

# Gardom Lake Management Plan

Prepared for:  
Columbia Shuswap Regional District

Prepared by:  
Fraser Basin Council on behalf of the Gardom Lake Planning Committee

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## Acknowledgments

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A planning process takes funding, expertise, commitment, time, and much more. The following groups made the development of the Gardom Lake Management Plan possible:

- The Columbia Shuswap Regional District
- The Gardom Lake Planning Committee volunteers

## Purpose

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Gardom Lake is home to loons, painted turtles, a passionate group of residents and is a sought after recreation and fishing destination. The purpose of this plan is to make collaborative management recommendations to the Columbia Shuswap Regional District to address issues and maintain values raised by residents at a public meeting in November 2014.

# Gardom Lake Planning Committee

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A Gardom Lake Planning Committee (GLPC) was formed and met for the first time in December 2014. The purpose of the Committee was to guide the Gardom Lake planning process.

The GLPC is composed of representatives from four orders of government (federal, provincial, local, first nations), organizations, recreation groups, and property owners. The Committee members agreed that there would be no Chairperson identified. The following groups/organizations are represented on the Gardom Lake Planning Committee or receive ongoing communication throughout the planning process:

- Columbia Shuswap Regional District (CSRD)
- Ministry of Forests Lands and Natural Resource Operations (MFLNRO)
- Ministry of Environment (MOE)
- BC Lakes Stewardship Society (BCLSS)
- Ministry of Transportation and Infrastructure (MOTI)
- Secwepemc - Splatsin
- Secwepemc - Neskonlith
- Secwepemc - Adams Lake Indian Band
- Secwepemc - Little Shuswap Indian Band
- Syilx - Okanagan Indian Band
- Gardom Lake Bible Camp
- North Okanagan Holding Society and Legion
- Friends of Gardom Lake (comm. with Shuswap Naturalists)
- Rancho Deep Creek Community Association
- Gardom Lake Community Park Society
- Kalamalka Fly Fishers Association
- Salmon Arm Fish and Game Club
- Agriculture sector

## 1 Gardom Lake & Surrounding Area

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### 1.1 Landscape & Lake

Gardom Lake is approximately 75 hectares (ha) and is at 545 m in elevation. The deepest part of the lake is approximately 21 m and the shoreline is approximately 4 km long. The Gardom Lake watershed is approximately 417 ha and is comprised largely of forested land and some private residential land on and near the lakeshore<sup>1</sup>.

Gardom Lake is in the Interior Douglas Fir (IDF) Biogeoclimatic Zone and in the moist warm subzone. The IDFmw is characterized by warm, dry summers and cool winters<sup>2</sup>.

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<sup>1</sup> BC Lake Stewardship and Monitoring Program – Gardom Lake 2010-2012 <http://www.bclss.org/>

<sup>2</sup> Selkirk College website <http://selkirk.ca/discover/bec/>

## 1.2 First Nations Rights

Secwepemc and Syilx people have lived in and around the Gardom Lake area for thousands of years, long before the arrival of European settlers. First Nations' title and rights are evolving through the courts and the treaty process, and exist throughout the planning area.

## 1.3 Legislation & Existing Plans

There are several pieces of legislation and existing plans that pertain to the management of Gardom Lake and the development/management of the foreshore and surrounding watershed including the following:

- BC Land Act – Government of British Columbia
- BC Water Act (BC Water Sustainability Act) – Government of British Columbia
- Forest and Range Practices Act – Government of British Columbia
- Fisheries Act – Government of Canada
- Shipping Act – Government of Canada
- [Ranchero/Deep Creek Land Use Bylaw No. 2100](#)
- [Ranchero/Deep Creek Official Community Plan \(CSRD\) Bylaw No. 750](#)
- [Ranchero/Deep Creek Official Community Plan Amendment \(CSRD\) Bylaw No. 750-1](#)

## 2 Vision for Gardom Lake

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Collaboratively preserve and protect the values and ecological integrity of Gardom Lake and manage impacts that affect it.

## 3 Goals, Objectives & Actions

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### 3.1 Water

#### Goal 1: Maintain or improve the water quality of Gardom Lake

**Objective 1A:** Determine the current water quality of Gardom Lake

**Action 1A-1:** Ministry of Environment will compare existing water quality data with national water quality standards to determine the need for testing additional parameters and to identify data gaps – **2015**

**Action 1A-2:** Ministry of Environment to identify test sites (two, upper and lower) and conduct standard water quality tests on Mallory Creek – **2015/ongoing**

**Action 1A-3:** Ministry of Environment to identify a suitable site or sites and conduct bio-monitoring on Mallory Creek – **2016/2017**

**Objective 1B:** Develop and implement a water quality monitoring plan for Gardom Lake

**Action 1B-1:** BC Ministry of Environment to identify water quality testing parameters, timing, and frequency at Gardom Lake and Mallory Creek, to address data gaps identified in action 1A-1; local volunteers will carry out testing – **2015**

**Action 1B-2:** BC Ministry of Environment, Columbia Shuswap Regional District, and local stewardship groups, work together to collaboratively collect and share water quality data from Gardom Lake and Mallory Creek – **2015**

Goal 2: Establish greater baseline water quantity data for Gardom Lake

**Objective 2A:** Determine the water quantity trends in Gardom Lake

**Action 2A-1:** Determine a location and establish an official staff gauge at Gardom Lake and record lake levels on an ongoing basis – **2015**

**Action 2A-2:** The Ministry of Environment will establish a V notch weir/calibrated flume in the inlet (and at the outlet when water is flowing) to determine the inflow and outflow of Gardom Lake and calculate the volume and water balance; local volunteers will take weekly readings at the weir(s) – **2015**

Goal 3: Educate Gardom Lake residents and visitors about water quality

**Objective 3A:** Provide educational opportunities to Gardom Lake residents regarding water quality and beneficial practices

**Action 3A-1:** Advertise educational opportunities for residents including but not limited to septic systems, yard maintenance, riparian health, household chemicals, and best practices for pets around water, on the CSRD and other interested group/organization websites – **2015/ongoing**

**Action 3A-2:** Develop and deliver water quality educational workshops for the residents of Gardom Lake on topics including but not limited to those listed in action 3A-1 – **2015/ongoing**

**Action 3A-3:** Provide educational materials including print materials, advertising, and signage for visitors to Gardom Lake on issues related to water quality as part of an overall interpretive plan in goal 6 – **2015/ongoing**

## 3.2 Environment

### Goal 4: Maintain or improve the riparian zone of Gardom Lake

**Objective 4A:** Assess the riparian zone across the whole lakefront

**Action 4A-1:** BC Ministry of Environment, Columbia Shuswap Regional District and local stewardship groups work together to map and evaluate the riparian zone – **2015**

**Objective 4B:** Educate Gardom Lake area residents, property owners/managers, and visitors/users about the importance, function, and health of riparian ecosystems

**Action 4B-1:** Develop and deliver two or more riparian workshops/field days with expertise from but not limited to Thompson Rivers University and the BC Ministry of Environment – **2015/ongoing**

**Action 4B-2:** Provide a list of native plants suitable for the riparian zone of Gardom Lake and a list of invasive species to avoid planting; post lists on the CSRD and other interested group/organization websites – **2015**

**Action 4B-3:** Provide stewardship resources for Gardom Lake residents on but not limited to the CSRD and other interested group/organization websites – **2015**

**Objective 4C:** Educate Gardom Lake area residents and visitors about local flora and fauna and beneficial practices in and around the lake

**Action 4C-1:** Columbia Shuswap Regional District, First Nations, and other interested groups/individuals to develop and implement an interpretive plan for Gardom Lake that includes but is not limited to biodiversity, ecology, native and invasive species, cultural heritage, history, and endangered species – **2016/2017**

### Goal 5: Maintain or improve the upland areas of Gardom Lake

**Objective 5A:** Educate **upland owners** about the relationship between upland areas and lake health, water quality, and related beneficial practices

**Action 5A-1:** Advertise existing educational opportunities/materials for residents regarding healthy upland and lake health, water quality and related beneficial practices on the CSRD and other interested group/organization websites – **2015/ongoing**

**Action 5A-2:** Develop and deliver educational materials for Gardom area residents regarding the relationship between **upland areas** and lake health, water quality, and beneficial practices – **2015/ongoing**

## 3.3 People

### Goal 6: Improve septic system health around Gardom Lake

#### **Objective 6A:** Inventory septic systems around Gardom Lake

**Action 6A-1:** Access septic system information for shoreline residences from Interior Health, BC Ministry of Environment, and CSRD; develop a map that shows system type, age, distance from the lake, and soil type – **2015**

**Action 6A-2:** Provide free, voluntary, and confidential septic system tests to shoreline residences – **2015/2016**

**Action 6A-3:** Conduct face to face surveys of shoreline residences regarding septic system knowledge – **2015**

#### **Objective 6B:** Educate Gardom Lake residents about beneficial management practices for septic systems near water

**Action 6B-1:** Distribute and promote existing resources from Interior Health and the CSRD to Gardom Lake area residences (*in conjunction with Action 6A-3*) – **2015/ongoing**

**Action 6B-2:** Include septic system health and management in a water quality workshop (Action 4B-1) – **2015/ongoing**

**Action 6B-3:** CSRD to provide a directory/or link to a directory of qualified septic system professionals on website – **2015**

#### **Objective 6C:** Implement a behaviour change campaign

**Action 6C-1:** Using results from the septic system inventory, provide homeowners that have properly functioning septic systems with a 'marker' to identify them in the community as such – **2016**

### Goal 7: Establish baseline recreation data for Gardom Lake

#### **Objective 7A:** Determine the amount and type of lake use

**Action 7A-1:** Compile historical recreation/lake use data from BC Parks, BC Ministry of Environment, and the BC Ministry of Forests, Lands and Natural Resource Operations – **2015/2016**

**Action 7A-2:** Develop and deliver a scientific lake use survey at Musgrave Road, Teal Road, Gardom Lake Park, Gardom Lake Bible Camp, and the Legion camp. The survey should include but not be limited to the following parameters: type of use, frequency, timing, and distance traveled – **2015/2016**



## Goal 8: Restore Mallory Creek

### **Objective 8A:** Develop a restoration plan

**Action 8A-1:** Form a restoration planning committee to oversee the development of the restoration plan – **2016**

### Lake Access

The Gardom Lake Planning Committee was unable to reach consensus on trailered boat access. As a result, the question regarding the need for trailered boat access was brought to the broader public for input in the form of a survey. The survey was filled out online, via email, and in hard copy over a two week period; 411 surveys were completed.

Most survey respondents provided detailed feedback regarding the overall Plan as well as trailered boat access; support for trailered boat access was divided approximately equally. Based on the feedback collected in the public survey and input from the Gardom Lake Planning Committee, recommendations for public access at Gardom Lake are as follows:

#### **Teal Road Access Point**

- a. MoTI to repair the surface of Teal Road – **2015**
- b. MFLNRO to repair and maintain the degraded lake access point and to remediate riparian vegetation where possible (*all permissions from federal and provincial agencies and the application of beneficial management practices throughout the repair process are implicit*) – **2016**
- c. MFLNRO to provide garbage/recycling bins and portable washrooms, and ongoing maintenance of those improvements – **2016**
- d. MFLNRO to “clean up” the shoulder area of both sides of the road and build privacy fencing for residences adjacent to the access – **2016**
- e. CSRD to erect signage – prior to the development of an interpretive plan (Action 4C-1)– redirecting people with small/non-trailered watercraft to the Musgrave Road and Gardom Lake Park access points (see below) – **2015**

#### **Musgrave Road Access Point**

- a. CSRD to erect signage – prior to the development of an interpretive plan (Action 4C-1) – regarding the presence of turtles/turtle habitat/nesting sites and best practices – **2015**
- b. CSRD to erect signage directing traffic approaching from both Gardom Lake Road and Deep Creek Road to launch small/non-trailered watercraft at the Musgrave Road and Gardom Lake Park access points and trailered boats at the Teal Road access – **2015**

### **Gardom Lake Park Access Point**

- a. Provide “boat caddies” to assist with the transport of small watercraft from the parking area to the lake – **2015**
- b. Remain open year round (provide year round maintenance) – **2015/ongoing**
- c. Upgrade bathroom facilities – **2016**
- d. Provide garbage and recycling bins – **2015**

### **General**

- a. CSRD to develop and provide information (physical signs, online, print materials) directing watercraft types to the appropriate access point as described above – **2015**

## 4 Funding

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### 4.1 Funding

Funding for the development of the Gardom Lake Management Plan was provided by the Columbia Shuswap Regional District.

### 4.2 Budget

The Gardom Lake planning process does not have an ongoing budget. If funding beyond the initial planning fund is obtained, those funds will be allocated as per the requirements of the fund and with guidance from the Gardom Lake Planning Committee and the Columbia Shuswap Regional District.

## 5 Governance

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The development of the Gardom Lake Management Plan was guided by the Gardom Lake Planning Committee. Decision making was achieved by consensus. The Gardom Lake Planning Committee will be in place until the Gardom Lake Management Plan is presented to the public in May 2015. After the completion of the Plan, the Committee will disband unless the Committee members decide otherwise.

# 6 Appendices

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## I. Gardom Lake Planning Committee - Terms of Reference

### *Background*

The Columbia Shuswap Region District (CSRD) would like to develop a lake management plan for Gardom Lake (*the what*) and a planning process (*the how*) that balances the economic, environmental, social, cultural, and recreation values and issues. The Fraser Basin Council has been tasked with coordinating this effort.

Support for a planning process for Gardom Lake was expressed by more than 45 people at a public meeting held on November 24, 2014; it was agreed that a planning committee be formed to report back to a larger public audience in spring 2015.

### *Purpose*

The purpose of the Gardom Lake Planning Committee is to utilize input from the November 24, 2014 public meeting and online survey to develop a draft Gardom Lake Management Plan and implementation/management options for presentation to the public in spring 2015 for feedback. Implementation may be conducted by an order of government and or community group.

### *Objectives*

- Review and integrate new information with existing plans including but not limited to:
  - [CSRD Ranchero/Deep Creek Official Community Plan](#)
  - First Nations Plans
  - [Okanagan Shuswap Land and Resource Management Plan](#)
- Develop the draft Gardom Lake Management Plan for presentation to the public in spring 2015
- Develop implementation/management options respective to the goals in the draft Plan, for presentation to the public in spring 2015
- Effectively communicate back and forth between the Committee and respective membership throughout the planning process

### *Proposed Deliverables*

The deliverables of the Gardom Lake Planning Committee up to spring 2015 are as follows:

- Guide the development of the draft Gardom Lake Management Plan and management process that integrates new information and existing plans
- Provide recommendations for governance
- Provide recommendations for implementation

### *Composition and Structure*

The GLPC is composed of representatives from four orders of government (federal, provincial, local, first nations), organizations, recreation groups, and property owners. The Committee members have agreed that there will be no Chairperson identified.

The following groups/organizations will be represented on the Gardom Lake Planning Committee:

- Columbia Shuswap Regional District (CSRD)
- Ministry of Forests Lands and Natural Resource Operations (MFLNRO)
- Ministry of Environment (MOE)/BC Lakes Stewardship Society (BCLSS)
- Ministry of Transportation and Infrastructure (MOTI)
- Secwepemc - Splatshin
- Secwepemc - Neskonlith
- Gardom Lake Bible Camp
- North Okanagan Holding Society (Legion)

- Friends of Gardom Lake/Shuswap Naturalists
- Rancho Deep Creek Community Association
- Gardom Lake Community Park Society
- BC Fly Fishing Federation
- Salmon Arm Fish and Game Club/BC Wildlife Federation
- Agriculture sector

### *Roles of the Planning Committee Members*

The role of the Planning Committee members is:

- Provide direction, coordination and oversight to the development of the Plan including the achievement of the vision and goals
- Promote the role of the GLPC and the Plan to collaboratively address issues
- Attend meetings and work collaboratively with all GLPC members to seek joint opportunities
- Effectively communicate back and forth between the Committee and respective membership throughout the planning process

### *Support to the Gardom Lake Planning Committee*

The Fraser Basin Council is an impartial organization that provides support to the GLPC but is not a member. Support to the GLPC will include but is not limited to coordinating meeting and workshop logistics, facilitating meetings, providing meeting summaries, and communicating with other members of the public. The Council will also write the content of the Gardom Lake Management Plan with the guidance of the GLPC.

### *Reporting & Transparency*

The GLPC will report to the larger public through a meeting in spring 2015. Meeting summaries of the GLPC will be posted on the website [www.gardomlakeplan.ca](http://www.gardomlakeplan.ca) for transparency to members of the public. In addition, background materials, presentations, draft versions of the Plan, and other information related to the development of the Gardom Lake Management Plan will be posted to the Gardom Lake webpage.

### *Meeting Frequency*

The GLPC will meet as needed, based on the task(s) at hand.

### *Decision Making Process*

The GLPC will operate on a consensus decision making model wherever possible. Where consensus cannot be reached, a decision will be delayed until the subsequent meeting, or dissenting opinions will be noted, or options will be presented to the public meeting in spring 2015.

### *Funding*

The GLPC has no specific financial responsibilities or budget.

### *Process to Modify the Terms of Reference*

The TOR will be updated as needed and agreed to by consensus of the members.

### *Completion*

The Gardom Lake Planning Committee will guide the development of the Gardom Lake Management Plan up to its completion in May 2015. At that time, it will be up to the discretion of the GLPC to determine whether it will become a more permanent body or if it will be dissolved.

## II. Gardom Lake Planning Committee - Meeting Summaries

*December 15, 2014*

### *Welcome*

The meeting started at 10:05 AM. Tracy Thomas and Mike Simpson welcomed everyone to the meeting and recognized Secwepemc and Syilx traditional territory.

### *Attendance*

The meeting was attended by the following:

- Jack Andrews – Splatsin
- Marge Sidney – Ministry of Environment/BC Lakes Stewardship Society
- Brian Turner – Ranchoero Deep Creek Community Association
- Susan Abbott – CSRD
- Jack Butula – BC Fly Fishing Association
- Joy deVos – Agriculture sector
- Dyann Johnson (alt) – Friends of Gardom Lake/Shuswap Naturalists
- Doug Hearn – Gardom Lake Community Park Society
- Tracy Thomas (facilitator) – Fraser Basin Council
- Mike Simpson (facilitator) – Fraser Basin Council

### *Purpose*

Tracy and Mike reviewed the purpose of the meeting including the following objectives:

- Develop relationships, identify common interests
- Confirm GLPC membership and communications plan
- Review and finalize the GLPC Terms of Reference

### *Introductions & Committee Membership*

Everyone introduced themselves and gave a brief description of their perspective. The representation on the Gardom Lake Planning Committee is listed in the table below.

<b>Organization/Group</b>	<b>Lead</b>	<b>Alternate</b>
Splatsin	Jack Andrews	Adam Neil
Ranchoero Deep Creek Community Association	Brian Turner	
Okanagan Indian Band	Colleen Marchand	
Columbia Shuswap Regional District	Susan Abbott	Ryan Nitchie
North Okanagan Holding Society/Legion	Glen Hill	Henry Butters
Gardom Lake Community Park Society	Doug Hearn	Fred McAllister
Friends of Gardom Lake (comm. With Shuswap Naturalists)	Elizabeth Winter	Dyann Johnson
Ministry of Forests, Lands and Natural Resource Operations	Eric Hegerat	
BC Fly Fishing Federation	Jack Butula	Bill Kirkland
Salmon Arm Fish and Game Club/BC Wildlife Federation	Hank Shelley	Garry Ellis
Agriculture Sector	Joy deVos	Lorne Hunter

Ministry of Environment/BC Lakes Stewardship Society	Marge Sidney	Dennis Einarson
Adams Lake Indian Band	Iva Jules	
Neskonlith	Richard Manual	Nesa7 White
Gardom Lake Bible Camp	Rikk Kieft	Morgan Taylor
Little Shuswap Indian Band	Stewart Adamson	

There was discussion around the involvement of other agencies/groups as follows:

- It was raised that the area in and around Gardom Lake are not Syilx traditional territory but Secwepemc traditional territory; the Fraser Basin Council is including both nations as both have identified their traditional territory as being in and around Gardom Lake
- It was raised that Interior Health should be a part of this planning process.
  - Interior Health is aware of this planning process and will provide guidance and information as required.
- It was raised that someone from the planning department should represent CSRD at this table.
  - Each of the members of the GLPC chose their representative. The CSRD representative (the same as all other members) is required to report back to the Regional District (specific staff person where required) with information from and to the GLPC
- It was raised that the Ministry of Transportation and Infrastructure should be a part of this planning process.
  - MoTI is following the process and has agreed to provide information and guidance as required.
- Question around the involvement of Fisheries and Oceans Canada
  - DFO does not feel that they need to be on the Planning Committee at this time as the Gardom Lake recreational fishery does not connect to any other fisheries or spawning areas; However, DFO has agreed to provide guidance and information if required

In addition to the GLPC membership, several agencies/organizations/individuals are following the planning process and have agreed to provide information and guidance if required including the following:

- Ministry of Transportation and Infrastructure
- Columbia Shuswap Regional District – Planning
- Columbia Shuswap Invasive Species Society
- Ministry of Forests Lands and Natural Resource Operations – Ecosystems
- Ministry of Forests, Lands and Natural Resource Operations – Water Stewardship

### *About Gardom Lake*

Meeting attendees took turns adding information to a map of Gardom Lake. Information was added including the location of access points, private property, and the best spots for fishing. Committee members also adding information within the watershed. It was an opportunity for each of the representatives to identify common interests in and around the lake and to discuss them.

### *Finalizing the GLPC Terms of Reference*

The GLPC reviewed the December 3<sup>rd</sup> draft Terms of Reference. The revised GLPC Terms of Reference will be available at [www.gardomlakeplan.ca](http://www.gardomlakeplan.ca). Committee members provided the following feedback:

- *Objectives* - existing plans should be listed along with a link to the Deep Creek Ranchero Official Community Plan. Clarity should be added to ongoing process of Committee members and their job to bring information back and forth from their respective groups/organizations to the GLPC.

- *Composition and Structure* - the GLPC members determined that they would not have a committee chair or co-chairs
- There were several minor edits made on the list of Committee members
- *Support to the Gardom Lake Planning Committee* - writing the content Gardom Lake Management Plan will be added to the list of Fraser Basin Council tasks
- *Reporting & Transparency* – ongoing versions of the draft Gardom Lake Management Plan, presentations and all other supporting documents/information will be posted to [www.gardomlakeplan.ca](http://www.gardomlakeplan.ca)

### *Communication Plan*

GLPC members reviewed and revised a draft communication plan; the revised edition will be posted at [www.gardomlakeplan.ca](http://www.gardomlakeplan.ca)

### *Work Plan*

GLPC members reviewed a draft work plan originally based on input from the public meeting on November 24<sup>th</sup>, the online survey, and general phone calls and emails from members of the Gardom Lake area. Based on the issues that were collectively listed in the work plan, Committee members agreed that the focus of the January meeting will be water quality, including trophic levels, nutrient sources, and existing research and reports. The subsequent planning meetings will focus on riparian areas and lake/recreation management respectively.

Prior to the January meeting, the Fraser Basin Council will draft a "straw dog" Plan based on what has been heard to date. The GLPC members will work through the ongoing development of this plan throughout the planning meetings.

The next several planning meetings will be focused on learning about the topics noted above. Committee members will hear presentations from experts/land managers and will then refine the draft Plan based on what they have learned.

### *Action Items*

1. Tracy Thomas to add a note on the Gardom Lake webpage regarding ongoing input to the planning process being welcome – complete
  2. Tracy Thomas to add background resources (maps etc.) to webpage - ongoing
  3. Marge Sidney to speak with Dennis Einarson regarding speaking at the next meeting - complete
  4. Marge Sidney to send a bathometric map of Gardom Lake to Tracy - complete
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## *January 20, 2015*

### *Welcome*

The meeting started at 10:10 AM. Tracy Thomas and Mike Simpson welcomed everyone to the meeting and recognized Secwepemc and Syilx traditional territory. Everyone attending introduced themselves. Committee membership and consensus was reviewed.

### *Attendance*

The meeting was attended by the following:

- Stuart Lee – Splatsin (to 2:00PM)
- Marge Sidney – Ministry of Environment/BC Lakes Stewardship Society
- Brian Turner – Rancho Deep Creek Community Association
- Susan Abbott – CSRD
- Jack Butula – Kalamalka Lake Fly Fishing Association

- Joy deVos – Agriculture sector
- Elizabeth Winter – Friends of Gardom Lake
- Rikk Kieft – Gardom Lake Bible Camp
- Nesa7 White - Neskonlith
- Doug Hearn – Gardom Lake Community Park Society
- Dennis Einarson – Ministry of Environment (guest speaker)
- Tracy Thomas (facilitator) – Fraser Basin Council
- Mike Simpson (facilitator) – Fraser Basin Council

### *Purpose*

Tracy and Mike reviewed the purpose of the meeting including the following objectives:

- Learn about lakes and related natural systems
- Learn about water quality
- Develop water quality goals and objectives for the Gardom Lake Management Plan

### *Dennis Einarson Presentation*

Dennis presented on limnology, water quality and lake processes based on water quality data collected by the Ministry of Environment (MoE) and the BC Lake Stewardship Society (BCLSS). Some key points are listed below. The presentation will be posted at [www.gardomlakeplan.ca](http://www.gardomlakeplan.ca) in the resources section.

- Toxic blue-green algae is only one type of algae – there has been very few toxic blue-green blooms in BC
- Clarity (tested with a secchi disk) tells us about water quality (there is more than one reason for a lake to be turbid, may be sediments from stream inflow, not algae)
- Nutrients is a simple term but it is more complex, there are many types for example, carbon is a nutrient, a requirement of life along phosphorus and nitrogen.
- Nutrient management plans are usually aimed at preventing late summer blue-green algae blooms. The spring 2008 and 2010 algae blooms on Shuswap Lake were Golden-brown algae, not blue-green algae. These blooms indicate early spring nutrients and organic inputs that also impact the lakes
- Dennis first sampled at Gardom in 1990
- Detritus – everything that dies and excrement; it all ends up in the bottom of the lake
- Lake processes and limnology – algae growth in small areas of a lake is good; it shows that there is life in a lake
- There are lots of good resources available on limnology and lake productivity. Refer to the *Algal Bowl*, by Jack Valentine and later revised and updated by David Schindler
- Littoral - depth to which sunlight will penetrate water
- Lake productivity - Eutrophic = nutrient rich or shallow, oligotrophic = nutrient poor, usually deep, steep sided and surrounded by rock; oligotrophic lakes usually have small amount of littoral zone. Mesotrophic = nutrient medium, between eutrophic and oligotrophic
- We need to understand how each of the measured factors influence water quality and lake productivity.
- Water at 4°C is at its densest; colder water is less dense, that's why ice floats. More solids can dissolve in higher temperatures. Hard water (Ca, Mg) confounds the issue of dissolving “crud.” (White Lake and Paul Lake are hard water)
- Productivity of the lake – aquatic plants produce O<sub>2</sub> in day and consume O<sub>2</sub> at night
- To take water from liquid to steam/gas takes a lot of energy. 79.3 cal/g water. To turn water to ice it takes 340 cal/g water
- Solar heating warms the surface of water changing the density; cool water is most dense so it sinks to the bottom. Water in a lake mixes using wind energy causing the lake to be one temperature “isothermal”. As summer approaches, the warm layer on the top of the lake becomes warmer



where the bottom stays cold; this is stratification. The epilimnion is the top layer and the hypolimnion is the bottom. The epilimnion influenced by atmosphere (warm air/long sunny days); the hypolimnion is separated from atmospheric input. In early fall, the epilimnion is the biggest. Then with the formation of ice, there is no circulation.

- Lake turnover (wind mixing) - Gardom is dimictic (two turnovers per year), and Shuswap is monomictic (one turnover per year). In Gardom Lake the spring turn over tends to be incomplete. This is good as there is less nutrients being stirred up from the bottom into the surface waters.
  - Lakes don't turn over in July; the water can be pushed by wind, tilting the thermocline.
  - Shuswap Lake "burps" where the thermocline tips, cold water discharged "seich"
- Gardom, April 27, 2009 – sampling water two weeks after ice-off. Measure spring and fall over-turn; **Strong thermocline in place right after ice-off**, very unusual. Some years the lake is already stratified under ice; according to textbooks, this should not happen.
- The ice "rots" or becomes deeply pitted as there is no wind to break it up – this rotting creates candles or lenses that seem to concentrate light.
- The lake cools quickly in fall (cold rain, short days, long nights). Temperature 7°C at bottom; ground water could be influencing temperature, but there are other things going on. There is actually algae production under ice, using nutrients and O<sub>2</sub> under the ice (no new inputs).
- Water samples are taken in the deep portion of lake because everything ends up in deepest part eventually. Sampling since 1990 has been minimum 12 times per year, at most 30 times per year. (more samples is not better, cannot use too many samples in statistical analysis)
- Current conditions (all off deepest part of lake; just off aerator platform):
  - pH good for fish
  - metals including Manganese, around the aesthetic drinking water guideline
- Water inflow – one creek flows into Gardom Lake year round
- Definitions of Trophic status – Eutrophic - very productive (3m secchi) mesotrophic – moderately productive (6m secchi), oligotrophic is low productivity
- Gardom Lake doesn't always turn over in spring, and "that's a good thing" (DE). Anoxic (no oxygen) conditions at the bottom makes the P in the bottom sediments, soluble. Changes in O<sub>2</sub> levels make difference in P availability in the bottom water. Detritus on bottom is less available due to colder temperatures and lack of sunlight; better to turn over in fall, not spring.
- Aerator – there has been an aerator in Gardom Lake since the 70s. Aeration is used to bring up O<sub>2</sub> levels of lake; otherwise there would be winter kill. The aerator is placed between 12m and 16m from the bottom of the lake to maximize oxygenation and prevent pulling detritus up from the bottom. The aerator keeps the lake alive by preventing anoxic conditions in the water.
- Generally, Gardom Lake is mesotrophic. Bottom of the lake acts as a nutrient sink. If we did a lake core in bottom, can look at how fast lake is filling in (sedimentation rate). Marg – lakes have a life span; mesotrophic is middle-aged; more nutrients in, the lake ages faster. A fen is a very, very, very old lake. Lakes start deep, steep sided, and end up as swamp, then bog, then fen over time.
- Nutrients – internal vs. external loading. N and P, example of external loading is fertilizer used on lawns; P is different than N, N is very dissolvable in water; P binds to sediments and isn't as available.
- NEXT STEPS: blank slides, on purpose. – the next steps for Gardom Lake are to be decided as part of the lake management planning process
- Management suggestions (from Dennis)
  - Minimize disturbance of shoreline areas, keep natural vegetation (riparian) intact
  - Limit use of fertilizers and pesticides, particularly not during rain
  - Manage septic systems

### *Review of Draft Plan Outline*

Tracy outlined the table of contents of the draft plan outline. The committee members agreed with the table of contents. The committee then moved into planning mode, taking on developing a vision for Gardom Lake and goals, objectives and action items in the water section of the plan.

### *Planning*

Each of the committee members had a sample vision statement and a list of values from Nov 24 public meeting, and the online survey. In addition, they were given sample goals, objectives and action items to help them move through the planning process.

The committee succeeded in drafting a vision statement, goals, objectives and action items. Tracy will draft all of this work into the draft Gardom Lake Management Plan and circulate it to committee members prior to the next planning meeting.

### *Feedback*

The committee members were asked to provide feedback on the planning process to date. The following suggestions were made:

- We should have longer meetings – 9:30-3:30
- The committee should continue to meet in the CSRD boardroom

### *Action Items*

- Distribute Mallory Creek paper (from Gene Dodd) to GLPC.
- Post updated map on website – need permission from Erica, Susan
- Post Dennis Einarson presentation on website
- Explore some language around watershed in the Plan
- Identify agencies/groups/individuals responsible for each action item in the plan
- Post CSRD septic survey on website
- Doug Hearn – share unofficial history and lake data with Tracy

Meeting adjourned at 3PM.

Next Meeting: Thursday February 12, 2015, 9:30AM-3:30PM in CSRD boardroom (tentative based on speaker availability)

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### *February 12, 2015*

#### *Welcome*

The meeting started at 9:30 AM. Tracy Thomas and Erin Vieira welcomed everyone to the meeting. Introductions were done around the room.

#### *Attendance*

Rikk Kieft – Gardom Lake Bible Camp (to 2:25 pm)  
Diane Johnson – Friends of Gardom Lake (alternate)  
Susan Abbott – Columbia Shuswap Regional District  
Jack Butula – Kalamalka Lake Fly Fishing Association  
Fred McAllister – Gardom Lake Community Park Society (alternate)  
Stuart Lee – Splatsin  
Ryan Nitchie (observer) – CSRD (alternate; to 11:30 am)  
Brian Turner – Ranchero/Deep Creek Community Association

Joy de Vos – Agriculture sector  
Marge Sidney – BC Ministry of Environment; BC Lakes Stewardship Society  
Jacque Sorensen – Thompson Rivers University (guest speaker)  
Tracy Thomas (facilitator) – Fraser Basin Council  
Erin Vieira (facilitator) – Fraser Basin Council

### *Purpose*

The objectives of the meeting were to:

- Learn about lakes and related natural systems
- Learn about water quality
- Development environment goals and objectives for the draft Gardom Lake Management Plan

### *Feedback on the planning process*

A brief roundtable discussion took place on the planning process to date, and feedback committee members are receiving from their respective organizations.

### *Guest Presentation – Jacque Sorensen*

Jacque presented on riparian areas: their definition, their important role in a watershed, how they function, threats to healthy riparian areas, and how to protect them. The presentation will be posted at [www.gardomlakeplan.ca](http://www.gardomlakeplan.ca) in the resources section of the website. Some highlights from Jacque's presentation include:

- A riparian area is a *transitional zone* between land and water; its boundary is determined by how far the water influences the vegetation on land
- A riparian area contains a diverse plant and wildlife community. It provides the following:
  - Shade and shelter for wildlife
  - Food (insect fall, litter fall)
- Riparian areas also:
  - Trap sediment to keep water clean
  - Filter water – this is especially important as plants in the riparian area take up excess nutrients (e.g., phosphorus, nitrogen) that flow on the surface or in groundwater that would otherwise end up in a stream or lake
  - Stabilize shorelines (prevent erosion)
  - Maintain biodiversity – VERY important. Riparian areas provide refuge, nesting and rearing habitat
- Threats to riparian areas include urban and rural development, agriculture, invasive species, resource extraction, transportation, and recreation
- Restoring and repairing riparian areas is difficult and expensive – much better to maintain their function and prevent degradation
- Strategies for protecting riparian areas include:
  - Educating the public, especially home owners, about their importance and how to be a good steward
  - In development plans, maintain 'buffers' (e.g., set buildings back from water)
  - Maintain vegetation (i.e. don't clear trees and shrubs)
  - Limit access
- Take home message: riparian areas occupy a small area of lake but are disproportionately important!

### *Review of Draft Plan to date*

Committee members discussed and agreed upon the Vision statement.

The goals, objectives and action items for the Water section of the plan were reviewed and some edits were suggested. The DRAFT Plan will be posted to [www.gardomlakeplan.ca](http://www.gardomlakeplan.ca) when the revisions have been made.

#### *Planning: Environment section of the Plan*

Committee members discussed and agreed upon four goals and corresponding objectives and actions for the Environment section of the plan. The DRAFT Plan will be posted to [www.gardomlakeplan.ca](http://www.gardomlakeplan.ca) when the revisions have been made.

#### *Update from CSRD Planning Department – Jan Thingsted*

Long-range planner Jan Thingsted presented the proposed new foreshore zoning bylaw for Gardom Lake to the planning committee. Five zones are proposed each with uses and structured permitted in each zone, and with uses prohibited in all zones. The committee provided feedback to Jan.

#### *Action Items*

- Tracy will look into Riparian Areas Regulations – what are they, who do they apply to
- Fred will look into the ownership of Gardom Lake Park (to determine if/how RAR applies to the park)

The meeting adjourned at 3:40 PM. Next meeting: Tracy will seek a date with committee members that aligns with speaker availability and CSRD Boardroom availability

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*March 9, 2015*

#### *Welcome*

The meeting started at 9:35 AM. Tracy Thomas and Erin Vieira welcomed everyone to the meeting. Introductions were done around the room.

#### *Attendance*

Rikk Kieft – Gardom Lake Bible Camp (to 1:45pm)  
Elizabeth Winter – Friends of Gardom Lake  
Susan Abbott – Columbia Shuswap Regional District  
Jack Butula – Kalamalka Lake Fly Fishing Association  
Fred McAllister – Gardom Lake Community Park Society (alternate)  
Stuart Lee – Splatsin  
Brian Turner – Rancho Deep Creek Community Association  
Joy de Vos – Agriculture sector  
Marge Sidney – BC Ministry of Environment; BC Lakes Stewardship Society  
Glen Hill – North Okanagan Holding Society; Legion  
Keith Weir – Forests, Lands and Natural Resource Operations (guest speaker)  
Pat Tobin – Forests, Lands and Natural Resource Operations (guest speaker)  
Ben Van Nostrand – Columbia Shuswap Regional District (guest speaker)  
Natalie Stafl – Columbia Shuswap Invasive Species Society (guest speaker)  
Brian Gregory – Interior Health Authority (guest speaker)  
Tracy Thomas (facilitator) – Fraser Basin Council  
Erin Vieira (facilitator) – Fraser Basin Council

## *Purpose*

The objectives of the meeting were to:

- ❖ Review the draft Gardom Lake Management Plan “environment” section
- ❖ Learn about Crown land/ jurisdiction, septic systems, drinking water testing, invasive species
- ❖ Develop “people” goals and objectives for the DRAFT Gardom Lake Management Plan

## *Feedback on the planning process*

A brief roundtable discussion took place on the planning process to date, and feedback committee members are receiving from their respective organizations.

## *Gardom Lake Management Plan Review: Section 3.2 - Environment*

The committee members reviewed the draft environment section of the Plan. Revisions will be added to the Plan and it will be posted to [www.gardomlakeplan.ca](http://www.gardomlakeplan.ca) when complete.

## *Guest Presentation – Keith Weir, Senior Lands Officer, BC Ministry of Forests, Lands and Natural Resource Operations*

- ~ 20 years ago BC Parks divested themselves of Gardom Lake Park. 1997 – Crown Lands enabled the Gardom Lake Park Society to take it over. In 2007 the Licence to Occupy was renewed and will expire in 2017. The renewal process involves a review of the file, complaints, insurance, and a new management plan. Terms and conditions include: ongoing public use with no reasonable restriction of access and a safe and clean site. Rent is \$1 for a 10 year term. No cutting trees without a permit, except for safety (e.g. snags); the Park Society must apply for permission to add sand to the beach. For more information go to the **FrontCounter BC website at: <http://www.frontcounterbc.gov.bc.ca/> or call the office directly at: 250-828-4131. Long story short – a license of occupation does not come with rights to cut trees or fill beaches.**
- Heritage Conservation Act – cannot disturb registered archaeology sites. None currently registered at Gardom Lake.
- Federal Fisheries Act – includes all sport fisheries
- Operationally the recreational fisheries component (fish stocking and aeration) is implemented by the BC Ministry of Forests, Lands and Natural Resource Operations and the BC Ministry of Environment
- Property that bounds water, that boundary is mobile – it moves with erosion and accretion. Waterfront property owners have the right to protect their property from erosion **above the high water mark but that requires an application/permit through FrontCounter BC.**
- EW: clarification on what the high water mark. Where is the Crown boundary? KW: hard to answer. Some lakes are controlled with a dam. Getting it surveyed would give you the best answer. Can consider the presence/growth of woody material near the historical/highest water mark. “The visible high water mark of any lake, water or stream where the presence and action of water are so common and usual ... as to mark on the soil on the bed of the body of water ...” BUT remember that beach grooming obscures this.
- Can apply for accretion to extend the boundary of your title
- Call FrontCounter BC **at 250-828-4131**, they are the single window of application for provincial legislation. They can guide proponents on matters relating to development or modifications on water-front property. They will also instruct proponents when it’s appropriate to seek approval from regional/local government where there are bylaws in place.
- FM: question about fencing off embankment to control access to the beach, encourage trail use. KW: yes, call FrontCounter BC and find out if application is necessary. PT: a licence of occupation isn’t meant to be a tool for park management. The Crown prefers a local Government to operate

parks. In the newest management plan, include description of any work the Park Society would like to do. **Works in and about a stream (this includes streams, swamps, lakes) require a notice.**

*Patrick Tobin – Regional Manager, Compliance and Enforcement, BC Ministry of Forests, Lands and Natural Resource Operations*

- We hold people accountable for their behaviour and support behaviour change that results in compliance. There are approximately 40 pieces of legislation that we enforce. In 2010 the first iteration of FLNRO was created and took elements of Water and Wildlife Section from BC Ministry of Environment; also took the then-known Integrated Lands Management Bureau. As a result, Compliance & Enforcement (C&E) moved away from forestry and the scope grew significantly. Working to develop policy to bring issues of major non-compliance into greater compliance – e.g., docks, retaining walls, beach grooming, and other lake front management issues.
- Respond largely to public complaints. However, we are taking an inventory of lakes to understand the issues and be proactive.
- Thompson Region has 19 officers, covering the area from the US border, north to Clearwater, east to Wap, and west to Lillooet. Lakes and recreation are the major focus for our work. We work closely with land officers and the water stewardship branch to ensure public engagement and understanding regarding shoreline rights and values.
- Water Act, Land Act are two of the most powerful pieces of legislation. Any activity on Crown Land is a contravention. Policies provide for how people interact with Crown land – recreation, building, occupying etc.
- Examples of Crown land trespass include unauthorized building of structures such as docks, boathouses, and retaining walls. A non-compliant proponent would be asked to get a tenure; if they do not, they would be issued a trespass notice. A last case resort, the structure would be seized and removed at the expense of the proponent.
- JD: if I were a prospective buyer of a property, can I get a Natural Resource Officer to check the property and check compliance? PT: no, due to lack of capacity. It's a buyer-beware situation.
- EW: who would apply to remove a downed fence on a public access? PT: suspect BC Ministry of Transportation.
- NRO has a reporting line: **1-844-676-8477**. That will get you a FrontCounter BC dispatcher. Website is: <http://www.frontcounterbc.gov.bc.ca/>

*Natalie Staffl – Columbia Shuswap Invasive Species Society*

- Covers CSRD boundary
- Facilitate prevention, management, reduction of invasive species in the region
- Education and engagement about invasive species and the impacts
- Establish and operate invasive species mgmt. programs
- Environmental impacts: second greatest threat to global biodiversity after habitat loss
- Social impacts include health (e.g. giant hogweed, fire ants) – burns, stings, allergies, etc.
- Economic impacts: e.g. loss to hay sales and other agricultural operations
- Aquatic Invasive Species Profiles
  - **Zebra and quagga mussels** – large threat to BC waters but currently not present. The focus is education and prevention campaigns.
  - **Yellow flag-iris** – present at Gardom. Impacts to waterfowl and painted turtle; outcompetes native vegetation; very difficult to control – rhizome removal and seed-head cutting is effective but labour - intensive. Catherine Tarasoff's study at Thompson Rivers University regarding anoxic treatment of yellow flag-iris
  - **Knotweeds** – also known as false bamboo. Extremely fast-growing and can grow through concrete, asphalt. Hazard for transportation. Thrives in moist areas, takes over riparian areas. Most effective method of treatment is herbicide.

- **Purple loosestrife** – part of Mint family, has a square stem.
- **Himalayan balsam** – highly reproductive. People mistakenly plant it as an ornamental. Relatively easy to get rid of.
- **Eurasian watermilfoil** – a concern for the Shuswap area. Can be very prolific. Highly undesirable for boating, swimming. CSRD is harvesting in priority areas.
- Loss of enjoyment; increased maintenance costs; collapse of aquatic ecosystems and fisheries
- **What can you do? Get educated. Spread the word. For boaters, don't transport invasive species – clean, drain, dry your boats and recreation equipment before going to another lake/body of water**
- Report-a-Weed app for smart phones – take a photo of the invasive plant/species. Download the app here: <https://itunes.apple.com/app/report-a-weed/id547471331?mt=8>
- CSISS – supports community weed pulls (provide food, honoraria); provide youth programs; ID workshops; landowner extension (information)
- Website, social media
- JB: what do you do about invasives on private property? NS: we can visit a property owner to educate them. It is their responsibility to keep the species from spreading.

*Ben Van Nostrand – Columbia Shuswap Regional District*

- Solid waste, recycling, septic, invasive species
- Septic Smart program born out of Liquid Waste Management Plans (LWMP). Plans in place for Areas F, C, and E. These plans address lakeshore development and private discharge; public desire to eliminate discharges to lakes; opportunities for education and outreach
- Septic Smart – to reduce health and environmental impacts through public education
- Area D does not have LWMP – this includes Gardom Lake although Gardom Lake participated in a septic survey that was part of LWMP
  - Survey results indicate that waterfront properties have older septic systems; inspections are either frequent, or never; frequency of pump-outs is frequent or never
- TI: is there a record of what properties have what kind of system? BVN: Historically, yes the Health agency did. Currently, installation is sub-contracted out to on-site contractors and the home owner has to file records with Interior Health.
- MS: is there a way to find out if there are dry wells near Gardom Lake, and force a homeowner to upgrade? BG: Unless you can prove contamination to drinking water, and unless you can determine it's a health hazard, and unless sewage is surfacing – then you can't force an upgrade, just encourage.

*Brian Gregory – Environmental Health Officer, Interior Health Authority*

- Infrastructure Programs at the Interior Health Authority's Health Protection Department includes Healthy Built Environment; large water systems; small water systems; public health engineering teams
- Healthy Built Environment team: input on watershed protection, community sewer and water supply.
- Large Water System team: serves over 500 people. Monitors and enforces compliance with the Drinking Water Protection Act (DWPA), regulations and policies
- Small Water System team: serves up to 500 people and monitors/enforces compliance with the DWPA, regulations and policies
- Public Health Engineering team: provides support to the large water and small water teams
- Changes to the role of the Infrastructure Programs:
  - No onsite sewerage inspection unless there's a hazard or a complaint is lodged, or taking enforcement action. Educate, Advocate, Enforce.
  - More emphasis on strategies to reduce the number of systems on boil water notice

- More emphasis in land use planning and the promotion of a sustainable healthy built environment
- Engage and collaborate with local, regional government recognizing their leadership role in planning and delivering drinking water (re: OCPs, RGS, LWMPS, zoning, etc.)
- Regarding Onsite Sewage:
  - Environmental Health Officers (EHOs) enforce the sewerage system regulation
  - Only an 'authorized person' can install a sewerage system; they must refer to the standard practice manual for guidance (re setbacks, etc.)
  - EHOs respond to complaints regarding illegal installations and malfunction systems
- Regarding Drinking Water:
  - A 'drinking water system' is defined as a domestic system that serves more than a single family residence
  - **Single family owner-occupied residents that provide their own drinking water are not 'drinking water systems' and therefore are unregulated;**
  - Water supply systems must monitor the drinking water source, water in the source and the water it provides
  - Regulations re: *E. coli* and coliform bacteria are contained in the DWPA
  - IHA uses the federal drinking water guidelines
  - IN the event of water quality standards not being met, the lab must report this to a Drinking Water Officer
  - Drinking water system operator must prepare an annual report; and an emergency response plan
  - Common contaminants to drinking water: many are naturally occurring.
- **Take home message: Single family residents that don't have a treatment system (UV & filtration) should boil their drinking water**

### *Gardom Lake Management Plan DRAFT: Section 3.3 - People*

Committee members discussed the presentations and key messages that should be included in the "people" section of the plan. Given that the next planning meeting will be about management and people, the goals, objectives, and action items were not drafted during this planning session. Key messages include the following:

- There is a need for more recreation information regarding the amount of use Gardom Lake receives, recommend a recreation survey
- Voluntary septic system testing (funding provided)
- Provide information about common trespass activities on Crown land (adding sand, dock building, tree cutting, etc.) Include information on how to determine property line
- Include direction on when to boil water and for how long

The DRAFT Plan will be posted to [www.gardomlakeplan.ca](http://www.gardomlakeplan.ca) when the revisions have been made.

### *Next Steps*

- The meeting adjourned at 3:30 PM.
  - Next meeting: March 30<sup>th</sup>, CSRD Board Room, 9:30 AM
- 

### *March 30, 2015*

### *Welcome*

The meeting started at 9:35 AM. Erin Vieira welcomed everyone to the meeting and acknowledged Secwepemc territory. Introductions were done around the room.



### *Attendance*

Rikk Kieft – Gardom Lake Bible Camp  
Elizabeth Winter – Friends of Gardom Lake  
Susan Abbott – Columbia Shuswap Regional District  
Jack Butula – Kalamalka Lake Fly Fishing Association  
Fred McAllister – Gardom Lake Community Park Society (alternate)  
Brian Turner – Rancho Deep Creek Community Association  
Joy de Vos – Agriculture sector  
Marge Sidney – BC Ministry of Environment; BC Lakes Stewardship Society  
Glen Hill – North Okanagan Holding Society; Legion  
Eric Hegerat – Ministry of Forests, Lands and Natural Resource Operations  
Brian Robertson – Guest  
Andrew Klassen – Guest  
Jason Webster – Guest  
Ken Namislo – Guest  
Erin Vieira (facilitator) – Fraser Basin Council  
Mike Simpson (facilitator) – Fraser Basin Council (to 12:30 pm)  
Tracy Thomas (facilitator) – Fraser Basin Council (from 1:30 pm)

### *Purpose*

The objectives of the meeting were to:

- ❖ Learn about stocking rates and access points
- ❖ Lake access discussion, issues and solutions
- ❖ Develop 'people' goals, objectives and action items for the Draft Gardom Lake Management Plan

### *Feedback on the planning process*

A brief roundtable discussion took place on the planning process to date, and feedback committee members are receiving from their respective organizations. Some noteworthy points from that discussion include:

- ❖ FM – Gardom Lake Community Park Society has applied for Section 9 notifications at the park
- ❖ EW – Friends of Gardom Lake have applied for a grant-in-aid to repair/replace a water testing meter; FOGL is hosting a yellow flag iris removal on June 7<sup>th</sup>

### *Guest Presentation – Brian Robertson, BC Ministry of Forests, Lands and Natural Resource Operations*

- ❖ Water Act, Section 9 applies to works in and about a stream; a stream is defined as any and all watercourses (fish-bearing or not). Two types of work under a Section 9: (1) a notification, and (2) an approval. The former is straightforward and no cost; the latter is more involved, a fee applies, may require work by a Qualified Environmental Professional, First Nations referral, and requires a decision by Ministry staff.
- ❖ The new Water Sustainability Act will be implemented in January 2016. It's objectives include:
  - Protect stream health and aquatic environments
  - Improve water governance arrangements
  - Groundwater regulation
- ❖ Riparian Area Regulations (RAR) are an 'enabling legislation' in the Fish Protection Act; it enables local governments to create bylaws to protect riparian areas from development and impacts thereof. RAR applies to riparian areas that 'have a connection to fish-bearing waters' – this includes ditches that connect to fish-bearing streams. RAR does not apply to federal lands or agricultural lands, or to institutional developments (i.e. hospital; school). Where RAR applies to a

proposed development or works, the proponent needs a Qualified Environmental Professional to conduct an assessment.

- ❖ For more information, contact:

### **SECTION 9 Application Information**

Okanagan Shuswap Natural Resource District

Email: [FCBCVernon@gov.bc.ca](mailto:FCBCVernon@gov.bc.ca)

Phone: 250-558-1700

Toll Free: 1-877-855-3222

[http://www.env.gov.bc.ca/wsd/water\\_rights/licence\\_application/section9/index.htm](http://www.env.gov.bc.ca/wsd/water_rights/licence_application/section9/index.htm)

### **RAR Information**

FLNR Penticton Regional Office

Phone: 250-490-8200

Email: [RARReg8@gov.bc.ca](mailto:RARReg8@gov.bc.ca)

<http://www2.gov.bc.ca/gov/topic.page?id=FB284A0570084959BEBF55B9D4D4AEC2>

### *Guest Presentation – Eric Hegerat, BC Ministry of Forests, Lands and Natural Resource Operations*

- ❖ Fish population and stocking records for Gardom Lake date back to 1909; history of Gardom Lake stocking was presented
- ❖ Gardom Lake is managed as a 'Quality' fishery; this has been an evolving process at the BC MFLNRO to meet regional demand and angler response; acknowledged the angler pressure on the lake and that there are some conflicting values at play
  - There was discussion in the group regarding changing how the fishery is managed – to a Trophy fishery or a Family fishery, as a means of alleviating angler pressure – however it's unknown how changing the management regime would affect demand. It's thought that managing the fishery as 'Quality' is the sweet spot.
- ❖ The contact point regarding stocking is regional staff – Eric Hegerat or Tara White
- ❖ BC MFLNRO is open to explore opportunities for working together on education/engagement, signage, stewardship initiatives, etc.
- ❖ Freshwater Fisheries Society of BC has a website with educational material on it:  
[www.gofishbc.com](http://www.gofishbc.com).

### *Guest Q&A – Ken Namislo, BC Ministry of Transportation and Infrastructure*

Q: Why won't the boat launch at Teal Road be shut down?

A: From the MOTI perspective, it isn't a boat launch – it's a road. The boat launch was not developed by MOTI; we only maintain the road to the water's edge. [Other people in the room pointed out that as a launch it is providing an important service for emergency services].

Q: Can MOTI work with a group to better manage the area?

A: Yes, with some limitations. Cannot block access to the water (i.e., MOTI will not install bollards). Would need to follow necessary approval processes, have insurance, etc.

Q: There are erosion issues and run-off into the lake. Could MOTI put gravel on the boat launch to alleviate this?

A: No – it's outside of the MOTI mandate and putting gravel in is illegal, without proper permits.

BCMFLNRO: willing to explore possibility of supporting gravel or pads into the lake at Teal Road.

Q: Could a community group 'adopt' an MOTI right-of-way access point and co-manage it for garbage, squatting, etc.?

A: Suggested a field trip to discuss road issues – Wednesday April 1<sup>st</sup> – not a Gardom Lake Planning Committee meeting but open to anyone who would like to discuss road issues.

### *Discussion: Access Issues and Solutions*

The committee discussed the need for Gardom Lake to have a public boat launch:

FM: No – a trailer-access boat launch isn't needed. The Gardom Lake Park Society has voted that there should not be a launch in the park.

JD – tough question, but yes – because it makes the lake accessible to anyone

BT – yes

Brian Robertson – yes – issues will escalate until there is a properly maintained public boat launch

Jason Webster – yes

Eric Hegerat – yes – it will enable safer, more responsible access to the lake

EW – yes – but it needs to be carefully considered, doesn't feel like all options have been looked at yet

GH – yes

JB – yes, the lake has been used by fishers since before 1908. Need a proper boat launch with a washroom; accessible for people with mobility challenges. Gardom Lake is provincial gem; it's a public resource, not a private lake for residents. A boat launch would alleviate pressure from other access points on the lake.

SA – yes

RK – yes, because it enables holding people accountable

The committee brainstormed and discussed solutions for establishing a boat launch with parking, toilet, garbage, and educational information/kiosk, and that would be accessible for persons with mobility challenges. Feasible options at this point include:

- ❖ Crown land – Gardom Lake Park
- ❖ Partnership with the Bible camp or Legion (existing boat launches)
- ❖ Partnership with private landowner (i.e. Teal Road)

Purchasing property to develop a boat launch is not considered feasible due to the cost.

Roundtable discussion:

MS – The park has a place for parking, signs, toilets are already there. Slope issues could be addressed.

Ken Namislo – Musgrave Road offers everything: toilet, access, parking, minimal disturbance to residents, inexpensive to develop.

FM – explore partnership with landowner at Teal Road to develop parking/turn-around space

RK – Musgrave Road seems logical, but need to consider work, cost, impact to habitat

JB – Purchasing private land with suitable grade would be ideal; alternatively, consider why Musgrave Road can't be developed

GH – consider developing multiple sites; e.g., a hand launch site and a trailered boat launch site. Consider easement from property owner for a boat launch.

EW – All sites including Gardom Lake Park should be investigated. It needs deep water, an already-impacted site, toilets, parking, suitable grade

SA – new motor restrictions will have an impact on boat traffic; the effects of this are yet to be seen

### *Guest – Jan Thingsted, CSRD*

The CSRD planning department is looking at introducing lake zoning to Gardom Lake to zone the surface of the lake, the foreshore zone in particular. Dock sizes and numbers can be regulated in a zoning bylaw.

Re: dock sizes. Considering maximum size of 12m<sup>2</sup> for dock surface, in addition to 5m<sup>2</sup> for ramp. Small docks seem appropriate for a small, non-motorized lake. Would allow for a larger dock in the park zone

and the bible camp zone in the new bylaw. Limited to one dock per residence; existing structures would be grandfathered.

### *Gardom Lake Management Plan DRAFT: Section 3.3 - "People"*

Committee members assembled in two small groups and each discussed one topic: access, or homeowner education on water quality and septic systems.

The revised plan will be posted to [www.gardomlakeplan.ca](http://www.gardomlakeplan.ca).

### *Next Steps*

- The meeting adjourned at 3:30 PM
  - Next meeting: April 16<sup>th</sup>, Meet at Gardom Lake Park at 8:30 AM for field tour; have lunch and final planning meeting at Gardom Lake Bible Camp
  - Public meeting will be held on May 14<sup>th</sup> at Rancho – Deep Creek Fire Hall
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### *April 16, 2015*

#### *Welcome*

The meeting started at 8:30 AM at Gardom Lake Park for a field tour.

#### *Attendance*

Rikk Kieft – Gardom Lake Bible Camp  
Elizabeth Winter – Friends of Gardom Lake  
Dyann Johnson – Friends of Gardom Lake (alternate)  
Susan Abbott – Columbia Shuswap Regional District  
Ryan Nitchie – Columbia Shuswap Regional District (alternate)  
Jack Butula – Kalamalka Lake Fly Fishing Association  
Doug Hearn – Gardom Lake Community Park Society  
Fred McAllister – Gardom Lake Community Park Society (alternate)  
Kerry Orchard – Rancho Deep Creek Community Association (alternate)  
Joy de Vos – Agriculture sector  
Marge Sidney – BC Ministry of Environment; BC Lakes Stewardship Society  
Glen Hill – North Okanagan Holding Society; Legion  
Lee Hesketh – rancher, riparian/creek restoration expert (guest)  
Rene Talbot – Columbia Shuswap Regional District Director (guest)  
Gene Dodd – resident (guest)  
Tracy Thomas – Fraser Basin Council (facilitator)  
Erin Vieira - Fraser Basin Council (facilitator)

#### *Purpose*

The objectives of the meeting were to:

- Participate in a field tour to see and learn about Gardom Lake Park, and Mallory Creek and possible restoration activities for the creek
- Discuss lake access
- Finalize the 'people' section of the DRAFT Gardom Lake Management Plan

### *Field Tour with guest Lee Hesketh*

The tour included the Mouth of Mallory Creek, the Musgrave Road lake access, private property adjacent to Musgrave Road, several stops along Mallory Road, and wrapped up at Gardom Lake Park. At each of the stops, the group discussed possible scenarios and options for restoration/mitigation projects that may help to improve biodiversity and water quality. There is interest from community members and in some cases property owners, to learn more about restoration and mitigation of parts of the creek and to take part in restoration planning. The morning tour was concluded with lunch and afternoon meeting at the Gardom Lake Bible Camp.

### *Review the “people” section of the DRAFT plan*

Goal 6 (“Educate Gardom Lake area residents about...”) and its objectives and actions were reviewed; minor modifications were made to Objective 6B and Objective 6C. Please refer to the DRAFT Gardom Lake Management Plan v.4 for the updates.

Goal 7 (“Collect baseline recreation data...”) and its objectives and actions were reviewed, discussed and endorsed.

### *Access: Where we are at*

The GLPC re-visited the issue of trailered boat access at Gardom Lake, with the purpose of developing a goal to include in the draft Plan. Consensus was not reached with regard to lake access at the March 30<sup>th</sup> meeting.

Tracy presented a draft goal, and a roundtable discussion took place. The following points were raised:

- The GLPC should not pursue recommending a boat launch be developed until the impacts of the new motorized restriction is understood
- The GLPC should immediately recommend a boat launch be developed
  - People have been waiting 15 years for a proper boat launch
  - Electric motor technology is improving (i.e., becoming more powerful)
  - There needs to be a safe access for trailers
  - Gardom Lake is a provincial lake, there should be safe trailered boat access
- The development of a boat launch would be contingent on an environmental assessment and feasibility study being done for three sites: Teal Road, Musgrave Road, and Gardom Lake Community Park

### *Planning*

Consensus was not reached on the development/need for lake access. The public will be asked to provide input at the May 14<sup>th</sup> public meeting as described in the Gardom Lake Planning Committee Terms of Reference. Input will also be collected online for those people that are unable to attend the meeting.

Per the discussion at Musgrave Road during the field tour earlier in the day, the GLPC discussed how the observed turtle-nesting habitat at Musgrave Road could be better protected without completely impeding vehicle access to the hand launch. The GLPC agreed that the boulders could be moved to encompass more of the nesting site, thereby protecting the area from compaction and disturbance. The placement of the boulders would leave room for a single vehicle to drive to the lake trail thereby accommodating people with limited mobility. Boulders will not be moved so that they impede the turn-around space. Version 4 of the DRAFT Gardom Lake Management Plan will be posted [www.gardomlakeplan.ca](http://www.gardomlakeplan.ca) when revisions are complete.

The GLPC briefly discussed the inclusion of a restoration plan for Mallory Creek in the draft Plan. Due to limited time in the meeting, the committee agreed that Tracy would draft a goal and related objectives

and action items with the proviso that details of a restoration plan would not be included. Version 4 of the DRAFT Gardom Lake Management Plan will be posted [www.gardomlakeplan.ca](http://www.gardomlakeplan.ca) when revisions are complete.

#### *Next steps*

There will be a public meeting to present the draft Gardom Lake Management Plan:  
Ranchero – Deep Creek Fire Hall  
5:30 – 8:30 PM, May 14<sup>th</sup> 2015

The purpose of the public meeting is to present the draft Plan, answer questions, and collect feedback. Per the GLPC Terms of Reference, the public will be asked for their input on specific items. Tracy explained that the draft Plan and a comment form will be made available online for those who cannot attend the public meeting in person on May 14<sup>th</sup>.

Tracy explained the format of the public meeting:

- A drop-in open house session will take place in the first part of the meeting, with FBC staff and committee members present to discuss and answer questions face-to-face. Poster boards and other print materials will be on display.
- A presentation with Q&A will take place in the second part of the meeting.

Tracy asked the GLPC members to consider how they would like to be involved in the meeting – such as during the open house to answer questions, or to participate in a presentation.

The meeting closed at 3:15 PM

### III. Public Meeting Summaries

#### *November 24, 2014*

##### *Public Meeting & Online Survey*

Approximately 45 people attended the public meeting on the evening of November 24<sup>th</sup> despite the wild winter weather. The meeting attendees showed how passionate they are about Gardom Lake and helped to explain all the ways that the lake is unique. It was a very productive evening. In addition, an online survey was open from November 7<sup>th</sup> to 28<sup>th</sup> to collect input from those people unable to attend the meeting in person; twenty two people filled out the survey.

##### *Background*

The Fraser Basin Council facilitated a public meeting at the Ranchero-Deep Creek hall on November 24<sup>th</sup> to kick off the Gardom Lake planning process. The purpose of the meeting was to collect information regarding values and issues around Gardom Lake and to establish a planning committee to guide the planning process. The same information was collected via the online survey. The values and issues collected during the public meeting and the online survey are summarized below.

##### *Values*

People value Gardom Lake for many reasons but the one that is most evident is because the lake is unique. There is no other lake proximal to an urban setting that boasts amazing fishing, peaceful surroundings, and a vast array of wildlife. Meeting attendees listed many values about Gardom Lake including:

- Quality fishing, stocking, size, lake structure, unique, insect hatches

- Quality ice fishing for the same reasons
- Bird (loons), turtle (painted turtle) watching, wildlife in general
- Biodiversity
- Education (science, biology, water skills)
- Relatively intact foreshore
- Environmental diversity (wildlife, plants)
- Kayaking/non-motorized boating
- Peacefulness, quiet
- Swimming with turtles, swimming at CSRD Park and in general
- The lake is an "emerald jewel" 1914 newspaper article description of Gardom, still true today
- Skating, snowshoeing, skiing
- Accessibility, proximity to urban areas
- Joyful place, the sounds of children enjoying the lake
- Boating

### *Issues Identified*

As part of the public meeting and the online survey, issues around Gardom Lake were identified. All of the issues were divided into three broad categories: 1. Water 2. Environment 3. People. Below is a list of the issues that were submitted as part of the online survey as well as those collected at the public meeting.

#### *Water*

- Water quality
  - sediment, nutrients, leaky septic systems, oil gas, inflow, outflow, inflow stream health
- Water quantity
  - lake level, water withdrawals (private use/fire), aquifer health/recharge areas

#### *Environment*

- Fish
  - habitat, populations, stocking rate, non-native introductions (intentional and accidental)
- Plants
  - invasive species (management/prevention), riparian areas
- Animals
  - migratory bird habitat, loon habitat, painted turtle habitat, moose, deer, wildlife in general

#### *People*

- Recreation
  - noise from firearms, fireworks, snowmobiles and ATVs on ice, congestion, parking, lack of facilities(bathrooms), garbage/cigarette butts, lack/location of access points, lack of boat launches for trailers, conflict between uses, dogs on beach, traffic on lake, safety in and around parked vehicles on road sides,
- Development
  - shoreline modifications, riparian zone removal
  - commercial development
  - lack of consultation with landowners prior to development
- Regulation & Enforcement
  - existing laws/bylaws, lack of enforcement
  - too many rules and regulations
  - gas boat motors should not be restricted
  - illegal structures/water use
  - septic system health
- Education

- lack of education regarding the lake, invasive species, biodiversity, riparian areas, species at risk, foreshore health
- lack of signage
- lack of quantifiable data regarding lake use/pressure, sensitive habitat, plants

### *Gardom Lake Planning Committee*

A portion of the public meeting was dedicated to the development of the Gardom Lake Planning Committee (GLPC). Similarly, the online survey allowed for respondents to identify people/agencies/groups/etc. that should be involved in the planning process.

Ideally, a planning committee strikes a balance between having broad representation from governments, agencies, industry/business, interest/stewardship groups, and landowners while being a manageable size.

The groups identified as members of the GLPC are as follows:

- Columbia Shuswap Regional District (CSRD)
- Ministry of Forests, Lands and Natural Resource Operations (MFLNRO)
- Ministry of Environment (MoE)/BC Lakes Stewardship Society (BCLSS)
- Fisheries and Oceans Canada (DFO)
- Ministry of Transportation and Infrastructure (MoTI)
- Syilx Nation
- Secwepemc Nation
- Gardom Lake Bible Camp
- Friends of Gardom Lake/Shuswap Naturalists
- North Okanagan Holding Society (Legion)
- Gardom Lake Community Park Society
- BC Fly Fishing Federation
- Salmon Arm Fish and Game Club/BC Wildlife Federation
- Agriculture sector
- Rancho Deep Creek Community Association

A list of individual representatives will be established by the end of November. Committee members must be willing to work collaboratively, be able to attend meetings, and bring information from and to their respective groups throughout the planning process.

The GLPC will be guided by a Terms of Reference that includes the following key points:

- The Fraser Basin Council is an impartial organization that provides support to the GLPC but is not a member
- The planning process, documents, meeting notes etc. will be available online, second public meeting in spring 2015
- The GLPC will operate on a consensus decision making model
- The GLPC has no specific financial responsibilities or budget
- The GLPC will determine if and how to go forward in May 2015

See the Gardom Lake Planning Committee DRAFT Terms of Reference at [www.gardomlakeplan.ca](http://www.gardomlakeplan.ca)

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*May 14, 2015*

### *Background*

The Gardom Lake Management planning process began in October 2014. The purpose of the process was to address issues raised by the public at a meeting held in November 2014. The purpose of the May 14, 2015 public meeting was to present the draft Gardom Lake Management Plan that the Gardom Lake Planning Committee (GLPC) had completed over the winter.



The GLPC followed a consensus based decision making process and successfully developed eight goals and related objectives and action items; however, the Committee was unable to come to consensus on the issue of trailered boat access. As a result, the need or lack thereof for trailered boat access was brought to the broader public for feedback. See the Gardom Lake Planning Committee Terms of Reference at [www.gardomlakeplan.ca](http://www.gardomlakeplan.ca).

Boat access and several related issues were raised at the first public meeting and online survey of the Gardom Lake planning process in November 2014. Issues related to people and recreation recorded at the 2014 Gardom Lake public meeting and online survey include the following:

- noise from firearms, fireworks, snowmobiles and ATVs on ice
- congestion, parking
- lack of facilities (bathrooms)
- garbage/cigarette butts
- lack/location of access points
- lack of boat launches for trailers
- conflict between uses
- dogs on beach
- traffic on lake
- safety in and around parked vehicles on road sides

This formed the precedent for including it in the lake management planning process.

### *Public Meeting*

Approximately 85 people attended the public meeting on the evening of May 14 at the Ranchero – Deep Creek Fire Hall. Participants showed up early to set up the chairs and stayed right until the end. The purpose of the meeting was to present the draft Gardom Lake Management Plan and to encourage community members to provide feedback (via feedback form at the meeting or via online survey – both of which asked the same two questions). Mike Simpson, Tracy Thomas, Joy deVos, and Marge Sidney delivered presentations.

### *Online Survey*

An online survey was open from May 4<sup>th</sup> to 19<sup>th</sup> to collect public feedback regarding trailered boat access; 411 surveys were completed online, in hardcopy form, and via email. In the survey 51% of the respondents indicated that a safe, trailered boat launch and infrastructure is needed and 49% indicated that it isn't. The comments provided in the survey by respondents gave suggestions regarding lake access, feedback on the draft Plan, and a few misconceptions.

Survey suggestions on lake access combined with previous input from the Gardom Lake Planning Committee have provided the foundation for recommendations in the Gardom Lake Management Plan. The feedback on the draft Plan will be used to draft the final version of the Plan; misconceptions and respective clarifications are listed below.

### *Misconceptions and clarifications (the latter indicated in parentheses):*

- access to Gardom Lake may be restricted or a boat launch closed (**there will be no restriction to lake access**)
- a decision has already been made regarding lake access (**no decisions have been made regarding lake access**)
- boat access was added to the plan unnecessarily (**issues of boat access were raised by members of the public in November 2014**)

- any boat launch improvements would be major and would only serve big motor boats **(the scope of boat launch improvements have not been determined)**
- the CSRD has jurisdiction at Teal Road **(the BC Ministry of Transportation and Infrastructure has jurisdiction at Teal Road)**
- all motorized boats are currently restricted from the lake **(there is a gas motor restriction in place at Gardom Lake; electric motors are allowed)**
- a planning group is able to provide habitat/species protection **(habitat and species protection is the responsibility and jurisdiction of the provincial and federal governments)**

### *Next Steps*

The input collected from the public will be included in the recommendations around boat access in the Gardom Lake Management Plan. The Plan will be presented to the CSRD and the CSRD Board will determine how to move forward.

*Thank you to everyone that completed the online survey*