

SCOPING STUDY

**BRILLIANT
HEADPOND
STEWARDSHIP
INITIATIVE**



KATARINA HARTWIG
HEATHER LESCHIED
MAY 2017

Scoping Study: Brilliant Headpond Stewardship Initiative
Katarina Hartwig, Heather Leschied | May 2017

Design and Layout: Mandi McRobbie
Cover Photo: Douglas Noblet, WildAir Photography

©2017 Living Lakes Canada
All rights reserved. Permission is granted to reproduce all or part of this
publication for non-commercial purposes, as long as you cite the source



Living Lakes Canada
Box 691
Invermere, BC
VOA 1K0

EXECUTIVE SUMMARY

The Brilliant Headpond Stewardship Initiative Scoping Study is intended to be the first phase of a stewardship strategy for the Brilliant Headpond Reservoir. The Scoping Study is guided by the Brilliant Headpond Stewardship Initiative Steering Committee, which includes leaders from the Brilliant Headpond communities of Tarrys, Thrums, Glade, Shoreacres, and South Slokan, representatives of the Ktunaxa First Nation and Okanagan Nation Alliance, and Regional District of Central Kootenay (RDCK) Area I Director, Andy Davidoff, and RDCK Area H Director, Walter Popoff.

The Brilliant Headpond Reservoir (“BHPR”) was created by the damming of the Kootenay River at the Brilliant Canyon for the completion of the West Kootenay Power Corps. Brilliant Dam hydroelectric project completed in 1944. The BHPR area extends from Columbia Power Corporation’s (current owner) Brilliant Dam and Brilliant Expansion Project (2007) upstream to the Slokan Pool area just below BC Hydro’s Kootenay Canal (1975) and FortisBC’s South Slokan (1928) dams. FortisBC owns and operates the four dams on the Lower Kootenay, upstream of Brilliant Dam, and FortisBC operates Brilliant Dam and Brilliant Expansion facilities on behalf of Columbia Power Corporation. The BHPR is located mainly within RDCK Area “I”, which has a population of 2,570 people including the communities of Shoreacres, Glade, Tarrys and Thrums (Davidoff, 2012). RDCK Area “H” extends to include the Slokan Pool (Columbia Power Corporation) properties.

Since completion of the West Kootenay Power Corps. (now Columbia Power Corporation) Brilliant Dam, the BHPR has been managed solely for hydro-electric generation purposes, and has been referred to as an “industrial commodity”. The priority has been to maximize economic revenue while providing an energy source for area residents and industry. Construction of the dams created more stable flows leading to the establishment of housing developments, recreation and public access. However, fluctuating water levels have impacted riparian areas, caused erosion issues, and increased access has led to the introduction of invasive species. Residents of the Headpond have expressed the need for improved planning and water management (CRT Local Governments’ Committee, 2014).

The Brilliant Headpond Stewardship Initiative was developed in 2015 as a result of the efforts of RDCK Director Davidoff, and with the financial support of the RDCK, Columbia Basin Trust (CBT) and Columbia Power Corporation (CPC). It aims to bring together residents of the Brilliant Headpond Reservoir area in a collaborative effort to build an environmental stewardship plan that supports informed decision-making in order to ensure the area is best managed for ecological, social, and cultural values, in addition to its current uses. The long-term goal is to develop a comprehensive stewardship strategy for BHPR, ensuring that riparian management practices, recreation access and watershed management are undertaken in ways that protect the natural resources and community values of the area.

The methods applied to complete the Scoping Study include: i) compiling a Steering Committee to guide the Scoping Study; ii) developing a Terms of Reference for the Steering Committee; iii) conducting stakeholder interviews and compilation; iv) public survey results compilation; v) summarizing issues identified and priorities; and, vi) developing stewardship recommendations and next steps. Findings from the Brilliant Headpond Stewardship Initiative Scoping Study will help prioritize stewardship actions in the watershed.

TABLE OF CONTENTS

1.	Introduction	6
1.1	Purpose	7
1.2	Objectives	7
1.3	Study Area	8
2	Scoping Activities	9
3	Interviews	11
3.1	Interview Questions	12
3.2	Interview Results	13
3.3	Regional District Of Central Kootenay Area/ Official Community Plan Community Survey	19
3.4	Frequencies, Outliers And Trends	27
4	Existing Information For The Brilliant Headpond Reservoir	29
4.1	Resource Use Agreements Inventory	29
4.1.1	The Columbia River Treaty	29
4.1.2	Canal Plant Agreement	29
4.1.3	International Joint Commission – Kootenay Lake Board Of Control	31
5	Opportunities For Implementing Stewardship In The Brilliant Headpond Reservoir	32
5.1	Regional District Of Central Kootenay Area I Official Community Plan Review	32
5.2	Watershed Management Planning	32
5.3	Community-Based Water Monitoring	33
6	Recommendations For Creating A Brilliant Headpond Stewardship Collaborative	34
6.1	Proposed Actions	34
6.1.1	Establishing A Brilliant Headpond Stewardship Collaborative	34
6.1.2	Stewardship Activities	35
6.1.3	Planning And Management	35
6.1.4	Sensitive Habitat Inventory Mapping	36
6.1.5	Columbia River Treaty – Nested Governance In The Columbia River Basin	37
6.1.6	Brilliant Headpond Ecological Literature Review	37
6.2	Engagement & Communication	38
6.3	Proposed Phase One Timeline	38
6.4	Funding Sources	39
7	Conclusion	40
8	References	41
	Appendix A	42

ACKNOWLEDGEMENTS

The project team gratefully acknowledges the following people for their contributions and guidance during the completion of this report.

Project development support was provided by:

- Andy Davidoff, Regional District of Central Kootenay Area I Director
- Sangita Sudan, Director of Development Services, Regional District of Central Kootenay
- Meeri Durand, Planning Manager, Regional District of Central Kootenay

Project guidance was provided by the Brilliant Headpond Stewardship Initiative Steering Committee:

- Andy Davidoff, Regional District of Central Kootenay Area I Director
- Fred Bojey, Regional District of Central Kootenay Area I Alternate Director, Brilliant Community
- Walter Popoff, Regional District of Central Kootenay Area H Director
- Kelly Poznikoff, Regional District of Central Kootenay Area I Advisory Planning Commission, Shoreacres Community
- Andy Ozeroff, Regional District of Central Kootenay Area I Advisory Planning Commission, Glade Community
- Cal Lorencz, Shoreacres Neighbourhood Community Association
- Brian Gray, Tarrys/Thrums Community Representative
- Peter Wood, South Slokan Community Representative
- Linda McIntyre, Glade Access Committee
- John Hanneson, Glade Community Representative
- Nicole Kapell, Ktunaxa Nation Council
- Michael Zimmer, Okanagan Nation Alliance

Project funding was provided by:

- Regional District of Central Kootenay Area I
- Columbia Basin Trust and Columbia Power Corporation

This report was authored by:

- Heather Leschied, Program Director, Living Lakes Canada
- Katarina Hartwig, Executive Director, Living Lakes Canada

1. INTRODUCTION

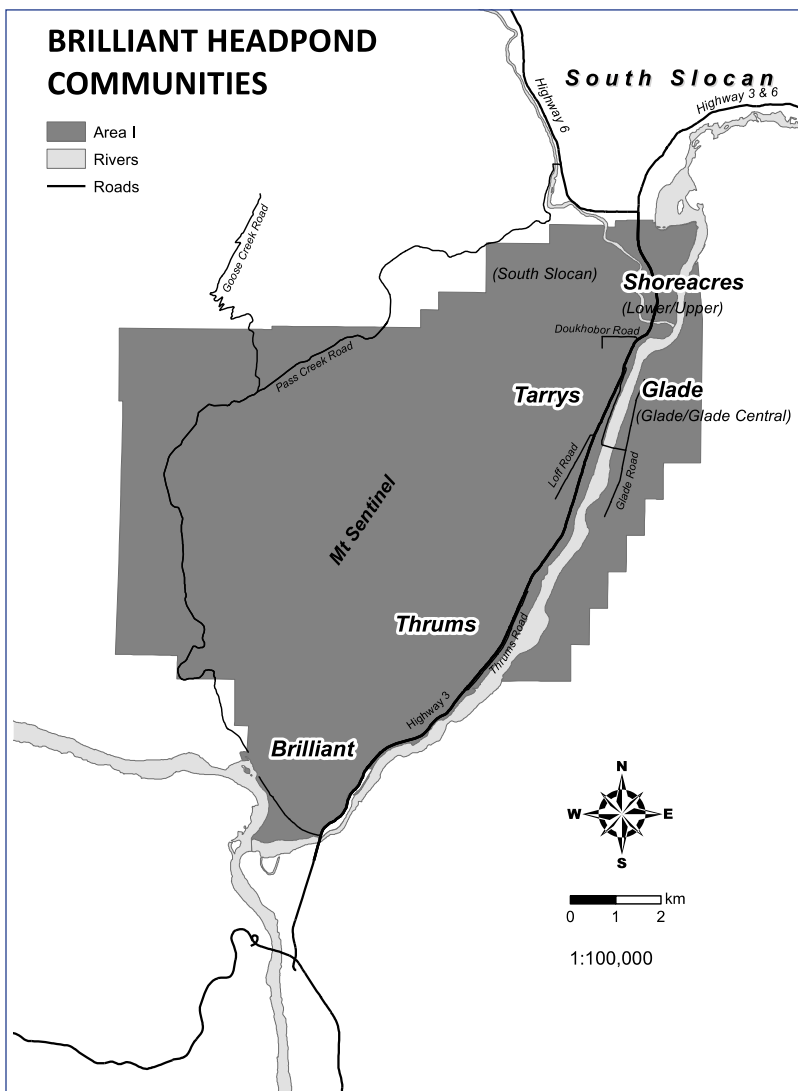


Figure 1: Brilliant Headpond Communities and RDCK Area I

The Brilliant Headpond Reservoir is formed by the construction of Brilliant Dam on the Kootenay River, upstream of the confluence with the Columbia River at Castlegar, British Columbia. The Headpond extends upstream through the communities of Thrums, Tarrys, Glade, Shoreacres, and South Slokan (Figure 1).

Water flows in the Brilliant Headpond Reservoir are managed by the Canal Plant Agreement in a manner that maximizes hydro-electric generation. Impacts from the management of the Reservoir are felt by the communities along the Headpond as a result of both daily and seasonal water level fluctuations.

Interest in developing a stewardship initiative for the Brilliant Headpond began in 2010, following a community identified need to establish conservation areas, engage community groups and local residents to examine possibilities of how to improve ecological protection

in the area. Coincidentally, similar processes had begun in other parts of the Columbia Basin that could serve as a model for engaging residents and decision makers in the Brilliant Headpond.

One such model is the East Kootenay Integrated Lake Management Partnership, which was established in 2006 to address the intensification of shoreline development pressures on lakes in the Kootenay Region.

The Partnership is made up of federal, provincial, regional, municipal and First Nations governments, community representatives as well as non-government organizations. This collaborative adopted Fisheries and Oceans Canada’s methodology for Sensitive Habitat Inventory Mapping (SHIM). SHIM helps to develop and implement guidelines for shoreline development that protects existing fish and wildlife values and conserves ecosystems and species of conservation concern. To date, the East Kootenay Integrated Lake Management Partnership has completed projects for Windermere Lake,

Columbia Lake, Wasa Lake, Moyie Lake, Monroe Lake, Tie Lake, Rosen Lake, St. Mary's Lake, Jim Smith Lake, and Lake Koocanusa.

Another model is the Kootenay Lake Partnership, which was formed in 2010 to address the increasing growth and development pressures of people desiring to live on or near Kootenay Lake. As a result, several agencies including local governments and First Nations collaborated and developed a strategic Terms of Reference to work together on the lake management planning.

Similar to the East Kootenay Integrated Lake Management Partnership, the Kootenay Lake Partnership focused on Sensitive Habitat Inventory Mapping projects. The now completed, Kootenay Lake Sensitive Habitat Inventory Mapping project is unique in that it incorporates Ktunaxa Nation archaeological and cultural values, in addition to ecological values previously identified. Integrating these layers into the Shoreline Management Guidelines Document have set a precedent in the Columbia Basin for recognizing the importance of aboriginal values to shoreline and lake management.

A significant opportunity has been identified by area residents of the BPHR for a collaborative effort to build a stewardship model that supports informed decision-making and planning efforts, in order to ensure the area is best managed for ecological and social values, in addition to its current values.

1.1 Purpose

Living Lakes Canada was contracted by the Regional District of Central Kootenay to complete the Brilliant Headpond Stewardship Initiative Scoping Study. The Scoping Study is intended to be an initial step in developing a comprehensive stewardship initiative for the Headpond.

1.2 Objectives

The goal of the Scoping Study is to bring together the residents of the Brilliant Headpond Reservoir in a collaborative effort to build the foundation for a stewardship initiative that supports informed decision-making in order to ensure the area is best managed for ecological, social and cultural values, in addition to its current uses.

The objectives of the Scoping Study are to:

- Establish a Steering Committee to guide the completion of the Scoping Study;
- Conduct stakeholder interviews and;
- Assess challenges and opportunities as identified by interviewees;
- Complete a resource use inventory of industrial operations agreements
- Complete a summary of stewardship recommendations, including the identification of potential financial resources

1.3 Study Area



Figure 2: Map of Columbia River dams with Lower Kootenay River dams circled.

The Kootenay River is a major tributary of the Columbia River, located in southeastern British Columbia. The Kootenay River begins at its headwaters in the Canadian Rocky Mountains north of Kootenay National Park, and flows south across the Montana border where the Libby Dam formed Kootenay Reservoir in 1972. The river heads north again and crosses the Idaho border near Creston BC, where it becomes Kootenay Lake. From the outlet of the lake, the Lower Kootenay River flows through a series of dams – Corra Linn, Upper Bonnington, Lower Bonnington, South Slokan, and Kootenay Canal before it reaches Brilliant Dam upstream of its confluence with the Columbia River (Figure 2).

The Brilliant Headpond lies within the traditional territories of and claimed by the Ktunaxa, Sinixt and Syilx (Okanagan) people. This area was historically important for navigation and trading. Culturally significant sites can still be found today, and are identified as important fishing and gathering areas (RDCK, 2016).

The area was settled between 1908 and 1913 by the establishment of communal Doukhobor villages sites at the confluence of the Kootenay and Columbia River, Ootischenia and Brilliant. Eventually communities were established in Pass Creek, Shoreacres, Glade, Tarrys and Thrums in order to support commercial enterprises in Brilliant (RDCK, 2016).

The region celebrates its social diversity. Cultural and heritage assets continue to be highly valued (RDI, 2013). Russian is the largest ethnic majority in most of the communities within the Brilliant Headpond area, however the region is continuing to diversify with new people moving to the area, and new languages being spoken.

Currently, the major land owners adjacent to the Brilliant Headpond are Selkirk College, which operates its Skattebo Educational Forest, Teck, Columbia Power Corporation and Canadian Pacific Railway. The amount of private land held by industrial and institutional entities is viewed by community members as an opportunity to increase riparian stewardship opportunities.

2 SCOPING ACTIVITIES

To ensure the Brilliant Headpond Stewardship Initiative Scoping Study acquired the appropriate information to conduct the scope, the following activities were undertaken:

- a) **Meetings with Regional District of Central Kootenay Area I Director, Andy Davidoff:**
 - Initial meeting with A. Davidoff to discuss project needs and potential.
 - Development and refinement of project proposal.
 - Identification of Steering Committee members.
 - Development of list of interview candidates.
- b) **Securement of financial resources:**
 - Confirmed financial support from RDCK Area I.
 - Confirmed financial support from Columbia Basin Trust and Columbia Power Corporation.
- c) **Brilliant Headpond Stewardship Initiative Steering Committee Meetings:**
 - Initial Steering Committee meeting took place to: review goals and objectives of the project; modify and approve Terms of Reference for the Steering Committee; receive summary of interview results to date; refine list of interviewees; and confirm next steps.
 - As requested by the Steering Committee, two additional members were invited to participate as representatives of the Ktunaxa First Nation and Okanagan Nation Alliance.
 - Final Steering Committee meeting took place to: review draft Scoping Study report and confirm next steps.
- d) **Stakeholder interviews:**
 - A contact list was initially established of 77 individuals including area residents, elected officials, government (including First Nations) and industry staff and community organization representatives.
 - Of this list a total of 37 individuals were interviewed. Each interview took approximately one hour, and included a total of 15 questions. Detailed notes for each interview were recorded in Microsoft Word.
- e) **RDCK Area I Official Community Plan Review Community Survey**
 - During the completion of the Scoping Study, the RDCK began a review of the 1994 Official Community Plan for Area I. This review included a comprehensive public survey to solicit more detailed information from residents than can be provided by census data. Survey questions related to household profile, agricultural land use, industrial land use, and recreational uses, among others. Additional questions were included in the survey, relevant to the Scoping Study, which provided an opportunity to gather broader perspectives across the community than from interviews alone. The relevant survey results are presented in this report.
 - As part of the OCP Review the RDCK hosted a public outreach table during the Pass Creek Fall Fair. Information about the Brilliant Headpond Stewardship Initiative was

distributed, and provided an opportunity for community members to volunteer to participate in the initiative in the future.

f) Summary of issues, challenges and opportunities:

- Each interview was reviewed in detail. Themes and trends pertaining to environmental issues, identified challenges and opportunities were recorded.
- Select quotes were pulled from the interviews that represent a cross-section of views, and reviewed for approval by the appropriate interviewee.
- Results are presented in graph format for ease of interpretation.
- Stakeholder interview results and government community survey results were combined and presented as frequencies, outliers and trends.

3 INTERVIEWS

The initial interview list was developed by RDCK Area I Director Andy Davidoff. The list was expanded based on recommendations by the interviewees themselves. In total, 37 individuals were interviewed (Table 1). The interview team made significant effort to ensure a broad cross-section of perspectives were covered. Despite these efforts, obvious gaps still exist in the data set. Specifically, Canadian Pacific Railway (CP Rail) did finally responded after numerous requests for an interview by saying that they had nothing to provide to this initiative. Given the significant role their operations play in the use of the Headpond area, it is recommended that attempts continue to be made to engage CP Rail as the Brilliant Headpond Stewardship Initiative matures.

	ORGANIZATION	POSITION/SECTOR	NAME
1	Glade Access Committee	Member	Linda McIntyre
2	Area I Advisory Planning Commission Glade Representative	Member	Andy Ozeroff
3	Shoreacres Neighbourhood Community Association	President	Cal Lorencz
4	Glade Community Representative	Member	John Hanneson
5	Tarrys/Thrums Community Representative	Member	Brian Gray
6	South Slokan Community Representative	Member	Peter Wood
7	Regional District of Central Kootenay	Area I Advisory Planning Commission, Shoreacres Representative	Kelly Poznikoff
8		Area I, Thrums, Tarrys, Shoreacres, Glade, Brilliant	Andy Davidoff
9		Area I Alternate Director, Brilliant Community	Fred Bojey
10		Area H, Slokan Pool	Walter Popoff
11		Area E, Slokan Pool	Ramona Faust
12		Planning Manager	Meeri Durand
13		General Manager of Development Services	Sangita Sudan
14		Manager of Castlegar & District Complex/Glade Regional Park	Jim Crockett
15	City of Nelson	Director Public Works and Operations	Colin Innes
16	BC Hydro	Environmental and Society Issues Manager	Mary Ann Coules
17	Columbia Basin Trust	Manager, Water & Environment	Tim Hicks
18	Columbia Power Corporation	Manager, Environmental Programs	Wendy Horan
19	FortisBC	Manager, Community and Aboriginal Relations	Blair Weston

20		School of Environment and Geomatics Recreation, Fish and Wildlife Technology Program	Brendan Wilson
21	Selkirk College	Fisheries, Ecology and GIS (macrophytes) Planning Instructor	Tim Thurston
22	Teck	Conservation Zone-Confluence of Slocan & Kootenay Rivers	Moss Giasson
23	Columbia River Treaty Local Government Committee & City of Nelson	Chair Mayor	Deb Kozak
24	Kootenay Lake Partnership	Chair	Ryan van der Marel
25	Slocan River Streamkeepers	Columbia Basin Water Quality Monitoring Program	Rhia McKenzie
26	Interior Health Authority	Environmental Health Officer Health, Built Environment Program Lead	Renee Ansel
27	Canadian Columbia River Inter-tribal Fisheries Commission	Stewardship and Protection	Kenton Andreashuk
28	Columbia Operations Fisheries Advisory Committee	Fortis Environmental Program Lead	Sheila Street
29	Ministry of Forests, Lands and Natural Resource Operations	Wildlife Biologist, Fish and Wildlife Compensation Program	Irene Manley
30		Senior Fish Biologist, Fish and Wildlife Branch	Jeff Burrows
31	Ktunaxa Lands and Resources Agency	Environment and Archaeological Stewardship Coordinator	Nicole Kapell
33	Ministry of Transportation and Infrastructure	Glade Ferry/improvements	Katie Ward
33	Central Kootenay Invasive Species Society	Executive Director	Jen Vogel
34		Aquatic Invasive Species Program Coordinator	Kaylish Fraser
35	Castlegar Friends of Parks and Trails	President	Doug Clark
36	Okanagan Nation Alliance	Fisheries Biologist – Columbia Region	Michael Zimmer
37	Resident	Retired Selkirk College Instructor and Hydrologist	Wendy Hurst

Table 1: List of Individuals Interviewed

3.1 Interview Questions

The questions selected for the interviews were reviewed and commented on by the Brilliant Headpond Stewardship Initiative Steering Committee. Questions were divided into the categories of “Opportunities/challenges”, and “Engagement”. They were adapted from the Kootenay Lake Stewardship Plan Scoping Study (AMEC 2011), and included the following:

Opportunities/Challenges

- What is you/your organization’s interest in Brilliant Headpond Reservoir?
- How do you/your organization use BHPR?
- What are the most important issue(s) facing BHPR?
- What are the opportunities involved with managing the BHPR?
- What are the challenges involved with managing the BHPR?

- What environmental stewardship activities within the region could contribute/collaborate toward a healthy watershed?
- How would you like your watershed to look in the next 10, 20, or 50 years?
- What, if anything, is a barrier to that happening?
- What, if anything, will help that to happen?

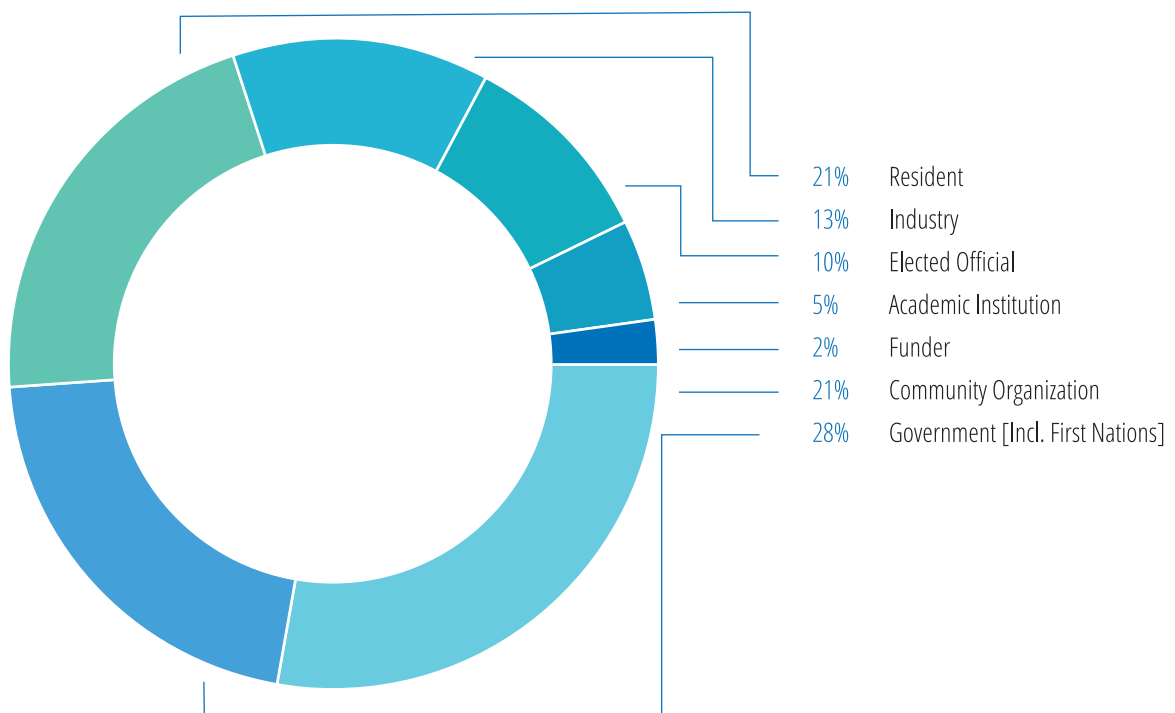
Engagement

- Can you suggest any local community leaders who are potential local stewardship champions? Other individuals/groups?
- What are the largest barriers to engaging people around this topic?
- Why will groups and individuals support or object to this project?
- What issues will likely be raised during engagement?
- How would you like to be engaged?
- What is the best way to reach you/your organization/community of interest?

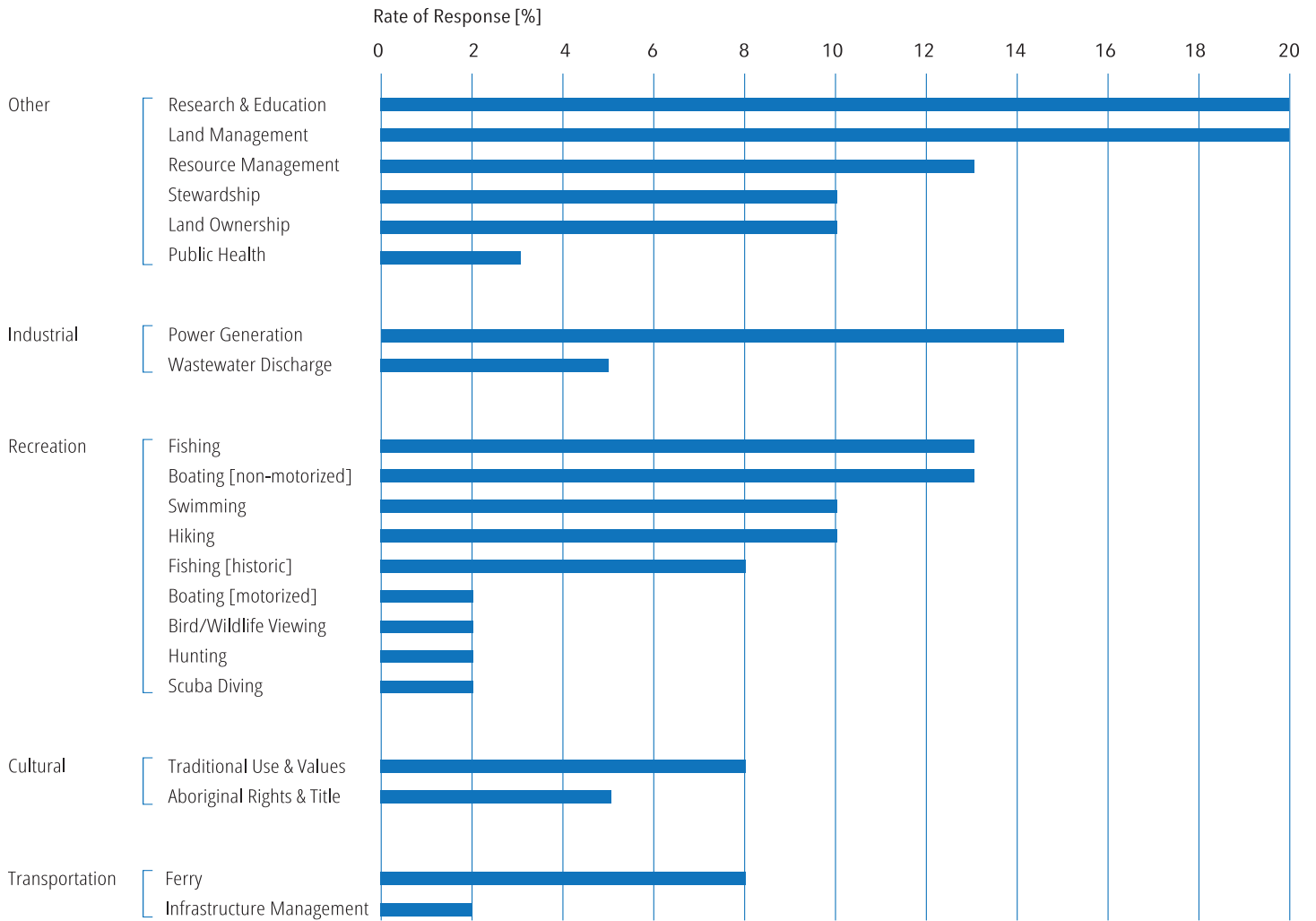
3.2 Interview Results

Subsequent to the interviews, a detailed summary of select questions was completed. Each summary displays the percentage of respondents who indicated concern for, or interest in the topics as presented. The following graphs outline trends that emerged based on the statements from interviewed individuals and the organizations they represent. This is not meant to be an exhaustive survey of the entire community, but rather a general indication of views and opinions held by those who participated in the interviews.

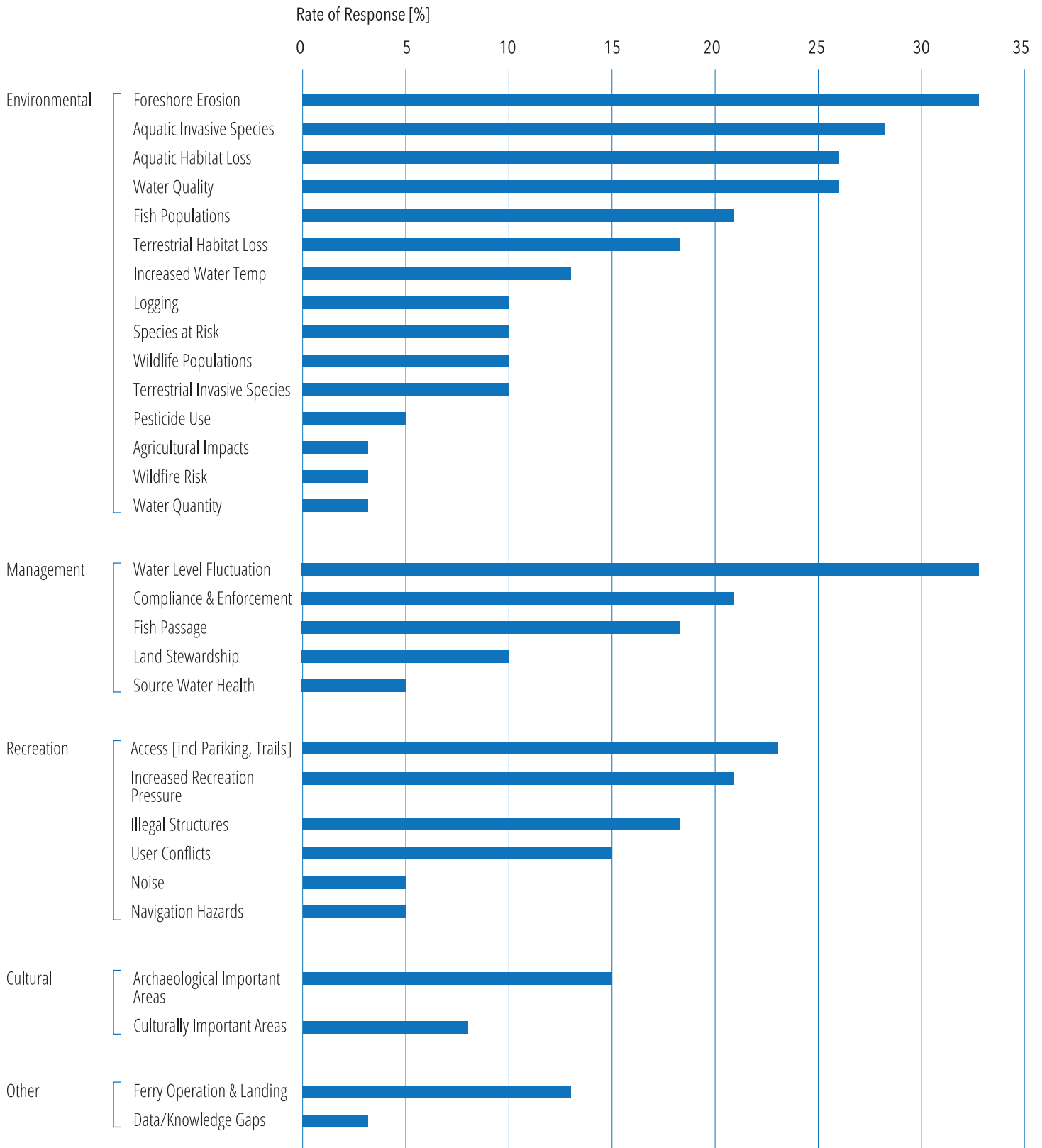
Question #1: What is you/your organization’s interest in the Brilliant Headpond Reservoir?



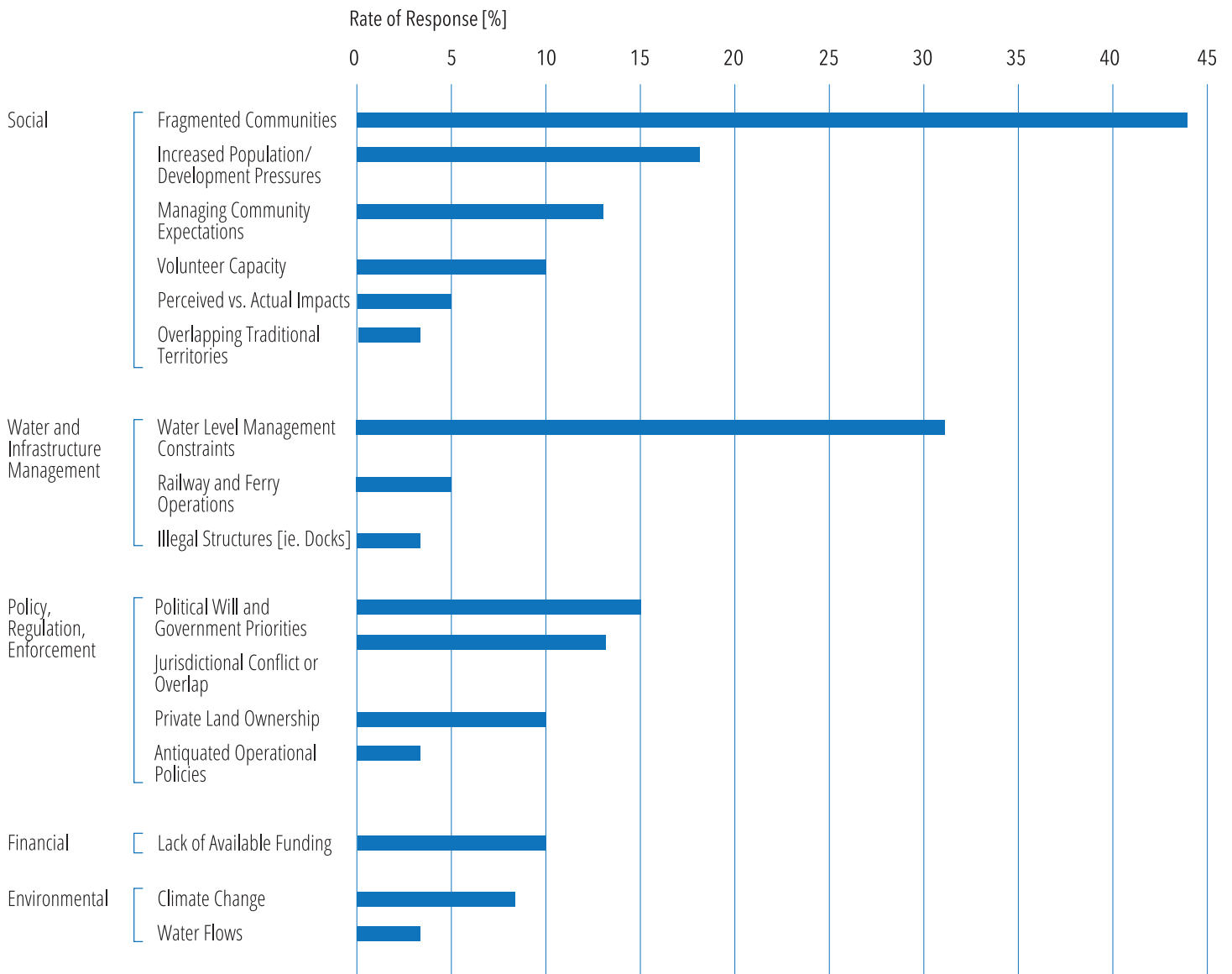
Question #2: How do you/your organization use Brilliant Headpond?



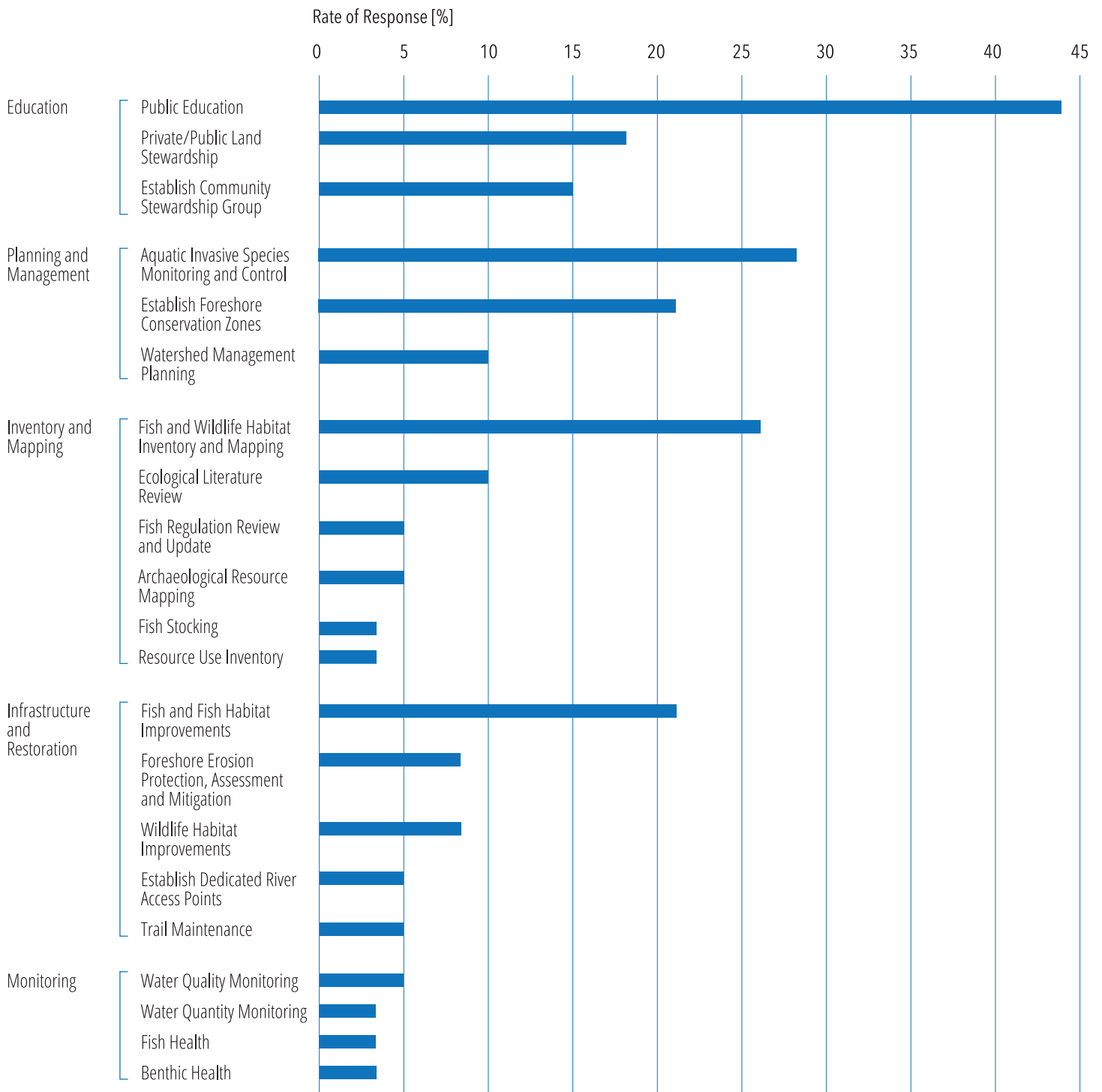
Question #3: What are the most important issue(s) facing Brilliant Headpond?



Question #4: What are the challenges involved with managing the Brilliant Headpond?



Question #5: What environmental stewardship activities within the region could contribute/ collaborate toward a healthy watershed?



Question #6: How would you like your watershed to look in the next 10, 20, or 50 years?

The following are select excerpts from interviews about future visions for the Brilliant Headpond watershed. A representative selection of responses is included below.

"Pristine water quality, control of aquatic invasive species, all identified high value land designated as conservation."

"Restrict motorized use at Slocan Pool."

"Achieve a balance of uses."

"Established conservation area on south side of the river."

"Healthier and more productive riparian buffer zone."

"Optimized sport fishery."

"Issues for endangered fish addressed."

"Improved access to the Brilliant Head Pond."

"No further development."

"Fisheries management improved, including enforcement."

"Salmon returning to the system."

"Riparian areas protected from erosion."

"No additional accesses for public boat launches."

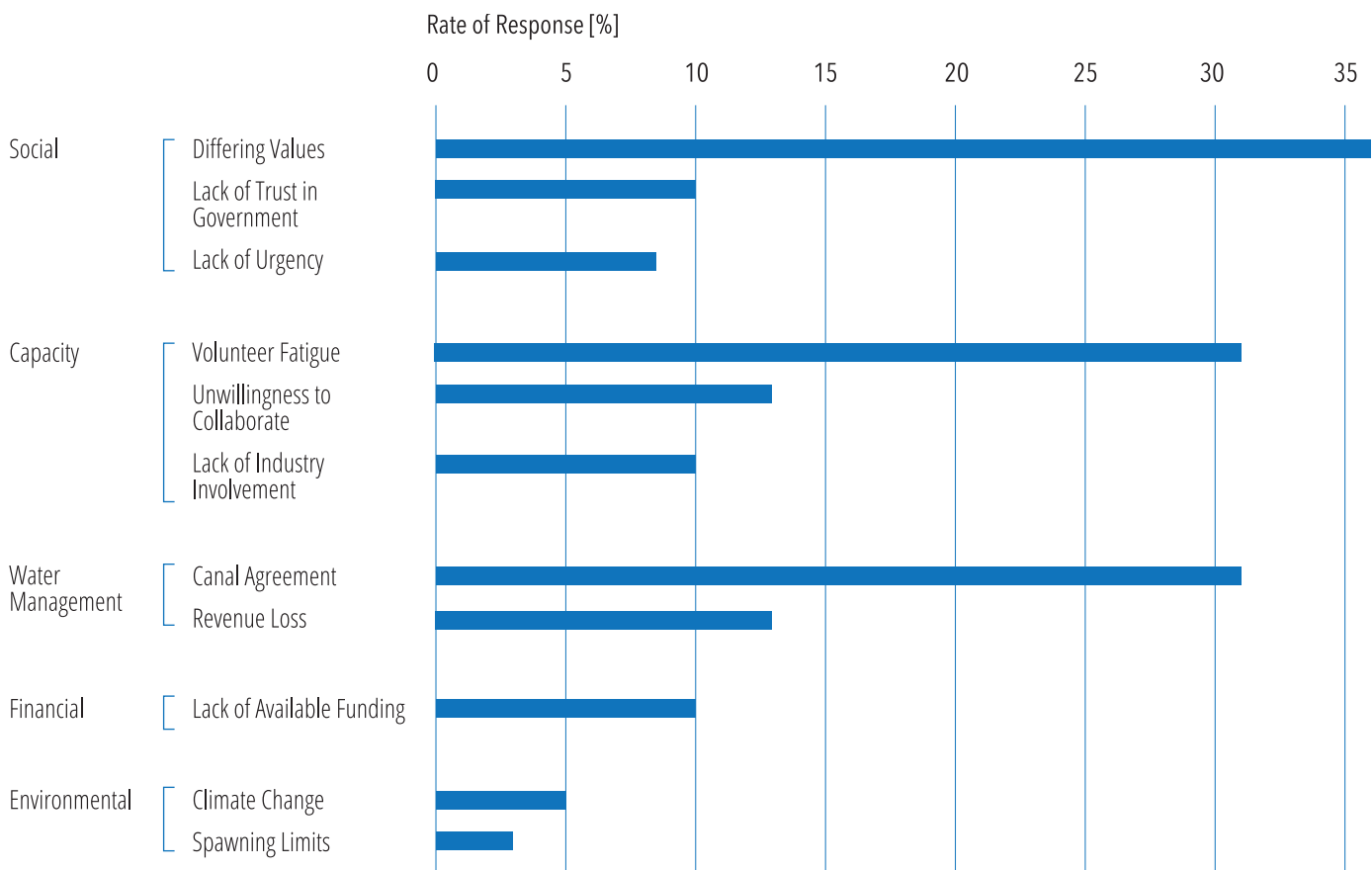
"More awareness of ecological function and value."

"Long-term protection of the wildlife corridor along the river."

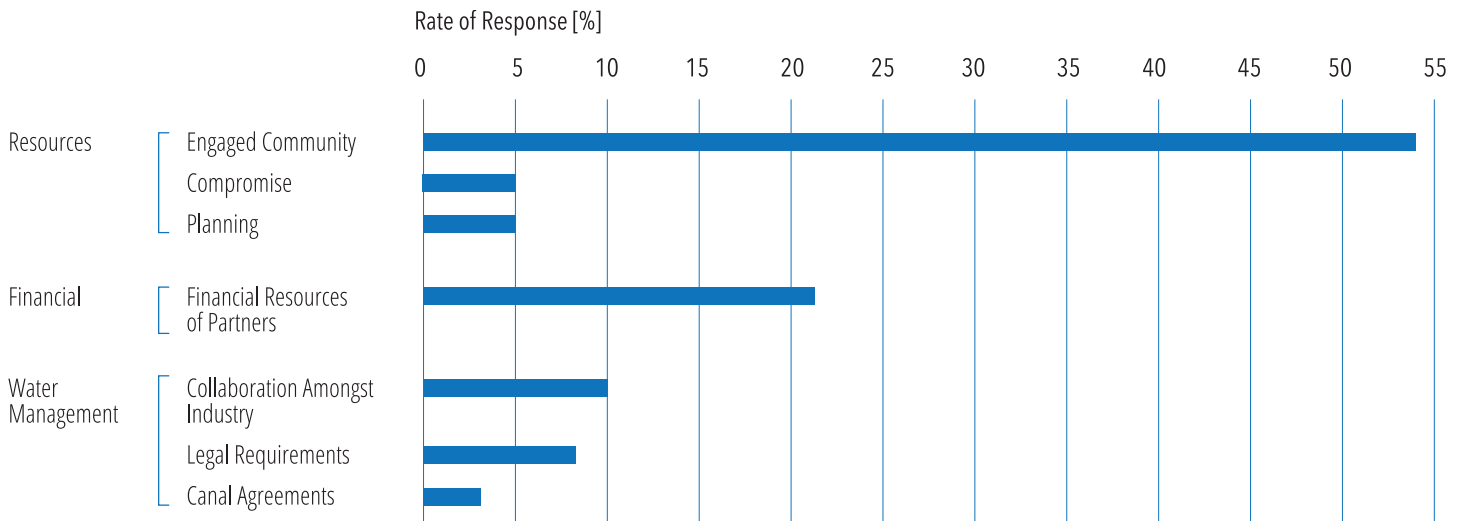
"Free of zebra mussels."

"Guided development that has minimal impact on fish and wildlife habitat."

Question #7: What, if anything, is a barrier to that (future vision) happening?



Question #8: What, if anything, will help that (future vision) to happen?

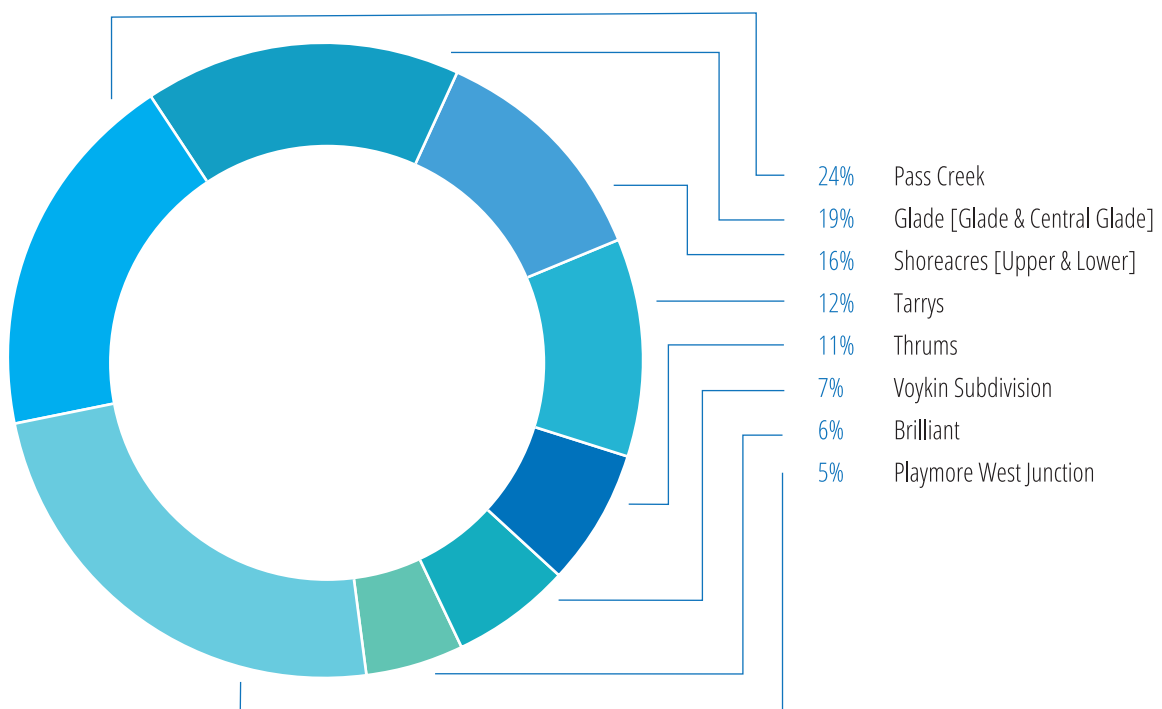


The remaining questions in the interview focused on approaches for community engagement and will be taken into account during stewardship planning and implementation.

3.3 Regional District of Central Kootenay Area I Official Community Plan Community Survey

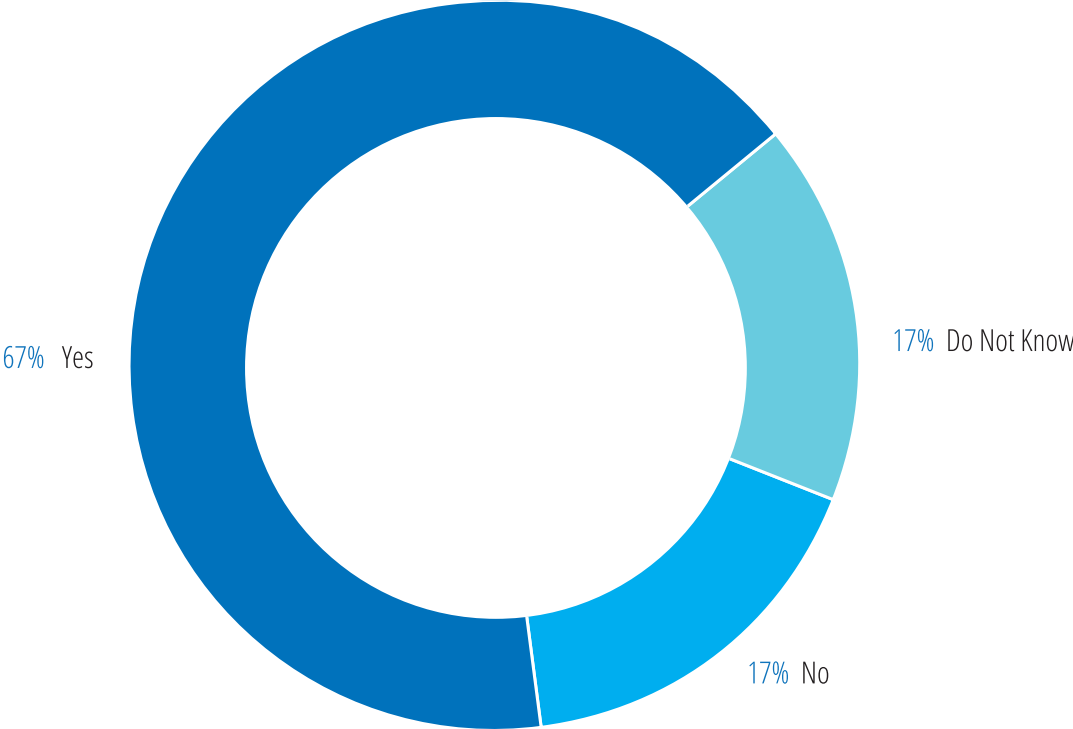
A selection of questions related to the Brilliant Headpond Stewardship Initiative were incorporated into the Area I Official Community Plan Community Survey in order to garner a broader perspective from area residents. Survey respondents were from communities across Area I. The results of the survey questions are presented below. Answers not relevant to the question were not included in the summary.

Question #1: Which community do you own property or reside within Electoral Area I?

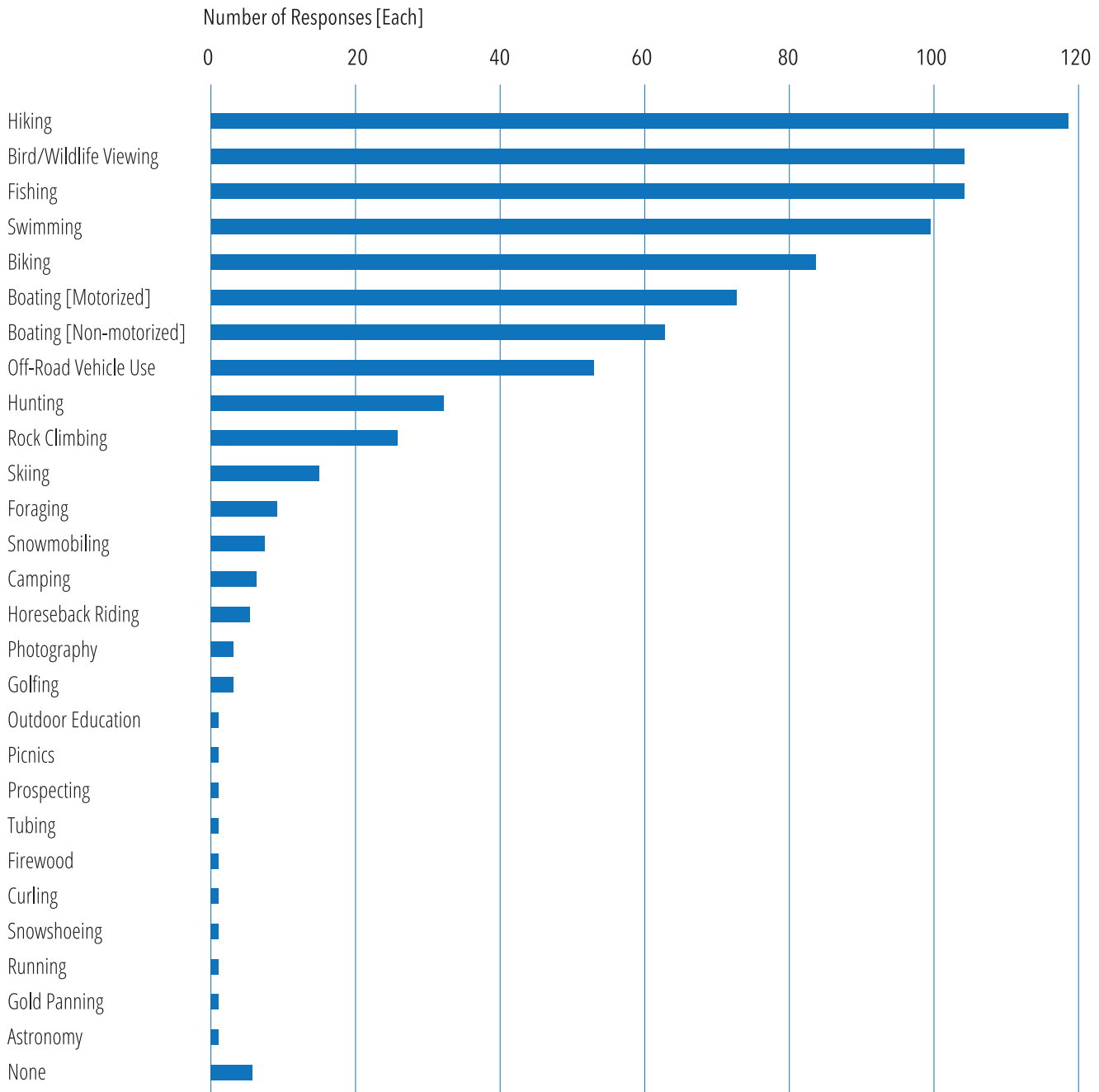


Question #2: Are there important heritage or archaeological assets (historic building or structures, cultural sites, places of historic public use) that should be recognized in the community plan and potentially listed as regional heritage sites?

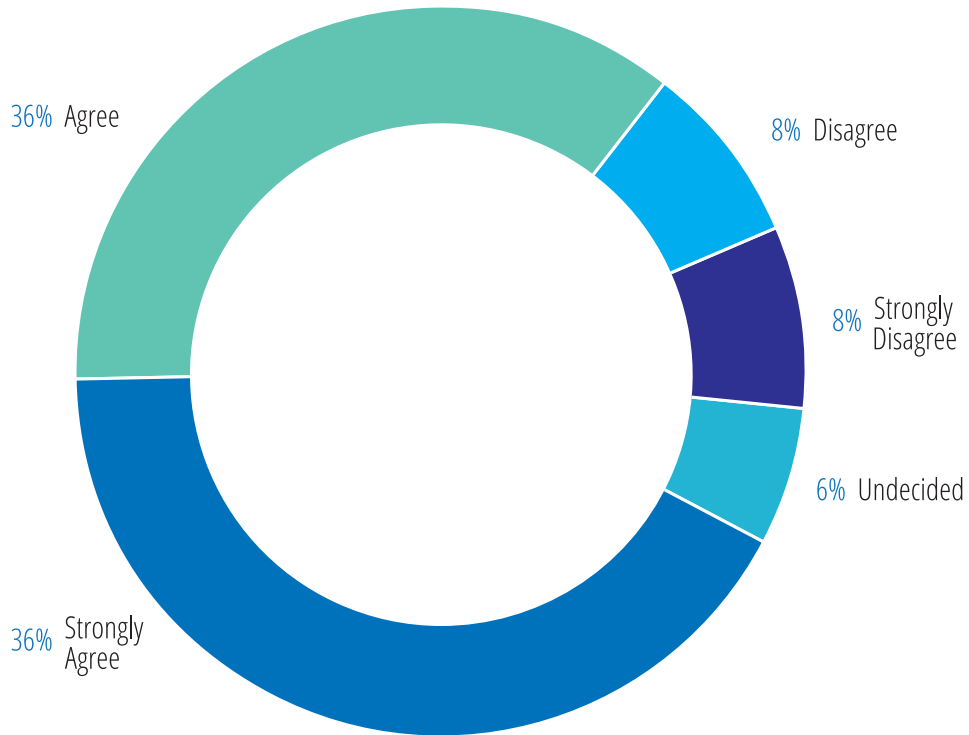
Note: while respondents provided detailed locations and examples of sites, the below graph depicts whether the respondent identified important cultural sites as present, absent or unsure/do not know. Detailed locations will be kept confidential.



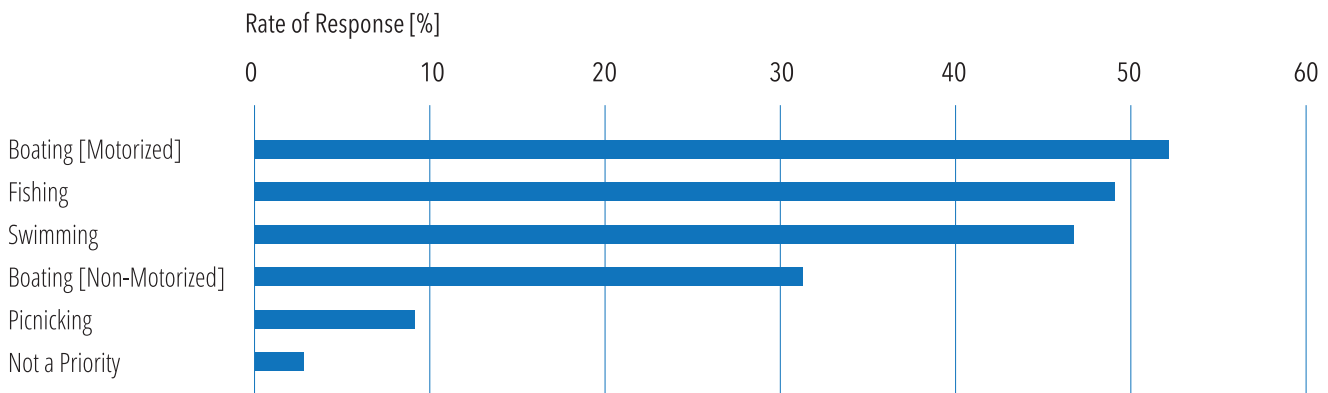
Question #3: Which outdoor recreational activities within your community do you participate in? Please list as many as application (swimming, motorized boating, non-motorized boating, off road vehicle use, hiking, rock climbing, fishing, mountain biking bird watching, wildlife viewing, etc.)



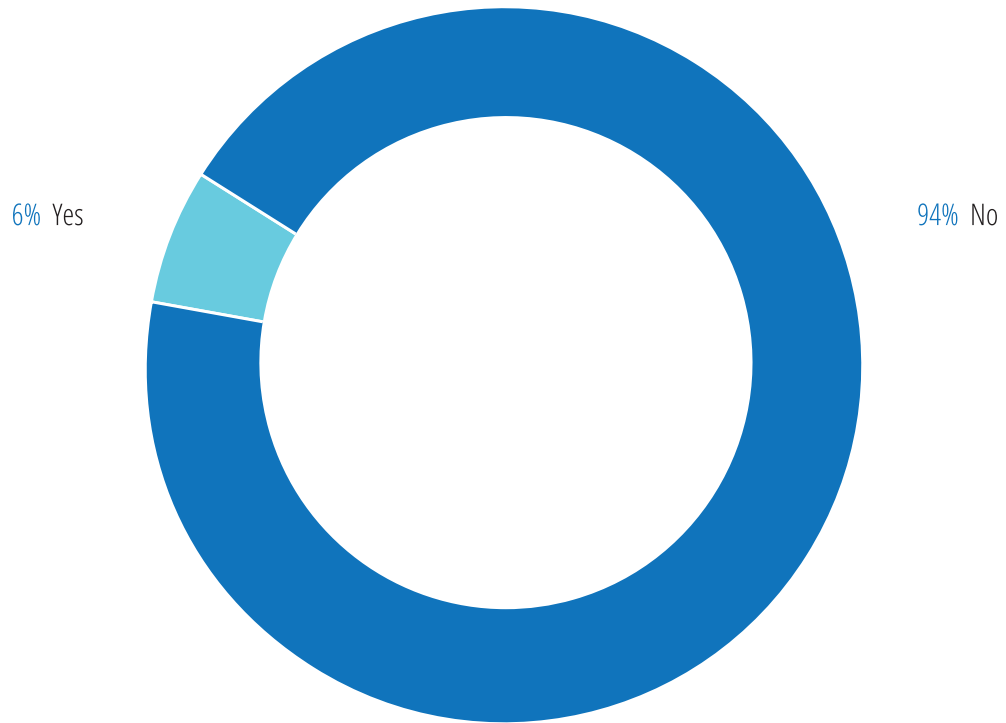
Question #4: Public access to the Kootenay River is a priority for my community:



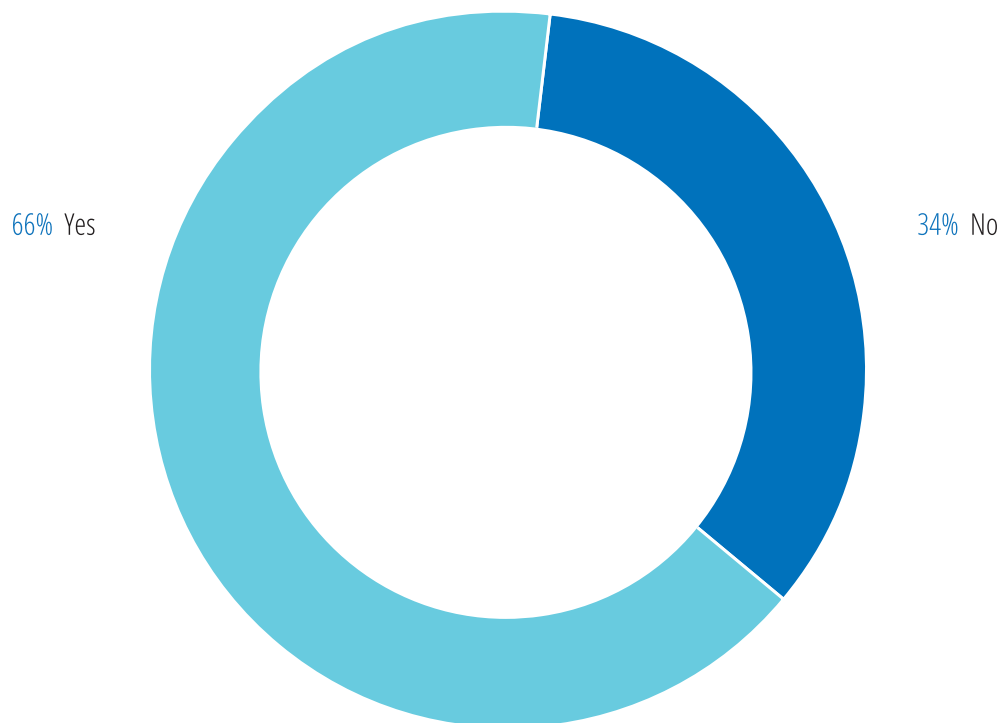
Question #5: If public access to the Kootenay river is a priority, for which activities?



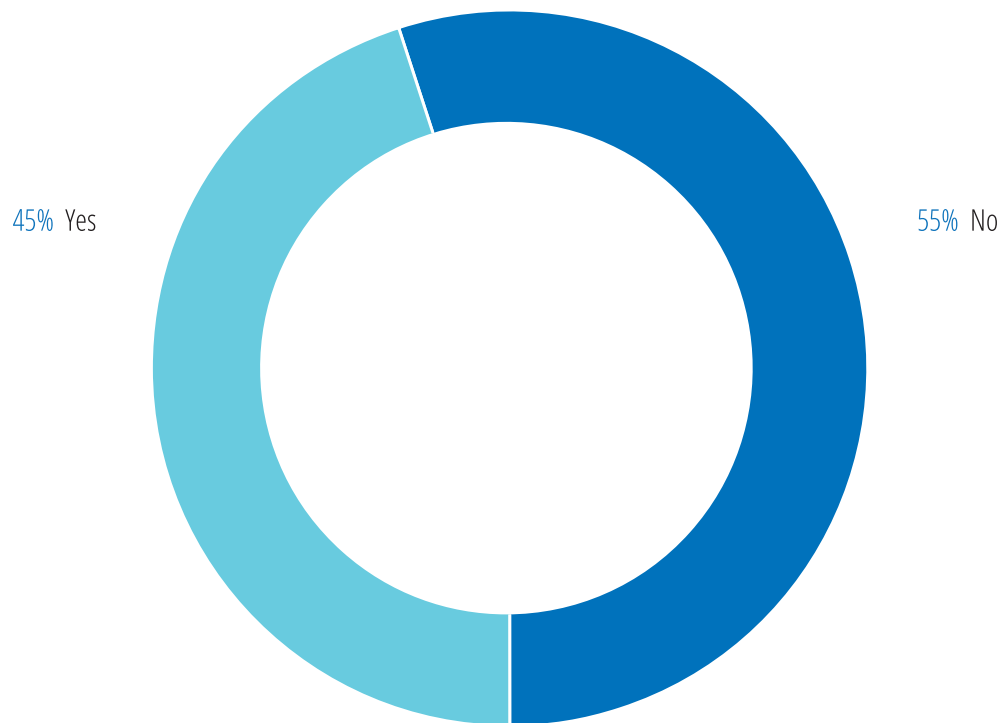
Question #6: Do you have a dock?



Question #7: Do you support the inventory and enforcement of regulations regarding structures such as docks?



Question #8: Do you support the amalgamation of numerous private docks into the establishment of a community boat launch or a community dock?



Question #9: Are there any significant wildlife, fisheries or natural heritage features you feel are important to the community that should be protected either as an environmental reserve or protected area?

- Slocan Pool
- Glade Creek
- Glade Falls
- Riparian vegetation in Shoreacres, Glade, Thrums, Tarry's
- Gold Island
- Wetlands adjacent to Shoreacres
- Near shore wetlands along river
- Skattebo Reach

Question #10: Please indicate your level of concern regarding the following environmental issues:

	Undecided	Not Concerned	Concerned	Very Concerned
Industrial Pesticide Use	2%	8%	25%	64%
Water Quality	3%	4%	34%	59%
Water Availability	4%	14%	30%	53%
Wildfire Risk	3%	11%	35%	52%
Domestic Pesticide Use	4%	13%	31%	52%
Aquatic Invasive Species	5%	4%	41%	50%
Logging	4%	17%	30%	50%
Fish Population	3%	5%	44%	49%
Aquatic Habitat Loss	6%	10%	43%	42%
Land-based Invasive Species	5%	8%	47%	40%
Foreshore Erosion	10%	14%	36%	40%
Water Level Fluctuation	6%	19%	36%	39%
Land-based Habitat Loss	6%	16%	41%	38%

Question #11: Are there any environmental issues of concern not listed above? Please identify:

- Wildlife populations
- Dam impacts
- Motorized boat use
- Livestock
- Air quality
- Hunting
- Land-based pollution
- Off-road vehicle use
- Bee populations
- Bat populations
- Noise pollution
- Climate change

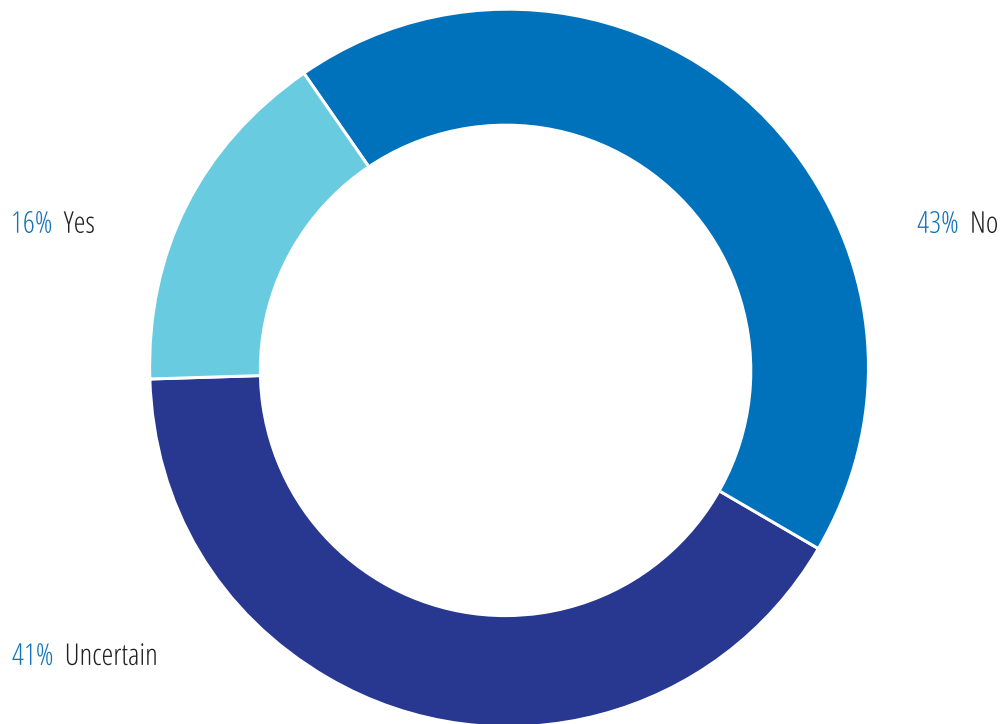
Question #12: Please indicate your level of support for environmental stewardship activities to improve the ecological health of the watershed.

	Undecided	Not Supportive	Supportive	Very Supportive
Water Quality Monitoring	7%	4%	41%	49%
Fish Habitat Improvements	4%	4%	47%	46%
Watershed Management Planning	5%	5%	45%	45%
Aquatic Invasive Species Identification, Monitoring and Control	7%	3%	50%	41%
Land-based Invasive Species Identification, Monitoring and Control	9%	4%	50%	37%
Foreshore Erosion, Protection, Assessment and Mitigation	10%	8%	45%	37%
Trail Maintenance	5%	7%	51%	37%
Establishment of Dedicated River Access Points	7%	12%	46%	35%
Establish Foreshore Conservation Zones for Habitat Protection	11%	11%	46%	32%
Community Outreach and Education	10%	8%	54%	28%
Private Land Stewardship	17%	13%	46%	24%
Archaeological Resource Mapping And Protection	13%	15%	48%	24%
Improving Navigational Aids	16%	21%	47%	16%

Question #13: Are there environmental stewardship activities you would like to see happen that are not listed? Please identify:

- Bat and bee population monitoring
- Fish population improvements
- Water conservation
- Improved recycling facilities
- Local food security

Question #14: Would you be interested in getting involved in environmental stewardship activities in the Brilliant Headpond area?



3.4 Frequencies, Outliers and Trends

The majority of individuals interviewed were government representatives (including First Nations), community organization representatives, and local residents. Interviewees use the Headpond in a variety of ways, including: conducting research and education, such as the Selkirk College Skattebo Educational Forest; land management activities, such as planning and policy development; power generation, and recreational activities.

“The RDCK is committed to balancing land use with environmental, social and economic values.”

SANGITA SUDAN, GENERAL MANAGER OF DEVELOPMENT SERVICES, REGIONAL DISTRICT OF CENTRAL KOOTENAY

The key themes that emerged with respect to environmental issues in the Headpond include: rapid water level fluctuations; erosion impacts; foreshore development including riparian habitat removal, erosion mitigation, and wetland loss; access and recreation including camping, boating, launches, docks, navigation hazards, ferry operation, trails, and off-road vehicle use; aquatic Invasive Species including; Yellowflag Iris, Purple Loosetrife, Eurasian Water Milfoil; culturally important areas; fish population and abundance; water quality concerns from upstream wastewater discharges and logging in a Community Drinking Watershed; loss of habitat for Species At Risk including Western Screech Owl and Lewis’s Woodpecker; habitat loss; pesticide use; and, lack of enforcement of existing regulations.

“People need to realize the importance of the waterbody and realize there is benefit to them in a number of ways – it’s not just about power generation, there are a lot of other ways it is important.”

COLIN INNES, DIRECTOR OF PUBLIC WORKS AND OPERATIONS, CITY OF NELSON

The key themes that emerged when asked about barriers and challenges of management in the Brilliant Headpond included: power production operations and constraints for water level management; railway and ferry operations; fragmented communities: geographically, differing values; lack of available funding; lack of volunteer capacity; variation in user groups (private property vs public access); political will and Ministry priorities; perceived vs actual impacts; managing community expectation; liability issues; and climate change.

“The challenge will be balancing ecosystem impacts, recreational impacts, increasing development of the foreshore, and hydro-electric operations.”

BLAIR WESTON, MANAGER, COMMUNITY AND ABORIGINAL RELATIONS, FORTIS BC

4 EXISTING INFORMATION FOR THE BRILLIANT HEADPOND RESERVOIR

The Brilliant Headpond is managed for hydro-electric generation purposes, and as such, a significant amount of scientific research has been conducted by industrial interests in order to ensure optimal management for power production, as well as to address mitigation and compensation requirements. An initial list of past studies and resources is included in this report (Appendix A), however, it is not exhaustive.

4.1 Resource Use Agreements Inventory

The Brilliant Dam operations are governed or impacted by a series of agreements in place between power producers, government agencies, and industry managers. These agreements include:

4.1.1 *The Columbia River Treaty*

The Columbia River Treaty is an agreement between Canada and the United States, for water management of the trans-boundary Columbia River. In 1963, the Canada-British Columbia Agreement transferred obligations of the Treaty to British Columbia. Under the terms of the Columbia River Treaty, the province of British Columbia is entitled to receive compensation resulting from the construction of Duncan, Libby, Mica, and Keenleyside Dams. This compensation is provided in the form of annual payments known as “downstream benefits”. The Canadian Entitlement is worth \$120-300M annually. Although operations at Libby and Duncan dams affect the water levels in Kootenay Lake and the Brilliant Headpond, neither water bodies are included in the Columbia River Treaty, and therefore do not receive benefits.

The Columbia River Treaty served to coordinate flood control and optimize hydroelectric power generation. While the construction of the Treaty dams brought benefits to Basin communities through employment and investment, it did not come without significant social and ecological, impacts. Large tracts of agricultural land, communities and homes, and cultural history and a way of life, were lost due to flooding and the creation of the reservoirs behind the dams. The people and communities of the Columbia Basin recognize these impacts and are working toward positive remedies in the current review and renewal process of the Treaty agreement.

4.1.2 *Canal Plant Agreement*

Both Duncan Dam and Libby Dam operate under the Columbia River Treaty, and provide a constant supply of water into Kootenay Lake, and subsequently all the dams downstream. BC Hydro diverts water from the five dams on the Kootenay River - Corra Linn, Upper Bonnington, Lower Bonnington, South Slokan and Kootenay Canal, which are owned by FortisBC.

The Canal Plant Agreement is an agreement between the operating parties, Columbia Power Corporation, BC Hydro, Teck and FortisBC. Through the agreement, FortisBC receives the amount of power their generating stations would have produced. The Brilliant Dam is also included in the agreement, as well as the Seven Mile and Waneta Dams on the Pend d’Oreille River. The Canal Plant

Agreement was created and is managed without community consultation and input into operations and timing of flows.

“Canal Plant Agreement (CPA) is a “one-operator” co-ordination agreement under which BC Hydro directs the operation of the projects within the basin and retains the resulting generation. In return, the Entitlement Parties (Teck, FortisBC, Columbia Power Corporation/ Columbia Basin Trust joint ventures, and Waneta Expansion Limited Partnership) receive a specified amount of electricity (capacity and energy) as determined by their plant capabilities, which includes the Brilliant head pond operating characteristics. While BC Hydro is interested in the generation that results from the operation of Brilliant facilities, the ownership of the projects and the management of the associated water licenses remains with the various joint ventures.”

MARY ANNE COULES, ENVIRONMENT AND SOCIETY ISSUES MANAGER, BC HYDRO

Brilliant Dam and Generating Station Statistics¹

Location	Castlegar, BC on the Kootenay River
Construction Period	Originally built in 1944 by Cominco (now Teck). Purchased by Columbia Power and Columbia Basin Trust in 1996
Owner Structure	Columbia Power (50%), Columbia Basin Trust (50%)
Capacity	140 megawatts
Turbine Type	4 vertical Francis turbines
Transmission	0.5 km link to the Brilliant Terminal Station
Joint Venture Asset Manager	Columbia Power
Operations and Maintenance Manager	FortisBC

Brilliant Expansion Generating Station Statistics²

Location	Castlegar, BC on the Kootenay River directly below the Brilliant Dam
Construction Period	2003-2007
Owner Structure	Columbia Power (50%), Columbia Basin Trust (50%)
Capacity	120 megawatts
Turbine Type	1 Kaplan turbine
Transmission	0.5 km links to the Brilliant Terminal Station
Joint Venture Asset Manager	Columbia Power
Operations and Maintenance Manager	FortisBC

¹ Columbia Power Corporation, accessed on September 1, 2016. <http://columbiapower.org/projects/brilliant-dam-generating-station/>

² Columbia Power Corporation, accessed on September 1, 2016. <http://columbiapower.org/projects/brilliant-expansion-generating-station/>

4.1.3 *International Joint Commission – Kootenay Lake Board of Control*

The International Kootenay Lake Board of Control consists of Environment Canada, the British Columbia Ministry of Environment, the U.S Army Corps of Engineers, and the U.S. Geological Survey. It was established in 1938 to supervise the operation of Corra Linn dam, and the subsequent storage of water in Kootenay Lake. The Order requires draw down of Kootenay Lake in advance of spring runoff, to ensure the water level does not exceed a given level. During the summer the allowable lake elevation is determined based on the discharge from Kootenay Lake under before excavation of Grohman Narrows, and reduced by the end of summer to allow farmers to work their fields.³

³ International Joint Commission, accessed on September 1, 2016. http://ijc.org/en/_iklbc/Mandate

5 OPPORTUNITIES FOR IMPLEMENTING STEWARDSHIP IN THE BRILLIANT HEADPOND RESERVOIR

Key topics that emerged through the interviews with respect to current opportunities that can provide a framework for furthering stewardship and management in the Brilliant Headpond include: Community and stakeholder collaboration; Columbia River Treaty renewal; Columbia Basin Regional Advisory Council; Columbia Basin Trust; Columbia Basin Watershed Network; Kootenay Lake Partnership and the East Kootenay Integrated Lake Management Partnership; Existing planning processes: RDCK Area I Official Community Plan, Kootenay River Watershed Plan, Canal Plant Agreement; compensation obligations of the power producers; Glade Ferry replacement scheduled for 2018; the new Water Sustainability Act; and, completion of the TransCanada Trail.

5.1 Regional District of Central Kootenay Area I Official Community Plan Review

The current Official Community Plan for Area I was adopted in 1996, and was identified as a priority for review beginning in 2016. The objective of the review is to outline a community vision that reflects the current and future needs of the community. Included in the review will be the development of a Comprehensive Land Use Bylaw containing components of an official community plan, and a zoning bylaw.

It is recognized that the OCP Review and the Brilliant Headpond Stewardship Initiative can be complementary, and efforts have been made to collaborate where possible, such as the inclusion of additional stewardship-related questions as part of the broad, local government community survey. The community survey provides additional information to support the identification of patterns and trends with respect to environmental issues and stewardship opportunities.

When considering stewardship opportunities, the community could prioritize, lead and implement areas of interest that respondents focused on, ie: aquatic invasive species monitoring and control; Sensitive Habitat Inventory Mapping; Fish and wildlife habitat protection and improvement; Cultural Resource Mapping and protection; watershed management planning; improving navigational aids and signage; water quality monitoring; fishery improvements and enhancements; private land stewardship; public outreach and education; foreshore protection, erosion assessment and mitigation; establishment of dedicated access points; and trail maintenance.

“If we want to help prevent further loss of biological diversity in the Brilliant Headpond, we need to start paying attention and doing restorative works and defining what kinds of human activities can be permitted in that stretch of the Lower Kootenay River.”

PETER WOOD, RESIDENT, SOUTH SLOCAN

5.2 Watershed Management Planning

Integrated watershed management planning is a cooperative effort by watershed residents, government and other stakeholders to create a long term plan to manage land, water and related resources on a watershed basis. All watershed management plans are unique and are a reflection of the landscape and

concerns of the community within each watershed.

In the case of the Brilliant Headpond the current industrial use agreements and accompanying levels of legal jurisdictions make watershed planning at the local level more challenging. However, watershed management in an era of climate change challenges will require innovative collaborative efforts to ensure climate resilient management of water systems. The degree of large scale watershed management planning may be limited due to the geographic scope of the BHP, unless there is vertical integration of a localized watershed plan to be nested within existing plans. For example:

“Rapid, daily fluctuations in water levels impact riparian areas, safe use of and access to this waterway, property values, recreational opportunities, and causes erosion. Residents suggest the following are needed: a Water Use Plan-like process, an erosion control/management plan, and invasive aquatic plant management plan, safe public boat and road access, and water navigation markers and policies.”

EXCERPT FROM: COLUMBIA RIVER TREATY LOCAL GOVERNMENTS' COMMITTEE AND COLUMBIA BASIN TRUST. 2014.
COLUMBIA RIVER TREATY: SUMMARY OF CANADIAN DAM AND RESERVOIR ISSUES.

5.3 Community-Based Water Monitoring

Water stewardship is integral to water sustainability in Canada. Protecting and conserving Canada's lakes, rivers, wetlands and aquifers are a top priority for water stewardship groups and aboriginal communities. These groups face many challenges in developing and implementing monitoring plans that are appropriate for assessing watershed health or responding to pollution and contamination of their watersheds. Water quality and quantity impacts, and spread of invasive species result not only from increased industrialization and urbanization but also from climate change pressures on our landscapes and infrastructures. At the same time, governments have decreased capacity and communities are becoming more engaged in innovative solutions to these complex problems.

Key Factors of a Successful Community-Based Watershed Stewardship Program:

- Obtaining adequate funding to ensure that the project can be delivered, whether it's through leveraging funds, or establishing strong relationships with funders over multiple years.
- Adopting a monitoring protocol leads to higher quality data, engages citizens in hands-on data collection, and allows for comparisons between monitoring initiatives and developing trends over time.
- The creation of partnerships within the community helps to build legitimacy, support, and trust. Working in partnership helps maximize the limited resources that are available for community-based monitoring, as well as building a strong foundation of volunteers and other project support.
- Linking monitoring with decision-making creates clear objectives and purposes for the data.
- Lastly, communicating results clearly and concisely to the public keeps the achievements of the program in the public realm. It builds interest and validates the work of the organization.

6 RECOMMENDATIONS FOR CREATING A BRILLIANT HEADPOND STEWARDSHIP COLLABORATIVE

6.1 Proposed Actions

Based on the results of the interviews completed, the Community Survey conducted as part of the RDCK Area I OCP Review, and with input from the Brilliant Headpond Stewardship Initiative Steering Committee, the following actions are recommended as next steps for the Brilliant Headpond Stewardship Initiative.

6.1.1 *Establishing a Brilliant Headpond Stewardship Collaborative*

The purpose of establishing a Brilliant Headpond Stewardship Collaborative is to convene a cross-section of groups who share an interest in maintaining the health of the Brilliant Headpond. The expectation is that the organization would become a catalyst for community based stewardship projects, and provide a mechanism to ensure that the projects are completed in a strategic and organized manner. The organization would also serve as a central location to discuss pressing planning and management issues, and be an avenue for engagement between the community, industry and government. It could serve as a resource to pull together the otherwise fragmented communities of the Brilliant Headpond, as was identified as a challenge during the interviews.

It is anticipated that the current Brilliant Headpond Stewardship Initiative Steering Committee could form the foundation of such an organization, and membership could grow based on needs identified by the current Steering Committee. Additional membership beyond the current Steering Committee could include representatives of:

- Industry
- Rod and Gun Clubs
- Chambers of Commerce
- Fishing Organizations
- Naturalists Groups
- Real Estate Associations
- Recreational Groups
- Invasive Species Councils
- Others as identified

Initial priorities of the Brilliant Headpond Stewardship Collaborative would be to develop a Terms of Reference, Vision and Mission. The existing resources of the Steering Committee can be adapted to suit the Stewardship Collaborative. Additional considerations could be made in the long-term regarding structure, such as obtaining Society Status and creating a formal Board of Directors. It is recommended that the Collaborative begin with establishing itself through initiating stewardship projects that have been made priorities. The Collaborative could also engage in and support existing stewardship initiatives such as the Syilx (Okanagan), Secwepemc (Shuswap) and Ktunaxa TriNation Collaborative Native Mussel Survey, as an example.

6.1.2 *Stewardship Activities*

Priority stewardship activities have been identified based on urgency of environmental issues (ie. Aquatic invasive species), and community interest as identified through the interviews and community survey. Consideration should be made as to whether or not funding sources are available to execute such activities.

Activities recommended for consideration include:

- Public outreach and education with a focus on water level management, shoreline stewardship and best management practices for erosion control, and aquatic invasive species identification.
- An inventory and control project for Aquatic Invasive Species with a focus on Eurasian Milfoil, Yellow-flag Iris and Purple Loosestrife. Such a project could be delivered in partnership with the Central Kootenay Invasive Species Society.
- A Fish and Wildlife Habitat Assessment to inventory and classify habitat values for fish and wildlife. Similar projects have been completed by the Kootenay Lake Partnership and the East Kootenay Integrated Lake Management Partnership, as well as in collaboration with Living Lakes Canada. Such as project can identify opportunities for fish habitat restoration projects.
- A comprehensive water quality monitoring program at identified locations along the Brilliant Headpond. Such a project would serve as an opportunity to engage residents in hands-on stewardship activities. Training in water monitoring methods and protocols, as well as application of water data at the decision-making level is essential to a successful program, and can be provided by the Columbia Basin Watershed Network and Living Lakes Canada.

6.1.3 *Planning and Management*

Improving planning and water management to increase stewardship in the Headpond has been identified as a priority. Water use plans have been developed for many of BC Hydro's hydroelectric facilities through consultation with government agencies, First Nations, local citizens and other interest groups. The Plans are accepted by the provincial Comptroller of Water Rights, and reviewed by provincial and federal agencies to ensure accordance with relevant legislation such as the Water Sustainability Act.⁴ Proceeding with a "Water-Use-Like" Plan for the Brilliant Headpond could help

⁴ BC Hydro. Accessed October 2, 2016. https://www.bchydro.com/about/sustainability/conservation/water_use_planning.html

achieve a better balance across competing interests such as water use for industry, domestic uses, fish and wildlife, recreation, and cultural needs.

6.1.4 *Sensitive Habitat Inventory Mapping*

Sensitive Habitat Inventory Mapping (SHIM) is a protocol developed by Fisheries and Ocean Canada. It provides decision-makers, planners, developers, landowners and government agencies with the tools required to make sustainable foreshore land use decisions that take into account cumulative impacts to fish and wildlife habitats. The resulting Shoreline Management Guidelines are used as an initial step when reviewing, planning for, or prescribing alterations along the shoreline. This approach provides a science-based assessment of areas of highest natural value requiring the highest level of ongoing protection.

The Sensitive Habitat Inventory Mapping program has three stages:

1. Foreshore Inventory Mapping (FIM)
2. Fish and Wildlife Habitat Assessment
3. Shoreline Management Guidelines

Foreshore Inventory Mapping assists in identifying the land use, shore type, existing riparian condition, and anthropogenic alterations along the foreshore. Based on this data, the shoreline is broken into a number of segments. The FIM serves as a benchmark for regulatory agencies by documenting current foreshore condition, and provides evidence for regulatory investigations and will assess objectives set out in foreshore protection initiatives.

The Fish and Wildlife Habitat Assessment uses scientific analysis to identify zones of sensitivity and key habitat features, and rank shoreline segments using the Aquatic Habitat Index (AHI). Fish, bird and wildlife habitat and occurrence and aquatic invertebrate presence/absence data is collected during the summer and fall over a one-year period. The AHI quantifies the Ecological Value for each shoreline segment and identifies the potential if anthropogenic alterations were to be removed.

The resulting Shoreline Management Guidelines are used as an initial step when reviewing, planning for, or prescribing alterations along the shoreline. This approach provides a science-based assessment of areas of highest natural value requiring the highest level of on-going protection. The Guidelines will help focus where new development could be located in the Headpond while sustaining priceless natural public assets and maintaining the economic viability of the area.

Once complete, Shoreline Management Guidelines are incorporated into local planning bylaws such as Official Community Plans, Development Permit Areas, Lake Management Plans and other Zoning processes. SHIM helps build local expertise and allows communities to take a more active role in planning and management.

Projects have been completed for 10 lakes in the Columbia Basin, and are nearing completion on Lake

Koocanusa and Kootenay Lake. Each lake is unique and has taken a different approach. Kootenay Lake for example is precedent-setting and has incorporated archaeological and cultural values, in a process led by the Ktunaxa First Nation.

Sensitive Habitat Inventory Mapping can also be completed in river systems, as the protocol was originally designed to map and assess large systems such as the Fraser River. SHIM has also been modified for reservoir systems such as Lake Koocanusa. Such a project would be beneficial for the Brilliant Headpond despite water fluctuations and can help develop a shared vision for fish and fish habitat management in the area.

6.1.5 Columbia River Treaty – Nested Governance in the Columbia River Basin

It is important to note from the outset that the Columbia River Treaty does not provide holistic watershed governance of the Columbia River Basin. Governance of the water and natural resources in the Columbia River Basin is complex. It involves federal, state, provincial and municipal governments, local watershed organizations, and tribes and First Nations. Governance and decision-making occurs at multiple geographic scales and involves varying degrees of formal authority. At present, governance of the Columbia River Basin lacks coordination. This fragmented governance makes it difficult to adequately respond to pressing issues affecting the entire Columbia River Basin, including climate change, a decreasing water supply, and ecosystem degradation (Lloyd-Smith, 2015).

It is possible to examine the legal constraints a stewardship group would have if they were part of a waterway that was already part of the Columbia River Treaty. “Nested governance” could form such a framework. Nested governance is where decision-making is distributed among a hierarchy of institutions, and is increasingly recognized as a way to address issues in watershed governance. Nested governance is a mechanism to provide social benefits through decentralized and community-based natural resource management, while addressing causes and consequences of social and ecological issues crossing spatial and jurisdictional scales.

A report entitled, *A Blueprint for Watershed Governance in British Columbia* by the POLIS Project on Ecological Governance states: “a nested, multi-scale approach will be necessary to address the more complex challenges associated with achieving positive, long-term ecological, social, and economic outcomes. For example, setting ecological objectives, including minimum standards and flow needs; ensuring enforcement; maintaining responsibility for developing and overseeing a general resource rights and entitlements regime (including for water); and facilitating regular, science-based assessments and transparent reporting of freshwater ecosystem health will all still directly involve both the federal and provincial government” (Brandes et al, 2014).

6.1.6 Brilliant Headpond Ecological Literature Review

Since no one repository exists to access all the information, or understand how this research might apply to current planning and management opportunities, and future stewardship initiatives, it is recommended that the Brilliant Headpond Stewardship Initiative commission a comprehensive ecological literature review. The literature review would provide the RDCK and Brilliant Headpond

Stewardship Initiative Steering Committee with summarization and consolidation of existing water quality, fish and ecological health studies and literature. Sampling locations, sampling frequency, sampling methods, sampling protocols and guidelines, and sample analysis criteria should be presented. Ideally, trends and changes in water quality, fish abundance and ecological health over time would also be identified within the report. The Literature Review could help guide the future activities of the Brilliant Headpond Stewardship Collaborative.

6.2 Engagement & Communication

Initial engagement and communication opportunities include participation in the Regional District of Central Kootenay Area I OCP Review Community Workshops. These workshops will take place next year in each of the Area I communities. This is an opportunity to engage Brilliant Headpond communities on the Brilliant Headpond Stewardship Initiative Scoping Study and next steps, and solicit participation in future initiatives.

During stakeholder interviews, questions were asked regarding the best way to engage area residents. Due to the geographic separation of the area communities, engagement can be a challenge. Additionally, diversity amongst communities means that one central information source, such as social or print media will not reach all residents. Most community representatives suggested the best way to distribute information is by posting information about the initiative on local community bulletin boards. Additional resources could be creating a website with a link to the RDCK Area I webpage. This would provide area residents with an online location to visit for further, up-to-date information about events or activities.

Additional opportunities for engagement with area residents and visitors is through the Chamber of Commerce, standard print media including both the Nelson Star and Castlegar News, and social media including Facebook.

6.3 Proposed Phase One Timeline

ACTIVITY	TIMEFRAME
Secure financial resources	Summer 2017
Develop community outreach strategy	Summer & Fall 2017
Conduct Literature Review	Winter 2017
Host community open houses & other outreach opportunities as identified	Summer & Fall 2017
Establish Brilliant Headpond Stewardship Collaborative	Spring & Summer 2017
Conduct Sensitive Habitat Inventory Mapping project	Summer 2017
Summarize results of community outreach	Summer 2017
Identify next steps	Fall 2017

6.4 Funding Sources

The following list provides a starting point for obtaining funding for stewardship projects. Funder priorities often change, therefore it is recommended to review grant information online, or contact the funder directly.

- Columbia Basin Trust Environment Grants
- Columbia Basin Trust Community Initiatives
- Habitat Conservation Trust Foundation
- Mountain Equipment Coop
- Real Estate Foundation of BC
- TD Friends of the Environment Foundation
- Columbia Power Corporation Community Sponsorship Program
- Fish and Wildlife Compensation Program
- FortisBC Community Investment Program
- RBC Blue Water Community Action Grants
- Environment Canada EcoAction
- Regional District of Central Kootenay Discretionary Grant
- Kootenay Savings Community Foundation
- Small Change Fund
- Canadian Wildlife Federation
- BC Hydro Community Investment Program
- Teck Community Investment Program

7 CONCLUSION

It is now generally understood that water stewardship and water management challenges posed by climate change will continue to be exacerbated and that to address these challenges and to work towards climate resilient communities, collaborative efforts for stewardships will help to support all levels of decision making.

Concerned residents, community groups, industry, institutions and local decision-makers are increasingly aware of the complexity of responding to watershed issues and climate change impacts, and share an interest in strengthening water stewardship for the benefit of communities and ecosystems.⁵

The Brilliant Headpond Stewardship Initiative Scoping Study has outlined and reflected some of the opportunities and challenges identified by the people who participated and provide their insights. The scoping study has provided potential next steps in advancing a comprehensive and collaborative water stewardship initiative for the Brilliant Headpond.

⁵ E.g., such sentiments were emphasized at the recent event, “Hot and Bothered in the Kootenays: Water, Drought, and Climate Change Forum”: <http://www.hotandbotheredinthekoots.org/#!about-the-2016-forum/dcdzj>; as well as at the 2011, as well as at the 2013 Watershed Governance Symposium Conference Proceedings, hosted by Living Lakes Canada and the Columbia Basin Watershed Network. Fairmont Hot Springs, B.C. September 29-30 2013. Online: <http://cbwn.ca/dev/2013-watershed-governance-symposium-proceedings/>.

8 REFERENCES

AMEC Earth and Environmental, et al. 2011. Kootenay Lake Stewardship Plan Scoping Study.

Brandes, O. M., O’Riordan, J., O’Riordan, T., Brandes, L. 2014. A Blueprint for Watershed Governance in British Columbia. POLIS Project on Ecological Governance.

Columbia River Treaty Local Governments’ Committee, Columbia Basin Trust. 2014. Summary of Canadian Dam and Reservoir Issues.

Davidoff, A. 2012. Brilliant Head-Pond Reservoir Issues. RDCK Area I Advisory Planning Commission.

Lloyd-Smith, Georgia. 2015. Greening the Columbia River Treaty: Alternative Approaches. University of Victoria Environmental Law Clinic.

Regional District of Central Kootenay. 2016. Electoral Area I Comprehensive Land Use Bylaw Community Background.

Rural Development Institute. 2013. State of the Basin Report.

APPENDIX A

Golder Associates Ltd. 2002. Brilliant Expansion Project. Population Estimate of Rainbow Trout in Brilliant Headpond, 2001. Report prepared for Columbia Power Corporation, Castlegar, B.C.

Golder Associates Ltd. 2002. Rainbow Trout Radio Telemetry Program in Brilliant Headpond, 2000 – 2001. Report prepared for Columbia Power Corporation, Castlegar, B.C.

RDCK Area I Advisory Planning Commission. 2012. Brilliant Headpond Reservoir Issues. Submission to the Columbia River Treaty Review Process and BC Columbia River Treaty Local Governments' Committee.

BC Government. 2014. Columbia River Treaty Review Public Consultation Report.

Columbia River Treaty Local Governments' Committee. 2013. Columbia River Treaty: Recommendations.

Columbia River Treaty Local Governments' Committee and Columbia Basin Trust. 2015. Community Engagement in Columbia Basin Hydro Operations. An Overview of Current Practices.

Columbia River Treaty Local Governments' Committee and Columbia Basin Trust. 2014. Columbia River Treaty: Summary of Canadian Dam and Reservoir Issues.

Columbia River Treaty Local Governments' Committee. 2014. Columbia River Treaty: Draft Recommendations Summary of November 2013 Feedback from Basin Residents.

Utzig, G. and Schmidt, D. 2011. Dam Footprint Impact Summary. BC Hydro Dams in the Columbia Basin. Prepared for Fish and Wildlife Compensation Program: Columbia Basin.

Selkirk College. 2000. Skattebo Educational Forest Survey.

Craig, J. 2012. Lower Arrow – Pend D'Oreille Invasive Plant Management Area (IPMA) Operational Framework 2012-2017. Prepared for Central Kootenay Invasive Plan Committee.

AMEC Earth and Environmental. 2011. Umatilla Dace Habitat use of the Skattebo Reach Reservoir and Lower Kootenay River. Report not available.

AMEC Earth and Environmental. 2012. Lower Kootenay River Fish Stranding Surveys. Report not available.

AMEC Earth and Environmental. 2012. Umatilla Dace Habitat Use of the Brilliant Headpond and Lower Kootenay River. Report not available.

Ministry of Forests, Lands and Natural Resource Operations. Skattebo Reach Stocking Records 1926 – 2015.