

# Lardeau

## Regional Park Management Plan



April 2020

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# Executive Summary

Lardeau Regional Park is located in the Village of Lardeau on the western shore of Kootenay Lake, in Area D of the Regional District of Central Kootenay (RDCK). The 2.3 hectare waterfront park is used primarily by locals to access the northern reaches of the lake and for day-use activities such as boating and picnicking. It is situated on land owned by the Province of British Columbia and operated by the RDCK through a License of Occupation (LoO).

A group of local residents began an initiative over a decade ago to attempt to construct a wharf adjacent to the existing boat launch. Although the group was successful in securing a total of \$25,000 in grant funding for the wharf, the group was not able to secure insurance for the facility. This challenge precipitated the involvement of the Regional District in the initiative. Following the approval of a Purpose and Operations Statement for the Lardeau Boat Launch in 2011, the LoO for use as a Regional Park was granted by the Ministry of Forestry Lands and Natural Resources in 2014. In 2015/2016, the RDCK held open houses in the communities of Meadow Creek and Kaslo, which revealed a lack of consensus and a number of dissenting opinions regarding the creation of a regional park and construction of a wharf. Although a wharf has been considered throughout this process, it has been removed from the preferred park concept due to limited support and vocal opposition.

In order to explore the range of positions, and provide additional detail to the proposed park improvements, the RDCK engaged Urban Systems to lead a process that would continue soliciting input from the public, guide development of the site, and protect and balance the park's recreational use, views, shoreline, trail linkages, cultural values, and important wildlife habitat. These considerations, as well as public, stakeholder, and staff engagement, guided the preferred park concept plans and cost estimate to implement the proposed improvements.

The Lardeau Regional Park Management Plan includes the following:

- » Park management vision, goals, and objectives
- » A phased conceptual park development plan
- » Management recommendations
- » Capital cost estimate and implementation plan

Urban initiated the second round of public engagement in November of 2018 with an online survey that received 548 responses. Two open houses and a third engagement event at Lardeau Regional Park were held in May 2019. Two open houses were held in January of 2020 to present the draft management plan to the community. Collaboration with RDCK staff took place throughout the process.

# Background

## Introduction

Lardeau Park provides residents of the Village of Lardeau and the surrounding area with access to approximately 150 metres (m) of shoreline along Kootenay Lake. Locals use the park for recreational activities such as boating, kayaking, canoeing, walking, nature appreciation, and picnicking. The natural beauty of the park is one of its most popular features.

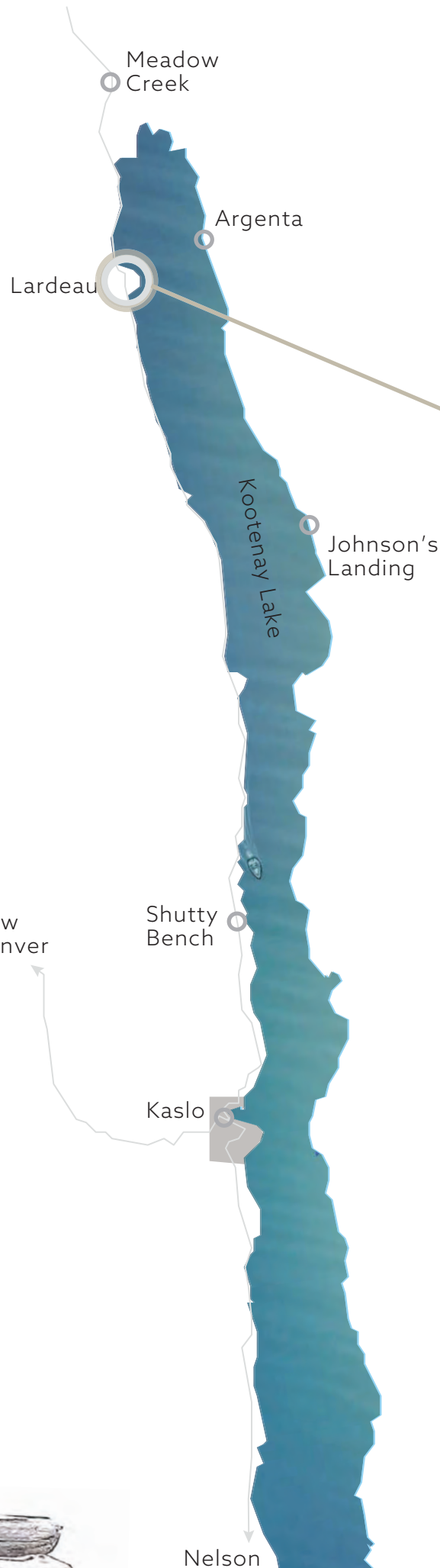
The RDCK began a planning process for the park in 2015/2016, and engaged Urban Systems in 2018 to develop a Park Management Plan for the area.

The Park Management Plan was shaped by several factors, including: input gathered during public engagement, current park uses and surrounding land uses, and research on best practices in park management.

The Park Management Plan begins with a brief description of the park, including regional context, research and policy context, and existing park features. This is followed by a summary of the planning process and public input.

A vision and set of goals were prepared to guide the development of three concept design options, that were then refined into preferred concepts. The park was also separated into management zones, with permitted uses listed for each zone.

The plan concludes with an implementation plan that identifies a recommended operations and maintenance schedule for the park, as well as the budget required for capital works and staff resource allocations over the next 10 years.





## Regional Context

The land surrounding Lardeau Park is located in the Interior Cedar – Hemlock geoclimatic zone, which is characterized by an interior, continental climate with cool, wet winters and warm, dry summers<sup>1</sup>. This biogeoclimatic zone is dominated by upland coniferous forests; however, it has the highest diversity of tree species in the entire province of British Columbia. Much of the zone consists of steeply sloped, mountainous terrain, and it is home to numerous plant and wildlife species. Dominant tree species include western redcedar, western hemlock, white spruce, and Engelmann spruce. Common animal species in lake and stream areas of the zone include Canada goose, common loon, painted turtle, and spotted frogs.

Some of the larger mammals that inhabit the Lardeau Valley include deer, moose, elk, black and grizzly bears, mountain caribou, wolverine, wolves, and mountain goats, and more than 68 species of birds have been recorded. Some streams contain cutthroat and rainbow trout, Dolly Varden (bull trout) and mountain whitefish<sup>2</sup>.

The park itself is a 2.3 hectare (ha) area of land located on the northwest shore of Kootenay Lake, east of the Village of Lardeau. Kootenay Lake levels vary based on the fluctuations influenced by both the Libby and Duncan dams. Highway 31 runs in a north-south direction approximately 300m west of the park's western boundary. The land north of the site is primarily privately owned, and land south and southwest of the site is owned by the Crown. Davis Creek joins Kootenay Lake south of the park boundary, and Davis Creek Provincial Park lies south of the creek.

1 Ketcheson, M.V., et. al. 1991. "Interior Cedar - Hemlock Zone." Chap. 11 in *Ecosystems of British Columbia*, 167-182. British Columbia Ministry of Forests.

2 Visit Kaslo. n.d. Meadow Creek & Lardeau Valley



## Research and Policy Context

A number of background studies and reports provide information on the environmental conditions and development opportunities in and around the regional park. The most relevant documents to the Park Management Plan are presented in chronological order as follows (**Appendix A** contains a full list of resources):



### The Future of Kootenay Lake: Community Values Survey Results, 2017<sup>3</sup>

In 2017, Compass Resource Management Ltd. conducted a community values survey for the Friends of Kootenay Lake Stewardship Society (FOKLSS) to gain a better understanding of the community values associated with Kootenay Lake to then inform future planning and management.

The majority of survey respondents indicated that the natural environment was one of the most highly valued features of the lake (92%), followed by the relaxed atmosphere (78%) and recreational activities on the lake (72%). High water quality (97%), mountain views (94%) and other recreational activities (82%) were ranked as important or very important by a majority of respondents.

The survey results suggested that more education and outreach may be required regarding regulations and bylaws on and around Kootenay Lake, as many respondents either stated that existing regulations were hard for the public to understand or that they did not know the answers to regulation-related questions.

The priorities identified in this survey helped guide the vision, goals, and objectives of the Lardeau Regional Park Management Plan.

<sup>3</sup> Compass Resource Management Ltd. January 13, 2017. The Future of Kootenay Lake: Community Values Survey Results. Prepared for the Friends of Kootenay Lake Stewardship Society.

### Official Regional Parks Plan Bylaw No. 2044, Consolidated 2017<sup>4</sup>

Bylaw No. 2173 is a consolidation of several Parks Service Area bylaws that establish a framework for the creation and operation of regional parks within the Regional District of Central Kootenay.

As regional parks are intended to provide outdoor recreation opportunities for residents of two or more municipalities or electoral areas, it is important that they are geographically distributed in a fair and balanced manner. Bylaw No. 2044 divides the RDCK into sub-districts in order to better accomplish this goal, with the proposed Lardeau Regional Park being in Area D – Kootenay Lake North.

The bylaw stipulates that park development plans must consider ongoing maintenance and operating costs in order to ensure that any plans do not exceed the ability of the RDCK to maintain the site and facilities.

There are two existing regional parks in Area D:

Glacier Creek Regional Park – situated at the mouth of Glacier Creek on land owned by the Province of British Columbia, this park is intended to meet the beach and camping needs of Area D residents and is classified as a waterfront access park

Historic Ainsworth Wharf Regional Park – situated in the community of Ainsworth on Kootenay Lake, this park is intended to preserve the historic concrete wharf and provide lakefront property for public use. It is also classified as a waterfront access park

<sup>4</sup> Regional District of Central Kootenay. 2009. Official Regional Parks Plan Bylaw No.2044.





## Regional District of Central Kootenay Park Regulation Bylaw No. 2173, 2011<sup>5</sup>

Bylaw No. 2173 outlines the permitted and non-permitted uses in regional parks within the RDCK. The following general regulations apply to all regional parks unless otherwise noted:

- » No dogs off-leash
- » No equine or packing animals
- » No overnight camping
- » No overnight parking
- » No alcohol
- » No damage to natural features
- » No fires
- » No firearms or hunting
- » No litter or dumping
- » No storage

## Kootenay Lake Foreshore and Inventory Mapping, 2010<sup>6</sup>

In 2010, Ecoscape Environmental Consultants conducted foreshore inventory and mapping (FIM) on the main arm of Kootenay Lake in order to assess existing site conditions and make recommendations regarding future site planning and development.

The study found that approximately 80% of the shoreline was in a natural condition, with groynes and boat basins being the most prevalent shoreline modifications. Kootenay Lake is generally surrounded by moderate to very steep slopes, with Cliff/Bluff shorelines as the most prevalent shore types. A lack of aquatic vegetation was observed along the lake, which could be in part due to the steep and rocky nature of the shoreline. Natural areas or Crown Lands account for 17% of the shoreline, and the remaining lands are privately held.

The study determined that the foreshore of the lake has been impacted by human land use practices, with these effects being most observable in more densely developed areas. The report recommends maintaining the rural nature of the shoreline and limiting intense development to reduce the cumulative impacts of human development on habitat.

5 Regional District of Central Kootenay. 2011. Park Regulation Bylaw No.2173.

6 Schleppe, J. September 2010. Kootenay Lake Foreshore Inventory and Mapping. Ecoscape Environmental Consultants Ltd. Project File: 09-513. Prepared for: Regional District Central Kootenay

An analysis of the data collected for Electoral Area D (where Lardeau Regional Park is located) determined that 83% of the Area D shoreline remains in a natural condition, with a low overall level of human impact. The shoreline consists primarily of moderate to steep slopes, with gravel beaches (14.5%), rocky shores (36%), cliffs/bluffs (40%) being the primary shoreline types. Limited aquatic vegetation was observed throughout the area.

Kootenay Lake has some of the best recreational fishing for rainbow trout and kokanee in the province. Rainbow trout feed on terrestrial insects that rely on riparian vegetation to fill their habitat needs; it is thus a priority to preserve and enhance aquatic and riparian vegetation wherever possible. The study also recommends undertaking impact mitigation and habitat restoration measures when developing land along the lakeshore. Finally, the study encourages development and use of best practices for the construction of retaining walls, marinas, boat ramps and boat basins in order to mitigate their impact on riparian and aquatic habitats.

## Regional District of Central Kootenay Floodplain Management Bylaw No. 2080, 2009<sup>7</sup>

Adopted by the Regional Board in 2009, Bylaw No. 2080 establishes floodplain management regulations that guide development and construction to ensure it takes place above the flood construction level and behind the floodplain setback established by the bylaw. Flood Construction Levels are listed as vertical elevations above mean sea level relative to Geodetic Survey of Canada (GSC) datum as determined by the Canadian Hydro-graphic Service. Pertinent information for the Lardeau Regional Park Management Plan includes the 536.5 GSC Datum Flood Construction Level and the 15.0 m Floodplain Setback established for Kootenay Lake. Any building or structure on site must therefore adhere to these regulations.

7 Regional District of Central Kootenay. 2009. Floodplain Management Bylaw No. 2080.



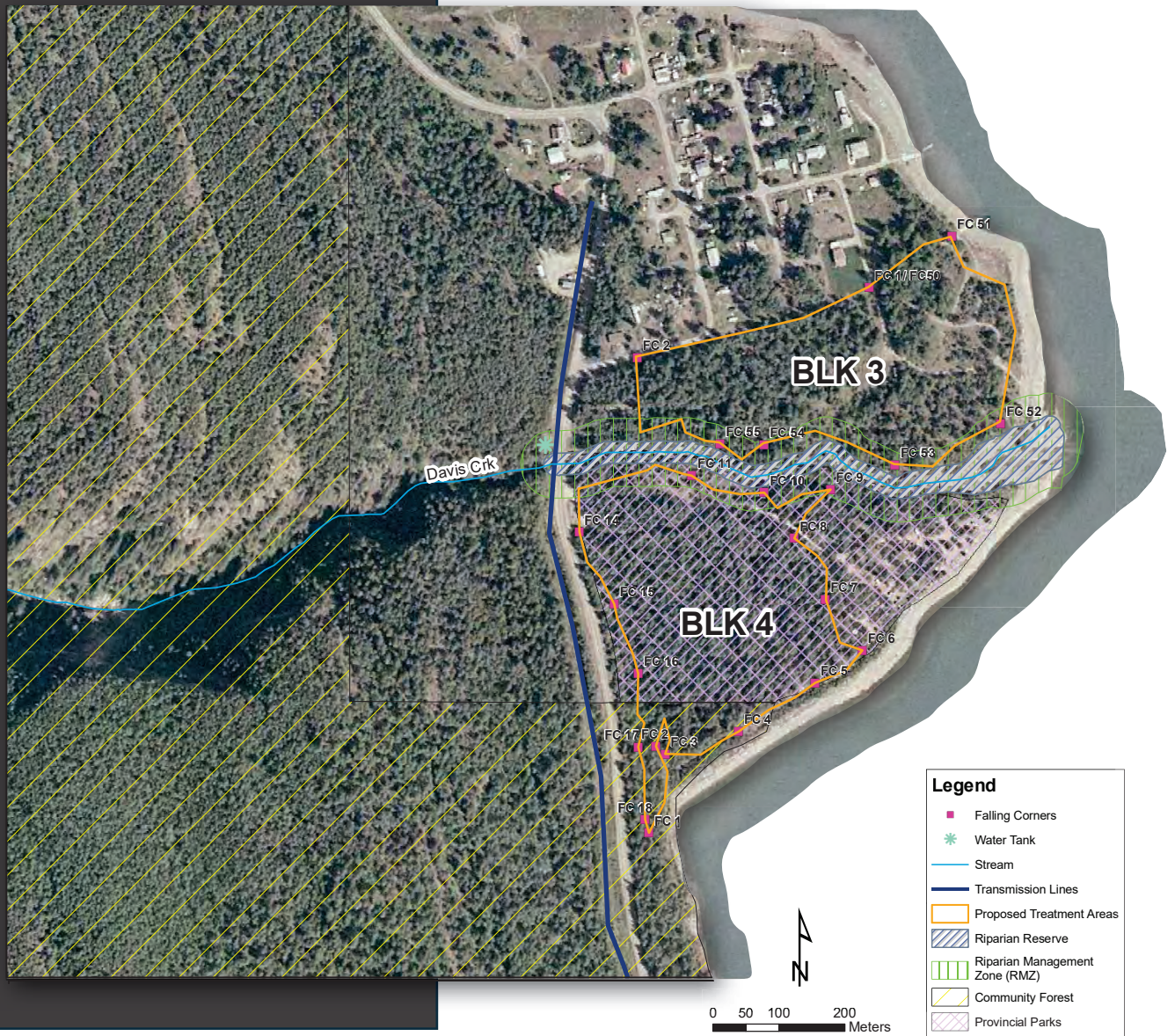


## Fuel Management

The fuel management prescription map for Lardeau Blocks 3 and 4 (Figure 1) was deployed to thin fuel below the canopy in Block 3 to reduce ladder fuels and improve access for suppression crews in case of fire<sup>8</sup>.

8 B.A. Blackwell & Associates Ltd. September 21, 2010. "Fuel Management Prescription Map: RDCK

Figure 1: Fuel Management Prescription Map





## Park History

The Lardeau Valley is partly made up of rich valley bottom farmland that was formed by the flow of the Duncan and Lardeau Rivers through the flats at the head of Kootenay Lake<sup>9</sup>. The Lardeau Valley is the historical land of a number of First Nations, including Ktunaxa, Qatmuknek, Sinixt, and Secwepemc, whose history in the region dates back approximately 12,000 years<sup>10</sup>.

Prospectors came to the area in the early 1900s in search of ore and were followed by homesteaders in 1912 who began to use the region for farming and logging. The 1950s saw the arrival of people looking to build sustainable communities and to return to nature<sup>11</sup>.

Both Canada Pacific Railway and the Nelson and Lardo Steam Navigation Company operated stern-wheelers servicing Lardeau from the late 1800s into the 1950s. The SS Moyie, which is moored today in neighbouring Kaslo, was retired in 1957 from service to Lardeau at which time she was the oldest stern-wheeler still in service in North America<sup>12</sup>.

The Duncan Dam – a 40m earth-fill dam without any power generation facilities – was built in 1967 to control the flow of water from Duncan River into Kootenay Lake. It was the first of three Columbia River Treaty dams to be built in the Canadian section of the Columbia River Basin. The Duncan tributary provides 13% of the water flowing into Kootenay Lake<sup>13</sup>.

9 Visit Kaslo. n.d. Meadow Creek & Lardeau Valley

10 Nelson and Kootenay Lake Tourism. n.d. Historical Hotspot: Lardeau Valley Historical Centre.

11 Visit Kaslo. n.d. Meadow Creek & Lardeau Valley

12 Touchstones Nelson: Museum of Art and History. n.d. "History." *Sternwheelers of Kootenay Lake*. Accessed August 19, 2019.

13 Ibid





# Physical Site Description

## Environmental Features

As no recent environmental studies have been conducted in Lardeau Park, the information provided in the following section is based on research, site visits, and anecdotal evidence from residents and park users.

## Abiotic Features

As noted in the Foreshore Inventory and Mapping report prepared by Ecoscape Consultants Ltd. in 2010, 83% of the shoreline around Lardeau Park remained in a natural condition, with a low overall level of human impact. Limited aquatic vegetation was observed in the area, in part due to the moderate to steep slopes along the shoreline. The study recommends undertaking impact mitigation and habitat restoration measures when developing land along the lake shore and developing and implementing best practices for construction of boat ramps and other infrastructure along the water's edge<sup>14</sup>. The Regional District of Central Kootenay implemented a 15.0m riparian setback in the 2009 Floodplain Management Bylaw No. 2080 to reduce and mitigate the impact of development on riparian and aquatic habitats<sup>15</sup>.

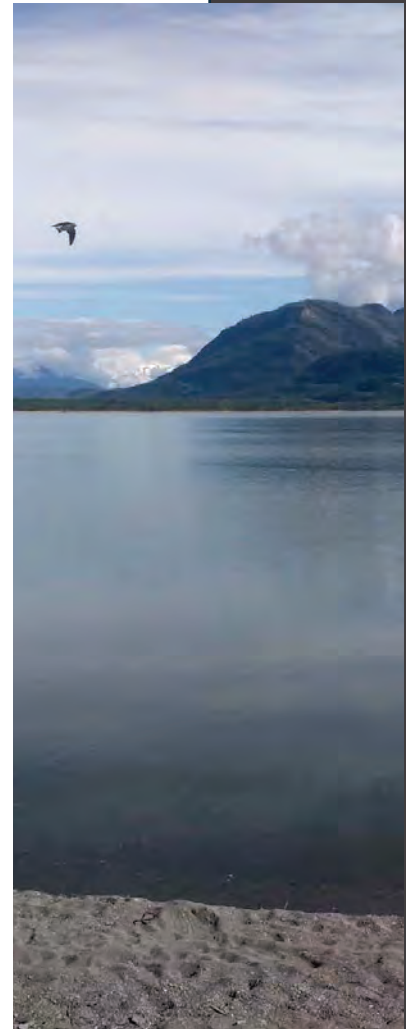
Davis Creek flows into Kootenay Lake just south of the park, and sediment moves north from the creek into an accretion zone at the northeast end of the park boundary.

## Fauna

The birds in the following list were identified by Lardeau residents and recorded on the Cornell Lab of Ornithology E-Bird website. There were 197 species identified in the Lardeau area including Canada goose, mallard duck, common merganser, Vaux's swift, wild turkey, Rufous hummingbird, spotted sandpiper, American kestrel, and American robin.

Some of the mammals observed by Lardeau residents and park users include long-tailed weasels, skunks, pack rats, shrews, coyotes, squirrels, chipmunks, mice, and bats. There are also occasional sightings of cougars and lynx. Water shrews are seen along Davis Creek during the winter months. It was noted that Richardson ground squirrels were becoming a problem due to their quick reproduction rates.

Kootenay Lake is home to approximately 28 fish species, including rainbow trout, cutthroat trout, bass, kokanee salmon, northern pike, whitefish, and walleye<sup>16</sup>.



<sup>14</sup> Schleppe, J. September 2010. Kootenay Lake Foreshore Inventory and Mapping. Ecoscape Environmental Consultants Ltd.

<sup>15</sup> Regional District of Central Kootenay. 2009. Floodplain Management Bylaw No. 2080.

<sup>16</sup> BC Ministry of Forests, Lands, and Natural Resource Operations. n.d. 2017-2019 Freshwater Fishing Regulations Synopsis Region 4.



## Flora

While no formal plant species inventory has been conducted for the park, the following plants were observed to be some of the most common species growing in the park.



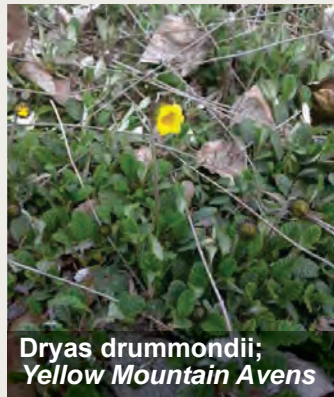
**Mahonia aquifolium;**  
*Oregon Grape*



**Symphoricarpos albus;**  
*Common Snowberry*



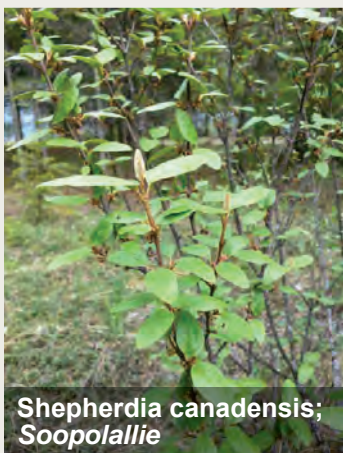
**Amelanchier alnifolia;**  
*Saskatoon*



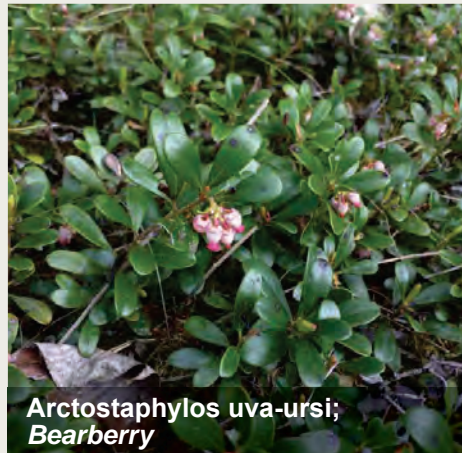
**Dryas drummondii;**  
*Yellow Mountain Avens*



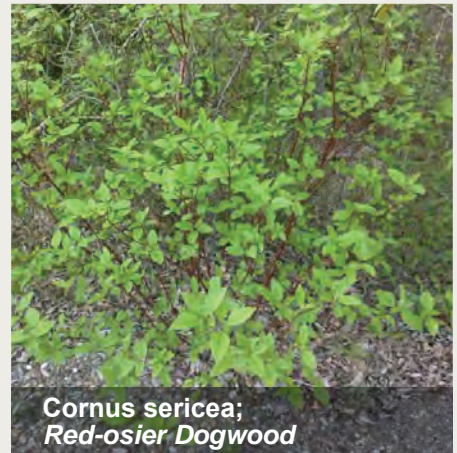
**Rubus parviflorus;**  
*Thimbleberry*



**Shepherdia canadensis;**  
*Soapollalie*



**Arctostaphylos uva-ursi;**  
*Bearberry*



**Cornus sericea;**  
*Red-osier Dogwood*





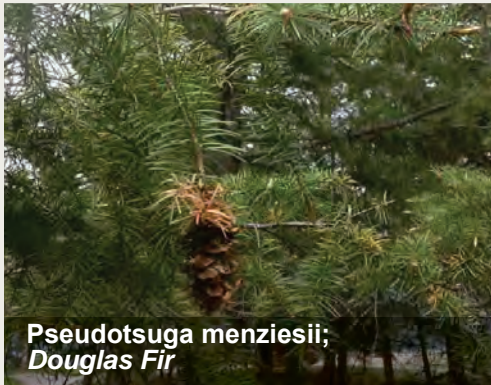
Flora (continued)



**Populus trichocarpa;**  
**Northern Black Cottonwood**



**Equisetum hymale;**  
**Scouring Rush**



**Pseudotsuga menziesii;**  
**Douglas Fir**



**Juniperus communis;**  
**Common Juniper**



**Betula papyrifera;**  
**Paper Birch**



**Sorbus scopulina;**  
**Western Mountain Ash**



**Acer douglasii;**  
**Douglas Maple**

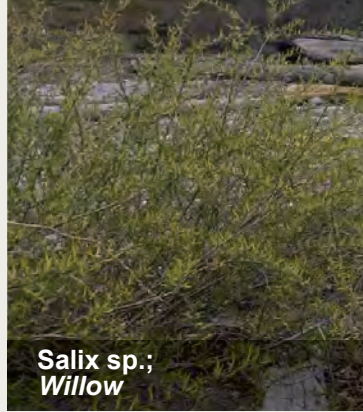


**Pinus monticola;**  
**Western White Pine**





**Thuja plicata;**  
*Western Redcedar*



**Salix sp.;**  
*Willow*



**Campylium stellatum;**  
*Golden Star Moss*



**Picea glauca;**  
*White Spruce*



**Goodyera oblongifolia;**  
*Rattlesnake Plantain*



**Trifolium sp.;**  
*Clover (introduced)*



**Taraxacum officinale;**  
*Dandelion (introduced)*



**Sisymbrium sp.;**  
*Tumbleweed (introduced)*



**Cotoneaster sp.;**  
*Cotoneaster (introduced)*





## Vehicle and Pedestrian Access

Vehicles and pedestrians access the park via Kootenay Street, and pedestrians also access the park by walking along the shoreline. There are several informal parking areas in and south of the park boundary that are accessible via internal roads.

## Recreational Features and Park Infrastructure

Lardeau Park has traditionally been used by locals for day-use activities such as boating, kayaking, canoing, walking, nature appreciation, and picnicking. The main recreational features of the site are a vehicle-accessible boat launch and an informal day use area. There are also informal camping areas throughout the Crown land to the south. There is an existing lighthouse – operated by Transport Canada – in the southeast corner of the park.





# Site Inventory

Site visits were completed to confirm current site conditions. Based on this information, a site inventory map was prepared (Figure 2). The text below summarizes key opportunities and constraints for park areas and features. This analysis provided direction for the conceptual plans and management recommendations.

Figure 2: Site Inventory Map





# Planning Process



# Online Community Engagement Summary

Community engagement for the Lardeau Regional Park Management Plan began with an online survey made available to the public from November 27, 2018 to January 15, 2019. Hard copy forms were also available upon request. There were 548 responses to the survey, of which 190 were complete. A copy of the questionnaire and verbatim responses are available in **Appendix B**. The results of the survey indicated the following priorities for respondents:

- » Environmental protection
- » Limit vehicular access to sensitive areas
- » Riparian enhancements
- » “Keep it simple/keep it natural”
- » Cost and maintenance

Around 88% of respondents agreed that improvements to the park should be minimal and focus on protecting natural values and resources, and 90% of respondents agreed that improvements should reflect a rustic Kootenay character. About 63% of respondents disagreed with providing facilities to support motorized watercraft uses, and 56% of respondents were against the construction of a wharf.

With the direction provided by stakeholders, the planning team prepared three concept plan options for the park (all three options are shown in **Appendix D**). The following list outlines the similar and unique features of each option.





Feature	Option A1	Option A2	Option B
<b>1</b> Riparian Vegetation Restoration	In areas along shoreline and adjacent to day use area	In areas along shoreline and adjacent to day use area	In areas along shoreline and adjacent to day use area
<b>2</b> Improved Parking and Vehicle Circulation	Improved boat parking and vehicle parking areas	Improved larger boat parking and vehicle parking areas	Improved larger boat parking and vehicle parking areas
<b>3</b> Washroom / Pit Toilet	West of northern parking area	West of northern parking area	West of northern parking area
<b>4</b> Wharf Structure	No wharf structure	Wharf structure	Wharf structure
<b>5</b> Trail	Along northwest edge of the riparian zone	Along northwest edge of the riparian zone	Along northwest edge of the riparian zone Through Crown land area south of current boundary
<b>6</b> Picnic Table(s)	In southeast corner of day use area	In southeast corner of day use area	In southeast corner of day use area
<b>7</b> Bench(es)	Spaced along shoreline pathway	Spaced along shoreline pathway	Spaced along shoreline pathway
<b>8</b> Waste Receptacle(s)	At north and south ends of day use area	At north and south ends of day use area	At north and south ends of day use area
<b>9</b> Entry Sign	At turn off from Kootenay Street	At turn off from Kootenay Street	At turn off from Kootenay Street



Feature	Option A1	Option A2	Option B
<b>10</b> Interpretive/Regulatory Signage	At the boat launch and at the trail head at the south end of the parking area	At the boat launch and at the trail head at the south end of the parking area	At the boat launch and at the trail head at the south end of the parking area
<b>11</b> Vehicle Exclusion Barrier/Fence	Along the edges of roads and parking areas	Along the edges of roads and parking areas	Along the edges of roads and parking areas
<b>12</b> Boulder Barrier(s)	Along roads and edges of vehicle areas	Along roads and edges of vehicle areas	Along roads and edges of vehicle areas
<b>13</b> Wheelchair Accessible Pathway	In southeast corner of site connecting to picnic area	In southeast corner of site connecting to picnic area	Leaving from north end of site and connecting to 4th Avenue  Running south along shoreline and Davis Creek
<b>14</b> High-Water Trail	None	None	West of northern parking area
<b>15</b> Acquisition of additional Crown Land	No	No	Acquisition of Crown Land south of existing LoO boundary

These concept options were presented to the public at two open houses held on May 13 and 14, and at an engagement event at Lardeau Park on May 15. Open house participants were given the opportunity to participate in a group discussion, ask questions, and complete a questionnaire.

Based on the questionnaire responses, preferred concept options were prepared for the park. They include an option with and without a wooden wharf structure, as well as an option with and without the acquisition of existing Crown land south of the park.





# Open House Engagement Summary

On May 13 and 14, 2019, two open houses were held regarding the Lardeau Regional Park Management Plan. A third engagement event was held on-site at the Lardeau Regional Park on May 15. The purpose of these events was to present the results from the online survey and gauge participants' support of various aspects of the project, including the vision, objectives, and concept plan elements. Participants were given the opportunity to participate in a group discussion, ask questions and complete a questionnaire. Responses to the questionnaire from each event are summarized below. Where possible, comments were consolidated by topic.

## Lardeau Valley Community Club Open House – 6:30pm, May 13, 2019

### **Approximately 38 participants**

The first five questions on the Open House Questionnaire asked participants to indicate their level of support for the draft vision and objectives for the Draft Management Plan, as well as their level of support for each of the concept plan options. The responses for each question are listed below in order to show the overall level of support for each part of the plan. The level of support that was chosen by the most participants is shaded.

Statement	Responses				
I support the draft vision statement	1	0	3	4	8
I support the draft objectives	1	2	2	4	8
I support the option A1 draft concept plan	3	0	3	2	4
I support the option A2 draft concept plan	10	2	0	0	4
I support the option B draft concept plan	7	1	2	0	2



The last three questions asked participants to expand upon which elements of the concepts they agreed or disagreed with and gave participants an opportunity to provide any other comments. Participant responses are summarized below in order of importance based on the number of times a topic was mentioned (indicated by the numbers in brackets).

## Question Responses

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What elements of the concept options do you most agree with?	<ul style="list-style-type: none"> <li>» Washroom/pit toilet (8)</li> <li>» Preservation of natural environment/minimising development/limiting motorized access (7)</li> <li>» Wharf (7)</li> <li>» Increased management and local control (2)</li> <li>» Crown land acquisition (2)</li> <li>» Extra parking</li> <li>» Additional parking away from view areas and riparian areas</li> <li>» Six trailer spots</li> <li>» Keep it Simple Stupid (KISS)</li> </ul>
What elements of the concept options do you most disagree with?	<ul style="list-style-type: none"> <li>» Wharf – encourages motorized access and more intense use (8)</li> <li>» Picnic tables/Day camping (3)</li> <li>» Increasing trailer parking</li> <li>» Any development</li> </ul>
Any other comments?	<ul style="list-style-type: none"> <li>» Concern for increase in traffic – could an alternate access be a possibility (3)</li> <li>» Need to conduct a wharf needs analysis and analysis for an appropriate wharf location (3)</li> <li>» Promote non-motorized uses (EG: kayaks) (2)</li> <li>» Vision is missing boating activity</li> <li>» North wind is a danger for boaters - SAR may examine problems boating in a north wind</li> <li>» “I am concerned that the people who started this are not even going to be around in 10 years - I wish younger people came to meetings”</li> <li>» I would like to see more discussion and input about why people come to the area</li> <li>» Consider the lost ledge site for wharf location - minimal disruption to residents, infrastructure largely in place now</li> <li>» “I am extremely afraid of how this will split the community and the unknown effects of a wharf ie. traffic, noise”</li> <li>» “No wharf, less motorized boat traffic, fewer tourists, leave the place alone, give it back”</li> <li>» “I strongly urge the RDCK to adopt the same model of park as the Balfour Beach Regional Park which preserves access to a pristine waterfront and riparian environment. If a dock goes in, north Kootenay Lake and specifically the community of Lardeau will change. Most of us are here for the serenity and quiet - that will disappear. The thought of that makes me very sad.”</li> <li>» “No wharf - because there has been a significant rise in the number of non-motorized watercraft on the lake. The reasons for that are formation of an unofficial rowing club in Lardeau and Davis Creek Campground now rents kayaks and paddle boards. The north end of the lake is a wildlife reserve and increased boat traffic will impact life on the Lardeau River”</li> <li>» “Thanks for the well-run meeting”</li> </ul>



## Kaslo Seniors Hall Open House – 6:30pm, May 14, 2019

*Approximately 15 participants*

The following responses are arranged in the same manner as the responses from the May 13 Open House.

Statement	Responses				
I support the draft vision statement	0	0	0	4	5
I support the draft objectives	0	0	0	2	5
I support the option A1 draft concept plan	2	0	2	2	0
I support the option A2 draft concept plan	1	0	4	0	0
I support the option B draft concept plan	0	0	0	4	3

Question	Responses
What elements of the concept options do you most agree with?	<ul style="list-style-type: none"> <li>» Acquisition of crown land (8)</li> <li>» Rehabilitation of wilderness (3)</li> <li>» Control of human uses - management with sensitivity (2)</li> <li>» Public access to foreshore</li> <li>» Decreasing motorized traffic</li> <li>» Encouraging foot traffic</li> </ul>
What elements of the concept options do you most disagree with?	<ul style="list-style-type: none"> <li>» Wharf (2)</li> </ul>
Any other comments?	<ul style="list-style-type: none"> <li>» There are many questions about the wharf - need to know more about the wharf structure (2)</li> <li>» "Thank you for presentation and proactivity on land use control"</li> <li>» "There is so much avian life along this shoreline - sandpipers, loons, geese, etc. - and lake otters!"</li> </ul>
Comments (on stickies) placed on presentation boards	<ul style="list-style-type: none"> <li>» Yes! Include the addition</li> </ul>



## Lardeau Regional Park Open House 10 am – 12:00 pm, May 15, 2019

### 10 Lardeau residents participated

Two questionnaires were completed and submitted during this event. The following responses are arranged in the same manner as the responses from the May 13 Open House.

Statement	Responses				
I support the draft vision statement	0	0	0	2	0
I support the draft objectives	0	0	0	1	0
I support the option A1 draft concept plan	0	0	0	1	0
I support the option A2 draft concept plan	0	0	1	0	0
I support the option B draft concept plan	0	0	0	0	1

The responses for questions 6-8 are summarized below:

Question	Responses
What elements of the concept options do you most agree with?	<ul style="list-style-type: none"> <li>» Wharf - for safe boat launch and retrieval</li> <li>» Enhanced parking in existing location</li> <li>» RDCK maintaining control of the land under license of occupation rather than letting it return to the Crown</li> </ul>
What elements of the concept options do you most disagree with?	<ul style="list-style-type: none"> <li>» Park development</li> <li>» Eliminating motorized boat access from the north end of the lake</li> </ul>
Any other comments?	<ul style="list-style-type: none"> <li>» No mention of motorized boat uses in vision</li> <li>» Don't advertise the park to increase usage</li> <li>» "I would not like to see the land developed into a more fullsome "park" (ie. Space for events) and especially never to be turned into a campground"</li> <li>» "I understood the desire on the part of some for a wharf but this is not a high priority for our household even though we regularly use the boat launch"</li> </ul>



The following themes and concerns were expressed by participants.

## Responses

---

- » Be aware of and support parking demand for Davis Creek trail users (grind-like hike)
- » Local citizen provided information collected in 2010 from an informal survey to gauge local support for a proposed Nature Reserve between the existing RDCK LoO and Davis Creek. 50 of 70 locals identified desire to protect entire crown land.
- » Consider providing shaded parking
- » Consider provision of overflow parking
- » Support protection of land to south of LoO to be managed to address open defecation and fires
- » No wharf
- » Keep cars away from shore-support habitat for birds, snakes and salamanders
- » Possibility of keeping more trees in the trailer parking area
- » 21 motorized boats in Lardeau
- » Over 40 non-motorized boats in Lardeau, paddling sports are becoming more popular
- » Is ATV use on shore appropriate? -could impact nesting birds
- » Grouse live along high water, ginger patch north of boat launch, moose, chickadee, 197 species of birds here
- » Consider invasive species control- zebra mussels, etc.
- » Consider ongoing maintenance of boat launch



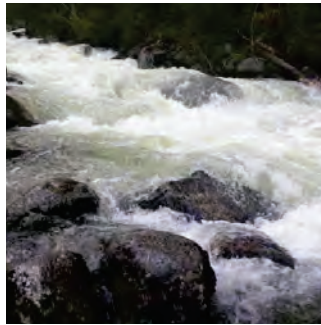


# Project Guiding Statements

The guiding statements including the vision and goals and objectives for Lardeau Regional Park were crafted from themes identified from the input received in the 2018 online survey.

## Vision

Lardeau Regional Park is an oasis for people and wildlife alike. Visitors to the park understand the balance between respectful recreation and the ecosystems that thrive in the park. The park is a great place to walk the trails, observe wildlife, kayak and paddle, and appreciate the spectacular views along the beach. This park is for everyone. Visitors and locals can enjoy this place, which is serene and tranquil, and also full of vitality and life.



# Goals and Objectives

The following goals identify what the management plan intends to accomplish, while the objectives function as a guide on how to accomplish each goal.



## Environment

Protect and enhance the rich natural environment and ecosystems that exist in Lardeau.

- » Identify and protect sensitive areas and species, e.g., restrict vehicular use on the foreshore.
- » Actively protect ecosystems, including monitoring of invasive species.
- » Encourage stewardship and learning among residents and visitors through interpretive signage and site-specific interventions.
- » Maintain and enhance desirable habitat for migratory birds that use the area as a stopover.
- » Support bird and wildlife viewing.



## Sense of Place

Retain the undeveloped and relaxed character of the place and the values of local residents.

- » Stay true to local character and values; let those guide the design and planning process.
- » Keep interventions thoughtful and minimal.



## Recreation

Create opportunities for access and recreation activities that are environmentally and locally sensitive, and can coexist with environmental goals and objectives.

- » Improve water and beach accessibility while protecting the foreshore.
- » Improve vehicular circulation.
- » Promote and provide opportunities for non-motorized activities on the lake, such as paddle boating and kayaking.
- » Maintain existing trails and enhance the trail network as required for universal access and fire mitigation.
- » Clearly communicate areas for active recreation and provide physical restrictions as appropriate and to limit disturbance to sensitive areas.



## Park Management

Manage the park efficiently with input from stakeholders and the community.

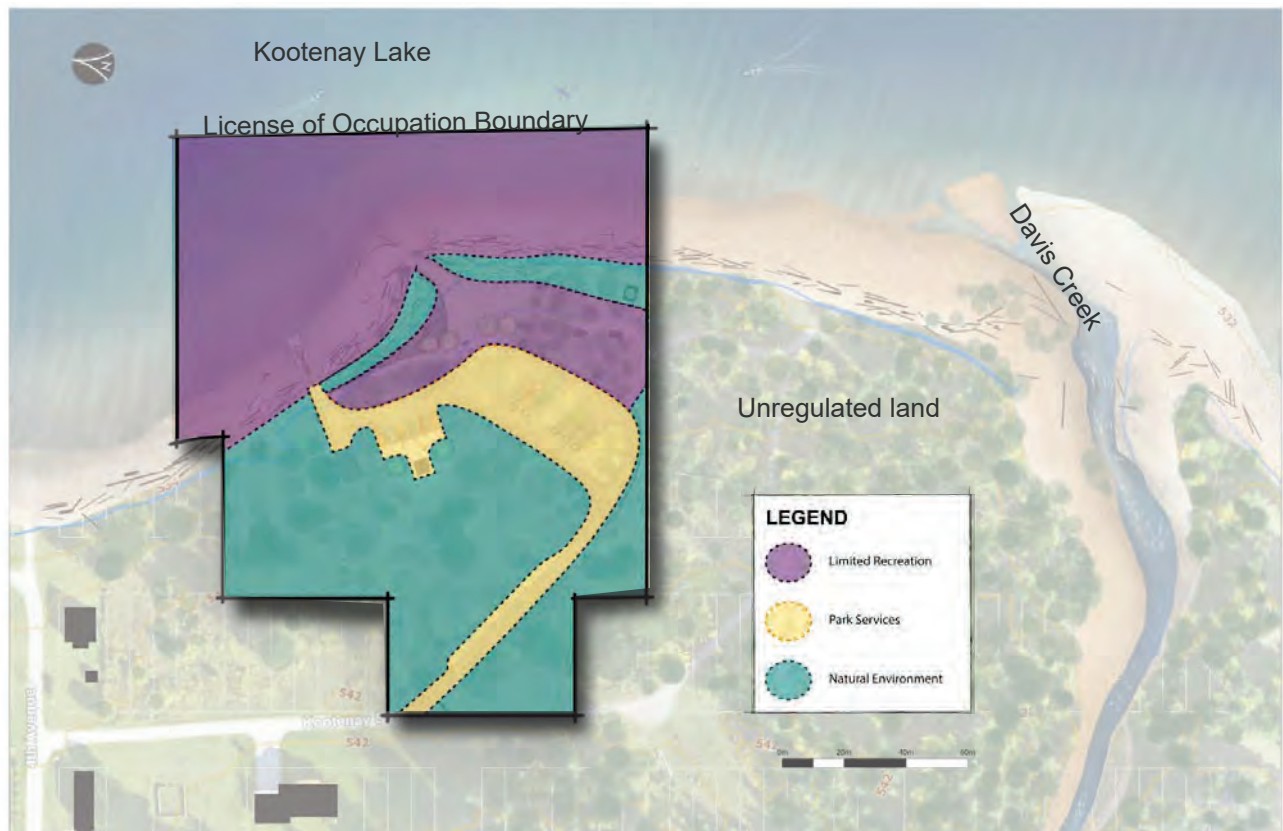
- » Continue to receive feedback from the local community and respect the rights of stakeholders.
- » Manage staff resources for efficiency of park maintenance.
- » Plan and manage the park in a way that minimizes fire risk.
- » Provide public amenities that support visitor enjoyment and environmental protection such as: a small washroom facility, signage, garbage management, and rest opportunities.



# Management Plan

## Design Concept

The design concept for Lardeau Regional Park establishes park management zones for different levels of use. The design concept includes amenity and infrastructure improvements. Preliminary design concepts are in **Appendix C**, and the preferred design concepts are in **Appendix E**. The management zones and design features of the preferred concepts are outlined below.



Park Management Zones Key Plan

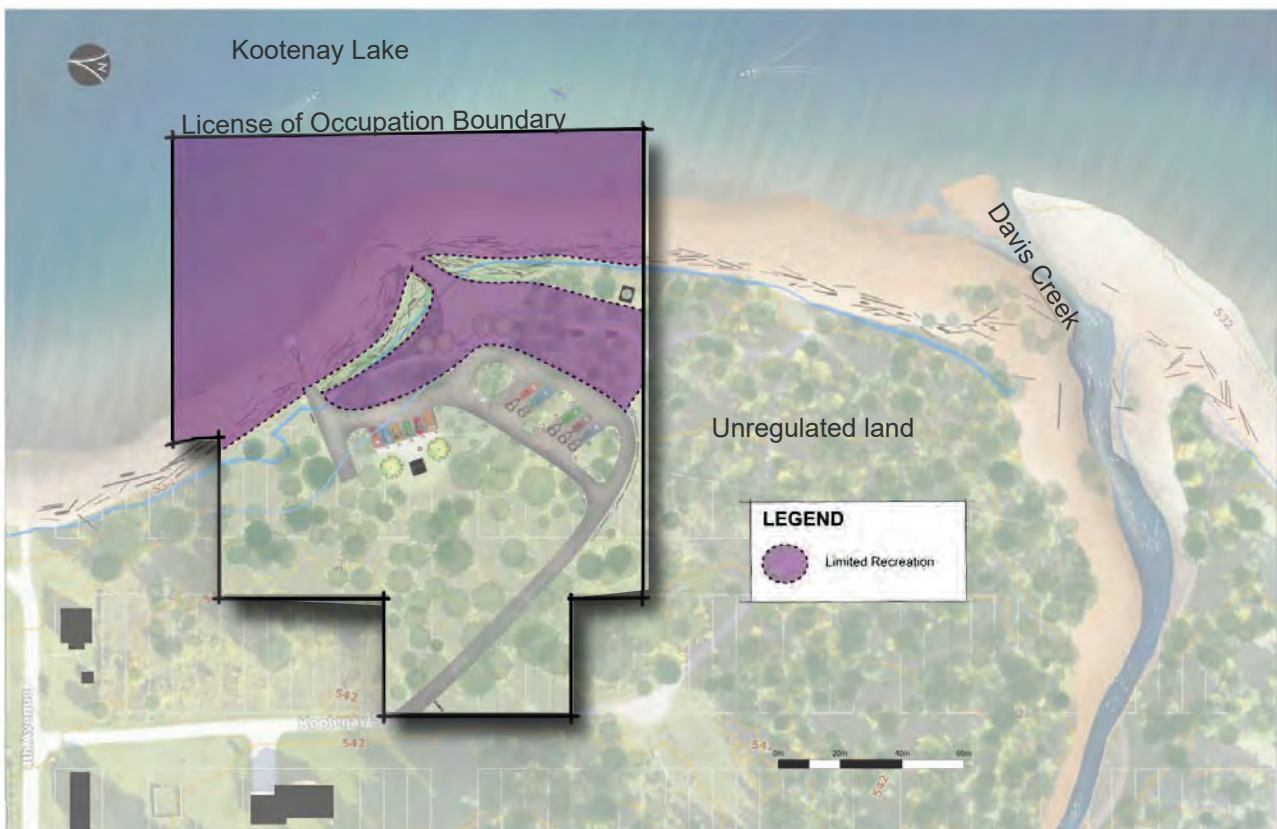
## Park Management Zones

### **Limited Recreation**

The Limited Recreation Zone includes the primary day use areas in the park. The proposed high-water trail links the north end of the park to the washroom, the day use areas and Crown land to the south. If the park expands into the Crown land in the future, this trail will provide access to the beach at the mouth of Davis Creek as well as upstream along the creek. The day use areas include the boat launch, an open grassed picnic area as well as a shaded picnic area in the existing forest immediately to the south. When the lake elevation permits, the beach below high water should also be considered part of this zone.

The following considerations pertain to the Limited Recreation Zone:

- » Critical wildlife habitat, specifically wildlife trees, should be retained where possible. The presence of these features should be considered in the finalization of the trail network. Ideally trails should avoid higher risk areas adjacent to mature trees with high wildlife value (e.g., potential nest cavities and perches) to mitigate the need for hazard tree management.
- » Where sanctioned trails intersect the high-water mark to create beach access, trails should be aligned to avoid actively eroding steep banks and cross the high-water line at an oblique angle to reduce the erosion from foot traffic.

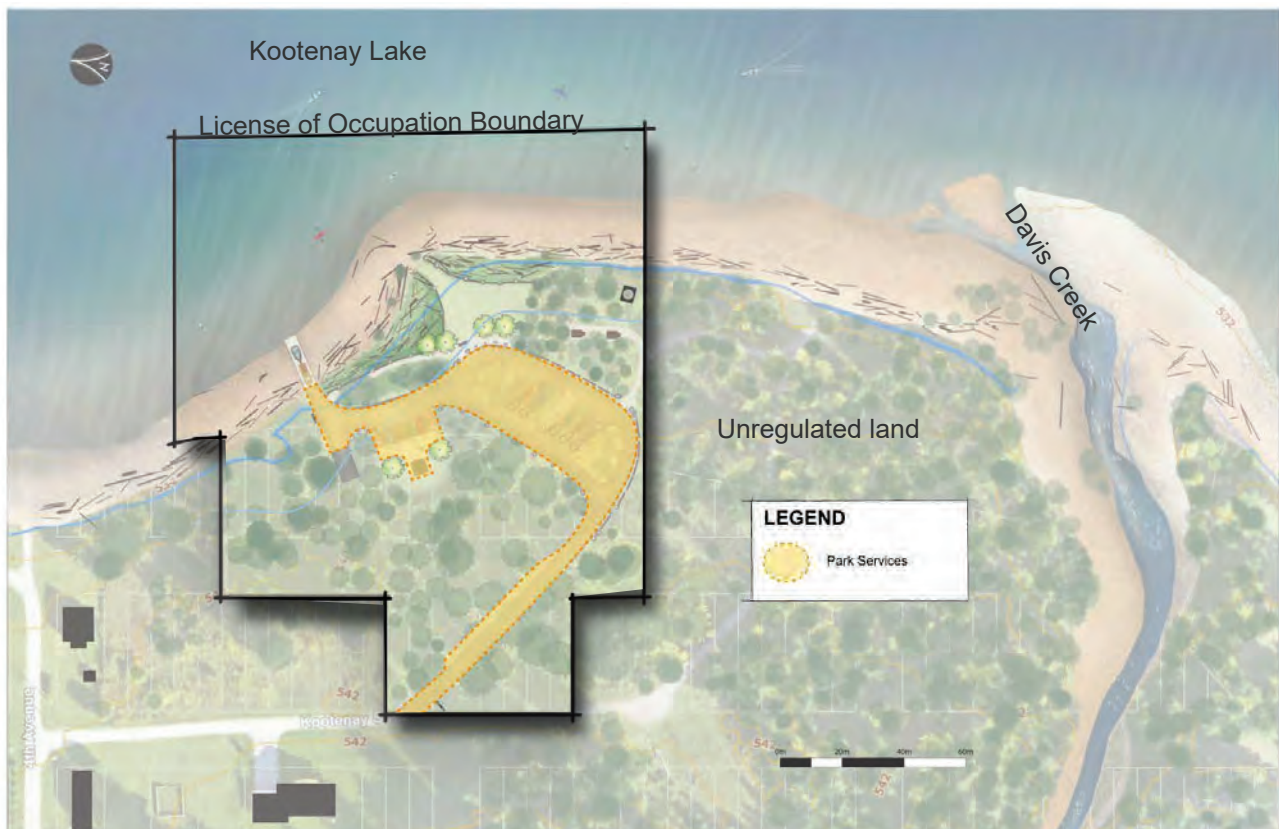




## Park Services

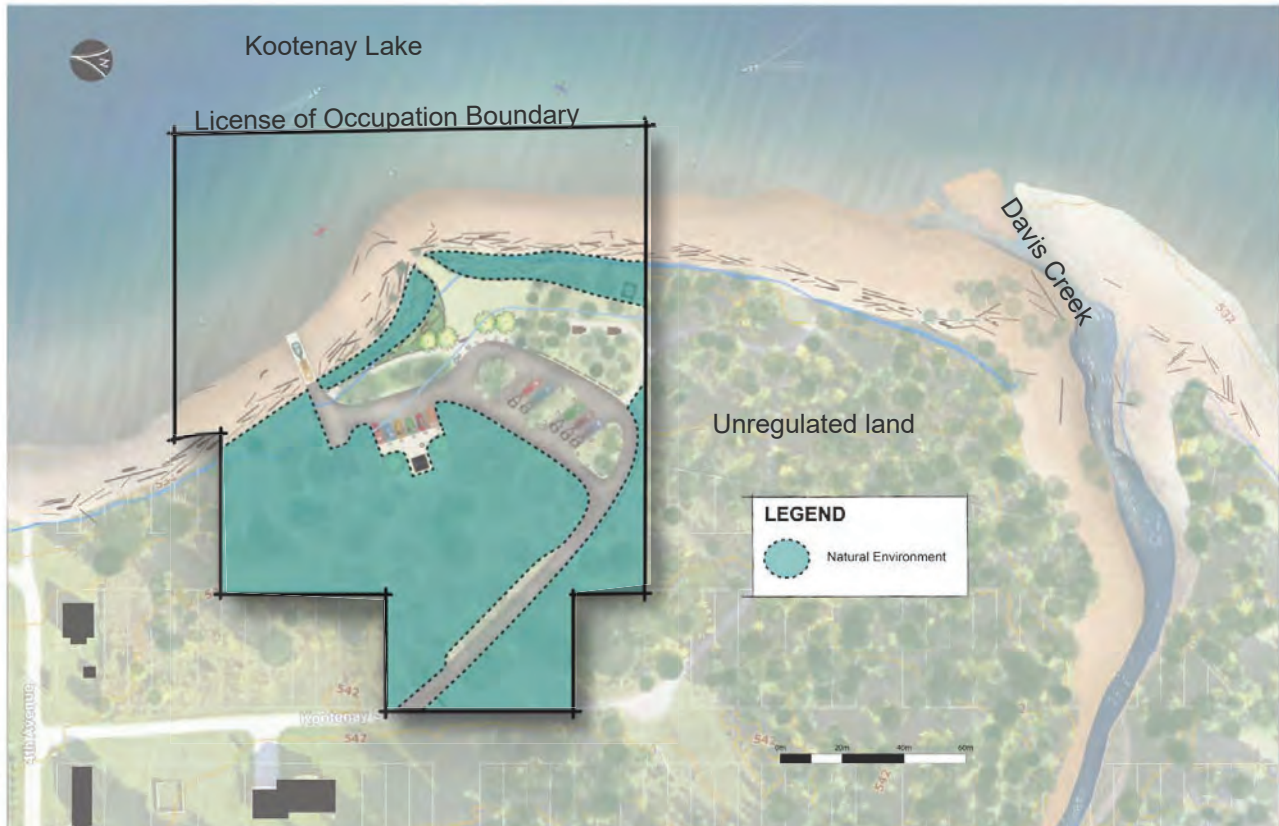
The Park Services Zone includes the newly defined parking areas and the washroom facility. The following considerations pertain to the Park Services Zone:

- » This zone is immediately adjacent to natural environment and day-use zones, and is therefore separated from these adjacent uses by barriers and boulders in order to restrict vehicles to intended areas.
- » Two stands of existing trees are proposed to remain and provide shade in the boat trailer area. These stands are to be protected by barriers and any dead and/or decaying snags should be left standing, unless they pose an immediate public safety hazard and are subject to monitoring.
- » Critical wildlife habitat, specifically wildlife trees, should be retained where possible, especially the large cottonwood located just southwest of the boat launch. This tree may require mitigation of hazard branches in order to preserve it in close proximity to the launch area.



## Natural Environment

The Natural Environment Zone represents the woodland with hummocky topography that occurs in the park, as well as the foreshore restoration area. This zone is intended to protect natural ecosystems for their intrinsic value, contributing to the park's biodiversity and not substantially influenced by recreational pressures. There are currently no sanctioned trails (only game trails) within this zone and it is assumed that recreational development in this zone will be limited to the segment of the high-water trail that links to 4th Avenue.



The following considerations pertain to the Natural Environment Zone:

- » Recreation within this zone is limited to low-impact walking and hiking on sanctioned trails only.
- » Any unsanctioned or redundant trails within this zone should be considered for decommissioning.
- » Foreshore areas in this zone offer nesting habitat for shore birds. Protecting this area from foot traffic with barriers to limit wildlife disturbance is a priority.






- » The large woody debris deposited by the lake provides structural complexity and should be retained to optimize habitat quality for shorebirds. It is recommended to retain a 27-100m wide area for coarse woody debris along the shoreline to provide sufficient habitat for shorebirds and other animals<sup>1</sup>. Leaf litter and bark fragments from trees and shrubs growing in the riparian zone also contribute to the formation of fine woody debris that becomes detritus and settles in crevices along the shoreline<sup>2</sup>. Development along the shoreline and removal of coarse woody debris removes food and shelter required by shorebirds, making them more vulnerable to storms and predation. Installing riprap and seawalls along shorelines can increase siltation and impact existing habitat, and installing piers where waterfowl live reduces available habitat and causes them to choose less ideal nesting locations. Development also reduces the vertical stratification of forested areas that many birds require for habitat stratification<sup>3</sup>.
- » Where unsanctioned dumping of yard waste has degraded the natural condition in the forest, removal efforts in conjunction with future access management should be implemented. Signage may be warranted if behaviour continues after park is commissioned.
- » The Natural Environment Zone should be evaluated for non-native and invasive plant species, and an organic weed management strategy should be implemented.
- » Mature trees, including those that are dead and/or decaying (snags) should be left standing, unless they pose an immediate public safety hazard.
- » Habitat enhancement opportunities (e.g., construction of nesting platforms, nest boxes), especially for rare and endangered species, should be explored.

1 Environment Canada. 2013. How Much Habitat is Enough? 3rd Edition.  
 2 Engel, Sandy, and Jerry L. Pederson Jr. December 1998. The construction, aesthetics, and effects of lakeshore development: a literature review.  
 3 Ibid



## Permitted Uses

The management plan recommends the following permitted uses, which will be incorporated into and managed under the Park Regulation Bylaw. The table below outlines the permitted activities that can occur within each management zone.

Permitted Uses	Natural Environment	Limited Recreation	Park Services
 Parking			Y
 Hiking/Walking/Running	Y	Y	Y
 Nature Appreciation	Y	Y	Y
 Picnicking		Y	
 Winter Activities		Y	
 On-leash dog walking	Y	Y	Y
 Swimming	Y	Y	
 Boating	Y	Y	
 Special Uses and Events*		Y	Y
 Commercial Uses**		Y	

\* Special Use means any service, activity, or event as defined and required by RDCK special use permit

\*\* Requires approval by RDCK.

All other RDCK permitted uses and restrictions are consistent with the Regional Parks Regulation Bylaw No. 2173. Typical restrictions include:

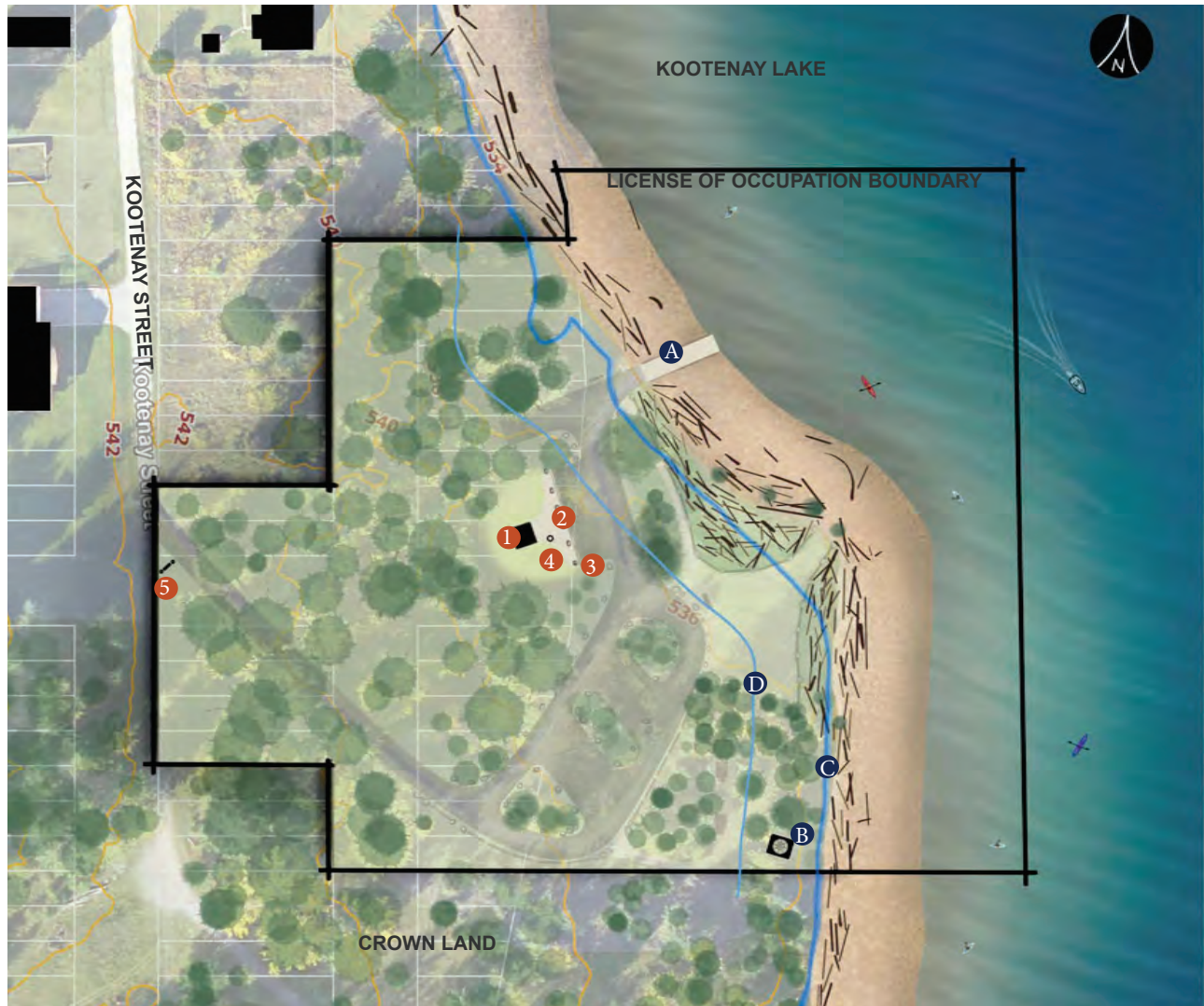
- » No alcohol
- » No alteration to natural features
- » No fires
- » No overnight camping
- » No overnight parking
- » No off-road vehicle use
- » No dumping or disposal
- » Dogs must be kept on leash (unless otherwise indicated)
- » No firearms
- » No hunting or trapping
- » No dumping or disposal
- » No smoking
- » No littering



## Preferred Park Designs-Proposed Features

Figures 3 - 5 depict a sequence of phasing the preferred park design option beginning with an initial phase to introduce a washroom and two subsequent phases to implement a minimum standard for park improvements. The specific elements and rationale of the designs are described in the following pages.

Figure 3: Base Park Establishment Plan - Phase 1



### LEGEND

- ① WASHROOM
- ② ACCESSIBLE PEDESTRIAN CONNECTION
- ③ VEHICULAR BARRIER
- ④ WASTE RECEPTACLE
- ⑤ ENTRY SIGN

- Ⓐ EXISTING BOAT RAMP
- Ⓑ EXISTING LIGHTHOUSE
- Ⓒ HIGH WATER 534.7m
- Ⓓ 15m RIPARIAN SETBACK



Figure 4: Base Park Establishment Plan - Phase 2



**LEGEND**

- |   |                                    |   |                      |
|---|------------------------------------|---|----------------------|
| ① | VEHICULAR CIRCULATION IMPROVEMENTS | Ⓐ | EXISTING BOAT RAMP   |
| ② | VEHICULAR BARRIER                  | Ⓑ | EXISTING LIGHTHOUSE  |
| ③ | VEGETATION RESTORATION             | Ⓒ | HIGH WATER 534.7m    |
| ④ | HABITAT PROTECTION BARRIER         | Ⓓ | 15m RIPARIAN SETBACK |
| ⑤ | ACCESSIBLE PATHWAY                 |   |                      |
| ⑥ | ACCESSIBLE PICNIC AREA             |   |                      |



### **Washroom**

In order to ensure public safety, comfort for park users, an accessible single-stall washroom with a CSA-compliant sealed tank is proposed for the park. The washroom is proposed to be located northwest of the parking area, above the minimum flood elevation of 536.5 m . This location is to be confirmed by an engineer during future design.

### **Vehicular Circulation**

The park plan proposes continued use and surface improvement of the existing road network, while removing vehicular access to sensitive areas. An extension hammer head is proposed to facilitate proper alignment of trailers to the ramp to compensate for the closure of the lower section of road that is currently used by ramp users.

### **Protective Barriers**

Vehicular barriers are proposed along the edge of parking areas and access roads to prevent damage to natural and sensitive features. These barriers are especially important where established user patterns are being intentionally altered to limit disturbance to riparian areas.

In addition to barriers limiting vehicular movements, the design concept proposes barriers to discourage pedestrian access into the most sensitive riparian habitat areas.

### **Signage**

The addition of entry signage at the end of Kootenay Street will direct park users to the vehicle and boat trailer parking area, while regulatory/interpretive signage at the boat launch is proposed to inform and educate visitors about park rules and interpret important site features.

### **Site Furnishings**

An important element of creating visible stewardship in the newly established park is providing a bear-proof receptacle for visitors to deposit waste. Universally accessible picnic tables and a bench with views to the lake are proposed in active areas of the site to support passive enjoyment of the park, enhance gathering spaces and accommodate users on all abilities.



*Accessible washroom at Crescent Valley Beach*

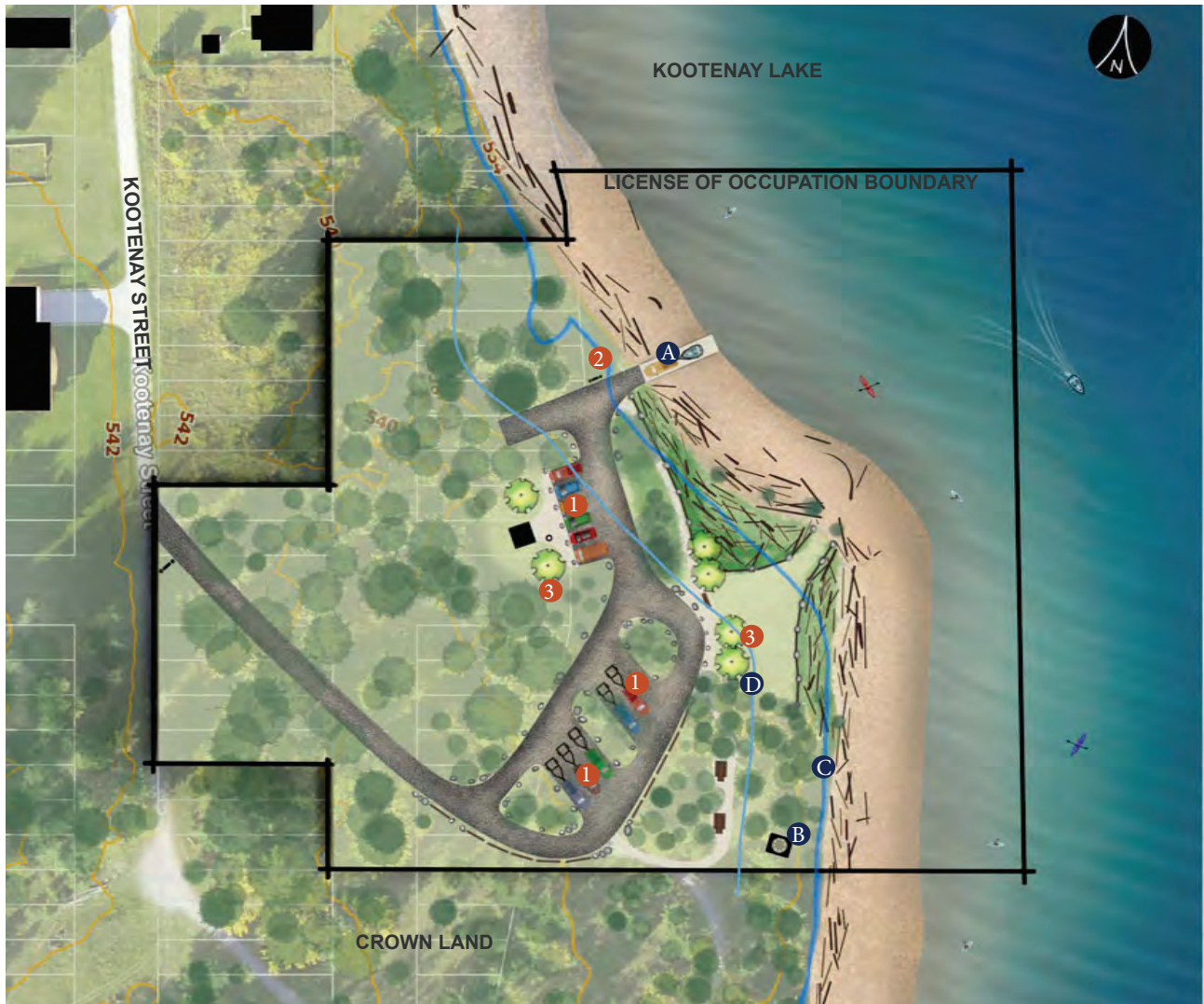


*Bear-proof waste receptacle at Crescent Valley Beach*



*Signage structure at Crescent Valley Beach*

Figure 5: Base Park Establishment Plan - Phase 3



**LEGEND**

- ① PARKING IMPROVEMENTS
- ② INTERPRETIVE SIGNAGE
- ③ SHADE TREE (TYP.)

- Ⓐ EXISTING BOAT RAMP
- Ⓑ EXISTING LIGHTHOUSE
- Ⓒ HIGH WATER 534.7m
- Ⓓ 15m RIPARIAN SETBACK



### ***Accessible Pathways***

Accessible compacted aggregate pathways are proposed to facilitate access to both the washroom facility, a picnic area and the boat ramp.

### ***Vegetation Restoration***

Additional shade trees and restoration seeding in disturbed and high use areas will improve the micro-climate and park experience for site users and reduce the establishment of invasive species. Restoration of riparian vegetation in areas where vehicular access has been restricted will improve ecosystem health and integrity.

### ***Parking Improvements***

The park concept proposed relocating parking outside the 15-metre riparian setback. In addition to the six pull-in stalls adjacent to the washroom, the concept proposes six dedicated pull-through boat trailer parking stalls.

### ***Existing Features***

The lighthouse, which is operated by Transport Canada, remains in its existing location.



*Accessible aggregate pathway Crescent Valley Beach*



*Existing lighthouse at Lardeau Regional Park*





### **Park Boundary**

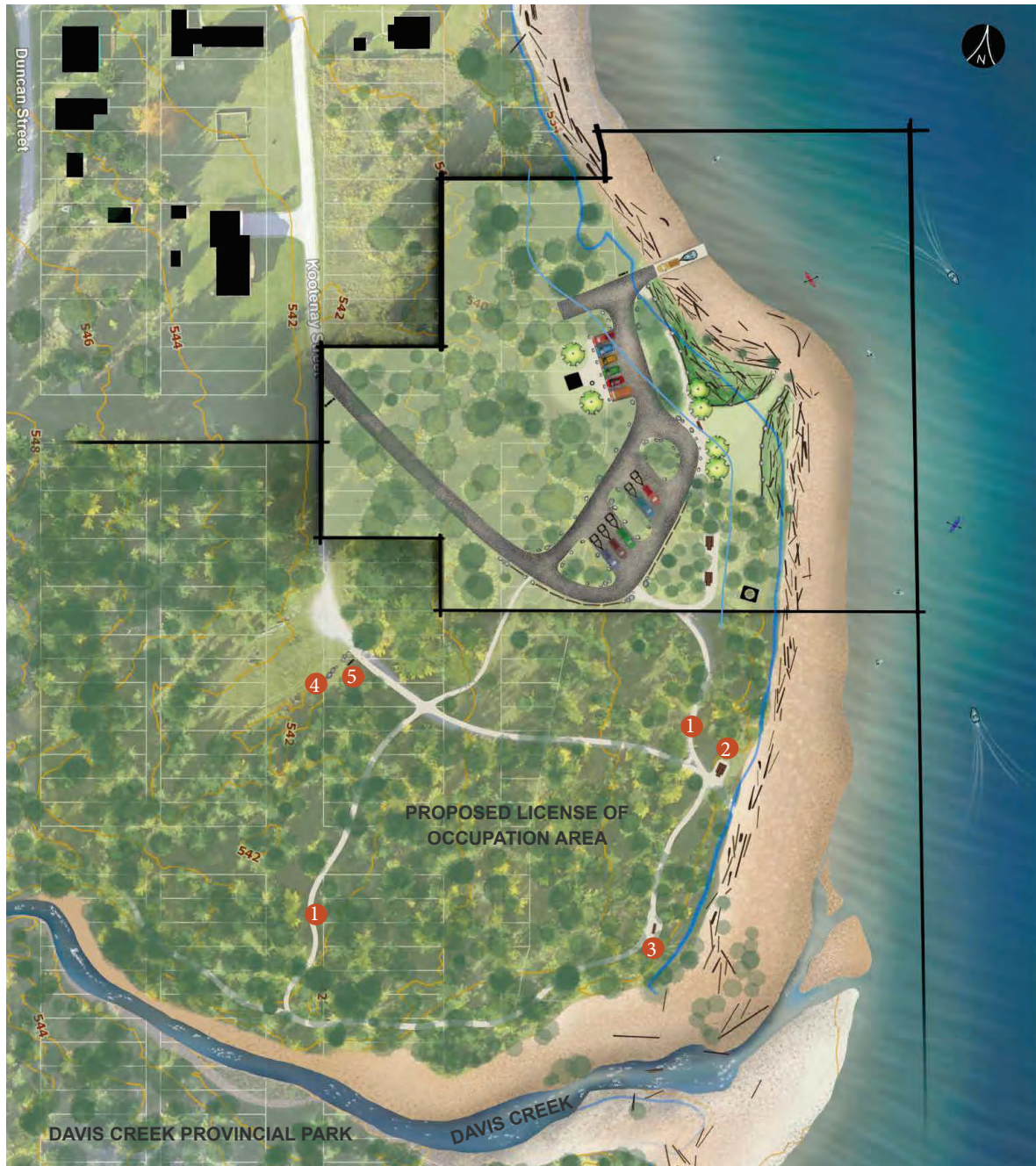
**Figure 6** depicts a future condition wherein the park boundary is expanded to include unregulated crown land to the south of the park. The precise boundary is not known, however may be explored in a future study informed by the proposed improvements shown in **Figure 5**. Expanding the park boundary in the future would provide the following advantages:

- » Creates an economy of scale benefit with respect to recreation value for tax-payer investment given the additional land that would be protected for future recreation while being serviced by the phase one amenities.
- » Provides legal framework for restricting camping, thereby reducing fire risk and unsanitary conditions in the forest from unregulated camping with no washrooms
- » Provides an opportunity to preserve and enhance the habitat and recreational values in the adjacent lands
- » Eliminates risk of future land development and conflicting land use adjacent to the park

In the expanded park boundary concepts, a network of interconnected trails provides a continuation of the high-water trail and facilitates access to the mouth and northern bank of Davis Creek. If this expansion is completed, a refined park plan will be required to confirm appropriate amenities based on actual boundaries and allowed uses.



Figure 6: Expanded Park Boundary - Potential Amenities







**LEGEND**

- ① ACCESSIBLE PATH
- ② ACCESSIBLE PICNIC TABLE
- ③ BENCH
- ④ VEHICULAR BARRIER
- ⑤ TRAILHEAD SIGN



# Operations and Maintenance Guidelines

Several critical tasks will be required to support a positive visitor experience and the success of the park as a managed recreation area. These high-priority tasks are identified in the table below with an estimated frequency and timing. We anticipate that the presence of the wharf has the potential to increase park use and influence the frequency of these tasks relative to leaving the park without a wharf. A complete list of actions can be found in the Implementation Plan (**Figure 8**) in the following section.

Task	 Summer Frequency	 Spring/Fall Frequency	 Winter Frequency	 Duration
Washroom cleaning	2x-3x Weekly	Weekly	Bi-Weekly	Ongoing
Washroom pumping	As needed	As needed	As needed	Ongoing
Waste removal	2x-3x Weekly	Weekly	Bi-Weekly	Ongoing
Boat ramp sediment removal	Bi-monthly or following storm event	Bi-monthly or following storm event	Bi-monthly or following storm event	Bi-monthly or following storm event
Driftwood management*	As needed	As needed	As needed	Ongoing
Vegetation Management	Bi-monthly	N/A	N/A	2-5 Years
Refinish site furnishings	N/A	N/A	As needed	Ongoing
Damage/ vandalism repair	Monthly or as needed	As needed	As needed	Ongoing
Removal of illegally dumped waste	As needed	Monthly or as needed	As needed	Ongoing
Snow plowing	N/A	As needed	following snow event	Ongoing

\*Based on storm events and lake levels



# Implementation Plan

The 10-year implementation plan lists the proposed actions and capital costs from the management plan (**Figure 8**). For each action that involves capital works, the timing of works and estimated costs in 2020 dollars are provided. Capital costs are Class D order-of-magnitude costs that include a 20% contingency and 20% for design fees. For actions that require staff resources, the anticipated effort is recorded in dollars. Some actions need annual attention and others are one-time efforts, as indicated on the table. For the portions of the park requiring significant capital investments, a full estimate of the anticipated capital investments is provided in **Figure 7**.

Capital costs associated with improvements within an expanded License of Occupation that includes the unmanaged crown land south of the current park boundary to Davis Creek are highlighted for consideration in **Figure 9**.

The implementation plan for this park requires more resources than are currently or projected to be available for this park. There may be opportunities to find cost savings through:

- » reducing the level of service from what has been proposed in this management plan
- » establishing maintenance and operations partnerships with local residents
- » securing funding from new sources, such as grants, in the future

Having the management and implementation plan in place can aid in securing funds. The implementation plan will need to be updated on a regular basis as part of the regional district's budgeting process that considers all of the parks within its mandate.



Figure 7: Capital Cost Estimate

<b>LARDEAU REGIONAL PARK COST ESTIMATE</b>					
This estimate is based on the Lardeau Regional Park Management Plan (in 2020 dollars)					
ITEM	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	TOTAL PRICE
<b>Base Park Establishment Plan</b>					
<b>1</b>	<b>Site Preparation</b>				
1	Mobilization	allowance	1	\$5,000	\$5,000
2	Tree clearing and removal w/ stockpiling of bucked logs suitable for barrier	m2	810	\$6	\$4,500
3	Clear and grub vegetation	m2	810	\$5	\$4,100
4	Strip and stockpile topsoil	m2	810	\$3	\$2,000
5	Excavation w/ offsite disposal (assume 300 mm depth for roads/parking)	m2	625	\$6	\$3,800
6	Excavation w/ offsite disposal (assume 150 mm depth for paths)	m2	290	\$3	\$900
<b>2</b>	<b>Vehicular Circulation</b>				
1	Improved (new) parking and hammerhead - granular surfacing	m2	625	\$45	\$28,100
2	Restore existing granular road (grade and granular top course)	m2	1580	\$20	\$31,600
<b>3</b>	<b>Trail Circulation</b>				
1	Accessible aggregate site pathways	m2	290	\$20	\$5,800
<b>4</b>	<b>Building Structures</b>				
1	Accessible washroom	ea	1	\$25,000	\$25,000
<b>5</b>	<b>Habitat Restoration</b>				
1	Riparian vegetation restoration allowance (topsoil, planting)	m2	45	\$25	\$1,100
<b>6</b>	<b>Landscape Improvements</b>				
1	Restoration seeding (topsoil, establish native grass)	m2	700	\$5	\$3,500
2	New shade tree (6 cm cal. standard, b&b)	ea	6	\$600	\$3,600
3	Habitat protection barrier (log and boulder placement)	lin m	100	\$50	\$5,000
4	Vehicular barrier	allowance	1	\$14,000	\$14,000
5	Regulatory/interpretive signage (allowance)	ea	1	\$6,000	\$6,000
6	Entry Sign	ea	1	\$2,500	\$2,500
<b>7</b>	<b>Furnishings</b>				
1	Bench w/ back (typical on concrete pad)	ea	1	\$2,000	\$2,000
2	Picnic tables (typical on concrete pad)	ea	2	\$3,000	\$6,000
3	Waste receptacle - bear proof	ea	1	\$2,500	\$2,500
<b>SUBTOTAL</b>					<b>\$157,000</b>
<i>Sub-total (Rounded)</i>					<i>\$157,000</i>
<i>Allocated Design and Contingency Amount (50/50)</i>				40%	<i>\$63,000</i>
<b>TOTAL ESTIMATED COST</b>					<b>\$220,000</b>



Figure 8: 10-Year Implementation Plan

Item #	Management Plan Actions	SHORT TERM					MEDIUM TERM					LONG TERM					Budget Allocation (with 20% contingency)	
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Budget Allocation	20% Contingency					
<b>5.1 Environment</b>																		
1	Riparian Restoration Planting		\$1,320.00													\$1,100.00	\$200.00	\$1,320.00
2	Restoration Seeding	\$720.00	\$5,480.00													\$3,500.00	\$700.00	\$4,200.00
3	Shade Tree Planting			\$4,320.00												\$3,600.00	\$720.00	\$4,320.00
4	Protective Barriers	\$4,000.00	\$6,000.00	\$6,000.00						\$6,800.00						\$19,000.00	\$3,800.00	\$22,800.00
	<b>Subtotal</b>	<b>\$4,720.00</b>	<b>\$10,800.00</b>	<b>\$10,320.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$6,800.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$27,200.00</b>	<b>\$5,440.00</b>	<b>\$32,640.00</b>
<b>5.2 Sense of Place</b>																		
1	Signage-Entry	\$3,000.00														\$2,500.00	\$500.00	\$3,000.00
2	Signage-Interpretive/Regulatory	\$7,200.00														\$6,000.00	\$1,200.00	\$7,200.00
	<b>Subtotal</b>	<b>\$10,200.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$8,500.00</b>	<b>\$1,700.00</b>	<b>\$10,200.00</b>
<b>5.3 Recreation</b>																		
1	Vehicular circulation and parking improvements		\$46,680.00	\$48,240.00												\$79,100.00	\$15,820.00	\$94,920.00
2	Trail Improvements	\$2,760.00	\$5,280.00													\$6,700.00	\$1,340.00	\$8,040.00
4	Washroom installation	\$30,000.00														\$25,000.00	\$5,000.00	\$30,000.00
5	Site Furnishings Installation	\$3,000.00	\$9,600.00													\$10,500.00	\$2,100.00	\$12,600.00
	<b>Subtotal</b>	<b>\$35,760.00</b>	<b>\$61,560.00</b>	<b>\$48,240.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$121,300.00</b>	<b>\$24,260.00</b>	<b>\$145,560.00</b>
	<b>TOTAL CAPITAL</b>	<b>\$50,680.00</b>	<b>\$72,360.00</b>	<b>\$58,560.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$6,800.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$157,000.00</b>	<b>\$31,400.00</b>	<b>\$188,400.00</b>
<b>5.4 Design and Studies</b>																		
1	Detailed Design including survey and geotechnical	\$12,000.00	\$16,000.00	\$3,400.00														\$31,400.00
2	Environmental Assessment		\$16,000.00															\$16,000.00
3	Archaeological Assessment and Monitoring	\$12,000.00	\$9,500.00	\$8,500.00														\$30,000.00
	<b>Subtotal</b>	<b>\$24,000.00</b>	<b>\$41,500.00</b>	<b>\$11,900.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$0.00</b>	<b>\$77,400.00</b>
<b>5.5 Park Management and Operations</b>																		
1	Plan implementation (coordination, capital project management, coordination of partnerships, intergovernmental communications)	\$4,000.00	\$3,000.00	\$3,500.00	\$3,500.00	\$3,500.00	\$3,500.00	\$3,500.00	\$3,500.00	\$3,500.00	\$3,500.00	\$3,500.00	\$3,500.00	\$3,500.00	\$3,500.00	\$3,500.00	\$3,500.00	\$35,000.00
2	Bylaw enforcement	\$2,000.00	\$2,000.00	\$1,400.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$1,000.00	\$11,700.00
3	Five/Ten-Year Management Plan Review	\$850.00	\$850.00	\$850.00	\$850.00	\$850.00	\$850.00	\$850.00	\$850.00	\$850.00	\$850.00	\$850.00	\$850.00	\$850.00	\$850.00	\$850.00	\$850.00	\$8,500.00
4	Washroom Cleaning and Servicing	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00	\$1,400.00	\$14,000.00
5	Garbage removal	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$12,000.00
6	Sediment management at boat ramp	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$12,000.00
7	Driftwood management	\$3,000.00	\$3,000.00	\$3,000.00	\$3,000.00	\$3,000.00	\$3,000.00	\$3,000.00	\$3,000.00	\$3,000.00	\$3,000.00	\$3,000.00	\$3,000.00	\$3,000.00	\$3,000.00	\$3,000.00	\$3,000.00	\$30,000.00
8	Day-use area and trail upkeep	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$1,200.00	\$12,000.00
9	Snow plowing	\$14,850.00	\$12,650.00	\$13,750.00	\$11,650.00	\$20,850.00	\$11,150.00	\$9,950.00	\$11,750.00	\$11,150.00	\$11,150.00	\$11,150.00	\$11,150.00	\$11,150.00	\$11,150.00	\$11,150.00	\$11,150.00	\$127,700.00
	<b>Subtotal</b>	<b>\$14,850.00</b>	<b>\$12,650.00</b>	<b>\$13,750.00</b>	<b>\$11,650.00</b>	<b>\$20,850.00</b>	<b>\$11,150.00</b>	<b>\$9,950.00</b>	<b>\$11,750.00</b>	<b>\$11,150.00</b>	<b>\$11,150.00</b>	<b>\$11,150.00</b>	<b>\$11,150.00</b>	<b>\$11,150.00</b>	<b>\$11,150.00</b>	<b>\$11,150.00</b>	<b>\$11,150.00</b>	<b>\$127,700.00</b>







Figure 9: Probable capital costs of expanding the park license of occupation

<b>LARDEAU REGIONAL PARK COST ESTIMATE</b>					
This estimate is based on the Lardeau Regional Park Management Plan (in 2020 dollars)					
ITEM	DESCRIPTION	UNIT	EST. QTY.	UNIT PRICE	TOTAL PRICE
<b>ADD EXPANDED PARK OPTION (License of Occupation)</b>					
<b>1</b>	<b>Site Preparation</b>				
	1 Excavation w/ offsite disposal (assume 150 mm depth for paths)	m2	545	\$3	\$1,600
<b>2</b>	<b>Trail Circulation</b>				
	1 Accessible aggregate site pathways	m2	545	\$20	\$10,900
<b>3</b>	<b>Landscape Improvements</b>				
	1 Vehicular barrier	allowance	1	\$3,000	\$3,000
<b>4</b>	<b>Furnishings</b>				
	1 Bench w/ back (typical on concrete pad)	ea	1	\$2,000	\$2,000
	2 Picnic tables (typical on concrete pad)	ea	1	\$3,000	\$3,000
<b>SUBTOTAL</b>					<b>\$20,500</b>
<i>Allocated Design and Contingency Amount (50/50)</i>				40%	\$8,000
<b>TOTAL ESTIMATED COST</b>					<b>\$29,000</b>



