Columbia River Project Water Use Plan

Kinbasket and Arrow Recreation Management Plan

Arrow Reservoir Recreational Demand Study – Final Report

Implementation Year 5

Reference: CLBMON-41

Study Period: 2009-2013

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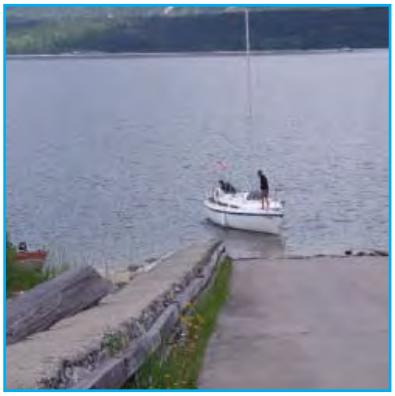

CLBMON-41 Arrow Reservoir Recreational Demand Study

Final Report (Study Period: 2009-2013)
February 2015

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Table 1. CLBMON-41 STATUS of OBJECTIVES, MANAGEMENT QUESTIONS and HYPOTHESES after Year 5

Objectives	Management Questions	Management Hypotheses	Year 5 (2013) Status
The main objective of the study is to: 1) Relate volume and type of use by recreational users to Arrow Lakes Reservoir water levels.	The primary management question addressed by the program is whether different reservoir water levels affect the quantity and frequency of participation in water-based and shore-based recreational activities.	H_0: Changes in recreational use of Arrow Lake Reservoir, if they occur, are not related to Arrow Lake Reservoir levels.	Results show that different reservoir water levels do not substantively affect quantity and frequency of recreational use of the Arrow Lake Reservoir.
	A secondary management question is whether reservoir levels affect types of recreational activities.	H_{0A}: Frequency of public use of Arrow Lake is not influenced by fluctuating reservoir water levels.	Fluctuating reservoir water levels have a minimal influence on frequency of public use. The majority of respondents (over four out of five) would return to the Arrow Lakes for recreation activities regardless of water levels.
		H_{0B}: Volume of public use of Arrow Lake is not influenced by fluctuating reservoir water levels.	Results show a modest relationship between the volume of public use and fluctuating reservoir water levels. Water levels account for 28.7% of the variation in visitor volume. Results show other variables influence volume of public use (*i.e.*, total precipitation, maximum daily temperature, type of day and season).
		H_{0C}: The different types of public use are not affected by fluctuating water levels.	Fluctuating reservoir water levels have a minimal affect on types of public use. The majority of respondents (four out of five) would return to the Arrow Lakes for recreation activities despite their type of public use.

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1. EXECUTIVE SUMMARY

The Arrow Lakes Reservoir has many designated and undesignated access points that residents and visitors use throughout the year for recreational activities including boating, fishing and shoreline use. One of the key factors affecting recreational quality and use is visitors' ability to safely access the water or shoreline during different water levels for both water and shore-based activities. BC Hydro currently makes operational decisions on the Arrow Lakes Reservoir by trading off power values for recreation values (and other values such as vegetation, erosion, etc.). Monitoring recreational demand in relation to water levels on the Arrow Reservoir was identified as one of the fundamental objectives of the Columbia River Water Use Plan (BC Hydro 2007).

The main objective of this study is to relate volume, frequency, and type of use by recreational users to Arrow Lakes Reservoir water levels. The results will be used to generate year-round use characteristics and determine how recreational use is tied to fluctuations in water level to inform decision making at the next Water Use Plan review.

To address the management questions specific parameters were measured through monitoring (traffic count and observational data collection) and interviews (on-site and on-line surveys). Sampling was conducted at 13 pre-selected, stratified monitoring sites comprised of 11 publicly accessible boat launches and two near-shore parks on the Arrow Lakes.

Results show frequency, volume and different types of public use of Arrow Lakes Reservoir are not substantively influenced by fluctuating water levels, suggesting factors other than water levels (*i.e.*, total precipitation, maximum daily temperature, type of day and season) dominate people's decision to visit the Arrow Lakes for recreation activities. Where water levels do account for a variation in use, a minority of visitors are affected.

Exceptionally high levels of both overall satisfaction and willingness to return suggest BC Hydro is providing opportunities for high quality recreational use at the Arrow Lakes Reservoir for water-based and shore-based activities (Table 2).

Table 2. CLBMON-41 STATUS of OBJECTIVES, MANAGEMENT QUESTIONS and HYPOTHESES after Year 5

Objectives	Management Questions	Management Hypotheses	Year 5 (2013) Status
The main objective of the study is to: 1) Relate volume and type of use by recreational users to Arrow Lakes Reservoir water levels.	The primary management question addressed by the program is whether different reservoir water levels affect the quantity and frequency of participation in water-based and shore-based recreational activities.	H_0: Changes in recreational use of Arrow Lake Reservoir, if they occur, are not related to Arrow Lake Reservoir levels.	Results show that different reservoir water levels do not substantively affect quantity and frequency of recreational use of the Arrow Lake Reservoir.
	A secondary management question is whether reservoir levels affect types of recreational activities.	H_{0A}: Frequency of public use of Arrow Lake is not influenced by fluctuating reservoir water levels.	Fluctuating reservoir water levels have a minimal influence on frequency of public use. The majority of respondents (over four out of five) would return to the Arrow Lakes for recreation activities regardless of water levels.
		H_{0B}: Volume of public use of Arrow Lake is not influenced by fluctuating reservoir water levels.	Results show a modest relationship between the volume of public use and fluctuating reservoir water levels. Water levels account for 28.7% of the variation in visitor volume. Results show other variables influence volume of public use (*i.e.*, total precipitation, maximum daily temperature, type of day and season).
		H_{0C}: The different types of public use are not affected by fluctuating water levels.	Fluctuating reservoir water levels have a minimal affect on types of public use. The majority of respondents (four out of five) would return to the Arrow Lakes for recreation activities despite their type of public use.

2. INTRODUCTION

2.1 Background

The Arrow Lakes Reservoir has many designated and undesignated access points that residents and visitors use throughout the year for recreational purposes. One of the key factors affecting recreational quality and use is visitors' ability to safely access the water or shoreline during different water levels for water-based and shore-based activities. Recreational activities on the Arrow include boating, fishing and shoreline use (swimming, nature walks, etc.). Different recreation activities may have different levels of preferred or optimal water levels.

During the Columbia River Water Use planning process, the Consultative Committee (CC) identified monitoring reservoir recreational demand (land-based, shoreline and boating) in relation to water levels on the Arrow Reservoir as one of the fundamental objectives of the Water Use Plan (BC Hydro 2007). The CC articulated the recreation objective for the Columbia as: *Maximize the community benefits from quality and diversity of recreation and tourism (p.3).* To reach this objective, the CC recommended the following soft constraints on Arrow Lakes Reservoir operations to help inform BC Hydro operators on impacts (Columbia River Water Use Plan Consultative Committee 2005):

(1) Target reservoir water levels between 437.4 m and 438.9 m (1435.0 ft and 1440.0 ft) from 24 May to 30 September.

(2) Flexibility to achieve lower reservoir levels of 434 m (1424 ft) during the peak recreation season provided that proposed construction/upgrade of boat ramps for recreation interests materializes.

The CC recommended a monitoring program to provide long-term measurement of recreation use on and near the waters of the Arrow Lakes from Revelstoke to the Hugh Keenleyside Dam at Castlegar. Through this study BC Hydro will develop performance measures that link some aspects of recreation to reservoir levels to inform decision making at the next Water Use Plan review. "The goal of the study is therefore to establish a functional link between recreational use and water levels on Arrow Lakes Reservoir" (Terms of Reference, BC Hydro 2008, p. 2).

This study is one of a series of monitoring programs that fulfills BC Hydro's obligation under the Water Use Plan as approved by the Comptroller of Water Rights. This study was conducted in conjunction with CLBMON-14 Boat Ramp Use Study[1] and was implemented over five years (2009-2013).

[1] CLBMON-14 is a 10-year study tracking use levels and user satisfaction at boat launch sites on the Arrow and Kinbasket Reservoirs where access improvements have been made.

The following summarizes major activities completed during the study period.

Table 3. Summary of Activities Completed by Year

Program Year	Year 1 (2009)	Year 2 (2010)	Year 3 (2011)	Year 4 (2012)	Year 5 (2013)
Activities	• Literature Review • Site selection • Survey development • Traffic counter installation • Pilot field season (fall)	• First full field season • One new site added (Edgewood)	• Second full field season • All sites sampled • One new site added (Burton South, traffic counter only)	• Third full field season • All sites sampled	• Fourth full field season • All sites sampled

2.2 Management Questions

The monitoring objectives, management questions and hypotheses for CLBMON-41 were stated in the Terms of Reference for the project (BC Hydro 2008) and are restated below.

The primary management question addressed by the program is whether different reservoir water levels affect the quantity and frequency of participation in water-based and shore-based recreational activities. A secondary management question is whether reservoir levels affect types of recreational activities.

Three management hypotheses frame this study:

$H_{0:}$ Changes in recreational use of Arrow Lake Reservoir, if they occur, are not related to Arrow Lake Reservoir levels.

$H_{0A:}$ Frequency of public use of Arrow Lake is not influenced by fluctuating reservoir water levels.

$H_{0B:}$ Volume of public use of Arrow Lake is not influenced by fluctuating reservoir water levels.

$H_{0C:}$ The different types of public use are not affected by fluctuating water levels.

2.3 Objectives

The main objective of the study is to relate volume and type of use by visitors[2] to Arrow Lakes Reservoir water levels.

2.4 Monitoring Program Rationale

As per the approach recommended in the project's Terms of Reference, this project is an observational study (*i.e.*, site-based inventory) supplemented with questionnaire-elicited data. The general approach is:

> "an observational study of within reservoir levels changes in recreation use at sites selected through a stratified random sampling design. Data will be collected through a combination of survey methods including observed distributions and activities, spot counts, vehicle counters and interviews at the boat access improvement sites on the Arrow Lakes Reservoir" (BC Hydro 2008, p. 6).

The analyses relate changes in recreation use to water levels that visitors experienced. Inferences about the causes of changes in types of recreation uses and the likely effects of altered operating regime on recreation volume, frequency and type will be made using statistical models. The models will represent users' responses to the operating regime, environmental conditions, and other variables.

2.5 Theoretical Foundation for Examining Visitor Demand and Use

When assessing overall recreation use, it is also important to measure variables that inform the *subjective evaluation* element of visitor satisfaction. These variables include socioeconomic characteristics, level of experience, and attitudes and preferences about the context within which visitors are engaging in their recreation activity.

The underlying goal of recreation management is quality: visitors desire high quality recreation experiences. BC Hydro seeks to provide visitors with recreation opportunities that are both safe and high quality. Within the context of outdoor recreation management, *quality* has traditionally been measured in terms of *visitor satisfaction* (Manning, 1999). Satisfaction can be considered to be "a function of the degree of congruence between aspirations and the perceived reality of experience" (Bultena & Klessig, 1969, p. 349). Although there are no standardized measures of satisfaction (experiences are dynamic, evolve over time, and are context-dependent), most measures of satisfaction have been rooted in expectancy theory (Fishbein & Ajzen, 1975), which posits that people engage in outdoor recreation activities with the expectation that this

[2] Groups under consideration include boaters, near-shore users and any other group deemed relevant to the study. Two broad classifications are used: resident and tourist.

engagement will fulfill particular needs, motivations, or other desires. Satisfaction is both multidimensional and relative (Figure 1): it is multidimensional as overall satisfaction is influenced by biophysical, social, and managerial elements/settings (*i.e.*, situational variables); satisfaction is relative as it is influenced by socioeconomic and cultural characteristics, levels of experience, and attitudes, preferences and norms (*i.e.*, subjective evaluations). Thus, satisfaction is a function of both the recreation setting and the participants.

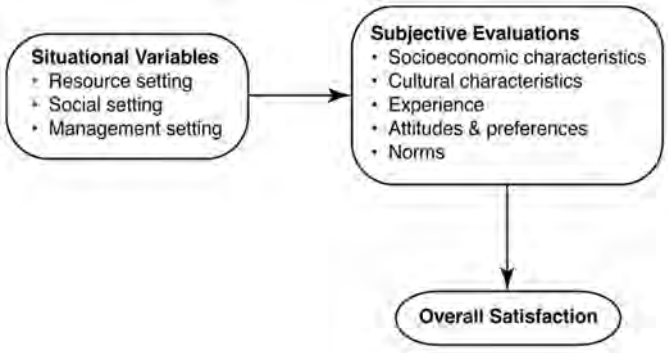


Figure 1. Conceptual model of recreation satisfaction (Manning, 1999).

Visitor satisfaction was selected as a useful and appropriate framework for this study: if people are not satisfied with their experiences on the Arrow Lakes Reservoir, they would likely seek alternative opportunities elsewhere. However, understanding visitors' satisfaction with their experiences on the Arrow Lakes Reservoir requires other information in addition to the specific monitoring parameters that have been identified for this project. While reservoir water level is the main variable, it was necessary to consider and control for other variables that may influence visitor use of the Arrow Lakes Reservoir.

In the context of this study, the resource setting (*i.e.*, biophysical setting) includes water levels, and meteorological data. For example, weather does affect recreation use: if visitor use was measured during a very wet year, one might expect lower visitor turnout; if weather was not accounted for, the predictive models may over- or underestimate the influence of water levels on recreation use. The social setting is concerned with the interactions that visitors have with other visitors; social setting is often measured in terms of social carrying capacity, which can be measured by identifying the degree of user conflicts and crowding that are experienced. For example, if visitor use was measured at a site where there has been a history of conflicts between visitors or where visitors have felt crowded, one might expect low repeat visitor use as people seek alternative opportunities free from conflict and crowding independent of water levels.

Lastly, the management setting of the Arrow Lakes Reservoir is multi-jurisdictional (*e.g.*, municipal land, Crown land, BC Parks) as different agencies are responsible for managing access to the Arrow Lakes Reservoir. For example, the frequency and level of maintenance of the facilities, such as the parking lot and boat ramp, may affect visitor satisfaction.

3. METHODS

To address the management questions and supporting hypotheses, specific parameters monitored over the five-year period included:

> "types of recreation activity, user classification (resident, tourist), distribution of activities, frequency of activities, reservoir levels and meteorological data (wind, waves, precipitation, air and water temperature). This information is considered necessary to confirm/refute assumptions about the importance of timing, frequency and duration of reservoir levels changes on recreation activities. Vehicle counters will be installed at each of the boat access sites on Arrow Lakes Reservoir to monitor the number of vehicles using the ramp facilities" (Terms of Reference, BC Hydro 2008, p.7).

The methods used in this project are described under the following headings:

- Sampling Sites;
- Traffic Data Collection;
- Observational Data Collection;
- Sampling Design;
- Survey Delivery;
- Survey Design;
- Predictive Model, and
- Sampling Analyses.

The methods employed including sampling sites, data collection, sampling design, survey delivery and survey design were vetted and approved by the study team in advance of the Year 1 pilot season (Fall 2009). Reviewers included the LEES+Associates team and BC Hydro (Public Use Management, Stakeholder Engagement Group, and the Water License Requirements Program). The Survey Questionnaire was also reviewed by an individual at the *Science Policy and Economics Section, British Columbia Ministry of Environment*, and members of the *Collaborative for Advanced Landscape Planning* at the *University of British Columbia*.

3.1 Sampling Sites

Field sampling occurred at thirteen access sites representing the three sections of the Arrow Lakes Reservoir (*i.e.,* Upper, Middle, and Lower Arrow Lakes Reservoir; see Table 4, Figure 2). The study area was divided into three geographical units in terms of broad accessibility, *i.e.*, distance to the sites from urban centres. The three sections of the Arrow Lakes Reservoir are:

1. Upper Arrow Lakes from Revelstoke to Eagle Bay
2. Middle Arrow Lakes from Nakusp to Edgewood
3. Lower Arrow Lakes from Renata to Hugh Keenleyside Dam.

Sampling sites were chosen to reflect relatively high use locations that provide direct access to the water or shoreline for water-based and shore-based activities. The sampling sites include 11 publicly accessible boat launches on the Arrow Lakes[3] plus two day use areas associated with the boat launches that provide direct access to the reservoir (Table 4, Figure 2). Day use areas were only included in the study if they provided access to water-based or shore-based activities[4]. Final site selection was confirmed by the study team and BC Hydro following a reconnaissance visit by the study team to all potential sites, as well as discussions with local forestry officers, park rangers, elected officials, and launch clubs. Site photos are found in **Appendix J**.

Table 4. Sampling locations.

Upper Arrow Lakes Reservoir	Middle Arrow Lakes Reservoir	Lower Arrow Lakes Reservoir
Revelstoke Boat Launch	Nakusp Beach (Day Use) †	Syringa Creek Park (Day Use) †
Eagle Bay Boat Launch	Nakusp Boat Launch	Syringa Creek Park Boat Launch
Shelter Bay Boat Launch	McDonald Creek Boat Launch	Anderson Point Boat Launch[5]
	Burton Historic Park Boat Launch	
	Burton South Boat Launch[6]	
	Fauquier Park Boat Launch	
	Edgewood Park Boat Launch	

† No ramp access or vehicle counter at these locations

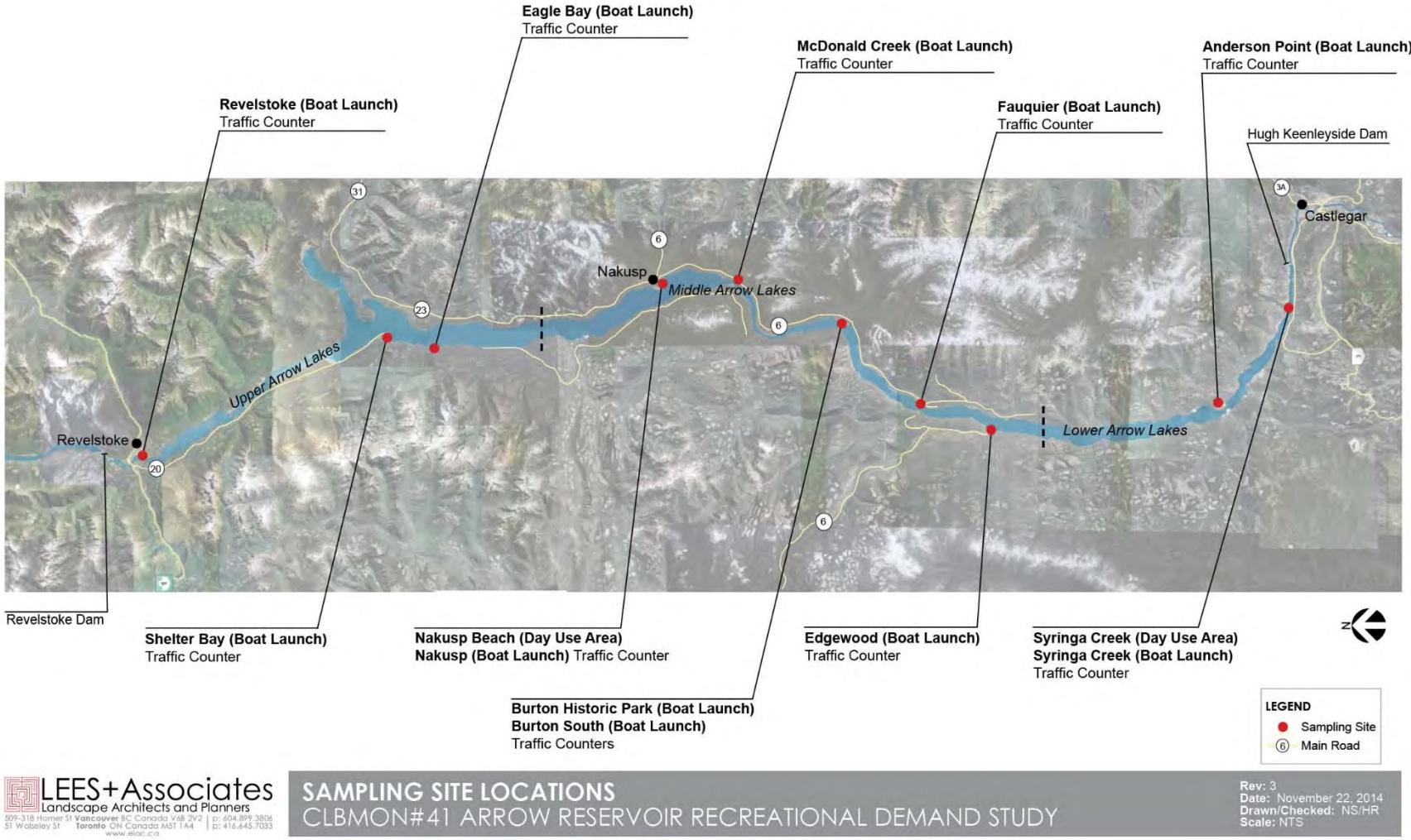
[3] Recreational boat access is also provided by a private facility called Scotties Marina (the only site which charges a user fee), and numerous undesignated launch facilities.

[4] The Revelstoke waterfront trail (a paved path primarily used by bicyclers, walkers and runners) and the Illecillewaet trail were not included in the study as recreation use at these facilities is not connected with reservoir water levels.

[5] Anderson Point (Boat Launch) was added to the study in 2010 in conjunction with CLBMON 14 Boat Ramp Use Study.

[6] Burton South (Boat Launch) was added in 2011. This site has a traffic counter only; no field sampling was undertaken.

Figure 2. Study area and sampling locations



3.2 Traffic Data Collection

3.2.1 Vehicle counter installation and settings

Vehicle counters were installed at all study locations with boat ramp access (*i.e.,* all monitoring sites except Syringa Creek and Nakusp Beach Day Use areas, see Figure 2). TRAFx G3 magnetic field controlled vehicle counters were used, as they are the preferred and recommended traffic counter of BC Parks, Parks Canada, and the U.S. National Parks Service.

Vehicle counters were configured and installed as per the manufacturer's specifications to monitor the number of vehicles using the boat ramp facilities. Counter sensitivity and delay settings were monitored and adjusted during the first year of study (2009) and inspected in-person three times each study year, to most accurately record traffic at each site, in order to achieve a level of accuracy that permitted conclusive answers to the management questions. Traffic counters remained in place year-round during the study period to collect vehicle counts. Counters remained in-situ during periods while boat ramps were under construction; however these dates have been excluded from the data (Table 5). Counters were removed during a high water period experienced in July and August of 2012 (Table 5).

Annual traffic counts were collected and automatically compiled by the TRAFx DataNet system for each full calendar year. This was done to standardize the calculation and application of average daily use to missing data. This system enabled the selection of any time period across years for calculating and reporting daily, weekly and monthly counts, averages and comparisons. Information on traffic counter sensitivity and delay settings, and further explanation of annual traffic count calculations can be found in **Appendix A**. Traffic counter results are presented in **Appendix I**.

Table 5. Construction periods and high water periods (Years 1-5).

Location	Construction Period†			High Water Period*		
McDonald Creek	2010-05-16	to	2010-07-01	2012-07-06	to	2012-08-15
Fauquier Boat Launch	2010-05-31	to	2010-09-21	2012-07-06	to	2012-08-15
Revelstoke Boat Launch	-		-	2012-07-06	to	2012-08-15
Eagle Bay	-		-	2012-07-06	to	2012-08-15
Burton Boat Launch	-		-	2012-07-06	to	2012-08-15
Burton South	-		-	2012-07-06	to	2012-08-15
Shelter Bay	-		-	2012-07-06	to	2012-08-15
Syringa Creek	-		-	2012-07-06	to	2012-08-15
Anderson Point	2012-05-14 2012-10-31	to	2012-06-12 2013-04-26	-		-
Nakusp	2013-02-04	to	2013-05-17	-		-
Edgewood	2013-03-11	to	2013-05-17	2012-07-06	to	2012-08-15

† Construction period dates are excluded in the data.
* Counters at these ramps were removed to prevent water damage thus no readings were taken during these periods.

3.3 Observational Data Collection

Field surveyors collected observational data about the visitors they encountered, photographs of site conditions and natural conditions (Table 6). These observations considered information about visitors including number of people seen, gender and age range, recreational activities, and number and origin of cars in the parking lot. They also considered information on natural conditions that could affect the level and nature of recreational usage, such as weather and reservoir conditions including waves, precipitation, wind, percent cloud cover, and air temperature. The observational data were assessed using standardized forms developed for this purpose. Samples of these forms as well as definitions used to record observed weather, waves, wind, cloud cover, air and water temperatures are included in **Appendix B**.

Table 6. Observational data: variables collected each field day.

Observation	Description
Number of people seen	• This information provides an overall sense of the level of activity that day. Recording the number of people approached provides a basis for calculating a response rate for the on-site survey. • Party size was also recorded where possible to compare with established Park stats[7].
Gender and age range	• Total male or female • Age range (1-10, 11-15, 16-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71+)
Activities	• Type of recreational activity observed
Number of cars in parking lot (and origin)	• The number and origin of license plates was recorded through continuous observation to provide information about the number of parties using the facilities, visitors' place of residence and rough travel distance. A systematic tally system was used at the beginning and end of each shift in conjunction with the surveys to minimize double counting.
Site photography	• Photographic records of sample sites to capture site conditions. Photos taken at the same angle, at the same time to facilitate comparison.
Weather*	• General descriptions to supplement individual measurements
Presence of waves*	• Wave height and formation.
Wind*	• Wind direction and an estimate of speed (Beaufort Scale).
Percent cloud cover*	• An assessment of the amount of sky/sun obscured by clouds.
Air temperature*	• Recorded in Celsius.
Water temperature*	• Recorded in Celsius.

* Note: Environmental data was collected each field day at 13h00.

3.4 Sampling Design

This section outlines the sampling design including details about the methods of data collection for the on-site survey, online survey and observational data collection.

Thirteen sampling sites were chosen to represent the three sections of the Arrow Lakes Reservoir (*i.e.,* Upper, Middle, and Lower Arrow Lakes Reservoir; Table 4). Eleven of the thirteen sites have boat launches. Intensive surveying occurred at all sites (except Burton South) in order to provide a comprehensive assessment of Arrow Lakes Reservoir recreational use, user preferences for conditions, and user attitudes about management.

The sampling periods were designed to maximize the response to the user survey and to capture a broad selection of outdoor recreation participants. The sampling strategy adopted in this project provided a

[7] BC Parks party size data are determined by number of people in group divided by the number of groups. Averages have been developed over years of surveys.

random sample that was stratified by four factors: (1) section of the Arrow Lakes Reservoir; (2) season (the number of sample days in each season was proportional to the number of days in that season); (3) type of day (*i.e.*, weekends, week days, holidays); and (4) the time of day that sampling occurs (*i.e.*, morning or afternoon). Over the course of the five-year sampling horizon, this approach provided a representative sample of visitors to the Arrow Lakes Reservoir.

In Years 1 - 5, three sites were sampled during each survey day – one sample site from each section of the Arrow Lakes Reservoir. Survey days at sample sites were randomly selected as per Gregoire & Buhyoff (1999). Sampling was conducted in spring, summer, and fall seasons (Terms of Reference, BC Hydro 2008, p.8) to reflect the high season and shoulder seasons on the Arrow Lakes Reservoir:

- High season – May 24 to September 30
- Shoulder seasons – April 1 to May 23 and October 1 to October 30
- Low Season – November 1 to March 31

Data collection typically commenced in April and finished in October, as per Sampling Schedules included as **Appendix C**. Sampling intensity was higher during the summer due to the proportional increase in volume, the diversity of recreational activities during this period, and the longer season (as spring and fall on-water recreation seasons are limited by snow, cold weather, and hours of daylight).

As a further step to ensure the representation of a wide range of outdoor recreation activities and respondents, surveyors were on-site during randomly selected six-hour periods (8:00 am to 2:00 pm or 2:00pm to 7:00pm in summer; and 8:30 am to 2:30 pm or 10:30 am to 4:30 pm[8] in spring and fall.

Visitors were surveyed at publicly accessible boat launches and near-shore parks. An entry/exit intercept survey method was selected over a mail-out survey as comprehensive lists of people who visit the Arrow Lakes Reservoir are not available (*viz*. Dillman *et al.*, 2002) and the participation of a broad selection (*i.e.*, water and shoreline recreationists) of visitors to the Arrow Lakes Reservoir was desired. A limitation of this sample approach is that respondents are self-selected based on their choice of recreation location and their decision to participate in the survey; people who have ceased visiting the Arrow Lakes Reservoir (for any reason) are excluded from the sample. Information about the use (or non-use) of the Arrow Lakes Reservoir (and reasons for non-use) needed to be gathered from a broader sample of regional residents. To address this limitation, an online survey was administered in order to capture the attitudes, behaviours, and preferences of a broader set of people in and around the Arrow Lakes Reservoir. This convenience sample was invited to participate in the online survey through a press release and announcement sent to local newspapers by BC Hydro, (see **Appendix D**).

[8] The six hour sampling period is based on successful application in previous recreational studies undertaken by the study team. An overlap of morning and afternoon periods ensures surveyors capture the higher use time over lunch hour. In 2012, summer sampling hours were shifted to capture more 'evening' recreationists.

3.5 Survey Delivery

The visitor survey was designed to be delivered in two formats over the course of this project: (1) an on-site survey, administered to visitors at sample sites; and (2) an online survey, administered to regional residents to capture a broader range of attitudes and opinions about recreational use (or non-use) of the Arrow Lakes Reservoir.

3.5.1 On-site Survey

Wherever possible, all parties at a sample site were approached for inclusion in this study. People were approached *after* using a boat ramp facility so that their responses would be based on their use of the facilities that day. Except where single-family parties were identified, all party members were asked to participate in the survey; when families were identified, only one representative was asked to participate in the survey; however, if other members of the party wished to participate they were welcomed to do so. Respondents completed the questionnaires on-site. The number of people approached for inclusion in the study was recorded to permit the calculation of response rate. Number of parties and total number of people on-site was also recorded. On sampling days with high attendance (such as long weekends, or Canada Day), the total number of visitors was estimated. People who refused to participate were thanked for their time and were not engaged further. A standard introduction statement was made to all prospective participants that summarized the cover letter that accompanied the questionnaire. If asked what the surveys would be used for, people were told that the information would be used to inform the development of strategies to guide the management of water flows in the Arrow Lakes Reservoir. Contact information for the project team was provided in the event that anyone had questions or concerns about the project.

3.5.2 Online Survey

An online version of the survey was developed for a sample of regional residents to capture a broader range of attitudes and opinions about recreational use (or non-use) of the Arrow Lakes Reservoir. As mentioned above, this survey was also available for on-site visitors that preferred to provide their information online. The online survey was identical to the on-site survey and was available at www.arrow-kinbasket-recreation-survey.ca. Due to low volume of responses (n = 0 to n = 37 responses per study year), the web-based data was collected for informational purposes only and was not used in the analysis. The online survey was taken off line in fall 2013, at the end of the five year sampling period.

3.6 Survey Design

The Visitor Survey questionnaire employed in this study (**Appendix E**) was developed using the principles of the *Tailored Design Method*. This method identifies procedures to maximize survey return rates and minimize survey error (Salant & Dillman, 1994; Dillman, 2000), including questionnaire layout

considerations. The questionnaire was designed to ensure a logical flow of the questions, and that the wording of the questions and instructions to the respondents be clear and as brief as possible. A key requirement of the questionnaire was that it be suitable for repeated delivery at multiple locations in order that a better understanding of recreation use trends and of visitors' attitudes about the management of the Arrow Lakes Reservoir be identified.

After an initial scoping exercise (which produced three drafts of potential questions) the Arrow Lakes Visitor Survey questionnaire underwent seven drafts before being finalized. Three initial drafts (*i.e.*, scoping documents) provided a comprehensive set of questions (and different wordings of questions). The objective of these early drafts was to (1) demonstrate different approaches that could be taken in a survey of visitors to the Arrow Lakes, (2) ensure that the questionnaire would be consistent with BC Hydro goals and objectives, (3) ensure that the questionnaire met the data requirements of the project, and (4) ensure that the questionnaire was amenable to potential respondents (*i.e.*, interesting, easy to follow, and phrased and laid out in a manner that could be answered consistently). Subsequent drafts of the questionnaire were circulated in order to promote discussion around suggested changes in question ordering, question wording, answer options, and/or question instructions. Reviewers included the LEES+Associates team, BC Hydro (Public Use Management, Stakeholder Engagement Group, and the Water License Requirements Program), an individual at the *Science Policy and Economics Section, British Columbia Ministry of Environment*, and members of the *Collaborative for Advanced Landscape Planning* at the *University of British Columbia*.

In spring 2010, Section 6 of the visitor questionnaire was amended to include four questions pertaining specifically to boat ramp usage to address the management questions for CLBMON 14 Boat Ramp Use Study[9]. The other sections remained the same. The questionnaire also retained the same format – a four-page booklet (two 8.5" by 11" sheets printed on both sides, stapled in the top left corner) that comprehensively measured people's use of, and attitudes about, recreation on the Arrow Lakes.

The survey questions permit the isolation of variables to characterize outdoor recreation use and water level preferences in the Arrow Lakes Reservoir. Recreationists are not a homogeneous group (Bryan, 1977; Manning, 1999; Salz *et al*., 2001; Rollins & Robinson, 2002), as participants differ in their values, the activities that they pursue, preferred settings, desired experiences, and motivations for participating (Choi *et al*., 1994); however, the variation among preferences, attitudes, and behaviours may be explained by the recreation specialization framework (Bryan, 1977; McFarlane *et al*., 1998). Understanding the desires and needs of recreationists is important for the management of outdoor recreation (McFarlane, 1994). As the recreation specialization framework can provide a basis for the

[9] As per the Terms of Reference for CLBMON 14 Boat Ramp Use Study.

differentiation of recreationists holding various goals, preferences, and behaviors (McFarlane, 2001), it was used to frame the collection of recreation data, as it provides a coherent and comprehensive approach, and addresses the issue of engagement in multiple activities, which can violate statistical assumptions about independent samples (Jackson, 1986). These measurement protocols follow standard practices and are appropriate for a project of this type. The questionnaire was composed of seven sections:

Section 1: Arrow Lakes Outdoor Recreation Activities.

Section 2: Important Outdoor Recreation Activities.

Section 3: Arrow Lake Outdoor Recreation Experiences.

Section 4: Use and Familiarity of Arrow Lakes.

Section 5: Arrow Lakes Outdoor Recreation Management.

Section 6: Arrow Lakes Outdoor Recreation Experiences.

Section 7: Demographics.

A detailed rationale for each question included in the questionnaire is included as **Appendix F**, demonstrating how the data captured in each of the seven sections addresses the study's management questions.

To address H_{0A} (frequency of public use of Arrow Lake is not influenced by fluctuating reservoir water levels), data were required about how often people come to the Arrow Lakes Reservoir and whether or not people will return based on the water levels that they experienced.

To address H_{0B} (volume of public use of Arrow Lake is not influenced by fluctuating reservoir water levels), data were required about numbers of people visiting the Arrow Lakes Reservoir.

To address H_{0C} (different types of public use are not affected by fluctuating water levels), data were required about the different activities that occur on and near the Arrow Lakes Reservoir, as well as an assessment of influence of water levels by activity.

Given that visitor satisfaction is multidimensional, data collection took advantage of the different elements of this study (*i.e.*, questionnaire-elicited data and observational data). Table 7 illustrates the links between the Management Hypotheses, specific monitoring parameters identified in the project's *Terms of Reference* (BC Hydro 2008), related questionnaire subsection and mode of measurement.

Table 7. Relation of Management Hypotheses to Specific Monitoring Parameters

Management Hypothesis	Specific Monitoring Parameter	Mode of Measurement	Unit of Measurement
1. H_{0A} – frequency of public use of Arrow Lake is not influenced by fluctuating reservoir water levels	Frequency of activities	• Questionnaire Section 1 • Questionnaire Section 2 • Questionnaire Section 5 • Questionnaire Section 6	Days per season per activity
	Reservoir levels	• Daily average elevation†	Meters
2. H_{0B} – volume of public use of Arrow Lake is not influenced by fluctuating reservoir water levels	Volume of recreation use	• Vehicle counters • Detailed Daily Sample Summary • Questionnaire Section 3 • Questionnaire Section 4	# of vehicles # of people in group
	Meteorological data‡	• *Site and Survey Log*	
		- Weather	General descriptions
		- Presence of waves	Wave height & frequency
		- Wind	Beaufort scale
		- Percent cloud cover	Assessment of sky/sun obscured by clouds
		- Air temperature	Recorded in Celsius
		- Water temperature	Recorded in Celsius
	Reservoir levels	• Daily average elevation†	Meters
3. H_{0C} – the different types of public use are not affected by fluctuating water levels.	Types of recreation activity	• Detailed Daily Sample Summary • Questionnaire Section 1	Descriptions # of different activities
	Distribution of activities	• Measured by stratifying observed recreation activities by sample sites • Questionnaire Section 5	# of activities per sample site
	User Classification (*i.e.*, resident, tourist)	• Site and Survey Log • Questionnaire Section 7	# who travelled > 80km (Murphy, 1991)
	Reservoir levels	• Daily average elevation†	Meters

† Reservoir elevation supplied by BC Hydro, as measured at Mica and Hugh Keenleyside; levels matched with sampling times.
‡ Meteorological data was collected by survey crews at 13h00 on each day on-site

3.7 Predictive Model

In Year 5 of the study, a predictive model of recreational use on the Arrow Lakes Reservoir was developed to explore relational inferences between recreation and reservoir levels. The dependent variable that the study team had planned to use in the predictive model ("Based on your experience today, will you come back to the Arrow Lakes for recreation activities?") turned out to have very little variation, as an average of 99% of respondents reported that they would return (Table 8).

Table 8. Based on your experience today, will you come back to the Arrow Lakes for recreation activities?

Year	n	Yes[†]	No
2009	122	98.4%	1.6%
2010	558	99.8%	0.2%
2011	625	99.2%	0.8%
2012	524	98.1%	1.9%
2013	687	99.3%	0.7%

[†] The percentage of respondents that indicated 'Yes' they would come back to the Arrow Lakes for recreation activities did not differ significantly by year.

As a result, two new sets of predictive models were developed to understand what influences people's decision to visit the Arrow Lakes. The first used boat launches (provided by traffic counter data) and weather data provided by Environment Canada's Nakusp Weather Station: the number of visitors launching boats on the Arrow Lakes (as measured by the traffic counters installed at boat launches) served as the dependent variable. The second approach used the survey data, and employed 'satisfaction' as the dependent variable as a proxy for likelihood of visitors to return. Table 9 illustrates the data used in the modelling. A full summary of predictive model results is presented in **Appendix K**.

Table 9. Relation of Management Hypotheses to Mode of Measurement for Predictive Model

Management Hypothesis	Mode of Measurement
1. H_{0A} – the frequency of public use of Arrow Lake is not influenced by fluctuating reservoir water levels	• *Questionnaire Section 5* • *Questionnaire Section 6* • *Reservoir Elevation Data*
2. H_{0B} – the volume of public use of Arrow Lake is not influenced by fluctuating reservoir water levels	• *Vehicle Counter Data* • *Environment Canada Weather Data* • *Reservoir Elevation Data* • *Questionnaire Sections 1, 2, 3, 5, 6, 7*
3. H_{0C} – the different types of public use are not affected by fluctuating water levels.	• *Questionnaire Section 1* • *Questionnaire Section 5* • *Questionnaire Section 7*

3.8 Survey Analyses

3.8.1 Data Entry QA/QC

The data from all returned questionnaires were entered (twice) into two SPSS databases to facilitate the verification of data for keying errors, and accuracy and consistency in data coding (Salant & Dillman, 1994). Not all respondents answered all questions – incomplete questionnaires were included in the SPSS and analysis, however they were omitted in the multi-variate analysis. Each questionnaire was compared among the two datasets such that each cell (each answer to a question) was verified using the Identify Duplicate Cases function in SPSS (if two cases were identified as being duplicates, then it was assumed that they had been entered correctly). When discrepancies were identified, the appropriate questionnaire was consulted and the necessary correction was made. The resultant dataset can be considered to be free of errors from data entry. The data were checked for "protest votes" (*i.e.,* outliers or obvious patterns such as multiple responses from the same IP address); when these were identified they were checked against the corresponding questionnaire. No obvious "protest votes" were identified. Responses above the average number of days in a season were capped (*i.e.,* respondents who answered that they visited the Arrow Lakes Reservoir more than 90 days per season were capped at 90).

3.8.2 Survey Responses

Survey responses have been summarized for each question between 2009 and 2013 and presented in **Appendix G** – Survey Results and **Appendix H** – General Respondent Comments. Where there are statistically significant differences between responses for sample years, they have been noted.

The following analysis considers on-site responses from respondents in the Arrow Lakes sample sites.

3.8.3 Management Hypothesis H_{0A}: Frequency of public use of Arrow Lake is not influenced by fluctuating reservoir water levels.

The likelihood of respondents returning to the Arrow Lakes for recreation activities was assessed for each sample day between 2009 and 2013; this was also done for the question that asked whether different water levels might affect respondents' use of the Arrow lakes for recreation activities.

3.8.4 Management Hypothesis H_{0B}: Volume of public use of Arrow Lake is not influenced by fluctuating reservoir water levels.

A multiple regression was used to investigate whether fluctuating reservoir water levels influenced the volume of public use of the Arrow Lakes between 2009 and 2013. Several data transformations were examined, including square root, cube root, fourth root, and log 10. None of these improved the fit of the model. All variables were standardized prior to analysis using multiple regressions. The daily average

water level (m) at Nakusp was the independent variable, and the summed daily traffic counter totals and daily environmental conditions were the dependent variable; results were graphed with a line of best fit. A multiple regression model was tested using reservoir level at Nakusp (m), total precipitation (mm), and maximum, minimum and mean temperature (°C) as independent variables. The model used boat launches (provided by traffic counter data) and weather data provided by Environment Canada's Nakusp Weather Station; the number of visitors launching boats on the Arrow Lakes (as measured by the traffic counters installed at boat launches) served as the dependent variable; the multiple regression model used a constant, and all of the variables were entered at the same time. The five ambient temperature measures provided by Environment Canada (minimum, maximum, and mean temperatures, and heat- and cool-degree days) were highly correlated (*i.e.*, > 0.7); thus the multiple regression model includes only one measure of ambient temperature (though all three measures are tested).

3.8.5 Management Hypotheses H_{0C}: The different types of public use are not affected by fluctuating water levels.

Seven different public use groups were identified to examine whether different types of public use were affected by fluctuating water levels. These groups were delineated based on their community of residence (i.e., resident/tourist) and the recreation activities that they were engaged in the day that respondents completed their questionnaires. The seven groups were: residents and tourists, three water-based activities (boaters/non-boaters, anglers/non-anglers, and swimmers/non-swimmers), and three shore-based activities (campers/non-campers, people engaged in beach activities/not engaged in beach activities, and walkers/hikers and non-walkers/hikers; respondents that did not indicate an activity were excluded from this analysis. Independent sample t-tests were employed to test whether there were any differences between the members/non-members of each of these groups for respondents' satisfaction with water levels on the Arrow Lakes. Chi-square tests were employed to test whether there were any differences between the members/non-members of each of these groups for the likelihood of respondents returning if water levels were the same, higher, or lower than the water levels experienced the day that the Arrow Lakes was visited.

4. RESULTS

Over 13,972 visitors were encountered between September 12, 2009 and October 24, 2013 during the sample periods. Field staff asked 3,252 visitors to participate in the survey; 2,628 questionnaires were returned (Figure 3), which represents an overall response rate of 72.7% (Table 10).

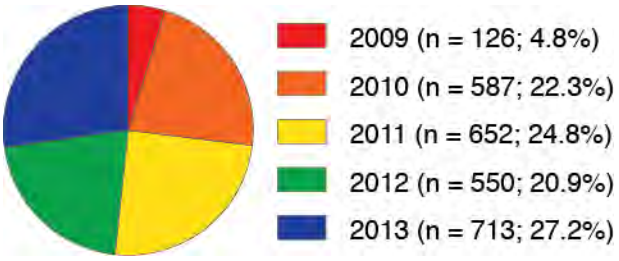


Figure 3. Questionnaire returns by sample year.

Table 10. Arrow Lakes visitors encountered and survey response rate.

Year	# Visitors Encountered	# Visitors Asked to Participate†	# Previously Completed‡	# Completed Questionnaires	Response Rate
2009	562	-	0	126	22.4%
2010	2,766	742	62	587	86.3%
2011	3,997	836	84	652	86.7%
2012	3,051	749	69	550	80.9%
2013	3,596	925	45	713	81.0%
TOTAL	**13,972**	**3,252**	**260**	**2,628**	**87.8%**

† This information was not collected in 2009.

‡ Visitors who have previously completed the survey in this sampling year. These visitors are subtracted from the number of visitors asked to participate, in order to calculate response rate.

The 2,628 questionnaires were collected at twelve sample locations. The number of returned questionnaires collected at each location varied by year (Figure 4; Table 11).

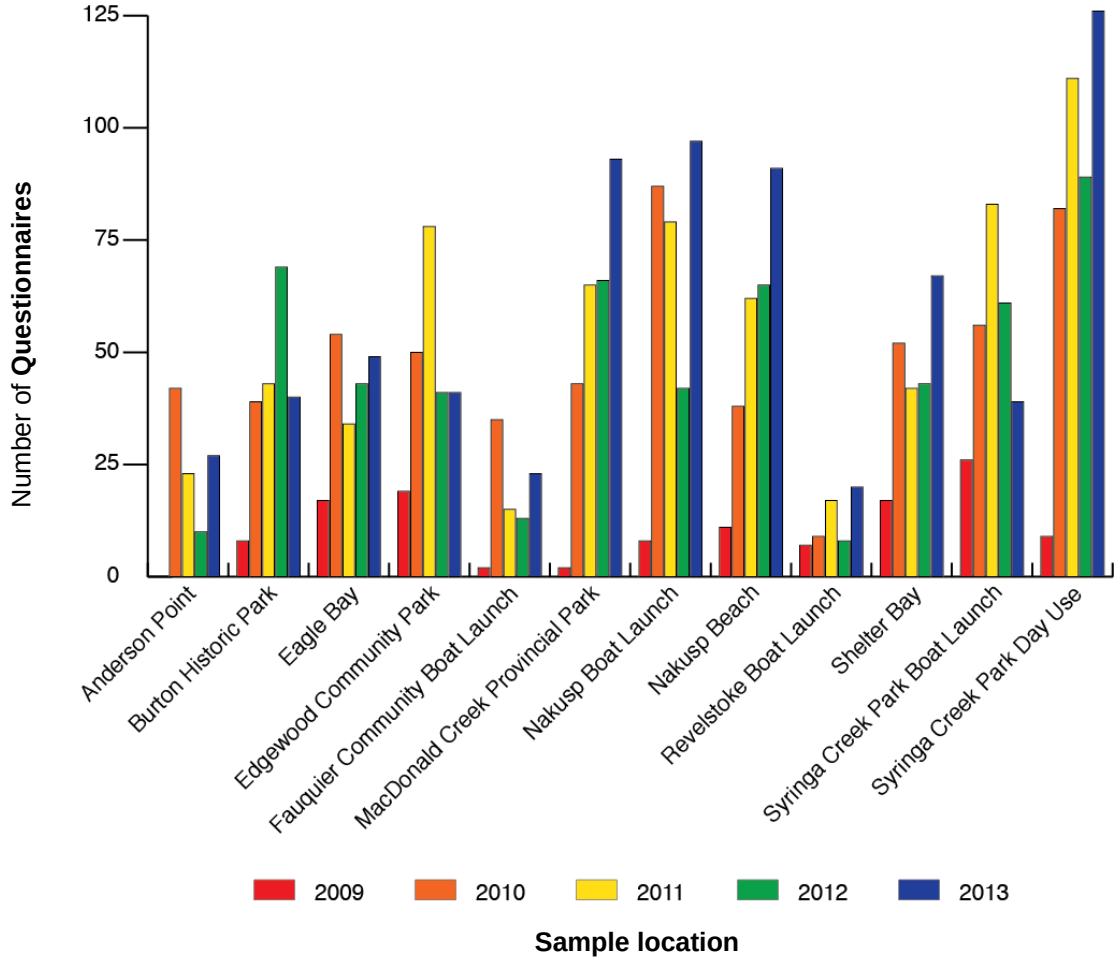


Figure 4. Returned questionnaires by sample location (n = 2,628).

Table 11. Returned questionnaires by sample location.

Sample Location	Year					Total
	2009	2010	2011	2012	2013	
Anderson Point	0	42	23	10	27	**102**
Burton Historic Park	8	39	43	69	40	**199**
Eagle Bay	17	54	34	43	49	**197**
Edgewood Community Park	19	50	78	41	41	**229**
Fauquier Community Park Boat Launch	2	35	15	13	23	**88**
MacDonald Creek Provincial Park	2	43	65	66	93	**269**
Nakusp Boat Launch	8	87	79	42	97	**313**
Nakusp Beach	11	38	62	65	91	**267**
Revelstoke Boat Launch	7	9	17	8	20	**61**
Shelter Bay	17	52	42	43	67	**221**
Syringa Creek Park Boat Launch	26	56	83	61	39	**265**
Syringa Creek Park Day Use	9	82	111	89	126	**417**
TOTAL	**126**	**587**	**652**	**550**	**713**	**2,628**

4.1 Management Hypothesis $H_{0A:}$

$H_{0A:}$ Frequency of public use of Arrow Lake is not influenced by fluctuating reservoir water levels.

The majority of respondents from all sample years (99.1%) indicated that, based on their experiences the day that they completed a questionnaire, they would return to the Arrow Lakes for outdoor recreation activities (Figure 5) which suggests a high level of satisfaction with recreation experiences on the Arrow Lakes.

There was nothing exceptional about the visitors that indicated that they would not return to the Arrow Lakes based on their experiences the day that they completed a questionnaire; it should also be noted that the number of people was small (n = 12) over a five-year period.

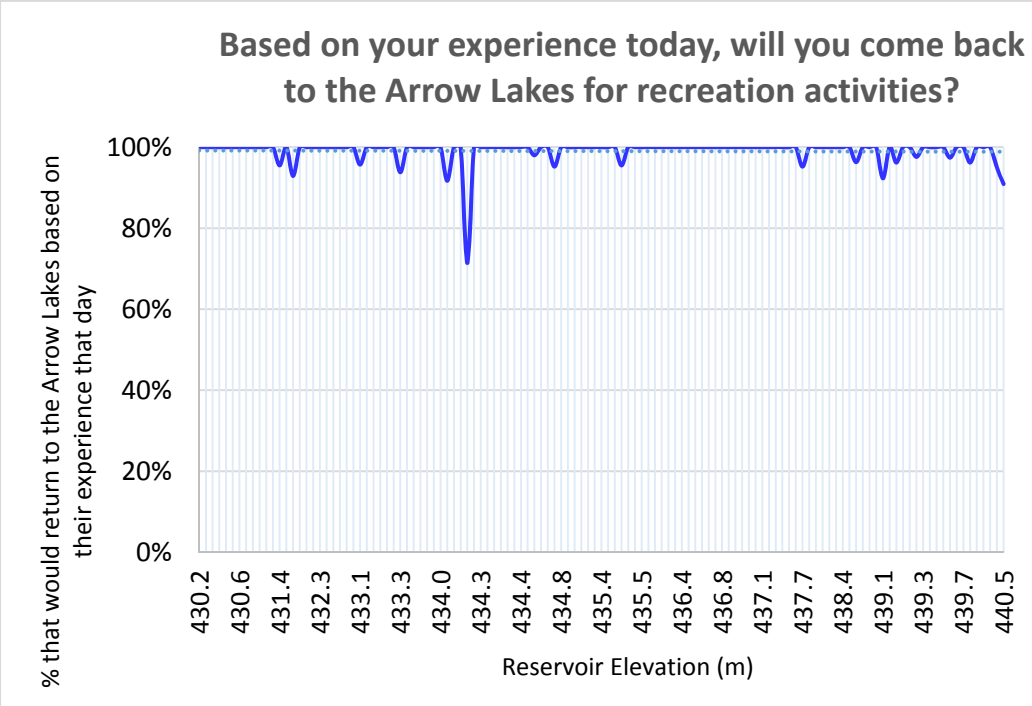


Figure 5. Percentage of respondents that will return to the Arrow Lakes for recreation activities based on their experiences the day that they completed a questionnaire.

The majority of respondents from all sample years (over 4 out of 5) indicated that they would return to the Arrow Lakes under all three water level scenarios that were posed to them suggesting that fluctuating water levels do not have an effect on frequency of public use. If the water level were lower than it was on the day that they completed a questionnaire 82.2% (n = 1,541) would return; if the water level was the same, 95.2% (n = 1,999) would return, and if the water level was higher, 88.6% (n = 1803) would return (Figures 6-9). Readers should be cautious about interpreting the low values in graphs 7-9 as they have small numbers of respondents (*i.e.*, large standard errors).

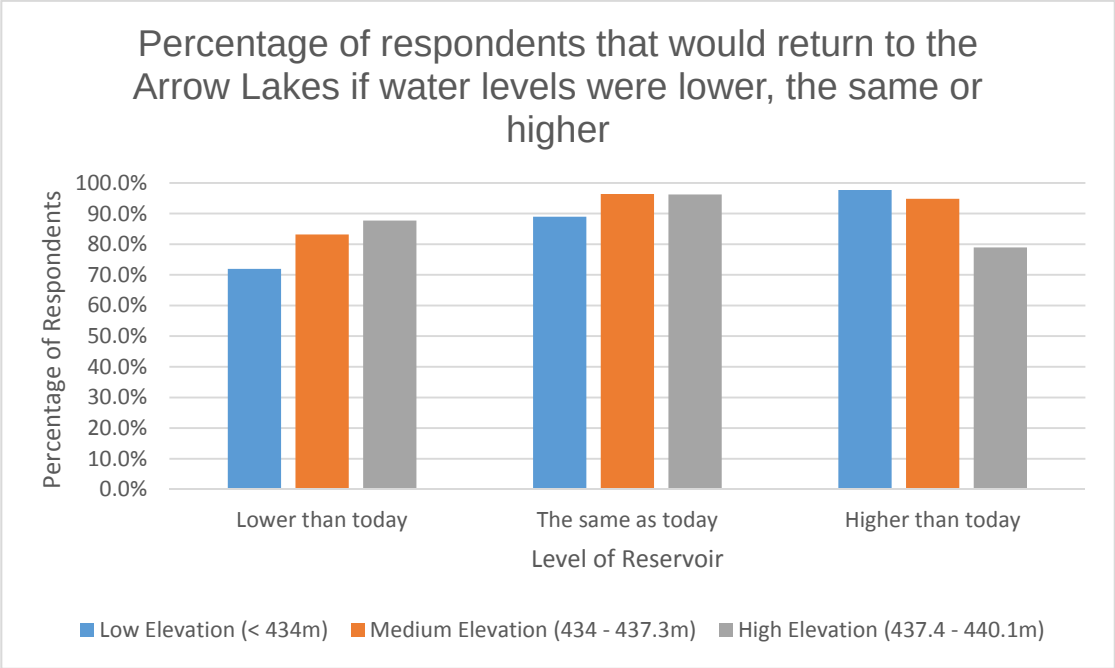


Figure 6. Percentage of respondents that will return based on a low, medium or high operational reservoir level on the day they completed a questionnaire.

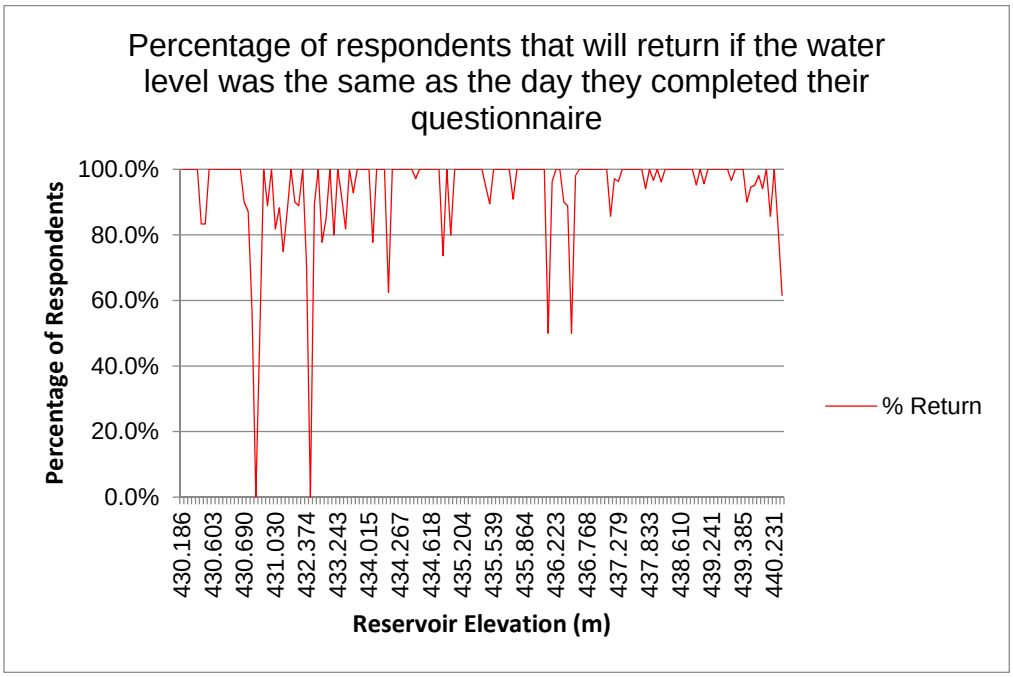


Figure 7. Percentage of respondents that will return if water level on the Arrow Lakes was the same as the day they completed their questionnaire.

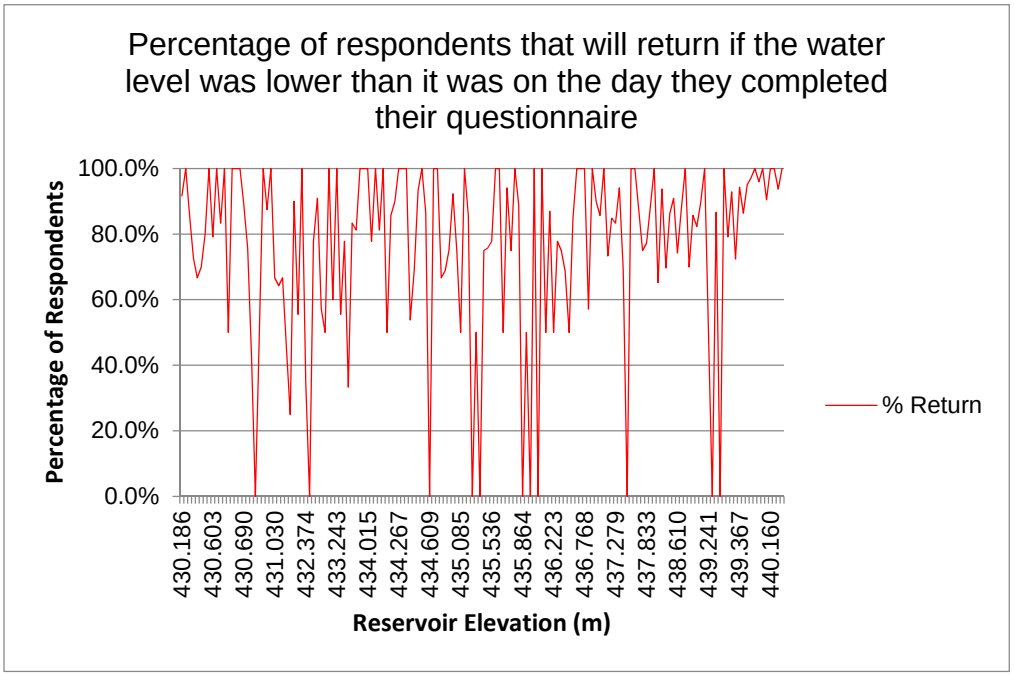


Figure 8. Percentage of respondents that will return if water level on the Arrow Lakes was lower than it was on the day they completed their questionnaire.

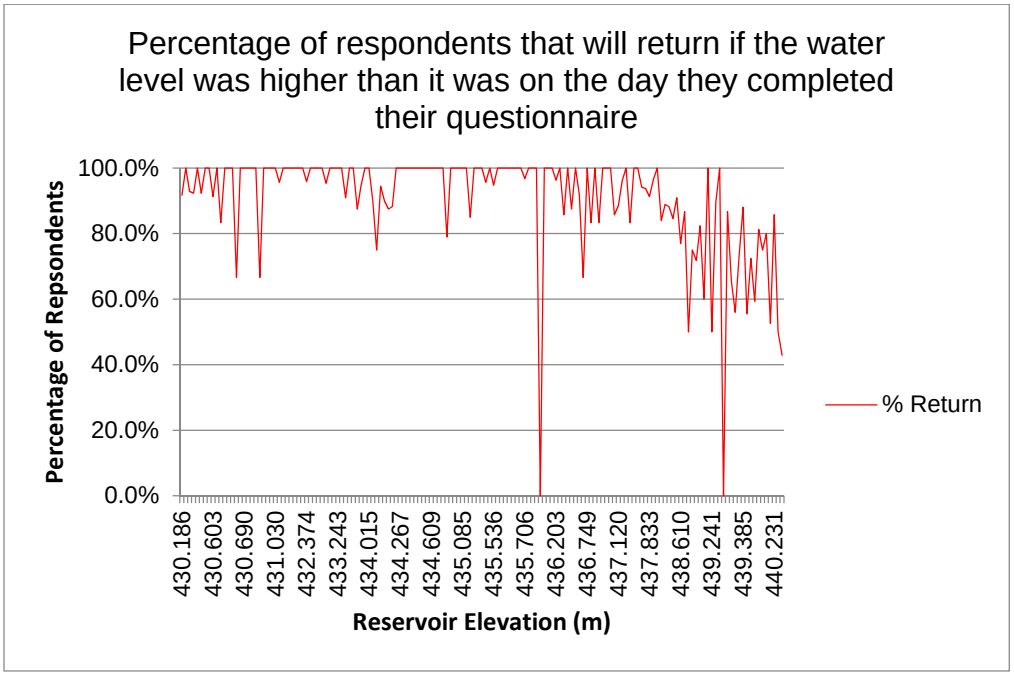


Figure 9. Percentage of respondents that will return if water level on the Arrow Lakes was higher than it was on the day they completed their questionnaire.

Satisfaction with water levels was above the median: 3.4 out of 5 visitors reported satisfaction with water levels over the study period (Figures 10 and 11) further validating that frequency of public use is not affected by water levels.

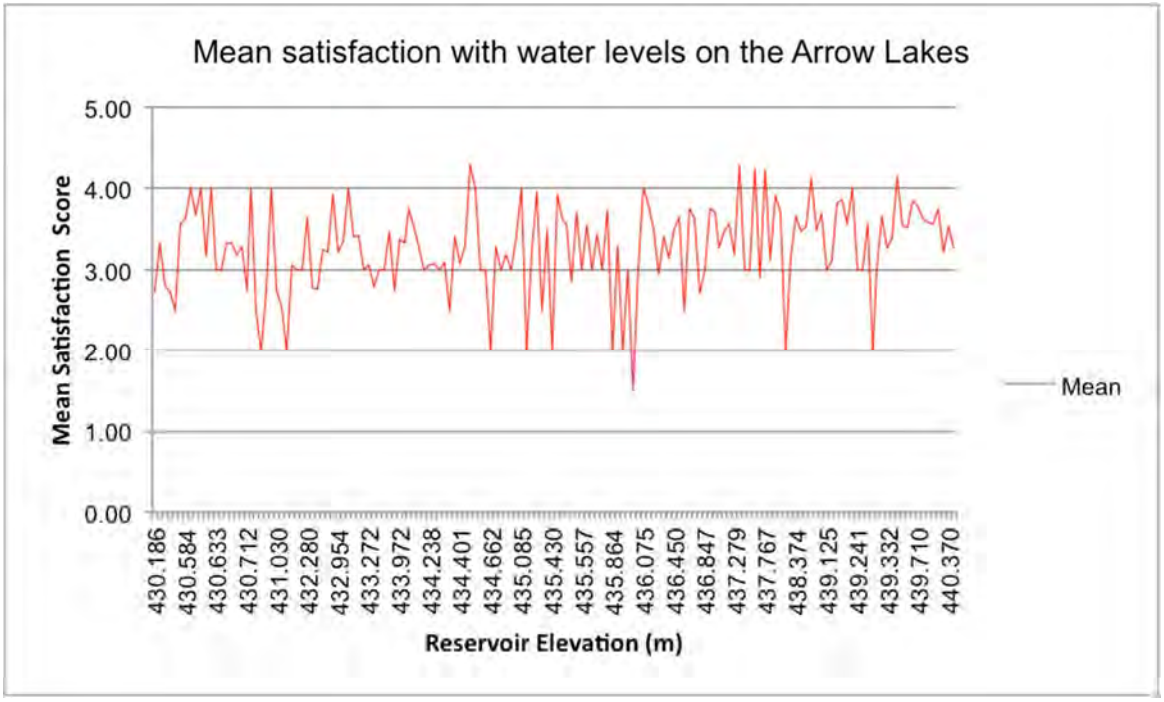


Figure 10. Mean satisfaction with water levels on the Arrow Lakes.

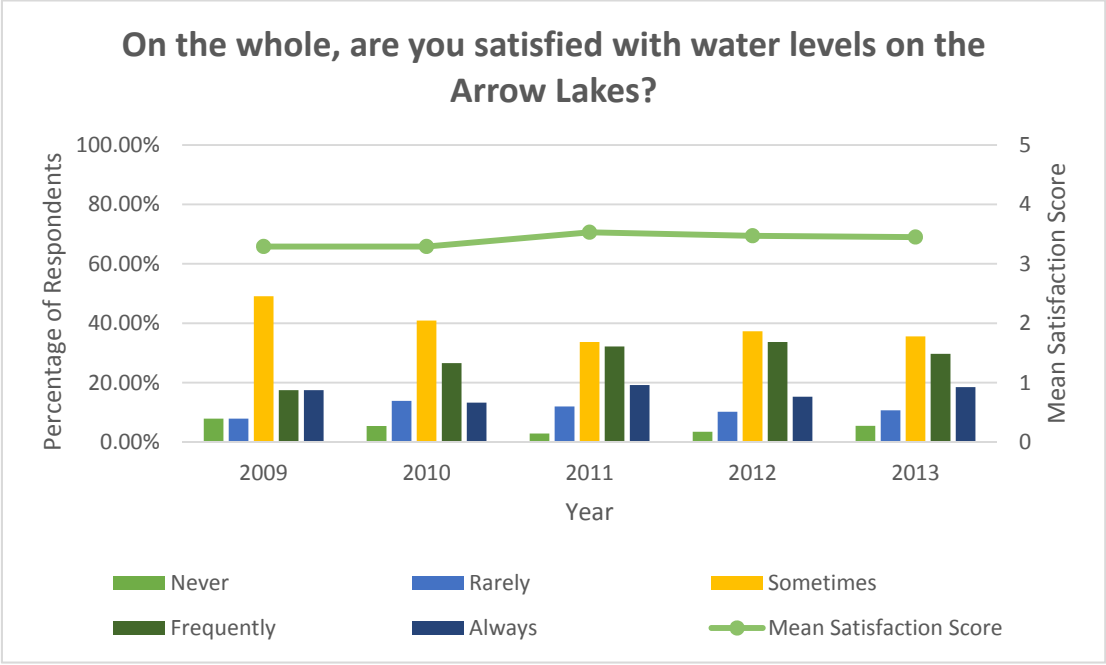


Figure 11. Mean satisfaction with water levels on the Arrow Lakes

Figure 12 illustra 2013).

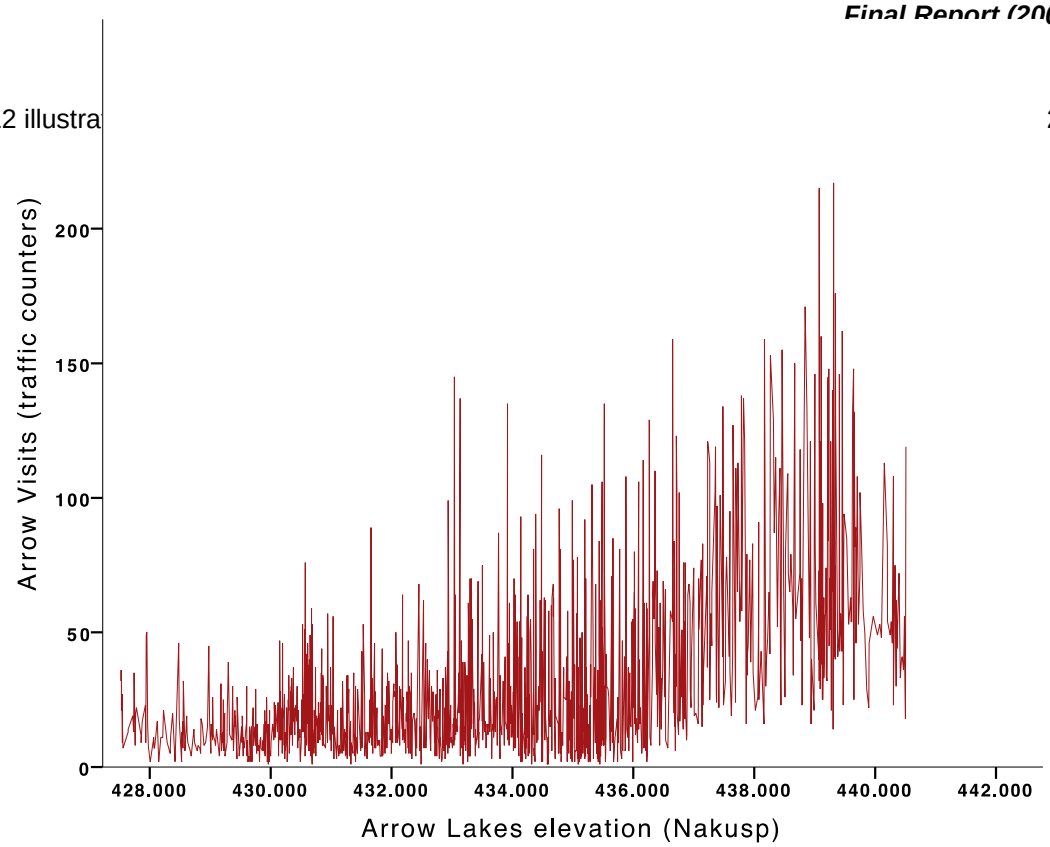


Figure 12. Number of total visits to the Arrow Lakes (2009-2013) for lake elevation at Nakusp.

4.2 Management Hypothesis H_{0B}:

$H_{0B:}$ Volume of public use of Arrow Lake is not influenced by fluctuating reservoir water levels.

A linear regression of all sample years (2009 - 2013) indicated that there was a modest relationship between the volume of public use and the water levels of the Arrow Lakes as measured at Nakusp ($F(1, 1516) = 611.208$, $p < .001$; $R^2 = 0.287$, ß = 0.536, $p < .001$). This indicates that the water level of the Arrow Lakes can account for 28.7% of the variation in visitor volume (Figure 13), which suggests that other variables influence the volume of visitors.

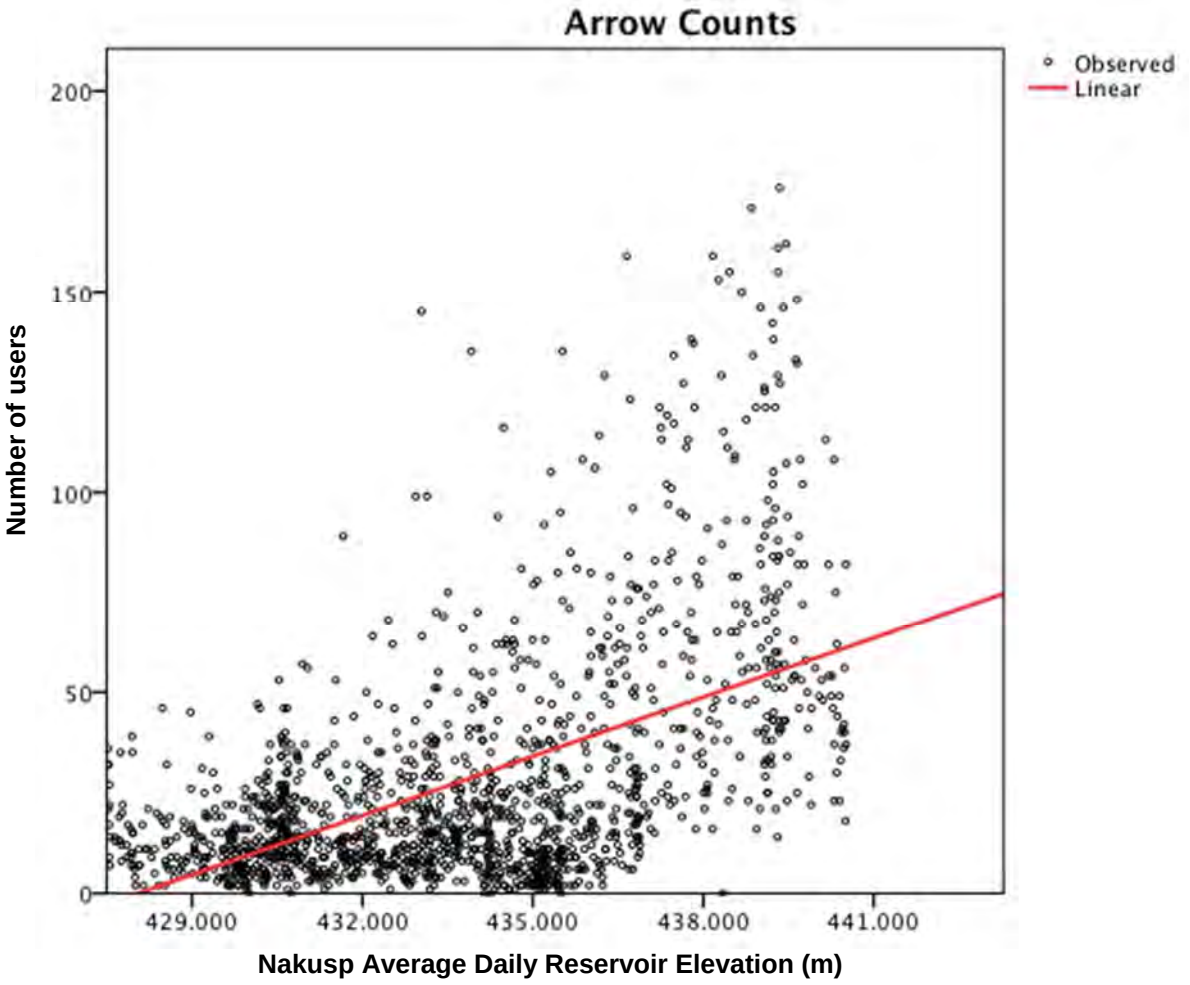


Figure 13. Volume of public use (2009 - 2013) and Arrow Lakes water levels at Nakusp (m).

A total of thirteen predictive models were tested. The best fitting model is presented here (the other models that were tested are presented in **Appendix K**). A multiple regression model using reservoir level at Nakusp (m), total precipitation (mm), and mean temperature (°C), type of day (weekend, holiday), and season as independent variables accounted for 70.5% of the variance in the number of boat launches on the Arrow Lakes; residuals were normally distributed (Table 12). This model indicated that for every 1.05m increase in reservoir level, an additional 0.2 boats were launched at one of the eleven boat launches considered; for every 1.0mm of precipitation that falls, 0.07 fewer boats were launched at one of the eleven boat launches considered; for every 1°C increase in the daily maximum temperature, an additional 0.8 boats were launched at one of the eleven boat launches considered; controlling for the effects of reservoir level, total precipitation, maximum temperature, and season, significantly fewer boats (half as many) were launched on weekdays compared to holidays; and controlling for the effects of reservoir level, total precipitation, maximum temperature, and type of day, significantly more boats were launched during high season (four times as many) compared to low season. The High *vs*. Weekend and High *vs*. Shoulder dummy variables did not make any significant contributions to the model.

Table 12. Model 2: Standardized regression coefficients for multiple regression analysis predicting daily visits to Arrow Lakes boat launches with traffic counters (n = 1,059)[†].

Variable	B	SE B	β	p	R^2
(Constant)	0.568	0.115		< .001	
Reservoir level at Nakusp (m)	0.213	0.025	0.203	< .001	
Total precipitation (mm)	- 0.072	0.019	- 0.064	< .001	
Maximum temperature (°C)	0.833	0.039	0.727	< .001	
Holiday (0) *vs*. Weekday (1)	- 0.987	0.108	- 0.415	< .001	.705
Holiday (0) *vs*. Weekend (1)	- 0.116	0.112	- 0.047	> .05	
High (0) *vs*. Shoulder (1)	- 0.018	0.068	- 0.007	> .05	
High (0) *vs*. Low (1)	0.444	0.093	0.186	< .001	

[†] Boat launches with traffic counters were: Anderson Point, Burton Historic Park, Burton South, Eagle Bay, Edgewood Community Park, Fauquier Community Park, MacDonald Creek Provincial Park, Nakusp, Revelstoke, Shelter Bay, and Syringa Creek.

This model explains 70.5% of the variance, suggesting that in addition to reservoir levels, total precipitation, maximum daily temperature, type of day, and season influence people's decision to visit the Arrow Lakes for recreation activities.

4.3 Management Hypothesis H_{0C}:

$H_{0C:}$ The different types of public use are not affected by fluctuating water levels.

An examination of overall satisfaction with water levels on the Arrow Lakes reveals significant differences between several public uses (Table 13). Tourists had a higher mean satisfaction than residents;

swimmers had a higher mean satisfaction than non-swimmers; campers had a higher mean satisfaction than non-campers; and people engaged in beach activities had a higher mean satisfaction than people not engaged in beach activities.

Table 13. Overall satisfaction with water levels on the Arrow Lakes by different public uses (2009 - 2013) †.

Type of Public Use	n	Mean	95% CI	SD	t	df
Tourist	1,454	3.52	± 0.05	1.030	6.007***	1,563.626
Resident	774	3.25	± 0.07	1.041		
Non-Boaters	1,847	3.43	± 0.05	1.054	0.506	575.835
Boaters	382	3.40	± 0.10	0.985		
Non-Anglers	1,629	3.41	± 0.05	1.034	-1.376	2,227
Anglers	600	3.48	± 0.08	1.062		
Non-Swimmers	1,701	3.35	± 0.05	1.037	-5.912***	2,227
Swimmers	528	3.66	± 0.09	1.024		
Non-Campers	1,888	3.40	± 0.05	1.059	-3.443**	513.793
Campers	341	3.59	± 0.10	0.928		
Non-Beach-Activities	1,815	3.37	± 0.05	1.051	-5.632***	656.868
Beach Activities	414	3.67	± 0.09	0.963		
Non-Walkers/Hikers	1,755	3.44	± 0.05	1.056	0.837	788.637
Walkers/Hikers	474	3.39	± 0.09	0.989		

* p < .05, ** p < .01, *** p < .005, **** p < .001
† Recreationists are classified by activity done on the day they completed a questionnaire.

If the water levels were the same as they were when respondents' visited the Arrow Lakes, almost all respondents would return; there were no significant differences between the seven types of public use that were examined (Table 14). If the water levels were higher than they were when respondents' visited the Arrow Lakes, more than four out of five respondents would return; however, more residents than tourists would go somewhere else if water levels were higher, more swimmers than non-swimmers would go somewhere else if water levels were higher, and more non-beach users than beach users would go somewhere else if water levels were higher (Table 15). If the water levels were lower than they were when respondents' visited the Arrow Lakes, an average of four out of five respondents would return; there were no significant differences between the seven types of public use that were examined (Table 16).

Table 14. How similar water levels may affect different uses of the Arrow Lakes (2009–2013).

Type of Public Use	n	If the water level is the same as today…		χ^2	df	Phi
		I will come back	I will go somewhere else			
Tourist	1,424	95.6%	4.4%	1.417	1	0.026
Resident	677	94.4%	5.6%			
Non-Boaters	1,755	95.2%	4.8%	0.008	1	0.002
Boaters	347	95.1%	4.9%			
Non-Anglers	1,537	95.3%	4.7%	0.182	1	0.009
Anglers	565	94.9%	5.1%			
Non-Swimmers	1,581	94.9%	5.1%	0.908	1	-0.21
Swimmers	521	96.0%	4.0%			
Non-Campers	1,746	95.0%	5.0%	0.713	1	-0.018
Campers	356	96.1%	3.9%			
Non-Beach-Activities	1,696	95.0%	5.0%	0.821	1	-0.020
Beach Activities†	406	96.1%	3.9%			
Non-Walkers/Hikers	1,637	95.3%	4.7%	0.166	1	0.009
Walkers/Hikers	465	94.8	5.2%			

* p < .05, ** p < .01, *** p < .005, **** p < .001
† Beach activities may include sunbathing, sand play, and leisure activities.

Table 15. How higher water levels may affect different uses of the Arrow Lakes (2009-2013).

Type of Public Use	n	If the water level is higher than today…		χ^2	df	Phi
		I will come back	I will go somewhere else			
Tourist	1,374	89.7%	10.3%	4.881*	1	0.049
Resident	663	86.4%	13.6%			
Non-Boaters	1,700	89.1%	10.9%	1.990	1	0.031
Boaters	338	86.4%	13.6%			
Non-Anglers	1,495	88.4%	11.6%	0.197	1	-0.10
Anglers	543	89.1%	10.9%			
Non-Swimmers	1,551	90.1%	9.9%	13.614***	1	0.82
Swimmers	487	84.0%	16.0%			
Non-Campers	1,699	88.9%	11.1%	0.682	1	0.18
Campers	339	87.3%	12.7%			
Non-Beach-Activities	1,659	89.5%	10.5%	7.091**	1	0.059
Beach Activities	379	84.7%	15.3%			
Non-Walkers/Hikers	1,582	88.2%	11.8%	0.978	1	-0.022
Walkers/Hikers	456	89.9%	10.1%			

* p < .05, ** p < .01, *** p < .005, **** p < .001

Table 16. How lower water levels may affect different uses of the Arrow Lakes (2009-2013).

Type of Public Use	n	If the water level is lower than today…		χ^2	df	Phi
		I will come back	I will go somewhere else			
Tourist	1,239	82.3%	17.7%	0.041	1	0.005
Resident	637	81.9%	18.1%			
Non-Boaters	1,558	82.5%	17.5%	0.750	1	0.20
Boaters	318	80.5%	19.5%			
Non-Anglers	1,362	82.9%	17.1%	1.649	1	0.30
Anglers	514	80.4%	19.6%			
Non-Swimmers	1,407	82.0%	18.0%	0.121	1	-0.008
Swimmers	469	82.7%	17.3%			
Non-Campers	1,561	82.4%	17.6%	0.222	1	0.011
Campers	315	81.3%	18.7%			
Non-Beach-Activities	1,512	82.7%	17.3%	1.205	1	0.025
Beach Activities	364	80.2%	19.8%			
Non-Walkers/Hikers	1,469	82.6%	17.4%	0.917	1	0.022
Walkers/Hikers	407	80.6%	19.4%			

* p < .05, ** p < .01, *** p < .005, **** p < .001

5. DISCUSSION

5.1 Management Hypothesis H_{0A}:

$H_{0A:}$ Frequency of public use of Arrow Lake is not influenced by fluctuating reservoir water levels.

Results suggest that frequency of public use of Arrow Lakes is not influenced by water levels. When asked whether different water levels would affect their likelihood of returning to the Arrow Lakes, over four out of five respondents indicated they would return regardless of water levels. Survey responses show 82.2% of respondents would return if water levels were lower, 95.2% of respondents would return of the water levels were the same, and 88.6% of respondents would return if the water levels were higher than on the day that they completed a questionnaire.

The majority of respondents from all sample years (99.1%) indicated that, based on their experiences the day that they completed a questionnaire, they would return to the Arrow Lakes for outdoor recreation activities. The willingness to return suggests a high degree of satisfaction with the recreation experience on the Arrow Lakes. There was nothing exceptional about the visitors that indicated that they would not return to the Arrow Lakes based on their experiences the day that they completed a questionnaire; it should also be noted that the number of people was small (n = 12) over a five-year period.

Overall satisfaction with water levels is above the median – 3.4 out of 5 visitors reported satisfaction with water levels over the study period.

5.2 Management Hypothesis H_{0B}:

$H_{0B:}$ Volume of public use of Arrow Lake is not influenced by fluctuating reservoir water levels.

The linear regression of all sample years indicated a modest relationship between the volume of public use at boat launches and water levels of the Arrow Lakes as measured at Nakusp. However, the amount of variation explained by this relationship was modest, which suggests that other variables influence the volume of visitors. A multiple regression of all sample years using reservoir level at Nakusp (m), total precipitation (mm), and mean temperature (°C), type of day (weekend, holiday) and season as independent variables explains 70.5% of the variance, suggesting that in addition to reservoir levels, total precipitation and the maximum daily temperature, type of day and season influence people's decision to visit the Arrow Lakes for recreation activities.

5.3 Management Hypothesis H_{0C}:

$H_{0C:}$ The different types of public use are not affected by fluctuating water levels.

Tourists, swimmers, campers, and people engaged in beach activities had a higher mean satisfaction with water levels on the Arrow Lakes than their counter-parts did. Although residents, and people not engaged in swimming, camping, or beach activities were not as satisfied as their counter parts, their mean satisfaction levels were above the median. Were water levels to remain the same, or lower as they were when respondents' visited the Arrow Lakes, there would be minimal impact on the number of people visiting, despite their type of public use. Fewer people would return to the Arrow Lakes for recreation activities if water levels were higher than those experienced the day the reservoir was visited; more residents, swimmers, and beach users would go elsewhere than other groups.

5.4 Effect on Soft Constraints:

The soft constraints on recreation for Arrow Lakes operations are (Columbia River Water Use Plan Consultative Committee, 2005):

(1) Target reservoir water levels between 437.4 m and 438.9 m (1435.0 ft and 1440.0 ft) from May 24 to September 30;

(2) Flexibility to achieve lower reservoir levels of 434 m (1424 ft) during the peak recreation season provided that proposed construction/upgrade of boat ramps for recreation interests materializes.

Reservoir water levels experienced by respondents on the day that they completed their questionnaire ranged between 430.2 m and 440.5 m. When asked if they would return to the Arrow Lakes for recreation

activities based on their experience on the day that they completed a questionnaire, respondents reported a high willingness to return (99.1%) despite the operating regime on the day they completed a questionnaire.

When asked if they would return based on different water levels there was little variation in the sample for the first two conditions (same water levels or higher); there was more variation for the third (lower water levels) (see Figure 14). While water levels do affect recreation use, results suggest that a minority of visitors is affected; lower water levels seem to affect people's plans to return the most.

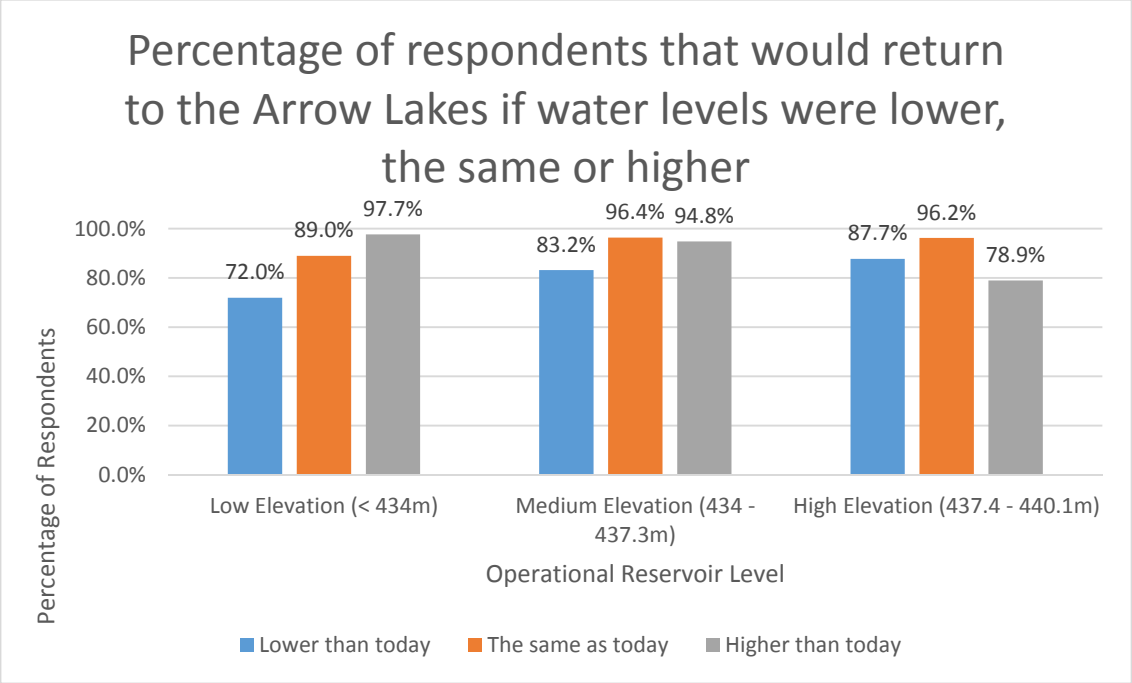


Figure 14. Percentage of respondents that would return to the Arrow Lakes for recreation activities if water levels were lower, the same or higher.

6. LIMITATIONS AND OPPORTUNITIES FOR FURTHER STUDY

A variety of uncontrollable variables have arisen each year that affect use, particularly with regard to construction periods and high water curtailment of traffic counts. A limitation to data collection was the need to remove counters (or exclude counter data) for extended periods due to the presence of construction activity on the boat ramps. Periods when counter data was excluded is noted in Table 5. Construction exclusion dates represent best estimates based on construction progress information provided to the study team by BC Hydro, Columbia Power Corporation and on-site observations by project field staff. There is some uncertainty as to exact dates of construction activity that impacted the use of the boat ramps (either construction vehicle traffic increasing counts or construction activity not

allowing public access to a ramp). For example, there was likely a fair amount of construction activity on either side of the official McDonald Creek construction period that affected traffic counts. In some cases construction took place in the water (pile driving) and did not impede the use of the ramp but support vehicles would have been counted.

Year 4 of the study was an excessively high water year with a sustained water level of 1,446 feet elevation (or about two feet above normal pond level of 1,444'). The high water period continued for six weeks beginning July 6, 2012. This created a number of challenges to data collection during the busiest summer boating period. To protect the electronic traffic counters from being submerged and water damaged, the counters were removed from all sites except for Anderson Point, Nakusp and Syringa Creek. Removal of the counters limited the ability to measure recreational activity while water levels were 'artificially' high. Gaining more accurate count data during high water periods would help to give a better sense of what happens when BCH raises water levels during peak recreation periods.

It should be noted that the lowest water levels typically occurred during the winter months when no onsite sampling or surveys were conducted (November to March). Therefore interpretations in this report based on visitor survey responses represent recreational users who visited the reservoirs during the shoulder and high seasons (April to October).

Based on the results of this study, future monitoring of recreation use on the Arrow Lakes Reservoir could rely on traffic counters for long term monitoring with periodic surveys and observational data collection. Predictive model analysis showed traffic count data was a useful dependent variable, while Environment Canada weather data were the most useful independent variables for predicting recreation use on the reservoir.

7. CONCLUSION

Results show frequency, volume and different types of public use of Arrow Lakes Reservoir are minimally influenced by fluctuating water levels. Where water levels do account for a variation in use, a minority of visitors are affected.

Fluctuating reservoir water levels have minimal influence on frequency of public use. The majority of respondents (over four out of five) would return to the Arrow Lakes for outdoor recreation activities regardless of water levels. Lower water levels seem to affect people's plans to return the most.

Fluctuating reservoir water levels have a modest influence (28.7%) on volume of boat launches on the Arrow Lakes. While water levels of the Arrow Lakes can account for 28.7% of the variation in visitor volume, results show total precipitation, maximum daily temperature, type of day and season account for

70.5% of the variance, suggesting factors other than water levels dominate people's decision to visit the Arrow Lakes for recreation activities.

Fluctuating reservoir water levels have a minimal effect on types of public use. Although respondents engaging in all types of public use reported satisfaction above the median, residents, swimmers and beach users are more likely to go elsewhere in high water levels. Water levels have minimal impact on the other types of public use (tourists, boating, angling, camping, and walking/hiking).

The Arrows Lakes Reservoir is generally used by area residents and BC tourists (85%), who have been visiting the Arrow Lakes for recreation opportunities for many years (average 18.6 years). Exceptionally high levels of both overall satisfaction and willingness to return suggest BC Hydro is providing opportunities for high quality recreational use at the Arrow Lakes Reservoir for water-based and shore-based activities.

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10. ADDITIONAL REPORTING REQUIREMENTS

Data Provided to BC Hydro

An MS Access database containing all 2009 through 2013 data was provided to BC Hydro in April 2014.

APPENDIX A – TRAFx VEHICLE COUNTERS

How were traffic counters used in this study?

TRAFx G3 magnetic field controlled vehicle counters were selected for use in this study as they are the preferred and recommended traffic counter of BC Parks, Parks Canada and the US National Parks Service. Traffic counters were configured and installed at the boat launch sites using the following settings:

Table 17. Traffic counter settings at Arrow Lakes (2009-2013).

Location	Mode	Period	Delay	Threshold	Rate
Revelstoke	VEH_2s	000	120	16	S
Eagle Bay	VEH_2s	000	120	16	S
Shelter Bay	VEH_2s	000	120	16	S
Nakusp (2009-2012)	VEH_4d	000	96	16	S
Nakusp (2013)	VEH_5d	000	96	8	S
McDonald Creek	VEH_2s	000	120	16	S
Burton	VEH_2s	000	120	16	S
Burton South	VEH_2s	000	120	16	S
Fauquier	VEH_2s	000	120	16	S
Edgewood	VEH_2s	000	120	16	S
Syringa Creek	VEH_4d	000	96	16	S
Anderson Point	VEH_2s	000	120	16	S

Notes:

Mode: VEH_2s = single lane traffic; VEH_4d = double lane traffic with counter on side of road;
VEH_5d=double lane traffic with counter in middle of road

Period: 000 = timestamps

Delay: 8 = 1 sec; 96 = 12 sec; 120 = 15 sec

Threshold: Range is 3-16; 16 is least sensitive[10]

Rate: S = slow (<50 km/h)

Settings were monitored and adjusted during the first year of study (2009) to ensure counters were configured to most accurately record traffic at each site. Sensitivity and delay settings remained unchanged through 2012. In 2013, Nakusp counter settings were adjusted to accommodate placement of the counter in the middle of the new cement ramp.

How does the traffic counter work?

Ferrous metal (i.e., metals with iron content) objects distort the earth's magnetic field as they move through it. Pure aluminum (non-alloy aluminum) will not be detected. Moving the counter (i.e., pointing it in different compass directions, tilting it, jiggling or jolting it) will also cause counts to occur. This is

[10] Counter thresholds were adjusted to the least sensitive setting that would still trip the counter when a vehicle passes through. This also prevented the count of bicycles, and smaller metal objects.

because the earth's magnetic field has different strengths for different directions and tilts, and the counter senses this.

As vehicles move, they disturb the earth's magnetic field. The TRAFx vehicle counter digitizes and analyzes these disturbances using highly sophisticated hardware and software. Thus, as a vehicle passes within the detection zone it changes the earth's magnetic field in that area which triggers a count. Different modes are used to meet the particular needs and traffic pattern of a given site. That is why the modes and sensitivity settings were selected at each site to best reflect the local conditions.

Figure 15. TRAFx Magnetic Vehicle Counter

Can the vehicle counter be buried? Does it perform differently when buried?

Yes, it can be buried. Because it responds to changes in the earth's magnetic field, the TRAFx Vehicle Counter functions the same whether the counter is buried or installed above ground.

Will the counter still function if a vehicle parks over or near the counter?

Yes. Unlike most other types of vehicle counters, the TRAFx vehicle counter will automatically adjust to the presence of a vehicle parked over top or nearby, and continue to function properly. Likewise, if the counter is placed near a metal pole (e.g., signpost) or similar static metal object (e.g., guard rail, cattleguard, bridge beam etc.) it will automatically adjust to its presence.

How ae annual traffic counts calculated?

TRAFx DataNet traffic count estimates follow the most widely accepted vehicle traffic calculation methods used in North America. This system is used by the US Army Corps of Engineers, US Bureau of Land Management, US Fish and Wildlife, US Forest Service, US National Parks Service, Parks Canada, most Canadian provicincial and territorial governments, and numerous countries in Europe and the South Pacific.

Annual Traffic Counts are collected and automatically compiled by the TRAFx DataNet system for each full calendar year. This was done to standardize the calculation and application of average daily use to missing data. The system enables the selection of any time period across years for calculating and reporting daily, weekly and monthly counts, averages and comparisons.

The Annual Traffic Summary shows estimated total yearly counts by recording the total daily counts and calculating the average daily count for that month, then applying that average daily count to missing data periods (such as partial months due to mid-month start date or interruptions due to data downloads, dead batteries or missing data). Thus, if a given counter has at least one day of counts in a month but is also missing at least one day of counts that month, the TRAFx Datanet will apply the monthly average daily count to only those days where data have been interrupted or is missing. If the counter had been operating without interruption during a day or month and there was absolutely no traffic recorded, the TRAFx DataNet calculates a '0' traffic count for that day or month. For years with complete months of missing data (not zero counts, but actually missing data) an annual average daily traffic count (AADT) is applied to all days within a missing month. The total estimate for the year is generated by adding the recorded and calculated counts.

How were boat launch counts calculated?

The AADT procedure has been applied as described above for minor occurrences of missing data. However, as most boat launch locations in this study are snow bound in winter, recorded summer use has been higher and winter use has been lower than the annual daily average. Thus, applying Annual Average Daily values to major disruptions in winter months generates an overestimate while applying them to major disruptions in summer months provides an underestimate. Operational conditions causing interruptions to continuous data collection, such as construction activity, excessive high water and counter malfunction resulted in some gaps in the data. Thus, to more accurately present and compare the total boat ramp use throughout the study period, an average traffic count for each month at each location was calculated and applied to the respective month with missing data at each location. Data was excluded for periods when a ramp was unavailable for public use due to construction activity.

To get an accurate count at a boat launch setting it was necessary to apply additional factors, including:

- Filter — a 12-17 second delay is applied (12 seconds on double lane ramps and 17 seconds on single lane ramps) to remove any multiple counts within those intervals to reduce the possibility of multiple counts for a single launch.
- Divide by two — as a vehicle must pass the counter twice to launch a boat (going into the water loaded and coming out empty) the count is divided by two.

- Adjustment Factor of '0.5' — as a vehicle must make two trips per boating experience (one to launch the boat and another to load the boat) the count is again multiplied by 0.5 (or in other words again divided by two).

(TRAFx, 2010)

APPENDIX B – OBSERVATIONAL DATA FORMS AND DEFINITIONS

Data Forms

- Site and Survey Log
- Detailed Daily Sample Summary

Definitions

- Wind Condition Definitions
- Water Surface Condition Definitions
- Forecasting Terminology
- Sky Conditions Definitions
- Air and Water Temperature Data Collection Procedures

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Arrow Lakes Recreation Study – Detailed Daily Sample Summary

Date: Sample Site: Surveyor: Page ____ of ____

Total # in Group	Gender	Age Range									Activities	Comments
	Total M/F	1 – 10	11 – 15	16 – 20	21 – 30	31 – 40	41 – 50	51 – 60	61 – 70	71 +		

Version: September 7, 2009

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Arrow Lakes Recreation Study
Site and Survey Log

Date (dd/mm/yr)	Location	Time of env record	Sky Cond (1-14)	Wind (0-12)	Wind Dir (from)	Water Surface Cond (1-5)	Air Temp (°C)	Water Temp (°C)	# BC Plates	# Other Canada Plates	# Intn'l Plates	# Parties	Total # People visiting site	# invited to take survey	# prev taken survey this yr	# who decline taking survey	# completed surveys	# surveys to be mailed in	Staff Initials	Comment

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Page ____

Arrow Reservoir Recreational Demand Study
Water Surface Condition
Definitions

Water Condition	Description
1. Calm	Flat surface – some ripples, no noticeable breeze
2. Gentle	Noticeable breeze; low gentle waves
3. Small waves	Light winds – larger waves but no white caps
4. Moderate waves	Moderate winds; choppy water; white caps
5. Stormy	Strong winds; steep waves

Arrow Reservoir Recreational Demand Study
Forecasting Terminology

Condition	Description
Duration of Precipitation	• Brief - short, sudden showers or periods of rain • Intermittent - on and off intervals, not continuous • Occasional - irregular, infrequent intervals of precipitation • Frequent - persistent short intervals, happening regularly and often • Periods of precipitation - rain or snow falling most of the time with breaks
Distribution of Precipitation, as in showers	• Isolated - showers separated during a given period of time • Few - indicated in time, not over an area • Local - restricted to a smaller area • Patchy - irregularly occurring in an area • Scattered - not widespread but of greater occurrence than isolated showers
Precipitation Intensity	• Light - each drop or small flake of precipitation can be easily seen, puddles form slowly, some water flow in gutters • Moderate - water puddles quickly, roads and other surfaces collect water, rain streams down windows • Heavy - numerous flakes or sheets of rain, large puddles form, flooding can occur, visibility reduced
Cloud Cover	• Clear or sunny - free of clouds or less than one tenth cloudy • Partly cloudy or partly sunny - three tenths to six tenths of the sky is clouded • Mostly cloudy - the sky is predominantly clouded or seven tenths to eight tenths of the sky has clouds • Cloudy or overcast - the sky is covered with clouds from nine tenths to a hundred percent cloud covered
Showers vs. Rain: A Difference of Duration and Intensity	• Rain - forms from stratus clouds, more widespread over larger area, uniformly steady, less intense • Showers - forms from cumulus clouds, more isolated, short-lived, affects a smaller area, sometimes more intense
Partly Cloudy vs. Partly Sunny	According to the National Oceanic and Atmospheric Administration there is no official difference between the two terms. One or the other may be emphasized, to help clarify the meaning of the term used.

Read more: http://weatherforecasting.suite101.com/article.cfm/meteorologist_forecasting_terms#ixzz0QBMaiiTT

Arrow Reservoir Recreational Demand Study
Wind Condition
Definitions

International Description	Specifications	Beaufort Number	MPH	Knots
Calm	• Calm, smoke rises vertically	0	< 1	< 1
Light air	• Direction of wind shown by smoke drift but not by wind vanes	1	1 - 3	1 - 3
Light Breeze	• Wind felt on face • Leaves rustle • Vanes moved by wind	2	4 - 7	4 - 6
Gentle Breeze	• Leaves and small twigs in constant motion • Wind extends light flag	3	8 - 12	7 - 10
Moderate	• Raises dust, loose paper • Small branches moved	4	13 - 18	11 - 16
Fresh	• Small trees in leaf begin to sway • Crested wavelets form on inland waters	5	19 - 24	17 - 21
Strong	• Large branches in motion • Whistling heard in telegraph wires • Umbrellas used with difficulty	6	25 - 31	22 - 27
Near Gale	• Whole trees in motion • Inconvenience felt walking against wind	7	32 - 38	28 - 33
Gale	• Breaks twigs off trees • Impedes progress	8	39 - 46	34 - 40
Strong Gale	• Slight structural damage occurs	9	47 - 54	41 - 47
Storm	• Trees uprooted • Considerable damage occurs	10	55 - 63	48 - 55
Violent Storm	• Wide Spread Damage	11	64 - 72	56 - 63
Hurricane	• Wide Spread Damage	12	73 - 82	64 - 71

Source: Oregon Emergency Management Net – Net Protocol

Arrow Reservoir Recreational Demand Study
Sky Condition
Definitions

Sky Condition	Description
1. Clear (Sunny)	< 10% cloud cover
2. Partly Cloudy (mostly sunny)	30 - 60% cloud cover
3. Mostly Cloudy (partly sunny)	70-80 % cloud cover
4. Overcast	≥ 90% cloud cover
5. Fog	Report visibility in tenths of a kilometer (*e.g.*, 100m, 200m, etc.)
6. Trace of Rain or Snow	Not enough to measure
7. Light Rain	from stratus (layers/blanket) clouds, more widespread, steady, less intense; each drop of precipitation can be easily seen, puddles form slowly, some water flow in gutters
8. Moderate Rain	water puddles quickly, roads and other surfaces collect water, rain streams down windows
9. Heavy Rain	numerous sheets of rain, large puddles form, flooding can occur, visibility reduced
10. Showers	forms from cumulus clouds, more isolated, short-lived, affects a smaller area, sometimes more intense
11. Drizzle	Fine consistent light rain, <1mm droplet size (no wind)
12. Light Snow	Visibility is > 1 km; often very little accumulation results
13. Moderate Snow	Visibility between 400m - 1km; < 10 cm in 12 hours
14. Heavy Snow	Numerous flakes, visibility <400m; 10 cm in 12 hrs or 15 cm in 24 hrs

Source: http://weatherforecasting.suite101.com/article.cfm/meteorologist_forecasting_terms

Arrow Reservoir Recreational Demand Study
Air and Water Temperature
Data Collection Procedures

Field staff should take air and water temperature readings any time between 11:00 am and 2:00 pm on each survey day. First collect air temperatures then water temperatures.

Summary of procedure for air temperature readings

1. Expose the thermometer to the air yet suspended away from any other material that may affect an accurate air temperature reading. The thermometer should be sheltered from direct solar radiation and other weather related influences.
2. Allow the thermometer to equilibrate before reading.
3. Read temperature.
4. Record temperature in the field form, along with ancillary information such as site, date, and time.

Summary of procedure for near surface water temperature readings

1. Select a representative area of the water body 2m from shore and hold the thermometer directly in the water 10 cm below the surface (*e.g.,* attach thermometer to a fishing line and pole and hang so as to have thermometer bulb about 10cm below surface).
2. Allow the immersed thermometer to equilibrate before reading (hold in water about 2 minutes).
3. Read temperature. If the thermometer is unreadable while it is immersed in the water, pull the thermometer out and check the reading quickly. Do this multiple times until an accurate reading is achieved (the lowest reading for a reading from cold water when the air is hot and still, or the highest reading if the water is warm and a wind is cooling the wet thermometer).
4. Record temperature in the field form, along with ancillary information such as site, date, and time.
5. If temperature readings are unstable (which can occur in lakes or poorly mixed streams), take multiple readings.

Suggested tips for taking the water-temperature measurements

Be careful not to break your thermometer and keep it in the shade at all times. While reading temperature, avoid warming the thermometer bulb or water sample with your hands or by the sun. Read the temperature measurements to the nearest ½ degree C.

Source: Adapted from SFU Water Studies (http://www.educ.sfu.ca/nbcr/tempprot.html), and Washington State Department of Ecology Environmental Assessment Program Standard Operating Procedures for Instantaneous Measurements of Temperature in Water http://www.ecy.wa.gov/programs/eap/qa/docs/ECY_EAP-SOP_011InstantMeasureofTempinWater.pdf
Note: Thermometers used in study: waterproof pocket thermometer (-30/+50c), not calibrated.

APPENDIX C – SAMPLING SCHEDULES

Arrow Lakes Fall 2009 Sampling Schedule

Day	Date	Upper Arrow Lakes Reservoir		Middle Arrow Lakes Reservoir		Lower Arrow Lakes Reservoir	
Saturday	September 12, 2009	Shelter Bay	AM	Nakusp Boat Launch	AM	Syringa Park Boat Launch	PM
Sunday	September 13, 2009	Eagle Bay	AM	Nakusp Beach Area	AM	Syringa Park Day Use	PM
Wednesday	September 23, 2009	Revelstoke Boat Launch	PM	Fauquier Park	AM	Syringa Park Boat Launch	PM
Friday	September 25, 2009	Revelstoke Boat Launch	PM	Edgewood Park	AM	Syringa Park Boat Launch	PM
Thursday	October 8, 2009	Shelter Bay	AM	MacDonald Creek Park	AM	Syringa Park Boat Launch	AM
Sunday	October 11, 2009	Eagle Bay	AM	Burton Historic Park	AM	Syringa Park Boat Launch	PM
Monday	October 12, 2009	Eagle Bay	AM	Burton Historic Park	AM	Syringa Park Boat Launch	PM
Tuesday	October 13, 2009	Revelstoke Boat Launch	PM	Fauquier Park	PM	Syringa Park Boat Launch	PM
Monday	October 19, 2009	Shelter Bay	AM	MacDonald Creek Park	PM	Syringa Park Boat Launch	AM
Saturday	October 24, 2009	Shelter Bay	PM	Edgewood Park	AM	Syringa Park Boat Launch	PM

Morning sample periods: 8:30 AM – 2:30 PM
Afternoon sample periods: 10:30 AM – 4:30 PM

Arrow Lakes Spring 2010 Sampling Schedule

Day	Date	Upper Arrow Lakes Reservoir		Middle Arrow Lakes Reservoir		Lower Arrow Lakes Reservoir	
Friday	April 2, 2010	Shelter Bay	PM	Nakusp Boat Launch	PM	Anderson Point	AM
Sunday	April 4, 2010	Eagle Bay	PM	MacDonald Creek Park	PM	Anderson Point	PM
Saturday	April 10, 2010	Revelstoke Boat Launch	AM	Edgewood Park	AM	Syringa Boat Launch	PM
Friday	April 16, 2010	Eagle Bay	PM	Fauquier Boat Launch	AM	Anderson Point	PM
Monday	April 26, 2010	Eagle Bay	AM	Burton Historic Park	AM	Syringa Creek Day Use	PM
Wednesday	May 12, 2010	Shelter Bay	PM	MacDonald Creek Park	AM	Syringa Creek Day Use	PM
Monday	May 17, 2010	Revelstoke Boat Launch	PM	Nakusp Boat Launch	AM	Syringa Creek Day Use	PM

Spring sampling hours
AM: 8:30 AM – 2:30 PM
PM: 10:30 AM – 4:30 PM

Arrow Lakes Summer 2010 Sampling Schedule

Day	Date	Upper Arrow Lakes Reservoir		Middle Arrow Lakes Reservoir		Lower Arrow Lakes Reservoir	
Monday	May 24	Eagle Bay	AM	Fauquier Boat Launch	PM	Syringa Creek Day Use	AM
Saturday	May 29	Revelstoke Boat Launch	PM	Fauquier Boat Launch	AM	Anderson Point	AM
Sunday	May 30	Revelstoke Boat Launch	AM	Edgewood Park	PM	Anderson Point	PM
Friday	June 4	Revelstoke Boat Launch	PM	MacDonald Creek Park	PM	Syringa Boat Launch	PM
Sunday	June 6	Revelstoke Boat Launch	PM	Burton Historic Park	AM	Syringa Creek Day Use	PM
Saturday	June 19	Shelter Bay	AM	MacDonald Creek Park	AM	Anderson Point	PM
Saturday	June 26	Shelter Bay	AM	Edgewood Park	PM	Syringa Creek Day Use	AM
Thursday	July 1	Eagle Bay	AM	Nakusp Beach	AM	Anderson Point	AM
Saturday	July 3	Shelter Bay	AM	Fauquier Boat Launch	PM	Syringa Creek Day Use	AM
Thursday	July 8	Eagle Bay	AM	Nakusp Beach	PM	Syringa Boat Launch	PM
Friday	July 23	Eagle Bay	AM	Burton Historic Park	PM	Syringa Boat Launch	PM
Friday	July 30	Revelstoke Boat Launch	PM	Nakusp Boat Launch	AM	Anderson Point	AM
Sunday	August 8	Shelter Bay	PM	Edgewood Park	PM	Anderson Point	AM
Monday	August 23	Shelter Bay	PM	Nakusp Boat Launch	PM	Syringa Boat Launch	PM
Tuesday	August 24	Revelstoke Boat Launch	AM	Nakusp Boat Launch	AM	Anderson Point	AM
Sunday	September 12	Shelter Bay	PM	Nakusp Beach	AM	Syringa Boat Launch	PM
Tuesday	September 14	Eagle Bay	PM	Burton Historic Park	AM	Anderson Point	AM
Wednesday	September 22	Eagle Bay	AM	MacDonald Creek Park	AM	Syringa Creek Day Use	PM

Summer sampling hours:
AM: 8:00 AM – 2:00 PM
PM: 1:00 PM – 7:00 PM

Arrow Lakes Fall 2010 Sampling Schedule

Day	Date	Upper Arrow Lakes Reservoir		Middle Arrow Lakes Reservoir		Lower Arrow Lakes Reservoir	
Sunday	October 3, 2010	Eagle Bay	PM	MacDonald Creek Park	AM	Anderson Point	PM
Tuesday	October 5, 2010	Revelstoke Boat Launch	AM	Nakusp Boat Launch	AM	Syringa Boat Launch	PM
Saturday	October 9, 2010	Revelstoke Boat Launch	AM	Edgewood Park	PM	Syringa Boat Launch	AM
Monday	October 11, 2010	Shelter Bay	PM	Burton Historic Park	PM	Syringa Boat Launch	PM
Wednesday	October 13, 2010	Shelter Bay	PM	Fauquier Boat Launch	PM	Syringa Creek Day Use	AM

Fall sampling hours
AM: 8:30 AM – 2:30 PM
PM: 10:30 AM – 4:30 PM

Arrow Lakes Spring 2011 Sampling Schedule

Day	Date	Upper Arrow Lakes Reservoir		Middle Arrow Lakes Reservoir		Lower Arrow Lakes Reservoir	
Saturday	April 9, 2011	Shelter Bay	AM	MacDonald Creek Park	AM	Anderson Point	PM
Monday	April 11, 2011	Revelstoke Boat Launch	PM	Burton Historic Park	AM	Syringa Boat Launch	AM
Saturday	April 16, 2011	Eagle Bay	PM	Edgewood Park	AM	Anderson Point	AM
Tuesday	April 19, 2011	Revelstoke Boat Launch	AM	Nakusp Beach	PM	Anderson Point	AM
Friday	April 22, 2011	Shelter Bay	AM	Nakusp Boat Launch	PM	Syringa Boat Launch	PM
Wednesday	May 4, 2011	Eagle Bay	AM	Edgewood Park	PM	Anderson Point	AM
Tuesday	May 10, 2011	Revelstoke Boat Launch	PM	Fauquier Boat Launch	AM	Anderson Point	PM

Spring sampling hours
AM: 8:30 AM – 2:30 PM
PM: 10:30 AM – 4:30 PM

Arrow Lakes Summer 2011 Sampling Schedule

Day	Date	Lower Arrow Lakes Reservoir		Middle Arrow Lakes Reservoir		Upper Arrow Lakes Reservoir	
Saturday	June 4, 2011	Syringa Creek Day Use	AM	Nakusp Boat Launch	PM	Revelstoke Boat Launch	AM
Sunday	June 12, 2011	Syringa Boat Launch	AM	Fauquier Boat Launch	AM	Shelter Bay	PM
Tuesday	June 14, 2011	Syringa Boat Launch	AM	Nakusp Boat Launch	AM	Eagle Bay	AM
Friday	July 1, 2011	Anderson Point	PM	Edgewood Park	AM	Revelstoke Boat Launch	PM
Thursday	July 7, 2011	Syringa Boat Launch	AM	Edgewood Park	AM	Shelter Bay	AM
Saturday	July 9, 2011	Syringa Creek Day Use	PM	Nakusp Beach	AM	Eagle Bay	AM
Saturday	July 23, 2011	Syringa Boat Launch	PM	Edgewood Park	AM	Revelstoke Boat Launch	PM
Friday	July 29, 2011	Anderson Point	AM	MacDonald Creek Park	PM	Shelter Bay	PM
Tuesday	August 2, 2011	Syringa Creek Day Use	PM	Fauquier Boat Launch	PM	Revelstoke Boat Launch	AM
Friday	August 5, 2011	Syringa Boat Launch	PM	Nakusp Boat Launch	PM	Shelter Bay	PM
Monday	August 8, 2011	Syringa Creek Day Use	PM	Burton Historic Park	AM	Eagle Bay	PM
Monday	August 15, 2011	Syringa Boat Launch	AM	MacDonald Creek Park	PM	Revelstoke Boat Launch	PM
Saturday	August 27, 2011	Anderson Point	AM	Nakusp Beach	AM	Eagle Bay	AM
Sunday	September 4, 2011	Syringa Creek Day Use	PM	Fauquier Boat Launch	PM	Shelter Bay	AM
Monday	September 5, 2011	Anderson Point	PM	Burton Historic Park	PM	Eagle Bay	AM
Sunday	September 11, 2011	Anderson Point	PM	MacDonald Creek Park	AM	Revelstoke Boat Launch	PM
Thursday	September 22, 2011	Syringa Creek Day Use	AM	Burton Historic Park	AM	Eagle Bay	PM
Sunday	September 25, 2011	Anderson Point	AM	Nakusp Beach	PM	Shelter Bay	AM

Summer sampling hours
AM: 8:00 AM – 2:00 PM
PM: 1:00 PM – 7:00 PM

Arrow Lakes Fall 2011 Sampling Schedule

Day	Date	Upper Arrow Lakes Reservoir		Middle Arrow Lakes Reservoir		Lower Arrow Lakes Reservoir	
Sunday	October 9, 2011	Revelstoke Boat Launch	AM	Nakusp Boat Launch	AM	Nakusp Boat Launch	PM
Monday	October 10, 2011	Shelter Bay	AM	Fauquier Boat Launch	PM	Fauquier Boat Launch	AM
Wednesday	October 12, 2011	Shelter Bay	AM	Edgewood Park	PM	Edgewood Park	PM
Saturday	October 15, 2011	Eagle Bay	PM	MacDonald Creek Park	AM	MacDonald Creek Park	AM
Wednesday	October 19, 2011	Eagle Bay	PM	Burton Historic Park	AM	Burton Historic Park	AM

Fall sampling hours
AM: 8:30 AM – 2:30 PM
PM: 10:30 AM – 4:30 PM

Arrow Lakes Summer 2012 Sampling Schedule[11]

Day	Date	Upper Arrow Lakes Reservoir		Middle Arrow Lakes Reservoir		Lower Arrow Lakes Reservoir	
Monday	June 18, 2012	Eagle Bay	AM	Edgewood Park	PM	Syringa Creek Day Use	PM
Thursday	June 21, 2012	Shelter Bay	AM	Fauquier Boat Launch	AM	Syringa Creek Boat Launch	PM
Saturday	June 23	Shelter Bay	AM	Burton Historic Park	AM	Syringa Creek Day Use	AM
Wednesday	June 27	Revelstoke Boat Launch	PM	Nakusp Beach	PM	Syringa Creek Day Use	AM
Monday	July 2	Shelter Bay	AM	Edgewood Park	AM	Syringa Creek Boat Launch	AM
Thursday	July 5	Revelstoke Boat Launch	AM	Fauquier Boat Launch	AM	Anderson Point	PM
Sunday	July 15	Shelter Bay	AM	Nakusp Boat Launch	PM	Anderson Point	AM
Saturday	July 21	Revelstoke Boat Launch	PM	MacDonald Creek Park	PM	Syringa Creek Boat Launch	AM
Sunday	July 29	Revelstoke Boat Launch	AM	Burton Historic Park	PM	Anderson Point	PM
Sunday	August 5	Eagle Bay	PM	Nakusp Beach	PM	Syringa Creek Day Use	AM
Monday	August 6	Eagle Bay	PM	Burton Historic Park	AM	Syringa Creek Boat Launch	PM
Saturday	September 1	Eagle Bay	AM	MacDonald Creek Park	PM	Syringa Creek Day Use	AM
Sunday	September 2	Revelstoke Boat Launch	PM	Nakusp Boat Launch	AM	Syringa Creek Boat Launch	PM
Saturday	September 8	Eagle Bay	PM	Nakusp Beach	AM	Syringa Creek Boat Launch	PM
Monday	September 10	Shelter Bay	PM	MacDonald Creek Park	PM	Anderson Point	AM
Friday	September 21	Revelstoke Boat Launch	PM	Edgewood Park	PM	Syringa Creek Day Use	PM
Thursday	September 27	Shelter Bay	PM	Nakusp Boat Launch	AM	Anderson Point	AM
Friday	September 28	Eagle Bay	AM	Fauquier Boat Launch	AM	Anderson Point	PM

Summer sampling hours
AM: 8:00 AM – 2:00 PM
PM: 1:00 PM – 7:00 PM

[11] The 2012 sampling start date was later than in previous years per a deferment requested by BC Hydro.

Arrow Lakes Fall 2012 Sampling Schedule

Day	Date	Upper Arrow Lakes Reservoir		Middle Arrow Lakes Reservoir		Lower Arrow Lakes Reservoir	
Wednesday	October 3, 2012	Revelstoke Boat Launch	AM	Nakusp Beach	PM	Syringa Boat Launch	PM
Monday	October 8, 2012	Shelter Bay	PM	Edgewood Park	PM	Anderson Point	PM
Saturday	October 13, 2012	Eagle Bay	PM	Nakusp Boat Launch	AM	Syringa Boat Launch	AM
Sunday	October 21, 2012	Revelstoke Boat Launch	AM	Fauquier Boat Launch	PM	Anderson Point	PM
Monday	October 29, 2012	Shelter Bay	PM	MacDonald Creek Park	AM	Syringa Park Day Use	AM

Fall sampling hours
AM: 8:30 AM – 2:30 PM
PM: 10:30 AM – 4:30 PM

Arrow Lakes Spring 2013 Sampling Schedule

Day	Date	Upper Arrow Lakes Reservoir		Middle Arrow Lakes Reservoir		Lower Arrow Lakes Reservoir	
Saturday	April 6, 2013	Revelstoke Boat Launch	PM	Edgewood Park	AM	Syringa Creek Day Use	PM
Tuesday	April 16, 2013	Eagle Bay	AM	Fauquier Boat Launch	PM	Syringa Creek Day Use	PM
Friday	April 19, 2013	Shelter Bay	PM	Nakusp Boat Launch	AM	Syringa Boat Launch	AM
Sunday	May 5, 2013	Shelter Bay	AM	Burton Historic Park	AM	Syringa Creek Day Use	AM
Monday	May 13, 2013	Revelstoke Boat Launch	AM	Nakusp Beach	PM	Anderson Point	PM
Wednesday	May 15, 2013	Eagle Bay	AM	MacDonald Creek Park	PM	Syringa Boat Launch	PM
Monday	May 20, 2013	Revelstoke Boat Launch	AM	Nakusp Boat Launch	PM	Anderson Point	AM

Spring sampling hours
AM: 8:30 AM – 2:30 PM
PM: 10:30 AM – 4:30 PM

Arrow Lakes Summer 2013 Sampling Schedule

Day	Date	Upper Arrow Lakes Reservoir		Middle Arrow Lakes Reservoir		Lower Arrow Lakes Reservoir	
Saturday	May 25	Revelstoke Boat Launch	AM	Edgewood Park	PM	Syringa Creek Day Use	AM
Friday	June 7	Revelstoke Boat Launch	AM	Nakusp Boat Launch	PM	Anderson Point	AM
Monday	June 17	Eagle Bay	AM	Nakusp Boat Launch	PM	Syringa Creek Boat Launch	AM
Tuesday	June 18	Shelter Bay	PM	Edgewood Park	AM	Anderson Point	PM
Monday	July 1	Eagle Bay	PM	MacDonald Creek Park	AM	Syringa Creek Day Use	PM
Saturday	July 6	Eagle Bay	PM	Nakusp Boat Launch	AM	Syringa Creek Boat Launch	PM
Sunday	July 14	Eagle Bay	AM	MacDonald Creek Park	AM	Syringa Creek Day Use	AM
Sunday	July 21	Revelstoke Boat Launch	PM	Nakusp Beach	PM	Anderson Point	PM
Monday	July 29	Revelstoke Boat Launch	PM	Nakusp Beach	PM	Syringa Creek Boat Launch	PM
Saturday	August 3	Shelter Bay	PM	Fauquier Boat Launch	AM	Syringa Creek Day Use	PM
Friday	August 9	Shelter Bay	AM	Nakusp Beach	PM	Syringa Creek Day Use	AM
Friday	August 16	Shelter Bay	AM	Fauquier Boat Launch	AM	Anderson Point	AM
Sunday	August 18	Eagle Bay	AM	MacDonald Creek Park	AM	Syringa Creek Day Use	AM
Wednesday	August 21	Revelstoke Boat Launch	AM	Fauquier Boat Launch	PM	Syringa Creek Boat Launch	AM
Sunday	September 1	Eagle Bay	PM	Burton Historic Park	PM	Syringa Creek Day Use	PM
Monday	September 2	Revelstoke Boat Launch	AM	Burton Historic Park	PM	Anderson Point	AM
Sunday	September 15	Shelter Bay	PM	Edgewood Park	AM	Syringa Creek Boat Launch	PM
Thursday	September 19	Shelter Bay	PM	Burton Historic Park	AM	Anderson Point	AM

Summer sampling hours
AM: 8:00 AM – 2:00 PM
PM: 1:00 PM – 7:00 PM

Arrow Lakes Fall 2013 Sampling Schedule

Day	Date	Upper Arrow Lakes Reservoir		Middle Arrow Lakes Reservoir		Lower Arrow Lakes Reservoir	
Friday	October 4	Revelstoke Boat Launch	AM	Burton Historic Park	AM	Syringa Creek Day Use	AM
Saturday	October 12	Eagle Bay	PM	Nakusp Boat Launch	PM	Anderson Point	AM
Monday	October 14	Shelter Bay	AM	Fauquier Boat Launch	PM	Anderson Point	PM
Sunday	October 20	Shelter Bay	PM	MacDonald Park	AM	Syringa Creek Day Use	AM
Thursday	October 24	Revelstoke Boat Launch	PM	Edgewood Park	PM	Syringa Boat Launch	AM

Fall sampling hours
AM: 8:30 AM – 2:30 PM
PM: 10:30 AM – 4:30 PM

APPENDIX D – NEWS ARTICLES

- BC Hydro News Release (March 2011).
- BC Hydro online survey to understand recreational use of Arrow Lakes Reservoir and Kinbasket boat ramp use. (2011, March 31). *Revelstoke Current.*
- BC Hydro online survey studies recreational use of Arrow Lakes Reservoir. (2011, April 6). *Revelstoke Times Review*.
- BC Hydro survey seeks input on Arrow Lakes boat ramp use. (2011, April 6). *The Valley Voice*.
- BC Hydro launches revised recreation survey. (2011, April 6). *Arrow Lakes News.*

NEWS RELEASE

Issued: **March 2011**

BC Hydro online survey to understand recreational use of Arrow Lakes Reservoir and Kinbasket boat ramp use

BC Hydro announces an improved online survey now available at www.arrow-kinbasket-recreation-survey.ca as part of studies to understand water and shore-based recreational use of Arrow Lakes Reservoir and boat ramp use of Kinbasket Reservoir.

The online survey asks questions about reservoir recreation including boat ramp use, frequency of recreational activity, location, infrastructure requirements, user demographics, and level of familiarity with Arrow and Kinbasket Lakes reservoirs.

“BC Hydro wants to better understand current recreational use of Arrow Lakes Reservoir and use of Kinbasket Reservoir boat ramps as recommended by the Columbia River Water Use Plan,” said Alan Chan-McLeod, BC Hydro’s Columbia River Water Use Plan Physical Works Lead. “This information will help guide future decision-making on recreational improvements.”

The studies are being delivered by LEES and Associates. Data on recreational use is being collected at established recreation sites on Arrow Lakes Reservoir through traffic counters, face-to-face surveys with reservoir users, and online surveys. Kinbasket boat ramp use data is being collected through face-to-face surveys, online surveys and traffic counters installed at existing boat ramps.

“Last year, traffic counters installed at established boat launch locations recorded close to 24,000 boat launches at Arrow Lakes Reservoir ramps between October 1, 2009 and September 30, 2010,” said Erik Lees from LEES and Associates., “and a total of 1,354 boat launches at Kinbasket Reservoir ramps were recorded at Kinbasket Reservoir ramps between April 9, 2010 and Sep 30, 2010.

Study staff will be at randomly selected reservoir access points from spring to fall this year to continue face-to-face surveys with reservoir users. To date a total of 641 face-to-face surveys have been completed as well as 39 responses to the pilot online survey that operated last year.

The Columbia River Water Use Plan, now in its fifth year of implementation, recommends a large number of monitoring programs and projects over 12 years to provide benefits to a variety of non-power interests along the Columbia River mainstem including recreation, fish and fish habitat, wildlife, vegetation, and heritage. The Plan calls for debris management, boat ramp improvements, and recreation demand studies on Arrow Lakes and Kinbasket reservoirs to benefit boat recreation.

BC Hydro online survey to understand recreational use of Arrow Lakes Reservoir and Kinbasket boat ramp use | Revelstoke Current

http://w w w .revelstokecurrent.com/2011/03/31/bc-hydro-online-survey-to-understand-recreational-use-of-arrow -lakes-reservoir-andkinbasket-boat-ramp-use/ April 6, 2011

Posted by editor on **March 31, 2011**

Harry Anderson and Dave Fitchett are two of the LEES and Associates surveyors finding out what people hope to see done with boat ramps on the Kinbasket and Arrow Lakes. *Photo courtesy of BC Hydro*

BC Hydro has announced an improved online survey now available at www.arrow-kinbasket-recreationsurvey.ca as part of its studies to understand water and shore-based recreational use of Arrow Lakes Reservoir and boat ramp use of Kinbasket Reservoir.

The online survey asks questions about reservoir recreation including boat ramp use, frequency of recreational activity, location, infrastructure requirements, user demographics, and level of familiarity with Arrow and Kinbasket Lakes reservoirs.

“BC Hydro wants to better understand current recreational use of Arrow Lakes Reservoir and use of Kinbasket Reservoir boat ramps as recommended by the Columbia River Water Use Plan,” Alan Chan-McLeod, Hydro’s Columbia River Water Use Plan Physical Works Lead, said in a statement Thursday. “This information will help guide future decision-making on recreational improvements.”

The studies are being delivered by LEES and Associates. Data on recreational use is being collected at established recreation sites on Arrow Lakes Reservoir through traffic counters, face-to-face surveys with reservoir users, and online surveys. Kinbasket boat ramp use data is being collected through face-to-face surveys, online surveys and traffic counters installed at existing boat ramps.

“Last year, traffic counters installed at established boat launch locations recorded close to 24,000 boat launches at Arrow Lakes Reservoir ramps between October 1, 2009 and September 30, 2010,” said Erik Lees from LEES and Associates, “and a total of 1,354 boat launches were recorded at Kinbasket Reservoir ramps between April 9, 2010 and Sep 30, 2010.

Study staff will be at randomly selected Arrow Lakes and Kinbasket reservoir access points from spring to fall this year to continue face-to-face surveys with reservoir users. To date a total of 641 face-to-face surveys have been completed as well as 39 responses to the pilot online survey that operated last year. The Columbia River Water Use Plan, now in its fifth year of implementation, recommends a large number of monitoring programs and projects over 12 years to provide benefits to a variety of nonpower interests along the Columbia River mainstem including recreation, fish and fish habitat, wildlife, vegetation, and heritage. The plan calls for debris management, boat ramp improvements, and recreation demand studies on Arrow Lakes and Kinbasket reservoirs to benefit boat recreation.

Revelstoke Times Review - News

BC Hydro online survey studies recreational use of Arrow Lakes Reservoir

By Aaron Orlando - Revelstoke Times Review
Published: **April 06, 2011 12:00 PM**

BC Hydro has announced an improved online survey is now available at www.arrow-kinbasket-recreation-survey.ca as part of studies to understand water and shore-based recreational use of Arrow Lakes Reservoir and boat ramp use of Kinbasket Reservoir.

The online survey asks questions about reservoir recreation including boat ramp use, frequency of recreational activity, location, infrastructure requirements, user demographics and level of familiarity with Arrow and Kinbasket Lakes reservoirs.

“BC Hydro wants to better understand current recreational use of Arrow Lakes Reservoir and use of Kinbasket Reservoir boat ramps as recommended by the Columbia River Water Use Plan,” said Alan Chan-McLeod, BC Hydro’s Columbia River Water Use Plan Physical Works Lead. “This information will help guide future decision-making on recreational improvements.”

Boat ramp use data is being collected through face-to-face surveys, online surveys and traffic counters installed at existing boat ramps.

“Last year, traffic counters installed at established boat launch locations recorded close to 24,000 boat launches at Arrow Lakes Reservoir ramps between October 1, 2009 and September 30, 2010,” said Erik Lees from LEES and Associates, “and a total of 1,354 boat launches were recorded at Kinbasket Reservoir ramps between April 9, 2010 and Sep. 30, 2010.

Study staff will be at randomly selected Arrow Lakes and Kinbasket reservoir access points from spring to fall this year to continue face-to-face surveys with reservoir users. To date a total of 641 face-to-face surveys have been completed as well as 39 responses to the pilot online survey that operated last year.

The Columbia River Water Use Plan, now in its fifth year of implementation, recommends a large number of monitoring programs and projects over 12 years to provide benefits to a variety of non-power interests along the Columbia River mainstem including recreation, fish and fish habitat, wildlife, vegetation, and heritage. The plan calls for debris management, boat ramp improvements, and recreation demand studies on Arrow Lakes and Kinbasket reservoirs to benefit boat recreation.

The survey will run through until mid-2014 and results of the survey and other study activities will be made available in a recreation demand report around at the end of 2014.

Accessed at:
http://www.bclocalnews.com/kootenay_rockies/revelstoketimesreview/news/119294809.html

The Valley Voice (April 6th, 2011)
Serving every home between Edgewood,
Kaslo and South Slocan (on the Arrow Lakes)

BC Hydro survey seeks input on Arrow Lakes boat ramp use

submitted by BC Hydro

BC Hydro has recently posted an improved online survey as part of studies to understand water and shore-based recreational use of Arrow Lakes Reservoir and boat ramp use of Kinbasket Reservoir.

The online survey asks questions about reservoir recreation including boat ramp use, frequency of recreational activity, location, infrastructure requirements, user demographics, and level of familiarity with Arrow and Kinbasket Lakes reservoirs. Alan Chan-McLeod, BC Hydro's Columbia River Water Use Plan Physical Works Lead, said the information will help guide future decision-making on recreational improvements.

Data on recreational use is being collected at established recreation sites on Arrow Lakes Reservoir through traffic counters, face-to-face surveys with reservoir users, and online surveys. Kinbasket boat ramp use data is being collected through face-to-face surveys, online surveys and traffic counters installed at existing boat ramps.

"Last year, traffic counters installed at established boat launch locations recorded close to 24,000 boat launches at Arrow Lakes Reservoir ramps between October 1, 2009 and September 30, 2010," said Erik Lees from LEES and Associates, which is conducting the study. "A total of 1,354 boat launches were recorded at Kinbasket Reservoir ramps between April 9, 2010 and September 30, 2010."

Study staff will be at randomly selected Arrow Lakes and Kinbasket reservoir access points from spring to fall this year to continue face-to-face surveys with reservoir users. To date a total of 641 face-to-face surveys have been completed as well as 39 responses to the pilot online survey that operated last year.

The Columbia River Water Use Plan, now in its fifth year of implementation, recommends a large number of monitoring programs and projects over 12 years to provide benefits to a variety of non-power interests along the Columbia River main stem, including recreation, fish and fish habitat, wildlife, vegetation, and heritage. The plan calls for debris management, boat ramp improvements, and recreation demand studies on Arrow Lakes and Kinbasket reservoirs to benefit boat recreation.

To participate visit www.arrow-kinbasket-recreation-survey.ca.

BC Hydro launches revised recreation survey

By Staff Writer - Arrow Lakes News

Published: **April 06, 2011 5:00 PM**
Updated: **April 07, 2011 12:09 PM**

BC Hydro has announced an improved online survey is now available at www.arrow-kinbasket-recreation-survey.ca as part of studies to understand water and shore-based recreational use of Arrow Lakes Reservoir and boat ramp use of Kinbasket Reservoir.

The online survey asks questions about reservoir recreation including boat ramp use, frequency of recreational activity, location, infrastructure requirements, user demographics and level of familiarity with Arrow and Kinbasket Lakes reservoirs.

“BC Hydro wants to better understand current recreational use of Arrow Lakes Reservoir and use of Kinbasket Reservoir boat ramps as recommended by the Columbia River Water Use Plan,” said Alan Chan-McLeod, BC Hydro’s Columbia River Water Use Plan Physical Works Lead. “This information will help guide future decision-making on recreational improvements.”

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The Columbia River Water Use Plan, now in its fifth year of implementation, recommends a large number of monitoring programs and projects over 12 years to provide benefits to a variety of non-power interests along the Columbia River mainstem including recreation, fish and fish habitat, wildlife, vegetation, and heritage. The plan calls for debris management, boat ramp improvements, and recreation demand studies on Arrow Lakes and Kinbasket reservoirs to benefit boat recreation.The survey will run through until mid-2014 and results of the survey and other study activities will be made available in a recreation demand report around at the end of 2014.

Accessed at: http://www.arrowlakesnews.com/news/119367584.html

APPENDIX E – ARROW LAKES VISITOR SURVEY

LEES + Associates
RESEARCH & PLANNING

604 899 3806 | www.elac.bc.ca

Arrow Lakes Recreation Survey

- The purpose of this survey is to obtain information about recreation use of the Arrow Lakes.
- Participation in this study is completely voluntary: you may refuse to participate at any time.
- You may skip any question that you do not feel comfortable answering, although we encourage you to complete all questions if possible.
- The survey will take about 5 to 10 minutes to complete.

All information resulting from this study will be kept strictly confidential. Please do not write your name anywhere on this questionnaire. Individual responses will not be made available to anyone outside of the *Arrow Lakes Recreation Survey Research Team (LEES + Associates)*.

If you have any questions about this research,or would like further information, please do not hesitate to contact *LEES + Associates at (604) 899-3806*.

Q1

The questions in this section ask about the recreation activities that you do ON THE WATER or ON THE SHORE of the Arrow Lakes.

Indicate ALL of the activities that you do ON THE WATER or ON THE SHORE of the Arrow Lakes.

☐ Fishing	☐ Beach activities	☐ Hunting	☐ Mushroom picking
☐ Boating (motor cruising)	☐ Nature study	☐ Scenic viewing	☐ Berry picking
☐ Canoeing/kayaking	☐ Bird watching	☐ Picnicking	☐ Drawing/painting/photography
☐ Swimming	☐ Wildlife viewing	☐ Camping	☐ Cross-country skiing
☐ Waterskiing	☐ Horseback riding	☐ Walking/hiking	☐ Snowmobiling
☐ Wind surfing	☐ ATV/Trail bike/4 × 4	☐ Mountain biking	☐ Other: _____

On average, how many DAYS PER SEASON do you visit the Arrow Lakes?

Spring: _____ days/season Summer: _____ days/season

Fall: _____ days/season Winter: _____ days/season

What recreation activities did you do *TODAY* on the water or on the shore of the Arrow Lakes?

Are you participating in this activity today as a paying customer of a commercial recreation or tourism operator/guide?

☐ **Yes** ☐ **No** **Please elaborate:**

OFFICE USE ONLY | Tracking # | Sample Date (yyyy-mm-dd) | Sample Location | Surveyor Initials

Version: March 29, 2010

Page 1 of 4

Q2 **The following questions ask about the *ONE* outdoor recreation activity that is MOST IMPORTANT to you. Refer to this activity when answering all of the questions in this section.**

Of all of the activities that you do on the water or on the shore of the Arrow Lakes, which one is the MOST IMPORTANT? ***Identify only one activity.***

My most important recreation activity is: _____

How many years have you done this activity? _____ years.

On a scale of 1 to 5, *with 1 being BEGINNER* and *5 being EXPERT*, how skilled are you at this activity?

Beginner (1) (2) (3) (4) (5) Expert

On a scale of 1 to 5, *with 1 being NOT IMPORTANT AT ALL* and *5 being VERY IMPORTANT*, how important is this activity to your lifestyle?

Not important at all (1) (2) (3) (4) (5) Very important

Who do you usually do this recreation activity with? ***Check only one.***

☐ Alone ☐ Family ☐ Friends ☐ Clubs ☐ People from work ☐ Other: _____

On average, how many DAYS PER SEASON do you do this activity?

Spring: _____ days/season Summer: _____ days/season

Fall: _____ days/season Winter: _____ days/season

Q3 **The following questions ask about some of the EXPERIENCES that you may have had while visiting the Arrow Lakes for recreation activities.**

Consider how many people you are comfortable seeing while you are visiting the Arrow Lakes and complete the following statement:

It is OK to have as many as _____ encounters per day.

OR

☐ It doesn't matter to me how many people I see.

For each season below, indicate on a scale of 1-9 how crowded you have felt while visiting the Arrow Lakes.

Spring: (1) (2) (3) (4) (5) (6) (7) (8) (9)
Not at all crowded — Somewhat crowded — Moderately crowded — Extremely crowded

Summer: (1) (2) (3) (4) (5) (6) (7) (8) (9)
Not at all crowded — Somewhat crowded — Moderately crowded — Extremely crowded

Fall: (1) (2) (3) (4) (5) (6) (7) (8) (9)
Not at all crowded — Somewhat crowded — Moderately crowded — Extremely crowded

Winter: (1) (2) (3) (4) (5) (6) (7) (8) (9)
Not at all crowded — Somewhat crowded — Moderately crowded — Extremely crowded

Have you ever experienced any conflicts with other people or recreation activities while you were visiting the Arrow Lakes?

☐ **Yes** ☐ **No** **Please elaborate:**

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Q4 The questions below ask about your USE and FAMILIARITY with the Arrow Lakes.

From the list below, indicate why you come to the Arrow Lakes. *Check all that apply.*

- ☐ To learn about reservoirs
- ☐ To discover new things
- ☐ To learn more about nature
- ☐ To view the scenery
- ☐ To be close to nature
- ☐ To think about my personal values
- ☐ To get exercise
- ☐ To give my mind a rest
- ☐ To have a change from my daily routine
- ☐ To be with friends
- ☐ To be with family
- ☐ Other _____

The Arrow Lakes serves many purposes. In your opinion, *what are the 3 most important management goals for the Arrow Lakes*? Place a 1, 2, or 3 beside your choices (with 1 being the most important management goal).

Rank

- _____ Provide local employment
- _____ Safety for reservoir users
- _____ Provide recreation opportunities
- _____ Flood control
- _____ Electricity generation
- _____ Provide habitat for aquatic species
- _____ Other _____

Q5 The questions below ask about HOW YOU FEEL about the management of recreation on the Arrow Lakes.

The management of the Arrow Lakes seeks to balance many tasks. Please indicate your satisfaction with management activities.

	Never	Rarely	Sometimes	Frequently	Always	Don't know
On the whole, are you satisfied with water levels on the Arrow Lakes?	1	2	3	4	5	☐
On the whole, do you have satisfying experiences on the water or on the shore of the Arrow Lakes?	1	2	3	4	5	☐
On the whole, are you satisfied with the condition of the boat ramp facilities at this site?	1	2	3	4	5	☐
On the whole, are you satisfied with the parking lot conditions at this site?	1	2	3	4	5	☐
On the whole, are you satisfied with the management of the Arrow Lakes?	1	2	3	4	5	☐

Compared to the water levels that you experienced today, how might different water levels affect your use of the Arrow Lakes for recreation activities?

	I will come back	I will go somewhere else	Not sure
If the water level is the **same** as today...	☐	☐	☐
If the water level is **higher** than today...	☐	☐	☐
If the water level is **lower** than today...	☐	☐	☐

Please elaborate:

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Q6 The following questions ask about YOUR RECREATION EXPERIENCES on the Arrow Lakes.

How long have you been coming to the Arrow Lakes for recreation activities? _____ years.

Based on your experience today, will you come back to the Arrow Lakes for recreation activities?

☐ Yes ☐ No Please elaborate:

Which boat ramp facility do you usually use on the Arrow Lakes?

Why did you come to this boat ramp facility today?

What did you LIKE MOST about the boat ramp facility that you visited today?

What did you LIKE LEAST about the boat ramp facility that you visited today?

How did you first hear about recreation opportunities and activities near and on the Arrow Lakes? *Check all that apply.*

☐ Tourism information booth	☐ Family	☐ BC Hydro web site
☐ Tourism information brochures	☐ Friends	☐ BC Hydro facility (*e.g.*, Revelstoke Dam)
☐ Tourism operators	☐ BC Parks	☐ BC Hydro bill
☐ Private marinas	☐ BC Forest Service	☐ Other:_____

Q7 These questions below ask about you. We use this information only to assist us in compiling the survey results.

What year were you born in? 19 _____ What community do you live in? _____

Gender: ☐ Male ☐ Female How long have you lived in your community? _____ years.

Please list any outdoor recreation clubs or organizations that you belong to.

Do you have any additional comments about recreation on the water or on the shore of the Arrow Lakes?

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APPENDIX F – QUESTIONNAIRE RATIONALE

The following illustrates how the data captured by each section of the questionnaire relates to the Management Hypotheses.

Section 1: Arrow Lakes Outdoor Recreation Activities.

Section 2: Important Outdoor Recreation Activities.

Section 3: Arrow Lake Outdoor Recreation Experiences.

Section 4: Use and Familiarity of Arrow Lakes.

Section 5: Arrow Lakes Outdoor Recreation Management.

Section 6: Arrow Lakes Outdoor Recreation Experiences.

Section 7: Demographics.

Section 1: Arrow Lakes Outdoor Recreation Activities

The questions in this section (Figure 16) ask about the recreation activities done on the water or onshore of the Arrow Lakes. The questions provide an assessment of the different activities that each respondent engages in. This can help to inform the likelihood of visitors substituting activities *vs*. opportunities (*i.e.*, location) if satisfaction is not achieved. These questions address H_{0A} by measuring the frequency of use by season. As information is also collected about the types of activities that take place on the water or onshore of the Arrow Lakes Reservoir, the frequency of use can be stratified by activity. These questions also inform H_{0C} by measuring the different types of recreation activity that take place on the water or onshore of the Arrow Lakes Reservoir.

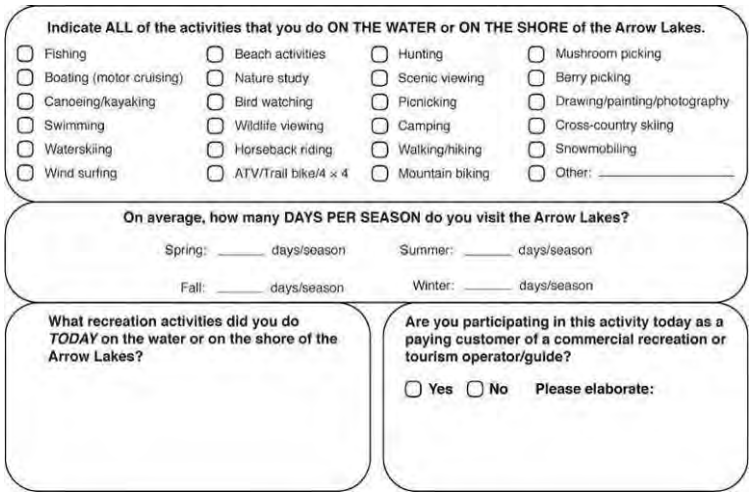


Figure 16. Section 1 questions.

Section 2: Important Outdoor Recreation Activities

Section 2 asks about respondents' most important outdoor recreation activities. These questions inform H_{0C} by providing information about the type of user in terms of intra-activity characteristics. Recreationist may partake in a range of activities. This question provides an assessment of an individual's degree of recreation specialization, which accounts for intra-activity variation (Bryan, 1977; McFarlane, 2001; Scott & Shafer, 2001).

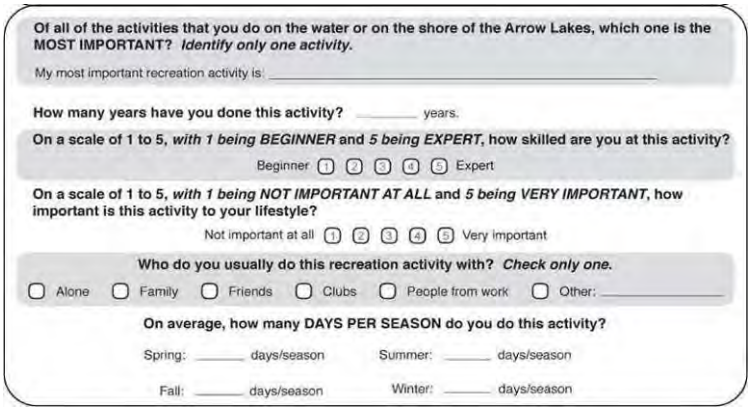
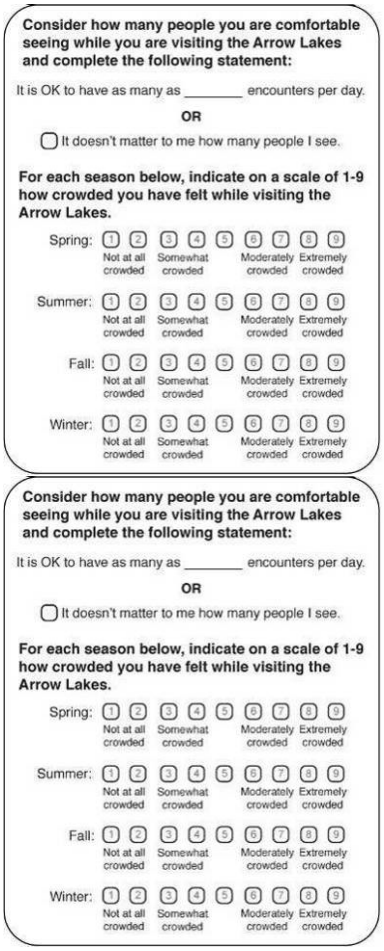


Figure 17. Section 2 questions.

Section 3: Arrow Lakes Outdoor Recreation Experiences.

This section has two parts. The first part (Figure 18) asks about some of the experiences that respondents may have had while visiting the Arrow Lakes for recreation activities. These two questions

provide information about social settings by eliciting individual's encounter norms to provide an assessment of crowding (Manning, 1999; Vaske & Donnelly, 2002).



Consider how many people you are comfortable seeing while you are visiting the Arrow Lakes and complete the following statement:

It is OK to have as many as _____ encounters per day.

OR

☐ It doesn't matter to me how many people I see.

For each season below, indicate on a scale of 1-9 how crowded you have felt while visiting the Arrow Lakes.

Spring: 1 2 3 4 5 6 7 8 9
Not at all crowded — Somewhat crowded — Moderately crowded — Extremely crowded

Summer: 1 2 3 4 5 6 7 8 9
Not at all crowded — Somewhat crowded — Moderately crowded — Extremely crowded

Fall: 1 2 3 4 5 6 7 8 9
Not at all crowded — Somewhat crowded — Moderately crowded — Extremely crowded

Winter: 1 2 3 4 5 6 7 8 9
Not at all crowded — Somewhat crowded — Moderately crowded — Extremely crowded

Consider how many people you are comfortable seeing while you are visiting the Arrow Lakes and complete the following statement:

It is OK to have as many as _____ encounters per day.

OR

☐ It doesn't matter to me how many people I see.

For each season below, indicate on a scale of 1-9 how crowded you have felt while visiting the Arrow Lakes.

Spring: 1 2 3 4 5 6 7 8 9
Not at all crowded — Somewhat crowded — Moderately crowded — Extremely crowded

Summer: 1 2 3 4 5 6 7 8 9
Not at all crowded — Somewhat crowded — Moderately crowded — Extremely crowded

Fall: 1 2 3 4 5 6 7 8 9
Not at all crowded — Somewhat crowded — Moderately crowded — Extremely crowded

Winter: 1 2 3 4 5 6 7 8 9
Not at all crowded — Somewhat crowded — Moderately crowded — Extremely crowded

Figure 18. Section 3 questions, part 1.

The second part addresses recreation conflicts (Figure 19). Recreation conflict occurs when the presence, behaviour, or values of an individual or group interferes with another individual or group (Vaske, *et al.*, 2007). This question provides information about the social setting by asking whether individuals have encountered any conflicts with other recreation visitors.

Figure 19. Section 3 questions, part 2.

Section 4: Use and Familiarity of Arrow Lakes.

This section includes two questions. The first question (Figure 20) asks about respondents' use of, and familiarity with, the Arrow Lakes. People can have multiple motivations for engaging in recreation activities, which may include enjoyment from the activity itself, socialization, as well as other benefits (Driver *et al.*, 1991). An understanding of people's motivations for pursuing recreation activities in the Arrow Lakes Reservoir helps to inform the attitudes and preferences element of the *subjective evaluation* component of the satisfaction model.

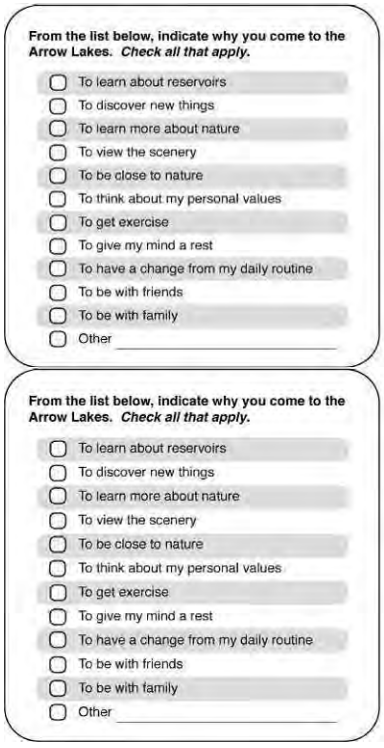


Figure 20. Section 4 questions, part 1.

The second question (Figure 21) addresses respondents' knowledge about the management goals of the Arrow Reservoir. People engage in outdoor recreation activities with the expectation that this engagement will fulfill particular needs, motivations, or other desires (Fishbein & Ajzen, 1975; Manning, 1999). Understanding individual's expectations informs their recreation satisfaction. If people are not aware of the management goals for the Arrow Lakes Reservoir, their expectations may not be realistic, and their satisfaction affected.

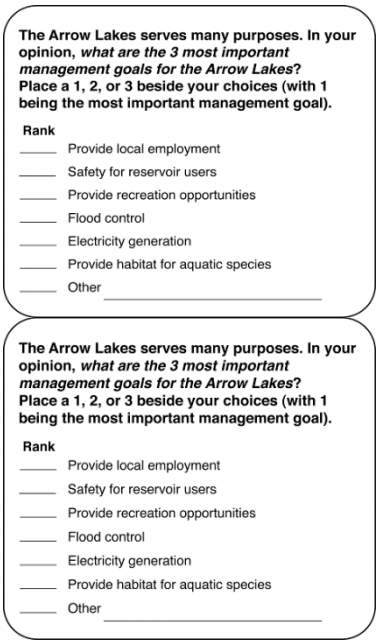


Figure 21. Section 4 questions, part 2.

Section 5: Arrow Lakes Outdoor Recreation Management.

This section has two parts. The first part of this section (Figure 22) asks about how respondents feel about the management of recreation on the Arrow Lakes. Although there are not any standardized measures of visitor satisfaction, a common approach is to gauge overall satisfaction through the use of multiple-item measures of satisfaction that are context specific (Manning, 1999). This question provides an overall assessment of visitor satisfaction, which was used to test the relationship of water levels to visitor use.

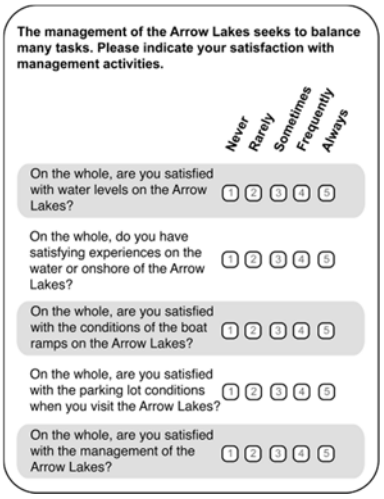


Figure 22. Section 5 questions, part 1.

The second part of this section (Figure 23) directly addresses H_{0A} as it explicitly asks whether respondents will return based on the water levels that they have experienced. This question also addresses H_{0C} as the stated relationship between water levels and likelihood of returning to the Arrow Lakes Reservoir can be stratified by activity. This question informs the conceptual model of satisfaction by examining the link between Resource Setting and likelihood of returning (*i.e.*, achieved satisfaction).

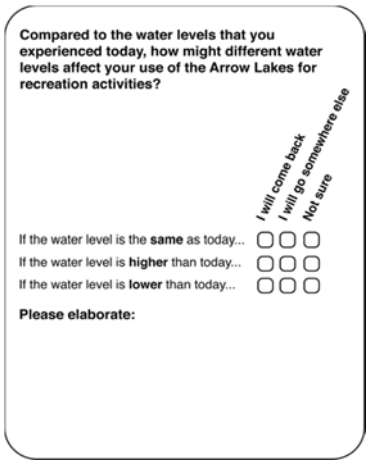


Figure 23. Section 5 questions, part 2.

Section 6: Arrow Lakes Outdoor Recreation Experiences.

This section has three parts (Figure 24, 25, and 26) which ask about respondents' recreation experiences on the Arrow Lakes. The first part of this section establishes respondents' familiarity with the Arrow Lakes Reservoir by asking about the length of time that they have used the area for outdoor recreation. The degree of familiarity influences visitors' expectations, which has an effect on their degree of satisfaction.

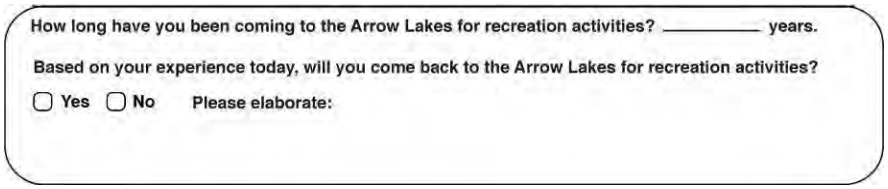


Figure 24. Section 6 questions, part 1.

The second part includes 4 questions related to respondents' experience while using boat ramp facilities (Figure 25). These questions address H_{0C} by asking about people's motivations, and their experiences with boat ramps on the Arrow lakes.

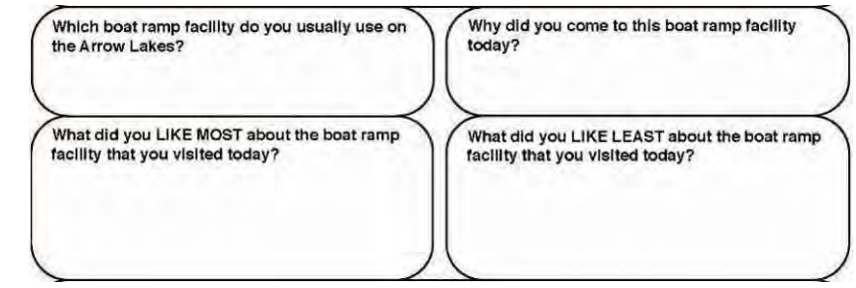


Figure 25. Section 6, part 2, questions pertaining to boat ramp use.

Respondents were also asked where they first heard about recreation opportunities near and on the reservoir (Figure 26).

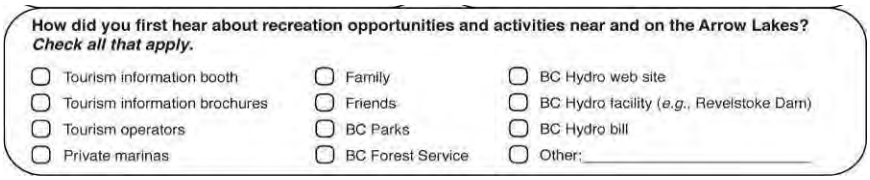


Figure 26. Section 6 questions, part 3.

Section 7: Demographics.

Section 7 collects basic information about respondents' demographic characteristics. These questions provide explicit information about individuals' place of residence, which informs the user classification as either resident or tourist (*i.e.,* travelled more than 80km (Murphy, 1991)). They also provide information about user socioeconomic characteristics, which addresses H_{0C}. This question provides data about socioeconomic characteristics, which addresses the *subjective evaluation* component of the conceptual model of satisfaction.

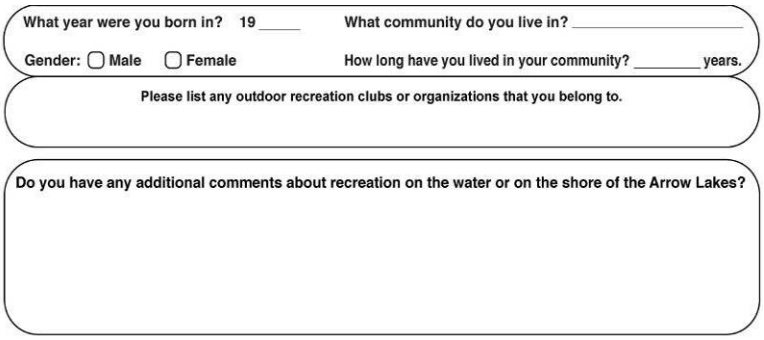


Figure 27. Section 7 questions.

APPENDIX G – SURVEY RESULTS

The following tables summarize responses to each survey question for each year (2009-2013).

NOTE: The analyses reported here only considered on-site responses from respondents at the Arrow Lakes sample sites.

Question 1: Recreation Activities Done on the Water or on the Shore of the Arrow Lakes[12].

Table 18. Indicate all of the activities that you do on the water or on the shore of the Arrow Lakes.

Activity	2009 (n = 126)	2010 (n = 587)	2011 (n = 652)	2012 (n = 549)	2013 (n = 715)	Average (n = 2,629)
ATV/Trail bike/4 x 4	15.9%	29.0%	21.5%	20.6%	24.3%	22.3%
Beach activities	61.9%	70.2%	71.6%	68.1%	74.7%	69.3%
Berry picking	27.8%	30.0%	23.6%	25.1%	26.6%	26.6%
Bird watching	32.5%	35.8%	34.2%	31.3%	29.5%	32.7%
Boating (motor cruising)	60.3%	60.8%	54.9%	48.8%	53.3%	55.6%
Camping	66.7%	71.2%	72.5%	72.3%	76.2%	71.8%
Canoeing/kayaking	27.8%	30.3%	29.0%	33.0%	33.3%	30.7%
Cross-country skiing	7.9%	8.2%	7.1%	6.0%	7.1%	7.3%
Drawing/painting/photography	14.3%	21.1%	19.2%	16.9%	19.3%	18.2%
Fishing	72.2%	72.1%	67.9%	66.7%	64.1%	68.6%
Horseback riding	4.8%	4.8%	2.8%	1.6%	3.8%	3.6%
Hunting	10.3%	18.4%	11.0%	11.7%	14.5%	13.2%
Mountain biking	15.1%	19.6%	19.3%	16.8%	20.3%	18.2%
Mushroom picking	19.8%	24.2%	16.6%	18.6%	16.8%	19.2%
Nature study	19.8%	23.7%	24.1%	22.0%	20.7%	22.1%
Picnicking	52.4%	58.9%	58.0%	53.0%	52.9%	55.0%
Scenic viewing	65.9%	62.2%	64.7%	60.1%	62.2%	63.0%
Snowmobiling	7.9%	14.1%	8.3%	7.5%	8.1%	9.2%
Swimming	62.7%	76.1%	78.8%	72.3%	78.2%	73.6%
Walking/hiking	64.3%	72.4%	71.8%	66.3%	69.5%	68.9%
Waterskiing	17.5%	20.6%	16.6%	15.1%	15.7%	17.1%
Wildlife viewing	47.6%	45.5%	44.8%	42.1%	43.5%	44.7%
Wind surfing	1.6%	3.1%	1.2%	0.9%	2.1%	1.8%
Other	6.3%	8.7%	7.1%	7.8%	6.9%	7.4%

[12] Where there are statistically significant differences between responses for sample years, they have been noted.

Table 19. On average, how many days per season do you visit the Arrow Lakes?

Season	Year	n	Mean	95% CI	SD
Spring[a]	2009	123	7.0	± 1.5	8.747
	2010	407	11.2	± 1.0	10.314
	2011	652	9.8	± 0.9	11.577
	2012	486	6.9	± 0.9	9.884
	2013	628	7.1	± 0.7	9.445
Summer[b]	2009	123	10.9	± 1.8	10.386
	2010	457	16.7	± 1.0	10.755
	2011	652	16.1	± 0.9	11.196
	2012	486	13.1	± 0.9	10.357
	2013	629	14.0	± 0.8	10.574
Fall[c]	2009	123	8.2	± 1.5	8.639
	2010	406	10.9	± 1.0	10.449
	2011	652	9.7	± 0.9	11.465
	2012	486	7.3	± 0.9	9.898
	2013	631	6.8	± 0.7	9.252
Winter[d]	2009	123	4.0	± 1.3	7.413
	2010	344	7.3	± 1.1	10.124
	2011	652	7.2	± 0.9	11.630
	2012	486	4.0	± 0.8	8.802
	2013	629	3.9	± 0.7	8.327
Annual[e]	2009	123	90.0	± 16.6	94.094
	2010	333	146.9	± 12.1	112.307
	2011	652	128.1	± 9.8	127.443
	2012	486	94.0	± 9.2	103.982
	2013	625	95.4	± 7.9	100.691

The Levene's statistic for each season was significant ($p < .001$); thus Welch's F-test was used.

[a] 2010 and 2011 had significantly higher mean monthly spring participation rates than 2009, 2012, and 2013 ($F_W(4, 684.910) = 16.035$, $p < .001$).

[b] 2010 and 2011 had significantly higher mean monthly summer participation rates than 2009, 2012, and 2013; 2009 had a significantly lower mean participation rate than 2013 ($F_W(4, 685.186) = 14.161$, $p < .001$).

[c] 2010 and 2011 had significantly higher mean monthly fall participation rates than 2012 and 2013; 2010 had a significantly higher mean participation rate than 2009 ($F_W(4, 684.317) = 14.146$, $p < .001$).

[d] 2010 and 2011 had significantly higher mean monthly winter participation rates than 2009, 2012, and 2013 ($F_W(4, 672.126) = 14.795$, $p < .001$).

[e] 2010 and 2011 had significantly higher mean annual participation rates than 2009, 2012, and 2013 ($F_W(4, 660.962) = 19.703$, $p < .001$).

Table 20. What recreation activities did you do today on the water or on the shore of the Arrow Lakes[†]?

Today's Recreation Activity	2009 (n = 126)		2010 (n = 587)		2011 (n = 652)		2012 (n = 550)		2013 (n = 715)	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
A TV/Trail bike/ 4 x 4	2	1.6%	12	2.0%	11	1.7%	10	1.8%	18	2.5%
Beach activities	8	6.3%	86	14.7%	107	16.4%	106	19.3%	170	23.8%
Berry picking	1	0.8%	1	0.2%	4	0.6%	8	1.5%	6	0.8%
Bird watching	5	4.0%	30	5.1%	22	3.4%	19	3.5%	26	3.6%
Boating (motor cruising)	20	15.9%	98	16.7%	113	17.3%	63	11.5%	117	16.4%
Camping	10	7.9%	91	15.5%	95	14.6%	92	16.7%	124	17.3%
Canoeing/kayaking	4	3.2%	14	2.4%	25	3.8%	60	10.9%	49	6.9%
Dog walking	3	2.4%	15	2.6%	2	0.3%	21	3.8%	17	2.4%
Drawing/painting/photography	3	2.4%	17	2.9%	22	3.4%	19	3.5%	23	3.2%
Fishing	46	36.5%	158	26.9%	179	27.5%	119	21.6%	167	23.4%
Horseback riding	0	0.0%	2	0.3%	0	0.0%	0	0.0%	1	0.1%
Hunting	1	0.8%	3	0.5%	0	0.0%	1	0.2%	6	0.8%
Mountain biking	1	0.8%	15	2.6%	20	3.1%	10	1.8%	19	2.7%
Mushroom picking	0	0.0%	5	0.9%	3	0.5%	3	0.5%	3	0.4%
Nature study	0	0.0%	7	1.2%	14	2.1%	5	0.9%	9	1.3%
Picnicking	6	4.8%	36	6.1%	80	12.3%	36	6.5%	47	6.6%
Scenic viewing	10	7.9%	61	10.4%	89	13.7%	63	11.5%	65	9.1%
Swimming	12	9.5%	95	16.2%	147	22.5%	137	24.9%	230	32.2%
Walking/hiking	26	20.6%	149	25.4%	140	21.5%	110	20.0%	170	23.8%
Waterskiing	0	0.0%	7	1.2%	10	1.5%	10	1.8%	20	2.8%
Wildlife watching	7	5.6%	18	3.1%	19	2.9%	11	2.0%	14	2.0%
Windsurfing	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Other	3	2.4%	38	6.5%	25	3.8%	34	6.2%	15	2.1%

[†] Some respondents identified more than one activity.

Table 21. Are you participating in this activity today as a paying customer of a commercial recreation or tourism operator/guide?

Response[a]	2009 (n = 119)		2010 (n = 547)		2011 (n = 620)		2012 (n = 515)		2013 (n = 672)	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
No	114	95.8%	481	87.9%	523	84.4%	426	82.7%	555	82.6%
Yes	5	4.2%	66	11.2%	97	15.6%	89	16.2%	117	17.4%

[a] A higher proportion of 2009 respondents indicated that they were not paying customers of a commercial recreation or tourism operator or guide ($\chi^2 = 19.781$, df = 4, $p < 0.01$; Cramer's V = 0.089).

Question 2: The One Recreation Activity that is Most Important to Respondents.

Table 22. Of all of the activities that you do on the water or onshore of the Arrow Lakes, which one is the most important†?

Activity	2009 (n = 126)		2010 (n = 568)		2011 (n = 627)		2012 (n = 534)		2013 (n = 695)	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
A TV/Trail bike/ 4 x 4	1	0.8%	7	1.2%	6	1.0%	7	1.3%	10	1.4%
Beach activities	8	6.3%	24	4.2%	36	5.7%	40	7.5%	55	7.9%
Berry picking	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	0.3%
Bird watching	1	0.8%	6	1.1%	3	0.5%	4	0.7%	3	0.4%
Boating (motor cruising)	13	10.3%	120	21.1%	96	15.3%	81	15.2%	87	12.5%
Camping	24	19.0%	77	13.6%	122	19.5%	133	24.9%	119	17.1%
Canoeing/kayaking	4	3.2%	12	2.1%	37	5.9%	23	4.3%	39	5.6%
Cross-country skiing	1	0.8%	0	0.0%	2	0.3%	2	0.4%	0	0.0%
Dog walking	2	1.6%	3	0.5%	2	0.3%	4	0.7%	7	1.0%
Drawing/painting/photography	1	0.8%	5	0.9%	4	0.6%	2	0.4%	1	0.1%
Fishing	50	39.7%	175	30.8%	197	31.4%	145	27.2%	191	27.5%
Horseback riding	1	0.8%	1	0.2%	1	0.2%	1	0.2%	2	0.3%
Hunting	1	0.8%	1	0.2%	3	0.5%	5	0.9%	6	0.9%
Mountain biking	0	0.0%	4	0.7%	4	0.6%	6	1.1%	4	0.6%
Mushroom picking	1	0.8%	2	0.4%	1	0.2%	2	0.4%	1	0.1%
Nature study	0	0.0%	2	0.4%	2	0.3%	1	0.2%	4	0.6%
Picnicking	0	0.0%	6	1.1%	8	1.3%	6	1.1%	0	0.0%
Scenic viewing	4	3.2%	15	2.6%	15	2.4%	10	1.9%	19	2.7%
Snowmobiling	0	0.0%	1	0.2%	2	0.3%	0	0.0%	0	0.0%
Swimming	16	12.7%	50	8.8%	105	16.7%	87	16.3%	120	17.3%
Walking/hiking	8	6.3%	33	5.8%	50	8.0%	38	7.1%	43	6.2%
Waterskiing	0	0.0%	3	0.5%	2	0.3%	12	2.2%	4	0.6%
Wildlife watching	0	0.0%	0	0.0%	4	0.6%	5	0.9%	2	0.3%
Other	2	1.6%	24	4.2%	24	3.8%	15	2.8%	20	2.9%

† Some respondents identified more than one activity.

Table 23. How many years have you done this activity?

Year	n	Min	Max	Mean†	95% CI	SD
2009	124	0	65	22.9	± 2.8	15.698
2010	564	0	80	22.4	± 1.3	15.561
2011	605	0	70	22.5	± 1.3	16.200
2012	523	0	75	23.1	± 1.4	16.389
2013	672	0	66	22.2	± 1.2	16.219

† There were no significant differences in the mean number of years respondents participated in the activity that was most important to them between the sample years.

Table 24. On a scale of 1 to 5, with 1 being beginner and 5 being expert, how skilled are you at this activity?

Year	n	Beginner (1)	Somewhat Skilled (2)	Moderately Skilled (3)	Very Skilled (4)	Expert (5)	Mean†	95% CI	SD
2009	122	2.5%	4.1%	27.9%	42.6%	23.0%	3.8	± 0.2	0.927
2010	568	2.6%	5.5%	22.2%	37.3%	32.4%	3.9	± 0.1	0.998
2011	618	1.8%	5.2%	24.4%	36.4%	32.2%	3.9	± 0.1	0.964
2012	531	1.7%	3.8%	26.4%	37.1%	31.1%	3.9	± 0.1	0.934
2013	689	1.2%	4.6%	23.2%	42.5%	28.4%	3.9	± 0.1	0.896

† There was no significant difference in respondents' mean skill in the activity that was most important to them between the sample years.

Table 25. On a scale of 1 to 5, with 1 being not important at all and 5 being very important, how important is this activity to your lifestyle?

Year	n	Not Important At All (1)	Somewhat Important (2)	Moderately Important (3)	Mostly Important (4)	Very Important (5)	Mean†	95% CI	SD
2009	121	2.5%	4.1%	14.9%	24.8%	53.7%	4.2	± 0.2	1.015
2010	578	1.2%	2.8%	11.9%	26.8%	57.3%	4.4	± 0.1	0.885
2011	624	0.6%	3.0%	15.9%	25.0%	55.4%	4.3	± 0.1	0.891
2012	530	0.8%	3.6%	17.2%	26.0%	52.5%	4.3	± 0.1	0.918
2013	696	0.9%	3.2%	14.1%	30.0%	51.9%	4.3	± 0.1	0.884

† There was no significant difference in the mean importance of the activity that was most important to respondents between the sample years.

Table 26. Who do you usually do this recreation activity with?

Year[†]	n	Alone	Family	Friends	Clubs	People from work	Other
2009	125	7.2%	41.6%	32.8%	0.8%	0.8%	16.8%
2010	580	6.7%	47.2%	24.0%	0.0%	0.2%	21.9%
2011	633	4.3%	50.4%	22.0%	0.3%	0.0%	23.1%
2012	540	3.5%	54.3%	21.5%	0.7%	0.4%	19.6%
2013	697	6.9%	46.9%	23.0%	0.1%	0.1%	23.0%

[†] A lower proportion of 2011 and 2012 respondents indicated that they usually do their most important activity alone; a higher proportion of 2012 respondents indicated that usually do their most important activity with family; a higher proportion of 2009 respondents indicated that usually do their most important activity with friends; and a lower proportion of 2009 respondents indicated that usually do their most important activity with other categories of people ($\chi^2 = 36.835$, df = 20, $p < 0.05$; Cramer's V = 0.060).

Table 27. On average, how many days per season do you do this activity?

Season	Year	n	Min	Max	Mean	95% CI	SD
Spring[a]	2009	122	0	30	6.66	± 1.36	7.683
	2010	396	0	30	10.66	± 1.01	10.227
	2011	652	0	30	9.92	± 0.85	11.068
	2012	506	0	30	6.81	± 0.79	9.095
	2013	650	0	30	7.75	± 0.72	9.363
Summer[b]	2009	122	0	30	11.27	± 1.68	9.482
	2010	453	0	30	16.10	± 0.99	10.796
	2011	652	0	30	18.26	± 0.80	10.414
	2012	506	0	30	15.74	± 0.86	9.837
	2013	647	0	30	17.51	± 0.78	10.178
Fall[c]	2009	122	0	30	8.66	± 1.51	8.537
	2010	397	0	30	10.16	± 1.02	10.327
	2011	652	0	30	9.72	± 0.85	11.043
	2012	507	0	30	7.33	± 0.82	9.392
	2013	650	0	30	7.32	± 0.70	9.152
Winter[d]	2009	121	0	30	2.85	± 1.03	5.776
	2010	342	0	30	6.33	± 1.03	9.685
	2011	652	0	30	6.73	± 0.87	11.352
	2012	506	0	30	2.94	± 0.66	7.579
	2013	647	0	30	3.91	± 0.65	8.435
Annual[e]	2009	123	3	360	89.99	± 16.63	94.094
	2010	333	0	360	146.92	± 12.06	112.307
	2011	652	0	360	128.07	± 9.78	127.443
	2012	486	0	360	94.01	± 9.24	103.982
	2013	625	0	360	95.41	± 7.89	100.691

The Levene's statistic for each season was significant ($p < .001$); thus Welch's F-test was used.

[a] 2010 and 2011 had significantly higher mean monthly spring participation rates than 2009, 2012, and 2013 ($F_W(4, 691.070) = 14.058$, $p < .001$).

[b] 2010, 2011, 2012, and 2013 had significantly higher mean monthly summer participation rates than 2009; and 2011 and 2013 had significantly higher mean monthly summer participation rates than 2012 ($F_W(4, 686.890) = 16.213$, $p < .001$).

[c] 2010 and 2011 had significantly higher mean monthly fall participation rates than 2009, 2012, and 2013 ($F_W(4, 679.760) = 9.100$, $p < .001$).

[d] 2010 and 2011 had significantly higher mean monthly winter participation rates than 2009, 2012, and 2013 ($F_W(4, 693.355) = 17.470$, $p < .001$).

[e] 2010 and 2011 had significantly higher mean annual participation rates than 2009, 2012, and 2013 ($F_W(4, 660.962) = 19.703$, $p < .001$).

Question 3: Experiences Had While Visiting the Arrow Lakes for Recreation Activities.

Table 28. Consider how many people you are comfortable seeing while you are visiting the Arrow Lakes and complete the following statement: "It is OK to have as many as _____ encounters per day".

Year	n	Min	Max	Mean[†]	95% CI	SD
2009	76	0	50	10.2	± 1.90	8.444
2010	540	0	100	4.93	± 1.13	13.353
2011	649	0	100	4.55	± 0.93	12.154
2012	490	0	127	3.29	± 0.97	10.916
2013	711	0	127	3.75	± 0.99	13.457

[†] The Levene's statistic for each season was significant ($p < .001$); thus Welch's F-test was used. 2009 had a significantly higher mean number of preferred daily encounters than all other years ($F_W(4, 509.198) = 10.804$, $p < .001$).

Table 29. It doesn't matter to me how many people I see.

Year	n	%
2009[a]	126	0.0%
2010	546	67.6%
2011	652	60.3%
2012	492	71.7%
2013	715	69.8%

[a] The mean percentage of 2009 respondents that reported not having a crowding threshold was significantly lower than that of other years.

Table 30. For each season below, indicate on a scale of 1 - 9 how crowded you have felt while visiting the Arrow Lakes.

Season	Year	n	Min	Max	Mean	95% CI	SD
Spring	2009	105	1	7	2.17	± 0.27	1.431
	2010	479	1	9	2.00	± 0.12	1.377
	2011	512	1	9	1.95	± 0.11	1.302
	2012	402	1	9	2.16	± 0.14	1.465
	2013	551	1	9	2.10	± 0.12	1.428
Summer	2009	111	1	9	4.22	± 0.45	2.447
	2010	520	1	9	3.96	± 0.20	2.354
	2011	589	1	9	3.76	± 0.18	2.263
	2012	483	1	9	4.13	± 0.22	2.443
	2013	661	1	9	4.04	± 0.18	2.378
Fall[†]	2009	111	1	7	2.29	± 0.28	1.522
	2010	454	1	9	2.20	± 0.14	1.538
	2011	493	1	9	2.08	± 0.12	1.353
	2012	411	1	8	2.39	± 0.15	1.568
	2013	538	1	9	2.24	± 0.13	1.497
Winter	2009	87	1	8	1.68	± 0.24	1.126
	2010	381	1	9	1.43	± 0.10	0.967
	2011	417	1	9	1.43	± 0.10	0.991
	2012	315	1	7	1.45	± 0.09	0.856
	2013	450	1	8	1.48	± 0.09	0.972

[†] The mean crowding threshold for 2011 was significantly lower than of 2012 ($F_W(4, 605.940) = 2.652$, $p < .05$).

Table 31. Have you ever experienced any conflicts with other people or recreation activities while you were visiting the Arrow Lakes?

Year	n	Response	Freq.	%[†]
2009	123	No	106	86.2%
		Yes	17	13.8%
2010	587	No	450	80.1%
		Yes	112	19.9%
2011	625	No	540	86.4%
		Yes	85	13.6%
2012	532	No	443	83.3%
		Yes	89	16.7%
2013	694	No	585	84.3%
		Yes	109	15.7%

[†] A significantly higher proportion of respondents in 2009 and 2011 indicated that experienced conflict than respondents in 2010, 2012, and 2013 (χ^2 = 9.590, df = 4, $p < .05$; Cramer's V = 0.061).

Question 4: Use and Familiarity with the Arrow Lakes.

Table 32. From the list below, indicate why you come to the Arrow Lakes.

Motivation	2009 (n = 126)		2010 (n = 574)		2011 (n = 652)		2012 (n = 534)		2013 (n = 715)	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
To learn about reservoirs	7	5.6%	27	4.7%	35	5.4%	20	3.7%	27	3.8%
To discover new things[a]	45	35.7%	192	33.4%	242	37.1%	156	29.2%	258	36.1%
To learn more about nature	27	21.4%	165	28.7%	191	29.3%	132	24.7%	190	26.6%
To view the scenery	90	71.4%	424	73.9%	489	75.0%	405	75.8%	528	73.8%
To be close to nature	69	54.8%	360	62.7%	421	64.6%	338	63.3%	467	65.3%
To think about my personal values[b]	20	15.9%	128	22.3%	186	28.5%	106	19.9%	167	23.4%
To get exercise	57	45.2%	292	50.9%	339	52.0%	253	47.4%	389	54.4%
To give my mind a rest	77	61.1%	345	60.1%	425	65.2%	347	65.0%	467	65.3%
To have a change from my daily routine	67	53.2%	317	55.2%	368	56.4%	295	55.2%	391	54.7%
To be with friends	79	62.7%	365	63.6%	376	57.7%	342	64.0%	452	63.2%
To be with family	73	57.9%	377	65.7%	449	68.9%	366	68.5%	500	69.9%
Other	17	13.5%	128	22.3%	114	17.5%	93	17.4%	108	15.1%

[a] A significantly lower proportion of respondents in 2012 & 2013 indicated that discovering new things was their motivation for visiting the Arrow Lakes ($\chi 2$ = 9.726, df = 4, $p < .05$; Cramer's V = 0.045).

[b] A significantly lower proportion of respondents in 2009, and a significantly higher proportion of respondents in 2011 indicated that thinking about their personal values was their motivation for visiting the Arrow Lakes ($\chi 2$ = 17.716, df = 4, $p < .001$; Cramer's V = 0.001).

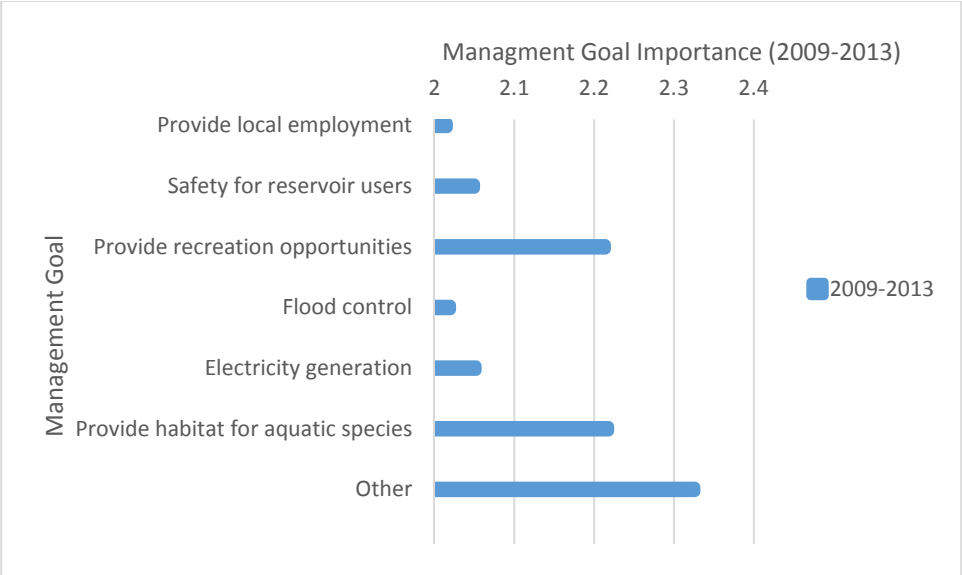


Figure 28. Average standardized importance rank scores of management goals for the Arrow Lakes.

Question 5: Visitor Satisfaction with Management Activities.

Table 33. The management of the Arrow Lakes seeks to balance many tasks. Please indicate your satisfaction with management activities.

Management Activities	Year	n	Never	Rarely	Sometimes	Frequently	Always	Mean	95% CI	SD
On the whole, are you satisfied with water levels on the Arrow Lakes?[a]	2009	114	7.9%	7.9%	49.1%	17.5%	17.5%	3.29	0.20	1.095
	2010	504	5.4%	13.9%	40.9%	26.6%	13.3%	3.29	0.09	1.035
	2011	543	2.9%	12.0%	33.7%	32.2%	19.2%	3.53	0.09	1.025
	2012	451	3.5%	10.2%	37.3%	33.7%	15.3%	3.47	0.09	0.987
	2013	616	5.5%	10.7%	35.6%	29.7%	18.5%	3.45	0.08	1.079
On the whole, do you have satisfying experiences on the water or onshore of the Arrow Lakes?[b]	2009	114	3.5%	1.8%	15.8%	38.6%	40.4%	4.11	0.18	0.972
	2010	549	1.6%	1.3%	14.2%	39.5%	43.4%	4.22	0.07	0.854
	2011	608	0.3%	1.0%	7.9%	38.8%	52.0%	4.41	0.06	0.707
	2012	512	1.0%	0.8%	10.0%	42.0%	46.3%	4.32	0.07	0.763
	2013	678	1.2%	1.5%	9.1%	36.3%	51.9%	4.36	0.06	0.803
On the whole, are you satisfied with the conditions of the boat ramps on the Arrow Lakes?[c]	2009	111	9.0%	14.4%	29.7%	27.9%	18.9%	3.33	0.22	1.201
	2010	455	21.1%	15.4%	18.9%	23.7%	20.9%	3.08	0.13	1.438
	2011	450	14.7%	12.7%	19.6%	20.9%	32.2%	3.43	0.13	1.424
	2012	393	13.2%	10.7%	19.3%	24.7%	32.1%	3.52	0.14	1.38
	2013	495	9.3%	10.1%	19.2%	26.9%	34.5%	3.67	0.11	1.294
On the whole, are you satisfied with the parking lot conditions when you visit the Arrow Lakes?[d]	2009	116	3.4%	3.4%	23.3%	40.5%	29.3%	3.89	0.18	0.985
	2010	518	7.1%	10.6%	18.7%	27.6%	35.9%	3.75	0.11	1.246
	2011	587	3.7%	6.0%	12.1%	31.0%	47.2%	4.12	0.09	1.075
	2012	495	4.0%	6.1%	16.0%	29.7%	44.2%	4.04	0.10	1.099
	2013	646	3.7%	6.3%	15.8%	31.9%	42.3%	4.03	0.08	1.082
On the whole, are you satisfied with the management of the Arrow Lakes?[e]	2009	116	4.3%	2.6%	36.2%	35.3%	21.6%	3.67	0.18	0.985
	2010	501	5.2%	10.8%	35.3%	27.7%	21.0%	3.49	0.10	1.095
	2011	535	4.1%	6.4%	26.9%	33.3%	29.3%	3.77	0.09	1.067
	2012	468	3.0%	5.8%	29.5%	35.5%	26.3%	3.76	0.09	1.002
	2013	605	4.0%	6.6%	26.9%	35.5%	26.9%	3.75	0.08	1.048

[a] The mean satisfaction with water levels on the Arrow Lakes for 2010 was significantly lower than that of 2011 ($F(4, 2223) = 4.349$, $p < .01$).
[b] The mean satisfaction with experiences on the water or onshore of the Arrow Lakes for 2011 was significantly higher than that of 2009 and 2010, and the mean satisfaction for 2013 was significantly higher than that of 2010 ($F_W(4, 648.561) = 6.232$, $p < .001$).
[c] The mean satisfaction with boat ramps on the Arrow Lakes for 2010 was significantly lower than that of 2011, 2012, and 2013 ($F_W(4, 608.952) = 11.646$, $p < .001$).
[d] The mean satisfaction with parking lot conditions at the Arrow Lakes for 2010 was significantly lower than that of 2011, 2012, and 2013 ($F_W(4, 670.331) = 7.832$, $p < .001$).
[e] The mean satisfaction with the management of the Arrow Lakes are visited for 2010 was significantly lower than that of 2011, 2012, and 2013 ($F(4, 2220) = 6.651$, $p < .001$).

Table 34. Compared to the water levels that you experienced today, how might different water levels affect your use of the Arrow Lakes for recreation activities?

Statement	Year	n	I will come back	I will go somewhere else
If the water level is the same as today…[a]	2009	97	91.8%	8.2%
	2010	458	97.6%	2.4%
	2011	538	96.5%	3.5%
	2012	447	92.2%	7.8%
	2013	562	95.0%	5.0%
If the water level is higher than today…[b]	2009	99	98.0%	2.0%
	2010	452	93.6%	6.4%
	2011	516	85.3%	14.7%
	2012	418	81.3%	18.7%
	2013	552	91.5%	8.5%
If the Water level is lower than today…[c]	2009	77	79.2%	20.8%
	2010	384	79.2%	20.8%
	2011	490	86.3%	13.7%
	2012	414	87.4%	12.6%
	2013	511	76.7%	23.3%

[a] A significantly lower proportion of respondents in 2009 and 2010 indicated that they would go elsewhere if water levels were the same as they were on the day that they visited the Arrow Lakes ($\chi^2 = 19.184$, df = 4, $p < .01$; Cramer's V = 0.096).
[b] A significantly lower proportion of respondents in 2009 and 2010 indicated that they would go elsewhere if water levels were higher than they were on the day that they visited the Arrow Lakes ($\chi^2 = 51.808$, df = 4, $p < .001$; Cramer's V = 0.159).
[c] A significantly lower proportion of respondents in 2011 and 2012 indicated that they would go elsewhere if water levels were lower than they were on the day that they visited the Arrow Lakes ($\chi^2 = 26.865$, df = 4, $p < .001$; Cramer's V = 0.120).

Question 6: Recreation Experiences on the Arrow Lakes.

Table 35. How long have you been coming to the Arrow Lakes for recreation activities (years)?

Year	n	Min	Max	Mean†	95% CI	SD
2009	120	0	65	17.05	± 2.44	13.652
2010	538	0	75	19.42	± 1.29	15.249
2011	605	0	70	17.75	± 1.20	15.027
2012	506	0	85	18.63	± 1.30	14.877
2013	665	0	74	17.93	± 1.08	14.246

† The mean number of years respondents had been coming to the Arrow lakes for recreation activities did not differ significantly by year.

Table 36. Based on your experience today, will you come back to the Arrow Lakes for recreation activities?

Year	n	Yes†	No
2009	122	98.4%	1.6%
2010	558	99.8%	0.2%
2011	625	99.2%	0.8%
2012	524	98.1%	1.9%
2013	687	99.3%	0.7%

† The percentage of respondents that indicated 'Yes' they would come back to the Arrow Lakes for recreation activities did not differ significantly by year.

Table 37. What boat ramp facility do you usually use?

Boat Ramp Location	2010 (n = 478)		2011 (n = 507)		2012 (n = 430)		2013 (n = 582)	
	n	%	n	%	n	%	n	%
Above Revelstoke Dam	0	0.0%	2	0.4%	0	0.0%	0	0.0%
Anderson Point	21	4.4%	11	2.2%	2	0.5%	9	1.5%
Arrow Park Ferry	10	2.1%	2	0.4%	1	0.2%	2	0.3%
Burton Historic Park	13	2.7%	16	3.2%	27	6.3%	15	2.6%
Bush Harbour	0	0.0%	0	0.0%	0	0.0%	1	0.2%
Centennial Park	1	0.2%	3	0.6%	3	0.7%	0	0.0%
Eagle Bay	15	3.1%	12	2.4%	21	4.9%	15	2.6%
Edgewood Community Park	30	6.3%	53	10.5%	26	6.0%	21	3.6%
Fauquier Community Park Boat Launch	14	2.9%	10	2.0%	13	3.0%	20	3.4%
Galena Bay	0	0.0%	0	0.0%	1	0.2%	2	0.3%
MacDonald Creek Provincial Park	7	1.5%	16	3.2%	16	3.7%	23	4.0%
Nakusp Boat Launch	62	13%	61	12.0%	42	9.8%	67	11.5%
Needles	3	0.6%	0	0.0%	1	0.2%	0	0.0%
Renata	3	0.6%	2	0.4%	0	0.0%	1	0.2%
Revelstoke Boat Launch	2	0.4%	2	0.4%	2	0.5%	4	0.7%
Scotties Marina	7	1.5%	4	0.8%	4	0.9%	7	1.2%
Shelter Bay	39	8.2%	92	18.1%	78	18.1%	58	10.0%
Syringa Creek Park Boat Launch	64	13.4%	15	3.0%	17	4.0%	65	11.2%
Syringa Creek Park Day Use	0	0.0%	0	0.0%	1	0.2%	8	1.4%
Don't use boat ramps	0	0.0%	22	4.3%	12	2.8%	219	37.6%
Multiple sites	187	39.1	184	36.3%	163	37.9%	45	7.7%

Table 38. Why did you come to this boat ramp facility today – Anderson Point & Burton Historic Park?

Response Categories	Anderson Point				Burton Historic Park			
	2010 (n = 42)	2011 (n = 21)	2012 (n = 7)	2013 (n = 27)	2010 (n = 24)	2011 (n = 24)	2012 (n = 36)	2013 (n = 24)
Access to Renata	28.6%	42.9%	14.3%	18.5%	—	—	—	—
Best one	—	—	—	3.7%	—	—	—	—
Close to beach	—	—	—	—	4.2%	—	—	—
Close to camping	—	—	—	7.4%	37.5%	50.0%	50.0%	50.0%
Close to home (local)	7.1%	4.8%	—	7.4%	12.5%	—	2.8%	—
Close to swimming	—	—	—	—	—	—	—	4.2%
Closest to other recreation activities	11.9%	9.5%	28.6%	—	4.2%	—	11.1%	—
Closest to where I want to go	4.8%	—	14.3%	—	4.2%	4.2%	—	—
Convenient	2.4%	—	—	—	12.5%	—	2.8%	4.2%
Cost (free)/Public launch	—	—	—	—	—	—	—	—
Do not have boat	—	—	—	—	4.2%	—	2.8%	4.2%
Keep boat here	—	—	—	—	—	—	—	—
Not crowded	—	—	—	—	—	—	—	—
Only one	7.1%	4.8%	—	—	—	—	—	—
Only one with appropriate facilities	—	—	—	—	—	—	—	—
Preferred one	—	—	14.3%	—	—	—	—	—
Previous enjoyable experience	—	—	—	—	—	4.2%	—	—
Scenery	—	14.3%	—	3.7%	—	4.2%	—	4.2%
To complete survey	—	—	—	—	—	—	—	—
To fish	16.7%	9.5%	—	18.5%	4.2%	—	—	—
To launch boat/take boat out of water	—	—	14.3%	3.7%	4.2%	—	—	12.5%
Water levels	—	—	—	3.7%	4.2%	—	—	—
Other	19.0%	14.3%	14.3%	33.3%	8.3%	33.3%	30.6%	16.7%
Didn't use ramp today	—	—	—	—	—	—	—	4.2%
Multiple	2.4%	—	—	—	—	4.2%	—	—

Table 39. Why did you come to this boat ramp facility today – Eagle Bay & Edgewood Community Park?

Response Categories	Eagle Bay				Edgewood Community Park			
	2010 (n = 40)	2011 (n = 20)	2012 (n = 28)	2013 (n = 37)	2010 (n = 37)	2011 (n = 64)	2012 (n = 27)	2013 (n = 26)
Access to Renata	—	—	—	—	—	—	—	—
Best one	2.5%	—	—	—	—	—	—	—
Close to beach	—	—	—	—	2.7%	—	—	—
Close to camping	50.0%	30.0%	46.4%	45.9%	2.7%	3.1%	7.4%	—
Close to home (local)	2.5%	—	—	—	24.3%	14.1%	18.5%	23.1%
Close to swimming	—	—	—	—	8.1%	1.6%	—	—
Closest to other recreation activities	7.5%	30.0%	7.1%	13.5%	29.7%	26.6%	14.8%	38.5%
Closest to where I want to go	—	—	—	—	—	—	3.7%	—
Convenient	7.5%	—	—	—	10.8%	1.6%	3.7%	—
Cost (free)/Public launch	—	—	—	—	—	—	—	—
Do not have boat	5.0%	—	—	—	—	—	—	—
Keep boat here	—	—	—	—	—	—	—	—
Not crowded	—	5.0%	—	—	—	3.1%	—	—
Only one	—	—	—	2.7%	—	4.7%	3.7%	—
Only one with appropriate facilities	—	—	—	—	—	—	—	—
Preferred one	2.5%	—	3.6%	—	—	3.1%	—	—
Previous enjoyable experience	5.0%	—	3.6%	—	—	—	—	—
Scenery	—	5.0%	—	—	—	7.8%	18.5%	7.7%
To complete survey	—	—	—	—	—	—	—	—
To fish	2.5%	10.0%	7.1%	10.8%	5.4%	12.5%	3.7%	—
To launch boat/take boat out of water	—	—	3.6%	8.1%	5.4%	1.6%	3.7%	—
Water levels	—	—	—	2.7%	—	—	—	3.8%
Other	7.5%	10.0%	17.9%	13.5%	10.8%	20.3%	14.8%	23.1%
Didn't use ramp today	5.0%	5.0%	—	2.7%	—	—	—	—
Multiple	2.5%	5.0%	10.7%	—	—	—	7.4%	3.8%

Table 40. Why did you come to this boat ramp facility today – Fauquier Community Boat Launch & MacDonald Creek Provincial Park?

Response Categories	Fauquier Community Park Boat Launch				MacDonald Creek Provincial Park			
	2010 (n = 32)	2011 (n = 14)	2012 (n = 13)	2013 (n = 21)	2010 (n = 19)	2011 (n = 19)	2012 (n = 22)	2013 (n = 38)
Access to Renata	—	—	—	—	—	—	—	—
Best one	—	—	—	4.8%	—	—	—	—
Close to beach	—	—	—	—	—	—	—	—
Close to camping	—	—	—	—	15.8%	52.6%	50.0%	39.5%
Close to home (local)	15.6%	7.1%	7.7%	47.6%	10.5%	—	—	5.3%
Close to swimming	—	14.3%	—	—	—	—	—	2.6%
Closest to other recreation activities	6.3%	—	30.8%	9.5%	21.1%	5.3%	4.5%	13.2%
Closest to where I want to go	—	—	—	—	—	—	—	2.6%
Convenient	12.5%	14.3%	7.7%	4.8%	10.5%	10.5%	4.5%	5.3%
Cost (free)/Public launch	—	—	—	—	—	—	—	—
Do not have boat	—	—	—	—	—	—	—	2.6%
Keep boat here	—	—	—	—	—	—	4.5%	—
Not crowded	—	—	—	—	—	—	—	—
Only one	—	—	—	4.8%	5.3%	—	—	—
Only one with appropriate facilities	—	14.3%	—	—	10.5%	—	4.5%	—
Preferred one	6.3%	—	—	—	—	—	—	—
Previous enjoyable experience	—	14.3%	—	—	—	—	—	—
Scenery	—	7.1%	—	4.8%	—	—	—	2.6%
To complete survey	28.1%	—	7.7%	—	—	—	—	—
To fish	6.3%	7.1%	15.4%	4.8%	5.3%	—	—	2.6%
To launch boat/take boat out of water	3.1%	7.1%	15.4%	4.8%	5.3%	10.5%	4.5%	5.3%
Water levels	6.3%	7.1%	—	4.8%	—	—	4.5%	—
Other	12.5%	7.1%	15.4%	9.5%	—	21.1%	13.6%	13.2%
Didn't use ramp today	—	—	—	—	10.5%	—	4.5%	5.3%
Multiple	3.1%	—	—	—	5.3%	—	4.5%	—

Table 41. Why did you come to this boat ramp facility today – Nakusp Boat Launch & Nakusp Beach?

Response Categories	Nakusp Boat Launch				Nakusp Beach			
	2010 (n = 67)	2011 (n = 66)	2012 (n = 34)	2013 (n = 69)	2010 (n = 14)	2011 (n = 24)	2012 (n = 20)	2013 (n = 24)
Access to Renata	—	—	—	—	—	—	—	—
Best one	—	1.5%	—	1.4%	—	—	—	—
Close to beach	—	—	—	—	—	4.2%	20.0%	—
Close to camping	—	—	—	1.4%	—	—	—	—
Close to home (local)	9.0%	16.7%	11.8%	21.7%	7.1%	4.2%	10.0%	8.3%
Close to swimming	—	—	—	2.9%	—	—	5.0%	8.3%
Closest to other recreation activities	40.3%	12.1%	20.6%	23.2%	14.3%	16.7%	15.0%	8.3%
Closest to where I want to go	—	—	—	1.4%	—	—	10.0%	—
Convenient	14.9%	15.2%	2.9%	2.9%	28.6%	8.3%	10.0%	8.3%
Cost (free)/Public launch	—	—	—	—	—	—	—	4.2%
Do not have boat	—	—	—	—	—	—	—	—
Keep boat here	7.5%	3.0%	8.8%	7.2%	—	—	10.0%	8.3%
Not crowded	—	—	—	—	—	—	—	—
Only one	1.5%	6.1%	—	—	—	4.2%	—	—
Only one with appropriate facilities	—	1.5%	8.8%	—	—	—	—	8.3%
Preferred one	—	1.5%	2.9%	—	—	4.2%	—	4.2%
Previous enjoyable experience	1.5%	1.5%	—	—	—	—	—	—
Scenery	—	3.0%	11.8%	4.3%	—	4.2%	—	8.3%
To complete survey	1.5%	—	—	—	—	—	—	—
To fish	6.0%	9.1%	5.9%	5.8%	7.1%	4.2%	—	—
To launch boat/take boat out of water	7.5%	7.6%	14.7%	4.3%	—	8.3%	5.0%	4.2%
Water levels	—	—	—	—	—	—	—	—
Other	10.4%	18.2%	11.8%	17.4%	21.4%	16.7%	10.0%	12.5%
Didn't use ramp today	—	1.5%	—	1.4%	14.3%	25.0%	5.0%	16.7%
Multiple	—	1.5%	—	4.3%	7.1%	—	—	—

Table 42. Why did you come to this boat ramp facility today – Revelstoke Boat Launch & Shelter Bay?

Response Categories	Revelstoke Boat Launch				Shelter Bay			
	2010 (n = 8)	2011 (n = 20)	2012 (n = 8)	2013 (n = 19)	2010 (n = 37)	2011 (n = 36)	2012 (n = 25)	2013 (n = 61)
Access to Renata	—	—	—	—	—	—	4.0%	—
Best one	—	—	—	—	—	—	—	3.3%
Close to beach	—	—	—	—	—	—	—	—
Close to camping	—	—	—	—	10.8%	11.1%	28.0%	9.8%
Close to home (local)	12.5%	5.0%	25.0%	10.5%	5.4%	2.8%	4.0%	9.8%
Close to swimming	—	—	—	10.5%	—	—	—	—
Closest to other recreation activities	—	5.0%	—	31.6%	8.1%	8.3%	8.0%	8.2%
Closest to where I want to go	—	—	—	—	—	2.8%	4.0%	3.3%
Convenient	12.5%	—	—	5.3%	13.5%	11.1%	8.0%	8.2%
Cost (free)/Public launch	—	—	—	—	—	—	—	—
Do not have boat	—	—	—	—	—	—	—	—
Keep boat here	—	—	—	—	—	—	—	—
Not crowded	—	—	—	—	—	2.8%	—	—
Only one	—	—	—	—	10.8%	8.3%	—	8.2%
Only one with appropriate facilities	—	—	—	—	5.4%	2.8%	4.0%	6.6%
Preferred one	12.5%	—	—	10.5%	—	—	—	4.9%
Previous enjoyable experience	—	—	—	—	—	—	—	—
Scenery	—	—	12.5%	15.8%	—	—	—	—
To complete survey	—	—	—	—	—	—	—	—
To fish	37.5%	15.0%	12.5%	10.5%	13.5%	27.8%	20.0%	21.3%
To launch boat/take boat out of water	—	—	25.0%	—	5.4%	2.8%	4.0%	4.9%
Water levels	—	5.0%	12.5%	—	2.7%	—	—	—
Other	12.5%	50.0%	12.5%	5.3%	13.5%	8.3%	8.0%	6.6%
Didn't use ramp today	—	10.0%	—	—	—	2.8%	—	—
Multiple	12.5%	10.0%	—	—	10.8%	8.3%	8.0%	4.9%

Table 43. Why did you come to this boat ramp facility today – Syringa Creek Park Boat Launch & Syringa Creek Park Day Use?

Response Categories	Syringa Creek Park Boat Launch				Syringa Creek Park Day Use			
	2010 (n = 54)	2011 (n = 66)	2012 (n = 54)	2013 (n = 32)	2010 (n = 27)	2011 (n = 30)	2012 (n = 37)	2013 (n = 51)
Access to Renata	—	—	—	—	—	—	—	—
Best one	5.6%	3.0%	—	—	—	—	—	2.0%
Close to beach	—	3.0%	1.9%	—	—	—	2.7%	—
Close to camping	9.3%	6.1%	—	3.1%	7.4%	23.3%	29.7%	27.5%
Close to home (local)	9.3%	4.5%	5.6%	18.8%	3.7%	3.3%	—	7.8%
Close to swimming	3.7%	—	—	—	3.7%	—	—	2.0%
Closest to other recreation activities	9.3%	16.7%	13.0%	12.5%	—	3.3%	2.7%	5.9%
Closest to where I want to go	—	—	1.9%	—	—	—	—	—
Convenient	7.4%	6.1%	16.7%	6.3%	11.1%	3.3%	—	5.9%
Cost (free)/Public launch	5.6%	3.0%	1.9%	3.1%	—	3.3%	8.1%	—
Do not have boat	—	—	—	—	—	—	—	—
Keep boat here	—	—	—	—	7.4%	3.3%	2.7%	2.0%
Not crowded	3.7%	1.5%	—	—	—	—	—	—
Only one	7.4%	7.6%	3.7%	—	14.8%	3.3%	2.7%	5.9%
Only one with appropriate facilities	3.7%	1.5%	9.3%	6.3%	—	3.3%	—	—
Preferred one	—	1.5%	7.4%	9.4%	3.7%	3.3%	8.1%	—
Previous enjoyable experience	1.9%	1.5%	1.9%	—	—	—	—	—
Scenery	—	—	1.9%	3.1%	—	—	—	—
To complete survey	—	—	—	—	—	—	—	—
To fish	3.7%	10.6%	5.6%	12.5%	3.7%	6.7%	8.1%	7.8%
To launch boat/take boat out of water	18.5%	10.6%	13.0%	9.4%	22.2%	13.3%	16.2%	11.8%
Water levels	1.9%	3.0%	—	3.1%	—	—	—	—
Other	7.4%	16.7%	9.3%	9.4%	—	13.3%	5.4%	9.8%
Didn't use ramp today	—	1.5%	3.7%	—	22.2%	13.3%	13.5%	5.9%
Multiple	1.9%	1.5%	3.7%	3.1%	—	3.3%	—	5.9%

Table 44. What do you like most about the boat ramp facility that you visited today – Anderson Point & Burton Historic Park?

Response Categories	Anderson Point				Burton Historic Park			
	2010 (n = 33)	2011 (n = 21)	2012 (n = 7)	2013 (n = 26)	2010 (n = 23)	2011 (n = 17)	2012 (n = 37)	2013 (n = 21)
Access	12.1%	9.5%	—	—	8.7%	5.9%	—	—
Amenities (toilets, garbage containers, *etc*.)	—	—	—	—	—	—	—	—
Boat tie ups	3.0%	—	—	—	—	—	—	—
Clean/well maintained	—	—	28.6%	11.5%	4.3%	5.9%	5.4%	9.5%
Close to activities	3.0%	—	—	—	4.3%	—	2.7%	—
Close to campsite	—	—	—	—	4.3%	5.9%	2.7%	9.5%
Close to home	3.0%	—	—	—	—	—	5.4%	—
Concrete ramp/dock	6.1%	—	—	—	4.3%	—	2.7%	4.8%
Convenient	—	4.8%	—	3.8%	13.0%	—	2.7%	—
Close to Renata	6.1%	4.8%	—	—	—	—	—	—
Cost (free)	—	—	—	—	—	—	—	—
Didn't use today	—	—	—	—	17.4%	—	2.7%	14.3%
Dock	—	—	—	3.8%	—	5.9%	—	—
Easy to use	—	4.8%	—	3.8%	4.3%	—	—	4.8%
Lots of space	—	—	—	—	4.3%	—	2.7%	—
Not crowded	—	14.3%	14.3%	19.2%	8.7%	5.9%	16.2%	4.8%
Only one	3.0%	—	—	—	—	—	—	—
Paved parking lot	—	—	—	—	—	—	—	—
Reputation	—	—	—	—	—	—	—	—
Upgrade/well constructed	—	—	—	42.3%	—	5.9%	10.8%	—
Water levels	3.0%	4.8%	—	—	—	11.8%	8.1%	4.8%
Wide ramp	—	—	—	—	—	—	2.7%	—
Other	24.2%	28.6%	—	3.8%	4.3%	5.9%	5.4%	9.5%
Multiple	—	—	—	7.7%	13.0%	35.3%	2.7%	14.3%
No problems/General positive comment	—	4.8%	28.6%	3.8%	—	5.9%	18.9%	9.5%
Do not like/negative comment	36.4%	23.8%	28.6%	—	8.7%	5.9%	8.1%	14.3%

Table 45. What do you like most about the boat ramp facility that you visited today – Eagle Bay & Edgewood Community Park?

Response Categories	Eagle Bay				Edgewood Community Park			
	2010 (n = 29)	2011 (n = 18)	2012 (n = 21)	2013 (n = 29)	2010 (n = 30)	2011 (n = 59)	2012 (n = 25)	2013 (n = 21)
Access	6.9%	11.1%	4.8%	6.9%	3.3%	8.5%	—	4.8%
Amenities (toilets, garbage containers, *etc*.)	—	—	—	—	—	—	—	—
Boat tie ups	—	—	—	—	—	—	—	—
Clean/well maintained	3.4%	5.6%	4.8%	3.4%	—	—	8.0%	4.8%
Close to activities	3.4%	—	—	—	—	—	—	—
Close to campsite	—	5.6%	14.3%	13.8%	—	—	4.0%	—
Close to home	—	—	—	—	3.3%	—	—	4.8%
Concrete ramp/dock	6.9%	16.7%	14.3%	—	16.7%	6.8%	4.0%	—
Convenient	—	—	—	—	3.3%	—	—	4.8%
Close to Renata	—	—	—	—	—	—	—	—
Cost (free)	—	—	—	3.4%	—	—	—	—
Didn't use today	13.8%	—	—	3.4%	6.7%	1.7%	4.0%	—
Dock	—	—	—	—	—	—	—	—
Easy to use	3.4%	—	4.8%	3.4%	3.3%	5.1%	4.0%	—
Lots of space	3.4%	—	—	—	—	—	—	4.8%
Not crowded	3.4%	—	4.8%	3.4%	13.3%	—	4.0%	4.8%
Only one	—	—	—	—	—	—	—	—
Paved parking lot	—	—	—	—	—	1.7%	—	—
Reputation	—	—	—	—	—	—	—	—
Upgrade/well constructed	6.9%	5.6%	4.8%	3.4%	—	1.7%	—	38.1%
Water levels	13.8%	5.6%	4.8%	3.4%	3.3%	1.7%	—	—
Wide ramp	—	—	—	—	—	—	—	—
Other	10.3%	16.7%	4.8%	20.7%	20.0%	35.6%	32.0%	14.3%
Multiple	—	—	—	13.8%	10.0%	3.4%	—	9.5%
No problems/General positive comment	13.8%	27.8%	19.0%	13.8%	—	5.1%	—	4.8%
Do not like/negative comment	10.3%	5.6%	19.0%	6.9%	16.7%	28.8%	40.0%	4.8%

Table 46. What do you like most about the boat ramp facility that you visited today – Fauquier Park Boat Launch & MacDonald Creek Park?

Response Categories	Fauquier Community Park Boat Launch				MacDonald Creek Provincial Park			
	2010 (n = 35)	2011 (n = 14)	2012 (n = 13)	2013 (n = 18)	2010 (n = 17)	2011 (n = 15)	2012 (n = 20)	2013 (n = 35)
Access	2.9%	—	—	5.6%	11.8%	13.3%	5.0%	5.7%
Amenities (toilets, garbage containers, *etc*.)	—	7.1%	—	5.6%	5.9%	—	—	—
Boat tie ups	—	—	—	—	—	—	—	2.9%
Clean/well maintained	8.6%	14.3%	—	—	5.9%	6.7%	15.0%	14.3%
Close to activities	—	—	—	—	—	—	—	—
Close to campsite	—	—	—	—	—	6.7%	—	2.9%
Close to home	—	—	—	—	—	—	—	—
Concrete ramp/dock	—	—	—	—	—	—	10.0%	—
Convenient	2.9%	—	7.7%	5.6%	5.9%	—	—	2.9%
Close to Renata	—	—	—	—	—	—	—	—
Cost (free)	—	—	—	—	—	—	—	—
Didn't use today	—	—	—	—	5.9%	6.7%	10.0%	2.9%
Dock	—	—	—	5.6%	—	—	5.0%	8.6%
Easy to use	5.7%	—	—	5.6%	5.9%	—	—	8.6%
Lots of space	—	—	—	—	—	—	—	2.9%
Not crowded	11.4%	—	—	5.6%	17.6%	6.7%	5.0%	2.9%
Only one	—	—	—	—	—	—	—	—
Paved parking lot	14.3%	—	—	—	—	—	—	—
Reputation	—	—	—	—	—	—	—	—
Upgrade/well constructed	5.7%	28.6%	30.8%	11.1%	17.6%	40.0%	25.0%	5.7%
Water levels	—	—	—	5.6%	—	—	—	—
Wide ramp	—	—	—	—	—	—	—	2.9%
Other	20.0%	28.6%	23.1%	22.2%	11.8%	—	5.0%	5.7%
Multiple	2.9%	14.3%	7.7%	11.1%	—	13.3%	—	28.6%
No problems/General positive comment	2.9%	7.1%	30.8%	11.1%	5.9%	6.7%	20.0%	2.9%
Do not like/negative comment	22.9%	—	—	5.6%	5.9%	—	—	—

Table 47. What do you like most about the boat ramp facility that you visited today – Nakusp Boat Launch & Nakusp Beach?

Response Categories	Nakusp Boat Launch				Nakusp Beach			
	2010 (n = 56)	2011 (n = 62)	2012 (n = 26)	2013 (n = 61)	2010 (n = 12)	2011 (n = 17)	2012 (n = 20)	2013 (n = 20)
Access	3.6%	4.8%	—	1.6%	8.3%	11.8%	—	—
Amenities (toilets, garbage containers, *etc*.)	3.6%	1.6%	7.7%	—	—	—	10.0%	—
Boat tie ups	—	—	—	—	—	—	—	—
Clean/well maintained	17.9%	4.8%	11.5%	4.9%	16.7%	5.9%	5.0%	5.0%
Close to activities	3.6%	—	—	—	—	—	5.0%	—
Close to campsite	—	—	—	—	—	—	—	—
Close to home	7.1%	4.8%	—	1.6%	—	11.8%	5.0%	—
Concrete ramp/dock	—	—	—	1.6%	—	—	—	—
Convenient	3.6%	6.5%	7.7%	1.6%	25.0%	17.6%	5.0%	—
Close to Renata	—	—	—	—	—	—	—	—
Cost (free)	—	—	—	—	—	—	5.0%	—
Didn't use today	—	4.8%	3.8%	3.3%	8.3%	11.8%	—	5.0%
Dock	—	1.6%	—	1.6%	—	—	—	—
Easy to use	1.8%	6.5%	—	1.6%	8.3%	—	—	5.0%
Lots of space	—	—	—	—	—	—	5.0%	—
Not crowded	7.1%	19.4%	15.4%	1.6%	16.7%	5.9%	5.0%	25.0%
Only one	—	—	—	—	—	—	—	—
Paved parking lot	1.8%	1.6%	—	1.6%	—	—	—	—
Reputation	—	—	—	—	—	—	—	—
Upgrade/well constructed	1.8%	1.6%	3.8%	29.5%	—	—	—	30.0%
Water levels	—	—	—	3.3%	—	5.9%	5.0%	—
Wide ramp	1.8%	—	7.7%	14.8%	—	—	5.0%	5.0%
Other	30.4%	22.6%	23.1%	14.8%	8.3%	17.6%	15.0%	10.0%
Multiple	3.6%	3.2%	—	6.6%	—	—	10.0%	15.0%
No problems/General positive comment	7.1%	12.9%	11.5%	3.3%	8.3%	5.9%	5.0%	—
Do not like/negative comment	5.4%	3.2%	7.7%	6.6%	—	5.9%	15.0%	—

Table 48. What do you like most about the boat ramp facility that you visited today – Revelstoke Boat Launch & Shelter Bay?

Response Categories	Revelstoke Boat Launch				Shelter Bay			
	2010 (n = 8)	2011 (n = 18)	2012 (n = 8)	2013 (n = 17)	2010 (n = 36)	2011 (n = 25)	2012 (n = 23)	2013 (n = 59)
Access	—	5.6%	25.0%	11.8%	16.7%	4.0%	8.7%	5.1%
Amenities (toilets, garbage containers, *etc*.)	—	—	—	—	—	—	—	—
Boat tie ups	—	—	—	—	—	—	—	—
Clean/well maintained	—	—	—	—	13.9%	4.0%	13.0%	5.1%
Close to activities	12.5%	—	—	—	—	—	—	1.7%
Close to campsite	—	—	—	—	8.3%	—	—	1.7%
Close to home	25.0%	11.1%	12.5%	5.9%	2.8%	—	—	—
Concrete ramp/dock	12.5%	—	—	—	8.3%	16.0%	8.7%	22.0%
Convenient	—	—	12.5%	5.9%	2.8%	—	—	5.1%
Close to Renata	—	—	—	—	—	—	—	—
Cost (free)	—	—	—	—	—	—	—	—
Didn't use today	—	—	—	—	—	—	8.7%	—
Dock	—	—	—	—	—	—	—	—
Easy to use	—	—	—	—	8.3%	8.0%	4.3%	5.1%
Lots of space	—	—	—	—	2.8%	—	4.3%	1.7%
Not crowded	25.0%	5.6%	—	23.5%	5.6%	8.0%	8.7%	6.8%
Only one	—	—	—	—	—	—	—	—
Paved parking lot	—	—	—	—	—	8.0%	—	1.7%
Reputation	—	—	—	—	—	—	—	—
Upgrade/well constructed	—	—	—	—	8.3%	—	8.7%	5.1%
Water levels	12.5%	5.6%	25.0%	5.9%	8.3%	—	13.0%	1.7%
Wide ramp	—	—	—	—	—	—	4.3%	—
Other	—	72.2%	—	23.5%	—	20.0%	4.3%	8.5%
Multiple	12.5%	—	—	—	2.8%	12.0%	—	15.3%
No problems/General positive comment	—	—	12.5%	17.6%	8.3%	16.0%	8.7%	3.4%
Do not like/negative comment	—	—	12.5%	5.9%	2.8%	4.0%	4.3%	10.2%

Table 49. What do you like most about the boat ramp facility that you visited today – Syringa Creek Boat Launch & Syringa Creek Day Use?

Response Categories	Syringa Creek Park Boat Launch				Syringa Creek Park Day Use			
	2010 (n = 48)	2011 (n = 64)	2012 (n = 46)	2013 (n = 23)	2010 (n = 27)	2011 (n = 28)	2012 (n = 28)	2013 (n = 46)
Access	8.3%	10.9%	2.2%	—	3.7%	3.6%	3.6%	8.7%
Amenities (toilets, garbage containers, *etc*.)	—	—	—	—	—	—	3.6%	—
Boat tie ups	2.1%	—	—	—	—	—	—	—
Clean/well maintained	8.3%	7.8%	8.7%	8.7%	3.7%	7.1%	3.6%	4.3%
Close to activities	—	—	—	—	—	—	—	—
Close to campsite	—	—	—	—	3.7%	—	10.7%	6.5%
Close to home	4.2%	3.1%	—	—	—	—	3.6%	—
Concrete ramp/dock	4.2%	1.6%	2.2%	13.0%	22.2%	7.1%	3.6%	—
Convenient	—	—	—	4.3%	7.4%	3.6%	—	—
Close to Renata	—	—	—	—	—	—	—	—
Cost (free)	—	1.6%	—	—	—	—	—	—
Didn't use today	—	—	—	—	3.7%	—	7.1%	6.5%
Dock	2.1%	3.1%	13.0%	—	—	14.3%	3.6%	—
Easy to use	—	1.6%	4.3%	4.3%	—	—	3.6%	—
Lots of space	—	1.6%	6.5%	—	—	—	—	—
Not crowded	16.7%	12.5%	8.7%	13.0%	11.1%	3.6%	7.1%	4.3%
Only one	—	—	—	—	—	—	3.6%	—
Paved parking lot	—	—	2.2%	—	—	3.6%	3.6%	—
Reputation	—	—	—	—	3.7%	—	—	—
Upgrade/well constructed	14.6%	9.4%	15.2%	8.7%	7.4%	10.7%	14.3%	6.5%
Water levels	8.3%	7.8%	2.2%	4.3%	7.4%	—	—	—
Wide ramp	2.1%	1.6%	—	4.3%	—	3.6%	3.6%	—
Other	12.5%	18.8%	8.7%	—	3.7%	3.6%	3.6%	17.4%
Multiple	—	6.3%	4.3%	30.4%	11.1%	21.4%	—	34.8%
No problems/General positive comment	12.5%	6.3%	17.4%	4.3%	11.1%	14.3%	10.7%	—
Do not like/negative comment	4.2%	6.3%	4.3%	4.3%	—	3.6%	10.7%	10.9%

Table 50. What do you like least about the boat ramp facility that you visited today – Anderson Point & Burton Historic Park?

Response Categories	Anderson Point				Burton Historic Park			
	2010 (n = 37)	2011 (n = 19)	2012 (n = 7)	2013 (n = 26)	2010 (n = 19)	2011 (n = 14)	2012 (n = 21)	2013 (n = 34)
Debris	—	—	14.3%	—	—	—	9.5%	—
Did not use today	—	—	—	—	5.3%	—	—	5.9%
Docks too far from shore	2.7%	—	—	—	—	—	—	—
Hard to get to	2.7%	—	—	—	—	—	—	—
Hard to use	5.4%	—	—	—	—	—	—	—
Improvements needed for all components	8.1%	10.5%	—	—	10.5%	—	—	2.9%
More parking needed	8.1%	—	—	19.2%	—	—	—	—
Needs barrier-free access	—	—	—	—	—	—	—	—
Needs picnic area	—	—	—	—	—	—	—	—
No boat launch	13.5%	—	14.3%	—	—	—	—	—
No boat tie-ups	2.7%	—	—	—	5.3%	7.1%	—	—
No wharf	—	—	—	—	—	—	—	—
Not enough room to turn around/load/unload	10.8%	10.5%	—	—	—	—	—	—
Not safe	5.4%	—	—	—	—	—	—	—
Not well maintained/not clean	2.7%	—	14.3%	—	—	14.3%	9.5%	—
Problems with breakwater	—	—	—	—	—	—	—	2.9%
Problems with dock/dock ramp	10.8%	15.8%	28.6%	—	10.5%	7.1%	4.8%	8.8%
Problems with parking lot	—	—	—	—	—	—	—	—
Ramp angle too steep	—	—	—	—	—	7.1%	—	2.9%
Ramp not long enough	2.7%	5.3%	—	—	—	7.1%	—	—
Rough launch	—	5.3%	—	—	—	—	—	—
Rough road	2.7%	—	14.3%	—	—	—	—	—
Too crowded	2.7%	21.1%	—	3.8%	5.3%	—	19.0%	—
Too high	—	—	14.3%	—	—	—	—	—
Too narrow/not wide enough	—	—	—	—	5.3%	—	4.8%	—
Too sandy/muddy	—	—	—	—	31.6%	—	4.8%	—

Table 50 (cont'd). What do you like least about the boat ramp facility that you visited today – Anderson Point & Burton Historic Park?

Response Categories	Anderson Point				Burton Historic Park			
	2010 (n = 37)	2011 (n = 19)	2010 (n = 37)	2011 (n = 19)	2010 (n = 37)	2011 (n = 19)	2010 (n = 37)	2011 (n = 19)
Washrooms needed	5.4%	—	—	—	—	—	—	—
Water levels	—	5.3%	—	3.8%	5.3%	14.3%	—	23.5%
No problems/positive comment	2.7%	—	—	65.4%	15.8%	28.6%	4.8%	50.0%
Other	5.4%	5.3%	—	7.7%	5.3%	7.1%	42.9%	2.9%
Multiple	5.4%	21.1%	—	—	—	7.1%	—	—

Table 51. What do you like least about the boat ramp facility that you visited today – Eagle Bay & Edgewood Community Park?

Response Categories	Eagle Bay				Edgewood Community Park			
	2010 (n = 29)	2011 (n = 14)	2012 (n = 19)	2013 (n = 41)	2010 (n = 27)	2011 (n = 48)	2012 (n = 25)	2013 (n = 38)
Debris	—	7.1%	—	—	—	—	4.0%	—
Did not use today	6.9%	7.1%	—	—	3.7%	—	—	—
Docks too far from shore	—	—	5.3%	—	—	—	4.0%	—
Hard to get to	—	—	—	—	—	—	—	—
Hard to use	—	—	—	—	—	—	—	—
Improvements needed for all components	—	7.1%	—	7.3%	11.1%	14.6%	—	2.6%
More parking needed	—	—	—	—	—	—	—	—
Needs barrier-free access	—	—	—	—	3.7%	—	4.0%	—
Needs picnic area	—	—	—	—	—	—	—	—
No boat launch	—	—	—	—	—	—	12.0%	—
No boat tie-ups	—	—	—	—	—	—	—	—
No wharf	—	—	—	—	—	—	4.0%	—
Not enough room to turn around/load/unload	—	—	—	—	—	—	—	—
Not safe	—	—	—	—	—	4.2%	—	2.6%
Not well maintained/not clean	20.7%	7.1%	31.6%	4.9%	18.5%	4.2%	—	—
Problems with breakwater	—	—	—	—	3.7%	6.3%	8.0%	2.6%

Table 51 (cont'd). What do you like least about the boat ramp facility that you visited today – Eagle Bay & Edgewood Community Park?

Response Categories	Eagle Bay				Edgewood Community Park			
	2010 (n = 29)	2011 (n = 14)	2010 (n = 29)	2011 (n = 14)	2010 (n = 29)	2011 (n = 14)	2010 (n = 29)	2011 (n = 14)
Problems with dock/dock ramp	10.3%	—	5.3%	7.3%	25.9%	16.7%	24.0%	—
Problems with parking lot	—	—	—	—	—	—	—	—
Ramp angle too steep	—	—	5.3%	—	—	—	4.0%	2.6%
Ramp not long enough	17.2%	7.1%	—	2.4%	3.7%	2.1%	4.0%	—
Rough launch	—	—	10.5%	2.4%	—	—	—	—
Rough road	3.4%	7.1%	10.5%	—	—	—	—	—
Too crowded	—	14.3%	5.3%	—	—	—	—	—
Too high	—	—	—	—	—	—	—	—
Too narrow/not wide enough	3.4%	—	—	—	—	—	—	—
Too sandy/muddy	—	—	—	4.9%	—	—	—	—
Washrooms needed	3.4%	7.1%	—	2.4%	—	4.2%	—	—
Water levels	10.3%	—	21.1%	9.8%	3.7%	6.3%	—	—
No problems/positive comment	17.2%	28.6%	5.3%	41.5%	18.5%	10.4%	16.0%	65.8%
Other	6.9%	7.1%	—	12.2%	7.4%	22.9%	16.0%	21.1%
Multiple	—	—	—	4.9%	—	8.3%	—	2.6%

Table 52. What do you like least about the boat ramp facility that you visited today – Fauquier Community Park Boat Launch & MacDonald Creek Provincial Park?

Response Categories	Fauquier Community Park Boat Launch				MacDonald Creek Provincial Park			
	2010 (n = 32)	2011 (n = 7)	2012 (n = 9)	2013 (n = 20)	2010 (n = 12)	2011 (n = 4)	2012 (n = 8)	2013 (n = 68)
Debris	3.1%	—	—	—	—	—	—	1.5%
Did not use today	—	—	—	—	—	—	—	—
Docks too far from shore	—	—	—	—	—	—	—	—
Hard to get to	—	—	—	—	—	—	—	—

Table 52 (cont'd). What do you like least about the boat ramp facility that you visited today – Fauquier Community Park Boat Launch & MacDonald Creek Provincial Park?

Response Categories	Fauquier Community Park Boat Launch				MacDonald Creek Provincial Park			
	2010 (n = 32)	2011 (n = 7)	2010 (n = 32)	2011 (n = 7)	2010 (n = 32)	2011 (n = 7)	2010 (n = 32)	2011 (n = 7)
Hard to use	—	—	—	—	—	—	—	—
Improvements needed for all components	15.6%	—	—	—	—	—	—	—
More parking needed	—	—	—	—	16.7%	—	—	1.5%
Needs barrier-free access	—	—	—	—	—	—	—	—
Needs picnic area	—	—	—	5.0%	—	—	—	—
No boat launch	—	—	—	—	—	—	—	—
No boat tie-ups	—	—	—	—	—	—	—	—
No wharf	—	—	—	—	—	—	—	—
Not enough room to turn around/load/unload	—	—	—	—	—	—	—	—
Not safe	—	—	—	—	—	—	—	—
Not well maintained/not clean	3.1%	—	—	—	8.3%	—	—	—
Problems with breakwater	—	14.3%	11.1%	5.0%	—	—	—	—
Problems with dock/dock ramp	37.5%	—	—	—	33.3%	—	—	—
Problems with parking lot	3.1%	—	—	—	—	25.0%	—	—
Ramp angle too steep	3.1%	14.3%	—	—	—	—	—	—
Ramp not long enough	6.3%	—	—	—	—	—	—	—
Rough launch	—	—	—	—	—	—	—	—
Rough road	—	—	—	—	—	—	—	—
Too crowded	3.1%	—	—	—	8.3%	—	—	1.5%
Too high	—	—	—	—	—	—	—	—
Too narrow/not wide enough	—	14.3%	—	—	—	25.0%	12.5%	—
Too sandy/muddy	3.1%	—	—	15.0%	—	—	—	—
Washrooms needed	—	—	—	—	—	—	—	—
Water levels	15.6%	—	11.1%	—	—	—	—	—
No problems/positive comment	—	57.1%	55.6%	70.0%	16.7%	25.0%	12.5%	94.1%
Other	6.3%	—	22.2%	5.0%	16.7%	25.0%	62.5%	1.5%
Multiple	—	—	—	—	—	—	12.5%	—

Table 53. What do you like least about the boat ramp facility that you visited today – Nakusp Boat Launch & Nakusp Beach?

Response Categories	Nakusp Boat Launch				Nakusp Beach			
	2010 (n = 42)	2011 (n = 45)	2012 (n = 20)	2013 (n = 88)	2010 (n = 13)	2011 (n = 16)	2012 (n = 20)	2013 (n = 69)
Debris	—	2.2%	5.0%	1.1%	—	—	—	—
Did not use today	—	4.4%	5.0%	—	7.7%	6.3%	—	1.4%
Docks too far from shore	—	—	—	1.1%	—	—	—	—
Hard to get to	—	—	—	—	—	—	—	1.4%
Hard to use	—	—	—	—	—	—	—	—
Improvements needed for all components	9.5%	6.7%	5.0%	1.1%	15.4%	18.8%	—	—
More parking needed	4.8%	—	—	4.5%	—	—	—	1.4%
Needs barrier-free access	—	—	—	—	—	—	—	—
Needs picnic area	—	—	—	—	—	—	—	—
No boat launch	—	—	—	—	—	—	—	—
No boat tie-ups	—	—	—	—	—	—	—	—
No wharf	—	—	—	—	—	—	—	—
Not enough room to turn around/load/unload	2.4%	—	—	—	—	—	—	—
Not safe	4.8%	2.2%	—	—	—	6.3%	15.0%	—
Not well maintained/not clean	16.7%	13.3%	10.0%	—	7.7%	25.0%	10.0%	—
Problems with breakwater	2.4%	—	—	2.3%	—	—	—	1.4%
Problems with dock/dock ramp	2.4%	6.7%	35.0%	1.1%	7.7%	—	20.0%	1.4%
Problems with parking lot	—	—	—	—	23.1%	—	5.0%	1.4%
Ramp angle too steep	4.8%	2.2%	—	2.3%	—	6.3%	—	—
Ramp not long enough	—	—	—	2.3%	—	—	—	—
Rough launch	—	—	10.0%	1.1%	—	—	5.0%	—
Rough road	—	—	—	—	—	—	—	—
Too crowded	—	—	5.0%	1.1%	7.7%	—	—	1.4%
Too high	—	—	—	—	—	—	—	—
Too narrow/not wide enough	4.8%	2.2%	—	—	—	—	5.0%	—

Table 53 (cont'd). What do you like least about the boat ramp facility that you visited today – Nakusp Boat Launch & Nakusp Beach?

Response Categories	Nakusp Boat Launch				Nakusp Beach			
	2010 (n = 42)	2011 (n = 45)	2010 (n = 42)	2011 (n = 45)	2010 (n = 42)	2011 (n = 45)	2010 (n = 42)	2011 (n = 45)
Too sandy/muddy	—	—	—	—	—	—	—	—
Washrooms needed	—	—	—	—	—	—	—	—
Water levels	11.9%	4.4%	—	3.4%	—	—	—	1.4%
No problems/positive comment	14.3%	22.2%	5.0%	51.1%	30.8%	18.8%	15.0%	85.5%
Other	16.7%	24.4%	15.0%	20.5%	—	12.5%	20.0%	2.9%
Multiple	4.8%	8.9%	5.0%	6.8%	—	6.3%	5.0%	—

Table 54. What do you like least about the boat ramp facility that you visited today – Revelstoke Boat Launch & Shelter Bay?

Response Categories	Revelstoke Boat Launch				Shelter Bay			
	2010 (n = 8)	2011 (n = 9)	2012 (n = 6)	2013 (n = 19)	2010 (n = 23)	2011 (n = 19)	2012 (n = 17)	2013 (n = 68)
Debris	—	—	—	—	4.3%	—	29.4%	—
Did not use today	—	—	—	—	—	—	—	—
Docks too far from shore	—	—	16.7%	—	—	—	—	—
Hard to get to	—	—	—	—	—	—	—	—
Hard to use	—	—	—	—	—	—	—	—
Improvements needed for all components	12.5%	11.1%	—	10.5%	8.7%	10.5%	—	4.4%
More parking needed	—	—	—	5.3%	4.3%	15.8%	—	1.5%
Needs barrier-free access	—	—	—	—	—	—	—	—
Needs picnic area	—	—	—	—	—	—	—	—
No boat launch	—	—	—	—	—	—	—	—
No boat tie-ups	—	11.1%	—	—	8.7%	—	—	—
No wharf	—	—	—	—	—	—	—	—
Not enough room to turn around/load/unload	—	—	—	—	—	—	—	—
Not safe	—	11.1%	16.7%	—	—	—	—	—
Not well maintained/not clean	12.5%	11.1%	—	10.5%	8.7%	5.3%	—	5.9%
Problems with breakwater	—	—	—	—	21.7%	5.3%	—	5.9%
Problems with dock/dock ramp	12.5%	—	—	5.3%	26.1%	15.8%	5.9%	7.4%
Problems with parking lot	—	—	16.7%	—	—	5.3%	5.9%	—
Ramp angle too steep	—	—	—	—	—	—	5.9%	—
Ramp not long enough	—	—	—	—	—	—	—	—
Rough launch	—	—	—	5.3%	—	—	—	—
Rough road	—	—	—	—	4.3%	—	—	—
Too crowded	—	22.2%	—	—	—	—	—	4.4%
Too high	12.5%	—	—	—	—	—	—	—
Too narrow/not wide enough	—	—	—	—	8.7%	—	5.9%	4.4%

Table 54 (cont'd). What do you like least about the boat ramp facility that you visited today – Revelstoke Boat Launch & Shelter Bay?

Response Categories	Revelstoke Boat Launch				Shelter Bay			
	2010 (n = 8)	2011 (n = 9)	2010 (n = 8)	2011 (n = 9)	2010 (n = 8)	2011 (n = 9)	2010 (n = 8)	2011 (n = 9)
Too sandy/muddy	—	—	—	—	—	5.3%	—	—
Washrooms needed	—	—	—	—	—	5.3%	—	—
Water levels	12.5%	—	33.3%	15.8%	—	—	5.9%	1.5%
No problems/positive comment	25.0%	11.1%	16.7%	42.1%	4.3%	10.5%	17.6%	44.1%
Other	12.5%	11.1%	—	—	—	15.8%	11.8%	13.2%
Multiple	—	11.1%	—	5.3%	—	5.3%	11.8%	7.4%

Table 55. What do you like least about the boat ramp facility that you visited today – Syringa Creek Park Boat Launch & Syringa Creek Park Day Use?

Response Categories	Syringa Creek Park Boat Launch				Syringa Creek Park Day Use			
	2010 (n = 33)	2011 (n = 46)	2012 (n = 38)	2013 (n = 38)	2010 (n = 21)	2011 (n = 21)	2012 (n = 28)	2013 (n = 99)
Debris	—	8.7%	15.8%	2.6%	9.5%	—	10.7%	—
Did not use today	—	—	2.6%	—	4.8%	9.5%	7.1%	1.0%
Docks too far from shore	6.1%	2.2%	2.6%	—	—	—	3.6%	1.0%
Hard to get to	3.0%	—	—	—	—	—	—	—
Hard to use	—	—	—	—	—	—	—	—
Improvements needed for all components	3.0%	—	—	—	4.8%	—	—	—
More parking needed	3.0%	4.3%	2.6%	5.3%	—	—	3.6%	4.0%
Needs barrier-free access	—	—	—	—	—	—	—	—
Needs picnic area	—	—	—	—	—	—	—	—
No boat launch	—	—	—	—	—	—	—	—
No boat tie-ups	—	—	—	—	—	—	3.6%	—
No wharf	—	—	—	—	—	—	—	—
Not enough room to turn around/load/unload	—	—	—	—	—	4.8%	—	—
Not safe	—	—	—	—	—	—	—	—
Not well maintained/not clean	6.1%	—	—	—	—	—	—	1.0%
Problems with breakwater	15.2%	4.3%	—	10.5%	28.6%	4.8%	3.6%	1.0%
Problems with dock/dock ramp	—	6.5%	5.3%	21.1%	9.5%	—	7.1%	2.0%
Problems with parking lot	3.0%	—	2.6%	—	—	—	21.4%	—
Ramp angle too steep	—	—	2.6%	—	4.8%	—	—	—
Ramp not long enough	6.1%	10.9%	—	—	—	—	—	—
Rough launch	—	—	—	—	—	—	—	—
Rough road	—	—	—	—	—	—	—	—
Too crowded	6.1%	10.9%	13.2%	5.3%	9.5%	19.0%	3.6%	9.1%
Too high	—	—	2.6%	—	—	—	—	—
Too narrow/not wide enough	—	—	2.6%	2.6%	—	4.8%	—	1.0%

Table 55 (cont'd). What do you like least about the boat ramp facility that you visited today – Syringa Creek Park Boat Launch & Syringa Creek Park Day Use?

Response Categories	Syringa Creek Park Boat Launch				Syringa Creek Park Day Use			
	2010 (n = 33)	2011 (n = 46)	2010 (n = 33)	2011 (n = 46)	2010 (n = 33)	2011 (n = 46)	2010 (n = 33)	2011 (n = 46)
Too sandy/muddy	—	—	—	—	—	—	—	—
Washrooms needed	—	—	—	—	4.8%	—	—	—
Water levels	15.2%	15.2%	13.2%	7.9%	14.3%	4.8%	7.1%	4.0%
No problems/positive comment	21.2%	10.9%	15.8%	42.1%	—	14.3%	7.1%	68.7%
Other	12.1%	15.2%	10.5%	—	9.5%	19.0%	14.3%	6.1%
Multiple	—	10.9%	7.9%	2.6%	—	19.0%	7.1%	1.0%

Table 56. How did you first hear about recreation opportunities and activities near and on the Arrow Lakes?

Information Source	2009 (n = 126)		2010 (n = 563)		2011 (n = 652)		2012 (n = 522)		2013 (n = 715)	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Tourism information booth	5	4.0%	21	3.7%	21	3.2%	17	3.3%	24	3.4%
Family	51	40.5%	261	46.4%	263	40.3%	242	46.4%	348	48.7%
BC Hydro web site	3	2.4%	4	0.7%	2	0.3%	4	0.1%	4	0.6%
Tourism information brochures	6	4.8%	31	5.5%	38	5.8%	34	6.5%	53	7.4%
Friends	77	61.1%	311	55.2%	342	52.5%	289	55.4%	406	56.8%
BC Hydro facility (*e.g.*, Revelstoke Dam)	2	1.6%	4	0.7%	3	0.5%	6	1.1%	6	0.8%
Tourism operators	0	0.0%	3	0.5%	6	0.9%	7	1.3%	10	1.4%
BC Parks	17	13.5%	58	10.3%	97	14.9%	87	16.7%	101	14.1%
BC Hydro bill	1	0.8%	2	0.4%	0	0.0%	1	0.2%	2	0.3%
Private marinas	2	1.6%	10	1.8%	10	1.5%	7	1.3%	12	1.7%
BC Forest Service	0	0.0%	29	5.2%	30	4.6%	25	4.8%	43	6.0%
Other	29	23.0%	151	26.8%	164	25.2%	115	22.0%	137	19.2%

Question 7: Respondents' Demographic Characteristics.

Table 57. Respondent age.

Year	n	Min	Max	Mean†	95% CI	SD
2009	121	17	79	52.1	± 2.5	14.243
2010	569	13	109	51.2	± 1.1	13.900
2011	652	12	120	53.4	± 1.5	19.075
2012	528	14	85	52.3	± 1.2	14.243
2013	695	14	84	49.2	± 1.1	15.277

† The mean age of 2013 respondents was significantly lower than of 2011 and 2012 respondents ($F_W(4, 706.625) = 5.878$, $p < .001$).

Table 58. Respondent's gender†.

2009 (n = 123)		2010 (n = 570)		2011 (n = 624)		2012 (n = 527)		2013 (n = 695)	
Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
77.2%	22.8%	67.0%	33.0%	64.1%	35.9%	63.4%	36.6%	59.35	40.7%

† The percentage of female 2009 respondents was significantly lower than other years; the percentage of female respondents in 2013 was significantly higher than other years ($\chi^2 = 21.464$, df = 4, $p < .01$; Cramer's V = 0.092).

Table 59. How long have you lived in your community?

Year	n	Min	Max	Mean†	95% CI	SD
2009	120	0	64	23.9	± 3.1	17.286
2010	565	0	78	25.5	± 1.5	17.908
2011	615	0	77	23.7	± 1.3	16.831
2012	517	0	73	25.1	± 1.4	16.545
2013	683	0	79	24.9	± 1.3	17.069

† The mean number of years that respondents had lived in their communities did not differ significantly by year.

Table 60. Respondents' communities of residence: British Columbia within 80km of Arrow Lakes (*i.e.*, local residents).

Community	2009 (n = 121)		2010 (n = 563)		2011 (n = 619)		2012 (n = 524)		2013 (n = 695)	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
AREA RESIDENTS	*78*	*64.5%*	*379*	*67.3%*	*362*	*58.5%*	*290*	*55.3%*	*401*	*57.7%*
Arrow Park	0	0.0%	1	0.2%	0	0.0%	2	0.4%	1	0.1%
Balfour	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Brilliant	0	0.0%	0	0.0%	3	0.5%	0	0.0%	2	0.3%
Burton	1	0.8%	13	2.3%	5	0.8%	11	2.1%	4	0.6%
Caribou Point	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Castlegar	16	13.2%	83	14.7%	85	13.7%	70	13.4%	77	11.1%
Crescent Valley	0	0.0%	3	0.5%	1	0.2%	1	0.2%	2	0.3%
Deer Park	0	0.0%	1	0.2%	1	0.2%	0	0.0%	0	0.0%
East Arrow Park	0	0.0%	1	0.2%	0	0.0%	0	0.0%	0	0.0%
Edgewood	15	12.4%	34	6.0%	52	8.4%	23	4.4%	26	3.7%
Fauquier	0	0.0%	26	4.6%	7	1.1%	12	2.3%	16	2.3%
Fruitvale	1	0.8%	5	0.9%	9	1.5%	9	1.7%	9	1.3%
Galena Bay	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Genelle	2	1.7%	11	2.0%	3	0.5%	5	1.0%	6	0.9%
Glade	0	0.0%	1	0.2%	0	0.0%	1	0.2%	1	0.1%
Glenbank	1	0.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Hills, BC	0	0.0%	1	0.2%	0	0.0%	3	0.6%	2	0.3%
Inonoaklin	0	0.0%	0	0.0%	0	0.0%	2	0.4%	0	0.0%
kootneys	0	0.0%	0	0.0%	0	0.0%	3	0.6%	3	0.4%
krestova	0	0.0%	0	0.0%	0	0.0%	1	0.2%	2	0.3%
Montrose, BC	0	0.0%	2	0.4%	2	0.3%	1	0.2%	5	0.7%
Naksup	14	11.6%	71	12.6%	59	9.5%	54	10.3%	89	12.8%
Nelson	2	1.7%	8	1.4%	20	3.2%	10	1.9%	6	0.9%

Table 60 (cont'd). Respondents' communities of residence: British Columbia within 80km of Arrow Lakes (*i.e.*, local residents).

Community	2009 (n = 121)		2010 (n = 563)		2011 (n = 619)		2012 (n = 524)		2013 (n = 695)	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
New Denver	0	0.0%	2	0.4%	1	0.2%	0	0.0%	3	0.4%
Ootischenia	0	0.0%	2	0.4%	2	0.3%	0	0.0%	2	0.3%
Pass Creek	1	0.8%	1	0.2%	4	0.6%	0	0.0%	0	0.0%
Raspberry	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Renata	0	0.0%	12	2.1%	4	0.6%	2	0.4%	2	0.3%
Revelstoke	16	13.2%	53	9.4%	43	6.9%	36	6.9%	79	11.4%
Robson	3	2.5%	12	2.1%	13	2.1%	9	1.7%	11	1.6%
Rossland	2	1.7%	5	0.9%	12	1.9%	11	2.1%	9	1.3%
Salmo	1	0.8%	7	1.2%	1	0.2%	1	0.2%	3	0.4%
Silverton	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Slocan Park	0	0.0%	3	0.5%	4	0.6%	1	0.2%	0	0.0%
Slocan Valley	0	0.0%	1	0.2%	0	0.0%	1	0.2%	0	0.0%
South Slocan	0	0.0%	1	0.2%	2	0.3%	3	0.6%	1	0.1%
Thrums	0	0.0%	5	0.9%	1	0.2%	1	0.2%	2	0.3%
Trail	2	1.7%	10	1.8%	26	4.2%	14	2.7%	32	4.6%
Valemount	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Vallican	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Warfield	1	0.8%	3	0.5%	1	0.2%	1	0.2%	1	0.1%
Ymir	0	0.0%	1	0.2%	1	0.2%	0	0.0%	0	0.0%

Table 61. Respondents' communities of residence: British Columbia greater than 80km of Arrow Lakes (*i.e.*, tourists).

Community	2009 (n = 121)		2010 (n = 563)		2011 (n = 619)		2012 (n = 524)		2013 (n = 695)	
	Freq.	%	Freq.	%	Freq.		Freq.	%	Freq.	%
BC RESIDENTS	*36*	*29.8%*	*117*	*20.8%*	*158*	*25.5%*	*161*	*30.7%*	*166*	*23.9%*
100 mile house	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
108 mile ranch	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Abbotsford	0	0.0%	1	0.2%	3	0.5%	1	0.2%	2	0.3%
Agassiz	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Angel Falls	0	0.0%	1	0.2%	0	0.0%	0	0.0%	0	0.0%
Armstrong	1	0.8%	8	1.4%	3	0.5%	5	1.0%	8	1.2%
Arrow Heights	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Big Eddy	0	0.0%	0	0.0%	1	0.2%	0	0.0%	1	0.1%
Blind Bay	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Burnaby	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Campbell River	0	0.0%	0	0.0%	2	0.3%	0	0.0%	0	0.0%
Canoe	0	0.0%	1	0.2%	0	0.0%	0	0.0%	0	0.0%
Chase	0	0.0%	0	0.0%	4	0.6%	0	0.0%	0	0.0%
Cherryville	0	0.0%	2	0.4%	1	0.2%	3	0.6%	1	0.1%
Chilliwack	0	0.0%	0	0.0%	3	0.5%	1	0.2%	2	0.3%
Coldstream	0	0.0%	2	0.4%	2	0.3%	0	0.0%	0	0.0%
Cranbrook	1	0.8%	1	0.2%	1	0.2%	6	1.1%	1	0.1%
Crescent Bay	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Creston	0	0.0%	0	0.0%	1	0.2%	2	0.4%	4	0.6%
Crofton	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Crossfield	0	0.0%	0	0.0%	1	0.2%	0	0.0%	1	0.1%
Dawson Creek	0	0.0%	0	0.0%	1	0.2%	1	0.2%	0	0.0%
Delta, BC	0	0.0%	1	0.2%	0	0.0%	0	0.0%	3	0.4%
Duncan	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%

Table 61 (cont'd). Respondents' communities of residence: British Columbia greater than 80km of Arrow Lakes (*i.e.*, tourists).

Community	2009 (n = 121)		2010 (n = 563)		2011 (n = 619)		2012 (n = 524)		2013 (n = 695)	
	Freq.	%	Freq.	%	Freq.		Freq.	%	Freq.	%
Edson	0	0.0%	1	0.2%	0	0.0%	0	0.0%	0	0.0%
Elk Point	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Enderby	2	1.7%	2	0.4%	2	0.3%	2	0.4%	2	0.3%
Evans	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Falkland	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Fort St. John	0	0.0%	0	0.0%	1	0.2%	0	0.0%	2	0.3%
Gibsons	0	0.0%	0	0.0%	2	0.3%	0	0.0%	0	0.0%
Golden	0	0.0%	1	0.2%	2	0.3%	3	0.6%	1	0.1%
Grand Forks	0	0.0%	0	0.0%	4	0.6%	0	0.0%	0	0.0%
Halcyon	0	0.0%	0	0.0%	2	0.3%	0	0.0%	0	0.0%
Hope, BC	0	0.0%	1	0.2%	0	0.0%	0	0.0%	0	0.0%
Hudson's Hope	1	0.8%	1	0.2%	0	0.0%	0	0.0%	0	0.0%
Invermere	0	0.0%	0	0.0%	0	0.0%	1	0.2%	1	0.1%
Kaleden	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Kamloops	2	1.7%	4	0.7%	8	1.3%	13	2.5%	8	1.2%
Kaslo	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Kelowna	6	5.0%	19	3.4%	24	3.9%	29	5.5%	32	4.6%
Keremeos	0	0.0%	1	0.2%	0	0.0%	0	0.0%	0	0.0%
Kimberly	1	0.8%	1	0.2%	2	0.3%	0	0.0%	0	0.0%
Lake Country	0	0.0%	0	0.0%	1	0.2%	0	0.0%	2	0.3%
Langley	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	0.3%
Lantzville	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Logan Lake	0	0.0%	1	0.2%	1	0.2%	0	0.0%	3	0.4%
Lone Butte	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Lower Mainland	0	0.0%	0	0.0%	1	0.2%	0	0.0%	1	0.1%

Table 61 (cont'd). Respondents' communities of residence: British Columbia greater than 80km of Arrow Lakes (*i.e.*, tourists).

Community	2009 (n = 121)		2010 (n = 563)		2011 (n = 619)		2012 (n = 524)		2013 (n = 695)	
	Freq.	%	Freq.	%	Freq.		Freq.	%	Freq.	%
Lumby	2	1.7%	4	0.7%	3	0.5%	3	0.6%	0	0.0%
Malakwa	0	0.0%	1	0.2%	0	0.0%	0	0.0%	0	0.0%
Maple Ridge	1	0.8%	1	0.2%	1	0.2%	1	0.2%	0	0.0%
Mayne Island	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Merritt	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Mission	0	0.0%	2	0.4%	1	0.2%	0	0.0%	0	0.0%
Nanaimo	0	0.0%	0	0.0%	0	0.0%	1	0.2%	1	0.1%
New Westminster	0	0.0%	0	0.0%	3	0.5%	0	0.0%	0	0.0%
North Saanich	0	0.0%	1	0.2%	0	0.0%	0	0.0%	0	0.0%
North Vancouver	0	0.0%	3	0.5%	2	0.3%	0	0.0%	1	0.1%
Okanagan	1	0.8%	6	1.1%	5	0.8%	3	0.6%	8	1.2%
Okanagan Falls	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Oliver	0	0.0%	0	0.0%	2	0.3%	0	0.0%	2	0.3%
Oyama	0	0.0%	0	0.0%	1	0.2%	1	0.2%	1	0.1%
Peachland	0	0.0%	1	0.2%	1	0.2%	2	0.4%	1	0.1%
Penticton	1	0.8%	2	0.4%	5	0.8%	5	1.0%	2	0.3%
Pine Lake	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Pitt Meadows	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Port Coquitlam	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Port Moody	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Prince George	2	1.7%	1	0.2%	1	0.2%	0	0.0%	3	0.4%
Princeton	0	0.0%	0	0.0%	1	0.2%	1	0.2%	0	0.0%
Pritchard	1	0.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Quesnel	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%

Table 61 (cont'd). Respondents' communities of residence: British Columbia greater than 80km of Arrow Lakes (*i.e.*, tourists).

Community	2009 (n = 121)		2010 (n = 563)		2011 (n = 619)		2012 (n = 524)		2013 (n = 695)	
	Freq.	%	Freq.	%	Freq.		Freq.	%	Freq.	%
Richmond	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Rivervale	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Salmon Arm	5	4.1%	14	2.5%	8	1.3%	12	2.3%	9	1.3%
Savona	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Scotch Creek	0	0.0%	1	0.2%	0	0.0%	0	0.0%	0	0.0%
Sechelt	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Shuswup	0	0.0%	1	0.2%	1	0.2%	3	0.6%	1	0.1%
Sicamous	4	3.3%	3	0.5%	2	0.3%	1	0.2%	3	0.4%
Sidney	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Sorrento	0	0.0%	1	0.2%	1	0.2%	1	0.2%	0	0.0%
Sparwood	0	0.0%	0	0.0%	1	0.2%	0	0.0%	1	0.1%
Squamish	0	0.0%	1	0.2%	1	0.2%	0	0.0%	0	0.0%
Summerland	1	0.8%	3	0.5%	2	0.3%	2	0.4%	4	0.6%
Summit Lake	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Sunshine Coast	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Surrey	1	0.8%	2	0.4%	3	0.5%	2	0.4%	4	0.6%
Swansea Point	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	0.3%
Tappen	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Tarrys	0	0.0%	0	0.0%	2	0.3%	0	0.0%	0	0.0%
Terrace	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Trout Lake	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	0.3%
Tsawwassen	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Vancouver	0	0.0%	6	1.1%	4	0.6%	12	2.3%	9	1.3%
Vancouver Island	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%

Table 61 (cont'd). Respondents' communities of residence: British Columbia greater than 80km of Arrow Lakes (*i.e.*, tourists).

Community	2009 (n = 121)		2010 (n = 563)		2011 (n = 619)		2012 (n = 524)		2013 (n = 695)	
	Freq.	%	Freq.	%	Freq.		Freq.	%	Freq.	%
Vanderhoof	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Vernon	2	1.7%	12	2.1%	19	3.1%	25	4.8%	21	3.0%
Victoria	1	0.8%	2	0.4%	2	0.3%	4	0.8%	2	0.3%
Westbank	0	0.0%	0	0.0%	1	0.2%	2	0.4%	0	0.0%
Winfield	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%

Table 62. Respondents' communities of residence: Other Canadian Provinces (*i.e.*, tourists).

Community	2009 (n = 121)		2010 (n = 563)		2011 (n = 619)		2012 (n = 524)		2013 (n = 695)	
	Freq.	**%**	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
CANADA	*6*	*5.0%*	*58*	*10.3%*	*84*	*13.6%*	*65*	*12.4%*	*114*	*16.4%*
Canada	0	0.0%	0	0.0%	0	0.0%	1	0.2%	1	0.1%
ALBERTA	*6*	*5.0%*	*50*	*8.9%*	*80*	*12.9%*	*61*	*11.6%*	*105*	*15.1%*
Alberta	1	0.8%	4	*0.7%*	4	0.6%	13	2.5%	12	*1.7%*
Airdrie	0	0.0%	3	*0.5%*	0	0.0%	1	0.2%	1	*0.1%*
Banff	0	0.0%	0	*0.0%*	2	0.3%	0	0.0%	0	*0.0%*
Beaumont	0	0.0%	0	*0.0%*	1	0.2%	0	0.0%	0	*0.0%*
Black Diamond	0	0.0%	0	*0.0%*	0	0.0%	1	0.2%	0	*0.0%*
Calgary	5	4.1%	18	*3.2%*	40	6.5%	25	4.8%	45	*6.5%*
Camrose	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	1	*0.1%*
Canmore	0	0.0%	4	*0.7%*	2	0.3%	3	0.6%	3	*0.4%*
Carstairs	0	0.0%	1	*0.2%*	0	0.0%	0	0.0%	0	*0.0%*
Cochrane	0	0.0%	1	*0.2%*	1	0.2%	0	0.0%	2	*0.3%*
Cremona	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	1	*0.1%*
Deerrun	0	0.0%	1	*0.2%*	0	0.0%	0	0.0%	0	*0.0%*
Didsbury	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	1	*0.1%*
Donnelly	0	0.0%	1	*0.2%*	0	0.0%	0	0.0%	0	*0.0%*
Edmonton	0	0.0%	7	*1.2%*	8	1.3%	8	1.5%	14	*2.0%*
Fort Macleod	0	0.0%	0	*0.0%*	1	0.2%	0	0.0%	0	*0.0%*
Fort McMurray	0	0.0%	0	*0.0%*	1	0.2%	0	0.0%	1	*0.1%*
Fort Saskatchewan	0	0.0%	0	*0.0%*	1	0.2%	0	0.0%	0	*0.0%*
Grand Cache	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	1	*0.1%*
Grande Prairie	0	0.0%	2	*0.4%*	3	0.5%	1	0.2%	2	*0.3%*
Innisfail	0	0.0%	0	*0.0%*	1	0.2%	0	0.0%	0	*0.0%*
Jasper	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	1	*0.1%*

Table 62 (cont'd). Respondents' communities of residence: Other Canadian Provinces (*i.e.*, tourists).

Community	2009 (n = 121)		2010 (n = 563)		2011 (n = 619)		2012 (n = 524)		2013 (n = 695)	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Keephills	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	1	*0.1%*
Keoma	0	0.0%	0	*0.0%*	0	0.0%	1	0.2%	0	*0.0%*
Legal	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	1	*0.1%*
Lethbridge	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	3	*0.4%*
Linden	0	0.0%	0	*0.0%*	1	0.2%	0	0.0%	0	*0.0%*
Lyalta	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	1	*0.1%*
Medicine Hat	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	2	*0.3%*
Millarville	0	0.0%	0	*0.0%*	0	0.0%	1	0.2%	1	*0.1%*
Millet	0	0.0%	0	*0.0%*	1	0.2%	0	0.0%	0	*0.0%*
Northern Alberta	0	0.0%	1	*0.2%*	0	0.0%	0	0.0%	0	*0.0%*
Olds	0	0.0%	0	*0.0%*	1	0.2%	1	0.2%	1	*0.1%*
Rainbow Lake	0	0.0%	0	*0.0%*	1	0.2%	0	0.0%	0	*0.0%*
Red Deer	0	0.0%	1	*0.2%*	5	0.8%	2	0.4%	3	*0.4%*
Rimbey	0	0.0%	1	*0.2%*	1	0.2%	0	0.0%	0	*0.0%*
Rocky Mountain House	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	1	*0.1%*
Sherwood Park	0	0.0%	0	*0.0%*	1	0.2%	2	0.4%	0	*0.0%*
Spruce Grove	0	0.0%	1	*0.2%*	0	0.0%	0	0.0%	1	*0.1%*
Spruce View	0	0.0%	1	*0.2%*	0	0.0%	0	0.0%	0	*0.0%*
St. Albert	0	0.0%	1	*0.2%*	0	0.0%	0	0.0%	0	*0.0%*
Stettler	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	1	*0.1%*
Stony Plain	0	0.0%	0	*0.0%*	1	0.2%	1	0.2%	0	*0.0%*
Strathcona Country	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	1	*0.1%*
Sundre	0	0.0%	0	*0.0%*	2	0.3%	1	0.2%	0	*0.0%*
Tofield	0	0.0%	1	*0.2%*	0	0.0%	0	0.0%	0	*0.0%*
Turner Valley	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	1	*0.1%*

Table 62 (cont'd). Respondents' communities of residence: Other Canadian Provinces (*i.e.*, tourists).

Community	2009 (n = 121)		2010 (n = 563)		2011 (n = 619)		2012 (n = 524)		2013 (n = 695)	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Warner	0	0.0%	1	*0.2%*	0	0.0%	0	0.0%	0	*0.0%*
Wetaskinin	0	0.0%	0	*0.0%*	1	0.2%	0	0.0%	0	*0.0%*
Whitecourt	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	1	*0.1%*
Xfield	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	1	*0.1%*
SASKACHEWAN	*0*	*0.0%*	*2*	*0.4%*	*0*	*0.0%*	*1*	0.2%	*3*	*0.4%*
Saskatchewan	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	1	*0.1%*
Estevan	0	0.0%	0	*0.0%*	0	0.0%	1	0.2%	0	*0.0%*
Prince Albert	0	0.0%	1	*0.2%*	0	0.0%	0	0.0%	0	*0.0%*
Regina	0	0.0%	1	*0.2%*	0	0.0%	0	0.0%	1	*0.1%*
Saskatoon	0	0.0%	0	*0.0%*	0	0.0%	0	0.0%	1	*0.1%*
MANITOBA	*0*	*0.0%*	*1*	*0.2%*	*1*	*0.2%*	*0*	*0.0%*	*0*	*0.0%*
Manitoba	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Whiteshell	0	0.0%	1	0.2%	0	0.0%	0	0.0%	0	0.0%
ONTARIO	*0*	*0.0%*	*3*	*0.5%*	*2*	*0.3%*	*1*	*0.2%*	*3*	*0.4%*
Ontario	0	0.0%	2	0.4%	1	0.2%	0	0.0%	1	0.1%
Makham	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Mississauga	0	0.0%	1	0.2%	0	0.0%	0	0.0%	0	0.0%
Ottawa	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Port Colborne	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Waubaushemei	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
QUEBEC	*0*	*0.0%*	*0*	*0.0%*	*0*	*0.0%*	*0*	*0.0%*	*2*	*0.3%*
Montreal	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	0.3%
NOVA SCOTIA	*0*	*0.0%*	*1*	*0.2%*	*0*	*0.0%*	*0*	*0.0%*	*0*	*0.0%*
Nova Scotia	0	0.0%	1	0.2%	0	0.0%	0	0.0%	0	0.0%

Table 62 (cont'd). Respondents' communities of residence: Other Canadian Provinces (*i.e.*, tourists).

Community	2009 (n = 121)		2010 (n = 563)		2011 (n = 619)		2012 (n = 524)		2013 (n = 695)	
	Freq.	**%**	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**	**Freq.**	**%**
NEWFOUNDLAND	*0*	*0.0%*	*1*	*0.2%*	*0*	*0.0%*	*0*	*0.0%*	*0*	*0.0%*
St. John's	0	0.0%	1	0.2%	0	0.0%	0	0.0%	0	0.0%
YUKON	0	0.0%	0	0.0%	1	0.2%	1	0.2%	0	0.0%
Yukon	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Whitehorse	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%

Table 63. Respondents' communities of residence: International (*i.e.*, tourists).

Community	2009 (n = 121)		2010 (n = 563)		2011 (n = 619)		2012 (n = 524)		2013 (n = 695)	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
INTERNATIONAL	*1*	*0.8%*	*9*	*1.6%*	*15*	*2.4%*	*8*	*1.5%*	*14*	*2.0%*
Austria	1	0.8%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
GERMANY	*0*	*0.0.%*	*1*	*0.2%*	*7*	*1.1%*	*2*	*0.4%*	*4*	*0.6%*
Germany	0	0.0%	0	0.0%	6	1.0%	2	0.4%	3	0.4%
Sulingen	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Munich	0	0.0%	1	0.2%	0	0.0%	0	0.0%	1	0.1%
NETHERLANDS	0	0.0.%	0	0.0%	0	0.0%	1	0.2%	3	0.4%
Netherlands	0	0.0%	0	0.0%	0	0.0%	1	0.2%	2	0.3%
The Hague	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
New Zealand	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
SWITZERLAND	*0*	*0.0%*	*3*	*0.5%*	*2*	*0.4%*	*0*	*0.0%*	*2*	*0.3%*
Switzerland	0	0.0%	3	0.5%	1	0.2%	0	0.0%	2	0.3%
Spiez, Switzerland	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
UNITED KINGDOM	*0*	*0.0%*	*2*	*0.4%*	*2*	*0.4%*	*2*	*0.4%*	*1*	*0.1%*
United Kingdom	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
England	0	0.0%	1	0.2%	0	0.0%	1	0.2%	0	0.0%
London	0	0.0%	1	0.2%	0	0.0%	0	0.0%	0	0.0%
Frodsham	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Scotland	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Wales	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%

Table 63 (cont'd). Respondents' communities of residence: International (*i.e.*, tourists).

Community	2009 (n = 121)		2010 (n = 563)		2011 (n = 619)		2012 (n = 524)		2013 (n = 695)	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%
UNITED STATES	0	0.0%	3	0.5%	4	0.6%	2	0.4%	3	0.4%
United States	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Gainesville, KT	0	0.0%	0	0.0%	0	0.0%	0	0.0%	1	0.1%
Kent, WA	0	0.0%	1	0.2%	0	0.0%	0	0.0%	0	0.0%
Methow Valley, WA	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Missoula, MT	0	0.0%	0	0.0%	1	0.2%	1	0.2%	0	0.0%
Reno, NV	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%
Spokane WA	0	0.0%	2	0.4%	0	0.0%	0	0.0%	1	0.1%
Utah	0	0.0%	0	0.0%	0	0.0%	1	0.2%	0	0.0%
Wyoming	0	0.0%	0	0.0%	1	0.2%	0	0.0%	0	0.0%

Table 64. Membership in outdoor recreation clubs or organizations.

Year	n	%
2009	126	27.8%
2010	587	21.8%
2011	652	26.1%
2012	550	21.8%
2013	715	25.5%

† Membership in outdoor recreation clubs did not differ significantly by year.

APPENDIX H – RESPONDENT GENERAL COMMENTS

The following tables summarize respondent comments by site for each year (2009-2013).

Table 65. Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

ANDERSON POINT
2010 (n = 24)
The survey mostly has to do with recreational use but a lot of people including us live across the lake 7/8 months of the year, and some full time. We need this launch so we have access to town for doctors, hospitals, health care, to bring in living supplies and in case of emergencies.
A beautiful area, love it! But, hate inconvenience like no boat space, no parking, water going up and down.
A bridge over Renata creek! Would be excellent!
Build a boat ramp!
Constant water levels would be preferred. The higher the better.
Houseboats always dump their waste into the lake. We do not like this because some people drink the water.
I am annoyed when summer water levels are too low and one has to hike down with all your swimming/kayaking gear every day. Canadians should have a full pond before giving any away to the Americans.
Make water level more consistent.
More access points to Arrow Lakes.
Need docks boat launch. Water levels need to be more consistent high.
Nice place to live.
Obviously — water level consistency during peak months would only be a positive factor for all recreation users.
Recreational activities enhance the area and can provide an economic boom for the area, which could promote the area to have a focus of fun and entertainment.
Residents need proper year round boat launch, but docking and parking at Anderson Point. Also proper camping facility other than Syringa Park.
Road to Anderson needs more plowing- boat ramp needs to be built.
The Kokanee limit should be 15. The locals think they own this area, not very polite
This is where we live so we need a better boat ramping also there isn't one now. We find it very hard to leave the boat when we have to go to town.
To increase the limit on Kokanee from 5 to 15 at least.

Table 65 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
ANDERSON POINT (cont'd)
2010 (n = 24)
Use Anderson Point as access to home for emergency access, for supplies. Definitely need a ramp put in, all got promises and promises with no action.
Way of life: fishing, living are primary activities and important to our life styles on the lake. Please keep "high" water about 1m lower, our shoreline erodes at high water and all beaches are lost.
We like the isolation, non-commercial private, off the main grid.
We need consistent water level especially during peak season. A regulated wharf. Decent parking. Signs and policing of over night camping in residents park. No camping. No parking signs.
Will I be alive to see a dock and boat ramp at Anderson Point?!?
Would like to see a higher limit for Kokanee.
2011 (n = 11)
Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Bigger boat launch and parking lot.
I hope this lake does not get over developed.
I like that this lake is usually not busy and it's warmer than Kootney lake. We enjoy boating activities and this is a great lake for it. More campgrounds please! Forestry campsites would be great (with docks for boats).
Keep it accessible.
Needs new road, docks, as stated above.
Renata is a very safe, clean area — off the main grid — peaceful. I would like to keep it that way.
The boat launch at Renata needs a lot of help!
The water level is too high. No shore and land erosion.
There should be a designated area for ATVs. This will keep them off the road.
To protect what areas are left in the Kootneys, tourism should not be promoted in the Arrow Lakes area. "in wilderness is the preservation of the world".
2012 (n = 6)
Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Clean up wood on lakeshore.
I\'d like to see improvements to recreation areas and roadways.

Table 65 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
ANDERSON POINT (cont'd)
2010 (n = 24)
Lake level does not matter, fluctuations in the level cause the problems with excessive driftwood, erosion, loss of access, stabilization of level would be a better option.
Syringa needs more floats, larger breakwaters.
We would like the boat ramp done this year! The bay of dog creek has a lot of driftwood that needs to be cleared up. Need more parking places.
We would like to see the boat launch completed at Anderson Point ASAP, as promised. The questions above are not pertinent because there is no boat ramp/launch where we are (Anderson Point).
2013 (n = 17)
Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
BC Parks have restricted too much of the access to the lake. Tulip creek and more. There was a public beach called driftwood bay that was used for a canal to the new powerhouse, but no public area returned.
Beautiful.
Dangerous single boom log tethered north of Gladstone Creek and islands north of that should have flags or buoys for people not knowing they exist.
Good job on the boat launch at Anderson Point, its awesome, keep up the good work.
Great ramp.
If deer park doesn't want their proposed launch, Renata could sure use it.
Its a beautiful spot/area to come camp, fish and hang with friends and family.
Keep it that way.

Table 65 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

ANDERSON POINT (cont'd)
2013 (n = 17)
More boat access rec sites would be nice and mooring buoys in deeper water. Not usable at this time.
Need a more usable dock at Renata.
Please put sign up to have people park in lot and leave boat launch clear at Anderson Point.
Stairway at Renata from launch to parking lot.
The Anderson Point boat ramp needs signs in parking lots, plus on ramp for parking. The bottom of the ramp can not be used in low water because it is to steep and big rock, need concrete further into water for winter use.
There could be a fuel station in Nakusp, that would help in tourism on the lake and boaters extend their stay on the water. Fuel in Nakusp is one of the most important things on my list as I travel there via boat frequently.
They need to brush cut more spots to get trailers in, more boat and quad access.
Widen Syringa ramp.
Yes, I did fish here but don't bother anymore. The limit was 25 per day then 18, 15, 10 now 5. I could limit out in 4 hours at 25 and get a few rainbows. Now you cant get 5. Salmon came up here before dams. Now we cant even stock kokanee.

Table 66. Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

Burton Historic Park
2010 (n = 20)
All is good.
Beautiful area, keep as is natural.
Better boat launches needed.
Bring the lake up to a decent level for land owners/ fishing/ swimming and leave it there.
Could be warmer water.
Do you fertilize the lake to improve fishing opportunities?
Historical campsite is beautiful!
I realize this is a Hydro Reservoir but surely local input and possible management would be fair and practiced for all concerned including USA.
Improvement of Kokanee and Bull trout spawning Caribou/Burton Creek long over due.
Its beautiful, lets do our best to preserve its natural beauty!
Love it here.
Maintain a more constant water level on the Arrow Lakes.
More campgrounds (RVs) are needed along the Arrow Lakes.
Need to work to developing additional road access on west side of lake.
Needs a dock at Halcyon, and a marina other than Nakusp.
Quit messing with the water levels!!
Upper Arrow needs another marina other than Nakusp, and if Halcyon doesn't have one they should.
Water sports require a diligent eye to spot logs.
We come from the Netherlands. We are travelling to Nakusp and have a picnic.
We love the Arrow Lakes and use them as much as possible. We value and enjoy the beauty of the lakes and appreciate the work that has been done. Our biggest frustration is regarding the fluctuating levels.
2011 (n = 17)
Arrow Lakes is clean with many good sand beaches when the water levels are 2-3 feet lower.
Can't seem to recall the year but the water level was the lowest we\'d seen making water activities difficult.
Great lake w. Great facilities.

Table 66 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Burton Historic Park (cont'd)
2011 (n = 17)
It is one of the most beautiful areas to be.
It should remain as it is today! Quick level changes should go slower, less than 6" /day.
Keep it as natural as it is. No commerce please, not too many boats, they destroy the peace and quietness of this place.
Love the fact it is not overly developed.
Love this god- place, absolutely love it. Burton Historical campground.
Nothing — we enjoyed here so much! Cost for campsite is very reasonable! Thank you for taking care of this place and we witnessed osprey in this camp.
Power generation time limits should be 7.30 9.30am. 7.30 8.30pm.
Prefer this location for boat ramp much more than new location south of Burton.
Shoreline erosion severe due to varying water levels not allowing vegetation to establish including [illegible] water turbidly.
The main reason I came here was to see the town of Burton. Again, I love the wilderness and beauty of BC. Please take care of it; the world needs BC.
We enjoy coming to the area; the people are friendly.
We liked it very much; the campground near the shore here near burton was very nice.
We love coming to Burton — it is so peaceful and beautiful here. Also love golfing and Fauquier.
Would like to see more access and camping on the Eagle Bay/Fosthall side of the lake.
2012 (n = 25)
Arrow lake ferry is a real bonus for accessing hiking trails.
Better info on hiking trails, if no trails i would appreciate some.
Camping on arrow lakes is peaceful and quiet as you don't have boat and seadoo traffic and no cell service.
Clean up debris from high water.
Debris is the biggest issue.
Fix the boat ramp in Burton.
I can't think of anything that could be done better. The area for the type of recreation we use it for, thank you.
I've grown up with these lakes, forever a pert of me and will always hold a special place in my heart.
If there is consideration to keeping the lake level I think experiences would be better on the lake.

Table 66 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Burton Historic Park (cont'd)
2012 (n = 25)
Keep water levels up.
Love the lakes and burton lakeside campgrounds. Well-maintained and large camping spots.
More campsites in future?
The fishing has gone out of the door since the fish hatchery closed its doors. New boat launch is not adequate for all seasons.
The new boat ramp south of burton is incomplete, not long enough and there is no snow removal. The promise to keep all year boat access has not been met by BC hydro.
The water level is much too high and the debris is a serious problem.
The water levels are awful- no beaches left, and that's why we camp here in particular.
This survey is a damn waste of our tax dollars.
This year the water levels caused extreme shore damage, immense debris on the lake and caused ferry disruption to arrow park.
Too bad cannot do anything about trees and debris on water at high level.
Water levels tend to fluctuate too much.
We enjoy coming to this peaceful place each year for a relaxing vacation away from our busy lifestyles.
We like the lots of trees, large sites, showers are nice, quietness, swimming and jumping off logs into water, fishing, size of sites and being able to put multiple vehicles on one site. We really like it, thanks!
We need a boat ramp for every day of the year, even at low water and during winter.
What surprises me (at end of July and beginning of August) very few insects, and because of that few birds. We saw only 2 or 3 seagulls, an osprey, and a loon with 3 chicks. My neighbour caught a few kokanee trout.
When we are told the water level will reach a high of [illegible] Feet then on the same day that level is met the water is promptly dropped, or dropping water a foot over night. Our boat gets land locked if not watched really closely!!
2013 (n = 18)
ATVs should not be allowed to run on the shores. Noise from some types of boats negatively affect the experience near the lakes.
Do not commercialize it (*i.e.*, no electricity, large tourist resorts *etc*.).
Friends and I have been coming over 20 years to Burton Historic Campground Provincial Park and love the open spaces, fresh water, camp host and nature versus places like Cultus Lake (too crowded).
High water levels years round at least summer June-September.
I am very appreciative to have facilities available to me.

Table 66 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Burton Historic Park (cont'd)
2013 (n = 18)
I'd like to see good stocking program for gerard rainbows and kokanee. Better fishing would bring us back even more.
Levels are somewhat too low for recreational activities.
Lovely area but needs some money put into the area to make improvements.
Please do something about the rubbish; flies and wasps love it.
Please keep it dog friendly.
Quite disappointed new boat launch un-usable today, drop off unsuitable, burton works but needs maintenance!
This site is so beautiful we thoroughly enjoy seeing the view and wildlife.
Uninformed.
Water levels need to be higher.
We come here because of the quietness, so we don't want to see anything more than outboard motor. Thank you. Pay phone in the Burton Campground would be nice.
We love the peace and quiet here, watching the birds. I would love to swim but the water level is way too low this year and being slightly handicapped the water is to far away to get at.
We would prefer to see the level stay high from spring to fall, winter not such a priority for us.
Would be nice to have a wharf to tie the boat up to so i do not have to pull the boat out of the water to go for lunch or overnight.

Table 67. Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

Eagle Bay
2010 (n = 24)
"Keep it wild". Stupendous rivers. Mountains, lakes.
A beautiful place to camp, boat and be with friends and family, the road in is worth it. Quiet with tenting keep most by [illegible] out.
Add voluntary pay boxes to help provide maintenance revenue. Would pay $5/night easily. Maybe $10.
Dock at Shelter bay would be great.
Due to the logging activities in the area the shores of the lake are often cluttered with wood chips, logs and debris inhibiting the use of the shore.
Enjoy the Eagle Bay campsite.
Good fishing.
Great place to be!!!
If the boat ramp is upgraded here you will have too many powerboats here — increasing noise and congestion for people. Love the way it is as more recreational fishing people enjoy this spot for its quietness!
Keep it as natural as possible.
Love it just the way it is.
Love this place.
Make ramp by old Edgewood.
More stable and higher lake levels would be better. Plans for upgraded shelter bay marina and docking facilities would be a huge asset to region.
Need more.
Need more patrol on people putting plugs of their RVs in the park plus parking units in June and remove in August. They use the lakeshore spots as their own private retreat; they are gone all week, units stay, then return on weekends. There is 14 day max?
Need to keep reservoir levels higher.
Nice place. Hope the rowdy's don't wreck it for others.
Please keep the boat launches up to date so we can use them. Thank you!
Please widen the road to Eagle Bay before someone is killed.
Revelstoke needs a new boat ramp.
This place is great and we hope it doesn't change.

Table 67 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Eagle Bay (cont'd)
2010 (n = 24)
Would like the water level to stay higher in the summer.
2011 (n = 15)
Eagle Bay needs a clean up, garbage all over, damaged picnic tables, fire pits not in the proper places.
Everything seems to be great.
Good fishing yesterday.
I do not mind the fact that the lake is a reservoir; it keeps recreational powerboats and vacationers to a minimum.
Lots of floating logs but only on some days.
Love it.
Minimize powerboats and ATVs... Keep area as quiet as possible.
More boat launches/marinas. Running water (taps).
Need boat launch closer to Revelstoke. More shoreline areas need preserving for future recreation/Provincial Park sites.
No other comments.
Really enjoyed our time here. We have enjoyed staying at many of the BC rec sites on our journey to and back from Alaska.
This is a great campsite have had many great vacation here with family and friends.
Usually is a nice quiet place to visit.
Very nice, don't tell anybody…
We like coming to Eagle Bay forestry site but it is a little run down (neglected). Picnic tables need to be repaired, toilets need repairing, fire pits are scattered all over campsites and off site, parking lots etc. Entry roads could use upgrading.
2012 (n = 15)
Control on Eagle Bay forestry campground. More sites entering especially on the north side. Washrooms upgrade! Such a beautiful place — don't let it get run down!!
Eagle bay forestry site needs improved camping sites and be maintained by a caretaker for a cleaner, healthier campsite to enjoy.
Great place, you're doing a great job, couldn't ask for more.
I am really pleased with Eagle Bay; I love Eagle Bay. I have been coming here since I was in my mum's stomach.
I like coming to a site where one does not have to pay to stay and enjoy nature. Paying for firewood is crime when so much dead wood is available.

Table 67 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Eagle Bay (cont'd)
2013 (n = 22)
Last year we lucked out with the campsite being empty and able to camp on the beach; but this year it was extremely busy and hard to find a spot for us and our 3 friends (and it was Tuesday), we did however find a spot and extremely enjoyed ourselves.
Outdoor washrooms need cleaning- possible area for grey and black water dump. Thank you.
Raise the levels! Campsite improvements are great. New tables, better access road grading into site.
The clear cutting made the area ugly and ruined many hiking, mushroom and animal areas. I thought clear cutting was illegal? Also the roads are washing away faster now from it too.
To keep it as natural as possible, no resorts.
Upgrade or build new boat launch in or near Revelstoke on Columbia, saves 100km /day driving to nearest launch (Shelter Bay).
We love Arrow Lakes.
We love this lake.
Wish they hadn't done all that clear cut logging in Eagle Bay area!
Would like to see grey water disposal at Eagle Bay and Shelter Bay campground
A well/hand pump well at Eagle Bay.
All the boat launches need to be upgraded, these forest ref sites need to remain free, they were built for the community in compensation for logging.
Beautiful site at eagle bay, great riding trails.
Boat launch for Columbia river is needed close to or in Revelstoke.
Boat launch was really bad, got stuck with my 4x4.
Close, not too busy.
Don't want to lose to big corporations or over protection (environment).
For years we camped at Octopus Creek fishing was great there; then we found Eagle Bay and fell in love with beautiful mountains and creeks on it lots of places to get out of your boat and go up to see the falls or cast in a bay, greatest place on earth. Hope it never changes. Too much debris in spring coming down the lake but that's all part of the lake. Wish there were more sites like this!
I love the camping facilities and nature.
It's fine how it is.
It's good the way it is.

Table 67 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Eagle Bay (cont'd)
2013 (n = 22)
Keep parts like this as rugged and underdeveloped because that is why some of us keep coming out here year after year. To be surrounded by the outdoors and not have all the comforts of home.
Keep this site from being ruined or decommissioned.
Leave Eagle Bay as is.
Looking forward to coming back.
Love it — leave it the way it is.
More recreational facilities like eagle bay around arrow lake, floating swimming dock offshore.
Provincial parks map and visitors guide/ BC Parks Kootenay brochure.
The road into eagle bay needs some tending to, it is falling apart and gravel is worn down to the rock underneath.
This camping ground is nice and quiet, its a little piece of sanctuary you can come too that\'s not too over populated with tourists. Please don\'t change that and make it a tourist destination.
We don't want to lose it, fix it.
Yes please stop selling us outlet locals have more to say about what you do with our land and recreation sites.

Table 68. Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

Edgewood Community Park
2009 (n = 9)
A beautiful area to visit. Clean and well kept.
At present it is good as there are so few people. People always spoil everything.
Boaters — facilities are not up to par, better ramps and docks and access to fuel. Kokanee — spawning questions. Swimmers — water levels questions. Landmarks — preserving some shorelines, safe harbour bays.
Fish should be restocked in the Arrow Lakes on a regular basis.
I love it here.
If the water level is too low or too high we lose our beaches.
Longer docks would greatly benefit potential recreational usage of the lakes; when lake levels are low there is no place for boats.
Need year round boat access to lake especially in winter, which requires ramp maintenance.
Needs to be fixed up and promoted as a tourist destination. Docks are awful.
2010 (n = 19)
Areas set aside for ATVs. Proper boat docks at Edgewood, Fauquier, and Burton! Hydro rate compensation for water table activities for power generation for residents.
BC hydro needs to upgrade boat launch and perhaps establish small marina in Edgewood's natural bay.
Better water access would be better. Sometime have to go to ferry ramp to put in.
Boat ramp needs to be maintained and accessible all year round, including snow removal and sanding.
Born in Nakusp, raised in Edgewood. Keep big developers out and campgrounds small and simple. Preserve the peaceful and relatively unpopulated feeling
Could use a boat dock and breakwater.
Don't wreck this paradise.
Eagle Creek needs attention for spawning fish.
I don't recommend commercial development anywhere along the lakes, will greatly reduce many people's enjoyment of the area, keep it simple. Not for sale! Limit campsite usage to 10 consecutive days.
I like it the way it is.
I like it the way it is. Further "development" brings pollution unavoidably. I lived in Muskoka, Ontario and watched development ruin the land and waterways. Gas and diesel fuels should be stored as far away as possible. No fuel pumps should be allowed near the reservoir. Preserve the natural beauty of the place.

Table 68 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Edgewood Community Park (cont'd)
2011 (n = 42)
I love Edgewood.
I love it here.
Inconsistent water levels affect the warming of the lake for swimming. Water levels also affect nesting for birds.
Keep water level same up and down.
More fish would be nice.
Not really.
Very beautiful — I'll be back
We need a marina.
Boat ramp: wharf needs upgrade.
Don't commercialize it.
(2) Edgewood needs a dock and wind break. [2 people provided this comment.]
Erosion is an issue from Eagle Creek.
Excited about new docks and lake access.
Fix our boat ramp facility. Stabilize the lake level more. [2 people provided this comment.]
Fix the boat ramp to the specifications of your on judgment. Put the new boat ramp at Killarney (old log dump) across from Edgewood on south side across Eagle Creek.
Great place, never crowded.
Great place, try to keep water levels more stable. Build a bigger boat launch in the same location.
I love it! [2 people provided this comment.]
I trust BC Hydro will make the right decision to upgrade the Edgewood campground boat launch to be on par with those in such places as burton and Fauquier.
Improve docking, swimming area for kids. [2 people provided this comment.]
It would be nice to see some shore stops along the lakes. Clean and safe. Signage about the history, wildlife *etc*.
Keep making it better for locals all year long.
Least amount of level fluctuation is best.
Lets get a functional ramp please.

Table 68 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Edgewood Community Park (cont'd)
2011 (n = 42)
Looking forward for my first time visit.
Marina-docks much needed. Walk way along beach maintained, this is a beautiful pristine area.
Maybe we will when we get back.
More water more access.
Need a year round boat launch.
Need new dock!
Once you lose the recreation values its hard to regain.
Please upgrade Edgewood boat launch to the standard of Fauquier and Burton ASAP, thank you.
Power generation with consideration of the folks trying to enjoy. [2 people provided this comment.]
Provide more forestry camp sites that provide privacy.
Stabilize the water level a little more.
They should rebuild the dock and add another one across from it.
We are lucky.
We have been enjoying our stay.
We love the Arrow Lakes (Edgewood campground) and will be back annually.
We need a new boat ramp.
We need a new ramp in Edgewood and better camp grounds. [2 people provided this comment.]
We need lights (beacons, washrooms, sani-dump for boats on the new dock and a marina).
We would love to see this area remain the same as it is now, thank you!
Would like to see no sea-doos. Beaches everywhere — water not too high.
2012 (n = 19)
A decent boat launch and breakwater would be nice!
A stabilized water level or at least not such drastic minus level.
A wharf would be really great, and fish ladders on eagle creek or dredging for spawning.
Extremely difficult for elderly folk to manage launching on the ridiculous condition of the ramp!!

Table 68 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Edgewood Community Park (cont'd)
2012 (n = 19)
Love it here.
Need better ramp, docks.
New dock is very important.
Nice and peaceful here.
Our recreation area has gotten too small to handle our population plus tourists. We have no council or government or regional district to cover big expenses, it leaves it for volunteers to apply for grant monies.
Sandy areas for canoe/kayak launches with a gradual slope into the water.
The anger, trauma, frustration originating with initial flooding is still an under current in this community, understandably, also creates a profound lack of trust with BC Hydro.
The Edgewood boat launch unusable in its current condition and at some points dangerous.
The facilities at the campground are not in as good a condition as they were back in the 80s and 90s.
Water levels on beach lower for hiking.
We can hardly wait for a decent dock that is in the water year round.
We need a dock at the boat launch.
We need a new boat ramp.
We need a new dock and breakwater!
Well done.
2013 (n = 18)
Ban the motorized noisy wave jumpers/jet ski boats from all areas of arrow lakes. Need more local fish management.
Beautiful.
Bury those cement blocks.
Don't agree with higher than usual water levels such at summer of 2012. Way to much shore line erosion.
Getting better.
I have noticed no change in the use of the lake or anything else.
I like it. It's quiet.
Important to keep clean and habitant friendly concrete blocks, eyesore should not be seen.

Table 68 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

Edgewood Community Park (cont'd)
2013 (n = 18)
It is a beautiful place to come as you can go all day and maybe see one other boat on the lake. We just love to see all the wildlife and scenery.
Keep up the great work.
Leave lake level so we can enjoy our many lovely beaches.
Limiting the crowds is very important.
More stable water levels and better ramp facilities.
Smaller lakes like Sugar Lake and smaller should only allow electric motors or canoe kayak *etc*., especially if used for drinking/reservoir.
The cement blocks on peninsula are very ugly, as a hike would like to see them buried. Is the expanse or native concerns?
The lake is clean and well looked after always enjoy our stay on Arrow Lakes.
Waiting to see finished boat ramp and want and breakwater, better control of water for fish spawning.
We like having lots of beach, please keep water levels more stable and low.

Table 69. Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

Fauquier Community Park Boat Launch
2009 (n = 1)
Have friends that come here often and they always seem to have a good time.
2010 (n = 13)
All the boat ramps in all small towns on Arrow Lakes need attention right now.
Boating and swimming should be separated floats for swimming docks for boats.
Clean up the wood on the shores before raising water level. Floating wood causes boating problems.
Do not promote growth like Kelowna.
Great for proper facilities - including all weather all season wharfs and breakwater.
If the equipment is here we will use it.
Less fluctuation of water levels a well maintained recreation site with ramp, docks, wharfs, picnic tables, garbage bins and an outhouse.
Really would like to see the level remain more constant.
There would be more people using the area if there was a proper boat launch to access instead of a sanded in ramp.
This boat ramp requires complete overhaul and when completed has to have a maintenance budget to insure ramp remains useable.
Very peaceful and clean.
Water level to stay with 10ft to 15ft drop over the year.
Year round access and docks.
2011 (n = 6)
A steady shoreline would be better, more fish!
Beautiful ramp.
Good fishing.
Love it!
Reopen hill creek facility.
The new boat ramp is great!!
2012 (n = 7)
All is well.
Always enjoyable, never very crowded.

Table 69 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Fauquier Community Park Boat Launch (cont'd)
2013 (n = 10)
Dock needs to be extended to be used in winter months or keep the reservoir higher during the winters months.
Have concerns with high water levels. I believe bringing water up to 1446' level will adversely affect (damage) the Fauquier golf course.
Please complete boat ramp as shown in plans presented.
Things are good now.
We love it!!
Complete lack of economic development due to a lack of services available to boaters from Castlegar to Revelstoke — no gas.
Drop water fast for summer to get rid of debris.
Enjoy it as much today as when I first saw it, the reservoir is better managed today than it was then.
Great lake.
Need more fish, more dock.
Please keep water at a mid stable level during June, July, August.
Stabilize the lake.
The quality of fishing since the flooding of arrow lakes has continued to be negative. Impacted that the suckers and squaw fish will soon be leaving.
The recreational facilities are rapidly coming to an end, if the CBI does not change or come to an end, there will no longer be any lake, only at the whim of the USA.
This lake could really use mooring buoys thru out its length for cruisers to over night on, we have about 100 in the Okanagan, and they're super valuable.

Table 70. Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

Macdonald Creek Provincial Park
2010 (n = 19)
Dock would be good.
I would prefer no large/noisy motors — go to Okanagan lake for that!
It is fantastic!
It looks like a lot is being done to make it user friendly — the MacDonald campsite is so lovely — we will come back to go fishing and kayaking.
Limited motor traffic on water would be nice.
More boat launches year round, north of Nakusp. More camping on shores of Arrow Lakes
More interpretative signage — get viewpoints on high sections of road to improve vista (with interpretation) why not vegetate the variable riparian zone (where water levels fluctuate) with tolerant species? Main dislike is unsightly “ring around the collar”.
Nice area/will come back for longer.
Please keep the lakes pollution free.
Save the lakes from the idiots regulate number of visitors.
Should have the 3 fish hatcheries that the Hydro promised.
Staff seem knowledgeable and engaged. Helpful and friendly. (1st 2nd weeks of June).
Thank you for this wonderful place!
The BC Parks are all closed too early and open too late. Bad in many ways.
The peace and quiet, lack of built up facilities, cleanliness- no litter, makes it a perfect spot.
This is a wonderful part of BC. It is like going back in time — it is so relaxing and enjoyable. Thanks for taking care of it.
Very beautiful, rustic yet still accessible!
We enjoy being on the water of the Arrow Lakes but many time[s] find the boat launch at Syringa extremely over crowded, with finding park[ing] difficult. More parking and another boat launch would relieve the congestion.
We moved here from the Okanagan to find a smaller community and a lake with fewer people.
2011 (n = 29)
Absolutely beautiful scenery and the water level is the best I have seen it. When it is lower the submerged town sites are almost visible and one worries about safety clearance.
Beautiful, very friendly attendants.
Beautiful!

Table 70 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Macdonald Creek Provincial Park (cont'd)
2011 (n = 29)
Campsites are well kept, clean and private. Beautiful views and peaceful surroundings have us looking forward to returning here
Don't have the water come much higher than it is today (Aug 15/11)
Extend the campground.
Fishing is not as good as it once was.
Great lake and facilities. Only change I would suggest is 1-2 more provincial campsites.
I would like to see more campgrounds similar to MacDonald Creek Park (beautiful place!).
I'm not local and haven't frequented much but recreation possibilities have always seemed available here *i.e.*, fishing, swimming, and camping. I grew up windsurfing and have in the back of my mind thought about checking spots around here.
International jewel, preserve! Valuable as a recreational resource is unimaginable!
It would be nice if more campsites could be available.
Its lovely, its tranquil and love the peace and quiet…. Will come here for many years to come.
Lower camping costs for parks and more reasonable rates.
Lower water is better. Better informing of when water will be lower high and for how long.
Lower the levels!!
Nice area.
Opportunities are endless, more boat launches needed: 1. Halfway river area, 2. North end of lake east side.
Perfect and enjoyable.
Please keep the MacDonald Creek campsite (on the lake) primitive, possibly expand into Donnley beach.
The water seems clear and clean, the area is beautiful. We camp at a large variety of BC parks — both on the island and off...on trips like this one we're on this summer we don't have specific destinations in mind so its a fluke that we found this park — it maybe years before we ever come back but not because we don't like it.
This survey is based on frequent users, not one-day passing through campers as we are!
We are camping at MacDonald Creek, first time in this area and all is very good.
We continue to enjoy our visits here. It has become our favourite camping location (MacDonald Creek).
We found 1999 accidently a quiet, peaceful place at MacDonald Creek. We are very disappointed by the development into a noisy marina like spot.
We have always been very happy about MacDonald campground in all aspects.

Table 70 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Macdonald Creek Provincial Park (cont'd)
2012 (n = 19)
We love the peacefulness, quiet and relaxing atmosphere, nice soft sand. Fish are great here.
Would be nice to have more "dog friendly" beaches, as lots of people travel with dogs.
Wouldn't mind seeing the beach/shoreline not so full of driftwood and logs, thanks.
A beautiful place.
BC Parks should not have reserved campsites and where ever possible they should expand as the needs of the local community are not being met. The water levels of the lake should try and be more consistent level so there are no surprises for the visitors to the area.
Clean up the excess debris on the beaches.
Coming here each year we have look at purchasing real estate here, we enjoy the area. Anything done has been an improvement.
Hard to answer some questions, as it is our first time here. Lovely area, wish the lake level was lower so lake was accessible. Will come back next year and try another Provincial Park.
I enjoy pristine areas that are not overly developed and crowded with people.
I'm happy.
It is really beautiful here and if I should visit Canada again I would think about coming here again.
Jet boats, seadoos and water skiers (speedboats) are to close to the beach at times.
Like to see lake levels more stable.
Little less water.
More reservable campsites! Showers at MacDonald Creek Provincial Park.
Thank you for being here.
The water was much higher than normal, and there was a lot of debris and wood in the water. Much of the banks were/are collapsing and there are no beach areas. Our boat launch has to be cleared every day before we could use it.
Water level is too high. MacDonald creek campground is known for its beaches, there were none. It's also very difficult to get reservations at MacDonald Creek campground. First time in three years that we were able to, why? There seems to be issues with reservation system. BC residents get first priority??
We believe that every effort should be made to preserve the opportunity to experience a remote and unspoiled camping experience. We feel strongly that the existing facility should not be expanded or further developed.
We keep coming back.

Table 70 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Macdonald Creek Provincial Park (cont'd)
2013 (n = 27)
We look forward to our two-week of vacation we get each year. This year we are sad that our short vacation time is not being spent as we hope all year to spend it. If the water level remains this high we will not spend the $ or time to come here in the future.
We were planning to buy property on the lake but have reconsidered given the water levels that can happen and the debris that comes with it.
Big trucks destroying nesting areas, garbage left by people.
Great lake.
Great, best part its not crowded.
Have camped here since a child and keep coming back, can't beat Nakusp.
I think monies from the treaty should be used to enhance the beautiful parks that are here and make even more, Tulip Creek is a prime example. Rather than taking advantage of a nice camp and installing outhouses and picnic table so that it could be a park assets they ditched the road so now its boat access with no services.
It is the beautiful surroundings, the very clean campsite (although it was full due to the weekend of Canada Day) so we are 110% happy.
It's a beautiful well-maintained park. The host people are helpful and friendly some play in sites would be great. Also more water outlets close to washrooms facilities.
It's beautiful, do not let industry destroy what we covet so dearly, our beautiful province we live in the greatest place on earth, BC. Keep BC beautiful
Just keep it all running as best you can, some are good years some are bad as far as water levels go, but I've never gone home disappointed.
Love the area.
More mountain biking trails would be an attraction. Beach at MacDonald has to many pointy objects sticking out of the sand in and out of the water.
My chances of coming back would be increased if there were shower facilities. However i appreciate not having such facilities might help to keep visitor numbers more manageable.
Nakusp beach is so clean and we love the shady spot that we can bring the dogs, too volleyball net is a real hit with the kids.
Nakusp wharf and marina need another breakwater.
Need to make people bear aware, bear campsite policy to protect the bears.
Nice parks and facilities.
Nice to see funds spent to upgrade camping facilities in arrow lakes (MacDonald Creek) would like to see Syringa campsite expanded also.
Not enough experience here (3 days) to comment.

Table 70 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Macdonald Creek Provincial Park (cont'd)
2013 (n = 27)
Not well known yet, very happy here. Lots of room and it is beautiful.
Not yet.
Removal of logs and washed up drift wood would make the shorelines more user friendly.
This campground (MacDonald Creek) is a bit pricey. $7.00 for 10 quartered logs for firewood. Always wet, not a fair price for a Provincial Park, especially after paying $31.50 for a night of camping.
Very good camping experience.
Water levels too inconsistent, too much debris, too cold (warm it up).
We love this part of the Kootenays. Full of history, attractions, great food, beautiful scenery and low key.
We love to come here to watch the osprey and bald eagles soar and catch their food as well as explore the other side, which is uninhabited. We appreciate all the different condition which exist here but especially the quiet.
We would ride our horses if there were facilities available. Also a noise by-law (music-loud motors on boats, bikes *etc*.) would be good.

Table 71. Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

Nakusp Boat Launch
2009 (n = 4)
I would like to see the water level on the Arrow Lakes at a more constant level. Not too high and not too low.
Keep it higher longer (June - September, inclusively).
My family was surprised (disappointed) to see the water level dip in late July. The beach in town was rocky.
Water too high: no beaches, debris on water.
2010 (n = 41)
We need more restocking of the Arrow Lakes. An additional ramp north of Nakusp.
A new launching ramp must include a float for loading unloading of vessels!
Beautiful area.
Beautiful spot.
Consistent water level yearly!
Continue the good work.
Driftwood.
Fish enhancement projects are needed.
Fishing is very poor and declining.
Full reservoir is not ideal for wildlife. Water right to the forest leaves very little shore. Ideally the levels should be stabilized at some “mid-” level. This would leave shoreline and allow vegetation to establish.
Great place – we’ll be back!
I am concerned with the fish population in the lake as this is [illegible] activity of my family and friends.
I think BC Hydro should live up to their commitments and obligations that they originally agreed to.
It is always peaceful and quiet where we live on the lake, the water level is my only concern. It is an incredible place to live.
Log salvage needs to be carried out. Logging companies to clean up wood they lose. Private salvers could sell back to company, as on coast, less debris.
Lots of logging driftwood at times (reservoir).
Love it, thank you!
Maintain the high water level, without it the village of Nakusp would not be as attractive to tourists/ investment opportunities.

Table 71 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Nakusp Boat Launch (cont'd)
2010 (n = 41)
Management of the lake is run quite well.
More boat launches; more access to lake.
More education for tourists and locals.
Nakusp needs better boat launching facilities.
Needs sanitation pump out for boats and fuel.
Nice relaxing place to visit.
Please put a sani-dump station on this lake.
Please try to keep the water at a reasonable level!
Really relaxing.
Release water from Revelstoke Dam to keep our water level constant.
Security non-existent! No fuel available why aren't there some marine buoys in the bay for visiting boaters?
Since the Hill Creek hatchery has been closed I have seen a deterioration in the fishing. The next step was to cancel the creel census. It appears to me that there is little motivation to maintain the fish population. The hatchery should be re-opened and the creel census started again to monitor the fishery.
Since they shut down the hatchery at Hill Creek, the trout fishing has gone down hill bad. If they do not do something soon it will be too late. We have to have the hatchery back "now".
Surprised at the evidence of how low the water is at the moment.
The boat launch area in Nakusp is great. The water levels would be better kept up to the max for June, July and August Instead of going down in July.
The water level should be level. I no longer live in Edgewood.
This summer was great for water levels!
Try to improve the fishing — should not have been allowed to take out the Hill Creek hatchery.
We feel the boat launch facilities and the marina should be upgraded to attract more tourists.
We love it here because it is not as crazy as Okanagan Lake where we came from.
What a beautiful place.
When the water is low there is a lot of logging cables *etc*.
Why close down hatchery at Hills Creek?

Table 71 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Nakusp Boat Launch (cont'd)
2011 (n = 29)
Huge fluctuation in water level is detrimental to the shore and wildlife. Very high reservoir levels are eroding/eliminating beaches. If reservoir is always kept high, the flood control is negated
Nice and quiet. Uncommercialized.
A great place to fish and lounge around.
Boat ramp in too be replaced.
Control tourism. Control jet skis.
Don't over commercialize like Shaswap or Okanagan — keep it pristine!
Enjoy the beaches sandy.
Fish needs to improve.
Fishing — very poor. Fish hatchery closed. No real evidence of fish enhancement (only spin).
Good facilities, trash, rest areas clean. Roads are good.
Have a great day.
I like it when the reservoir is at or near full capacity in the summer.
In some places there is littering.
It would be wonderful if the water level could be kept constant — even though I know that is not possible!
Nakusp needs to grow and this is the best place to start.
Need more fish in arrow lakes.
Parking could be easier to find.
Please fix ramp and improve fishing, thanks.
Shutting down the trout hatchery has reduced numbers of larger (4lbs+) gerrards. Kooteney Lake once lagged behind us in this area but now have superior catches regarding larger gerrerds… sad.
So far this small community seems friendly, clean and peaceful.
Thanks for asking.
The fishing here is not as good as it used to be in this area. The planted "dust control" is very disruptive to boat motors and campers.
The marina needs more spots for mooring.
Too much driftwood. Keep water level constant!

Table 71 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Nakusp Boat Launch (cont'd)
2012 (n = 12)
Very nice place to visit.
We are enjoying our stay at Arrow Lake.
When the lake is full there is a lot of debris floating and no shoreline.
Would like to see more sailing clubs and opportunities. Possible charters.
Yes you need to fix our boat launch and realize that fish stocks are down and your high level is causing dangerous conditions on this lake with driftwood.
Boat launch — needs a wash station for boats.
Bring the water level down!
Great experience.
Hydro needs to help fund projects that affect this lake as a reservoir and help funds with improvements to the boat launch club.
I would like hydro to clean up the driftwood at Arrow Park.
Love it here!!
Need a bridge.
No boat gas on water, need facility!!
Please help the Nakusp launch club marina repair the breakwater *etc*. (at same time as re-doing the boat launch).
Very nice lake.
We'll be back for years to come.
Wonderful area to explore and scenery is excellent. Summer time ferry crossings can be frustrating due to wait times.
2013 (n = 31)
Better access for swimming everywhere. Better public access everywhere. Get rid of the private property signs.
A more constant level would be my request.
Beautiful peaceful area to visit, hope it doesn't become too well known.
Consistent water level during summer.

Table 71 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

Nakusp Boat Launch (cont'd)
2013 (n = 31)
Debris clean up.
Debris is to often hitting boat.
Dock should have a ladder.
Fix the breakwater please.
I feel the recreation on the arrow lakes are very enjoyable, I would like to see things maintained for future generations.
I love the trees that are planted and well maintained, good job Nakusp.
I think it's a shame that the new boat launch in Nakusp was not allowed to be finished, before Hydro start raising the water level. If it is not usable at low water next year, some body should lose a job.
Keep up the appearances.
Lake level should be kept much higher, with less fluctuation.
Let the dams go and let the water run free, don't screw with any more water for power, money.
Lets have fun.
More camping sites, and more places to put your boat in.
Need year around boat access.
No fisheries enhancement.
Not enough places to boat launch, cables are dangerous.
The boat ramp is too short and will become unusable shortly, as a lakeshore owner like to see more stable water levels.
The new ramp at Nakusp is a joke; we got nothing since they flooded the lake.
This is the best place on Earth.
This is the best place!
Water levels should be stabilized to allow for establishment of a riparian zone. When high water recedes, local beaches are littered with debris and floating logs. Friends at Selena Bay with a cabin on the beach are selling out because of mess left on their beach last year after extremely high water levels.
Water too high in early summer.
We found the new docks at Anderson Point and Fauquier very useful.
Why don't you have a question re the Colombia River Treaty? At the very least it would raise awareness of the issues involved for the future.

Table 71 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Nakusp Boat Launch (cont'd)
2013 (n = 31)
Would like more conservation and stable water levels.
Would really like the water level to stay consistent.
Yes sometimes I have noticed boaters spill fuel in the lake, but otherwise its a great place to visit, not as crowded as others, *i.e*., Kelowna.
Yes, keep this place secretive and relatively unknown. Development will spoil the serenity of this jewel.

Table 72. Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

Nakusp Beach
2009 (n = 1)
Low water levels make it difficult to carry canoe to water. Sandstorms come iwth with high winds and drive us off the beach when water is low.
2010 (n = 13)
A tourist, enjoying great walking trails and scenery, nice neat community, like the RV facilities.
Arrow Lakes are a wonderfully under utilized lake for recreation. This makes it very desirable to return to year after year.
Beautiful clean beach and town site. Beautiful walk along lake.
Better marina with restaurant — more space and more water access (ramp) on lake. Gas stop on water or at marina.
Great place to live.
I love it here.
I love it here!
It's the reason why I live here.
Lets keep reservoir at reasonable levels 1432' – 1442' for months of June - July - August – September.
Love it!
Needs more security of belongings while camping in town campsite.
Please come to our town, it is the real gem of the Kootneys, not Nelson.
This place is a natural treasure, but the motor oil on the surface of the water is nasty to say the least.
2011 (n = 22)
As an occasional visitor I feel unable to answer many questions knowledgeably. However, we do love the area and would like to spend more time here.
Beautiful, unspoiled.
Beautiful!
Camping costs for tenting with no facilities are too high.
Get more people to come here.
Get rid of the planting of cottonwoods.
Great beach at Nakusp — it's a real attraction!
I love it here, so calming for the soul!

Table 72 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Nakusp Beach (cont'd)
2011 (n = 22)
Keep on focusing on keeping it great, thank you.
Love the area. [2 people provided this comment.]
Not today, the weather has been rainy and it's early yet for lake activity. Thanks, beautifully kept.
Only thing I could say is all the debris that is at the edge of the water, *e.g.*, big sticks, big rocks, even logs. There are lots of kids that play here, kind of dangerous.
Please don't wreck anything! Appreciate things as they are.
Promote rare species conservation, educational lectures, water safety, and explanation of need for water leveling, promote history.
Small town with great people. See you soon again.
The most beautiful place on Earth!
The natural beauty of this place will forever captivate everyone!! Thanks.
The water level goes down way to far.
The wharf is in the wrong position.
We love coming here every time we are near the area. The best part about it is that it is not all developed and fancy pants. We hope it remains this way.
We love Nakusp and the arrow lakes. Thank you for keeping them beautiful!
2012 (n = 24)
BC Hydro should patrol and attempt to keep the larger logs out of harms way from boaters, but this may bring too many boaters.
Because of the varying water levels our property lost 10 feet of sandy beach leaving us with a rock pile which would not have happened if we had stable water levels.
Build some bridges.
Clean up debris on the water and shore in the spring.
Constant high level of the lake would be nice.
Do not leave water levels to the discrepancy of BC Hydro — conflict of interest.
I just love the water quality and the cleanness of the shore and the coast. I have not tries the boating facilities but I sure will do.
I love the scenery and serenity here.

Table 72 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Nakusp Beach (cont'd)
2012 (n = 24)
It would be nice on busy weekends when there is an event to have bylaw officers patrolling the beach for alcohol and dogs. During the August long weekend lots of alcohol — (distracts from family enjoyment) and dogs on beach. The sign says these shouldn't be happening and so they should be enforced.
It's fantastic.
Its beautiful and family friendly
Love it! Best place to be in the summer
Need a pool — outdoor pool. Year-round heated — important
People smoking on the beach. Please enforce the bylaw. Speeding along and in front of beach. Monitor drinking on beach.
Please lower water slowly if possible or heighten water slowly, please upgrade Nakusp wharf.
Restrict motors. Pier for fishing for kids.
Some older commercial operations (now not operational any longer) have a lot of old steel junk left right on or close to lake shoreline- not good for people or environment.
Surprised when I came down today and there was no more beach for my dog to run on (covered with high water).
The beach is beautiful, and thank you for having a dog beach.
This is our first visit here, we will definitely return!
Very happy with our tour of the arrow lakes region.
We like this area very much and we come back every year in summer.
We would like to see the lake level about 8' lower than full — as at full pondage, in a storm, we can lose portions of our beach. We'd like the level at this level for 4-6 months per year.
Winter use of boats are not possible during winter months.
2013 (n = 41)
Beautiful.
Beautiful beach, well maintained.
Beautiful place, well kept swimming and beach area in Nakusp, very much appreciated, we love to come through here and stop for a swim and the night.
Being fully appreciative that arrow lake is a hydro electric reservoir, it would be nice to see water levels fluctuate levels because of the environmental effects, however it does not affect my use of the lake /shoreline.

Table 72 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Nakusp Beach (cont'd)
2013 (n = 41)
Clean toilets should be nice, we like it very much.
Consistent water levels, the booms are great to have back.
Great family place.
I like the new ramps and docks that were put in along the Arrow Lakes.
I love the area, particularly the peacefulness and lack of noisy boats.
I think the water quality to be good, otherwise, i would not continue to bring my family here. The lower water level this year (6ft), does cause me some concern. I do not know why the water level is low, but is suspect that the USA is taking water for their needs with little or no regard to BC or Canadian federal inflection.
I think it's awesome and we love to vacation here.
I'm concerned about erosion with fluctuating water levels and the affect for wildlife habitat agriculture and recreation.
Important that water is a consistent level during summer (love the logs).
It is absolutely amazing here, just beautiful.
It would be nice to be able to rent thing.
It would be nice to have space reserved for campers that would be free just to spend the night and enjoy nature.
Levels are lowest we have seen in 5 years but as usual it beautiful country.
Like the fact that very few motor boats -7 to quick recreation rather than ski boats and seadoos *etc*.
Love this dog beach too. All too often development restricts access to lakes, should be more. Private lakefront is good for property value but can be frustrating, the walkways or gardens provide everyone a good look, way to go.
Loved the beach at Nakusp, thanks for the hospitality.
Needs to be warmer.
No dog on public beach enforcement (currently none), have not yet seen Canadian dog owner who would turn back after reading, no dogs on beach. Most ignore signs blatantly and openly.
Seasonal summer recreation not respected the water level fluctuation is way too much. Can't swim in safe area due to this we have to swim on outside of logs.

Table 72 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

Nakusp Beach (cont'd)
2013 (n = 41)
Speed limits for boats, jet skis *etc*. Close to the shore and close to the campground beaches should be kept to a minimum.
Staff at information center were excellent, good recreation, needs more diving spots.
Thanks.
The beach could use a little more clean up at the end of the day. Day users can be messy. Having someone to clean rocks to the side and manage confrontational situation would be of hug necessity.
The water is beautiful and clear but damned cold.
The water level is down if this is consistent maybe move the booms out or let the water level go up higher.
There should be some non-motorized boat rentals.
This reservoir was erected for flood control and water availability for the USA. BC hydro is trying to make the best of a bad situation but putting in boat launches is way to minimal. BC Hydro need to try more to promote this area, including getting the government to sell more land along the lake.
This year the lake is so low.
To many aboriginal rights being abused.
Very pretty and quiet place. Would be nice to keep it that way.
We will always come back to Nakusp and maybe one day retire or if luck happens buy a vacation property, thank you great job.
We wish the water levels were more consistent- higher in the summer
When you grow up swimming in the Thames in London or the channel, this water is like swimming in silk.
Where is the swimming pool? 18 years and waiting.
Would be good to teach a code of ethics in the matter of being considerate, *i.e.*, taking turns at the boat ramp while putting in and taking our boats.
Would like to see more wetland enhancement for waterfront as we see at north end near Revelstoke.
Would take to long, as more a government hydro issue, re. Managing the CBT/CRT BC Hydro *etc*.

Table 73. Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

Revelstoke Boat Launch
2010 (n = 3)
Needs better boat access from Rev. To Shelter Bay, Martha Creek is nice but only one way (Why?) For the Alberta ski boats.
Nice to have so close to home.
Please fix ramp in Revelstoke when water is low cannot launch boat.
2011 (n = 4)
A better boat launch site closer to town would be nice for using the river.
Believe that Hydro should spend more on physical facilities (rather than studies) to enhance recreation (self powered) and wildlife environment. [2 people provided this comment.]
Great place to live!
2012 (n = 5)
A launch in Revelstoke that can be used at all water levels would make it easier and efficient to conduct research and recreate in the area.
I worry about bird habitat and bank erosion due to changing water levels.
More trees.
Need better boat launch for low water levels. Safer!
Waters south of Revelstoke are potentially dangerous, extreme care must be taken to avoid damage.
2013 (n = 8)
Beautiful water, nice scenery, delicious fish.
Improve a make a boat ramp launch with parking in east side between galena bay and Nakusp.
Love the water would be nice to have better boat launch closer to town on river. Also nice to have one south of town between Revelstoke and Fern.
Need ashtrays and garbage cans.
Nice area.
Some boat launches as in this one at Revelstoke need repair.
We need an ashtray and garbage can.
Why not have a other boat down at 10 or 12 mile everybody like to go fishing there, more south of Revelstoke. Like blanket creek and so on, on the other side of the river where it is safer I guess.

Table 74. Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

Shelter Bay
2009 (n = 6)
Stock more fish in the lake — they took the restroom to the other end of the campsite and now it is one on each end. Why not do doubles??? Keep campsites plowed out for winter camping and launching of boats.
Always enjoy coming out on the lake and meeting new people and anglers.
Keep the \"pristine shore line\' as is - no cottages, thanks. This year has been more challenging for fishing. Water level was much higher for summer months both in Arrows and Revelstoke lake. The temperature of the water ranged 65-70 degrees. October saw the water level down much lower. For whatever reason it makes for more challenges toward fishing. We love the Kootenay Lakes area — too bad it wasn't closer to Armstrong — but then it would become more polluted with??? A few more parks in other areas would be nice. We love the clean lakes.
More recreation sites for the people.
Need pay phone service at Shelter Bay ferries.
We are doing fish studies so not actually recreating.
2010 (n = 19)
A marina at Shelter Bay would be a valuable asset. Thank you.
Fishing has gotten poorer every year since the fish hatchery was shut down. Boat launch is not plowed for winter fishing which is my busy time of year.
Great spot to camp/fish (Shelter Bay). Need to make improvement to campsites, parking, definitely boat launch/ramp. Camp fees increased to $16.00 per night/and no visible improvement to the sites.
It is a great facility and should be well maintained to continue to allow access.
It is imperative that we have a marina on the water at Shelter Bay. Proper parking, breakwater, sewage disposal, fueling facility *etc*.
It's nice not to have houseboats.
Keep it clean and pristine for future generations - keep BC Hydro in BC!!
Keep the campgrounds season only priced. In off-season we always leave the campground tidy when no attendant on duty.
More access to the water and more boat ramps.
More warning of water hazards.
Need to improve the site since the price went up more parking, more campsites.
Not any more. I first fish the Salkchuck of [illegible] Slake Lake in AB. BC charge for non-residents is too high as it limits us from fishing the interior.

Table 74 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Shelter Bay (cont'd)
2011 (n = 12)
Nude beach.
Please do not allow houseboats to ruin this lake.
Ramp breakwater needs to be replaced, what is there is a joke. Fish fertilization needs to be ongoing.
Remove the ferries; build a bridge.
Shorelines should be cleared of debris. Boat launch at shelter Bay redone and expand parking area.
The area above [Raller?] Bay. This type of robbing should not be allowed. They have cleared the hillside right down to the water's edge. Without doubt there will be slides into lake from a big run-off.
To keep the lake quiet, no Albertans or development of the lakeshores.
Beautiful!
Eagle Bay forest rec site — picnic tables in poor condition. Boat ramp too short so can only be used in high water levels.
Favourite lake to visit. Clean, refreshing, great fishing and lots of nature hikes to explore.
Great, the best!
Hope we can keep coming here for the next 20 years.
Just the bug control if the water goes up and down daily.
Love the BC parks.
Require boat access at blanket creek. More trailer parking at shelter bay. More site control to limit occupancy time (more on Revelstoke lake).
Speed signs.
The lake water is cold all year long which makes the fish great.
Try to keep it from becoming another Okanagan. I never stop there anymore.
We travelled from Castlegar to Revelstoke fairy and found nowhere to put in a big boat with motorhome, leave it in the water and go find a camping spot. Locals were very helpful with info and helping pull boat every night.
2012 (n = 17)
Bear proof lockers would be nice to store food for cyclists like myself.
Boat ramps need shelter from wind/wave action. Floating debris management.
Could use fish cleaning table and disposal site. Logs in water at shore causing debris and no fish in area.
Decommission the Hugh Keenlyside dam!

Table 74 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Shelter Bay (cont'd)
2013 (n = 33)
It would be nice to have a boat launch at Galena Bay.
Love to fish here then go to halcyon hot springs to clean up!
Lovely the way it is!
Lower the water!!
No cell service and it might be a safety issue.
Not at this time.
Pretty campsites, we come back every year.
Sites could be more level — ours #2 was out 4". Make sites longer for longer rigs.
Small washroom for kids.
Tent sites need better gravel/dirt to put tent pegs in.
Too much driftwood (poor for shore fishing and boating hazard).
We feel this is imperative (boat ramp) to all camping and relaxing outdoor life!
Why are you doing the survey? What are you planning?
BC residents should camp for free, Albertans charge double.
Better year round fee for seniors (half price).
Boat ramp at eagle bay should be improved it is a great camping spot.
Campground too crowded, not enough privacy, bad for tenting, poor facilities.
Certain areas of exposed shoreline should be non-motorized zones, *e.g.*, Montane slough to Illecillewater River. Dramatic seasonal water level variations is the biggest issue
Clean up more of debris and deadheads.
Clean up the shoreline of floating debris (drift wood).
Could use a fish cleaning station.
Fix the boat ramps.
For years we have been promised year round access to our reservoir. I fish all year round we have no accessing in winter. The boat ramp at shelter bay is a disgrace.
Great weather.

Table 74 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Shelter Bay (cont'd)
2013 (n = 33)
Huge opportunity for more recreation if areas provided to smoke. Great to see more small rec sites from camping/car top boats access open to small fee at rec sites for these services. Hydro historically had more rec sites at their installations.
I know its impossible but i wish the water levels were in a tighter range.
I wish there were more facilities on the lake that were run provincially and not privately.
Improve boat launch.
It would be nice to bring the floating wood pile close to camp sites, the park is lacking grass to plant tents.
Just be consistent, been out when it will drop and leave you beached overnight, a couple months in the summer would be nice.
Keep the good work.
Love it here.
Loving the water, environment, people and fresh air.
Make it a clothing optional paradise.
More boat launch/ marina facilities near Revelstoke that are safe. More camping sites with shower facilities. Would like to fish in winter months, but too risky in the current facilities to launch our boat.
No I love it, out houses need to be cleaned more often.
No it's great.
Protected boat launch.
Smarten up the smelly toilets, try to maintain more average lake level.
Stock lake with rainbow trout.
Stop killing the kokanee.
The shelter bay park could use enlargements, needs nice sites like other provincial parks, not a parking lot and many more sites for the number of campers who want to stay here, we couldn't get a site. Make a provincial park and pools at halcyon so everyone can enjoy it.
Waters beautiful, plenty of good times to be had in the forest.
We need more camping facilities or overfull areas at shelter bay campsite, not enough sites.
We need more camping spots, getting really busy.
We would like shore fishing habitat as well as boat fishing. Kids are starting to learn/love to fish.

Table 75. Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

Syringa Creek Park Boat Launch
2009 (n = 12)
An “off leash” doggie beach area.
Boat launch for Syringa creek should be at campground or at least closer.
Great place to be!!!
It would be nice if there were more boat access beaches on the lake.
More docks.
Provide more forestry rec sites. Clean up beach area at Syringa by dozing rocks off beach during low water.
Require a boat ramp at Deer Park. Plus improve the road condition. Present road is very, very poor — restricts people from travelling this way.
Thanks for preserving such a great place!
Too many “captain assholes” — speed, not considering other boaters, garbage left on surf.
Water levels, docks on seasonal ramp.
We are very fortunate to have access to such a beautiful place. No complaints.
Where the best fishing spots?
2010 (n = 23)
Not satisfied with camping opportunities beyond summer break. No regard for disabled access to day use facility at Syringa.
Beach very rocky.
Clean up the beaches of debris, boat campsites need brushing.
Constant higher water elevation would be good.
Don’t like the idea of people being allowed to build homes on the beach. Used to camp more at Syringa Park before it got so busy and they started having to reserve sites.
Flag, deadheads, log booms.
I would like to see more priority on water levels on our lake during summer season. This would not only benefit locals but also encourage tourism. As this is always very important to the BC economy. We live in the most beautiful place in the world. More priority should be put on our lake than catering to the US and Roosevelt lake!!!
It would be nice to be able to use the other old boat launch at this site and be able to access by road the area by tulip falls.
It’s nice when full in summer and also Kokanee spawning season.
It’s awesome!!

Table 75 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Syringa Creek Park Boat Launch (cont'd)
2010 (n = 23)
It's too rocky.
Keep it the way it is.
Keep the water level higher! Fluctuating water levels create hazardous conditions due to wood in the water.
Keep up the great work!
Logs in the water should be cleaned up more. There should be a houseboat dump station — no one will pay $500 to remove their houseboat from the lake to dump. Its ridiculous that we have been denied by the government a proper way to handle this.
Need all season ramp.
Need another wharf on other boat ramp.
Park needs to be open sooner when weather is nice.
Shifting water levels too quick is poor. A lot of debris in water makes boating dangerous.
The people in the community of Shields would like to have a boat launch +/or a dock that would go up or down with the fluctuating water levels. It is extremely frustrating to find docks that have gone aground over-night or if you have been away for one or two days and the lake has been lowered.
There should be a pump house for boaters to empty their waste/black water instead of into the lake. No options for houseboats, or bigger boats with toilets *etc*. Clean up of logs in water.
Water level fluctuates too much, some times too high, some times too low.
Would like to see 7 fluctuation in levels. Particularly like to see the water stay at a high level for longer in the summer and early fall.
2011 (n = 33)
Amount of debris in water.
Clear the debris off the lake, especially July and August.
Continue to preserve public areas and limit building/development on the arrow lakes. No industry beyond the current. Too much already. Paper and metal mills limit enjoyment and overall quality of natural environment.
Debris was outrageous till beginning of August, that's unacceptable!!
Dock needs to be increased in length for low water use.
Dogs not being allowed in day use area or on beach is stupid. We always travel with our dogs so we don't use those beaches ever. We are considering paying for launch access at new condos as the launch and docks are protected from bad weather and Syringa is not, and our boat has been slammed a few times at the dock.

Table 75 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Syringa Creek Park Boat Launch (cont'd)
2011 (n = 33)
Driftwood is my main concern.
Feel very sad for young families when there are limited beaches for children to enjoy.
Fix the concrete ramp.
It would be nice to have another boat ramp in the Syringa campground.
Its time to spend some tax dollars or grant money and get this boat ramp and parking concern dealt with! Its long over due!
Just love it!
Keep boat launch open after 10 pm. Awesome place, thanks!
Keep it clean!
Keep stocking fish.
Level fluctuations in summer cause a few problems at beach (water usually colder as it goes up and down through spring to fall seasons).
Love the arrow lakes.
Maybe you could put another wharf on the north side of the boat ramp it would give more room, faster launches (instead of waiting 1 hour to put boat in or out of water) it would also act as breakwater so you don't bash your boat on the wharf in a south wind. Either leave water levels so wharfs are in water all year so fall and winter and spring can be done or put in moveable wharfs that can move with water levels up or down ramp so wharfs are in water all year long.
Moorage pins needed at Bowman Beach and more at Sunshine Bay
My husband has worked as a tugboat captain for 37 years.
Need another set of washrooms. Need water close to washrooms (pumps?) Tap? To wash hands.
Need more boat trailer parking and another ramp.
No condos please. Didn't like Pope and Talbot's sneaky selling of the properties on the lake.
Please try to keep water levels consistent, thanks.
Raise the limit on kokanees to 15 again like Slocan Lake. There are lots and it only took 45 minutes to catch our quota. Has been a steady increase and size is not too bad also.
Ramp and docking facilities unsuitable and unusable at low water levels.
Thank you.
Thank you for the pie-made hotdog sticks! Great job!
The husbands want the surveyors job! All good, keep up the good work!

Table 75 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Syringa Creek Park Boat Launch (cont'd)
2011 (n = 33)
The water could be a little lower.
West ramp. Extend ramp to low water mark. Boat launch at camp ground required.
Yes: we are not coming back to camp in Syringa again. We have about 12 other people that will never come back again. It's like a retirement home, we were not even allowed to sit and quietly talk in our campsite. Its sad when you pay top dollar for a site that has no running water, power or showers and then you are treated like children and told to go to bed at 10pm. We have camped all over BC and this place is the worst ever. They stock the campsite and see how many people there are if you have visitors watch out! We have a baby so we were being quiet and not to wake her, they were still coming round telling us to shhh.
Yes! A distinct lack of fire pits!
2012 (n = 22)
Be nice to develop public access.
Beautiful!
Concerned about illegal access road from C&W rail trail to Coykendahl lakeside community that is to be "water access only" and rumour has it they plan to expand. Concerned about route of power lines (underground, under water or through forest) to service deer park community.
Dock needs slow/no wake marker buoys to prevent large boat wakes.
Dumping sites for houseboats?
Fire existing management. Camping cost to high.
It's a shame when the water level is set so high, ruining the beach areas and docking sites!
Its time to spend some money on a great recreation area, I think it would benefit Castlegar and area.
Keep debris off the water; keep water levels at one level.
Keep up the good work!!
Longer dock, better fishing.
More fertilizer for fishing.
More sandy beaches please.
Need more boat launches (deer park) and a marina, more sheltered boat launch and slow/no-wake buoys near entrance to the boat launch.
Need more campsites and boat launch facilities.
Need more marine campsites.
Need to build a dock on east side.

Table 75 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Syringa Creek Park Boat Launch (cont'd)
2012 (n = 22)
Pick up loose logs- safety issue. Early season — extended dock.
Please put in a forestry camp site, increase current camp sites.
Requires overnight recreation sites along the lake.
There are too many floating logs, this needs to be cleaned up every week, many people are having boat damage from logs. Also many people are talking about a class action law suit for boat damage and to much floating logs.
To many logs in the water
2013 (n = 12)
A Frisbee golf course would be greatly appreciated.
A sani-pump station is needed for public, boats, and houseboat accessible. Wider cement ramp and extended dock at Syringa probably would allow for year round use.
Boat launch is too busy at times; need a second one or even wider and bigger one and more parking.
Debris and logs are a hazard.
Dock to far from water, breakwater to low, need dock at west ramp.
If it is possible to make boat launch longer in lower water.
Need more mooring buoys, need more auto parking at Syringa boat launch, access available to ramp 24/7, creek channels need to be defined for spawning, lake levels stabilized during spawning season, breakwater for launching ramps.
Put tenting only sites at campsite, put [illegible] at campsite.
Should be more of a gradual drop in levels, woke up several mornings and almost had our boat high and dry (beached) and stuck.
The Syringa boat ramp is not a 24/7 ramp, BC Hydro promised a any time boat launch when the high arrow dam was built. The launch is closed from 10 pm to 7 am in spring and summer months, which is inexcusable. The parking is very poor and not monitored.
Too large of fluctuation in water levels.
Would like to see the loose wood cleaned up as well as the dead heads interfere should help with this.

Table 76. Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

Syringa Creek Day Use
2009 (n = 3)
I really hope that this park remains here - should be expanded because of summer use (hard time to get a site during summer months. June 01-end of August).
Keep water level higher during summer.
The only adverse item I encounter with the Arrow Lakes is very low water levels. Although we still recreat and use the lake/shoreline a consistent and higher water level would be better for all recreation users and all wildlife.
2010 (n = 34)
Beautiful area. Well kept by organizations and other public users — there could be more advertising for activities on the water available to all the public-more tours for tourists and locals to learn about the area.
Beaches could have more sand less stones; “water level need to be higher in the summer months”.
Best lake that we know of for sailing, canoeing, camping and used to be very good for fishing!
Better breakwater required at Syringa creek. Beautiful lake! Lets keep it that way.
Extend north Syringa boat launch and provide floats for case of putting in and taking out boats.
First visit but liked what we saw. We will be back soon!
Full pool or close 1440’ ± in summer from mid June to mid Sept
Good to see these surveys to se how the public feels. Can’t do much about the politics though. Anytime you mess with natural waters, there’s going to be opposition.
Growing up in Castlegar, the Arrow Lakes was a big part of my life. It is why I believe in the environment and the conservation of it.
Having lived in Castlegar and using the arrow Lakes for fishing and boating activities I always did not like the inconsistency of the water levels. Water levels got too low the beach became useless and rock covered. If the water levels are too high there is too much driftwood and poses a safety issue for boaters. I always felt the local sawmill should be held accountable.
I like the lake to be full.
I no longer boat on the Arrow Lakes due to water level fluctuations.
Install floats and extend boat launch ramp at upper Syringa boat launch. Also increase height of breakwater due to west winds.
It’s frustrating when Lake Roosevelt is kept at high levels for summer recreation and Arrow Lakes levels are lowered.
Keep it clean!
Keep up the good work!!

Table 76 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Syringa Creek Day Use (cont'd)
2010 (n = 34)
Keeping the lake level 10' or so below full pond would provide more beaches. At least one more protected boat launch is needed (with larger parking areas).
More sites at Syringa, more boat camping sites on lake. Better boat launch. No houseboats at Syringa or tied up year round on shoreline.
Nice and clean facilities are camp areas.
Please keep it a consistent level for the summer.
Please limit waterfront development*it restricts reservoir options*it takes away from recreational value. Thanks.
Please look at and consider the use of the lake in the summer more. Thank you!
Thank you.
The payment for extra car was stupid especially when u pay for the site.
Upgrade high water boat launch at Syringa with floats and extended breakwater.
Upgrade the boat launch and breakwater as well as truck and trailer parking area. Maintain more constant water level. Nighttime lights on dock facilities to aid in loading could be on photocell and solar panel.
Upgrade the dock -bumpers on dock-make it better when windy.
Upgrading the boat ramp and dock. Maintain a reasonable water level.
Way too much drift wood!
Wayward concerns about floating logs – safety.
We would like to see the lake areas preserved for future generations to enjoy.
Would definitely like to see the levels not fluctuate so much — reduction of hazardous debris. Would like to see more public use.
Would like a better kept (sandy beach).
Would like to see the amphitheaters returned as they provided excellent info for both adults and children and guided nature walks as well as history of the lake. Because our house is one that was floated down to Robson.
2011 (n = 49)
Add shower to the campsite.
Boats should be monitored for cleaner engines; there is an oil film visible on water.
Campgrounds — hard to get info. Campgrounds are over priced for little services.
Camping spots are becoming harder to find. More accessible forest service sites, keep water level high.

Table 76 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Syringa Creek Day Use (cont'd)
2011 (n = 49)
Clean and beautiful. Beautiful, beautiful, beautiful!!!! And maybe a boat dock off the camping beach.
Create more camping *i.e.*, BC Hydro sites.
Create more parks or campgrounds on the Arrow Lakes.
Great recreational experience, except there are too many loose logs floating on the lake and cluttering the shoreline.
Hire someone to continuously work on cleaning debris out of the lake and on the shore, open up more land for lakeside cabins.
I have canoed the lake from Galena Bay to Syringa creek at high water — excellent!!
I now love bringing my own kids here, the facilities have always been well maintained and we look forward to many more years of camping, boating, and beaching. Keep up the good work. Showers and soap in the campground bathrooms would be wonderful!
It is a very valuable resource, well worth preserving. The boat ramp is not protected from the west, which makes removal of boat from lake difficult in choppy conditions — needs a breakwater.
It would be nice to have a campground with a proper beach and boat launch all in one setting.
Its nice peaceful and serene. I like it just the way it is.
Keep it up!!
Kinbasket lake and others should have been logged before flooded.
Lack of fish, very, very poor… where are they??? How is it that US lakes and reservoirs have more fish- something wrong here! Clean the beach of debris.
Lovely.
Lower the water to a level where the beaches are and can be used. Need to push highway up the lake pass Deer Park.
More blocked out swimming area would be nice (further into the deeper parts).
More work to be done to enhance fishery.
Need more boat launch options at the south end <> more camping is required. Syringa is near capacity all summer and completely closed for camping in the off-season. There is a need for more campsites in the area. A campground similar to the Buckley site above 7 mile would be wonderful above Keenlyside but still close to Castlegar.
Need more dog beaches.
Need more hydro camping areas, would not mind paying a reasonable fee to maintain such areas. 7 mile dam is a fantastic facility. Also enjoyed Williston Lake (Bennet dam) when we lived in that area. p.s. Great survey, thanks!

Table 76 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Syringa Creek Day Use (cont'd)
2011 (n = 49)
Need more shore/beach areas. Levels could fluctuate from year to year so you could repeat favorite things sometimes but if they are underwater you would find new sites to check out.
Nice to have charts for boaters and investors… Robson boat launch of which I am happy to say I had something to do with both as part of my stint with Castlegar Development Board, Bob Briscon, Oceans and Fisheries. Keep up the good work.
No P.W.Cs. More refuse cans, stop smokers!
Please preserve the arrow lakes and keep them pristine for years and years to come.
Showers, slow sign by day park, bigger stalls for more than one trailer.
Some dock facilities at campground.
Sometimes the water level is too high that lots of debris is floating in the water — interferes with swimming near the shoreline.
Stop the wild fluctuations!!
The boat launch and parking must be dealt with. On a busy day there is vehicles parked everywhere including the hi-way. A paved lot with paved lines would probably help. A lot of people have no clue how to park with a trailer in tow.
The only concern with water levels is the lack of sandy beach for recreation and swimming.
The teenagers have always found a place to party on the arrow lakes and need to be policed or monitored so as not to disturb all other residents.
There is always too much junk on the water; it makes it hard to waterski, fish and swim. The lake needs to be stocked with more fish. The water levels need to be the same every year from late spring to mid fall. The Syringa camp ground needs a lot of work to make it appealing to travellers, and get rid of the $10.50 a night for an extra car. This does nothing to encourage friends and family to get together.
There should be more supervision of boaters who are drinking on the lake. We witnessed a water-skiing accident at MacDonald creek where the boat operator was impaired and driving much too close to our canoes and the beach where children were playing.
To many dead head on water? Late 10 o'clock closing.
Too many deadheads on the water. Not enough amenities on the lake for boat users.
Very clean and wild still.
Very nice park. We would like to see it maintained and expanded over the years.
Water levels are high this year but there has been a lot of runoff and they are quite high everywhere. Most years i find that the water levels are too low. The large fluctuation can be quite frustrating for recreational use.
Water levels make a huge difference in our enjoyment of Syringa.
We are very lucky to live in such a wonderful and beautiful place. It is a great environment to raise my children.

Table 76 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Syringa Creek Day Use (cont'd)
2011 (n = 49)
We love it!
We love the sturgeon release and Syringa beach!
We love to camp here and look forward to coming back in the years ahead.
We need to control the water level when all are camping and boating!! The water level is always fluctuating: winter fishing high water??? Poor fishing.
We need to have better access to the lake by vehicle, more camping up the lake, more beaches to go to.
2012 (n = 39)
Additional boat launch in campground- maintained or improved fish stocks (Syringa). Showers at campground (Syringa).
Be nice if lake was little lower water level for fishing maybe.
Be nice if water remains high, also reservation of campsites that are most beautiful are in reservation system and cost are ridiculous to reserve/unfair to local persons.
Beautiful!
Clean the debris from the beaches.
Clean up debris on beaches, haul more sand in. Pick up garbage, glass. Put in electricity. Put in showers so we don't have to go home everyday. Stupid to charge for car parking in the site we are already paying for and then leaving outside gates for vandals. Pick up logs, driftwood, hire students! Use that for fire lighting.
Consider people with pets (dogs) in their own section. I really do not appreciate other people's pets all over the place, barking all the time. Not everyone likes dogs, day and night.
During this high water year a great deal of driftwood is on the beach, making walking hazardous yet you cannot collect this wood for camp fire use at your camp fire pit at you site!!
Group site should have a boat launch for Syringa creek campground users, this would provide relief at main launch.
I don't approve of the "reserved" area of Syringa campground. I would like to see Syringa campground open in spring and fall like the old days. I am aware of the change due to vandalism and it's a shame that it affects us this way. Cell phone service would be great especially for emergences.
I think more should be done to clear the lake of hazardous driftwood.
I think this facility needs to expand to meet the needs of this area. I don't think any provincial park should have reserved sites. The charges are getting very high and soon it will be cheaper to go to private campsites.
I would prefer that the lake level does not fluctuate as much as it does.

Table 76 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

Syringa Creek Day Use (cont'd)
2012 (n = 39)
If water levels stay the same and not fluctuate too much.
Improvements to area around the playground for swimming.
It would be nice if the water level was kept high and at a constant level.
It would be nice to be able to buy property along the lake.
It would be nice to see user-friendly hydro camps along the lakes, something that doesn't get loaded with Albertans and other silly tourists.
Keep it simple and as natural as possible.
Keep old rail bed trails/train tresses open to all users, no exclusivity! We are not all the same when it comes to our recreational activities just like we are not the same when we meet different users on those trails.
Keep the public beaches sandy and at a proper water level.
Maintaining a high arrow lake level defiantly makes the arrow lake beach experience more pleasant and safer. I know the lake level is controlled by the US.
More anchorages needed particularly at bowman, sunshine, renata, edgewood, gladstone, hutcheson. Certainly the most pressing issue to me is the launching facility at syringa. Unfortunately the cost of fixing this engineering blunder is most likely too prohibitive but would result in a much faster launch and de-launch, allowing the boaters the ease of less stress while doing so. Another dock on the other side of the same launch would be perfect.
More camp size, size for just tent and tent trailer. More site for trailer. Full hook ups and practical hook up. People to drive slower.
More campsites and maybe showers.
More launch facilities.
More sandy beaches on the waterfront behind the campsites.
Nice and peaceful, not crowded like some lakes. Keep water levels reasonable to campsites please.
Nice area.
Nice place, clean and organized.
No, except hydro or private enterprise should develop more camping areas throughout the region to allow more families the opportunity to enjoy our beautiful west Kootenays, including the Ponderay Valley/ camp ground always full!!
Pamphlets at the campground with data/stats on lakes/dam would be nice.
Smoking should be prohibited in the area, picnic and shore.

Table 76 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Syringa Creek Day Use (cont'd)
2012 (n = 39)
Syringa by far has been my favourite place camp swim or picnic and boat at. I only wish when camping there were showers even if they were $2 a shower. Also when people camp they come here to relax, not be told 10 pm shhh, no talking. People come to camp, relax and socialize not be told what to do.
There is very few kokanee this year. I hope this can be rectified by consistent water levels. Re: hunting- stop to kill female whitetails and only open for males apts or better for 3 or 4 years until stocks return
To have more camping sites in campground, camping in overnight stay. People to drive slower. Have place for just tents and tent trailer. Full hook ups and practical
We hope that this resource will be available to future generations of Canadians as a place to go to enjoy nature and get away from crowded/noisy/hectic places like our current home town has become.
We live in the best part of the world.
Would be nice to have a wharf on each side of the launch. A breakwater and larger parking lot are also required.
2013 (n = 69)
$10.50 a night for extra vehicle is crazy, $7 bundle of wood is too high, bathrooms being cleaned at 8-8.30am doesn't work, the gates should not be locked at night, there should not be a 14 day maximum stay. Showers and hot water would be great and soap in bathrooms.
A lot of debris floating everywhere, and along shorelines.
Add soap dispensers in campsite bathrooms, reduce reservation sits, give locals more opportunity to camp on spur of the moment, if you pay for a campsite, you should have to occupy the campsite.
Although i do not own a boat yet i do plan on owning one, in the near future and will likely use the Syringa or deer park boat launches.
As locals we have a very hard time getting a camping spot here at Syringa, there are far to many reserved sites that sit empty. You are told you can camp 1 night in them but if it is reserved you have to move, who wants to spend all that time setting up to be told you have to move. Also it seems that every year there are more and more reserved sites. What ever happened to affordable camping, you pay big bucks for camping with flush toilets, no showers or anything else. Is it all about the money ???
Bathrooms need to be cleaner with soap, fill in the sites so the platform isn't a hazard.
Been coming to the area for long time and now live in area. Park is well kept. Lake has lots of activities and improvements are going on which will make it easier for some to enjoy the area. Friends that have houses on lake do complain about low water levels in summer.
Being we don't have a boat, we just usually camp and enjoy our family coming out as they live close by and meet friends here.
Campsite needs, showers (paid or free), electrical and water hookups.
Concerned about the amount of debris in the water when the level is high, dangerous for boating. Do not like such extremes in the water level. We love camping at MacDonald creek as well.

Table 76 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Syringa Creek Day Use (cont'd)
2013 (n = 69)
Dog beach is pretty rough and rocky so difficult to access water.
Don't develop anymore, we don't want it to be any busier than it is. The new dog beach is wonderful, especially with the water being low. I would suggest putting posts with poop bags along trails and at dog beach.
Earlier access to 1/2 of campground, reservable side should open easily in season.
Expand the campground in the future.
Fluctuating water levels are a major annoyance; use of generators in parks is noisy and are being used excessively. Also use of remote control boats very noisy. Keep boats away from swimming areas. Pylon reservation system needs to stop. Has created 2-tiered system.
Great.
Hand soap and sanitizes in washrooms also showers would be definite asset to this park.
I camp at the park on average 20 days/year and always notice many other campers with boats, the park would benefit with a semi private boat launch for campers and relieve congestion at the single launches.
I love having the water higher in the summer.
I think I've said enough.
I wish there were more campgrounds along the shore near Castlegar as Syringa is always crowded or full in summer months. Restrict/enforce generator use in campground.
I wish there were more low impact, walk in sites for tenters away from generators.
Increase the number of camping sites, showers, soap in bathrooms.
Kill wasps, more drop in sites, showers. Thanks.
More beach areas, sand added.
More campsites needed at Syringa, shower facilities would be welcome addition. Thank you.
Need more campsites and bigger two-lane boat dock. It is way too difficult to get an empty campsite on weekends
Need more trails and detailed trail maps for mountain bikers.
Need some improvement in the reservation system lots of days unavailable in reservable spots that should be available. Now reserveable spots are taken for days at a time unused just to have a spot. Sad.
Nice clean bathrooms, good job.
Not happy that the Syringa park facilities is closed, shut off by a gate for the majority of the year and local resident do not have year round access to this beautiful park.

Table 76 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Syringa Creek Day Use (cont'd)
2013 (n = 69)
Park needs showers.
Power sites and paid showers would improve our experience, more shallow swimming areas for young children with ropes, cell service is a safety concern, children activities programming, and monitoring noise at night at playground.
Pretty much satisfied.
Quit raising and lowering water all the time.
Showers in campground ... Power sites... Dust in campsites (some gravel needed), camp programs for kids *i.e.*, nature *etc*. swimming area roped off re: depth *etc*.
Showers, hooks ups (camping), hot water, cell service would all be great.
Showers, more campsites.
Showers, Wi-Fi, cell service, hook ups would all be wonderful.
So many logs.
Supposed to be free public recreational park when dam was put in, not now that BC Government has privatized it, too expensive and cater to out of town campers (supposed to be for locals).
Syringa boat launch needs more parking also walking dock closer to ramp and a wake break. Playground in the campground try to deal with tripping hazards and holes that could create hazards to our family and friends or anyone else enjoying the facilities.
Syringa provincial park could use showers and perhaps a couple of outhouses at the ends of the road loops..
Thank you for the opportunity to provide input.
Thanks for keeping the campground awesome for so many years.
The boat traffic has become very heavy; I feel the boats the park at the public beach are danger to swimmer and should be allowed to have boat access to these areas. It's also annoying to many people on the beach when boater park at the beach and blare their music.
The campground needs to be bigger.
The dock needs to be extended at least 40ft for safe use, dock needs a deck on the shore for safe access, now it's a major safety problem. Alcohol control to many boaties drinking.
The flush bathrooms are filthy, toilets back and floors have been dirty all season. So much broken glass along beach, dog's crap on pathways.
The lake view sites could use a little brushing so you could see the lake. More campsite are required, a boat dock for the campground would be nice.
The sand is too big, it's not fine enough.

Table 76 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Syringa Creek Day Use (cont'd)
2013 (n = 69)
The Syringa campground could use showers (paying) love the clear warm water and plenty of wildlife, we'll be back next year.
The water level on the shoreline should be kept at max level for all recreational purposes. This area is the most beautiful of BC. Our levels should be kept for our area. Campground should be increase there should be less reserved sites and none as many times they are empty with people not staying as you can only stay a night in reserved if not booked that night. Should be first come first served. No charge for extra vehicle, no charge or half for extra trailer in.
The water levels go up and down way too quickly. It should be done far more gradually.
The water levels have affected the spawning situation for kokanee, should stay up to the creek beds, doggie bags available in different locations, love new dog beach, the natural water slide and Tualip Falls are a bone.
There should be fewer reservations at Syringa, people should be forced to show up and book- many campers travel from campground to campground throughout the summer and should not be out of luck because of someone booking from their couch and who sometimes don't even show up. There should be more areas lined off for swimming, and more boate.r education re: speed and safety (Syringa not bad, but we need to keep it that way)
This lake must be kept clean; development will kill the atmosphere here just as it does everywhere. Keeping a stable water level is important for fishing, however it is understood that is must be managed.
This park was much better managed when run by bc parks staff, too few employee now. Hosts unfriendly and inconsistent with reservation systems, bathrooms not thoroughly cleaned. Best park in southern BC.
To much driftwood on the lake most days. Really enjoyed the campground this year as we were allowed to sit around the campfire at night and have a few drinks, talk, play cards *etc*. In previous years we were told to go to bed at 10.00pm when there were four adults around the fire talking.
Try to maintain more constant levels and then develop some more boat access rec sites. Also open up more boat launch sites with parking facilities or up grade the existing boat launches with more parking space.
Vehicle speed in the campground (including the camp attendants) too fast sometimes. We have small kids and are concerned.
Very beautiful, would hate to ever see liter and garbage around the areas, I am glad we live in an areas that is clean and people clean up after themselves.
We come here because there are few people, if it got to be more we'd stop.
We like the water to be higher, it would be nice if there were more camping opportunities on the arrow lakes.
Wind can be an issue, especially rapid weather changes (squalls).
Would be great if there was a nice sandy beach near the campground at Syringa Creek. We would probably use the shore area more frequently if there was a proper beach access.

Table 76 (cont'd). Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?
Syringa Creek Day Use (cont'd)
2013 (n = 69)
Would be great to have access to hot showers, wasp control.
Would be nice if the facility had showers.
Would like to see more sites available during summer.

APPENDIX I – TRAFFIC COUNTER RESULTS

Traffic Results

On average, over 10,000 boats are launched each year on the Arrow Lakes. This is a conservative number, as there are a number of other formal and informal boat launch locations on the Arrow Lakes that were not included in this study.

Key Considerations

The following describes key considerations affecting traffic counts for each year of the study period.

Sample Years 1 and 2 (2009-2010)

In 2009-2010 (the warmest recorded winter during the study period), more people used the boat launches in the winter and spring seasons than in any other year. In 2010, the recorded use at McDonald Creek boat launch appeared to be almost double that of subsequent years. It was likely higher than normal due to construction related activity counts on either side of the construction period when the boat ramp was out of service to the public.

Sample Year 3 (2011)

There was no construction activity or high water that adversely affected boat launch use in 2011. Thus, this is likely the most 'normal' year for comparison than any of the other year.

Sample Year 4 (2012)

In Year 4, recorded boat launches on the Arrow Lakes showed significant decreases over other years. The decreases may be attributed to the fact that many of the counters had to be removed during six weeks of excessive high water during July and August. In addition, the excessive high water levels producing a prolonged presence of floating debris that clogged some boat ramps and created boating safety hazards throughout the lake for much of the summer.

The Syringa Creek and Nakusp counters provided a base line for comparisons as these counters were not removed during the 2012 season and represent over 62% of all the boating use on the lake. In 2012, boat launch use at Syringa Creek was down 15% and Nakusp was down 8%. Use at Anderson Point was higher than other years but there was road construction activity through much of the summer and fall that would have generated higher traffic counts as the counter is situated on the road above the ramp.

Sample Year 5 (2013)

Traffic count data indicates that 9,380 boats were launched at the study sites in 2013, which is a 17% decrease in use from 2011 and 23% lower than 2010. This suggests that use is steadily decreasing.

However, this number may be closer to the four-year average of 10,305 launches per year if we consider the following:

- As mentioned above, 2009 – 2010 was a warm winter, resulting in more boat traffic on the lakes in winter and spring, and the McDonald Creek boat launch use in 2010 appears to be almost double that of subsequent years. This alone could represent an over-count of over 400 launches.
- Year 4 (2012) was a very high water year, thus counters were removed for 6 weeks and counts were down.

If the previous year's use was applied for the 2013 construction period at those sites where construction took place it would add 816 launches, bringing the total to 10,196. This would be a 4% increase over 2012 and only a 5% decrease from 2011.

Average Traffic Counts – All Years

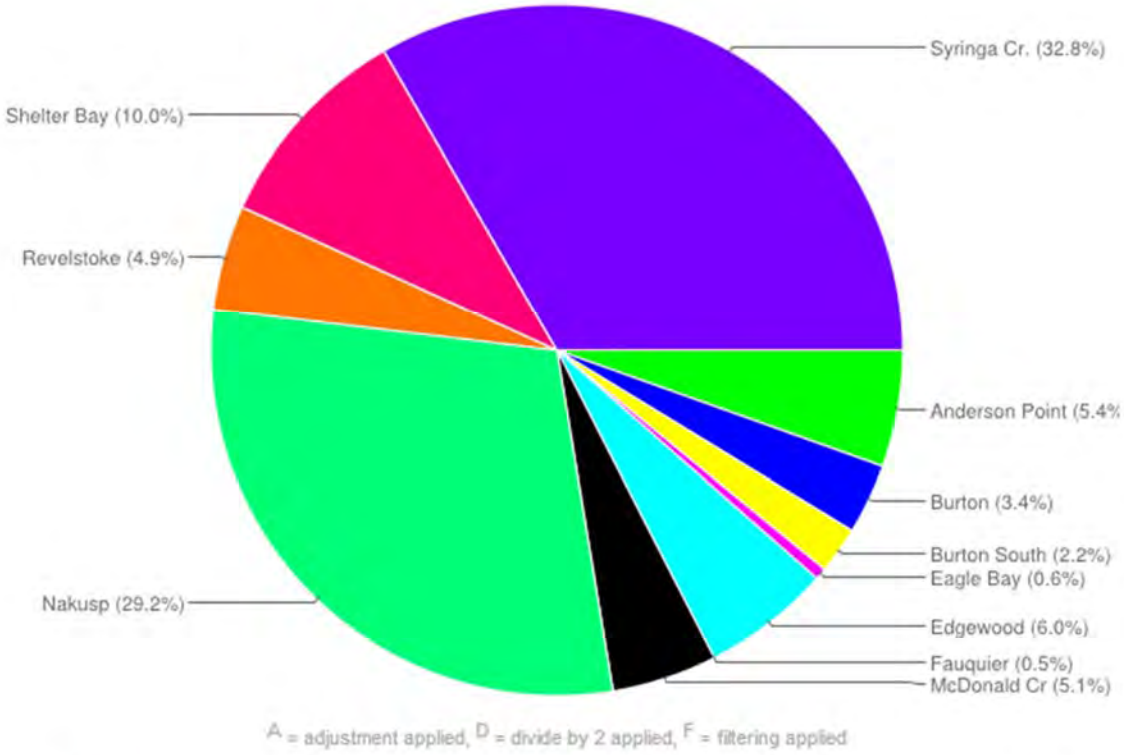
Under normal operating conditions, all years would likely have produced a count somewhere between 10,200 – 10,700 launches per year. The table on the following page provides an annual comparison of all boat launch activity in the study between 2009 and 2013.

Table 77. Arrow Lakes Reservoir – Annual Traffic Summary (2009-2013)[13]

Year	Site	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Total	Grand Total
2009	Burton	--	--	--	--	--	--	--	--	62	19	8	0	**220**	
	Eagle Bay	--	--	--	--	--	--	--	--	25	3	0	0	**68**	
	Edgewood	--	--	--	--	--	--	--	--	84	51	48	37	**630**	
	Fauquier	--	--	--	--	--	--	--	--	33	7	6	3	**128**	
	McDonald Cr	--	--	--	--	--	--	--	--	71	26	15	7	**317**	
	Nakusp	--	--	--	--	--	--	--	--	245	178	144	149	**2066**	
	Revelstoke	--	--	--	--	--	--	--	--	114	81	32	0	**604**	
	Shelter Bay	--	--	--	--	--	--	--	--	211	142	79	9	**1233**	
	Syringa Cr.	--	--	--	--	--	--	--	--	465	152	78	55	**1972**	**7238**
2010	Anderson Point	--	--	--	32	49	99	97	96	55	43	20	14	**505**	
	Burton	0	3	2	8	32	83	106	123	15	19	9	2	**414**	
	Eagle Bay	0	0	1	1	22	2	41	25	17	2	0	0	**115**	
	Edgewood	96	100	136	64	61	88	174	103	26	34	21	15	**921**	
	Fauquier	3	17	18	12	35	--	--	--	3	0	0	0	**88**	
	McDonald Cr	4	19	16	32	124	--	300	215	87	37	12	2	**849**	
	Nakusp	152	162	170	192	247	330	748	529	161	185	90	150	**3114**	
	Revelstoke	2	16	33	24	42	90	159	87	86	68	17	0	**623**	
	Shelter Bay	0	41	100	89	165	85	142	148	118	179	31	0	**1092**	
	Syringa Cr.	106	130	181	164	307	565	997	738	175	174	64	32	**3637**	**11358**
2011	Anderson Point	12	12	12	21	42	61	104	86	60	56	30	4	**501**	
	Burton	0	9	2	11	32	72	121	144	56	6	2	2	**459**	
	Burton South	--	--	--	--	--	--	--	8	22	5	0	1	**36**	
	Eagle Bay	0	0	0	0	9	3	23	13	11	7	1	0	**65**	
	Edgewood	12	10	42	51	66	68	140	123	53	29	7	11	**614**	
	Fauquier	2	0	0	4	2	3	3	2	3	0	0	0	**21**	
	McDonald Cr	0	0	0	36	33	55	101	148	52	3	0	7	**444**	
	Nakusp	183	114	125	198	202	318	643	724	266	165	90	161	**3195**	
	Revelstoke	0	0	0	25	44	60	119	129	91	51	2	0	**516**	
	Shelter Bay	0	0	22	102	171	119	116	174	174	129	24	17	**1047**	
	Syringa Cr.	44	77	97	147	241	495	1066	1004	381	112	54	51	**3794**	**10691**
2012	Anderson Point	12	13	32	49	64	63	71	92	90	50	25	9	**756**	
	Burton	1	0	0	1	13	44	101	128	30	6	2	0	**204**	
	Burton South	0	0	2	8	4	13	8	37	24	5	0	3	**92**	
	Eagle Bay	0	0	0	2	16	4	31	2	6	1	0	0	**36**	
	Edgewood	14	12	33	52	50	52	68	126	76	35	16	4	**470**	
	Fauquier	0	0	2	2	4	7	0	4	0	2	0	0	**21**	
	McDonald Cr	2	0	0	11	37	47	70	110	57	13	2	3	**271**	
	Nakusp	171	112	209	213	231	225	524	697	320	224	132	135	**3198**	
	Revelstoke	1	5	4	30	24	64	205	136	79	34	4	0	**392**	
	Shelter Bay	4	0	7	88	181	70	87	205	223	132	39	8	**973**	
	Syringa Cr.	48	46	87	144	239	266	873	1008	341	149	87	82	**3378**	**9792**
2013	Anderson Point					40	49	76	72	26	25	12	9	**384**	
	Burton	0	0	0	5	27	26	106	132	28	5	0	1	**411**	
	Burton South	0	79	70	14	23	24	72	54	12	2	3	2	**418**	
	Eagle Bay	0	0	0	0	4	3	5	10	3	2	0	0	**34**	
	Edgewood	10	44			60	32	60	85	31	25	28	17	**407**	
	Fauquier	0	2	3	0	3	1	4	11	4	2	2	1	**38**	
	McDonald Cr	4	0	31	29	43	73	145	164	52	10	10	5	**649**	
	Nakusp	175	15			115	257	530	487	242	192	114	149	**2086**	
	Revelstoke	3	13	24	19	43	65	121	77	89	33	15	0	**505**	
	Shelter Bay	1	8	107	95	202	116	133	168	152	120	51	9	**1142**	
	Syringa Cr.	80	118	147	174	275	459	916	724	229	109	46	55	**3307**	**9380**

[13] See Appendix A for a description of how the TRAFx traffic counters work and how annual traffic counts are calculated.

Arrow Lakes – Average Daily Traffic by Site



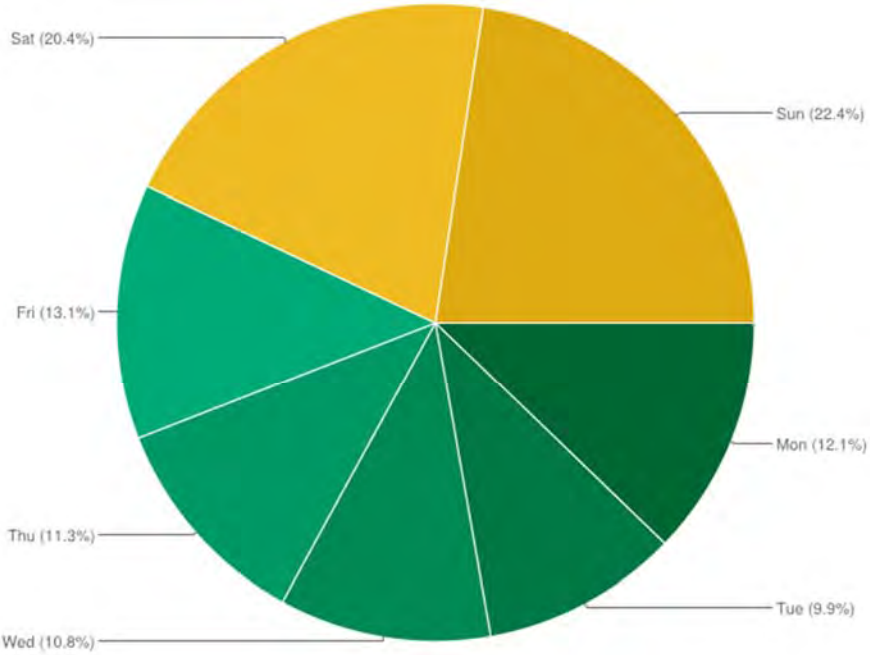
A = adjustment applied, D = divide by 2 applied, F = filtering applied

Site name	Daily average
Anderson Point ADF	1.6 (5.4%)
Burton ADF	1.0 (3.4%)
Burton South ADF	0.6 (2.2%)
Eagle Bay ADF	0.2 (0.6%)
Edgewood ADF	1.8 (6.0%)
Fauquier ADF	0.1 (0.5%)
McDonald Cr ADF	1.5 (5.1%)
Nakusp ADF	8.7 (29.2%)
Revelstoke ADF	1.4 (4.9%)
Shelter Bay ADF	3.0 (10.0%)
Syringa Cr. ADF	9.8 (32.8%)

The average annual boat launch use recorded on the Arrow Lakes is over 10,300 boats per year. Syringa Creek and Nakusp are the most active boat launch locations and constitute over 62% of the daily recorded boat launch traffic while Fauquier and Eagle Bay combined generate only about 1% of total boat launch traffic. The Revelstoke boat ramp would be expected to receive much more use than recorded due to its nearby population centre. However, in addition to the low water periods during the winter and spring, the short ramp length, poor ramp condition, and poor alignment with water flow make the ramp virtually unusable for much of the year. Also, many of the traffic counts are not actual launches but rather people

using the ramp for other recreational activities. Therefore this count may be higher than the number of actual boat launches occurring.

Arrow Lakes – Average Traffic by Day of the Week

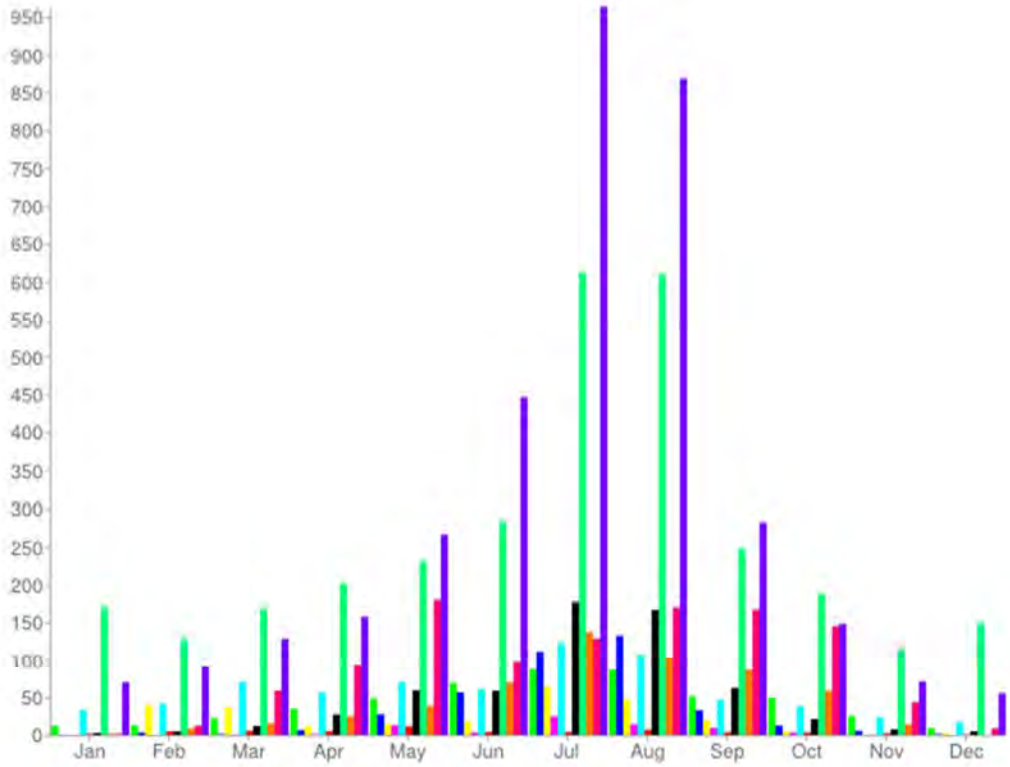


site name	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Anderson Point[ADF]	1.5	1.2	1.2	1.3	2.0	1.8	2.1
Burton[ADF]	0.9	0.9	0.8	0.9	1.0	1.2	1.2
Burton South[ADF]	0.6	0.5	0.5	0.8	0.6	0.6	0.8
Eagle Bay[ADF]	0.2	0.1	0.1	0.2	0.2	0.2	0.2
Edgewood[ADF]	1.6	1.5	1.7	1.6	1.8	2.1	2.2
Fauquier[ADF]	0.1	0.1	0.1	0.1	0.1	0.2	0.2
McDonald Cr[ADF]	1.3	1.3	1.1	1.3	1.5	2.0	2.0
Nakusp[ADF]	7.6	6.1	7.0	7.3	8.3	11.8	12.5
Revelstoke[ADF]	1.5	1.3	1.4	1.4	1.2	1.5	1.7
Shelter Bay[ADF]	2.0	1.6	1.7	1.9	2.8	5.4	5.3
Syringa Cr.[ADF]	7.9	6.0	6.7	6.4	7.7	15.3	17.9
daily averages	2.3	1.9	2.0	2.1	2.5	3.8	4.2

[A] = adjustment applied, [D] = divide by 2 applied, [F] = filtering applied

Generally, each weekend day receives about 1.3 – 2 times the number of recorded counts as most week days. Weekends account for approximately 43% of the weekly use. As expected, Friday and Monday counts are generally higher than other week day counts for most sites. Anderson Point is an anomaly, likely due to commuter traffic, as it continues to have higher Friday counts than on Saturday.

Arrow Lakes – Average Traffic by Month



Site Name	Average	Median	STDV (σpop)	Min	Max
Anderson Point[ADF]	42.0	41.2	26.6	9.0	87.2
Burton[ADF]	32.3	9.2	43.1	0.3	132.0
Burton South[ADF]	21.3	16.3	19.8	2.0	64.0
Eagle Bay[ADF]	5.6	1.9	7.5	0.3	24.3
Edgewood[ADF]	56.9	51.2	30.6	16.8	123.0
Fauquier[ADF]	4.2	3.7	2.6	0.8	11.0
McDonald Cr[ADF]	50.1	23.8	58.4	2.5	176.8
Nakusp[ADF]	258.4	194.2	164.5	114.0	612.6
Revelstoke[ADF]	46.4	31.4	42.7	1.5	137.1
Shelter Bay[ADF]	91.9	95.6	63.5	1.3	179.6
Syringa Cr.[ADF]	295.4	152.4	298.3	55.0	963.3

[A] = adjustment applied, [D] = divide by 2 applied, [F] = filtering applied

As expected, July and August recorded the highest average traffic counts. Syringa Creek Park had the highest average use with over 960 launches in July and 850 in August, while Nakusp averaged about 705 and 650 launches respectively in the same months when not under construction. However, Nakusp maintained the highest counts through the off-season months (October - April). This may be due to the fact that the boat launch access is good, right in town and plowed regularly. The moorage at the marinas near Syringa Creek Park and Nakusp also reduced the need for launching a boat each time it was used, so the total boating use estimates for the lake are likely much higher than recorded.

Special Operational Considerations

Continuous traffic counts were not possible at all locations as counters were removed during periods of boat launch upgrades and new construction. Six of the eleven boat launches studied had major construction work undertaken during the study period resulting in the removal of the respective traffic counters during these periods. Also, excessive high water in 2012 and a faulty battery pack case in 2012 resulted in disruptions to the acquisition of continuous traffic counts. These are outlined below.

Construction Periods

During the study period the following boat launches underwent major construction extensions and upgrades making them unavailable for full public use through: McDonald Creek, Fauquier boat, Burton South, Anderson Point, Nakusp and Edgewood. The traffic usage calculations for the partial months either side of the construction periods at the respective locations have been adjusted for all years to ensure that the AADT values were calculated minus these days and that no average values were applied to the days while the ramps were under construction and unavailable for public use. As the study period finished in the fall of 2013, the counters were removed in early November and for each location a 3-year average value was applied for the months of November and December 2013. Construction exclusion dates are noted in Table 5.

High Water Period

Year 4 (2012) was an excessively high water year with a sustained water level of 1446' elevation, or about 2 feet above normal pond level of 1444' during the summer period. To protect the traffic counters from water damage, eight of the eleven counters were removed between July 6, 2012 and August 15, 2012. The counters at Nakusp, Syringa Creek and Anderson Point were able to remain in situ during these periods and provided a good base line comparison for that year. At all other locations, the elevation, design and layout of approaches to the top of the boat ramps precluded moving the counters to higher ground to obtain continuous data collection. The water above full pool also generated greater than normal amounts of floating debris on the lake and clogged some boat ramps from time to time depending on the direction of the wind and waves. Water level exclusion dates are noted in Table 5.

Equipment Issues

On October 31 2012, during regular fall traffic counter winterization schedule, the Anderson point counter was removed due to planned road construction activities in preparation for the boat ramp construction during the following winter and spring. Upon removal, this counter was found to have a faulty battery pack case which resulted in the counter not functioning as of September 9, 2012. As it was eventually decided to keep this ramp available for public use through the end of December, a count was applied based on a 2-year average for each of the three respective months at this site.

Averages applied for missing data

Total annual traffic counts, as calculated using the TRAFx system, are on a calendar year basis while the monthly, weekly and daily averages are calculated on specific selected time periods. The Average Annual Daily Traffic (AADT) is lower than the actual average use during the summer months, as that is the peak use period, and is higher than actual use in winter months when the ramps are not accessible or used very little. Thus, due to seasonal constraints at most of the Arrow Lakes locations, the AADT calculations for the summer months are conservative and winter months are over-estimates. To best reflect actual use for all locations, the use estimates for minor missed days in partial months of counts have been based on the AADT. However, monthly average traffic from past years was used for complete months of missing data where construction and other disruptions occurred while the boat ramps were still available for public use. The AADT calculations were also adjusted where average monthly data was added in to avoid over counting.

To more accurately and consistently present the summary comparison of total boat ramp use across all years, the average November and December counts for each location from the past three years have been respectively applied to the November and December 2013 data. Due to missing data in August and October 2012 at the Fauquier location, averages from other years were applied to the values for those months. This was also done for Anderson Point from October – December 2012 as the counter had been removed for proposed road construction but the boat ramp was still usable by the public. AADT calculations were adjusted to match each change.

While these disruptions in traffic counts posed a few challenges, the numbers derived provide a very reasonable estimate of the average annual boat launch use for the study sites.

APPENDIX J – SITE PHOTOS

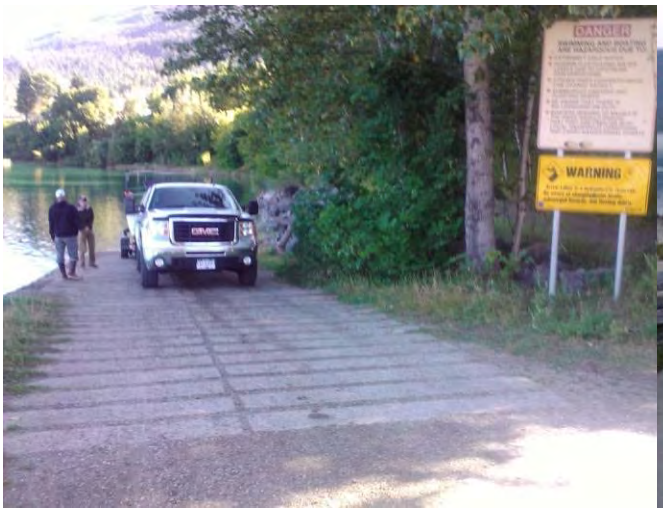


Figure 29. Revelstoke Boat Launch

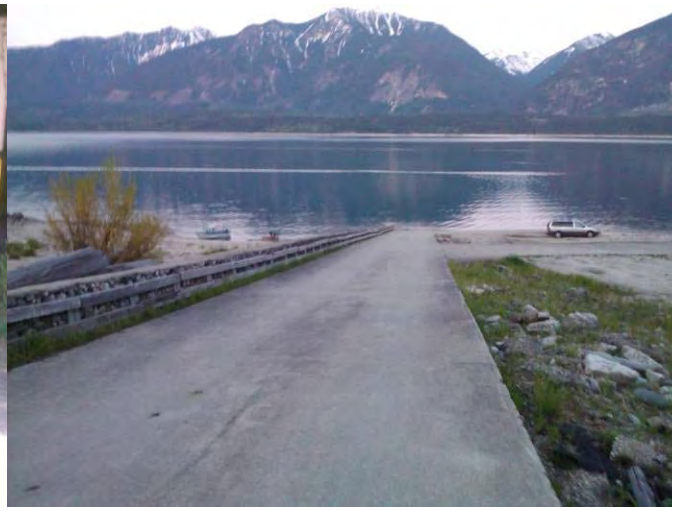


Figure 30. Shelter Bay Boat Launch

Figure 31. Eagle Bay Boat Launch

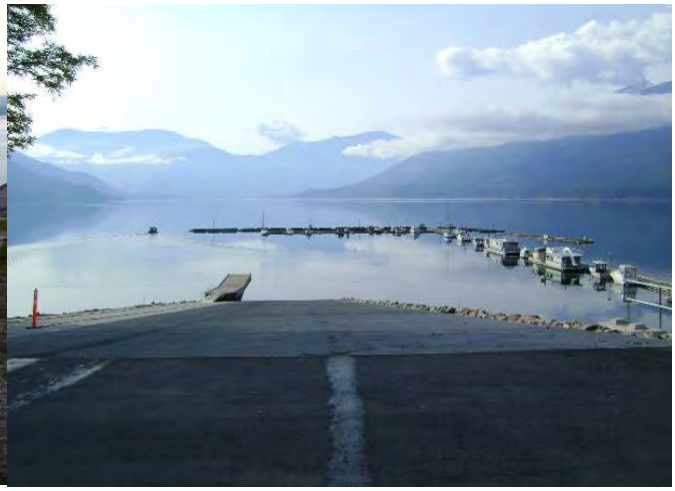


Figure 32. Nakusp Boat Launch

Figure 33. McDonald Creek Park Boat Launch

Figure 34. Burton Historic Park Boat Launch

Figure 35. Burton South Boat Launch

Figure 36. Fauquier Boat Launch

Figure 37. Edgewood Boat Launch

Figure 38. Syringa Creek Park Boat Launch

Figure 39. Anderson Point Boat Launch

Figure 40. Nakusp Beach

Figure 41. Syringa Day Use

APPENDIX K – PREDICTIVE MODEL

Methods

Variable Preparation

Two new variables have been developed: type of day (*i.e.*, weekday, weekend, and holiday), and season. A 3-season approach was adopted as per the Term of Reference (BC Hydro 2008, p.9): High Season (Victoria Day to September 30), Shoulder Season (April 1 to Victoria Day, and October 1 to October 30), and Low Season (November 1 to March 31). As many of the independent variables were nominal, a number of dummy variables were created:

1. Day Type: Holidays is reference category.
2. Season: High season is the reference category; 'Low' not included in Survey Data models as there was no survey data collected in low season.
3. Gender: Male is reference category.
4. Tourist/Resident: Resident is reference category.
5. Pre-/Post-Construction: Pre-construction is reference category.
6. Conflict Experienced: No conflict is reference category.
7. Shore-based/Water Activity: Water activity is reference category.

A series of data transformations (log, square root, cube root, and fourth root) were tested on the dependent variables to determine whether they would improve overall model fitness; however, no improvements to model fit were found. Subsequently, all interval variables have been normalized.

Model Operationalization

Two approaches for understanding what influences the number of visitors to the Arrow Lakes were used. The first used boat launches (provided by traffic counter data) and weather data provided by Environment Canada's Nakusp Weather Station: the number of visitors launching boats on the Arrow Lakes (as measured by the traffic counters installed at boat launches) served as the dependent variable; each multiple regression model included a constant, and all of the variables were entered at the same time. The five ambient temperature measures provided by Environment Canada (minimum, maximum, and mean temperatures, and heat- and cool-degree days) were highly correlated (*i.e.*, > 0.7; Table A10); thus the multiple regression models only include one measure of ambient temperature (though all three measures are tested). A total of five multiple regression models were tested using different independent variables:

1. Reservoir level at Nakusp (m), total precipitation (mm), mean temperature (°C), type of day, (weekend, holiday), and season.

2. Reservoir level at Nakusp (m), total precipitation (mm), maximum temperature (°C), type of day, (weekend, holiday), and season.
3. Reservoir level at Nakusp (m), total precipitation (mm), minimum temperature (°C), type of day, (weekend, holiday), and season.
4. Reservoir level at Nakusp (m), total precipitation (mm), maximum temperature (°C), direction of maximum wind gusts (10s of degrees), type of day, (weekend, holiday), and season.
5. Reservoir level at Nakusp (m), total precipitation (mm), maximum temperature (°C), speed of maximum wind gusts (km/h), type of day, (weekend, holiday), and season.

The second approach used the survey data, and employed 'satisfaction' as the dependent variable as a proxy for likelihood of visitors to return; only on-site responses from sample site on the Arrow Lakes were used. A constant was not included in these models (*i.e.*, coefficients have been calculated through the origin); the independent variables were entered into the model at the same time. The models tested four dependent variables:

1. Satisfaction with water levels on the Arrow Lakes;
2. Satisfaction with experiences on the water or on the shore of the Arrow Lakes;
3. Satisfaction with the condition of the boat ramp facilities; and
4. Satisfaction with the management of the Arrow Lakes.

The two temperature measures collected by survey staff (water and air temperature) were highly correlated (*i.e.*, > 0.7; Table A11); thus the multiple regression models only include one measure of temperature (though both measures are tested).

(Recreation characteristics)

- # Visits annually;
- # Years visiting the Arrow Lakes for recreation activities (years);
- Encounter conflict;
- Mean crowding (average of four seasons crowding variables); and
- Land or water-based recreation activity.

(Environmental characteristics)

- Reservoir levels (m);
- Temperature (air/water °C); and
- Pre-/post-construction status of sample site visited.
- Type of day

- Season

(Demographic characteristics)

- Age;
- Gender; and
- Tourist/resident.

Results

Traffic Counter/Environment Canada Data Predictive Models

The best fitting model was Model #2[14]. The second model accounted for 70.5% of the variance in the number of boat launches on the Arrow Lakes; residuals were normally distributed (Table 78). This model indicated that for every 1.05m increase in reservoir level, an additional 0.2 boats were launched at one of the eleven boat launches considered; for every 1.0mm of precipitation that falls, 0.07 fewer boats were launched at one of the eleven boat launches considered; for every 1°C in the daily maximum temperature, an additional 0.8 boats were launched at one of the eleven boat launches considered; controlling for the effects of reservoir level, total precipitation, maximum temperature, and season, significantly fewer boats (half as many) were launched on weekdays compared to holidays; and controlling for the effects of reservoir level, total precipitation, maximum temperature, and type of day, significantly more boats were launched during high season (four times as many) compared to low season. The High *vs*. Weekend and High *vs*. Shoulder dummy variables did not make any significant contributions to the model.

Table 78. Model 2: Standardized regression coefficients for multiple regression analysis predicting daily visits to Arrow Lakes boat launches with traffic counters (n = 1,059)[†].

Variable	B	SE B	β	p	R^2
(Constant)	0.568	0.115		< .001	
Reservoir level at Nakusp (m)	0.213	0.025	0.203	< .001	
Total precipitation (mm)	- 0.072	0.019	- 0.064	< .001	
Maximum temperature (°C)	0.833	0.039	0.727	< .001	
Holiday *vs*. Weekday	- 0.987	0.108	- 0.415	< .001	.705
Holiday *vs*. Weekend	- 0.116	0.112	- 0.047	> .05	
High *vs*. Shoulder	- 0.018	0.068	- 0.007	> .05	
High *vs*. Low	0.444	0.093	0.186	< .001	

[†] Boat launches with traffic counters were: Anderson Point, Burton Historic Park, Burton South, Eagle Bay, Edgewood Community Park, Fauquier Community Park, MacDonald Creek Provincial Park, Nakusp, Revelstoke, Shelter Bay, and Syringa Creek.

[14] The remaining 12 models that were tested can be found in the Appendix, Tables A12 - A23.

Conclusions

There was nothing exceptional about the visitors that indicated that they would not return to the Arrow Lakes based on their experiences the day that they completed a questionnaire; it should also be noted that the number of people was small (n = 12) over a five-year period.

Of the thirteen models tested, the Boat Launch/Weather Model #2 (Table 78) provided the best fit (explains 70.5% of the variance), suggesting that in addition to reservoir levels, total precipitation, maximum daily temperature, type of day, and season influence people's decision to visit the Arrow Lakes for recreation activities.

None of the models that used survey data were as well-fitted as Model #2. However, the eight models that were tested suggest that the more often in a year a person visits the Arrow Lakes and the length of time (in years) that they had visited the Arrow Lakes decreased their satisfaction with different management activities. Increases in reservoir levels appeared to decrease satisfaction with boat ramp conditions and overall management of the Arrow Lakes. However, visitor satisfaction increased marginally at boat ramp sites that had been improved.

Appendix

Table A1. Indicate all of the activities that you do on the water or onshore of the Arrow Lakes (n = 12).

Activity	Freq.	%
ATV/Trail bike/4 x 4	2	16.7%
Beach activities	8	66.7%
Berry picking	5	41.7%
Bird watching	6	50.0%
Boating (motor cruising)	6	50.0%
Camping	10	83.3%
Canoeing/kayaking	5	41.7%
Cross-country skiing	2	16.7%
Drawing/painting/photography	3	25.0%
Fishing	7	58.3%
Horseback riding	1	8.3%
Hunting	3	25.0%
Mountain biking	3	25.0%
Mushroom picking	4	33.3%
Nature study	6	50.0%
Picnicking	4	33.3%
Scenic viewing	9	75.0%
Snowmobiling	2	16.7%
Swimming	9	75.0%
Walking/hiking	9	75.0%
Waterskiing	2	16.7%
Wildlife viewing	7	58.3%
Wind surfing	2	16.7%
Other	3	25.0%

Table A2. On average, how many days per month the Arrow Lakes in each season?

Season	n	Min.	Max.	Mean	95% CI	SD
Spring	11	0	30	6.0	± 6.8	10.198
Summer	11	0	21	9.8	± 5.1	7.757
Fall	11	0	30	6.5	± 6.7	10.073
Winter	11	0	4	0.6	± 1.0	1.433
Annual	11	3	225	68.7	± 49.7	74.933

Table A3. What recreation activities did you do today on the water or onshore of the Arrow Lakes† (n = 11)?

Today's Recreation Activity	Freq.	%
Beach activities	1	9.1%
Boating (motor cruising)	3	27.3%
Canoeing/kayaking	6	54.5%
Fishing	3	27.3%
Mushroom picking	1	9.1%
Picnicking	1	9.1%
Scenic viewing	1	9.1%
Swimming	3	27.3%
Walking/hiking	2	18.2%
Wildlife watching	1	9.1%
Other	2	18.2%

† Some respondents identified more than one activity.

Table A4. Are you participating in this activity today as a paying customer of a commercial recreation or tourism operator/guide (n = 10)?

Response	Freq.	%
No	9	90.0%
Yes	1	10.0%

Table A5. For each season below, indicate on a scale of 1 - 9 how crowded you have felt while visiting the Arrow Lakes.

Season	n	Min	Max	Mean	95% CI	SD
Spring	8	1	7	2.6	± 1.8	2.264
Summer	11	1	8	3.2	± 1.7	2.601
Fall	8	1	9	3.0	± 2.3	2.777
Winter	7	1	5	2.7	± 1.7	1.890

Table A6. Have you ever experienced any conflicts with other people or recreation activities while you were visiting the Arrow Lakes (n = 12)?

Response	Freq.	%
No	10	83.3%
Yes	2	16.7%

Table A7. The management of the Arrow Lakes seeks to balance many tasks. Please indicate your satisfaction with management activities.

Management Activities	n	Min	Max	Mean	95% CI	SD
On the whole, are you satisfied with water levels on the Arrow Lakes?	9	1	5	2.9	± 1.0	1.269
On the whole, do you have satisfying experiences on the water or onshore of the Arrow Lakes?	11	1	5	3.6	± 0.9	1.286
On the whole, are you satisfied with the conditions of the boat ramps on the Arrow Lakes?	8	1	5	3.3	± 1.4	1.753
On the whole, are you satisfied with the parking lot conditions when you visit the Arrow Lakes?	10	1	5	4.2	± 0.9	1.229
On the whole, are you satisfied with the management of the Arrow Lakes?	10	1	4	2.4	± 0.8	1.174

Table A8. Compared to the water levels that you experienced today, how might different water levels affect your use of the Arrow Lakes for recreation activities?

Statement	n	I will come back	I will go somewhere else
If the water levels is the same as today...	10	40.0%	60.0%
If the water level is higher than today...	10	40.0%	60.0%
If the Water level is lower than today...	10	70.0%	30.0%

Table A9. How long have you been coming to the Arrow Lakes for recreation activities (years)?

n	Min	Max	Mean	95% CI	SD
12	0	30	9.1	± 5.4	8.597

Table A10. Pearson correlation of potential variables in the traffic counter data/weather data models.

	Traffic Counts	Reservoir Level at Nakusp (m)	Total Precipitation (mm)	Temperature (°C)			Speed of Maximum Gusts (km/h)	Direction of Maximum Gusts (10s of degrees)	Day Type Dummy 1	Day Type Dummy 2	Season Dummy
				Mean	Maximum	Minimum(C)					
Traffic Counts											
Reservoir Level at Nakusp (m)	.536**										
Total Precipitation	-.168**	-0.021									
Mean Temperature (C)	.697**	.601**	-0.057								
Maximum Temperature (C)	.723**	.569**	-.121**	.983**							
Minimum Temperature (C)	.609**	.613**	0.053	.958**	.888**						
Speed of Maximum Gusts (km/h)	0.079	.149*	0.096	.177*	.180**	.147*					
Direction of Maximum Gusts (10s of degrees)	-0.074	-0.067	0.058	-.147*	-0.135	-.140*	0.038				
Day Type Dummy 1	-.339**	-0.003	0.023	-0.017	-0.019	-0.008	0.114	0.105			
Day Type Dummy 2	.311**	0.001	-0.011	0.015	0.016	0.008	-0.122	-0.091	-.939**		
Season Dummy Variable	-.129**	-.291**	-0.019	-0.016	0.016	-.068**	-0.03	0.051	-0.017	0.012	
Season Dummy Variable	-.501**	-.420**	0.042	-.791**	-.791**	-.735**	-0.103	0.109	0.013	-0.002	-.455**

* Correlation is significant at the 0.05 level (2-tailed); ** Correlation is significant at the 0.01 level (2-tailed).

Table A11. Pearson correlation of potential variables in the traffic counter data/weather data models.

	Satisfaction with water levels	Satisfaction with experiences on Arrow Lakes	Satisfaction with boat ramp conditions	Satisfaction with management	Annual visitation	# Years visiting Arrow Lakes	Experienced conflict	Mean crowding	Land/water activity	Water Level Nakusp	Air Temp	Water Temp	Construction Status	Age	Gender	Tourist/ Resident	Day Type Dummy 1	Day Type Dummy 2
Satisfaction with water levels																		
Satisfaction with experiences on Arrow Lakes	.421**																	
Satisfaction with boat ramp conditions	.384**	.256**																
Satisfaction with management	.628**	.444**	.565**															
Annual visitation	-.139**	-0.029	-.211**	-.181**														
# Years visiting Arrow Lakes	-.290**	-.084**	-.223**	-.359**	.129**													
Experienced conflict	-.097**	-.073**	-.120**	-.152**	.080**	.129**												
Mean crowding	0.018	-.065**	0.009	0.008	-.066**	0.002	.144**											
Land/water activity	-.052*	0.009	-0.036	0.027	0.039	0.012	-.069**	-.053*										
Water Level Nakusp	.131**	-0.008	.098**	.099**	-.058**	-.043*	0.012	.042*	-.153**									
Air Temp	.129**	0.012	.152**	.103**	-.071**	-.074**	0.013	0.008	-.212**	.531**								
Water Temp	.151**	0.024	.207**	.175**	-.139**	-.108**	0.012	.060**	-.207**	.603**	.784**							
Construction status	.188**	0.045	.550**	.325**	-.296**	-.164**	-.086**	.151**	0.05	.078*	.160**	.260**						
Age	-.136**	-.090**	-.082**	-.135**	.063**	.218**	-0.017	-0.016	.061**	-.066**	-.128**	-.089**	-.083*					
Gender	.069**	.075**	.048*	.093**	-0.026	-.075**	0.009	-0.004	.084**	.075**	.101**	.098**	0.055	-.128**				
Tourist/ Resident	.126**	0.039	.085**	.172**	-0.01	-.236**	-.077**	0.02	0.012	0.037	-0.021	0.004	-.186**	.069**	-0.03			
Day Type Dummy 1	-.070**	-0.024	-.057*	-.061**	.069**	0.01	-.040*	-0.03	0.028	-.122**	.054**	0.025	-.141**	.072**	-.040*	.096**		
Day Type Dummy 2	.043*	0.005	.049*	.045*	-0.035	-0.029	0.036	0.029	-0.026	.086**	0.003	0.037	.130**	-.057**	0.024	-.087**	-.771**	
Season Dummy	-.174**	0.01	-.215**	-.181**	.167**	.110**	0.009	-.074**	.180**	-.520**	-.655**	-.643**	-.304**	.060**	-.051**	0.026	.095**	-.087**

* Correlation is significant at the 0.05 level (2-tailed).; ** Correlation is significant at the 0.01 level (2-tailed).

Traffic Counter/Environment Canada Data Predictive Models

Table A12. Model 1: Standardized regression coefficients for multiple regression analysis predicting daily visits to Arrow Lakes boat launches with traffic counters (n = 1,059)[†].

Variable	B	SE B	β	p	R^2
(Constant)	0.651	0.123		< .001	.665
Reservoir level at Nakusp (m)	0.190	0.026	0.181	< .001	
Total precipitation (mm)	- 0.127	0.020	- 0.113	< .001	
Mean temperature (°C)	0.752	0.046	0.651	< .001	
Holiday *vs*. Weekday	- 0.995	0.116	- 0.419	< .001	
Holiday *vs*. Weekend	- 0.117	0.119	- 0.048	> .05	
High *vs*. Shoulder	- 0.074	0.075	- 0.029	> .05	
High *vs*. Low	0.275	0.103	0.115	< .05	

[†] Boat launches with traffic counters were: Anderson Point, Burton Historic Park, Burton South, Eagle Bay, Edgewood Community Park, Fauquier Community Park, MacDonald Creek Provincial Park, Nakusp, Revelstoke, Shelter Bay, and Syringa Creek.

Table A13. Model 3: Standardized regression coefficients for multiple regression analysis predicting daily visits to Arrow Lakes boat launches with traffic counters (n = 1,060)[†].

Variable	B	SE B	β	p	R^2
(Constant)	1.061	0.113		< .001	.596
Reservoir level at Nakusp (m)	0.219	0.029	0.208	< .001	
Total precipitation (mm)	- 0.170	0.022	- 0.153	< .001	
Minimum temperature (°C)	0.277	0.046	0.239	< .001	
Holiday *vs*. Weekday	- 0.916	0.127	- 0.385	< .001	
Holiday *vs*. Weekend	- 0.029	0.131	- 0.012	> .05	
High *vs*. Shoulder	- 0.536	0.080	- 0.211	< .001	
High *vs*. Low	- 0.644	0.101	- 0.270	< .001	

[†] Boat launches with traffic counters were: Anderson Point, Burton Historic Park, Burton South, Eagle Bay, Edgewood Community Park, Fauquier Community Park, MacDonald Creek Provincial Park, Nakusp, Revelstoke, Shelter Bay, and Syringa Creek.

Table A14. Model 4: Standardized regression coefficients for multiple regression analysis predicting daily visits to Arrow Lakes boat launches with traffic counters (n = 169)[†].

Variable	B	SE B	β	p	R^2
(Constant)	0.449	0.308		> .05	
Reservoir level at Nakusp (m)	0.198	0.070	0.200	< .05	
Total precipitation (mm)	- 0.050	0.052	- 0.043	> .05	
Maximum temperature (°C)	0.836	0.105	0.671	< .001	
Direction of Maximum Gusts (10s of degrees)	0.003	0.005	0.025	> .05	.684
Holiday *vs*. Weekday	- 1.135	0.262	- 0.457	< .001	
Holiday *vs*. Weekend	- 0.024	0.275	- 0.009	> .05	
High *vs*. Shoulder	0.171	0.186	0.066	> .05	
High *vs*. Low	0.490	0.233	0.184	< .05	

[†] Boat launches with traffic counters were: Anderson Point, Burton Historic Park, Burton South, Eagle Bay, Edgewood Community Park, Fauquier Community Park, MacDonald Creek Provincial Park, Nakusp, Revelstoke, Shelter Bay, and Syringa Creek.

Table A15. Model 5: Standardized regression coefficients for multiple regression analysis predicting daily visits to Arrow Lakes boat launches with traffic counters (n = 169)[†].

Variable	B	SE B	β	p	R^2
(Constant)	0.499	0.292		> .05	
Reservoir level at Nakusp (m)	0.202	0.070	0.204	< .05	
Total precipitation (mm)	- 0.045	0.053	- 0.039	> .05	
Maximum temperature (°C)	0.842	0.108	0.676	< .001	
Speed of Maximum Gusts (km/h)	- 0.016	0.049	- 0.015	> .05	.683
Holiday *vs*. Weekday	- 1.125	0.262	- 0.453	< .001	
Holiday *vs*. Weekend	- 0.023	0.276	- 0.009	> .05	
High *vs*. Shoulder	0.189	0.186	0.073	> .05	
High *vs*. Low	0.507	0.235	0.191	< .05	

[†] Boat launches with traffic counters were: Anderson Point, Burton Historic Park, Burton South, Eagle Bay, Edgewood Community Park, Fauquier Community Park, MacDonald Creek Provincial Park, Nakusp, Revelstoke, Shelter Bay, and Syringa Creek.

Survey Data Predictive Models

Table A16. Model 6: Standardized regression coefficients for multiple regression analysis predicting satisfaction with water levels using survey data (n = 387).

Variable	B	SE B	β	p	R^2
# Visits annually	0.019	0.048	0.020	> .05	
# Years visiting the Arrow Lakes for recreation activities	- 0.174	0.050	- 0.182	< .001	
Encounter conflict	- 0.032	0.123	- 0.014	> .05	
Mean crowding	0.015	0.053	0.013	> .05	
Land or water-based recreation activity	0.084	0.100	0.051	> .05	
Reservoir levels (m)	1.301	0.537	0.379	< .05	
Air temperature (°C)	0.056	0.073	0.054	> .05	.188
Pre-/post-construction	0.314	0.102	0.244	< .05	
Age	- 0.112	0.051	- 0.104	< .05	
Gender	- 0.069	0.096	- 0.041	> .05	
Tourist/resident	0.424	0.099	0.350	< .001	
High *vs*. Shoulder	- 0.187	0.166	- 0.089	> .05	
Holiday *vs*. Weekday	- 0.275	0.139	- 0.165	< .05	
Holiday *vs*. Weekend	- 0.113	0.128	- 0.081	> .05	

Table A17. Model 7: Standardized regression coefficients for multiple regression analysis predicting satisfaction with water levels using survey data (n = 387).

Variable	B	SE B	β	p	R^2
# Visits annually	0.022	0.048	0.023	> .05	
# Years visiting the Arrow Lakes for recreation activities	- 0.172	0.050	- 0.180	< .05	
Encounter conflict	- 0.034	0.123	- 0.015	> .05	
Mean crowding	0.012	0.054	0.011	> .05	
Land or water-based recreation activity	0.080	0.100	0.048	> .05	
Reservoir levels (m)	1.291	0.544	0.376	< .05	
Water temperature (°C)	0.052	0.100	0.040	> .05	.187
Pre-/post-construction	0.315	0.103	0.244	< .05	
Age	- 0.133	0.051	- 0.106	< .05	
Gender	- 0.071	0.096	- 0.043	> .05	
Tourist/resident	0.428	0.099	0.353	< .011	
High *vs*. Shoulder	- 0.209	0.172	- 0.099	> .05	
Holiday *vs*. Weekday	- 0.273	0.145	- 0.164	> .05	
Holiday *vs*. Weekend	- 0.113	0.132	- 0.081	> .05	

Table A18. Model 8: Standardized regression coefficients for multiple regression analysis predicting satisfaction with experiences on the water or on the shore using survey data (n = 436).

Variable	B	SE B	β	p	R^2
# Visits annually	- 0.001	0.047	- 0.001	> .05	
# Years visiting the Arrow Lakes for recreation activities	- 0.017	0.050	- 0.019	> .05	
Encounter conflict	- 0.123	0.127	- 0.052	> .05	
Mean crowding	- 0.020	0.053	- 0.019	> .05	
Land or water-based recreation activity	- 0.019	0.099	- 0.012	> .05	
Reservoir levels (m)	- 0.046	0.551	- 0.014	> .05	
Air temperature (°C)	- 0.053	0.073	- 0.052	> .05	.013
Pre-/post-construction	- 0.015	0.103	- 0.012	> .05	
Age	- 0.032	0.050	- 0.032	> .05	
Gender	0.136	0.096	0.085	> .05	
Tourist/resident	0.214	0.103	0.187	< .05	
High *vs*. Shoulder	- 0.074	0.164	- 0.036	> .05	
Holiday *vs*. Weekday	- 0.242	0.142	- 0.152	> .05	
Holiday *vs*. Weekend	0.012	0.132	0.009	> .05	

Table A19. Model 9: Standardized regression coefficients for multiple regression analysis predicting satisfaction with experiences on the water or on the shore using survey data (n = 436).

Variable	B	SE B	β	p	R^2
# Visits annually	- 0.005	0.047	- 0.006	> .05	
# Years visiting the Arrow Lakes for recreation activities	- 0.017	0.050	- 0.019	> .05	
Encounter conflict	- 0.116	0.127	- 0.049	> .05	
Mean crowding	- 0.019	0.053	- 0.018	> .05	
Land or water-based recreation activity	- 0.005	0.100	- 0.003	> .05	
Reservoir levels (m)	- 0.100	0.558	- 0.030	> .05	
Water temperature (°C)	0.013	0.101	0.010	> .05	0.011
Pre-/post-construction	- 0.031	0.105	- 0.025	> .05	
Age	- 0.028	0.050	- 0.028	> .05	
Gender	0.134	0.096	0.084	> .05	
Tourist/resident	0.208	0.103	0.182	< .05	
High *vs*. Shoulder	0.016	0.170	0.008	> .05	
Holiday *vs*. Weekday	- 0.279	0.148	- 0.175	> .05	
Holiday *vs*. Weekend	- 0.019	0.137	- 0.014	> .05	

Table A20. Model 10: Standardized regression coefficients for multiple regression analysis predicting satisfaction with the condition of the boat ramp facilities using survey data (n = 353).

Variable	B	SE B	β	p	R^2
# Visits annually	- 0.069	0.043	- 0.071	> .05	.429
# Years visiting the Arrow Lakes for recreation activities	- 0.086	0.047	- 0.083	> .05	
Encounter conflict	- 0.343	0.117	- 0.136	< .05	
Mean crowding	0.016	0.051	0.014	> .05	
Land or water-based recreation activity	- 0.033	0.096	- 0.017	> .05	
Reservoir levels (m)	2.566	0.502	0.692	< .001	
Air temperature (°C)	- 0.082	0.068	- 0.075	> .05	
Pre-/post-construction	1.115	0.095	0.776	< .001	
Age	- 0.027	0.048	- 0.024	> .05	
Gender	0.015	0.092	0.008	> .05	
Tourist/resident	0.207	0.094	0.156	< .05	
High *vs*. Shoulder	- 0.286	0.150	- 0.131	> .05	
Holiday *vs*. Weekday	0.203	0.131	0.113	> .05	
Holiday *vs*. Weekend	0.317	0.119	0.210	< .05	

Table A21. Model 11: Standardized regression coefficients for multiple regression analysis predicting satisfaction with the condition of the boat ramp facilities using survey data (n = 353).

Variable	B	SE B	β	p	R^2
# Visits annually	- 0.075	0.043	- 0.078	> .05	.428
# Years visiting the Arrow Lakes for recreation activities	- 0.087	0.047	- 0.084	> .05	
Encounter conflict	- 0.332	0.117	- 0.131	< .05	
Mean crowding	0.018	0.051	0.015	> .05	
Land or water-based recreation activity	- 0.005	0.097	- 0.002	> .05	
Reservoir levels (m)	2.418	0.508	0.655	< .001	
Water temperature (°C)	0.054	0.092	0.039	> .05	
Pre-/post-construction	1.081	0.097	0.752	< .001	
Age	- 0.019	0.048	- 0.017	> .05	
Gender	0.007	0.092	0.004	> .05	
Tourist/resident	0.196	0.094	0.148	< .05	
High *vs*. Shoulder	- 0.108	0.154	- 0.049	> .05	
Holiday *vs*. Weekday	0.121	0.136	0.067	> .05	
Holiday *vs*. Weekend	0.257	0.123	0.170	< .05	

Table A22. Model 12: Standardized regression coefficients for multiple regression analysis predicting satisfaction with the management of the Arrow Lakes using survey data (n = 394).

Variable	B	SE B	β	p	R^2
# Visits annually	- 0.037	0.046	- 0.039	> .05	
# Years visiting the Arrow Lakes for recreation activities	- 0.120	0.048	- 0.122	< .05	
Encounter conflict	- 0.219	0.115	- 0.094	> .05	
Mean crowding	- 0.049	0.050	- 0.045	> .05	
Land or water-based recreation activity	0.158	0.094	0.094	> .05	
Reservoir levels (m)	2.189	0.508	0.631	< .001	
Air temperature (°C)	- 0.078	0.067	- 0.074	> .05	.278
Pre-/post-construction	0.575	0.096	0.447	> .05	
Age	- 0.154	0.048	- 0.143	< .05	
Gender	0.017	0.090	0.010	> .05	
Tourist/resident	0.409	0.095	0.338	< .001	
High *vs*. Shoulder	- 0.319	0.158	- 0.145	< .05	
Holiday *vs*. Weekday	- 0.122	0.131	- 0.072	> .05	
Holiday *vs*. Weekend	0.175	0.121	0.125	> .05	

Table A23. Model 13: Standardized regression coefficients for multiple regression analysis predicting satisfaction with the management of the Arrow Lakes using survey data (n = 394).

Variable	B	SE B	β	p	R^2
# Visits annually	- 0.045	0.045	- 0.047	> .05	
# Years visiting the Arrow Lakes for recreation activities	- 0.119	0.048	- 0.122	< .05	
Encounter conflict	- 0.212	0.115	- 0.091	> .05	
Mean crowding	- 0.049	0.050	- 0.045	> .05	
Land or water-based recreation activity	0.197	0.094	0.117	< .05	
Reservoir levels (m)	2.013	0.516	0.580	< .001	
Water temperature (°C)	0.103	0.094	0.079	> .05	.278
Pre-/post-construction	0.530	0.098	0.412	< .001	
Age	- 0.141	0.048	- 0.131	< .05	
Gender	0.009	0.090	0.006	> .05	
Tourist/resident	0.395	0.095	0.327	< .001	
High *vs*. Shoulder	- 0.084	0.164	- 0.038	> .05	
Holiday *vs*. Weekday	- 0.224	0.137	- 0.134	> .05	
Holiday *vs*. Weekend	0.091	0.125	0.065	> .05	

Table A24. Based on your experience today, will you come back to the Arrow Lakes for recreation activities? — Elaboration (n = 7).

I'm from Germany and probably this is the only time in Canada I have. [2012/07/21; MacDonald Creek; post-construction.]
No boat dock. [2010/04/16; Fauquier Community park; pre-construction.]
Not on today's experience. Water level is too high and unpredictable and there is no beach. [2012/07/21; MacDonald Creek Provincial Park; post-constriction.]
Too busy, too much tourists [2011/08/15; MacDonald Creek Provincial Park; post-construction.]
Water is too low. [2011/04/16; Edgewood Community Park; pre-construction.]
Water level far too low. [2012/08/21; Fauquier Community Park; post-construction.]
Water level too high, no beach [2012/07/21; MacDonald Creek Provincial Park; post-construction.]

Table A25. Do you have any additional comments about recreation on the water or onshore of the Arrow Lakes?

If you are going to promote area make sure there is some fish in lake so you can catch some and have a meal as is now fish population sucks.
It is really beautiful here and if I should visit Canada again I would think about coming here again.
It would be wonderful if the water level could be kept constant — even though I know that is not possible!
Teach people how to be respectful campers — both of others & the environment.
The recreational facilities are rapidly coming to an end, if the CBI does not change or come to an end, there will no longer be any lake, only at the whim of the USA.
We found 1999 accidently a quiet, peaceful place at MacDonald Creek. We are very disappointed by the development into a noisy marina like spot.
We look forward to our two-week of vacation we get each year. This year we are sad that our short vacation time is not being spent as we hope all year to spend it. If the water level remains this high we will not spend the money or time to come here in the future.