 - Compliance and Enforcement Branch: Michael Olsen, Tracy James, Megan Heathfield)
 - BC Ministry of Forests, Lands and Natural Resources Rec
 - Natural Resource Officers (Kat McNamara)
 - Forest and Range Evaluation Program (Christine Galliazzo)
 - BC Recreation Sites and Trails (Tom Blackbird)

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- BC Ministry of Environment
- BC Parks (Rob Wilson)
- Ayelstexw
- Resilient Waters
- Lower Fraser Fisheries Alliance
- Funding
 - Successful application for \$150K to the Indigenous Advisory and Monitoring Committee to support the S'ólh Téméxw Guardian working with partner First Nations Sq'éwlets, Yale and Skwah on Emergency Management Preparedness and Response
- Education
 - On-going development of S'ólh Téméxw Guardians online curriculum
- Engagement
 - S'ólh Téméxw Guardian continues to meet with STSA member First Nations and Tribal groups to understand their environmental restoration needs/ hotspots/ areas of concern
- Program planning and implementation
- Development of a S'ólh Téméxw Guardians portal, similar to StoloConnect, is underway. This portal will act as a data-housing and management system and provide a communication platform for the STSA member First Nations and select external partners to connect on the work of the S'ólh Téméxw Guardians
- On-going development of other standards such as safety protocols and incident response processes

Crossover with Other Projects

The S'ólh Téméxw Guardians will collaborate on mines monitoring (Mining Inventory and Analysis), air and water quality monitoring (S'ólh Téméxw Integrity Analysis Theme Project) and two- way training opportunities.

Challenges/ Identified Areas of Opportunity

Due to COVID-19, this project saw the postponement of the hiring of a program supervisor and an additional project coordinator. This has created challenges to grow the program with limited staff. In spite of this, significant headway has been made in program planning and implementation and the team is looking forward to hiring more staff in the next fiscal year. The absence of guaranteed multi-year funding for a S'ólh Téméxw Guardians program limits fulsome program planning and implementation. A perpetual funding source is required to realize the programs full potential.

Collaborative Recommendations for Change

Multi-year funding for First Nations and First Nations Organizations in order to bring stability to the S'ólh Téméxw Guardians program

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There needs to be legislative structure for the S'ólh Téméxw Guardians to explore authority and enforcement.

Future Project Goals/Vision

- Further expansion of the S'ólh Téméxw Guardians program
- Hiring of a Program Supervisor, Project Coordinator, and second S'ólh Téméxw Guardian
- Continued development of the role of the S'ólh Téméxw Guardians in support of the STSA's Emergency Management Preparedness and Response
- Coordination with other Indigenous Guardians initiatives
- Accessing alternate funding streams

Xá:ytem Facility and Curriculum Development Project Update

Project Theme

Education and Training Theme

Team Members

- **Dr. David Schaepe PhD., Director, Stó:lō Resource and Research Management Centre (SRRMC), Project Lead**
- **Yvette Lizee, Regional Manager, South Coast, Ministry of Indigenous Relations and Reconciliation (MIRR), Project Lead**
- **Sukhvinder Kaeley, Senior Resource Coordination Officer, MIRR, Project Coordinator**
- **Amber Kostuchenko, Manager – Library/Archives, Cultural Education, and Tours, SRRMC, Team Member; Subject Matter Specialist**
- **Cara Brendzy, Manager, Heritage Stewardship and Archaeology, SRRMC, Team Member; Project Archaeologist**
- **Kierstin Dolata, Researcher and Project Coordinator, SRRMC, Team Member**

Project Goals

The Xá:ytem Facility and Curriculum Development Project (Xá:ytem Project) was separated out and recognized as a separate project from the broader Two-way Training Initiative for F20/21.

To foster collaboration, advance reconciliation, and implement forms of transformative change in cultural awareness and education; there is a need to develop and sustain two-way training initiatives between the STSA and the Province, as well as within Stó:lō communities. For this work to proceed, facilities for two-way training are required. The Xá:ytem Interpretive Centre is very well-suited to serve as a campus for two-way training initiatives for groups ranging from provincial staff to youth; Guardians; Stó:lō members and community leaders.

The Xá:ytem Interpretive Center and transformer rock site (Xá:ytem/the Site) is a designated National Historic Site of significant cultural value to the Stó:lō People. The heritage value of Xá:ytem resides in the spiritual importance of the transformer rock and its association with the preservation of Stó:lō history, culture and spirituality. Xá:ytem's transformer stone holds the life forces of Stó:lō ancestors, who stood outside the longhouses of the community for thousands of years as a reminder to live together in a good way and to share gifts of knowledge from the Creator.

Due to prolonged closure, the washroom portion of the Site has fallen to a level of disrepair which may limit the intended public access and use for cultural education. Improvements to the Xá:ytem Interpretive Centre will once again provide an opportunity for Stó:lō and non-Stó:lō community members alike to learn about creation of the Stó:lō in a place of transformative change and deeply meaningful cultural and historic significance. Xá:ytem is a source of spiritual awareness, renewal, its teachings are highly aligned with the spirit of reconciliation and the Truth and Reconciliation Commission's (TRC) Calls to Action.

Specific objectives of the Xá:ytem Project include:

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- Application for external funding to support necessary renovations of the Xá:ytem Interpretive Center to support overall goals to advance 'two-eyed seeing' / two-way training and cultural awareness and competency training for government, industry, the public and local school districts.
- Reinitiate the archaeological sifting educational program and develop site-specific educational materials for use by teachers to supplement learning tours (e.g. Transformation Story).
- Fostering partnership with the Stó:lō Heritage Trust Society (SHTS), as owners of the Site, to ensure that key components of the Xá:ytem Project including development of curriculum and training materials, operational planning, and relationship building among stakeholders and potential learners, is aligned with the vision and goals of the Trust.

Methodology

As the focus of the Xá:ytem Project in F20/21 has been primarily operational and focused on achieving the necessary facility upgrades support re-opening and use, the application of scientific method (Indigenous or western) to achieve Project outcomes is generally not required.

All work, however, related to educational programming, including update of the archaeological onsite sifting program, as well as strategic visioning with the SHTS is conducted in alignment with Stó:lō tradition and practices. Archaeological work at Xá:ytem also conforms with Provincial requirements stipulated under the *Heritage Conservation Act*.

Status Reports and Achievements

Key achievements of the Xá:ytem Project Team during F20/F21 include:

- Completion of the audiovisual and IT equipment projection system upgrades to support training and meetings.
- Application submission for funding to support the facility renovations and improvements through two external infrastructure grant programs:
 - *The Canada-BC Infrastructure Grant (Investing in Canada Grant)*
 - *The Indigenous Cultural Heritage Infrastructure Grant administered by First Peoples' Cultural Council*
- A half day Visioning Session was held onsite at Xá:ytem with Stó:lō Heritage Trust Society (SHTS) in mid-October. The session was facilitated by Four Directions Consulting (Dan George), and a summary report has been received by the Xá:ytem Project team.
- Filming of the CHIA/CHOA video took place at Xá:ytem.

Deferred to F21/22

- Originally planned work for this fiscal related to restart of the archaeological sifting educational program.
- Drafting of the pre/post Tour curriculum.
- Facility renovations and infrastructure upgrades will depend, in part, on the successful outcome of the Canada-BC Infrastructure Grant.

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Crossover with Other Projects

- **Stó:lō Leadership and Education Directive (SLED):** Moving forward into F21/22, educational curriculum development and programming to be delivered at Xá:ytem will be developed in conjunction with/as part of, the program and materials development under the SLED Project.
- **Cultural Heritage Impact Assessment (CHIA)/Cultural Heritage Overview Assessment (CHOA):** The key deliverable from the CHIA/CHOA Project was the production of a video intended to facilitate the referrals process by providing clarity to those involved as to why CHIAs and CHOAs are necessary and how they differ from AIAs (Archaeological Impact Assessments) and AOAs (Archaeological Overview Assessments) but are more important. Xá:ytem served as a location for filming, and both the Interpretive Center and the Hatzic Rock site are featured in the final video to help communicate the importance of protecting and managing all Stó:lō Heritage sites, including the ones not currently protected by the *Heritage Conservation Act*.
- **Two-way Training:** Once fully operational, Xá:ytem will be used as a place to host two-way training events, to support an increase in Stó:lō cultural awareness and competency training for government, industry, the public and local school districts.

Challenges/Identified Areas of Opportunity

The primary challenges associated with the Xá:ytem project relate to difficulties in securing funding to support the immediate Project goals, as well as to ensure sustained site operations. Although there have been additional funding streams offered through Provincial and Federal sources a part of Covid-19 relief and economic regeneration initiatives, it has been difficult to obtain funding to support the several capital improvements required to bring the facility up to operating capacity. In the past, Xá:ytem's doors were closed and the facility fell into a state of disrepair due to discontinued Federal funding. If the full potential of Xá:ytem is to be realized, ongoing, secured funding is also needed to ensure an annual operating budget for the long-term site maintenance and operation including the delivery of educational programming.

Collaborative Recommendations for Change

The Project team does not currently have any specific recommendations for Provincial policy or legislative/regulatory change. It is anticipated, however, that upon further advancement of educational programming goals, potential recommendations for changes to the *Heritage Conservation Act*, and Ministry of Education processes for curriculum development may be identified.

Future Project Goals/Vision

The Xá:ytem Project is underway, and the team is committed to working together to achieve the collaborative goals reflected in the updated Terms of Reference. It is anticipated that Project goals for F21/22 will include:

- Continued pursuit and securement of funding to support priority renovations and upgrades at Xá:ytem.

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- Completion of priority facility renovations and infrastructure improvements with goal of hosting a cross-cultural two-way training event in the longhouse between the STSA and the Province in fall 2021, and/or when Covid-19 safety protocols allow.
- Ongoing development and sustainment of the partnership with SHTS for visioning and operational planning purposes.
- Completion of the pre and post tour educational curriculum for local school districts, and initiation of classroom site tours.
- Determination of archaeological permitting requirements to re-initiate the archaeological shifting education program.
- Training of Stó:lō Research and Resource Management Centre (SRRMC) cultural education staff/contractors to deliver the new programs.
- Advancing additional work to support the longer-term vision of Xá:ytem as a place for ongoing training and education for the Province, STSA community members and partners, school children, and potentially the general public.

Stó:lō Leadership and Education Directive (SLED) Project Update

Project Theme

Education and Training

Team Members

- **Lisa Wolgram, Alongside Consulting**, Project co-lead
- **Dr. Dave Schaepe PhD., Stó:lō Research and Resource Management Center**, Project co-lead
- **Carrielynn Victor, Ayelstexw Consulting**, Project coordinator
- **Michael Blackburn, Assistant to the regional manager, Alongside Consulting**, Team member

Project Goals

- Formation of an advisory group of Elders and other Stó:lō community members that are gifted in the area of teaching.
- Development of communication strategies with families, youth, and youth coordinators within communities.
- Partnership development with school districts and/or universities in order to run an accredited course. Course will need Political reinforcement.
- Development of list of teachers who communicate well with youth and who are knowledgeable about land and governance.
- Localizing the First Peoples Principles of Learning.
- Identify and Articulate a Stó:lō Model of Learning.
- Adapted plan to replace placename tours due to COVID-19 restrictions.
- Formation of an Education Steering Committee, with Terms of Reference.
- Development and Delivery of Regional Survey.

Methodology

- Project Cycle: Research, including Indigenous Research Methodologies, consistent quarterly reporting, project review, reflection, and next steps
- Collaborative engagement with Stó:lō/First Nation Community Educators, & SRRMC Director
- Adaptive, and reflexive approach to the work plan

Status Reports and Achievements

- Localizing the First Peoples Principles of Learning: Resources and initial research undertaken, project ongoing
- Identifying and Articulating a Stó:lō Model of Learning: 3 Models articulated, research ongoing

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- Adapted plan to replace placename tours and other youth events and activities due to COVID-19 restrictions: Educational Video Series work plan under development, sample video created
- Formation of an Education Steering Committee: Drafted Terms of Reference, anticipated continuation of committee development as social restrictions shift
- Development and Delivery of Regional Survey: delayed due to COVID-19, first district to administer the survey will be Fraser Cascade, April/May 2021
- High quality, accessible up to date status reporting conducted throughout the timeline of the project

Crossover with Other Projects

- Xá:ytem project: Curriculum Development and potential collaboration with Abbotsford and Mission School Districts. Start date of this work is to be decided
- Localization of the First Nations Education Steering Committee (FNESC) BC First Nation Land, Title, and Governance curriculum and exploring CSF connection potential. Start date of this work is to be decided
- Sumas Land Based Resiliency Project: Terms of Reference has recently been drafted. Project began in December 2020, carrying through to March 31st, 2023.

Challenges/Identified Areas of Opportunity

- Youth events and activities are on hold due to COVID-19 gathering restrictions
- Enhancing the Terms of Reference
- Lack of articulated organizational support (SRRMC), which created barriers to establishing working relationships with educational organizations and institutions. Opportunity to improve efficiency related to day to day communications and decisions of the project in organization housing the program. Improved efficiency could lead to increased progress on all projects.
- A Provincial partner would increase access and understanding of policy and legislation relating to curriculum development
- Notable work plan pivots following the introduction of social restrictions in 2020:
- Increased focus on available resources related to teaching and learning development, decolonizing literature, Indigenous research methodologies, and locally generated Stó:lō stories
- Use of digital interfacing to access and engage Stó:lō knowledge keepers and educators

Collaborative Recommendations for Change

- Continuation of curriculum development for UFV, Stó:lō Land and Governance
- BC First Nation Land Title and Governance localized curriculum development incorporated into Stó:lō Leadership and Education programming,
- BC Ministry partner collaboration, support, and presentations related to BC Education policy and legislation as related to Stó:lō First Nation Curriculum development

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Future Project Goals/Vision

- Development of Xá:ytem curriculum content
- Expansion of project team and partners to develop expanded workplan, research and develop accredited course for delivery in local institutions
- Localizing the First Peoples Principles of Learning, continued research, and development

Appendix A

Stó:lō Research and Resource Management Centre



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ANALYSIS OF DISTRIBUTION OF FIRST
NATIONS' BURIALS & ANCESTRAL REMAINS
IN BRITISH COLUMBIA: RELATIONS TO FEE
SIMPLE & CROWN LANDS

In collaboration with:

Archaeology Branch

Ministry of Forests, Lands, Natural Resource
Operations & Rural Development

3rd Floor – 2975 Jutland Street

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2021 Ruskin, Jessica, David M. Schaepe, Cara Brendzy, Kierstin Dolata, Drew MacLennan, Lisa Dojack, Shannon Enns, Janna Bucsis, and Colin Green. *Analysis of the Distribution of First Nations' Burials & Ancestral Remains in British Columbia: Relations to Fee Simple & Crown Lands*. Unpublished report on file at the Archaeology Branch and Stó:lō Library and Archives, British Columbia.

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1.0 Executive summary

This project was carried out as a collaborative project between staff in the British Columbia Archaeology Branch (Branch) and the Stó:lō Research and Resource Management Centre (SRRMC). It was conducted as part of the Collaborative Stewardship Forum (CSF) between British Columbia and the S'ólh Téméxw Stewardship Alliance (STSA). The project contributes to work in the CSF within the theme of 'Heritage Site Protection'. The focus of this project is First Nations' burial sites and ancestral remains (burial sites) located throughout British Columbia, and their relationship to the landscape of fee simple and Crown lands as factors of heritage conservation issues and needs that exist throughout the Province. The motivation for this analysis comes from current interests and needs to better understanding these spatial relationships, particularly between burial sites and fee simple parcels. This project is an exploratory in nature. It serves to provide a base-line to analytic methods. It provides outcomes that are useful in guiding future research and serves to inform the review and potential revision of policy, procedure, and legislation. These goals and the collaborative nature of this work are in keeping with the mandate and relational nature of the CSF.

2.0 Introduction / Background

There are more than 2,200 recorded archaeological sites in British Columbia known to contain First Nations' ancestral remains. A number of these First Nations burial sites are located on fee simple (private property/lands). The relationship between burial sites and private properties is one of risk to the integrity of such sites, and the interests and integrity of First Nations, fee simple land holders, and the Province. Private lands are focal points for development across the Province. Private lands with burial sites then represent a type of spatial relationship that carries substantial inherent risk of and actual impacts.² While this relationship is recognized as a source of significant concern across the parties noted above, it is not well understood. Lacking information specific to this relationship inhibits input into the development of effective, proactive measure of heritage conservation in policy, procedure, and legislation.

Following ongoing challenges where land development in British Columbia intersects with First Nations burial sites, the Branch launched a review of current policies and practices related to the treatment of

² Archaeology Branch Ancestral Remains Policy Review Final Report April 2019. BC, Canada.

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ancestral remains. The intended outcome is the development of a framework providing a full spectrum of processes, tools, and policies to guide respectful treatment of ancestral remains in British Columbia on private property.

Engagement sessions were held August 2018 to January 2019 through which Branch representatives met with First Nations communities across the Province to discuss provincial policies and processes in relation to the respectful treatment of ancestral remains. Notes from these meetings were distributed to attendees and feedback was incorporated into final meetings notes.

A list of themes discussed was compiled by Branch staff. One of these themes concerned limited knowledge and awareness of Indigenous Cultural Heritage among private property owners and other key stakeholders, resulting in damage to some First Nations burial sites, and cultural heritage sites/resources.

Recommendations developed from these engagement sessions included a plan to develop a Request for Legislation seeking a mandate to make transformative changes to the *Heritage Conservation Act* (HCA) and related policies. The changes include greater protection for ancestral Indigenous cemeteries in alignment with protection offered to registered cemeteries under the Cremation, Interment, and Funeral Services Act (CIFSA). Related to this is exploring whether there are situations (e.g. the presence of multiple individuals buried at the same site) where HCA alteration permits will not be considered by the Province.

The Branch is also seeking approval on a decision-making framework (initially intended for 2019) to guide when and how the provincial government should consider purchasing property containing burials. The necessity to develop this framework has arisen from past situations in which the Province has been forced to intervene and purchase properties in order to provide protection to First Nations Burial Sites that are at risk. Since 1976, the Province has purchased more than a dozen properties containing First Nations burial sites. The Province's current approach in response to these cases is under review and aiming to shift to a more proactive approach informed by First Nations' engagement; and which addresses the legal, financial, consultative, cultural, and political risks for the Province.

The Branch recommended that an effective decision-making framework be developed to achieve the following:

1. Identify circumstances that warrant provincial intervention / purchase;

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2. Outline an approach to compensation to ensure consistency; and
3. Provide options/support for land management post acquisition.

This report was carried out to inform this process.

3.0 Objectives

The primary objectives of this report are as follows:

- Present the results of an analysis of 10% of recorded First Nations burial sites within the Province, and of those which may be candidates for designation as cemeteries (CISFA) providing them with greater recognition and protection. For the purpose of this report, those qualifying as candidates are defined as sites that contain more than one individual, and that are recorded as having high integrity (minimally 75% intact);
- Understand how many of the First Nations burial sites that qualify as candidates for designation as cemeteries are located on private property (fee simple) and located on property with unknown land status. Plus, determine the monetary value of these properties.
- Use the above information to estimate the resulting number of new (unrecorded) sites that will be added in the future, potentially qualifying for designation as cemeteries under CISFA, and estimate associated costs that may be incurred by the Province if overlapping fee simple lots are purchased.

Findings presented in this report aim to support the first of three recommendations identified above (i.e., Identify circumstances that warrant provincial intervention / purchase) by providing an analysis of First Nations burial sites on both private properties and properties with an unknown status that may qualify for CISFA designation. The projected number of future recorded First Nations burial sites qualifying for CISFA designation on both private and property with unknown status is also discussed, along with predicted associated costs that would be incurred by the Province if it were to purchase the properties on which the sites are situated.

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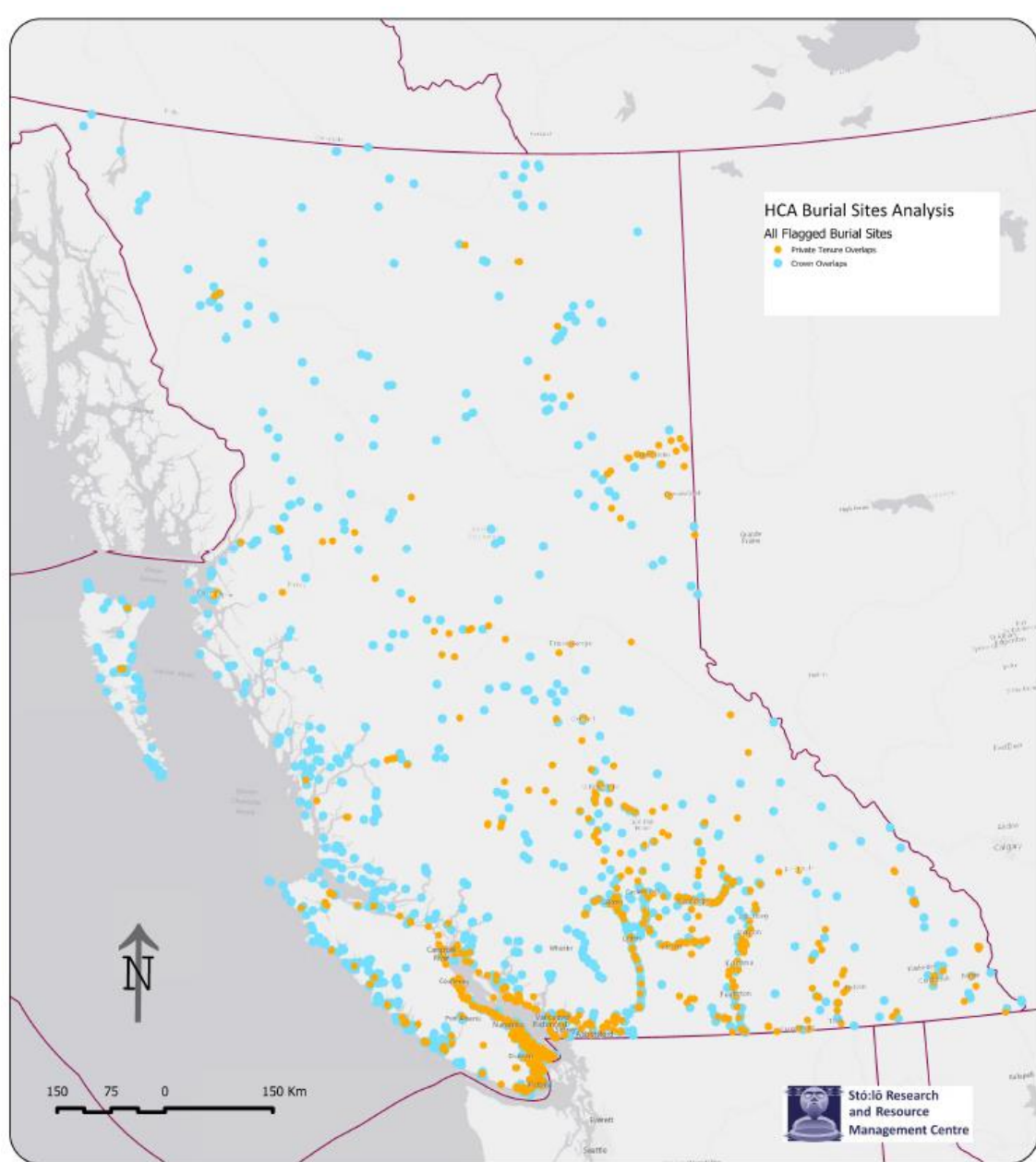
4.0 Methods

In order to gain insight into the possible number of First Nation burial sites that may qualify for CISFA designation, the Branch identified a total 2,255 recorded First Nations burial sites in British Columbia (see map in Figure 1 below). Of these, an approximate ten percent selective sample (225 sites) was decided on by the Branch for the current analysis (Figure 2). These 225 sites were subdivided into the following three subsets:

- **Subset A** consists of 75 First Nations burial sites with one site sampled from each National Topographic Series (NTS) sheet within the Province that contains at least one burial site.
- **Subset B** consists of 47 First Nations burial sites situated on **private property** with one site sampled where available from each National Topographic Series (NTS) sheet within the Province.
- **Subset C** consists of 103 First Nations burial sites selected by the Branch to include:
 - previously recorded 'rare sites' (those likely to qualify for CISFA designation as described in Section 3 of this report),
 - burial sites that were subject to landowner compensation by the Province (such as Grace Islet), and
 - additional sites from areas within the Province where there is a high occurrence of ancestral remains sites (drawn from an Archaeology Branch heatmap).

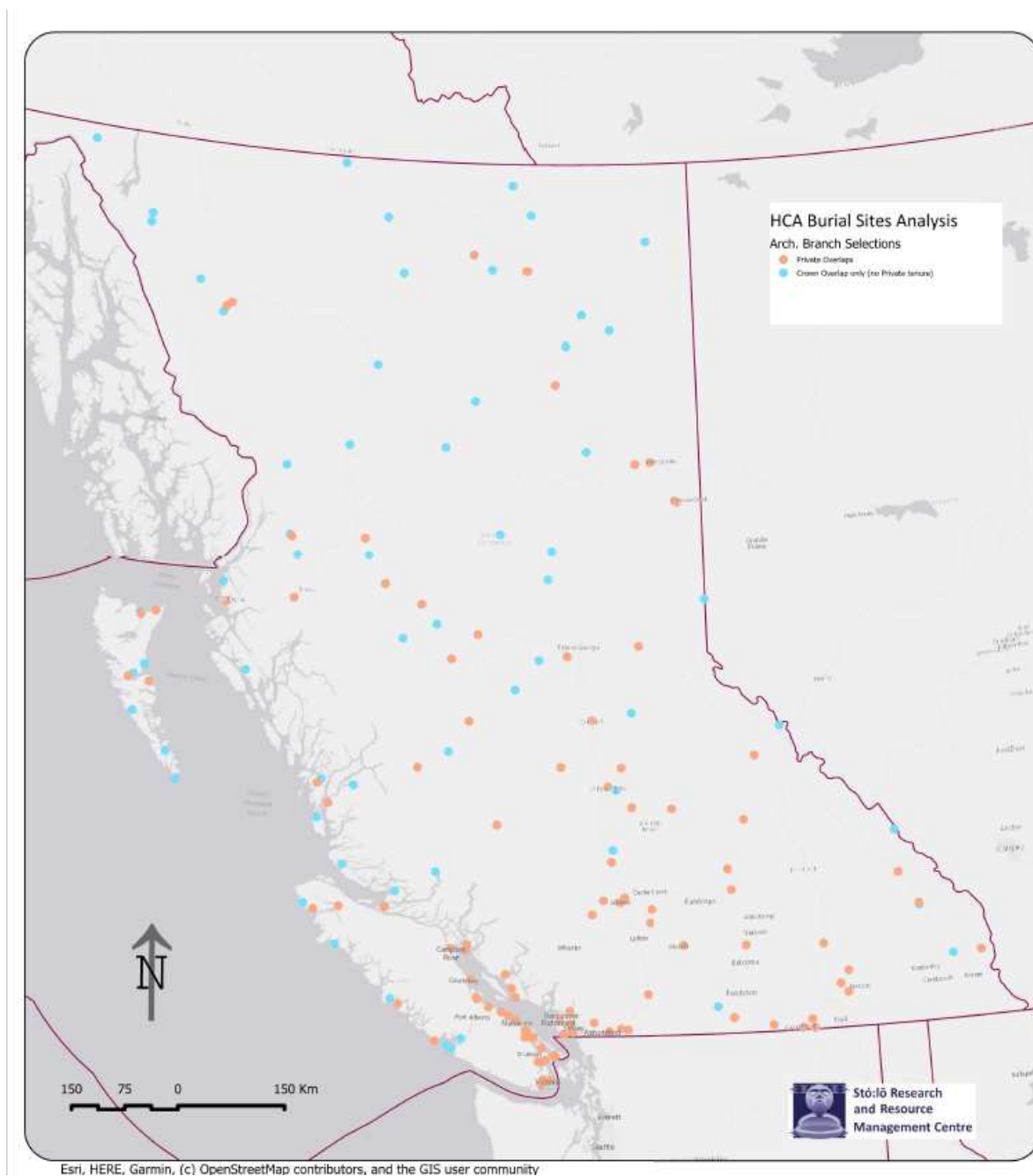
Each of the three subsets (A, B, and C) is independent of each other, with no sites duplicated between subsets.

Figure 32 Map of all flagged First Nations burial sites in BC by tenure



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Figure 33: Map of Archaeology Branch 10% selected sample of First Nations burial sites in BC by tenure



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The intention of the sampling selection was to have an equal number of sites (75) representing each of the three subsets. However, this was not possible in Subset B (burial sites exclusively on private property) as some NTS mapsheets only contain one site, which had already been used in Subset A, and other mapsheets have no sites on private property. As a result, only 47 sites were captured in Subset B. Subset C includes an additional 28 sites to compensate for those unavailable for Subset B, giving a total of 103 for Subset C.

All First Nation burial sites from Subset A, B, and C (225 sites) were reviewed using information available in reports and site forms from the Provincial Archaeological Report Library (PARL), Remote Access to Archaeological Data (RAAD), and the Stó:lō Research and Resource Management Centre's library and archives.

In some cases, not enough information was available for some of the First Nations burial sites to allow for analysis. For example, some sites contained information on site integrity but not the number of individuals whose remains are located at the site, and other sites contain the number of individuals at a site but no description of the integrity of the site, and others contained neither details on integrity or number of individuals. Due to the incomplete information on the 225 Archaeology Branch selected sites representing Subsets A, B, and C, only 123 are included in the analyses that follow. Details of the number of excluded sites from each subset due to incomplete information are included in the Results Section 5.

In terms of site classification, “**multiple**” burial sites were defined as those with two or more individuals. First Nations burial sites classified as “**single**” burial sites are those containing the remains of one identified individual. Site integrity uses the following definitions:

- **high integrity** – sites between 75% to 100% intact
- **medium integrity** – sites between 50% to 75% intact
- **low integrity** – sites less than 50% intact

Sites were also categorized as located on either private land (fee-simple), Crown land (federal or provincial land), or unknown (e.g., parcels representing a Building Strata parent parcel, Common Ownership parcels,

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Interest parcels, and Absolute Fee Book parcels whose registered owner can only be determined by consulting the paper book of record).

In determining which of the First Nations burial sites might qualify for CISFA designation, and projected costs associated with the purchase properties associated with such sites, the analyses looked at the following factors in order:

1. Single vs. Multiple Burial Sites
2. Site Integrity
3. Integrity of Multiple Burial Sites
4. Land Status of High, Medium, Low, And Unknown Integrity Multiple Burials
5. Number of Private Lots Affected by High Integrity Multiple Burial Sites
6. Site Mapping Pre/Post 2010 For High Integrity Multiple Burial Sites
7. Private Lot Area vs. High Integrity Multiple Burial Site Area
8. Site Area of High Integrity Multiple Burial Sites on Private Property
9. Property Value by Site
10. Total Land Value

5.0 Results

5.1 Summary of Results

The results provide the data obtained on 123 of the 225 Archaeology Branch selected sites meant to represent a 10 percent sample of recorded First Nations burial sites in British Columbia. The results are focused on the 10 factors listed above (single vs. multiple burial sites, site integrity, integrity of multiple burial sites, land status of high, medium, low, and unknown integrity multiple burials, number of private lots affected by high integrity multiple burial sites, site mapping pre/post 2010 for high integrity multiple burial sites, private lot area vs high integrity multiple burial site area, site area of high integrity multiple burial sites on private property, property value by site, and total land value).

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Single versus Multiple Burial Sites

The results presented in Table 7 displays the number of single versus multiple burial sites in each of the individual subsets (A, B, and C) and in the three subsets combined.

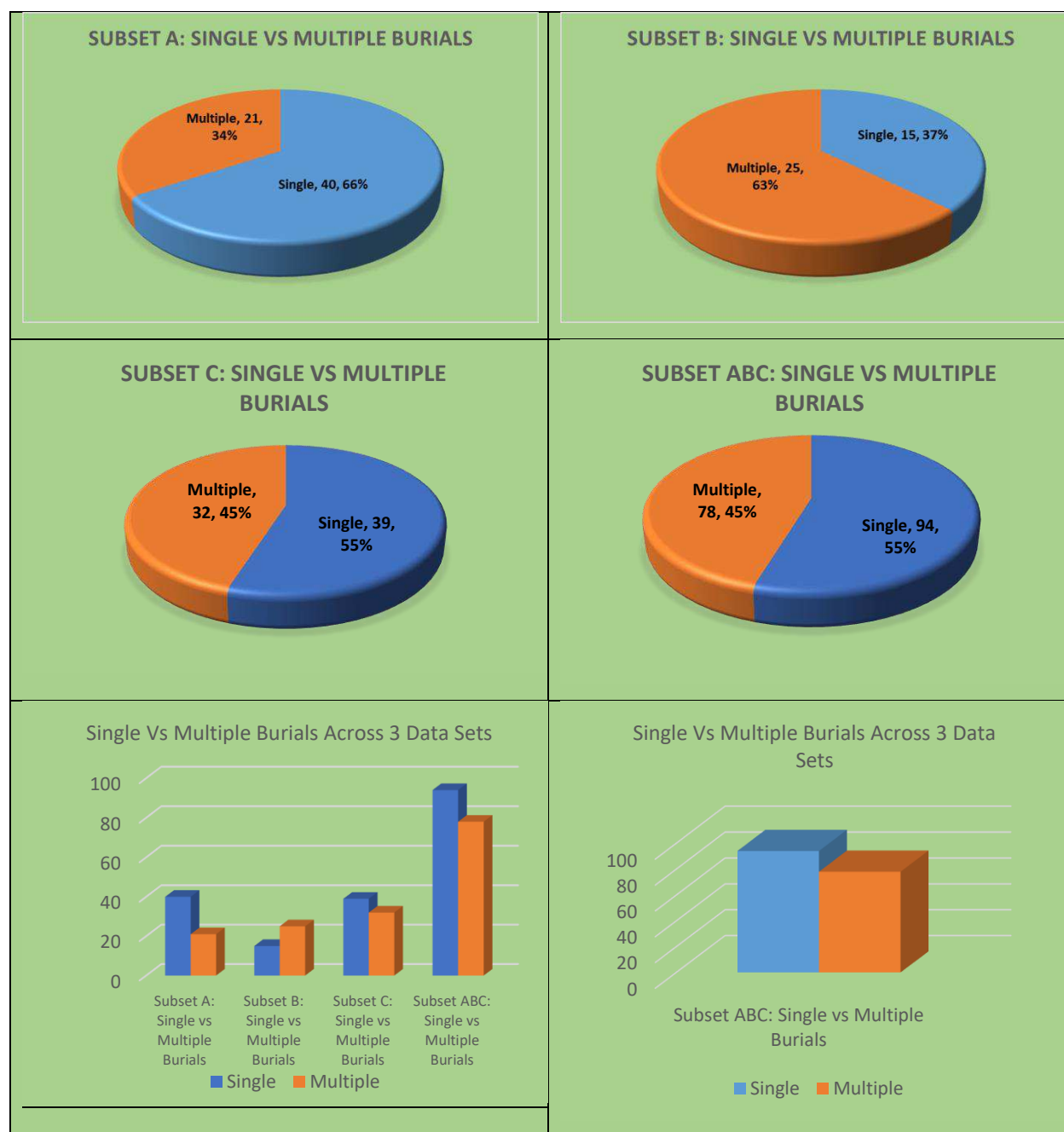
Table 5 Sites Analyzed in Subsets A, B, and C for Single vs Multiple Burial Sites

Number of Sites	Subset A	Subset B	Subset C	Subsets (A,B,C) Combined
# Sites in Subset	75	47	103	225
# Sites Analyzed	61 (81% of sites in Subset A)	40 (85% of sites in Subset B)	71 (69% of sites in Subset C)	172 (76% of sites in Subsets A,B, and C)
# Sites Not Included	14 (19%)	7 (15%)	32 (31%)	53 (24%)

As previously mentioned, not all sites within the three subsets provided results from the analysis, because site forms and/or reports reviewed did not contain all relevant information. The number of sites not included in the analysis of single versus multiple burials has been listed in Table 7 for each subset as these sites are removed from calculations to determine the percentages seen in Figure 33.

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Figure 34: Single vs Multiple Burial Sites



As can be seen in Figure 33, Subsets A and C have greater occurrences of single burial sites, while Subset B have more multiple burial sites. The three subsets combined offer a higher percentage of sites with single burials, a total of 94, (55% of total) than multiple burial sites.

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Site Integrity

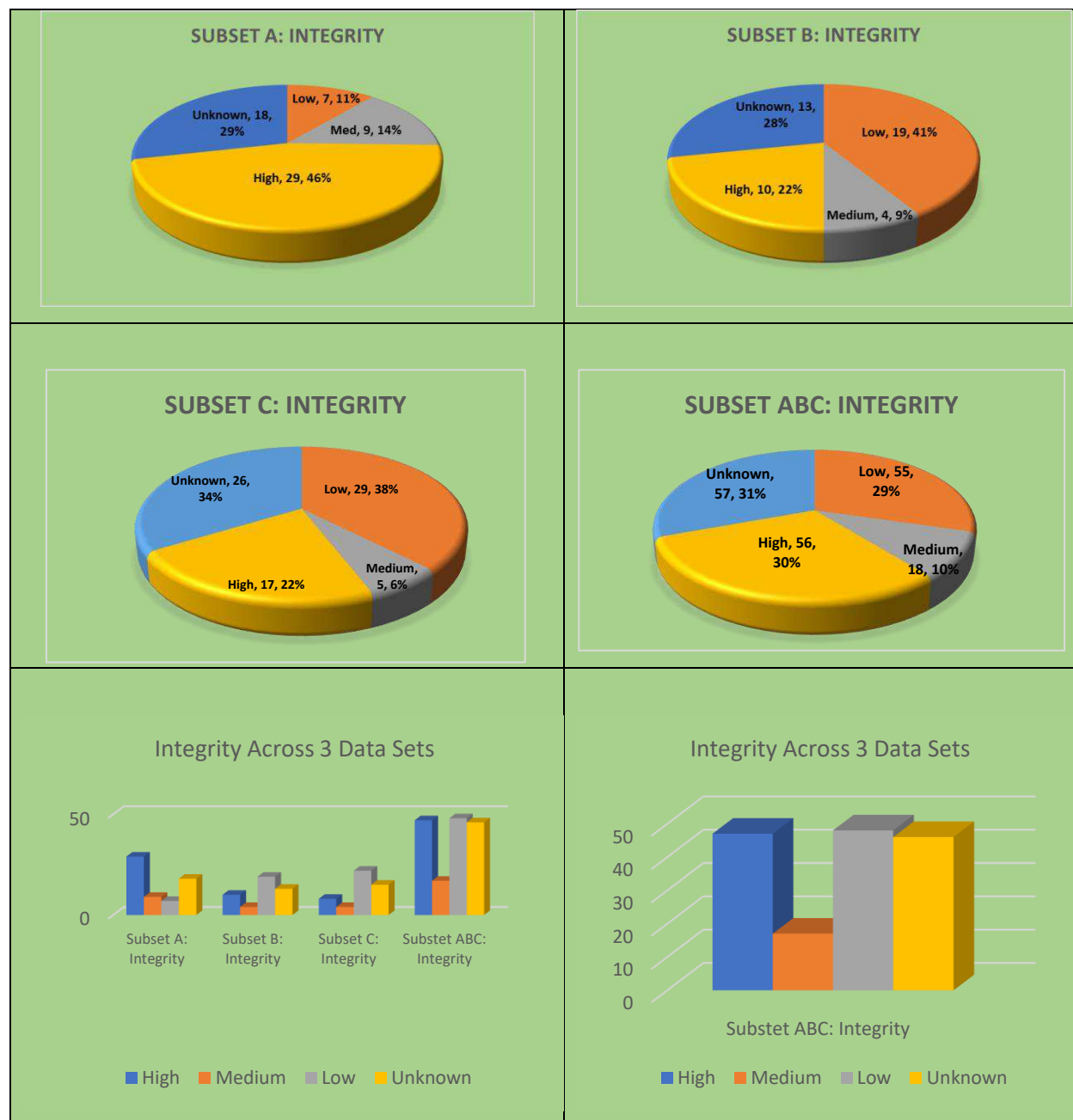
Table 6 presents the number of sites from each subset that were analyzed for site integrity. The level of intactness of a site is referred to as site integrity (high, medium, low or unknown). Information is displayed for all sites across the individual subsets (A, B and C) and the three subsets combined. The definition of integrity levels can be found in the methods section above (Section 4).

Table 6: Sites Analyzed in Subsets A, B, and C for Site Integrity				
Number of Sites	Subset A	Subset B	Subset C	Subsets A,B,C Combined
# Sites in Subset	75	47	103	225
# Sites Analyzed	63	46	77	186
# Sites Not Included	12	1	26	39

As mentioned above, not all sites within the subsets provided results from the analysis. The sites not included in the analyses are those for which information on site integrity was not detailed in reviewed site forms and/or reports. These sites are not included in the calculation of percentages in Figure 34.

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Figure 35: Site Integrity



The results vary across the three subsets with sites qualifying as high integrity sites accounting for only 29 sites in Subset A (46%), 10 sites in Subset B (22%), 17 sites in Subset C (22%), and 56 sites across all three subsets (30%) (Figure 2).

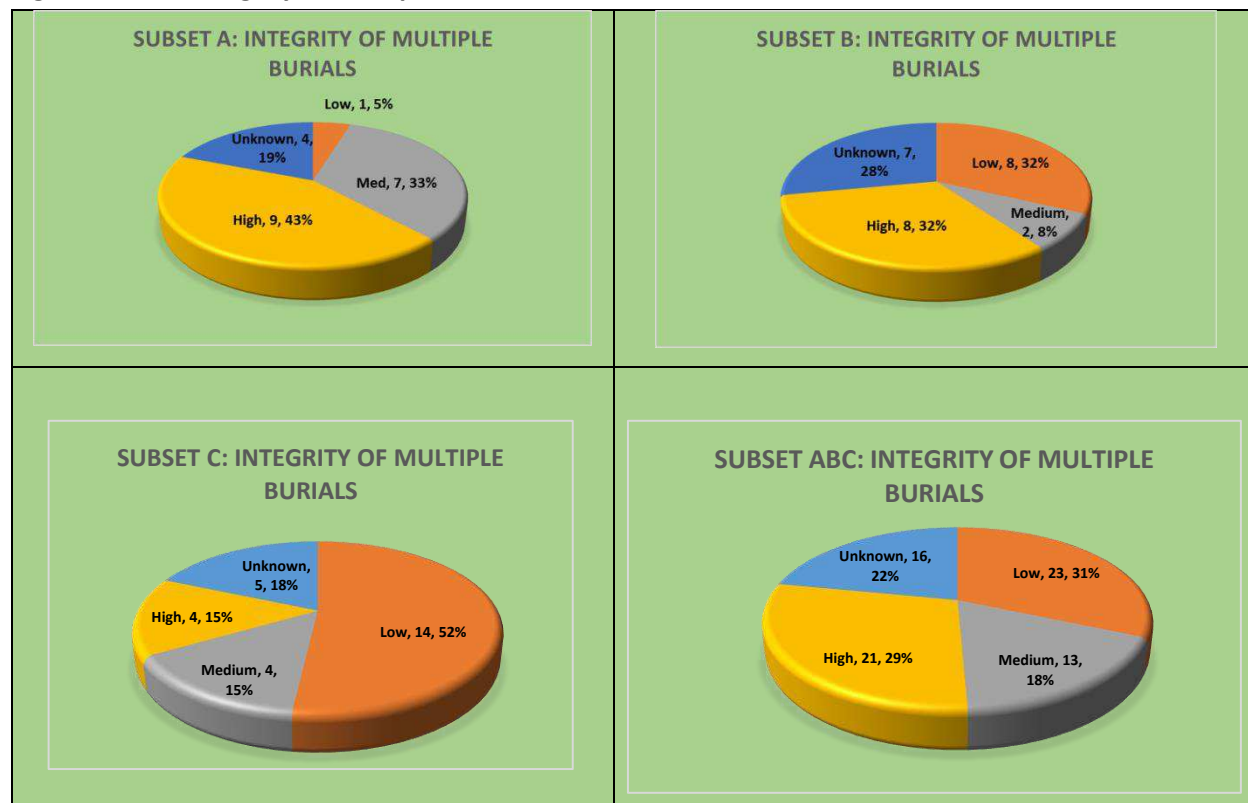
Integrity of Multiple Burial Sites

Table 7 presents the number of sites analyzed for site intactness, referred to as site integrity (high, medium, low or unknown) exclusively for those sites classified as Multiple Burial Sites across the individual subsets (A, B and C) and the three subsets combined.

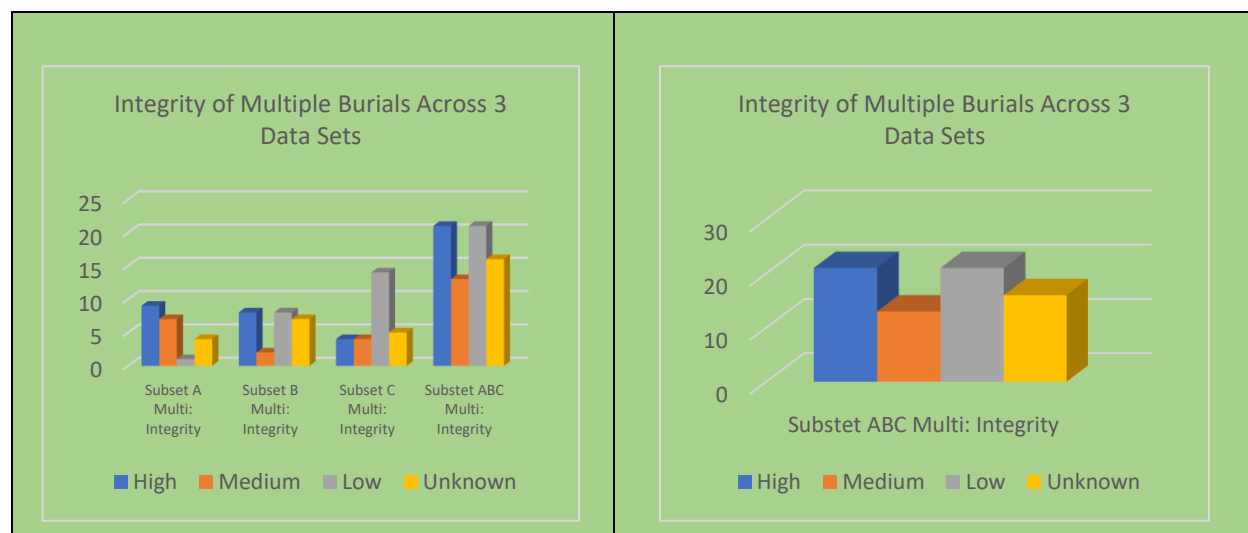
Table 7: Sites Analyzed in Subsets A, B, and C for Site Integrity of Multiple Burial Sites				
Number of Sites	Subset A	Subset B	Subset C	Subsets A,B,C Combined
# Sites in Subset	75	47	103	225
# Sites Analyzed	21	25	27	73
# Sites not included	54	22	76	152

As with the other analyses, not all sites within the subsets provided results. The number of sites not included are those for which information on site integrity is not detailed in reviewed site forms and/or reports. These sites are not included in the calculation of percentages.

Figure 36: Site Integrity of Multiple Burial



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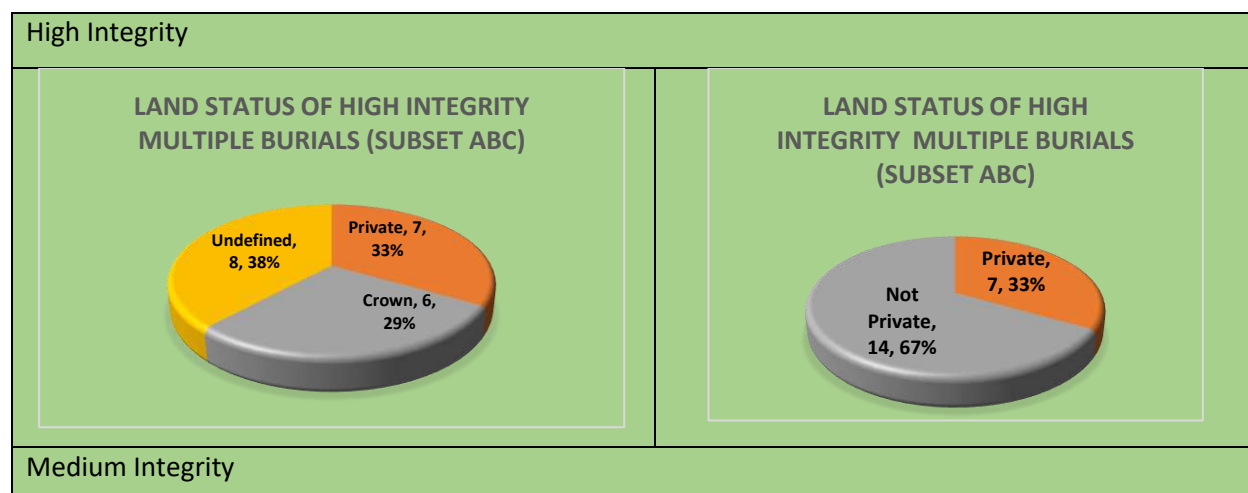


Again, the results vary across the three subsets with multiple burial sites qualifying as high integrity equating to 9 sites in Subset A (43%), 8 sites in Subset B (32%), 4 sites in Subset C (15%), and 21 sites (29%) across all three subsets.

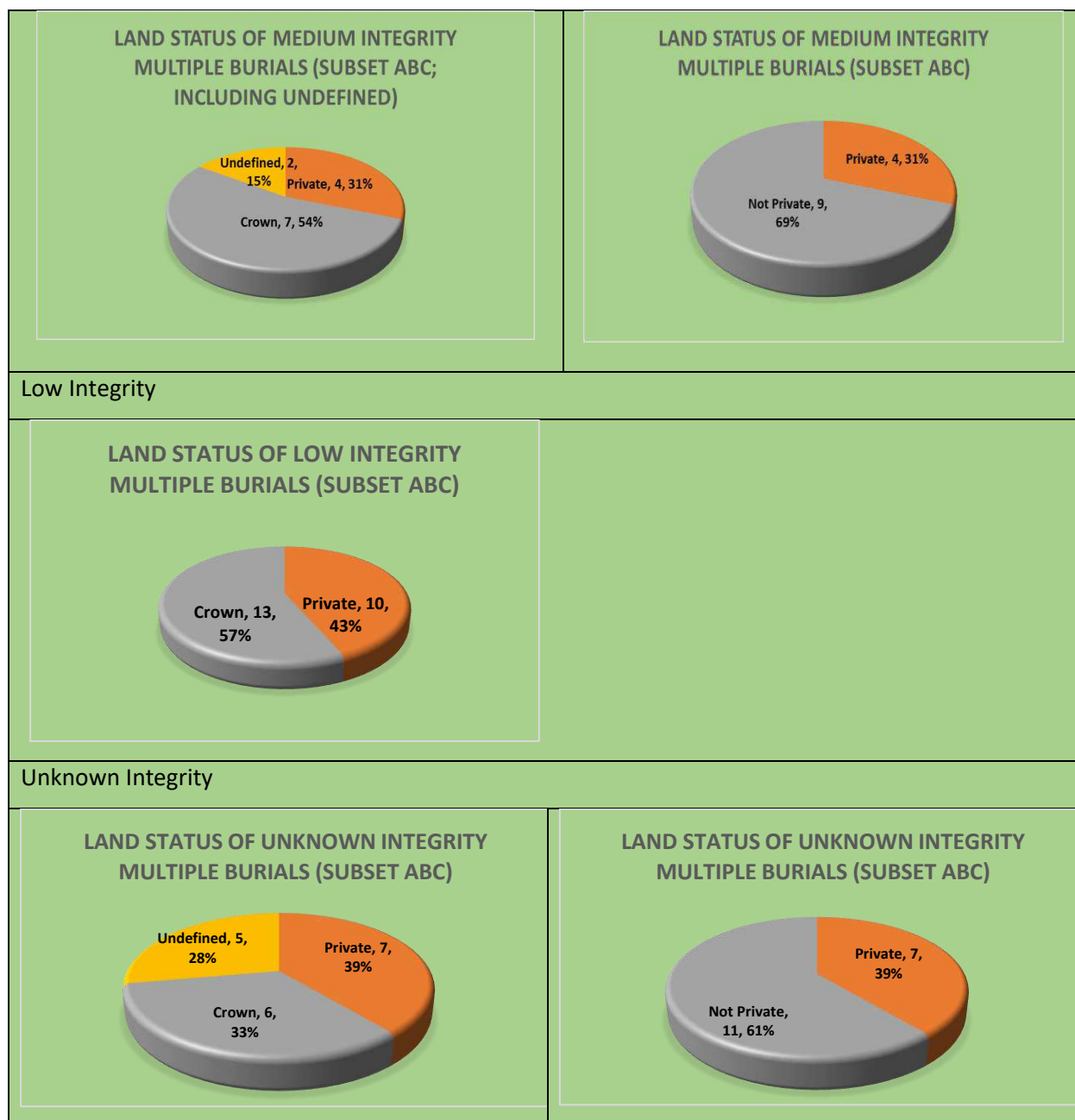
Land Status of High, Medium, Low, and Unknown Integrity Multiple Burial Sites

Figure 36 presents the results of a land status analysis of Multiple Burial sites within the three subsets and combined (A, B, and C) for each integrity level type (high, medium, low, and unknown).

Figure 37: Land Status of High, Medium, Low, and Unknown Integrity Multiple Burial Sites



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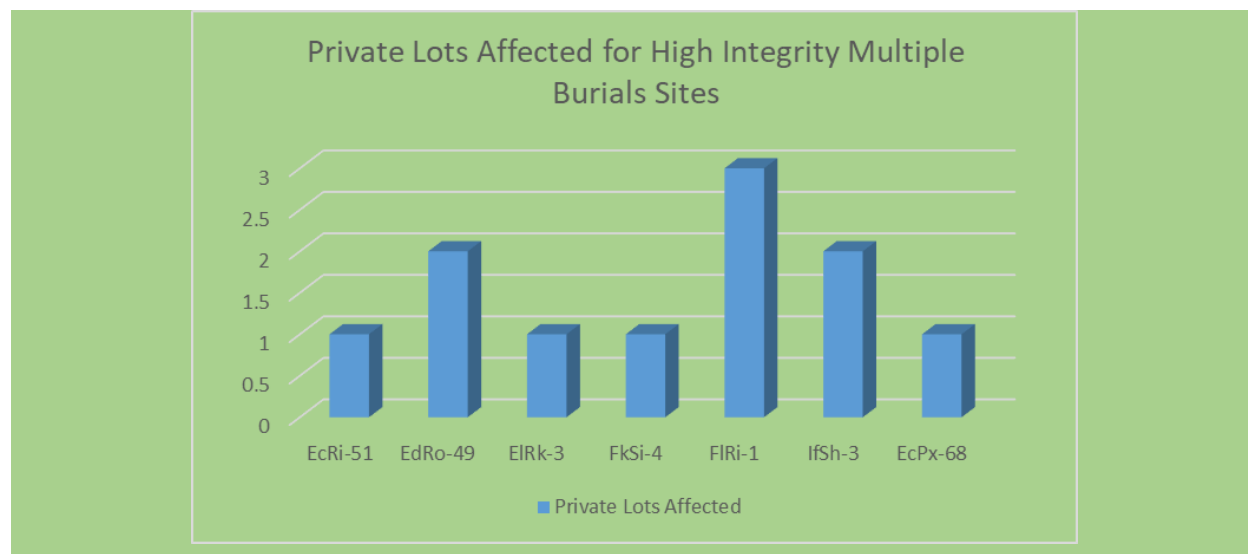


For each integrity level (high, medium, low, and unknown), the majority of Multiple Burial sites can be found on property with unknown and Crown land status combined, with those on private property parcels ranging from 31% to 43%. The land status of High Integrity Multiple Burial Sites, those most likely to qualify for CISFA protection, includes 8 sites (38%) on undefined land, 7 sites on private land (33%), and 6 on Crown land (29%).

Number of Private Lots Affected by High Integrity Multiple Burial Sites

Figure 37 presents the number of private lots affected for the seven sites within Subsets A, B, and C identified as High Integrity Multiple Burial sites on private property.

Figure 38: Private Lots Affected for High Integrity Multiple Burial Sites

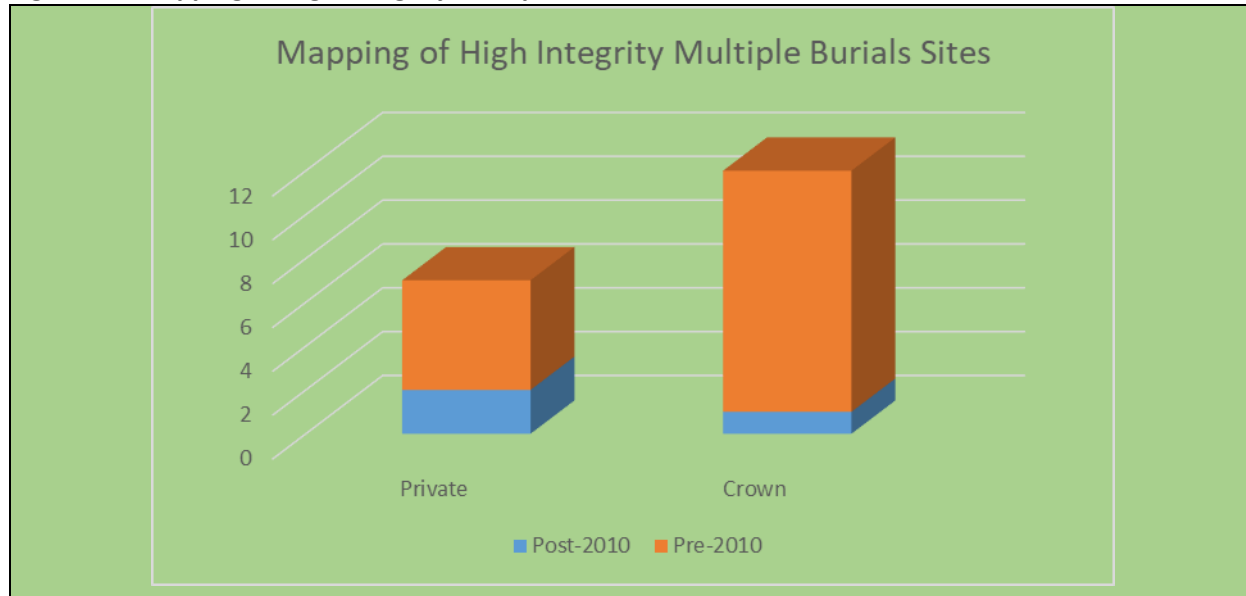


The majority of these sites (four), which are EcRi-51, EIRk-3, FkSi-4, and EcPx-68, affect only one private lot. Two sites stretch across two lots (EdRo-49 and IfSh-3) and only one site extends over three lots (FIRi-1).

Site Mapping Pre/Post 2010 for High Integrity Multiple Burial Sites

Figure 38 indicates when (pre or post 2010) the sites that qualify as High Integrity Multiple Burial sites were mapped by archaeologists during site visits. 2010 is relevant as a date as it is when orthoimagery became widely used and dependable enough for accurately mapping sites. The accuracy of sites recorded after 2010 can, therefore, be generally considered more reliable.

Figure 39: Mapping of High Integrity Multiple Burial Sites

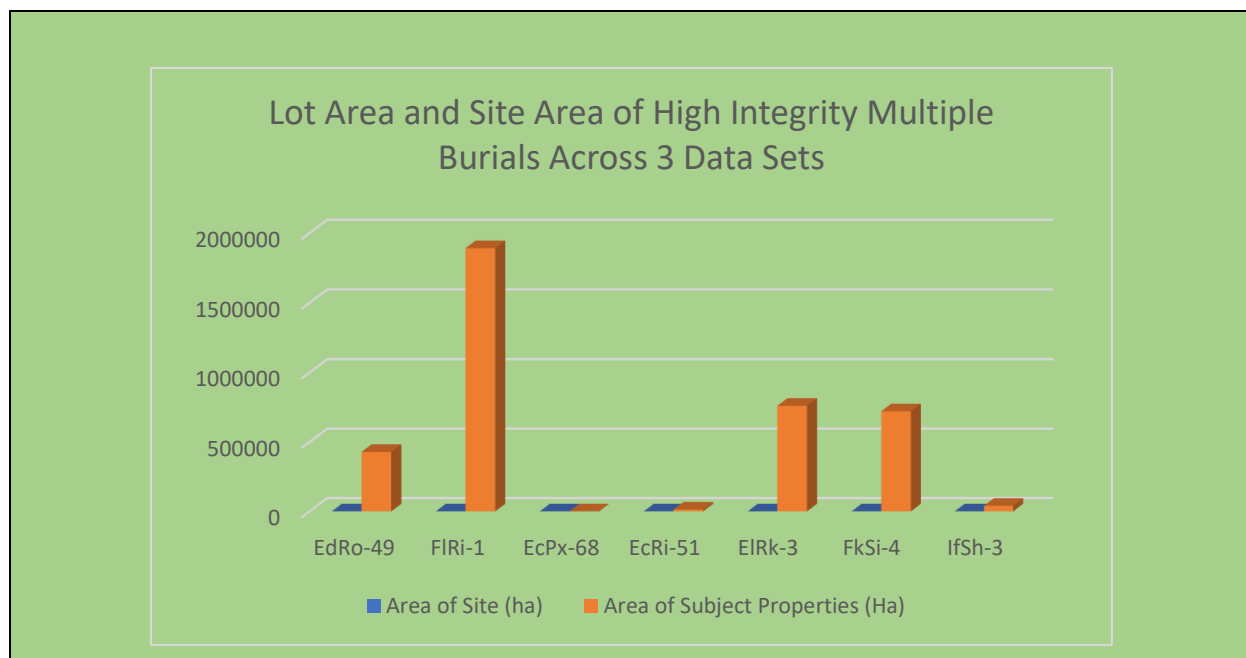


As can be seen in Figure 38, of the seven High Integrity Multiple Burial Sites, the majority were mapped prior to 2010 when mapping techniques can be considered less accurate than using today's equipment and standards.

Private Lot Area Vs High Integrity Multiple Burial Site Area

Figure 39 compares the area in hectares of the seven High Integrity Multiple Burial sites on private property to the lot area on which each site is located.

Figure 40: Lot Area and Site Area of High Integrity Multiple Burial Sites

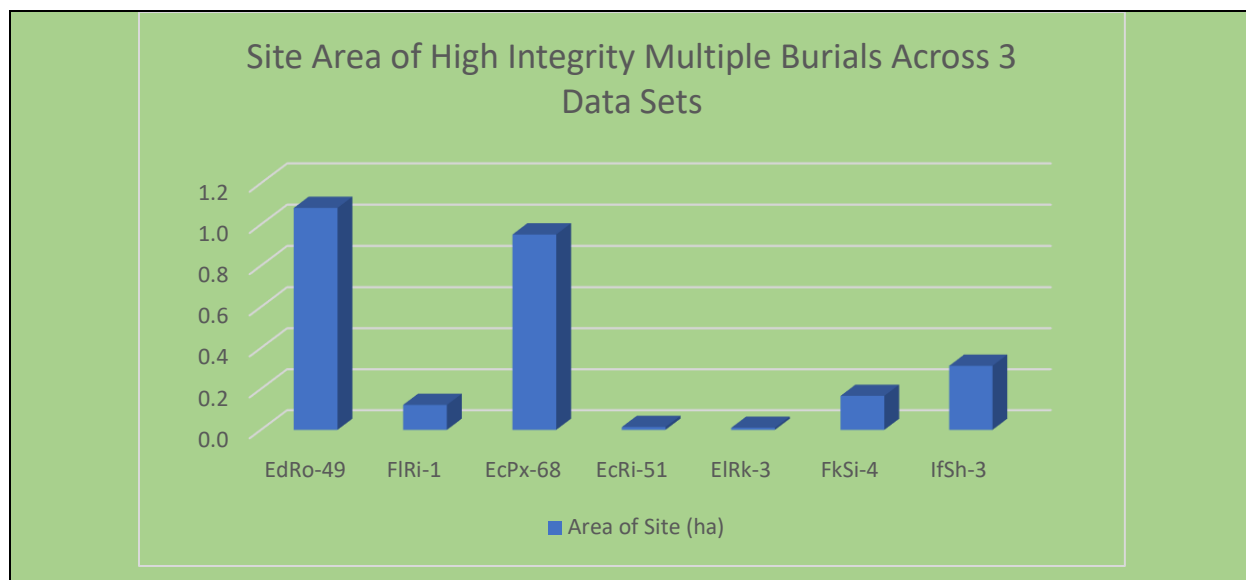


In several cases, the sites only extend over a minor portion of the lot area. In only one case (EcPx-68), the site covers the entire lot area.

Site Area of High Integrity Multiple Burial Sites on Private Property

Figure 40 displays the site area in hectares for each of the seven (7) High Integrity Multiple Burial sites on private property.

Figure 41: Site Area of High Integrity Multiple Burial Sites

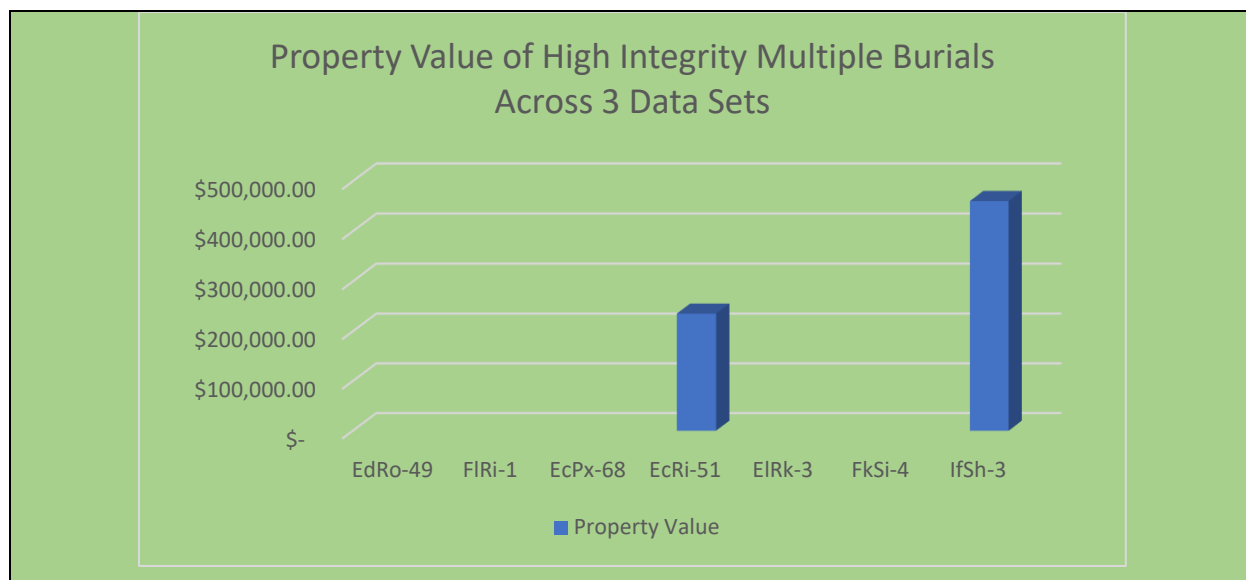


As is evident in Figure 40, of the seven High Integrity Multiple Burial sites identified, only two sites (EdRo-49 and EcPx-68) cover an area of roughly one hectare, whereas the other sites each cover an area under 0.3 hectares in size.

Property Value by Site (not all property values know at time of analysis)

Figure 41 displays the property values associated with two (2) of the seven (7) properties that overlap Highly Intact Multiple Burial sites. Property valuation was not available for all properties at the time of this analysis.

Figure 42: Property Value of High Integrity Multiple Burial Sites



Property value could be ascertained for properties on which two sites were situated (EcRi-51 and IfSh-3). The property associated with EcRi-51 was listed at \$235,400 CAD and the one associated with IfSh-3 was listed at \$460,300 CAD with a combined total value of \$695,700 CAD.

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5.2 Projections of Existing Sites, Annual Increase in Recorded Sites, and Annual Cost

Existing Number of Recorded Sites

Based on the number of sites established as Highly Intact Multiple Burial (HIMB) sites in the above analyses (17% of the sites sampled), it is estimated that there are approximately 385 of such sites out of the roughly 49,000 recorded archaeological sites in British Columbia. Approximately 128 HIMB sites are estimated to exist on private property, 147 on unknown, and 275 on private and unknown combined. The remaining 110 sites are estimated to exist on Crown land. These numbers were calculated based on the percentages ascertained for each from the 123 First Nations burial sites sampled for the analyses that contained sufficient information on site integrity and whether the sites contained remains of one or more individuals.

Table 8: Land Status of Existing Currently Recorded First Nations' Burial Sites

Land Status	Estimated Total Number of Currently Recorded First Nations' Burial Sites	Total Percent of all First Nations' Burial Sites	Total Percent of All Archaeology Sites
Crown	110	4.9%	0.22%
Private Property (Fee Simple)	128	5.7%	0.26%
Unknown	147	6.5%	0.3%
Private + Unknown	275	12%	0.56%
All (Crown, Private, Unknown)	385	17%	0.78%

*Projections have been factored to 100% of (a) all burial sites (2,255) and (b) all archaeology sites (49,000); (for Highly Intact Multiple Burials):

Growth in Number of Newly Recorded Sites

Based on the range of frequency of newly recorded sites over the past 40 and 50 years, and the accumulated site inventory to date (i.e. 1970/80 to 2020), the ongoing projected number of newly recorded Highly Intact Multiple Burial sites on fee simple land is three per year, while the number on fee simple and unknown is six (over 50 years) to seven (over 40 years) sites per year.

Table 9: Projected Yearly Increase in Newly Recorded First Nations' Burial Sites

Projected Yearly Increase in Newly Recorded First Nations' Burial Sites on Private Properties and Unknown Property Land Status Categories (for 'Highly Intact Multiple Burial' Site Types)	
Private Property (Fee Simple)	3 sites/yr
Unknown	3-4 sites/yr
Total (fee simple and unknown)	6-7 sites/yr

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Projected Annual Cost

An economic valuation could be placed on the range of projected newly recorded sites per year, as above, founded on a high to low range of property values throughout the Province of British Columbia; and attached to a range of average of potentially affected properties/lots per the results of the analyses (the range identified was one to three lots per site).

Table 10: Projected Annual Cost

Projected Range Lowest to Highest Annual Cost		
1 property/lot affected	6 sites/yr	\$3,450,000
3 properties/lots affected	7 sites/yr	\$ 12,075,000

At an estimate of \$575,000 purchase price per lot, the highest annual cost would range from \$3,450,000 to \$ 12,075,000.

6.0 Discussion/ Limitations of the Study, Recommendations and Conclusion

Limitations to Analysis

The limitations for conducting analysis on this project were substantial, including timeframe for analysis and accuracy of site information both spatially and contextually.

The timetable for completing the data analysis was condensed affecting the accuracy of the results. Quality control and quality assurance did not take place as it was not available in the allotted timeframe, and limited staff members were available as well. Research was time consuming, especially navigating the Provincial Archaeology Report Library (PARL) site to locate reports, affecting accuracy.

Researching the monetary values of specific properties with sites sampled on them was also a challenge as this information was not always available through Open Source. Many of the analyzed archaeological sites take up only a portion of property lots; therefore, the site land base and the compensation value are overestimations. There may be opportunities to subdivide the property lots to lessen the cost to purchase and preserve areas.

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The accuracy of the recorded site locations and extents affected the quality of the analysis. The majority of the sites were recorded prior to the development of accurate mapping techniques and electronic equipment such as GPS. Many of the recorded sites were drawn by hand on small scale maps. These zoomed out maps make it hard to discern landmarks. The hand-drawn maps are also vague in terms of anchoring their positions to the landscape, plus the landscape and landmarks have been altered with time due to construction, and fluvial and vegetational changes. As a result of these mapping issues, the Branch has had a difficult time digitizing the sites in their accurate location and to their correct extent. The strategy normally taken by the Branch has been to utilize generic polygon sizes, often circular, for sites that cannot be accurately mapped, leading to an underestimation of site extent.

Other issues arose from having a high percentage of the analyzed sites recorded in the 1970s and earlier. Many of these sites were never subsurface tested; therefore, the site extent and content is unknown. The majority of the sites have not been updated since initial recording resulting in unknown integrity statuses. Reporting around these sites is also limited and locating the reports that were written are hard to find, especially in the short timeframe allotted for this analyses. For some of the sites that were captured in multiple reports both interim and annual, the information is conflicting. Some site forms are also found to be conflicting with site reports. Also, because of the time at which the sites were recorded, not all original site forms were available.

The content in the site forms and reports also affected the accuracy of the analysis. The description of site type on the site form was in many occurrences absent, vague, or inaccurate (e.g., a site form indicated one burial, but the report discusses more). Details on the condition of ancestral remains are often missing as well as management recommendations specific to the ancestral remains.

Finally, the number of sites defined as single burial sites (those containing the remains of one individual) in Subsets A, B, and C is based on what has been recorded in site forms. In reality, there are likely fewer of these sites, as it is less common to find the remains of only one individual at a site.

Recommendations

It is recommended that additional time be allotted for more thorough research and an opportunity for quality assurance and quality control. Each of the recommendations that follows below would only be possible with more time available.

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With additional analysis time, it is recommended that there is access to original site forms. Where there is conflicting information between site forms and reports, it would also be beneficial to have direct contact with archaeologists who were responsible for site visits as well as provincial staff. Provincial staff would likely have additional avenues to search and may have some awareness of sites. Additionally, having the inventory department search through unprocessed emails for relevant site numbers could provide important site updates.

A more comprehensive resource than Open Source to research specific properties is also recommended as it would allow for more accuracy determining site land base and compensation value.

A greater idea of each site's relationship to the private lot on which it is situation, might provide a better understanding of the value of this specific section of the site. For example, sites on large parcels of land that are in a currently insignificant section of the property for the owner may be acquired without necessarily purchasing the entire property (e.g., subdividing).

Having the time and resources to complete a desktop review of sites is recommended as a way of more accurately determining a site's location and extent and remapping if it seems inaccurate in relation to site forms and reports. HIMB sites flagged as having been recorded long ago with no updates could be revisited for ground truthing, or alternatively, if provincial staff have access to LiDAR, this could potentially be used to pick up burial mounds.

Finally, additional time to allow for updating site forms to document changes may be necessary after the analysis has been carried out and new locations or site extents have been amended.

7.0 Appendix A

Data Tables



= site not included in analysis

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Table 11: Subset A

Borden Number	Number of affected parcels	Land Status	Number of Burials or burial features	Number of confirmed/suspected individuals	Integrity (level of intactness of the site)
DeRu-17	9	private	4(+)	4	Medium (50-75%)
DfSg-78	1		1 feature	0	Low <50%
DgQn-8	2	CROWN PROVINCIAL	several (?)	0	Medium (50-75%)
DhRr-13	7	PRIVATE	1 feature, 3 individuals	3	Low <50%
DiRa-28	1	CROWN PROVINCIAL	numerous (5+)		Medium (50-75%)
DiSe-10	8	PRIVATE	2	1	Low <50%
DiSo-20	1		1	2	Low <50%
DkPu-47	1		22	0	High (75-100%)
DkQi-17	2	PRIVATE	1	0	High (75-100%)
EaQu-7	1	PRIVATE	1	NA	Low <50%
EaSh-17	4	PRIVATE	1	several	unknown
EaSv-38	1		1	1	unknown
EcPx-68	1	#N/A	400+	400+	High (75-100%)
EdTb-3	1		0 (midden)	1 (possibly more)	High (75-100%)
EeRl-161	1	PRIVATE	1	0	Low <50%
EeRn-36	3	CROWN FEDERAL	2	2	High (75-100%)
EfQc-2	1	PRIVATE	1	0	unknown
EgSj-11	1		1	1	High (75-100%)
EgSv-5	1				
EiQc-36	1		1		High (75-100%)

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EiRm-7	1		2	2	High (75-100%)
EjTa-13	1		1	1	High (75-100%)
EkQu-2	1	PRIVATE	1	unknown	unknown
EIRf-5	1	PRIVATE	1	0	Medium (50-75%)
EITs-7	1		1	1 unconfirmed	High (75-100%)
FaRI-1	1	CROWN FEDERAL	1	1	High (75-100%)
FaSu-6	1				
FaTa-48	1		1 cave	3 (+)	Medium (50-75%)
FbTt-3	1		1	1	Unknown
FcRs-4	1	PRIVATE	1	1 (orally confirmed)	High (75-100%)
FdSi-9	1		2		High (75-100%)
FeUa-1	1		1 cave	2(+)	Unknown
FfQp-3	1	CROWN PROVINCIAL	1		High (75-100%)
FgRj-9	1	CROWN PROVINCIAL	1	0	High (75-100%)
FhUa-60	1	CROWN PROVINCIAL			
FiSa-20	1				
FiTk-1	1				
FiTx-23	1		NA	unknown	High (75-100%)
FkRv-1	1	CROWN FEDERAL			
FISo-3	1	CROWN FEDERAL			
GaUa-1	1	CROWN FEDERAL	several	several	Medium (50-75%)
GbSk-1	1		1	0	Unknown
GcRa-5	1		4	0	High (75-100%)
GcSm-2	2	PRIVATE	1or 2	2 orally confirmed	Medium (50-75%)
GdTo-40	1				

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GeRu-12	1	CROWN PROVINCIAL	1		High (75-100%)
GfTf-3	1		4	4 suspected	Unknown
GgRu-1	1		1	1	High (75-100%)
GgSt-6	1	CROWN FEDERAL	1	1	Low <50%
GhTg-4	1		unknown	1(+)	Unknown
GiSc-3	1		1	0	High (75-100%)
GkRd-7	1	PRIVATE	1	0	Unknown
HaTh-3	1	CROWN PROVINCIAL	unknown	unknown	High (75-100%)
HbRi-7	1	PRIVATE	1	1	High (75-100%)
HcRp-6	1		1	1	High (75-100%)
HcSk-1	1	CROWN PROVINCIAL	3	3 unconfirmed	High (75-100%)
HcSx-3	1	#N/A	2	2 unconfirmed	Unknown
HfTf-1	1				
HgSg-4	1		8(+)	8(+)suspected	High (75-100%)
HiSu-8	1		10	10	Medium (50-75%)
HkRs-2	1		2	2(suspected)	Unknown
HIRI-3	1		1	1	Unknown
HITs-31	1	CROWN FEDERAL	1	1	Unknown
IaRp-3	1		1	1	Unknown
IbTw-5	1		1	unknown	Unknown
IdSe-2	1	CROWN PROVINCIAL	1	1 suspected	Unknown
IdSr-1	1		1	1 unconfirmed	Unknown
IfUg-4	1		1	0(none confirmed)	Medium (50-75%)

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IgRg-1	1		1	unknown	High (75-100%)
IgUg-11	1				
IhSu-3	1		1	1 unconfirmed	High (75-100%)
IiRx-1	1				
IkSb-1	1		1	1 suspected	High (75-100%)
IkUq-1	1		unknown	unknown	Medium (50-75%)
IITd-2	1		17(+)	unknown	High (75-100%)

Table 12: Subset B

Borden Number	Number of affected parcels	Land Status	Number of Burials or burial features	Number of confirmed/suspected individuals	Integrity (level of intactness of the site)
DcRu-46	10	MUNICIPAL	1 burial	1	Low - less than 50%
DfSj-57	5	CROWN PROVINCIAL	3 burials	3	Medium - 75-50%
DgQs-3	1	PRIVATE	1 feature (burial ridge)	at least 2	Medium - 75-50%
DgRw-185	9	PRIVATE	1	1	Low - less than 50%
DiQj-12	1	PRIVATE	1	at least 1 possibly 2	Low - less than 50%
DiSn-16	1	PRIVATE	1 feature (cave)	Several	Medium - 75-50%
DjRi-33	2	CROWN PROVINCIAL	unknown	unknown	Low - less than 50%

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DkSf-27	35	CROWN MUNICIPAL	2 burials	2	Low - less than 50%
DIPr-31	1	PRIVATE	unknown	unknown	
EaQI-6	1	PRIVATE	unknown	unknown	Low - less than 50%
EaSf-44	1	PRIVATE	1	1	High - 100-75%
EcPx-8	1	PRIVATE	4 burials	4	Low - less than 50%
EcRi-51	1	PRIVATE	2	2	High - 100-75%
EdRo-49	2	PRIVATE	Multiple	Multiple	High - 100-75%
EdSp-26	1	PRIVATE	Multiple	Multiple	Low - less than 50%
EdTa-1	3	PRIVATE	Unknown	Unknown	Unknown
EeQw-97	1	PRIVATE	1 burial	1	Low - less than 50%
EgQw-1	2	CROWN PROVINCIAL	4 burials	at least 4	Low - less than 50%
EhRm-9	1	PRIVATE	2	2	Unknown
EjSc-7	1	PRIVATE	1	1	Unknown
ElRk-3	1	PRIVATE	4	4	High - 100-75%
ElSx-1	2	CROWN PROVINCIAL	Multiple	Multiple	High - 100-75%
FaTa-18	2	PRIVATE	Unknown	Unknown	High - 100-75%
FcQs-1	1	PRIVATE	1 burial	1	Medium - 75- 50%
FcRI-13	12	CROWN PROVINCIAL	2	2	High - 100-75%
FcSm-14	5	CROWN PROVINCIAL	1	1	Low - less than 50%

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FfRo-20	4	PRIVATE	15	0	Low - less than 50%
FfSg-18	1	PRIVATE	1	1	Low - less than 50%
FhTw-4	1	PRIVATE	Multiple	Unknown	Low - less than 50%
FhUb-9	1	PRIVATE	3	0	Unknown
FkRr-4	1	PRIVATE	2	2	Low - less than 50%
FkSi-4	1	PRIVATE	32	32	High - 100-75%
FIRi-1	3	PRIVATE	Multiple	Multiple	High - 100-75%
FIUa-4	3	CROWN FEDERAL	20+	20+	Unknown
GaSf-2	3	PRIVATE	4	3	Low - less than 50%
GaTw-1	3	CROWN FEDERAL	Unknown	Unknown	Low - less than 50%
GcTf-1	2	PRIVATE	1	1	unknown
GdSr-1	1	PRIVATE	1	1	Low - less than 50%
GhSu-2	2	CROWN PROVINCIAL	1	0	Low - less than 50%
GhTg-16	1	PRIVATE	Unknown	Unknown	Unknown
GkRd-3	1	PRIVATE	14	14	Unknown
HbRg-2	1	PRIVATE	1	0	Unknown
HhRt-1	1	PRIVATE	1	0	Unknown
HITs-11	1	PRIVATE	3+	3	Unknown
IaTr-18	1	PRIVATE	5+	5	Unknown
IdRx-1	3	CROWN PROVINCIAL	Multiple	Multiple	Unknown

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IfSh-3	2	PRIVATE	5	5	High - 100-75%
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Table 13: Subset C

Borden Number	Number of affected parcels	Land Status	Number of Burials or burial features	Number of confirmed/suspected individuals	Integrity (level of intactness of the site)
DgRn-31	7	PRIVATE	40	40	Medium - 75-50%
DhQw-42	1	PRIVATE	10	10	Low - less than 50%
DhRs-1	28	CROWN MUNICIPAL	Multiple	Multiple	low - less 50%
DhSb-8	30	CROWN PROVINCIAL	Several	10 confirmed. Unknown how many were destroyed previously during residential construction within area.	Low - less than 50%
DeRt-1	3	CROWN PROVINCIAL	4+	4+	low - less than 50%
DeRt-2	2	CROWN PROVINCIAL	Over 130	138 (estimate)	Medium - 75-50%
DgRs-1	413	CROWN MUNICIPAL	Multiple	Multiple	low - less than 50%
DjQj-1	4	CROWN PROVINCIAL			
DjQj-3	0		Unknown	Unknown	Unknown
DfSj-100	2	CROWN PROVINCIAL			

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DhRx-16	29	CROWN MUNICIPAL			
DfRu-9	64	CROWN MUNICIPAL			
DgRk-31	3	CROWN PROVINCIAL			
DgRr-1	351	CROWN MUNICIPAL			
DgRs-7	196	CROWN MUNICIPAL			
DeRt-4	20	CROWN FEDERAL			
DiSe-7	99	CROWN PROVINCIAL			
DgRr-6	6	CROWN FEDERAL			
GaUa-3	165	CROWN FEDERAL			
DgRr-2	26	CROWN MUNICIPAL	unknown	>12	Low (site form states 35-45%)
DgQn-3	1	CROWN PROVINCIAL	unknown	unknown	low- less than 50%
DgQo-2	3	CROWN MUNICIPAL	20+	20+	low- less than 50%
DgQu-4	0	CROWN PROVINCIAL	Multiple	Multiple	low- less than 50%
DgQk-25	0	CROWN PROVINCIAL	1	1	unknown
DjPv-60	1		Multiple	Multiple	unknown
EfQs-5	2	UNKNOWN	unknown	unknown	High - 100-75%
EfQv-109	2	CROWN FEDERAL	1	unknown	Medium - 75-50%
EfQv-59	1	CROWN PROVINCIAL	unknown	unknown	High - 100-75%
DcRt-34	5	PRIVATE	1	at least 1	Low - less than 50%

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DcRt-42	0	CROWN PROVINCIAL	at least 3- 5	unknown	Low - less than 50%
DcRu- 1159	25	MUNICIPAL	17 features	3 confirmed, the rest of the cairns/ mound are suspected burials	Medium - 75- 50%
DcRu-18	0	CROWN MUNICIPAL			
DcRu-6	2				
DcRu- 677	2	PRIVATE			
DcRv- 133	0	CROWN FEDERAL			
DcRv- 134	0	CROWN FEDERAL			
DcRv-2	0	CROWN MUNICIPAL	1	1	High
DcRv-61	0	0	Unknown	Unknown	unknown
DeRs-27	1	CROWN PROVINCIAL	1	1	Low - less than 50%
DeRt-13	2	CROWN FEDERAL	2	2	Low - less than 50%
DeRu-34	2	PRIVATE	1+	1+	Low - less than 50%
DfRv-79	0	PRIVATE	1	1	Low - less than 50%
DfSi-50	1	CROWN FEDERAL	1	2 (+)	Low - less than 50%
DfSh-77	0		1	1	Low - less than 50%
DeSg-19	0		Unknown	Unknown	unknown
DkSo-23	0		1	1	unknown (disturbed)
DjSo-11	0		Unknown	Unknown	unknown
DgSI-3	0		1	02-Jan	unknown
DhSI-10	1	CROWN FEDERAL	4 possibly more	4 (+)	High - 75- 100%)

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DiSc-1	7	CROWN PROVINCIAL	multiple	2+	unknown
DjSa-31	2	PRIVATE	1 (possibly more)	1	unknown
DkSb-30	6	CROWN PROVINCIAL	Unknown	1 possibly more	High - 75- 100%)
DgRr-2	26	CROWN MUNICIPAL	numerous (10+)	numerous (10+)	Low - less than 50%
DgRx-45	0	CROWN MUNICIPAL	1	1 possibly more	unknown
DhRo-85	4	CROWN PROVINCIAL	1	numerous	unknown
DiRx-7	8	PRIVATE			unknown
DkRs-15	0		1	1 suspected	High - 75- 100%)
DkRt-4	1	CROWN FEDERAL	1 cemetery (multiple burials)	multiple	unknown
DIrO-18	0	CROWN PROVINCIAL	several (number unknown)	several (number unknown)	High - 75- 100%)
DjRi-39	0	CROWN PROVINCIAL			
DjRi-129	0	CROWN PROVINCIAL	1	1	High - 75- 100%)
DgRI-23	2	PRIVATE	1	1	High - 75- 100%)
EaRe-64	1	PRIVATE	unknown	unknown	high - no subsurface testing conducted
EcRk-17	0	CROWN PROVINCIAL	1	1	unknown

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EcRk-8	0	CROWN PROVINCIAL	unknown	unknown	unknown - disturbance from plowing
EdRh-24	0	CROWN PROVINCIAL	unknown	unknown	unknown - continued erosion and disturbance from twin tracking
EdRk-4	0	CROWN PROVINCIAL	1	1	unknown - shovel testing indicated extensive looting; probable destruction if land used as an orchard
EeRd-24	1	CROWN PROVINCIAL	1	1	low - No further work required as site collected in its entirety
EeRI-214	1	PRIVATE	1	1	assumed low (remains found in road cut)
EeRI-30	1	PRIVATE	4	4	1969 - Site nearly gone. Little left for salvaging. Road cut is re-cut annually by Department of Highways
EaRw-4	0		1	1	unknown

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EaSe-128	0		3	7 (5 individuals in Feature 1, 1 each in Features 2 and 3)	Pothunting for human remains (skulls) has occurred in the area (Hill 1985:44) and the presence of three mandibles but no skulls at EaSe-127 suggests it may have occurred here as well. Site has been impacted by erosion, rock fall from adjacent bluff. In 1998 members of Sliammon FN observed human remains eroding out from beneath and between boulders at base of bluff.
EdSf-5	0		1	1	high - no subsurface testing conducted; sheltered rock overhang location

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EdSv-24	1	PRIVATE	1	1	the nature of the disturbed remains suggests wave and carnivore activity; as of 2014 did not appear to be much impacted since this site was originally recorded in 1999
EeSu-21	1	CROWN FEDERAL	multiple	4 (minimum)	Medium - site form states 35-50% of site destroyed as of 1978; also notes future disturbance unlikely
EfSq-42	1	CROWN PROVINCIAL	1	1	unknown
EjSq-12	0		1	1	low (site form states <5% intact); all disturbances due to access to site
EkRo-121	0		1	1	general site likely high - erosion from Fraser River and Meason Creek; previous agricultural use; isolated element low - secondary context
EiRh-9	1	CROWN PROVINCIAL	unknown	unknown	unknown

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FaRm-33	1	PRIVATE	2	2	site form notes very disturbed (site clearance by developer)
FeSr-10	1	CROWN PROVINCIAL	1	1	unknown
FdTa-26	0		1 (possibly more)	1	Low (<50%)
GbTo-33	4	CROWN FEDERAL	60+	60+	Low (<50%)
EeSo-58	0		1	1 (suspected)	(High - 100- 75%)
DfSh-77	0		1	1	Low (<50%)
DeSh-21	1	CROWN PROVINCIAL	1	3	high (75-100)
DhSa-28	1	PRIVATE	2	3+	unknown
DfRw-21	6	CROWN PROVINCIAL	3	3	
FgUd-1	0		unknown	unknown	unknown
EkTa-30	0		3	0	(High - 100- 75%)
EhSt-14	0		1	0	unknown (Human remains removed)
DgQo-1	2	CROWN PROVINCIAL	unknown	20(+)? 1978 report states to date estimate 20 burials have been removed from site with no info	Low (<50%)
DvRb-12	0				
EgRr-6	0		1	0	(High - 100- 75%)

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EaSf-17	1	PRIVATE	2 maybe 3	2 maybe 3	
DkSp-19	0		2 (+)	2	high (75-100)
DeRv- 182	1	PRIVATE	1	1	unknown
HaRe-2	0		1	1	Low (<50%)
IgUg-5	0		1	1	
GbUf-5	0		1	none confirmed	(High - 100- 75%)
DhRs-79	1	CROWN FEDERAL	1 (possibly more)	several	disturbed
FeSx-10	0		1	1	eroded from riverbank
EdSf-3	0	UNKNOWN	1	1	Low (<50%)

Appendix B – S’ólh Téméxw Integrity Analysis Interest Government Interest Data Layers and Overlapping Interests in Jones Lake Watershed

Table 14: Government Interest Data Layers from the SRRMC Interest Module Web Portal. These layers are queried by the module to determine overlapping interests.

Feature Class Name	Ministry	IntID	IntID Field	Interest	Interest Field	IntSubType	IntSubType Field
Red- restricted access; black - public	Things in red - represent problems in determining best information source, how a field can be populated by a query, or (?) whether that data type is available.						
Cadastre - from ICIS - SRRMC map service/ openmaps.gov.bc.ca/mapserver/land-ownership-and-status kml - alternate being tried - may be replaced by ICF provided by province	ICIS	Parcel#	PID	Land Parcel - not all in		Owner - Public Crown Federal Crown Provincial Crown Municipal Unknown	OWNER_CLASS
DRA - transportation - type of road only - SRRMC map service - display intersect and basic info only - hold this dataset - Google Earth provides this info. See if we need the details or can use iMap for this when needed.	MoTransportation	Trans #	DGLRDTLSL	Transportation	Assigned - if Trans# then	Road Type	Road_Class or DTSPPLR
ICF - from ICIS - SRRMC map service/ openmaps.gov.bc.ca/mapserver/land-ownership-and-status kml	ICIS	Parcel#	PID	Land Parcel - swapped out Aug 14th		Owner - Public Crown Federal Crown Provincial Crown Municipal Unknown	OWNERSHIP_CLASS
Parks_LocalPrivRegional - SRRMC map service derived from FVRD and Metro Vancouver Data		Park #	Object_ID	Local, Private or Regional Park		Park Type	Designatio

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Feature Class Name	Ministry	IntID	IntID Field	Interest	Interest Field	IntSubType	IntSubType Field
WHSE_ADMIN_BOUNDARIES.FADM_TFL_SCHED_A_polygon	FLNRO	Forest #	FEATURE_ID	Tree Farm Licence Schedule A		NA	NA
WHSE_ADMIN_BOUNDARIES.FADM_DISTRICT	FLNRO Forest Tenures Branch	Forest#	DISTRICT_NAME	Forest District	Assigned - if DISTRICT_NAME then	Forest District	FEATURE_NAME
WHSE_ADMIN_BOUNDARIES.FADM_PROV_FOREST	FLNRO Forest Tenures Branch	Forest#	FEATURE_ID	Provincial Forest	Assigned - if F? then	Provincial Forest	PROV_FOREST_CD_DESCRIPTION
WHSE_ADMIN_BOUNDARIES.FADM_PROV_FOREST_ADDITION	FLNRO Forest Tenures Branch	Forest#	FEATURE_ID	Provincial Forest Addition	Assigned - if F? then	Provincial Forest - OIC #	PROV_FOREST_CD_DESCRIPTION + OIC_NUMBER
WHSE_ADMIN_BOUNDARIES.FADM_PROV_FOREST_DELETION	FLNRO Forest Tenures Branch	Forest#	FEATURE_ID	Provincial Forest Deletion	Assigned - if F? then	Provincial Forest - Deletion #	PROV_FOREST_CD_DESCRIPTION + DELETION_NUMBER
WHSE_ADMIN_BOUNDARIES.FADM_PULPWOOD_AGREEMENT	FLNRO Forest Tenures Branch	Forest #	FOREST_FILE_ID	Pulpwood Agreement	Assigned - if ? then	NA	NA
WHSE_ADMIN_BOUNDARIES.FADM_PULPWOOD_AREA	FLNRO Forest Tenures Branch	Forest #	PULPWOOD_AREA+FEATURE_ID	Pulpwood Area	Assigned - if PULPWOOD_AREA then	NA	NA
WHSE_ADMIN_BOUNDARIES.FADM_TFL_ALL_SP	FLNRO	Forest #	FOREST_FILE_ID	Tree Farm Licence		NA	NA

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Feature Class Name	Ministry	IntID	IntID Field	Interest	Interest Field	IntSubType	IntSubType Field
WHSE_ARCHAEOLOGY.RAAD_TFM_SITES_SVW detail field info is missing from this feature class view	FLNRO - Arch Branch	BordenID	BORDENNUMB	Archaeological Site	Assigned - if BORDENNUMBER then	Site Type - y=Protected Historic Site n=Historic but not Recognized for Protection null=Archaeological Site	ISHERITAGE
WHSE_FOREST_TENURE.FTEN_CUT_BLOCK_POLY_SVW	FLNRO Forest Tenures Branch	Forest # *caution will duplicate with harvest authority for non-volume harvest authorities - possibly use one or the other	CUT_BLOCK_FOREST_FILE_ID	Cut Block	Assigned - if CUT_BLOCK_FOREST_FILE_ID then	Cut Block Type - see FTEN_Codes SKEY look up	FEATURE_CLASS_SKEY
WHSE_FOREST_TENURE.FTEN_FREE_USE_PERMIT_POLY_SVW	FLNRO Forest Tenures Branch	Forest #	FOREST_FILE_ID	Free Use Permit	Assigned - if ? Then	Free Use Type - e.g. Firewood	FUP_COMMENT

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Feature Class Name	Ministry	IntID	IntID Field	Interest	Interest Field	IntSubType	IntSubType Field
WHSE_FOREST_TENURE.FTEN_HARVEST_AUTH_POLY_SVW	FLNRO Forest Tenures Branch	Forest # *caution will duplicate with cut blocks for non-volume harvest authorities - possibly use one or the other	FOREST_FILE_ID + CUTTING_PERMIT_ID	Forest Harvest Authority	Assigned - if ? then	Harvest Authority Type - see FTEN_Codes File Type look up	FILE_TYPE_CODE
WHSE_FOREST_TENURE.FTEN_MANAGED_LICENCE_POLY_SVW	FLNRO Forest Tenures Branch	Forest #	FOREST_FILE_ID	Forest Managed Licence	Assigned - if ? then	Managed Licence Type - see FTEN_Codes File Type look up	ML_TYPE_CODE
WHSE_FOREST_TENURE.FTEN_MAP_NOT_ATN_LINES_SVW ***This dataset does not overlap with SXTA TSLs or CSPs so not including in the Interest Module	FLNRO Forest Tenures Branch	Forest#	FOREST_FILE_ID	Map Notation Lines	Assigned - if ? then	Map Notation Type - see FTEN_Codes SKEY lookup and refer to Map Notation look up	FEATURE_CLASS_SKEY

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WHSE_FOREST_TENURE.FTEN_MAP_NOT ATN_POLY_SVW	FLNRO Forest Tenures Branch	Forest#	FOREST_FILE_ID	Map Notatio n Polygon s	Assigned - if ? then	Map Notation Type - see FTEN_Co des SKEY lookup and refer to Map Notation look up	FEATURE_CLASS_SKEY
WHSE_FOREST_TENURE.FTEN_RANGE_PO LY_SVW	FLNRO Provincial Range Operations	Forest #	FOREST_FILE_ID	Forest Range	Assigned - if RAN# then	Range Type - E01=Grazi ng License E02=Grazi ng Permit E03=Non- replaceab le Grazing Permit H01=Hay cutting License H02=Hay cutting Permit	FILE_TYPE_CODE
WHSE_FOREST_TENURE.FTEN_REAL_PRO PERTY_POLY_SVW	FLNRO Forest Tenures Branch	Forest#	FOREST_FILE_ID	Real Propert y Project	Assigned - if ? then	Real Property Type - see FTEN_Co des Property	PROJECT_TYPE_CODE

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						Type look up	
WHSE_FOREST_TENURE.FTEN_REC_SITE_POINTS_SVW - subset of WHSE_FOREST_TENURE.FTEN_RECREATION_POLY_SVW with detailed info on these select sites - contains details of rec polygon sites - see web link	FLNRO Rec Sites & Trails						
WHSE_FOREST_TENURE.FTEN_RECREATION_LINES_SVW	FLNRO Rec Sites & Trails	Rec Site Line	FOREST_FILE_ID	Recreation Site_Trail	Assigned - if FOREST_FILE_ID then	Project Type - I = Interpretive Trail R = Recreation Reserve S = Recreation Site T = Recreational Trail	PROJECT_TYPE
WHSE_FOREST_TENURE.FTEN_RECREATION_POLY_SVW	FLNRO Rec Sites & Trails	Rec Site Poly	FOREST_FILE_ID	Recreation Site	Assigned - if IF FOREST_FILE_ID then	Project Type - Interpretive Trail Recreation Reserve Recreation Site Recreational Trail	PROJECT_TYPE

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Feature Class Name	Ministry	IntID	IntID Field	Interest	Interest Field	IntSubType	IntSubType Field
WHSE_FOREST_TENURE.FTEN_ROAD_SECTION_LINES_SVW	FLNRO Forest Tenures Branch	Forest#	FOREST_FILE_ID+ROAD_SECTION_ID	Road Section	Assigned - if FOREST_FILE_ID+ROAD_SECTION_ID then	e.g. Road Permit	FILE_TYPE_DESCRIPTION
WHSE_FOREST_TENURE.FTEN_ROAD_SEGMENT_POLY_SVW - use as under/overlay only-** provides ROW information /client name in section data	FLNRO Forest Tenures Branch						
WHSE_FOREST_TENURE.FTEN_SPEC_ACCESS_RD_POLY_SVW	FLNRO Forest Tenures Branch	Forest#	FOREST_FILE_ID	Gravel Pits/Road Dedications	Assigned - if ? then	Special Access Road Type - 564=Forest Service Road Gravel Pit	Where FEATURE_CLASS_SKETCH = 564
WHSE_FOREST_TENURE.FTEN_SPEC_USE_PERMIT_POLY_SVW	FLNRO Forest Tenures Branch	Forest#	FOREST_FILE_ID	Special Use Permit	Assigned - if ? then	Special Use Permit Type - e.g. Gravel Pit Rock Quarry	SPECIAL_USE_DESCRIPTION
WHSE_FOREST_TENURE.FTEN_TIMBER_LICENCE_POLY_SVW	FLNRO Forest Tenures Branch	Forest #	FOREST_FILE_ID	Timber Licence	Assigned - if ? then	Timber Licence Type - see FTEN_Codes File Type look up	FEATURE_CLASS_SKETCH
WHSE_FOREST_VEGETATION.GRY_PSP_STATUS_ALL	FOR Research Branch	Forest #	PROJECT_IKEY	Forest Research	Assigned - if PROJECT_KEY then	Installation Name -	PROJECT_TITLE

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Feature Class Name	Ministry	IntID	IntID Field	Interest	Interest Field	IntSubType	IntSubType Field
				Installation		Project Title	
WHSE_LAND_USE_PLANNING.RMP_OGMA_LEGAL_CURRENT_SVW	FLNRO Resource Management Objectives Branch	Forest#	LEGAL_OGMA_PROVID	Old Growth Management Area - Legal	Assigned - if LEGAL_OGMA_PROVID then	Legal OGMA Type lookup table coming	OGMA_PRIMARY_REASON
WHSE_LAND_USE_PLANNING.RMP_OGMA_NON_LEGAL_CURRENT_SVW	FLNRO Resource Management Objectives Branch	Forest#	NON_LEGAL_OGMA_PROVID	Old Growth Management Area - Non-legal	Assigned - if NON_LEGAL_OGMA_PROVID then	Non-Legal OGMA Type lookup table coming	OGMA_PRIMARY_REASON
WHSE_LEGAL_ADMIN_BOUNDARIES.OATS_ALR_POLYS	Agricultural Land Comm	ALR #	ALR_POLY_ID	ALR	Assigned - if ALR_POLY_ID then ALR	NA	NA
WHSE_LEGAL_ADMIN_BOUNDARIES.WCL_CONSERVATION_LANDS_SP	FLNRO Resource Management Objectives Branch	Conservation Land #	CONSERVATION_LAND_ID	Conservation Land		Conservation Land Type	CONSERVATION_LAND_TYPE
WHSE_MINERAL_TENURE.MTA_ACQUIRE_D_TENURE_SVW	MEM Mineral Titles and Policy Branch	Tenure #	TENURE_NUMBER_ID	Mining Tenure	Assigned - if TENURE_NUMBER_ID then	Coal/Min/Placer	TENURE_TYPE_DESCRIPTION + TENURE_SUB_TYPE_DESCRIPTION

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Feature Class Name	Ministry	IntID	IntID Field	Interest	Interest Field	IntSubType	IntSubType Field
WHSE_MINERAL_TENURE.MTA_SITE_SP	MEM Mineral Titles and Policy Branch	Reserve #	SITE_NUMBER_ID	Mineral Reserve	Assigned - if SITE_NUMBER_ID then	1= 1 Post Recreation Area A=Administrative C=Conditional H=Heritage L=Designated Lease N= No Registration O=Other R=Release Required S=Surface Restriction T=Designated Claim	MTA_SITE_ORDER_RE STR_CODE + MTA_SITE_ORDER_RE STR_DESC

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Feature Class Name	Ministry	IntID	IntID Field	Interest	Interest Field	IntSubType	IntSubType Field
WHSE_MINERAL_TENURE.PTSA_PETROLEUM_TITLE_POLY	MNGD - Tenure and Geoscience Branch	Title#	TITLE_NUMBER_ID	PTSA Title	Assigned - if TITLE_NUMBER_ID then	PTSA Title Type lookup table: e.g. DL=Drilling Licence NG=Natural Gas PB=Permit Class B PET=Petroleum Tenure PNG=Petroleum & Natural Gas Tenure	TITLE_TYPE_CODE
WHSE_TANTALIS.TA_CONSERVANCY_AREAS_SVW ***This dataset does not overlap with SXTA TSLs or CSPs so not included in the Interest Module	FLNRO GeoBC	Conservancy #	FEATURE_CODE	Conservancy		NA	NA
WHSE_TANTALIS.TA_CROWN_TENURES_SVW	FLNRO GeoBC	Crown Ten #	INTRID_SID	Crown Tenure	Assigned - if DISPOSITION_TRANSACTION_SID then	e.g. Waterpower - Penstock -ROW- Statutory ROW (or easement)	TENURE_PURPOSE + TENURE_SUBPURPOSE+TENURE_TYPE + TENURE_SUBTYPE

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Feature Class Name	Ministry	IntID	IntID Field	Interest	Interest Field	IntSubType	IntSubType Field
WHSE_TANTALIS.TA_PARK_ECORES_PAS_VW	FLNRO GeoBC	Park #	SURVEYOR_GENERAL_PLAN_NO	Park		Park Class	PARK_CLASS
WHSE_TANTALIS.TA_SURVEY_PARCELS_S_VW	FLNRO GeoBC	Parcel #	PIN_SID	Survey Parcel	Assigned - if IPIN_SID then	Parcel Type - Primary parcel type Subdivision	PARCEL_TYPE
WHSE_TANTALIS.TA_SURVEYED_ROW_PARCELS_SVW	FLNRO GeoBC	ROW#	PIN_SID	Right-of-Way/Access	Assigned - if IPIN_SID then	Parcel Type - 3 = Right-of-Way	PARCEL_TYPE
WHSE_TANTALIS.TA_WILDLIFE_MGMT_AREAS_SVW	ENV Fish and Wildlife Branch (MOE)	Wildlife Management Area #	ADMIN_AREA_SID	Wildlife Management Area		NA	NA
WHSE_WATER_MANAGEMENT.GW_WATER_WELLS_WRBC_SVW	ENV Water Protection and Sustainability Branch	Ground Well#	WELL_TAG_NO	Ground Well	Assigned - if WELL_TAG_NO Then	Well use -	WELL_USE_NAME
WHSE_WATER_MANAGEMENT.WLS_COMMUNITY_WS_PUB_SVW	FLNRO ENV Science and Information Branch	Water #	COMMUNITY_WS_CODE	Water Community WS	Assigned - if COMMUNITY_WS_CODE Then	Licence Purpose - e.g. Domestic Enterprise Irrigation etc	LICENSE_PURPOSE

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Feature Class Name	Ministry	IntID	IntID Field	Interest	Interest Field	IntSubType	IntSubType Field
WHSE_WATER_MANAGEMENT.WLS_POD_LICENCE_SP	FLNRO Water Managem ent Branch	Water #	TPOD_TAG +LICENCE_NO	Water POD	Assigned If TPOD_TAG+LICENCE _NO then	Purpose(s) - can be more than one purpose simultane ously with a licence for each	PURPOSE
WHSE_WATER_MANAGEMENT.WLS_RESE RVOIR_PMT_LICENSEE_SP	FLNRO Water Managem ent Branch	Water #	LICENCE_NUMBER	Water Reservoi r	Assigned - if LICENCE_NUMBER then	Storage Power purposes	PURPOSE
WHSE_WATER_MANAGEMENT.WLS_WAT ER_LICENCED_WRK_LINE_SP - use as under/overlay only?? Only a general view of locations; Scanned licence will show the exact location; pnt file of water licences will carry water structures that join or go between the lines;	FLNRO Water Managem ent Branch						
WHSE_WILDLIFE_MANAGEMENT.WAA_G UIDE_OUTFITTER_AREA_SVW	ENV Fish and Wildlife Branch (MOE)	GuideOutl D(Cert#)	GUIDING_CERTIFICA TE_NO	Guide Outfitte r	Assigned - if Certificate # then	NA	NA
WHSE_WILDLIFE_MANAGEMENT.WAA_TR APLINE_AREAS_SP	ENV Fish and Wildlife Branch (MOE)	Trapline #	TRAPLINE_AREAS_SP _ID	Trapline	Assigned - if TRAPLINE_AREAS_SP _ID then	NA	NA

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WHSE_WILDLIFE_MANAGEMENT.WCP_UNGULATE_WINTER_RANGE_SP	ENV Ecosystems Branch (MOE)	UWR #	UWR_NUMBER	Ungulate Winter Range	Assigned - if UWR_NUMBER then	See ungulate look up table: Primary Species e.g. M- ODHE= Black tailed or Mule Deer Secondary Species (may not always be one) e.g.M - CEEL=Elk	SPECIES_1 + (SPECIES_2)
WHSE_WILDLIFE_MANAGEMENT.WCP_WILDLIFE_HABITAT_AREA_POLY	ENV Ecosystems Branch (MOE)	WHA #	TAG	Wildlife Habitat	Assigned - if HABITAT_AREA_ID then	Animal	COMMON_SPECIES_NAME

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Table 15: Current Overlapping Interests on Jones/Wahleach Watershed, from Web Portal Interests Analysis

Ministry	ID	Interest Type	Subtype	Distance	Area (ha)	Overlap (ha)	Overlapped (%)	Overlaps Project Area (%)
Agricultural Land Commission	196	ALR		26m	579.75	0	0	0
ENV Water Protection and Sustainability Branch	55605	Ground Well	Private Domestic	Overlapping	0	0	0	0
ENV Water Protection and Sustainability Branch	66018	Ground Well	Private Domestic	Overlapping	0	0	0	0
ENV Water Protection and Sustainability Branch	73305	Ground Well	Private Domestic	Overlapping	0	0	0	0
FLNRO Archaeology Branch	DhRj-9	Archaeological Site	Archaeological Site	Overlapping	2.14	2.14	100	0
FLNRO ENV Science and Information Branch	100.113	Water Community WS		Overlapping	4.84	4.84	100	0
FLNRO Forest Tenures Branch	8149	Gravel Pit / Road Dedication	Forest Service Road - Dedications	Overlapping	8.99	7.79	86.6	0.1
FLNRO Forest Tenures Branch	8149 - 01	Road Section	Forest Service Road	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	8149 - 03	Road Section	Forest Service Road	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	8149 - 04	Road Section	Forest Service Road	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	8149 - 05	Road Section	Forest Service Road	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	8149 - 06	Road Section	Forest Service Road	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	8149 - 07	Road Section	Forest Service Road	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	8149 - 08	Road Section	Forest Service Road	Overlapping	0	0	0	0

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Ministry	ID	Interest Type	Subtype	Distance	Area (ha)	Overlap (ha)	Overlapped (%)	Overlaps Project Area (%)
FLNRO Forest Tenures Branch	8149 - 09	Road Section	Forest Service Road	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	8149 - 10	Road Section	Forest Service Road	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	A81822	Cut Block	Forest License Cut Block	Overlapping	99.76	99.76	100	0.9
FLNRO Forest Tenures Branch	A90236	Cut Block	Forest License Cut Block	Overlapping	13.85	13.84	99.9	0.1
FLNRO Forest Tenures Branch	A90380	Cut Block	Forest License Cut Block	Overlapping	85.13	85.13	100	0.7
FLNRO Forest Tenures Branch	A91368	Cut Block	Forest License Cut Block	Overlapping	80.49	60.39	75	0.5
FLNRO Forest Tenures Branch	A92170	Cut Block	Timber Sale License Minor CB Non Replaceable	86m	64.68	0	0	0
FLNRO Forest Tenures Branch	A93093	Cut Block	Forest License Cut Block	Overlapping	34.49	12.43	36	0.1
FLNRO Forest Tenures Branch	F00309	Free Use Permit	DANGER TREE REMOVAL	Overlapping	2.03	2.03	100	0
FLNRO Forest Tenures Branch	F00422	Free Use Permit	Firewood Cutting Area	Overlapping	30.21	30.21	100	0.3
FLNRO Forest Tenures Branch	F00443	Free Use Permit	Firewood	Overlapping	0.04	0.04	100	0
FLNRO Forest Tenures Branch	MN0930	Map Notation Polygon	Miscellaneous	Overlapping	20.14	20.14	100	0.2
FLNRO Forest Tenures Branch	R17046 - BRJ3	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R18040 - SPUR1	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R18040 - SPUR1A	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R18564 - JONES LK W	Road Section	Road Permit	Overlapping	0	0	0	0

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Ministry	ID	Interest Type	Subtype	Distance	Area (ha)	Overlap (ha)	Overlapped (%)	Overlaps Project Area (%)
FLNRO Forest Tenures Branch	R18564 - LL2-1	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R18564 - LL2-2	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19313 - BR 6	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19313 - BR 6A	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19313 - BR J5	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19313 - BR J5A	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19313 - JL1300	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19313 - JW1100	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19313 - JW2000	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19313 - JW2100	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19662 - BO2500	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19662 - BO2510	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19662 - JL1170	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19662 - JL1180	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19662 - JL1190	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19662 - JL1200	Road Section	Road Permit	Overlapping	0	0	0	0

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Ministry	ID	Interest Type	Subtype	Distance	Area (ha)	Overlap (ha)	Overlapped (%)	Overlaps Project Area (%)
FLNRO Forest Tenures Branch	R19662 - JL1201	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19662 - JL1260	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19662 - JL1310	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19662 - JL1320	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19662 - JL1330	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19662 - JL1340	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19662 - JL1350	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19662 - JL1360	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19662 - JW1150	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19662 - JW1151	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R19662 - JW1152	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	R21099 - SHN6006	Road Section	Road Permit	Overlapping	0	0	0	0
FLNRO Forest Tenures Branch	T0776	Timber License	Timber License	Overlapping	2622.51	2491.8	95	21.6
FLNRO GeoBC	163642	Crown Tenure	COMMUNICATION / COMMUNICATION SITES / LICENCE / LICENCE OF OCCUPATION	Overlapping	0.21	0.08	37.9	0

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Ministry	ID	Interest Type	Subtype	Distance	Area (ha)	Overlap (ha)	Overlapped (%)	Overlaps Project Area (%)
FLNRO GeoBC	891509	Crown Tenure	RESIDENTIAL / RECREATIONAL RESIDENTIAL / LEASE / STANDARD LEASE	Overlapping	0.76	0.76	100	0
FLNRO GeoBC	903408	Crown Tenure	COMMERCIAL / COMMERCIAL A / LICENCE / LICENCE OF OCCUPATION	Overlapping	0.03	0.03	100	0
FLNRO GeoBC	903409	Crown Tenure	COMMERCIAL / COMMERCIAL A / LICENCE / LICENCE OF OCCUPATION	Overlapping	0.01	0.01	100	0
FLNRO GeoBC	907484	Crown Tenure	ALL SEASONS RESORT	Overlapping	9246.98	8709.34	94.2	75.5
FLNRO GeoBC	919059	Crown Tenure	ENVIRONMENT, CONSERVATION, & RECR	Overlapping	32272.24	25.06	0.1	0.2
FLNRO GeoBC	924745	Crown Tenure	WATERPOWER / INVESTIGATIVE PHASE / LICENCE / INVESTIGATIVE LICENCE	Overlapping	467.69	467.69	100	4.1
FLNRO GeoBC	932617	Crown Tenure	ENVIRONMENT, CONSERVATION, & RECR / SNOW SURVEY / RESERVE/NOTATION / SEC 16 MAP RESERVE	Overlapping	19.19	19.19	100	0.2
FLNRO GeoBC	944115	Crown Tenure	MISCELLANEOUS LAND USES	Overlapping	10187.3	0.49	0	0
FLNRO GeoBC	949108	Crown Tenure	ENVIRONMENT, CONSERVATION, & RECR	Overlapping	77109.47	53.75	0.1	0.5

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Ministry	ID	Interest Type	Subtype	Distance	Area (ha)	Overlap (ha)	Overlapped (%)	Overlaps Project Area (%)
FLNRO GeoBC	3810761	Surveyed Parcel	Subdivision	Overlapping	16.3	7.65	46.9	0.1
FLNRO GeoBC	3810891	Surveyed Parcel	Subdivision	52m	4.63	0	0	0
FLNRO GeoBC	3811251	Surveyed Parcel	Subdivision	Overlapping	49.1	48.59	99	0.4
FLNRO GeoBC	3811381	Surveyed Parcel	Subdivision	Overlapping	16.83	13.28	78.9	0.1
FLNRO GeoBC	3811411	Surveyed Parcel	Subdivision	Overlapping	25.95	4.13	15.9	0
FLNRO GeoBC	3811541	Surveyed Parcel	Subdivision	Overlapping	32.64	21.23	65.1	0.2
FLNRO GeoBC	3811671	Surveyed Parcel	Subdivision	Overlapping	8.43	8.43	100	0.1
FLNRO GeoBC	3812031	Surveyed Parcel	Subdivision	13m	60.55	0	0	0
FLNRO GeoBC	3812741	Surveyed Parcel	Subdivision	28m	33.57	0	0	0
FLNRO GeoBC	3812871	Surveyed Parcel	Subdivision	38m	16.35	0	0	0
FLNRO GeoBC	4623510	Surveyed Parcel	Primary	Overlapping	81.74	62.75	76.8	0.5
FLNRO GeoBC	4623640	Surveyed Parcel	Primary	Overlapping	186.39	63.93	34.3	0.6
FLNRO GeoBC	4623770	Surveyed Parcel	Primary	28m	136.49	0	0	0
FLNRO GeoBC	4646370	Surveyed Parcel	Primary	Overlapping	25.98	11.17	43	0.1
FLNRO GeoBC	4646950	Surveyed Parcel	Primary	Overlapping	175.7	175.7	100	1.5
FLNRO GeoBC	4652780	Surveyed Parcel	Primary	Overlapping	0.31	0.31	100	0
FLNRO GeoBC	4665460	Surveyed Parcel	Primary	Overlapping	0.14	0.14	100	0
FLNRO GeoBC	4665590	Surveyed Parcel	Primary	Overlapping	0.62	0.62	100	0
FLNRO GeoBC	4720680	Surveyed Parcel	Primary	Overlapping	19.27	9.48	49.2	0.1
FLNRO GeoBC	4720710	Surveyed Parcel	Primary	Overlapping	20.91	20.91	100	0.2
FLNRO GeoBC	4720840	Surveyed Parcel	Primary	Overlapping	11.57	11.57	100	0.1
FLNRO GeoBC	4720970	Surveyed Parcel	Primary	Overlapping	8.05	8.05	100	0.1
FLNRO GeoBC	4721040	Surveyed Parcel	Primary	Overlapping	20.91	20.91	100	0.2
FLNRO GeoBC	4721170	Surveyed Parcel	Primary	Overlapping	1.58	1.58	100	0
FLNRO GeoBC	4721200	Surveyed Parcel	Primary	Overlapping	20.91	10.34	49.4	0.1
FLNRO GeoBC	4728280	Surveyed Parcel	Primary	Overlapping	11.04	2.48	22.5	0

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Ministry	ID	Interest Type	Subtype	Distance	Area (ha)	Overlap (ha)	Overlapped (%)	Overlaps Project Area (%)
FLNRO GeoBC	11406740	Right of Way		Overlapping	0.21	0.08	37.9	0
FLNRO GeoBC	90006935	Surveyed Parcel	Subdivision	Overlapping	8.16	8.16	100	0.1
FLNRO GeoBC	90006936	Surveyed Parcel	Subdivision	Overlapping	32.04	8.7	27.1	0.1
FLNRO Rec Sites & Trails	REC0004	Recreation Site	Recreation Site	Overlapping	8.68	8.68	100	0.1
FLNRO Rec Sites & Trails	REC0452	Recreation Site	Recreation Reserve	Overlapping	9.87	9.87	100	0.1
FLNRO Rec Sites & Trails	REC3072	Recreation Site Trail	Recreation Trail	Overlapping	0	0	0	0
FLNRO Rec Sites & Trails	REC3109	Recreation Site Trail	Recreation Trail	57m	0	0	0	0
FLNRO Resource Management Objectives Branch	SRY_401_20	OGMA - Legal		Overlapping	26.29	2.88	10.9	0
FLNRO Resource Management Objectives Branch	SRY_401_30	OGMA - Legal		62m	11.37	0	0	0
FLNRO Resource Management Objectives Branch	SRY_401_33	OGMA - Legal		Overlapping	12.9	0.28	2.1	0
FLNRO Resource Management Objectives Branch	SRY_401_43	OGMA - Legal		5m	10.46	0	0	0
FLNRO Resource Management Objectives Branch	SRY_401_47	OGMA - Legal		Overlapping	7.59	0.08	1.1	0
FLNRO Resource Management Objectives Branch	SRY_401_60	OGMA - Legal		68m	3.5	0	0	0
FLNRO Resource Management Objectives Branch	SRY_401_73	OGMA - Legal		56m	4.86	0	0	0
FLNRO Resource Management Objectives Branch	SRY_401_78	OGMA - Legal		Overlapping	20.75	0.33	1.6	0

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Ministry	ID	Interest Type	Subtype	Distance	Area (ha)	Overlap (ha)	Overlapped (%)	Overlaps Project Area (%)
FLNRO Resource Management Objectives Branch	SRY_417_1	OGMA - Legal		93m	6.32	0	0	0
FLNRO Resource Management Objectives Branch	SRY_418_12	OGMA - Legal	Keystone	Overlapping	3.11	3.11	100	0
FLNRO Resource Management Objectives Branch	SRY_418_13	OGMA - Legal	Keystone	Overlapping	6.33	6.33	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_133	OGMA - Legal	Keystone	Overlapping	13.61	0.07	0.5	0
FLNRO Resource Management Objectives Branch	SRY_418_140	OGMA - Legal		Overlapping	9.21	9.21	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_142	OGMA - Legal	Keystone	Overlapping	3.92	3.92	100	0
FLNRO Resource Management Objectives Branch	SRY_418_143	OGMA - Legal	Keystone	Overlapping	24.54	24.54	100	0.2
FLNRO Resource Management Objectives Branch	SRY_418_15	OGMA - Legal	Keystone	Overlapping	2.96	2.96	100	0
FLNRO Resource Management Objectives Branch	SRY_418_153	OGMA - Legal	Keystone	Overlapping	4.31	4.31	100	0
FLNRO Resource Management Objectives Branch	SRY_418_159	OGMA - Legal	Keystone	Overlapping	7.81	7.81	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_160	OGMA - Legal	Keystone	Overlapping	3.51	3.51	100	0

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Ministry	ID	Interest Type	Subtype	Distance	Area (ha)	Overlap (ha)	Overlapped (%)	Overlaps Project Area (%)
FLNRO Resource Management Objectives Branch	SRY_418_161	OGMA - Legal	Keystone	Overlapping	5.45	5.45	100	0
FLNRO Resource Management Objectives Branch	SRY_418_162	OGMA - Legal	Keystone	Overlapping	7.47	7.47	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_164	OGMA - Legal	Keystone	Overlapping	16.23	16.23	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_168	OGMA - Legal	Keystone	Overlapping	28.92	28.92	100	0.3
FLNRO Resource Management Objectives Branch	SRY_418_169	OGMA - Legal	Keystone	Overlapping	29.19	29.19	100	0.3
FLNRO Resource Management Objectives Branch	SRY_418_17	OGMA - Legal	Keystone	Overlapping	16.28	16.28	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_170	OGMA - Legal	Keystone	Overlapping	40.8	40.8	100	0.4
FLNRO Resource Management Objectives Branch	SRY_418_171	OGMA - Legal	Keystone	Overlapping	9.58	9.58	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_177	OGMA - Legal	Keystone	Overlapping	7.73	7.73	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_19	OGMA - Legal	Keystone	Overlapping	13.83	13.83	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_2	OGMA - Legal	Keystone	Overlapping	15.7	15.7	100	0.1

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Ministry	ID	Interest Type	Subtype	Distance	Area (ha)	Overlap (ha)	Overlapped (%)	Overlaps Project Area (%)
FLNRO Resource Management Objectives Branch	SRY_418_20	OGMA - Legal	Keystone	Overlapping	9.11	9.11	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_21	OGMA - Legal	Keystone	Overlapping	33.24	33.24	100	0.3
FLNRO Resource Management Objectives Branch	SRY_418_22	OGMA - Legal	Keystone	Overlapping	7.66	4.43	57.9	0
FLNRO Resource Management Objectives Branch	SRY_418_23	OGMA - Legal	Keystone	Overlapping	5.58	5.58	100	0
FLNRO Resource Management Objectives Branch	SRY_418_26	OGMA - Legal	Keystone	Overlapping	16.85	16.85	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_27	OGMA - Legal	Keystone	Overlapping	12.89	12.89	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_29	OGMA - Legal	Keystone	Overlapping	4.31	4.31	100	0
FLNRO Resource Management Objectives Branch	SRY_418_31	OGMA - Legal	Keystone	Overlapping	16.51	16.51	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_37	OGMA - Legal	Keystone	Overlapping	61.35	61.35	100	0.5
FLNRO Resource Management Objectives Branch	SRY_418_45	OGMA - Legal	Keystone	Overlapping	11.78	11.78	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_46	OGMA - Legal	Keystone	Overlapping	5.21	5.21	100	0

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Ministry	ID	Interest Type	Subtype	Distance	Area (ha)	Overlap (ha)	Overlapped (%)	Overlaps Project Area (%)
FLNRO Resource Management Objectives Branch	SRY_418_49	OGMA - Legal	Keystone	Overlapping	5.79	5.79	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_5	OGMA - Legal	Keystone	Overlapping	5.5	5.5	100	0
FLNRO Resource Management Objectives Branch	SRY_418_51	OGMA - Legal	Keystone	Overlapping	9.32	9.32	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_53	OGMA - Legal	Keystone	Overlapping	8.78	8.78	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_55	OGMA - Legal	Keystone	Overlapping	9.21	9.21	100	0.1
FLNRO Resource Management Objectives Branch	SRY_418_94	OGMA - Legal	Keystone	Overlapping	7.02	7.02	100	0.1
FLNRO Water Management Branch	F120307	Water Reservoir	STORAGE-POWER	Overlapping	476.99	476.99	100	4.1
FLNRO Water Management Branch	PD42965 - F120307	Water POD	STREAM STORAGE: POWER	Overlapping	0	0	0	0
FLNRO Water Management Branch	PD42968 - C119821	Water POD	POWER: GENERAL	Overlapping	0	0	0	0
FLNRO Water Management Branch	PD42968 - F120303	Water POD	POWER: GENERAL	Overlapping	0	0	0	0
FLNRO Water Management Branch	PD42969 - C119821	Water POD	POWER: GENERAL	Overlapping	0	0	0	0
FLNRO Water Management Branch	PD42969 - F120303	Water POD	POWER: GENERAL	Overlapping	0	0	0	0
FLNRO Water Management Branch	PD42969 - F120307	Water POD	STREAM STORAGE: POWER	Overlapping	0	0	0	0

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FLNRO Water Management Branch	PD42972 - C114881	Water POD	WATERWORKS (OTHER THAN LP	Overlapping	0	0	0	0
FLNRO Water Management Branch	PD42991 - C106433	Water POD	DOMESTIC	Overlapping	0	0	0	0
FLNRO Water Management Branch	PD74982 - C114881	Water POD	WATERWORKS (OTHER THAN LP	Overlapping	0	0	0	0
ICIS	1549022	Land Parcel		59m	4.58	0	0	0
ICIS	1549081	Land Parcel		Overlapping	8.25	1.13	13.7	0
ICIS	2026961	Land Parcel		Overlapping	16.57	12.96	78.2	0.1
ICIS	2027011	Land Parcel		Overlapping	8.64	8.64	100	0.1
ICIS	4976843	Land Parcel		Overlapping	9.83	8.79	89.5	0.1
ICIS	4976886	Land Parcel		Overlapping	6.66	5.7	85.6	0
ICIS	4976894	Land Parcel		Overlapping	5.84	5.84	100	0.1
ICIS	4976932	Land Parcel		Overlapping	14.32	5.72	39.9	0
ICIS	13108247	Land Parcel		Overlapping	4.2	3.49	83	0
ICIS	13108395	Land Parcel		12m	0.5	0	0	0
ICIS	13108701	Land Parcel		27m	17.08	0	0	0
ICIS	13108727	Land Parcel		37m	8.18	0	0	0
ICIS	13110373	Land Parcel		Overlapping	15.83	15.83	100	0.1
ICIS	13110446	Land Parcel		Overlapping	15.67	15.67	100	0.1
ICIS	13110462	Land Parcel		Overlapping	16.6	16.21	97.7	0.1
ICIS	13110471	Land Parcel		38m	7.88	0	0	0
ICIS	13110497	Land Parcel		Overlapping	16.63	13.79	82.9	0.1
ICIS	13110527	Land Parcel		Overlapping	0.69	0.69	100	0
ICIS	13110578	Land Parcel		Overlapping	17.82	7.24	40.6	0.1
ICIS	23616130	Land Parcel		26m	1.34	0	0	0

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ICIS	23616148	Land Parcel		39m	0.87	0	0	0
ICIS	23908963	Land Parcel		99m	51.86	0	0	0
ICIS	013085859 - 4646370	Land Parcel	CROWN PROVINCIAL	Overlapping	25.54	11.03	43.2	0.1
MEM Mineral Titles and Policy Branch	326269	Mineral Reserve	No Registration Reserve	Overlapping	65.13	28.04	43.1	0.2
MEM Mineral Titles and Policy Branch	1006449	Mineral Reserve	Conditional Registration Reserve	Overlapping	899.74	708.99	78.8	6.1
MEM Mineral Titles and Policy Branch	1040351	Mining Tenure	Mineral / CLAIM	Overlapping	84.24	59.06	70.1	0.5
MEM Mineral Titles and Policy Branch	1044750	Mining Tenure	Mineral / CLAIM	Overlapping	63.21	63.21	100	0.5
MEM Mineral Titles and Policy Branch	1046544	Mining Tenure	Mineral / CLAIM	Overlapping	21.06	21.06	100	0.2
MEM Mineral Titles and Policy Branch	1048395	Mining Tenure	Mineral / CLAIM	Overlapping	84.24	22.28	26.4	0.2
MEM Mineral Titles and Policy Branch	1048918	Mining Tenure	Mineral / CLAIM	Overlapping	273.87	269.39	98.4	2.3
MEM Mineral Titles and Policy Branch	1048946	Mining Tenure	Mineral / CLAIM	Overlapping	105.35	104.26	99	0.9
MEM Mineral Titles and Policy Branch	1048947	Mining Tenure	Mineral / CLAIM	Overlapping	231.85	231.85	100	2
MEM Mineral Titles and Policy Branch	1061806	Mining Tenure	Mineral / CLAIM	Overlapping	126.36	17.66	14	0.2
MEM Mineral Titles and Policy Branch	1069942	Mining Tenure	Mineral / CLAIM	Overlapping	63.36	63.36	100	0.5
MEM Mineral Titles and Policy Branch	1069943	Mining Tenure	Mineral / CLAIM	Overlapping	21.12	0.05	0.2	0
MEM Mineral Titles and Policy Branch	1071662	Mining Tenure	Mineral / CLAIM	Overlapping	21.12	15.19	71.9	0.1
MEM Mineral Titles and Policy Branch	1075104	Mining Tenure	Mineral / CLAIM	Overlapping	21.12	4.68	22.2	0

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Ministry of Environment Ecosystems Branch	2-012	Wildlife Habitat	Mountain Beaver	Overlapping	78.56	78.56	100	0.7
Ministry of Environment Ecosystems Branch	2-099	Wildlife Habitat	Grizzly Bear	Overlapping	456.71	456.71	100	4
Ministry of Environment Ecosystems Branch	u-2-001	Ungulate Winter Range	Mountain Goat	19m	35653.44	0	0	0
Ministry of Environment Fish and Wildlife Branch	2130524	Trapline		Overlapping	7137.71	15.3	0.2	0.1
Ministry of Environment Fish and Wildlife Branch	2130664	Trapline		Overlapping	15406.25	2.87	0	0
Ministry of Environment Fish and Wildlife Branch	2130666	Trapline		Overlapping	20370.66	11450.82	56.2	99.2
Ministry of Environment Fish and Wildlife Branch	2130670	Trapline		Overlapping	30244.84	16.38	0.1	0.1
Ministry of Environment Fish and Wildlife Branch	2130671	Trapline		Overlapping	23308.39	52.2	0.2	0.5
Ministry of Environment Fish and Wildlife Branch	2130672	Trapline		Overlapping	39455.72	3.38	0	0