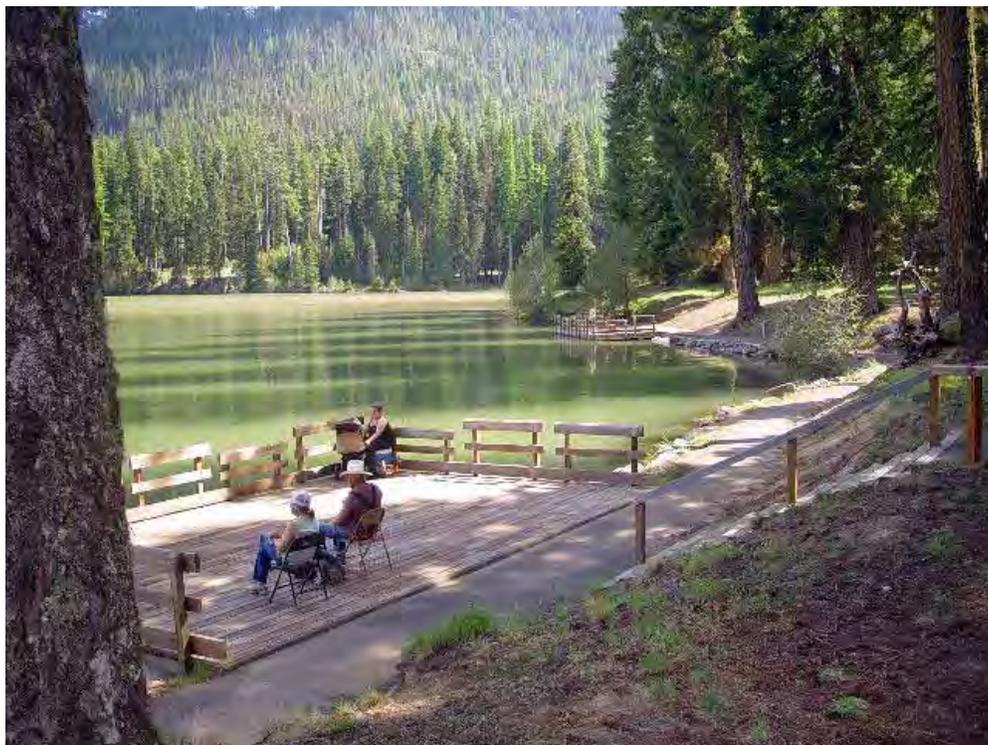


# RECLAMATION

*Managing Water in the West*

## Yakima River Basin Reservoir and River Recreation Survey Report of Findings



U.S. Department of the Interior  
Bureau of Reclamation  
Technical Service Center  
Denver, Colorado

January 2008

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

# **Yakima River Basin Reservoir and River Recreation Survey Report of Findings**

A Component of Yakima River Basin Water Storage  
Feasibility Study, Washington

Technical Series No. TS–YSS–15

Prepared for:

The U.S. Department of the Interior, Bureau of Reclamation

by

Aukerman, Haas & Associates LLC (AHA)



U.S. Department of the Interior  
Bureau of Reclamation  
Technical Service Center  
Denver, Colorado

January 2008

# Preface

The Congress directed the Secretary of the Interior, acting through the Bureau of Reclamation, to conduct a feasibility study of options for additional water storage in the Yakima River basin. Section 214 of the Act of February 20, 2003 (Public Law [P.L.] 108-7), contains this authorization and includes the provision "... with emphasis on the feasibility of storage of Columbia River water in the potential Black Rock Reservoir and the benefit of additional storage to endangered and threatened fish, irrigated agriculture, and municipal water supply."

Reclamation initiated the Yakima River Basin Water Storage Feasibility Study (Storage Study) in May 2003. As guided by the authorization, the purpose of the Storage Study is to identify and examine the viability and acceptability of alternate projects by: (1) diversion of Columbia River water to a potential Black Rock reservoir for further water transfer to irrigation entities in the lower Yakima River basin as an exchange supply, thereby reducing irrigation demand on Yakima River water and improving Yakima Project stored water supplies; and (2) creation of additional water storage within the Yakima River basin. In considering the benefits to be achieved, study objectives are to modify Yakima Project flow management operations to improve the flow regime of the Yakima River system for fisheries, provide a more reliable supply for existing proratable water users, and provide water supply for future municipal demands.

State support for the Storage Study was provided in the 2003 Legislative session. The 2003 budget included appropriations for the Washington State Department of Ecology (Ecology) with the provision that the funds "... are provided solely for expenditure under a contract between the department of ecology and the United States bureau of reclamation for the development of plans, engineering, and financing reports and other preconstruction activities associated with the development of water storage projects in the Yakima river basin, consistent with the Yakima river basin water enhancement project, P.L. 103-434. The initial water storage feasibility study shall be for the Black Rock reservoir project." Since that initial legislation, the State of Washington has appropriated additional matching funds.

Storage Study alternatives were identified from previous studies by other entities and Reclamation, appraisal assessments by Reclamation in 2003 through 2006, and public input. Reclamation filed a Notice of Intent and Ecology filed a Determination of Significance to prepare a combined Planning Report and Environmental Impact Statement (PR/EIS) on December 29, 2006. A scoping process, including two public scoping meetings in January 2007 identified several concepts to be considered in the Draft PR/EIS. Those concepts have been developed into "Joint" and "State" Alternatives.

The Joint Alternatives fall under the congressional authorization and the analyses are being cost-shared by Reclamation and Ecology. The State Alternatives are outside the congressional authorization, but within the authority of the state legislation, and will be analyzed by Ecology only. Analysis of all alternatives will be included in the Draft PR/EIS.

This technical document and others explain the analyses performed to determine how well the alternatives meet the goals of the Storage Study and the impacts of the alternatives on the environment. These documents will address such issues as hydrologic modeling, sediment modeling, temperature modeling, fish habitat modeling, and designs and costs. All technical documents will be referenced in the Draft PR/EIS and available for review.

# Acknowledgments

The following people were key contributors to this study. Dr. Robert Aukerman, Aukerman, Haas & Associates LLC, was the principal investigator; Elke Schuster, Research Associate, coordinated data collection, provided computer statistical data runs and printouts, and was the chief author of the report; Darrell Welch, the U.S. Department of the Interior, Bureau of Reclamation, was the overall project manager.

Numerous professional staff members of the U.S. Forest Service Okanogan and Wenatchee National Forests contributed time and resources. Pam Novitzky and Mike Ames at the Cle Elum Ranger District, and Mike Rowan at the Naches Ranger District were particularly helpful. A special thanks goes to Jody Fudacz, Tim Ehlers and Virginia Smoot who assisted in collecting data.

Lucy Schmidt, Denise Sobania, and Azam Junejo diligently pursued the visitors to collect survey data.

Ken and Donna Walker, the campground area managers for the Cle Elum Ranger District, Tom and Debbie Brewer and Tom Smith, the campground area managers for the Naches Ranger District, and all of their very friendly and helpful campground hosts helped a great deal with distributing and collecting back surveys and conducting visitor counts. Dee and Jerry at Clear Lake south campground and Albert at Clear Lake day use area also helped with data collection.

Colleen Hawley, Supervisory Park Ranger at Lake Easton State Park, was very informative and welcomed our survey efforts. Chuck Kohls, Captain of the Enforcement Division with the Washington Department of Fish and Wildlife and his staff officers were very helpful in providing visitor counts in the Clear Lake, Rimrock Lake, and Tieton River areas.

The professional and friendly staff at Red's Fly Shop, The Evening Hatch, Yakima River Fly Shop, Worley Bugger, Silver Beach Resort, and Bumping Lake Marina helped in distributing and collecting surveys, and conducting visitor counts. Two fly-fishing outfitters and seven rafting companies and their guides and staff contributed important information, time, and assistance.

Finally, we would like to thank the more than one thousand visitors who took the time and effort to complete the surveys and provide valuable recreation information.

# Definition of Terms

- cfs:** River flow in cubic feet per second
- Mean:** The mathematical average of a set of numbers, computed by adding them up and dividing by their number
- Mode:** The most frequent value of a set of data
- Water Level:** Reservoir level in feet

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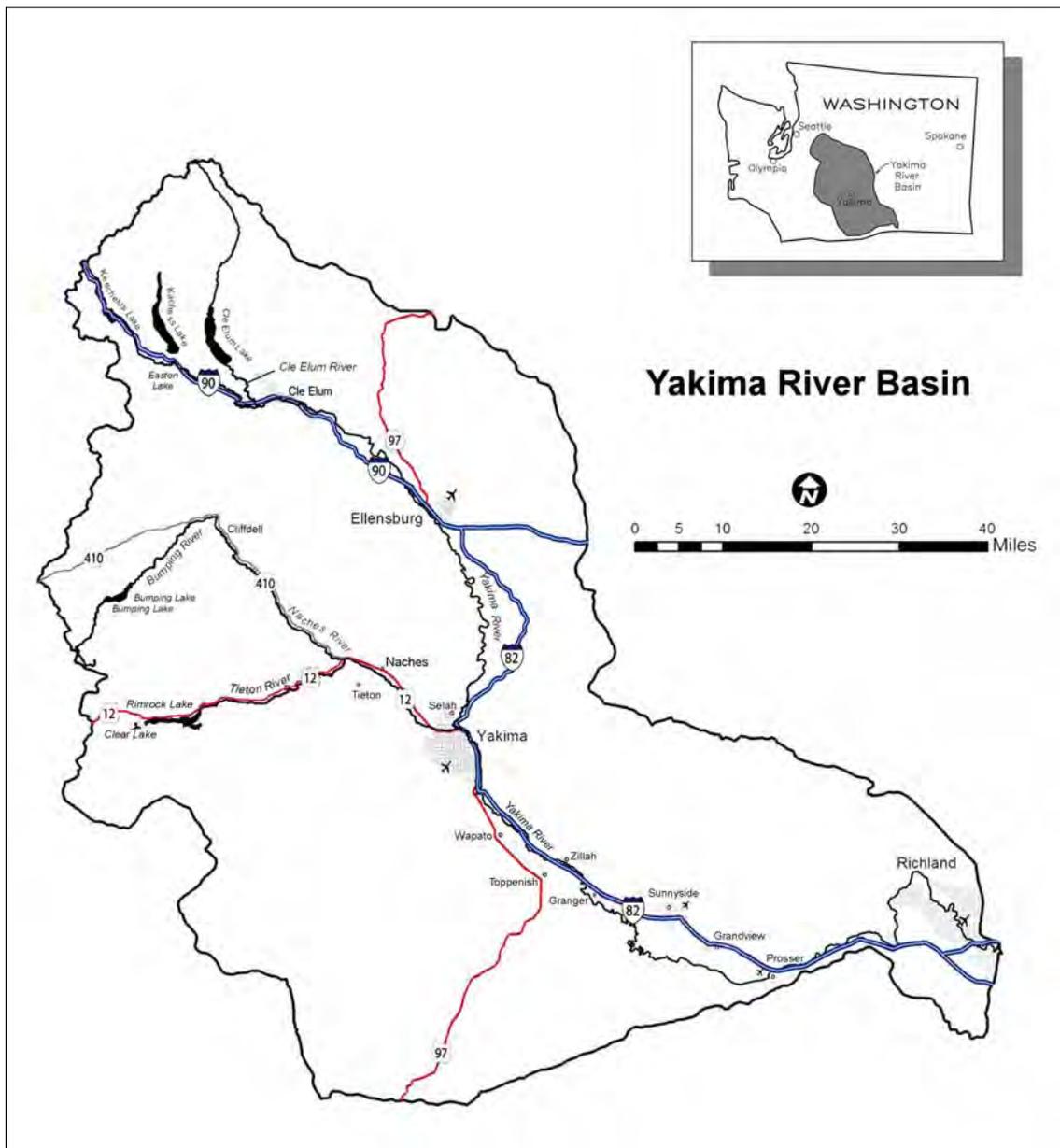
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# Introduction

## Description of Study Area

The Yakima River basin is located centrally in the State of Washington, encompassing the counties of Benton, Franklin, Yakima, and Kittitas. The primary water storage reservoirs for the Yakima Project include Bumping Lake, Clear Lake, Cle Elum Lake, Kachess Lake, Keechelus Lake, Lake Easton, and Rimrock Lake. The five primary rivers in the Yakima River basin are the Naches River, Yakima River, Cle Elum River, Bumping River, and Tieton River. (See map.)



Source: Yakima River Basin Visitor Survey.

## **Overall Purpose for Collecting Recreation Information**

The Bureau of Reclamation (Reclamation) has prepared the Yakima River Basin Water Storage Feasibility Study (Storage Study) Draft Planning Report Environmental Impact Statement (PR/EIS). The PR/EIS addresses different options for supplying additional water storage for the basin. The purpose of the Storage Study is to:

- develop additional stored water and manage it to improve anadromous fish habitat
- improve the reliability of Reclamation's Yakima Project in providing junior (portable) water users with water in dry years, and
- provide additional water to meet growth demand for municipal (urban/city) water users.

The flat-water lakes being looked at are Kachess Lake, Cle Elum Lake, Rimrock Lake, Bumping Lake, Clear Lake, Lake Easton, and Keechelus Lake.

The rivers being looked at are the Tieton River, Yakima River, Bumping River, Naches River, and Cle Elum River.

Currently, site-specific recreation-related data is unavailable for the primary flat-water lakes and rivers within the Yakima River basin. In order to accurately assess the current recreation environment within the basin, additional information must be collected from the recreationists who visit the basin's lakes and rivers. Further, the information collected from the recreating public will allow Reclamation to adequately assess the impacts that different water storage options would have on the recreation environment and the local and national economy. The current recreation environment (existing condition) and the potential environmental impacts (consequences) are documented in the Draft PR/EIS.

## **Survey Period and Number of Surveys Collected**

Visitor surveys were conducted at Kachess, Cle Elum, Rimrock, Bumping, Clear, Easton, and Keechelus Lakes as well as the Tieton, Yakima, Bumping, Naches, and Cle Elum Rivers during the summer recreation seasons of 2006 and 2007 (Memorial Day Weekend until Labor Day Weekend). In addition, periodic sampling during the fall and spring 2006/07 fishing seasons took place on the Yakima River.

One thousand one hundred and thirty-eight (1,138) total useable surveys were completed at eleven different water bodies within the basin. Table 1 shows that the largest amount of surveys was collected at Lake Easton (168), followed by the Yakima River (134), and the least amount of surveys was collected on the

Cle Elum River (61). Keechelus Lake was not included in this report due to the low number of completed surveys. (Please also see the limitations section in chapter II for more details.)

Table 1. Number of surveys by survey locations

Survey locations	Number of surveys	Percentage
Kachess Lake	100	9 %
Cle Elum Lake	99	9 %
Rimrock Lake	101	9 %
Bumping Lake	116	10 %
Clear Lake	85	7 %
Lake Easton	168	15 %
Tieton River	103	9 %
Yakima River	134	12 %
Bumping River	91	8 %
Naches River	80	7 %
Cle Elum River	61	5 %
Total number of surveys	1,138	100 %

Table 2 shows that most of the surveys (38 percent) were collected during the month of July, followed by August (21 percent), June (19 percent), September (14 percent), May (6 percent), and then April, October and November (1 percent or less each).

Table 2. Number of surveys by survey months

Survey months	Number of surveys	Percentage
April	9	1 %
May	67	6 %
June	212	19 %
July	411	38 %
August	229	21 %
September	158	14 %
October	5	<1 %
November	1	<1 %
Total number of surveys <sup>1</sup>	1,092	100 %

<sup>1</sup>The total number of surveys in table 2 is less than the actual number of completed surveys (1,138) due to 46 surveys that did not include a date.

## **Visitor Counts**

In addition to collecting visitor survey information, visitor counts were conducted at all of the primary public recreation sites on all the reservoirs and rivers included in this study. The information was collected to establish a baseline total visitation figure for all activities for each of the study locations.

Surveyors were instructed to count all visitors recreating at a certain location and record the total number of visitors by activity. Visitor counts were usually conducted on the same days and at the same locations survey collection took place. The number of count days varied by location (from 16 different count days at Keechelus Lake to 76 different count days at Clear Lake) and was determined by estimated visitor use of the areas and surveyor availability. For a summary of the visitor count data collected, please see “Visitor Count Results.”

# Study Methodology

## Survey Design

Two separate surveys, one for reservoirs (Appendix A) and one for rivers (Appendix B), were designed and questions framed and compiled by Reclamation. These were then sent to the Office of Management and Budget (OMB) for approval.

## Sample Size

In order to determine how many surveys needed to be collected for each river and reservoir, a sample size that would give a representative sample of all visitors to each water body needed to be determined. The sample size was determined by first estimating the number of visitors to each of the water bodies. These estimates came initially from Reclamation estimates that were later revised using actual visitor counts from on-site surveyors. It was also necessary to determine what confidence level and confidence interval/precision level would be acceptable for this field surveying. Initially, a 95-percent confidence level and a + or – 6-percent confidence interval/precision level was selected. These are the highest levels typically used in scientific research. These levels would have required collection of 260 useable surveys at each water body. As predicted, this proved to be unrealistic. Since the Yakima survey was not a scientific lab research study but a field study where errors in randomness could easily exceed errors from sample size, a 90-percent confidence level with a + or – confidence interval/precision level of 5-percent or standard deviation from the mean of 1.96 was selected. Inputting these figures and the visitation numbers into standard statistical sample size formulas and calculators gave a sample size of 100 for each water body. Simply put, this means that there is a 90-percent certainty that the answers given by the 100 visitors surveyed will deviate less than 5 percent from what all visitors together would have answered if surveyed. This is scientifically acceptable for field studies. It also proved to be realistic since surveyors were able to collect approximately 100 surveys at each water body.

## Sample Design

Besides assuring adequate sample size to represent the visitors at the water bodies, it was important to randomly select visitors to be surveyed. This helps assure that those visitors selected are truly representative of all other visitors. To achieve this randomness, Stratified Cluster Sampling was done. Stratified Cluster Sampling is especially useful when sampling recreation areas where there is no way to determine *a priori* who will be visiting. This allows sampling at different field locations based upon time blocks that include days of the week and hours of the day based upon estimates of the percent of visitation at each of the locations and times.

The time blocks are then randomly selected and assigned for survey sampling. All visitors are then surveyed in these locations during these time blocks.

For the Yakima water bodies, stratification was done by selecting for the two recreation seasons, days of the week and weekends versus week days, and a mix of time periods in each day for surveying at each water body. During each of these time periods, all visitors willing to be surveyed were surveyed. Visitor counts were also done during these time periods. The selected time periods were mostly adhered to, but not always, due to surveyor schedule conflicts, driving times and routes, weather, etc.

## **Survey Collection**

Recreation users were surveyed using on-site questionnaires, which were handed out and collected by surveyors at all of the reservoirs and rivers included in this study. In addition to the three surveyors hired by the contractor, surveys were distributed by seasonal Forest Service employees, campground hosts, guides, outfitters, private marinas, resorts, sporting good stores, and the Naches Valley chamber of commerce website. Surveyors received training, an official letter of introduction from the contractor and Reclamation, and were provided a code of conduct and survey instructions (Appendix C) before they started surveying. Constant guidance and supervision was provided for the surveyors throughout the study by the survey coordinator. The *Yakima Herald Republic*, the *Tribune*, and KNDO Television provided media coverage of the project.

Survey sites consisted predominantly of campgrounds, day use areas, boat ramps, parking lots, highway pullouts, and other public recreation sites managed by the Forest Service's Cle Elum and Naches Ranger Districts, the Bureau of Land Management, the Washington Department of Fish and Wildlife, and campground concessionaires. Some surveys were also distributed at privately owned sites, such as resorts, outfitters, and marinas.

## **Data Analysis Methods**

After the data was gathered, it was organized and entered on the computer into the Statistical Package for the Social Sciences (SPSS) program for analysis. Survey data was kept separate for the different reservoirs and rivers included in the study. This was an extremely lengthy and time-consuming process due to the number of surveys, the overall number of questions in the survey, and the number of open-ended questions. After the complete data was entered, frequencies were run in all cases for the generation of descriptive, non-parametric statistics. For each closed-ended (multiple-choice type) question, the overall percentages and the mean and mode (where applicable) were presented in table or chart form in the survey results chapter of this report.

Each of the surveys contained several open-ended questions. Open-ended questions allow the respondents to express their opinions in their own words and

generally elicit more detailed responses. They also serve as excellent follow-up questions for closed-ended questions. Each response to an open-ended question was grouped into a category with similar responses, counted, and then the categories were prioritized based upon frequency of mention. The most frequently mentioned responses were presented in table format, similar to the closed-ended questions. If there was a wide variety of response types or the responses were too detailed to summarize in the main report, they were presented in the appendix section.

Visitor count data for the individual reservoirs and rivers was entered by count locations and recreation activities into an Excel file, which is available at Reclamation's Pacific Northwest Region, Upper Columbia Area Office.

## **Limitations of Data Collection**

A major limiting factor for data collection at many of the study sites was the short recreation season due to cold weather conditions, which limited access to the sites for visitors and surveyors. Most of the reservoirs are located at an elevation that receives cold weather and snowfall anywhere from the end of October until the middle of May. The developed campgrounds at those reservoirs (with the exception of Lake Easton State Park) did not open until or just before Memorial Day Weekend and closed shortly after Labor Day Weekend. Many of the study rivers were also affected by limited seasonal use due to weather conditions, especially the Bumping and Cle Elum Rivers.

Data collection on the Naches River was somewhat difficult because most of the lower part of the study area is in private ownership and public access is very limited. Cottonwood, Sawmill Flats, and Halfway Flats campgrounds are the main access points for the public. Due to the relative small size of these campgrounds, it was difficult to obtain a large sample of the recreating public.

It was challenging to survey guided rafters and guided boat anglers on the Yakima River, and, to some extent, the other study rivers. The clients of commercial operators pay for a limited time experience on the river. As such and with often no long-term interest in or knowledge of the area, many did not want to or simply did not have the time to fill out a survey before their shuttle vehicle left the area. Some of the guides and all of the guide shops operating on the Yakima River handed out a limited number of surveys to their clients, which helped to offset this imbalance. On the Tieton River, Forest Service employees handed out surveys to clients of commercial rafting companies during the "flip flop" releases, which helped to increase the number of surveys from guided rafters on this river.

Keechelus Lake does not receive as much recreation use as any of the other study reservoirs in the Yakima River basin. In addition, low water levels during the 2006 summer recreation season and construction activities at the reservoir during the 2007 recreation season affected data collection. The number of surveys collected was too small to be representative of the general recreating public at this lake; therefore, Keechelus Lake was not included in the data analysis.

# Visitor Survey Results

This chapter of the report summarizes the results of the Yakima River basin visitor survey conducted during the 2006 and 2007 recreation seasons. One thousand one hundred and thirty-eight (1,138) useable surveys were completed at eleven different water bodies within the basin. The findings for the study reservoirs are presented first, followed by the findings for all study rivers. The results are presented under sub-headings that group together answers to questions with related concepts (i.e., all results for activity questions are grouped together) rather than in the order they appeared in the surveys.

## Reservoirs

### Recreation Activities Participated In

Table 3 displays responses to *Q.4: Check all the recreation activities that you are doing on this trip*. The percentage of visitors participating in any recreation activity depended on the reservoir visited. Activities that were popular at all reservoirs included camping, swimming, sightseeing, and wildlife viewing. Kachess Lake was also a favored location for kayaking and canoeing. Thirty-two percent of respondents participated in kayaking or canoeing on Kachess Lake during the trip they were surveyed. Cle Elum (29 percent) and Rimrock Lakes (36 percent) were popular for motor boating; Bumping Lake for private boat fishing (34 percent) and bank fishing (34 percent); and Clear Lake (57 percent) and Lake Easton (31 percent) for bank fishing. Water-skiing and jet-skiing were somewhat popular at Cle Elum and Rimrock Lakes. Hunting, sailing, and guided boat fishing were not popular activities at any of the reservoirs surveyed. Many respondents indicated that they had participated in some other type of activity than was listed in the survey. Picnicking, hiking, and bike riding were mentioned most often in the “other” category.

Table 4 displays the results for *Q.5: Check the one activity that is your primary (main) activity on this trip*. At all of the reservoirs, the majority of visitors considered camping their primary activity (between 47 percent and 79 percent of respondents). Camping as a primary activity far outweighed all the other primary activities at all of the reservoirs, with the exception of Clear Lake, where 30 percent of visitors considered bank fishing their primary activity. Other important primary activities varied by reservoir and included kayaking at Kachess Lake (10 percent); swimming at Cle Elum Lake (20 percent), Bumping Lake (13 percent), and Lake Eastons (9 percent); and motor boating (16 percent) and private boat fishing (15 percent) at Rimrock Lake. The most often mentioned response in the “other” category at Lake Easton was picnicking. At all of the reservoirs, respondents mentioned guided boat fishing, hunting, sailing, and nature study least frequently as primary activities.

Table 3. All recreation activities participated in by reservoir visitors on this trip

<b>Activities:</b>	<b>Kachess Lake</b>	<b>Cle Elum Lake</b>	<b>Rimrock Lake</b>	<b>Bumping Lake</b>	<b>Clear Lake</b>	<b>Lake Easton</b>
Motor boating	22 %	29 %	36 %	27 %	7 %	4 %
Boat fishing (guided)	1 %	2 %	2 %	0 %	0 %	0 %
Boat fishing (private)	18 %	16 %	30 %	34 %	25 %	14 %
Bank fishing	19 %	21 %	25 %	34 %	57 %	31 %
Kayaking/canoeing	32 %	9 %	11 %	17 %	10 %	17 %
Hunting	0 %	2 %	2 %	3 %	0 %	0 %
Sailing	3 %	0 %	4 %	1 %	2 %	0 %
Water-skiing	13 %	20 %	20 %	10 %	1 %	0 %
Personal watercraft (PWC) (jet-skiing)	3 %	17 %	14 %	6 %	2 %	0 %
Swimming	70 %	61 %	47 %	54 %	24 %	66 %
Camping	93 %	61 %	82 %	69 %	61 %	82 %
Sightseeing	70 %	56 %	54 %	62 %	55 %	60 %
Wildlife viewing	60 %	45 %	58 %	54 %	43 %	50 %
Nature study	25 %	8 %	11 %	14 %	13 %	19 %
Other	23 %	21 %	15 %	18 %	16 %	29 %

Table 4. Reservoir visitors' primary activities on this trip

<b>Primary Activities:</b>	<b>Kachess Lake</b>	<b>Cle Elum Lake</b>	<b>Rimrock Lake</b>	<b>Bumping Lake</b>	<b>Clear Lake</b>	<b>Lake Easton</b>
Motor boating	6 %	11 %	16 %	10 %	1 %	1 %
Boat fishing (guided)	0 %	2 %	1 %	0 %	0 %	0 %
Boat fishing (private)	4 %	9 %	15 %	11 %	14 %	2 %
Bank fishing	1 %	2 %	3 %	6 %	30 %	5 %
Kayaking/canoeing	10 %	1 %	1 %	4 %	5 %	3 %
Hunting	0 %	0 %	1 %	2 %	0 %	0 %
Sailing	0 %	0 %	2 %	0 %	0 %	0 %
Water-skiing	4 %	7 %	5 %	1 %	0 %	0 %
PWC (jet-skiing)	0 %	9 %	3 %	5 %	0 %	0 %
Swimming	6 %	20 %	8 %	13 %	1 %	9 %
Camping	73 %	52 %	63 %	55 %	47 %	79 %
Sightseeing	4 %	13 %	7 %	9 %	4 %	7 %
Wildlife viewing	1 %	3 %	6 %	4 %	7 %	3 %
Nature study	0 %	1 %	1 %	0 %	1 %	1 %
Other	1 %	5 %	3 %	5 %	6 %	12 %

Table 5 displays the mean and mode for *Q.6: Number of people in your group on this trip who participated in the primary activity* (please see page v for a definition of the terms mean and mode). For most primary activities, the average visitor group consisted of two to seven people. In general, social activities such as motor boating, water skiing, jet-skiing, swimming, and camping had larger average group sizes than more solitary or quiet activities such as private boat fishing, bank fishing, or kayaking and canoeing.

The symbol \*\* in table 5 and many of the following tables in this section of the report was used to indicate that there were not enough responses to provide a number in the table. The assumption is that these were not popular activities at any or all of the reservoirs. (Please also see footnotes beneath the tables.)

Table 5. Number of people in group for primary reservoir activity

Primary Activities:	Kachess Lake		Cle Elum Lake		Rimrock Lake		Bumping Lake		Clear Lake		Lake Easton	
	Mean	Mode	Mean	Mode	Mean	Mode	Mean	Mode	Mean	Mode	Mean	Mode
Motor boating	6.8	10	8.4	4	5.6	5	5.2	2	2.0	2	6.7	7
Boat fishing (guided)	**	**	**	**	**	**	**	**	**	**	**	**
Boat fishing (private)	3.7	1	4.2	2	3.9	2	3.9	4	3.3	2	4.1	3
Bank fishing	2.6	2	2.9	4	3.8	2	3.7	2	4.3	4	3.2	2
Kayaking/ canoeing	3.9	2	2.3	2	2.7	2	6.7	4	5.2	3	3.8	2
Hunting	**	**	**	**	**	**	3.0	2	**	**	**	**
Sailing	**	**	**	**	**	**	**	**	**	**	**	**
Water-skiing	5.3	2	6.1	2	6.0	5	4.6	5	**	**	**	**
PWC (jet-skiing)	13.3	10	6.8	9	5.1	4	8.8	2	**	**	**	**
Swimming	5.8	3	6.5	7	4.5	5	6.5	2	6.1	4	6.6	2
Camping	6.5	2	5.3	4	5.3	2	6.7	4	4.9	7	6.0	4
Sight-seeing	4.8	2	4.4	3	4.5	2	5.8	4	4.7	2	6.5	2
Wildlife viewing	4.4	2	5.9	2	4.5	2	6.0	4	4.3	2	6.2	2
Nature study	4.6	2	4.0	2	2.0	2	4.3	1	3.3	2	5.3	2
Other	5.0	2	2.5	2	5.4	1	5.4	2	3.4	2	8.7	4

\*\* Denotes that there were not sufficient responses.  
Note: If multiple modes exist, the lowest value is shown.

## Visitor Experience

Table 6 displays a summary of the responses to *Q.8a: For your primary (main) reservoir recreation activity on this trip, please describe what contributes to and makes for an enjoyable recreation experience.* The most frequently mentioned response (between 34 percent and 46 percent) was that the natural beauty, pretty scenery, and clean water of the reservoirs made for an enjoyable experience. Many of the respondents felt that the reservoirs offered good water-based recreation opportunities with a diversity of activities available. The well-maintained campsites, cleanliness of facilities, and friendly staff were other important factors contributing to an enjoyable recreation experience. High-to-medium water levels were mentioned frequently, followed by the opportunity to experience peace and quiet.

Table 6. Factors contributing to an enjoyable reservoir recreation experience

<b>Categorized Responses:</b>	<b>Kachess Lake</b>	<b>Cle Elum Lake</b>	<b>Rimrock Lake</b>	<b>Bumping Lake</b>	<b>Clear Lake</b>	<b>Lake Easton</b>
Beauty of this lake; nature; pretty scenery; forest; clean water; views of lake and mountains; open space; nice weather; wildlife; extensive shoreline	41 %	34 %	35 %	44 %	46 %	39 %
Good kayaking; canoeing; camping; fishing; swimming; boating; skiing; hiking; access to water-based activities; catching fish; nice trails; nice sandy beach; diversity of activities	29 %	39 %	29 %	34 %	39 %	41 %
Well maintained campsites; cleanliness of facilities; flushing toilets and running water; showers; plenty of parking; good launch facilities; friendly hosts; safe campground	33 %	20 %	24 %	32 %	22 %	33 %
High water level; full lake; No stumps or rocks exposed; higher levels of water make for better fishing and safer boating; at least a medium lake level	20 %	24 %	32 %	23 %	8 %	13 %
Not too crowded; peace and quiet; low noise level; not too many people and motorized watercraft; little development; friendly people; respectful users of the area; no conflicts	16 %	11 %	18 %	15 %	25 %	7 %
Time to enjoy family; children and grandchildren; Spending time with family and friends; having fun	4 %	3 %	4 %	6 %	4 %	2 %
Closeness; close to Seattle; close to Puget Sound; accessibility; local; close to town; close proximity to home; central location; easy drive	3 %	1 %	3 %	1 %	1 %	4 %
Other	9 %	6 %	7 %	6 %	12 %	8 %

Table 7 displays the categorized responses to *Q.8b: At this reservoir, what detracts from your recreation experience?* For Kachess (31 percent) and Cle Elum Lake visitors (37 percent) and, to some extent, Rimrock (19 percent) and Bumping Lake visitors (17 percent), low water levels detracted from an enjoyable recreation experience. Crowding, noise and inconsiderate people were mentioned relatively frequently by visitors of all reservoirs (between 14 percent and 31 percent), with the exception of Lake Easton. Easton is the only State Park; therefore, visitor expectations might be different than at the other study locations. Many of the respondents (between 16 percent and 24 percent) mentioned the lack of facilities and poor maintenance as a detracting factor, followed by bad weather and speeding boaters and jet-skiers not following the boating regulations. For 26 percent of respondents, the highway and train noises detracted from visitors' recreation experiences at Lake Easton.

Table 7. Factors detracting from an enjoyable reservoir recreation experience

<b>Categorized Responses:</b>	<b>Kachess Lake</b>	<b>Cle Elum Lake</b>	<b>Rimrock Lake</b>	<b>Bumping Lake</b>	<b>Clear Lake</b>	<b>Lake Easton</b>
Low water levels make this reservoir less desirable for recreational activities; low water level means more exposed stumps and muddy shoreline; when lake is down, it is hard to get boat in water and fishing is bad; less scenic	31 %	37 %	19 %	17 %	4 %	7 %
Too many people; large groups; crowding; crowded parking lots; inconsiderate people; noise; people partying all night; loud music; generators; dogs barking; people disregarding the rules	29 %	14 %	19 %	17 %	31 %	5 %
Lack of facilities; No showers; no electricity; not enough bathrooms and campsites; poor maintenance of boat ramp and access road; too expensive; not enough public access; amount of private land	16 %	18 %	24 %	17 %	21 %	21 %
Bad weather; cold weather; muggy weather; heavy rain and wind; choppy water; dust; cold water; too many mosquitoes; bees; insects	8 %	25 %	24 %	25 %	22 %	5 %
Jet-skiers not following boating laws and regulations; too many boats and jet-skis; speeding boats; loud jet-skis and power boats; speeding cars; freeway and train noise	14 %	6 %	5 %	11 %	11 %	26 %

**Table 7. Factors detracting from an enjoyable recreation experience – continued**

<b>Categorized Responses:</b>	<b>Kachess Lake</b>	<b>Cle Elum Lake</b>	<b>Rimrock Lake</b>	<b>Bumping Lake</b>	<b>Clear Lake</b>	<b>Lake Easton</b>
Water levels too high; boat launch with very high water; lack of shoreline to walk and play for children; not as much beach; debris in water from high water levels; flooding	4 %	3 %	7 %	2 %	1 %	0 %
Poor fishing; lack of fish; over fishing; catch and release; lack of hiking	1 %	5 %	3 %	2 %	8 %	7 %
Nothing	8 %	4 %	13 %	16 %	12 %	18 %
Other	3 %	1 %	2 %	1 %	5 %	3 %

Figure 1 displays the results for Q.9: *For this trip and for your primary activity, what type of visitor experience do you most desire/seek?* The majority of respondents at all of the reservoirs desired a rural visitor experience (between 62 percent and 89 percent). Approximately one-third of visitors at all reservoirs, with the exception of Lake Easton, desired a primitive recreation experience. Only nine percent of visitors desired a primitive experience at Lake Easton. A small minority of respondents desired an urban visitor experience, with the greatest percentage (6 percent) at Rimrock Lake. For the attributes used to describe “urban,” “rural,” and “primitive,” please see Q.9 of the visitor survey in Appendix A.

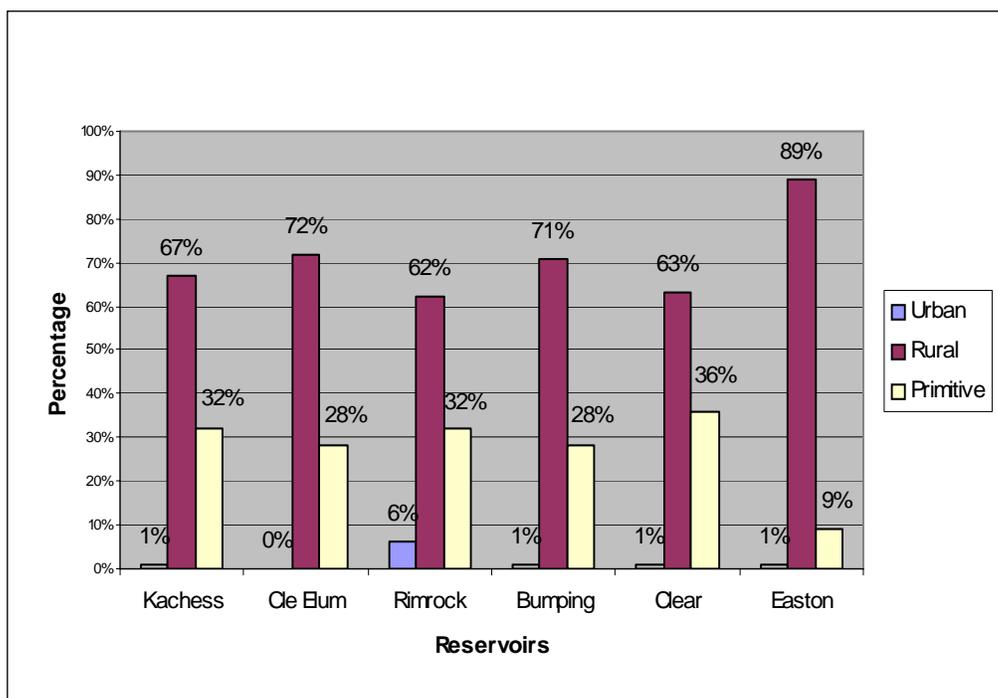


Figure 1. Type of reservoir visitor experience desired for primary activity.

Figure 2 displays the responses for *Q.10a: Can you find your desired experience somewhere on this reservoir?* A large majority of respondents (between 76 percent and 98 percent) indicated that they could find their desired experience at the reservoir they visited. Twenty-four percent of visitors surveyed at Clear Lake and 16 percent of visitors surveyed at Rimrock Lake could not find their desired experience.

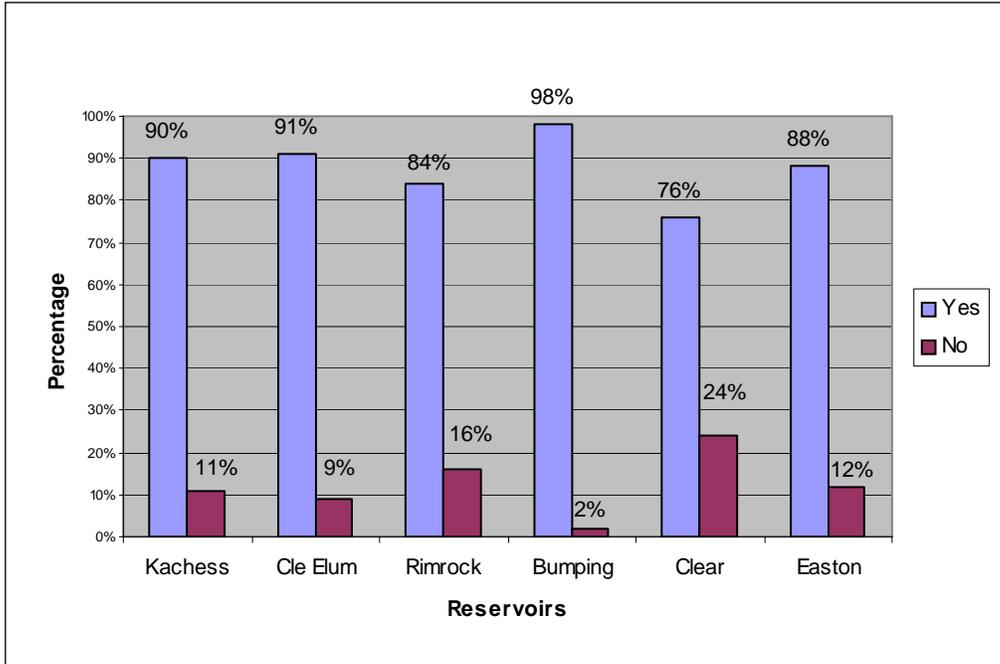


Figure 2. Can visitors find their desired experience on this reservoir?

*Q.10b* in the survey asked *where* visitors could find their desired experience on the reservoir visited. Many respondents at Kachess Lake mentioned Kachess Lake in general (37 percent), Kachess campground (17 percent), and Box Canyon (7 percent). At Cle Elum Lake, many visitors found their desired experience at Wish Poosh (21 percent), Cle Elum Lake in general (14 percent), and at the north end of the reservoir (12 percent). Rimrock Lake visitors mentioned Rimrock Lake in general (28 percent), the peninsula (16 percent), and Silver Beach Resort (10 percent). At Bumping Lake, many respondents found their desired experience at Bumping Lake in general (35 percent), Bumping Lake campground (24 percent), and the Bumping Lake day use area (13 percent). Clear Lake visitors frequently mentioned Clear Lake in general (39 percent) and Clear Lake day use area (15 percent). At Lake Easton, a majority of visitors said that they found their desired experience at Lake Easton in general (44 percent), at Lake Easton State Park (16 percent), and Lake Easton campground (13 percent). Please see Appendix D for the complete results to this question.

Figure 3 displays the results for *Q.11a: Can you find your desired experience at other nearby reservoirs within the Yakima River basin?* The majority of respondents (between 53 percent and 71 percent) were able to find their desired recreation experience at other nearby reservoirs within the basin. Between 30 percent (Kachess Lake) and 47 percent (Rimrock Lake) of respondents could not find their desired experience at nearby reservoirs.

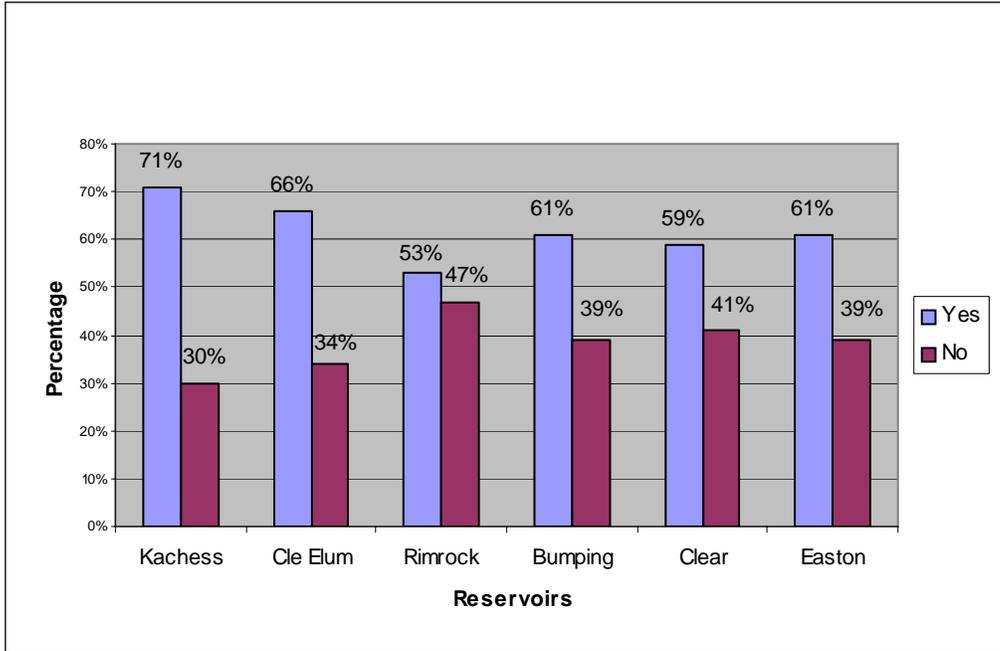


Figure 3. Can visitors find their desired experience at nearby reservoirs?

*Q.11b* in the survey asked *where* visitors could find their desired experience at other nearby reservoirs within the Yakima River basin. Twenty-five percent of Kachess Lake respondents mentioned Cle Elum Lake, and 16 percent of Cle Elum Lake visitors mentioned Kachess Lake. Many Rimrock Lake visitors mentioned Clear Lake (19 percent) and Bumping Lake (13 percent) as alternative reservoirs. Many Bumping Lake visitors (25 percent) could also find their desired experience at Rimrock Lake. Clear Lake respondents mentioned Rimrock Lake (26 percent), and Lake Easton visitors mentioned Kachess Lake (14 percent) most often as alternatives. Please see Appendix E for the complete results to this question.

### Facilities Used

Table 8 displays the results for *Q.12a: What facilities do you use at the reservoir?* Facilities most often used by visitors to all reservoirs were restrooms (between 68 percent and 93 percent) and campgrounds (between 64 percent and 90 percent). Beaches, boat ramps, parking lots, and picnic sites were also popular facilities at the lakes. On the other hand, floating docks, marinas, boat camps, and private concessions were used less frequently by visitors or were not available at some of the reservoirs. For example, 14 percent of Bumping Lake visitors and 11 percent of

Rimrock Lake visitors used marinas at the reservoirs. Nineteen percent of Rimrock Lake visitors and 10 percent of Bumping Lake visitors also used private concessions during their trip. The other study reservoirs do not have marinas or private concessions available. Floating docks were most frequently used at Clear Lake (28 percent), Bumping Lake (27 percent), and Rimrock Lake (22 percent). Facilities that were most often mentioned in the “other” category were hiking and biking trails and hot showers and utilities. (Also see, Appendix F.)

Table 8. Percent of reservoir visitors who used facilities

<b>Facilities:</b>	<b>Kachess Lake</b>	<b>Cle Elum Lake</b>	<b>Rimrock Lake</b>	<b>Bumping Lake</b>	<b>Clear Lake</b>	<b>Lake Easton</b>
Boat ramps	39 %	48 %	56 %	46 %	31 %	18 %
Campgrounds	90 %	64 %	86 %	71 %	69 %	86 %
Picnic sites	43 %	34 %	44 %	53 %	53 %	48 %
Beaches	78 %	73 %	57 %	68 %	41 %	81 %
Floating docks	5 %	0 %	22 %	27 %	28 %	10 %
Marinas	0 %	0 %	11 %	14 %	2 %	1 %
Boat camps	5 %	3 %	4 %	6 %	1 %	2 %
Private concessions	0 %	0 %	19 %	10 %	2 %	2 %
Parking lots	39 %	40 %	38 %	57 %	53 %	48 %
Restrooms	93 %	68 %	73 %	87 %	75 %	90 %
Other	12 %	7 %	5 %	4 %	8 %	20 %

*Q.12b* asked visitors to give specific *facility names* for the facilities they used at the reservoirs. A majority of respondents at Kachess Lake mentioned Kachess Lake in general and Kachess Lake campground for all facilities used. A smaller percentage of respondents mentioned Box Canyon, Lodge Creek, Gale Creek, Mineral Creek, and Beargrass Flats, which are all part of Kachess Lake campground. At Cle Elum Lake, the majority of respondents mentioned Wish Poosh for all facilities, with the exception of beaches, where 42 percent of respondents mentioned Speelyi beach. At Rimrock Lake, 43 percent of respondents used Rimrock east boat ramp and 44 percent of visitors used Indian Creek campground. Silver Beach Resort was mentioned most often for beaches, floating docks, and private concessions. Silver Beach Resort and Rimrock Lake in general were mentioned most often for picnic sites and parking lots. Restroom facilities were most popular (29 percent) at Indian Creek campground. At Bumping Lake, the most popular facility names for all facilities used were Bumping Lake in general, Bumping Lake day use area, Bumping Lake campground and Bumping Lake Marina. At Clear Lake, a majority of respondents mentioned Clear Lake, Clear Lake day use area, and Clear Lake north and south campgrounds. At Lake Easton, all responses could be summarized under Lake Easton State Park with the exception of the “other” category. Please see Appendix F for the complete results to this question.

## Number of Trips, Days Per Trip and Recreation Use by Season

Table 9 shows the results for *Q.13: Number of trips for each primary activity in past 12 months* and *Q.14: Average number of days per trip*. Average visitors took between two and eight trips in the past 12 months to pursue their primary activities at their reservoir(s) of choice, where they spent an average of 2 to 4 days per trip. In general, the number of trips taken for visitors' primary activities appears to be slightly lower at Bumping Lake and Lake Easton than at any of the other reservoirs. At Bumping Lake, this could be related to the relative remote location of the reservoir, which makes day trips or short trips less convenient for some visitors. Lake Easton, on the other hand, is very accessible, with its location right off Interstate 90 and is, therefore, not only very attractive for locals but also for drive-by travelers who only visit once.

Table 9. Average number of trips and days per trip to the reservoirs for each primary activity in the past 12 months

Primary Activities:	Kachess Lake		Cle Elum Lake		Rimrock Lake		Bumping Lake		Clear Lake		Lake Easton	
	Trips	Days	Trips	Days	Trips	Days	Trips	Days	Trips	Days	Trips	Days
Motor boating	5.7	2.9	6.2	2.1	6.0	3.2	3.8	2.7	5.2	2.3	4.8	3.3
Boat fishing (guided)	**	**	**	**	**	**	**	**	**	**	**	**
Boat fishing (private)	6.3	2.9	6.9	1.6	7.7	2.5	3.1	3.1	4.3	2.0	1.9	3.6
Bank fishing	3.8	3.0	5.7	2.0	3.5	2.9	3.2	3.0	5.3	2.3	1.8	2.9
Kayaking/ canoeing	4.4	3.3	2.3	1.8	3.0	2.5	3.9	3.2	7.8	2.0	1.8	2.9
Hunting	**	**	**	**	5.2	5.5	2.5	4.6	**	**	**	**
Sailing	**	**	**	**	**	**	**	**	**	**	**	**
Water-skiing	6.3	2.8	9.5	2.3	6.1	3.0	2.5	3.0	**	**	**	**
PWC (jet-skiing)	2.3	**	4.8	2.6	7.1	2.4	2.8	3.3	**	**	**	**
Swimming	3.8	3.5	7.0	2.3	4.6	2.5	3.5	2.9	7.0	2.4	1.9	3.1
Camping	3.3	3.6	3.6	4.2	5.5	3.0	3.0	3.3	3.1	2.9	2.2	3.2
Sight-seeing	3.9	3.5	6.5	2.0	5.0	2.6	4.1	3.3	3.7	2.2	2.0	3.3
Wildlife viewing	3.6	3.8	6.6	2.1	4.5	2.7	4.9	3.6	5.8	3.1	2.1	3.3
Nature study	3.2	2.7	2.0	2.2	3.3	2.4	4.4	3.2	5.0	2.0	1.5	4.5
Other	3.2	2.1	5.2	4.5	8.3	2.1	1.7	1.8	3.5	1.8	2.2	2.1

\*\* Denotes that there were not sufficient responses or activity not applicable.

Table 10 summarizes the results for *Q.15: Percent of time that you participated in each primary activity on this reservoir by season*. A large majority of visitors participated in their primary activity during the summer, followed by spring and then fall. Participation in winter recreation was minor at all of the reservoirs. In general, recreation participation at the reservoirs is strongly dependent on the water levels, which are higher in spring and summer at most of the reservoirs, and the weather conditions, which limit water-based recreation activities during the winter months. Some land-based recreation activities such as hunting, sightseeing, wildlife viewing, and nature study do occur in the winter.

Table 10. Percent of time reservoir visitors participated in their primary activity by season

Primary Activities:	Kachess Lake				Cle Elum Lake				Rimrock Lake				Bumping Lake				Clear Lake				Lake Easton			
	Sp	Su	F	W	Sp	Su	F	W	Sp	Su	F	W	Sp	Su	F	W	Sp	Su	F	W	Sp	Su	F	W
	Percentage				Percentage				Percentage				Percentage				Percentage							
Motor boating	7	83	10	0	10	84	5	1	7	90	3	0	7	89	4	0	32	54	14	0	10	90	0	0
Boat fishing (guided)	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Boat fishing (private)	8	82	10	0	18	78	5	0	19	77	4	0	9	77	14	0	26	53	18	3	16	78	6	0
Bank fishing	19	70	10	0	16	75	5	5	15	79	5	0	18	73	8	0	29	59	12	0	13	75	12	0
Kayaking/canoeing	9	79	11	1	20	62	18	0	8	92	0	0	7	84	9	0	24	70	6	0	17	76	6	1
Hunting	**	**	**	**	**	**	**	**	0	20	70	10	0	0	94	6	**	**	**	**	**	**	**	**
Sailing	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Water-skiing	11	77	12	0	4	89	8	0	0	97	3	0	3	95	2	0	**	**	**	**	**	**	**	**
PWC (jet-skiing)	0	100	0	0	2	91	6	1	17	77	7	0	12	82	6	0	**	**	**	**	**	**	**	**
Swimming	5	89	6	0	2	94	5	0	3	94	3	0	7	91	2	0	8	88	5	0	7	88	5	1
Camping	11	81	7	1	5	92	3	0	17	69	12	2	13	80	6	1	15	74	12	0	7	82	10	0
Sightseeing	11	80	9	1	14	61	19	6	16	67	14	3	16	75	9	0	16	63	21	1	9	79	11	1
Wildlife viewing	13	71	13	2	12	70	15	4	14	66	16	4	20	72	7	2	20	67	9	4	8	80	8	4
Nature study	14	62	24	0	18	75	4	4	18	72	10	0	23	73	0	3	18	60	22	0	0	96	4	0
Other	17	52	14	17	7	70	8	15	18	8	35	39	7	75	4	13	7	73	20	0	5	79	11	5

Sp = Spring; Su = Summer; F = Fall; W = Winter.

\*\* Denotes that there were not sufficient responses or activity not applicable.

Percentages do not always add to 100 % due to rounding error.

## Water Levels and Effect of Additional Water Supply

Table 11 summarizes the responses for *Q.2: Do you consider the water level today “very high,” “high,” “medium,” “low,” or “very low”?* The majority of visitors considered the water levels in May and June to be very high or high. In July, the water levels were considered high and medium. In August, most visitors considered the reservoir levels medium to low, except for Lake Easton, where visitors perceived the water levels to be high to medium. This is consistent with the actual water drawdown due to water releases for downstream beneficial use during the summer recreation season. Visitors’ perceptions of the water levels in September varied for different reservoirs. At Kachess, Cle Elum, and Rimrock Lakes, the majority of visitors perceived the water levels to be low to very low. At Bumping Lake, Clear Lake, and Lake Easton, most visitors considered the water levels high to medium. Clear Lake and Lake Easton are least affected by the seasonal water drawdown.

Table 11. Visitors’ perception of water levels by month of year

<b>Water Levels:</b>	<b>Kachess Lake</b>	<b>Cle Elum Lake</b>	<b>Rimrock Lake</b>	<b>Bumping Lake</b>	<b>Clear Lake</b>	<b>Lake Easton</b>
<b>May</b>						
Very high	43 %	71 %	25 %	0 %	11 %	0 %
High	57 %	14 %	75 %	50 %	89 %	82 %
Medium	0 %	14 %	0 %	50 %	0 %	18 %
Low	0 %	0 %	0 %	0 %	0 %	0 %
Very low	0 %	0 %	0 %	0 %	0 %	0 %
<b>June</b>						
Very high	45 %	54 %	24 %	8 %	0 %	0 %
High	35 %	39 %	77 %	74 %	89 %	71 %
Medium	21 %	8 %	0 %	16 %	12 %	29 %
Low	0 %	0 %	0 %	2 %	0 %	0 %
Very low	0 %	0 %	0 %	0 %	0 %	0 %
<b>July</b>						
Very high	35 %	31 %	4 %	5 %	6 %	0 %
High	35 %	34 %	33 %	71 %	69 %	57 %
Medium	30 %	22 %	39 %	21 %	22 %	41 %
Low	0 %	13 %	25 %	5 %	3 %	2 %
Very low	0 %	0 %	0 %	0 %	0 %	0 %
<b>August</b>						
Very high	0 %	0 %	0 %	0 %	0 %	0 %
High	13 %	0 %	7 %	0 %	11 %	76 %
Medium	52 %	48 %	60 %	62 %	56 %	20 %
Low	35 %	36 %	27 %	31 %	22 %	4 %
Very low	0 %	16 %	7 %	8 %	11 %	0 %
<b>September</b>						
Very high	0 %	0 %	0 %	5 %	14 %	0 %
High	11 %	0 %	0 %	61 %	0 %	67 %
Medium	22 %	0 %	0 %	24 %	86 %	25 %
Low	56 %	20 %	100 %	8 %	0 %	8 %
Very low	11 %	80 %	0 %	1 %	0 %	0 %

Percentages do not always add to 100 % due to rounding error.

Table 12 displays the responses for *Q.3: Do you like this water level?* A large majority of respondents was satisfied with the water levels in May, June, and July, except for approximately half of the Cle Elum Lake visitors in July (52 percent dissatisfied visitors). Although 60 percent of Rimrock Lake visitors were satisfied with the water levels in July, the satisfaction level dropped from 100 percent satisfied visitors in May to 60 percent in July. In August, approximately half of the visitors were not satisfied with the water levels at Kachess, Cle Elum, and Rimrock Lakes, while between 85 percent and 94 percent of respondents were satisfied with the water levels at Bumping Lake, Clear Lake, and Lake Easton. In September, most of the visitors were dissatisfied with the water levels, except for Clear Lake and Lake Easton where there is minor or no water drawdown.

Table 12. Percentage of visitors satisfied with the water levels by month of year

<b>Water Levels:</b>	<b>Kachess Lake</b>	<b>Cle Elum Lake</b>	<b>Rimrock Lake</b>	<b>Bumping Lake</b>	<b>Clear Lake</b>	<b>Lake Easton</b>
<b>May</b>						
Yes	71 %	71 %	100 %	100 %	100 %	100 %
No	29 %	29 %	0 %	0 %	0 %	0 %
<b>June</b>						
Yes	78 %	86 %	71 %	92 %	96 %	100 %
No	22 %	14 %	29 %	8 %	4 %	0 %
<b>July</b>						
Yes	80 %	48 %	60 %	93 %	93 %	95 %
No	20 %	52 %	40 %	7 %	7 %	5 %
<b>August</b>						
Yes	48 %	41 %	53 %	85 %	89 %	94 %
No	52 %	59 %	47 %	15 %	11 %	6 %
<b>September</b>						
Yes	11 %	13 %	0 %	33 %	86 %	88 %
No	89 %	87 %	100 %	67 %	14 %	12 %

Table 13 categorizes responses to *Q.7: In what ways does this water level affect you and your primary (main) recreation activity?* In general, most visitors were positively affected by the water level if it was high to medium. According to the respondents, a high-to-medium water level made boat launching easier, boating safer, and made the landscape more visually appealing. Activities such as kayaking, fishing, water-skiing, and swimming were significantly improved by higher water levels. Boating and water sports activities were safer and more enjoyable due to less underwater obstacles and more boating space.

Table 13. Effect of today's water level on visitors and their primary activity

Categorized Responses:	Kachess Lake	Cle Elum Lake	Rimrock Lake	Bumping Lake	Clear Lake	Lake Easton
Higher water levels made launching easier; safer boating; prettier scenery; better kayaking, fishing, water-skiing, swimming	35 %	16 %	36 %	44 %	48 %	29 %
Low water made boat ramps hard to use; dangerous boating, water-skiing, jet-skiing; limited access to lake; muddy shoreline; worse fishing	30 %	44 %	28 %	17 %	16 %	21 %
Too high water did not allow for walk around the lake; access to shoreline is limited; no beaches; harder to bank fish; too many mosquitoes	12 %	21 %	8 %	9 %	10 %	4 %
No effect	22 %	19 %	28 %	25 %	23 %	38 %
Other	2 %	1 %	0 %	5 %	4 %	8 %

On the other hand, visitors were often negatively affected by the water level if it was too low or too high. Low water levels made boat ramps hard to use and boating unsafe. According to respondents, the shoreline was muddy, fishing was poor, and activities such as motor boating, water-skiing, and jet-skiing were more dangerous and less enjoyable due to exposed tree stumps and other underwater hazards. If the water level was too high, shoreline access and beach use was limited, bank fishing difficult, hikes along the shoreline were reduced or eliminated, and there were too many mosquitoes.

It is also worth noting that a considerable amount of respondents (between 19 percent and 38 percent) mentioned that the water level on the day of their visit did not have any effect on their primary activity.

Table 14 summarizes the results for *Q.16: Do you have a preferred reservoir level for each primary activity?* Visitors' preferences for water levels depended on the type of primary activity pursued and on the reservoir visited. The majority of visitors preferred very high or high water levels for motor boating, with the exception of Cle Elum Lake, where 50 percent of visitors preferred a medium water level. Most respondents preferred water levels from very high to medium for water-skiing at all of the reservoirs where water-skiing is a primary activity. In general, the highest water levels were preferred for motorized activities (motor boating, water-skiing, and jet-skiing). For all other activities, the majority of visitors preferred high and medium water levels, with the exception of sailing, where respondents preferred very high and high water levels.

Table 14. Visitors' preferred water levels for their primary activities

Primary Activities:	Kachess Lake	Cle Elum Lake	Rimrock Lake	Bumping Lake	Clear Lake	Lake Easton
<b>Motor boating</b>						
Very high	45 %	7 %	16 %	9 %	20 %	14 %
High	50 %	43 %	68 %	78 %	80 %	86 %
Medium	5 %	50 %	16 %	13 %	0 %	0 %
Low	0 %	0 %	0 %	0 %	0 %	0 %
Very low	0 %	0 %	0 %	0 %	0 %	0 %
<b>Boat fishing (private)</b>						
Very high	38 %	7 %	10 %	6 %	5 %	5 %
High	38 %	50 %	60 %	69 %	68 %	95 %
Medium	25 %	43 %	30 %	25 %	26 %	0 %
Low	0 %	0 %	0 %	0 %	0 %	0 %
Very low	0 %	0 %	0 %	0 %	0 %	0 %
<b>Bank fishing</b>						
Very high	17 %	14 %	13 %	0 %	0 %	0 %
High	42 %	29 %	50 %	64 %	72 %	92 %
Medium	25 %	57 %	38 %	32 %	28 %	4 %
Low	17 %	0 %	0 %	5 %	0 %	4 %
Very low	0 %	0 %	0 %	0 %	0 %	0 %
<b>Kayaking/canoeing</b>						
Very high	20 %	0 %	20 %	8 %	0 %	6 %
High	44 %	20 %	20 %	85 %	89 %	81 %
Medium	32 %	80 %	60 %	8 %	11 %	13 %
Low	4 %	0 %	0 %	0 %	0 %	0 %
Very low	0 %	0 %	0 %	0 %	0 %	0 %
<b>Hunting</b>						
Very high	**	**	**	0 %	**	**
High	**	**	**	20 %	**	**
Medium	**	**	**	60 %	**	**
Low	**	**	**	20 %	**	**
Very low	**	**	**	0 %	**	**
<b>Sailing</b>						
Very high	50 %	**	33 %	**	**	**
High	50 %	**	67 %	**	**	**
Medium	0 %	**	0 %	**	**	**
Low	0 %	**	0 %	**	**	**
Very low	0 %	**	0 %	**	**	**
<b>Water-skiing</b>						
Very high	33 %	11 %	17 %	17 %	**	**
High	44 %	33 %	58 %	67 %	**	**
Medium	22 %	56 %	25 %	17 %	**	**
Low	0 %	0 %	0 %	0 %	**	**
Very low	0 %	0 %	0 %	0 %	**	**
<b>Jet-skiing</b>						
Very high	0 %	13 %	20 %	0 %	**	**
High	67 %	27 %	40 %	71 %	**	**
Medium	33 %	53 %	40 %	29 %	**	**
Low	0 %	7 %	0 %	0 %	**	**
Very low	0 %	0 %	0 %	0 %	**	**

**Table 14. Visitors' preferred water levels for their primary activities – continued**

<b>Primary Activities:</b>	<b>Kachess Lake</b>	<b>Cle Elum Lake</b>	<b>Rimrock Lake</b>	<b>Bumping Lake</b>	<b>Clear Lake</b>	<b>Lake Easton</b>
<b>Swimming</b>						
Very high	13 %	3 %	20 %	0 %	0 %	0 %
High	55 %	39 %	48 %	72 %	75 %	84 %
Medium	30 %	55 %	32 %	25 %	25 %	16 %
Low	3 %	3 %	0 %	3 %	0 %	0 %
Very low	0 %	0 %	0 %	0 %	0 %	0 %
<b>Camping</b>						
Very high	15 %	3 %	8 %	2 %	3 %	2 %
High	49 %	25 %	55 %	66 %	71 %	88 %
Medium	30 %	69 %	35 %	27 %	26 %	9 %
Low	6 %	3 %	2 %	5 %	0 %	0 %
Very low	0 %	0 %	0 %	0 %	0 %	2 %
<b>Sightseeing</b>						
Very high	14 %	8 %	11 %	7 %	9 %	0 %
High	59 %	46 %	50 %	73 %	64 %	77 %
Medium	27 %	39 %	33 %	13 %	27 %	18 %
Low	0 %	8 %	6 %	7 %	0 %	5 %
Very low	0 %	0 %	0 %	0 %	0 %	0 %
<b>Wildlife viewing</b>						
Very high	10 %	0 %	11 %	8 %	0 %	0 %
High	65 %	20 %	39 %	62 %	80 %	83 %
Medium	20 %	70 %	39 %	15 %	20 %	11 %
Low	5 %	10 %	11 %	15 %	0 %	6 %
Very low	0 %	0 %	0 %	0 %	0 %	0 %
<b>Nature study</b>						
Very high	8 %	0 %	0 %	0 %	0 %	0 %
High	62 %	17 %	57 %	75 %	80 %	71 %
Medium	23 %	83 %	14 %	0 %	20 %	29 %
Low	8 %	0 %	29 %	25 %	0 %	0 %
Very low	0 %	0 %	0 %	0 %	0 %	0 %
<b>Picnicking</b>						
Very high	7 %	0 %	0 %	0 %	0 %	0 %
High	71 %	0 %	33 %	86 %	83 %	81 %
Medium	21 %	100 %	50 %	0 %	17 %	14 %
Low	0 %	0 %	17 %	14 %	0 %	5 %
Very low	0 %	0 %	0 %	0 %	0 %	0 %
<b>Other</b>						
Very high	0 %	**	0 %	0 %	0 %	0 %
High	50 %	**	50 %	100 %	50 %	40 %
Medium	50 %	**	0 %	0 %	50 %	40 %
Low	0 %	**	50 %	0 %	0 %	20 %
Very low	0 %	**	0 %	0 %	0 %	0 %

\*\* Denotes that there were not sufficient responses or activity not applicable.

Boat fishing (guided) is not shown in the table due to insufficient responses at any of the reservoirs. Percentages do not always add to 100 percent due to rounding error.

Some respondents preferred low water levels for bank fishing at Kachess Lake (17 percent), hunting at Bumping Lake (20 percent), wildlife viewing at Bumping Lake (15 percent), Rimrock Lake (11 percent), and Cle Elum Lake (10 percent). Twenty-nine percent of Rimrock Lake visitors and 25 percent of Bumping Lake visitors preferred low water levels for nature study. Rimrock Lake and Bumping Lake visitors (17 percent and 14 percent, respectively) also preferred low water levels for picnicking.

Table 15 displays how many additional trips and days per trip the average visitor would take per year for their primary activities if his or her preferred water levels were met (*Q.17: Additional number of trips per year and days per trip if preferred water levels were met.*) The numbers indicate that visitors would substantially increase visitation for most of their primary activities (two to six trips and days per trip for most activities).

Table 15. Additional number of trips per year and days per trip if visitors' preferred water levels were met

Primary Activities:	Lake Kachess		Cle Elum Lake		Rimrock Lake		Bumping Lake		Clear Lake		Lake Easton	
	Trips <sup>1</sup>	Days	Trips	Days	Trips	Days	Trips	Days	Trips	Days	Trips	Days
Motor boating	4.2	5.4	6.1	4.3	4.8	3.8	3.3	4.1	4.2	3.4	2.6	4.6
Boat fishing (guided)	1.7	3.3	**	**	**	**	**	**	**	**	**	**
Boat fishing (private)	6.3	4.1	10.3	11.1	6.3	3.4	3.4	3.6	3.1	2.5	2.6	4.5
Bank fishing	3.1	4.3	2.6	5.8	4.8	4.8	3.8	3.5	3.9	3.5	2.5	4.4
Kayaking/canoeing	4.6	6.8	3.2	3.5	**	**	5.5	4.8	2.0	2.7	1.2	3.2
Hunting	**	**	**	**	**	**	1.4	4.8	**	**	**	**
Sailing	1.7	6.0	**	**	**	**	**	**	**	**	**	**
Water-skiing	5.0	5.6	8.7	6.8	6.2	3.3	3.5	2.3	**	**	**	**
PWC (jet-skiing)	9.0	**	3.6	2.8	3.5	2.6	4.5	3.0	**	**	**	**
Swimming	4.6	6.7	7.4	4.9	5.2	4.4	2.7	3.0	1.9	2.6	2.5	4.6
Camping	4.4	6.3	3.1	5.0	4.5	4.4	2.6	3.5	3.7	3.7	2.8	4.6
Sight-seeing	4.4	5.3	4.9	4.8	4.4	5.0	2.8	2.4	2.8	3.3	2.8	4.5
Wildlife viewing	4.5	4.9	2.7	3.0	4.5	5.5	3.0	2.7	2.5	4.0	2.9	3.3
Nature study	4.9	5.9	3.0	4.7	3.3	5.7	**	**	2.3	3.0	3.3	3.8
Picnicking	5.3	6.1	5.3	4.7	2.5	1.5	3.0	2.3	1.5	2.0	3.2	4.3
Other	3.0	**	**	**	**	**	**	**	**	**	**	**

<sup>1</sup> All numbers shown in the table are averages.

\*\* Denotes that there were not sufficient responses or activity not applicable.

Table 16 displays results for *Q.18: Are there high and/or low water level elevations that would stop you from pursuing your primary activity on the reservoir?* Depending on the activity pursued, most visitors would stop their primary activity at very high, high, or medium *upper* water levels. Some respondents indicated that they would not stop their activity even if the water levels were very high (i.e., water-skiing and jet-skiing at Kachess Lake). Most visitors would stop their primary activity at medium, low, or very low *lower* water elevations.

Table 16. Upper and lower water levels where visitors would stop their primary recreation activities

Primary Activities:	Kachess Lake		Cle Elum Lake		Rimrock Lake		Bumping Lake		Clear Lake		Lake Easton	
	UWL	LWL	UWL	LWL	UWL	LWL	UWL	LWL	UWL	LWL	UWL	LWL
<b>Motor boating</b>												
Very high	0 %	0 %	56 %	0 %	33 %	0 %	20 %	0 %	67 %	0 %	25 %	0 %
High	75 %	6 %	11 %	0 %	67 %	6 %	80 %	5 %	0 %	0 %	25 %	0 %
Medium	25 %	33 %	22 %	7 %	0 %	35 %	0 %	16 %	0 %	0 %	50 %	86 %
Low	0 %	44 %	11 %	36 %	0 %	35 %	0 %	74 %	33 %	75 %	0 %	14 %
Very low	0 %	17 %	0 %	57 %	0 %	24 %	0 %	5 %	0 %	25 %	0 %	0 %
<b>Boat fishing (p)</b>												
Very high	0 %	0	**	0 %	29 %	0 %	63 %	0 %	89 %	0 %	29 %	0 %
High	67 %	0	**	0 %	43 %	0 %	25 %	0 %	0 %	0 %	14 %	0 %
Medium	33 %	33 %	**	0 %	29 %	12 %	0 %	23 %	11 %	7 %	57 %	20 %
Low	0 %	44 %	**	70 %	0 %	47 %	13 %	41 %	0 %	57 %	0 %	73 %
Very low	0 %	22 %	**	30 %	0 %	41 %	0 %	36 %	0 %	36 %	0 %	7 %
<b>Bank fishing</b>												
Very high	0 %	0	75 %	0 %	100 %	0 %	33 %	0 %	57 %	0 %	25 %	0 %
High	67 %	14 %	25 %	0 %	0 %	0 %	33 %	9 %	29 %	0 %	25 %	0 %
Medium	33 %	29 %	0 %	0 %	0 %	18 %	11 %	18 %	7 %	4 %	50 %	18 %
Low	0 %	29 %	0 %	75 %	0 %	55 %	22 %	27 %	7 %	52 %	0 %	59 %
Very low	0 %	29 %	0 %	25 %	0 %	27 %	0 %	46 %	0 %	44 %	0 %	24 %
<b>Kayaking/canoeing</b>												
Very high	75 %	0 %	**	0 %	**	0 %	83 %	0 %	**	0 %	100 %	11 %
High	0 %	0 %	**	0 %	**	25 %	17 %	10 %	**	0 %	0 %	0 %
Medium	25 %	31 %	**	0 %	**	0 %	0 %	10 %	**	0 %	0 %	11 %
Low	0 %	54 %	**	60 %	**	50 %	0 %	50 %	**	60 %	0 %	67 %
Very low	0 %	15 %	**	40 %	**	25 %	0 %	30 %	**	40 %	0 %	11 %
<b>Sailing</b>												
Very high	**	**	**	**	**	**	**	**	**	0 %	**	**
High	**	**	**	**	**	**	**	**	**	33 %	**	**
Medium	**	**	**	**	**	**	**	**	**	0 %	**	**
Low	**	**	**	**	**	**	**	**	**	67 %	**	**
Very low	**	**	**	**	**	**	**	**	**	0 %	**	**

Table 16. Upper and lower water levels where visitors would stop their primary recreation activities – continued

Primary Activities:	Kachess Lake		Cle Elum Lake		Rimrock Lake		Bumping Lake		Clear Lake		Lake Easton	
	UWL	LWL	UWL	LWL	UWL	LWL	UWL	LWL	UWL	LWL	UWL	LWL
<b>Water-skiing</b>												
Very high	**	0 %	100 %	0 %	0 %	0 %	**	0 %	**	**	**	**
High	**	0 %	0 %	0 %	100 %	14 %	**	0 %	**	**	**	**
Medium	**	17 %	0 %	0 %	0 %	14 %	**	40 %	**	**	**	**
Low	**	83 %	0 %	27 %	0 %	43 %	**	40 %	**	**	**	**
Very low	**	0 %	0 %	73 %	0 %	29 %	**	20 %	**	**	**	**
<b>PWC (jet-skiing)</b>												
Very high	**	0 %	80 %	0 %	**	0 %	50 %	0 %	**	**	**	**
High	**	0 %	20 %	0 %	**	0 %	25 %	0 %	**	**	**	**
Medium	**	14 %	0 %	0 %	**	40 %	25 %	0 %	**	**	**	**
Low	**	71 %	0 %	20 %	**	60 %	0 %	75 %	**	**	**	**
Very low	**	14 %	0 %	80 %	**	0 %	0 %	25 %	**	**	**	**
<b>Swimming</b>												
Very high	46 %	0 %	56 %	0 %	57 %	0 %	36 %	0 %	33 %	0 %	53 %	0 %
High	46 %	4 %	25 %	0 %	14 %	0 %	36 %	0 %	33 %	0 %	7 %	0 %
Medium	8 %	36 %	19 %	11 %	29 %	32 %	18 %	28 %	17 %	0 %	40 %	17 %
Low	0 %	39 %	0 %	15 %	0 %	37 %	9 %	52 %	17 %	67 %	0 %	57 %
Very low	0 %	21 %	0 %	74 %	0 %	32 %	0 %	20 %	0 %	33 %	6 %	26 %
<b>Camping</b>												
Very high	40 %	0 %	75 %	0 %	65 %	0 %	50 %	0 %	67 %	0 %	65 %	0 %
High	30 %	4 %	8 %	0 %	12 %	0 %	28 %	4 %	22 %	0 %	6 %	0 %
Medium	30 %	32 %	17 %	0 %	18 %	20 %	11 %	15 %	11 %	6 %	29 %	13 %
Low	0 %	36 %	0 %	22 %	0 %	33 %	11 %	39 %	0 %	69 %	0 %	59 %
Very low	0 %	29 %	0 %	78 %	6 %	47 %	0 %	42 %	0 %	25 %	0 %	26 %
<b>Sight-seeing</b>												
Very high	60 %	0 %	**	0 %	60 %	0 %	20 %	0 %	25 %	0 %	**	0 %
High	20 %	0 %	**	0 %	0 %	0 %	60 %	10 %	50 %	0 %	**	0 %
Medium	20 %	63 %	**	0 %	40 %	22 %	0 %	20 %	0 %	20 %	**	0 %
Low	0 %	13 %	**	50 %	0 %	33 %	20 %	60 %	25 %	40 %	**	70 %
Very low	0 %	25 %	**	50 %	0 %	44 %	0 %	10 %	0 %	40 %	**	30 %
<b>Wildlife viewing</b>												
Very high	40 %	0 %	**	**	**	0 %	25 %	0 %	**	0 %	**	0 %
High	20 %	0 %	**	**	**	0 %	75 %	14 %	**	0 %	**	0 %
Medium	40 %	67 %	**	**	**	0 %	0 %	29 %	**	0 %	**	0 %
Low	0 %	11 %	**	**	**	33 %	0 %	43 %	**	67 %	**	63 %
Very low	0 %	22 %	**	**	**	67 %	0 %	14 %	**	33 %	**	38 %

Table 16. Upper and lower water levels where visitors would stop their primary recreation activities – continued

Primary Activities:	Kachess Lake		Cle Elum Lake		Rimrock Lake		Bumping Lake		Clear Lake		Lake Easton	
	UWL	LWL	UWL	LWL	UWL	LWL	UWL	LWL	UWL	LWL	UWL	LWL
<b>Picnicking</b>												
Very high	75 %	0 %	**	0 %	**	0 %	20 %	0 %	**	0 %	60 %	0 %
High	0 %	0 %	**	0 %	**	0 %	60 %	14 %	**	0 %	20 %	0 %
Medium	25 %	43 %	**	0 %	**	40 %	0 %	14 %	**	0 %	20 %	11 %
Low	0 %	57 %	**	67 %	**	40 %	20 %	57 %	**	67 %	0 %	58 %
Very low	0 %	0 %	**	33 %	**	20 %	0 %	14 %	**	33 %	0 %	32 %
<b>Other</b>												
Very high	**	0 %	**	**	**	**	**	**	**	0 %	**	**
High	**	0 %	**	**	**	**	**	**	**	0 %	**	**
Medium	**	75 %	**	**	**	**	**	**	**	33 %	**	**
Low	**	25 %	**	**	**	**	**	**	**	33 %	**	**
Very low	**	0 %	**	**	**	**	**	**	**	33 %	**	**

UWL = Upper water level; LWL = Lower water level.

\*\* Denotes that there were not sufficient responses or activity not applicable.

Boat fishing (guided) and house boating are not shown due to insufficient responses at any of the reservoirs.

Percentages do not always add to 100 percent due to rounding error.

Table 17 displays the categorized responses for *Q.1: At this reservoir, what effect might an additional water supply in the Yakima River basin have on your recreation experience?* For most visitors (between 34 percent and 50 percent) at all of the reservoirs, with the exception of Lake Easton (15 percent), the effect of an additional water supply in the Yakima River basin would be positive if it kept the reservoir levels higher for a longer period during the summer and fall. According to the respondents, this would improve boat launching, boating safety, and water-related recreation activities, such as fishing.

Some of the respondents (between 10 percent and 23 percent) feared that, if the additional water supply in the basin lowered the water levels at the reservoirs, it would reduce the recreational value of those reservoirs. According to the respondents, the lowered water levels would limit boating and make the landscape less visually appealing. Some visitors, especially at Bumping Lake (16 percent) and Clear Lake (12 percent), feared that if the additional water supply raised the water levels, it would reduce or eliminate beach access, shoreline hiking, and boat launches. Many of the respondents (between 17 percent at Kachess Lake and 34 percent at Lake Easton) also mentioned that an additional water supply in the basin would have no effect on their recreation experience. Some respondents, especially at Lake Easton (14 percent), said that they were not sure about the effects.

Table 17. Effect of additional water supply in the Yakima River basin on reservoir visitors' recreation experience

<b>Categorized Responses:</b>	<b>Kachess Lake</b>	<b>Cle Elum Lake</b>	<b>Rimrock Lake</b>	<b>Bumping Lake</b>	<b>Clear Lake</b>	<b>Lake Easton</b>
If lake level stays higher longer, it would lengthen our summer recreation season; easier launching; safer boating; better fishing	41 %	50 %	42 %	34 %	40 %	15 %
If it lowers water level, the recreational value would be reduced; limits boating; less scenic	23 %	15 %	10 %	22 %	16 %	19 %
Very high water level would eliminate beach access, shoreline hiking and launch areas	5 %	7 %	9 %	16 %	12 %	8 %
No effect	17 %	18 %	30 %	18 %	23 %	34 %
Unknown	8 %	9 %	4 %	4 %	2 %	14 %
Other	6 %	1 %	4 %	6 %	6 %	11 %

### Trip Expenditures

Table 18 displays the results for *Q.19: How much money do you and members of your household expect to spend on this trip for each of the expenditure categories listed below both in total and within the local area?* Table 18 is divided into two columns for each of the reservoirs. The first column displays the average amount spent by visitors for their entire trip to the reservoir; the second column displays the average amount spent by visitors only within the local area. The local area was described to respondents as the Yakima River basin as shown on the map at the end of the survey. (See Appendix A.)

The table indicates that the average visitor spent a considerable dollar amount on groceries and liquor, gas and oil for auto and boat, and restaurants for their reservoir-related recreation, both within the local area and in total. The total amount spent for groceries and liquor often exceeded \$100 for the majority of the reservoirs and the within local area amount was only slightly less. Camping fees varied considerably from reservoir to reservoir, with total and local expenditures highest for Lake Easton visits (more than \$70) and lowest for Clear Lake visits (around \$30). Many visitors spent roughly between \$50 and \$70 on recreation supplies for their trip. The large majority of visitors did not spend any money on guide services, automobile rentals, or public transportation fares for their trip to any of the reservoirs.

Table 18. Reservoir visitors' average total and within local area trip expenditures by expenditure category

Expenditure Categories:	Kachess Lake		Cle Elum Lake		Rimrock Lake		Bumping Lake		Clear Lake		Lake Easton	
	Total \$ spent	Local \$ spent										
Camping fees	\$70.95	\$66.46	\$58.28	\$67.69	\$37.49	\$49.78	\$54.12	\$65.37	\$30.53	\$28.89	\$77.54	\$74.49
Day use fees	\$15.33	\$19.00	\$11.19	\$14.00	\$25.16	\$31.25	\$17.00	\$10.83	\$8.49	\$9.91	\$21.17	\$26.00
Hotels/motels + other lodging	\$80.00	\$80.00	\$360.00	\$375.00	\$225.00	\$200.00	\$400.00	\$450.00	**	**	\$132.50	\$325.00
Restaurants	\$47.50	\$57.73	\$108.70	\$132.00	\$62.00	\$59.55	\$79.67	\$126.81	\$52.50	\$39.44	\$78.18	\$86.13
Groceries and liquor	\$124.93	\$74.42	\$138.92	\$123.42	\$99.04	\$101.15	\$115.80	\$91.14	\$85.43	\$67.55	\$113.08	\$60.84
Gas and oil for auto and boat	\$92.80	\$90.75	\$96.99	\$134.12	\$95.54	\$94.62	\$77.65	\$77.71	\$66.25	\$60.92	\$90.87	\$72.11
Recreation supplies	\$57.62	\$48.33	\$66.29	\$60.00	\$73.13	\$73.13	\$58.18	\$67.00	\$45.81	\$43.33	\$53.48	\$34.10
Recreation equipment rentals	**	**	\$240.00	\$245.00	**	**	**	**	**	**	\$61.43	\$35.00
Guide services	**	**	**	**	**	**	**	**	**	**	**	**
Automobile rentals	**	**	**	**	**	**	**	**	**	**	**	**
Public transport. fares	**	**	**	**	**	**	**	**	**	**	**	**
Souvenirs/gifts	**	**	\$60.00	\$55.00	\$58.00	\$62.00	\$47.50	\$35.00	\$24.00	\$18.33	\$96.22	\$108.71
Other	**	\$37.00	**	**	**	**	\$70.00	\$89.00	\$33.97	\$30.63	\$108.00	\$68.20

\*\* Denotes that there were not sufficient responses.

Table 19 displays results for Q.20: *Please estimate, on average, how much you and members of your household spent per trip to the reservoir for each of your primary activities in the past 12 months.* The dollar amount spent varied by activity and reservoir. On average, visitors spent roughly between \$40 and \$250 per trip for each of their primary activities. The highest average amounts were spent on camping, picnicking, and motorized activities such as motor boating, private boat fishing, water-skiing, and jet-skiing. Although hunting and sailing were not very popular activities at any of the reservoirs, visitors who did participate spent a considerable dollar amount per trip on these recreation activities.

Table 19. Reservoir visitors' average expenditures per trip for each primary activity

Primary Recreation Activities:	Kachess Lake	Cle Elum Lake	Rimrock Lake	Bumping Lake	Clear Lake	Lake Easton
Motor boating	\$106.56	\$195.40	\$172.50	\$124.17	\$38.75	\$159.44
Boat fishing (guided)	**	**	\$253.33	**	**	*
Boat fishing (private)	\$135.00	\$114.23	\$119.63	\$101.73	\$141.50	\$51.82
Bank fishing	\$38.50	\$41.39	\$81.00	\$95.26	\$94.68	\$39.23
Kayaking/canoeing	\$198.46	\$68.00	\$71.67	\$77.50	\$108.50	\$118.89
Hunting	**	\$260.00	\$152.00	\$241.67	\$175.00	**
Sailing	**	**	\$425.00	**	**	**
Water-skiing	\$158.33	\$204.64	\$125.00	\$73.75	**	**
PWC/Jet-skiing	\$85.00	\$286.36	\$202.86	\$181.25	**	**
Swimming	\$76.50	\$132.33	\$150.42	\$59.25	\$50.63	\$53.25
Camping	\$212.75	\$179.41	\$199.08	\$234.38	\$185.93	\$185.79
Sightseeing	\$52.00	\$93.75	\$47.50	\$71.00	\$65.63	\$74.00
Wildlife viewing	\$95.00	\$45.83	\$62.14	\$57.14	\$91.67	\$40.00
Nature study	\$100.00	**	\$66.25	\$80.00	\$56.67	**
Picnicking	\$214.00	\$106.50	\$100.00	\$117.69	\$118.75	\$95.52
Other	**	**	**	\$75.00	\$35.00	\$355.00

\*\* Denotes that there were not sufficient responses or activity not applicable.

### Conflicts Experienced

Table 20 displays the results for Q.21: *Have you had any conflicts with other users while recreating here?* In general, the majority of visitors did not experience any major conflicts with other user groups at any of the reservoirs. Most of the conflicts that visitors did experience during their visit were with partiers, campers, jet-skiers, and motor boaters. Kachess Lake visitors experienced most conflicts with other campers (37 percent); Cle Elum Lake visitors with jet-skiers (25 percent); Rimrock Lake visitors with partiers

(31 percent); Bumping Lake visitors with partiers and jet-skiers (19 percent each); and Clear Lake visitors with partiers (22 percent). Lake Easton State Park visitors had the fewest conflicts of any of the reservoirs. Lake Easton respondents stated that they experienced most conflicts with partiers (7 percent) and other campers (7 percent). The “other category” most often included conflicts with dog owners, speeding drivers, noise from generators, ATV riders, rangers, camp hosts, and thieves.

Table 20. Conflicts that reservoir visitors experienced with other user groups

User Groups:	Kachess Lake		Cle Elum Lake		Rimrock Lake		Bumping Lake		Clear Lake		Lake Easton	
	Conflicts		Conflicts		Conflicts		Conflicts		Conflicts		Conflicts	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Kayakers/canoers	0 %	100 %	0 %	100 %	2 %	98 %	0 %	100 %	0 %	100 %	0 %	100 %
Shoreline anglers	0 %	100 %	0 %	100 %	0 %	100 %	0 %	100 %	0 %	100 %	0 %	100 %
Wildlife viewers	0 %	100 %	2 %	98 %	0 %	100 %	0 %	100 %	2 %	98 %	0 %	100 %
House boaters	0 %	100 %	0 %	100 %	0 %	100 %	0 %	100 %	0 %	100 %	0 %	100 %
Sightseers	0 %	100 %	4 %	96 %	0 %	100 %	0 %	100 %	0 %	100 %	0 %	100 %
Sailors	0 %	100 %	0 %	100 %	0 %	100 %	0 %	100 %	2 %	98 %	0 %	100 %
Partiers	27 %	73 %	19 %	81 %	31 %	69 %	19 %	82 %	22 %	78 %	7 %	93 %
Picnickers	2 %	98 %	4 %	96 %	6 %	94 %	2 %	98 %	4 %	96 %	1 %	99 %
Campers	37 %	63 %	17 %	83 %	14 %	87 %	6 %	94 %	4 %	96 %	7 %	93 %
Jet-skiers	23 %	77 %	25 %	75 %	25 %	75 %	19 %	82 %	4 %	96 %	4 %	96 %
Swimmers	2 %	98 %	2 %	98 %	8 %	92 %	9 %	91 %	2 %	98 %	2 %	98 %
Water-skiers	0 %	100 %	10 %	90 %	4 %	96 %	4 %	96 %	0 %	100 %	0 %	100 %
Boat anglers (guided)	0 %	100 %	0 %	100 %	0 %	100 %	0 %	100 %	0 %	100 %	0 %	100 %
Boat anglers (private)	0 %	100 %	0 %	100 %	0 %	100 %	0 %	100 %	4 %	96 %	0 %	100 %
Motor boaters	10 %	90 %	12 %	89 %	12 %	89 %	11 %	89 %	17 %	83 %	0 %	100 %
Bank fishers	0 %	100 %	0 %	100 %	0 %	100 %	0 %	100 %	0 %	100 %	0 %	100 %
Others	15 %	85 %	14 %	87 %	15 %	85 %	13 %	87 %	11 %	89 %	11 %	89 %

Percentages do not always add to 100 % due to rounding error.

Table 21 summarizes the responses to *Q.22: Describe any conflicts you have experienced on the reservoir*. The type of conflict most often mentioned by respondents was noise from campers and partiers. Kachess Lake (36 percent) and Rimrock Lake (28 percent) showed the largest amount of conflicts related to noise. Speeding boats, as well as motor boaters and jet-skiers ignoring the boating regulations, were other conflicts mentioned relatively frequently by

visitors. Clear Lake (14 percent) and Kachess Lake (12 percent) visitors reported most conflicts in this category. Ten percent of Cle Elum Lake respondents mentioned crowding as a conflict. The one major conflict that many of the Lake Easton visitors experienced was not with other users of the area but was related to noise from the adjacent highway and train noise, especially at night.

Table 21. Types of conflicts reservoir visitors experienced while recreating

<b>Categorized Responses:</b>	<b>Kachess Lake</b>	<b>Cle Elum Lake</b>	<b>Rimrock Lake</b>	<b>Bumping Lake</b>	<b>Clear Lake</b>	<b>Lake Easton</b>
Noise; campers with loud music and generators; late night partying; campers not following rules; campers shooting guns; large groups	36 %	14 %	28 %	10 %	14 %	7 %
Boaters ignoring speed limits and no-wake zones; boats disturbing fishing; boats not following rules; jet-skiers riding too close; noisy jet-skis; drunk boaters; kids swimming in boat launch area	12 %	10 %	8 %	11 %	14 %	1 %
Crowding; crowded parking; crowding on beach; crowding at boat launch; campsites too close; crowding on weekends	5 %	10 %	6 %	2 %	7 %	7 %
Speeding in campgrounds; driving in areas closed to motor vehicles; too much traffic after 11pm; noisy highway; train noise	5 %	3 %	1 %	3 %	5 %	13 %
Littering; garbage on ground, beaches; litter in lake; garbage overflow on weekend	4 %	5 %	2 %	2 %	6 %	0 %
Dogs on beach; barking dogs; dog poop not picked up by owners; loose dogs; dogs in buoyed swim area	7 %	3 %	1 %	2 %	5 %	4 %
Bugs; mosquitoes; bees	0 %	3 %	0 %	1 %	1 %	1 %
Not enough picnic tables to accommodate users; no dock to assist with launching; not enough beach access	0 %	0 %	0 %	2 %	0 %	1 %
Campground regulations; boating regulations; rangers; reservation system	5 %	0 %	0 %	0 %	0 %	5 %
No conflicts	19 %	22 %	23 %	34 %	24 %	23 %
Other	6 %	12 %	4 %	4 %	6 %	5 %

Table 22 displays percentages for *Q.23: What did you do about each conflict?* A majority of respondents (between 49 percent and 70 percent) indicated that they did something other than the answer choices provided in the survey. Many of the respondents tried to ignore the other party causing the conflict and decided to do nothing about it (between 42 percent and 73 percent). Visitors also frequently confronted the person or party, talked to them, and tried to resolve the conflict themselves (between 6 percent and 33 percent). Other common responses to conflicts were complaining to a manager about the conflict (between 11 percent and 31 percent), leaving the area (between 9 percent and 29 percent), and/or going to another area (between 5 percent and 19 percent).

Table 22. What reservoir visitors did about each conflict

<b>Response to Conflict:</b>	<b>Kachess Lake</b>	<b>Cle Elum Lake</b>	<b>Rimrock Lake</b>	<b>Bumping Lake</b>	<b>Clear Lake</b>	<b>Lake Easton</b>
Went to another area	8 %	19 %	13 %	17 %	16 %	5 %
Left the area	16 %	24 %	29 %	11 %	11 %	9 %
Complained to a manager	31 %	11 %	21 %	14 %	16 %	18 %
Went home	4 %	19 %	8 %	11 %	11 %	9 %
Other	69 %	49 %	50 %	58 %	61 %	70 %
▪ Ignored person/party/Did nothing/Put up with it	48 %	42 %	53 %	56 %	59 %	73 %
▪ Approached/confronted/talked to person or party	33 %	16 %	20 %	22 %	27 %	6 %
▪ Picked up garbage/Cleaned up/Put out fires	0 %	16 %	13 %	0 %	0 %	0 %
▪ Called police/Reported to ranger/camp host	9 %	0 %	13 %	6 %	0 %	3 %
▪ Complied	0 %	0 %	0 %	0 %	0 %	9 %
▪ Expressed concern to others	6 %	0 %	0 %	0 %	0 %	0 %
▪ Other	3 %	26 %	0 %	17 %	14 %	9 %

### Desired Recreation Opportunities

Table 23 displays categorized responses to *Q.24: What additional reservoir-related opportunities do you most desire in the Yakima River basin?* In general, response rates for this question were relatively low, indicating that many of the visitors were satisfied with the recreation opportunities already available. Some of the responses more often mentioned were the desire for expanded camping opportunities (between 7 percent and 12 percent), more and better fishing opportunities (between 7 percent and 10 percent), better facilities at the existing

recreation areas (between 3 percent and 11 percent), more opportunities for motor boating (between 4 percent and 9 percent), additional hiking and biking trails (between 4 percent and 8 percent), more swimming areas (between 0 percent and 6 percent) more opportunities for nonmotorized boating (between 0 percent and 6 percent), and more off-road vehicle opportunities (between 0 percent and 6 percent). Some respondents also expressed the desire for more reservoirs, specifically Black Rock Reservoir (between 0 percent and 7 percent). Four respondents at Bumping Lake and one respondent each at Clear and Lake Eastons expressed the desire for Black Rock Reservoir to be built.

Table 23. Additional reservoir recreation-related opportunities desired by visitors

<b>Categorized Responses:</b>	<b>Kachess Lake</b>	<b>Cle Elum Lake</b>	<b>Rimrock Lake</b>	<b>Bumping Lake</b>	<b>Clear Lake</b>	<b>Lake Easton</b>
Expanded camping opportunities; more campgrounds; boat camping; more reservation camping; more campgrounds with lake access; improvements to campgrounds	9 %	7 %	7 %	12 %	4 %	11 %
More and better fishing opportunities; extended fly-fishing opportunities; salmon and steelhead fishing; larger fish; stock lake for fishing; more designated fishing areas	7 %	9 %	10 %	9 %	6 %	7 %
Better facilities; showers; cleaner camping area and restrooms; more parking; more floating docks; additional boat ramps; low water level boat launches; potable water; more sites with hookups; more picnic spots next to lakes; group picnic areas; handicap access	3 %	6 %	5 %	6 %	7 %	11 %
More boating; motor boating; jet-skiing; more opportunities for water sports; house boating; boat rentals; jet-ski rentals; PWC designated areas	4 %	5 %	5 %	9 %	5 %	4 %
More hiking trails; more hiking opportunities; more trails along shoreline; bike trails; mountain bike trails; better marked trails; interpretive trails; nature trails	8 %	6 %	4 %	7 %	4 %	4 %
More swimming areas; better beaches; more beach access; sandy beaches	0 %	6 %	3 %	5 %	0 %	5 %

Table 23. Additional reservoir recreation-related opportunities desired by visitors – continued

<b>Categorized Responses:</b>	<b>Kachess Lake</b>	<b>Cle Elum Lake</b>	<b>Rimrock Lake</b>	<b>Bumping Lake</b>	<b>Clear Lake</b>	<b>Lake Easton</b>
Kayaking; canoeing; paddle boating; nonmotorized boating; motor-free lake; no-motor areas for primitive recreation; more no-wake areas; kayak and canoe rentals	2 %	4 %	0 %	6 %	2 %	3 %
More reservoirs; larger ski reservoir; better lakes for fast motorboats; more lakes close to Yakima; Black Rock Reservoir	0 %	0 %	2 %	7 %	5 %	3 %
More ORV facilities; off-road trails; ATV open roads; Jeep runs; motorcycles; snowmobiling in winter	1 %	2 %	6 %	3 %	0 %	1 %
Sightseeing; enjoying nature; wildlife viewing; nature study; photo opportunities	1 %	7 %	0 %	3 %	0 %	1 %
Higher water levels in reservoirs during summer months; more water; one lake that is not drained for irrigation purposes; less draw down; consistent level of water	3 %	3 %	2 %	0 %	0 %	1 %
Solitude; quiet; less development; more natural areas; protected areas for wildlife; closed areas if needed to protect T&E species or nesting species	0 %	3 %	0 %	2 %	2 %	0 %
More access to shoreline; more public access; limit the number of private developments that cut off access to the lake	0 %	3 %	1 %	0 %	0 %	2 %
Hunting	0 %	0 %	2 %	2 %	0 %	1 %
Small convenience store; more shopping; restaurant; coffee shops; resort	2 %	0 %	0 %	0 %	1 %	1 %
Golf; more golf	1 %	0 %	0 %	0 %	0 %	1 %
None	7 %	2 %	7 %	14 %	6 %	6 %
Other	7 %	3 %	2 %	8 %	7 %	6 %

## Visitor Demographics

The results for Q.25: *From where does your reservoir trip usually originate* can be found in Appendix G, where a list of respondents' zip codes is provided for each reservoir.

Figure 4 displays results for Q.26: *How many miles (one way) do you usually travel to visit the reservoir?* The average visitor traveled between 80 and 150 miles each way to visit the reservoirs. Rimrock Lake visitors traveled farthest, 150 miles one way, while the average Cle Elum Lake visitor traveled the shortest distance, 80 miles each way.

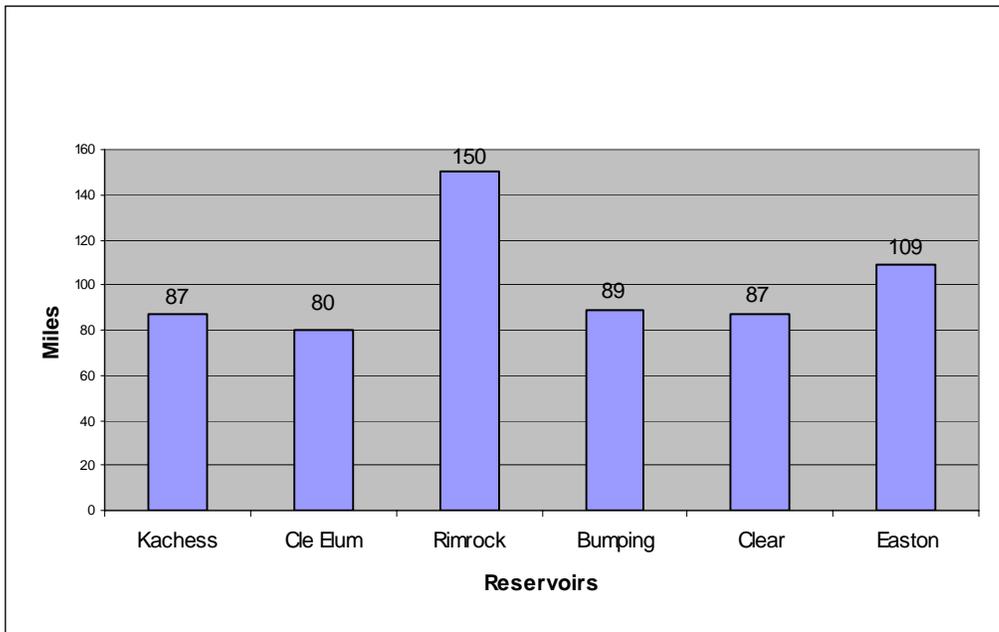


Figure 4. Average number of miles visitors traveled each way to visit reservoirs.

Figure 5 displays results for Q.27: *How many years have you been recreating on the reservoir?* Respondents had been recreating on the reservoirs between 8 and 17 years. Visitors, on average, had been recreating at Clear Lake for the longest period of time and at Lake Easton for the shortest amount of time.

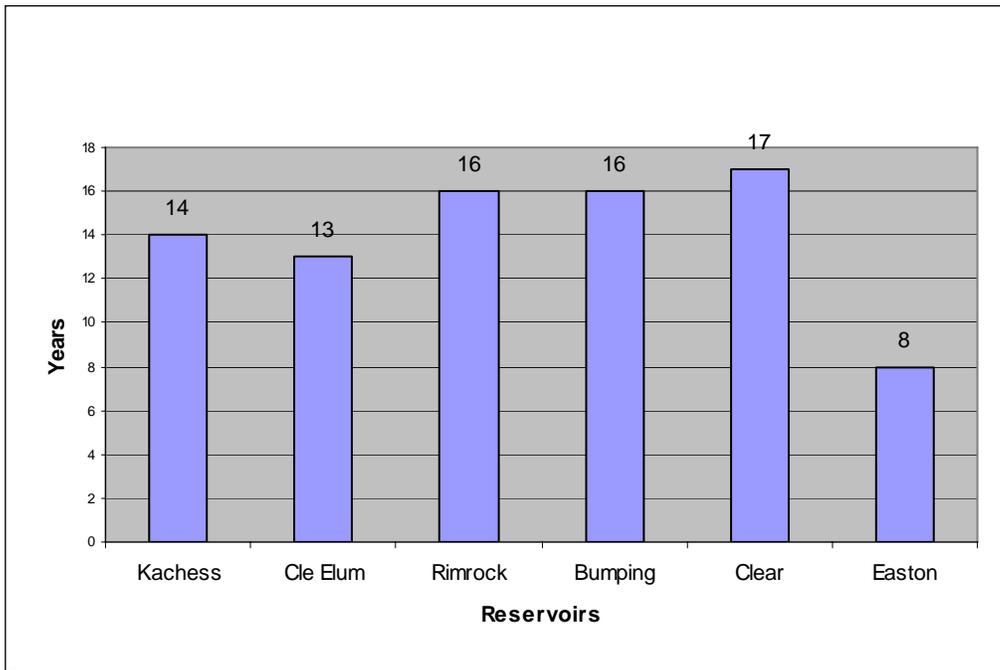


Figure 5. Average number of years visitors have been recreating on reservoirs.

Figure 6 displays results for *Q.28: Are you female or male?* Kachess, Cle Elum, Bumping and Lake Eastons showed an almost equal distribution of female and male respondents. At Rimrock and Clear Lakes, male visitors clearly outweighed female visitors.

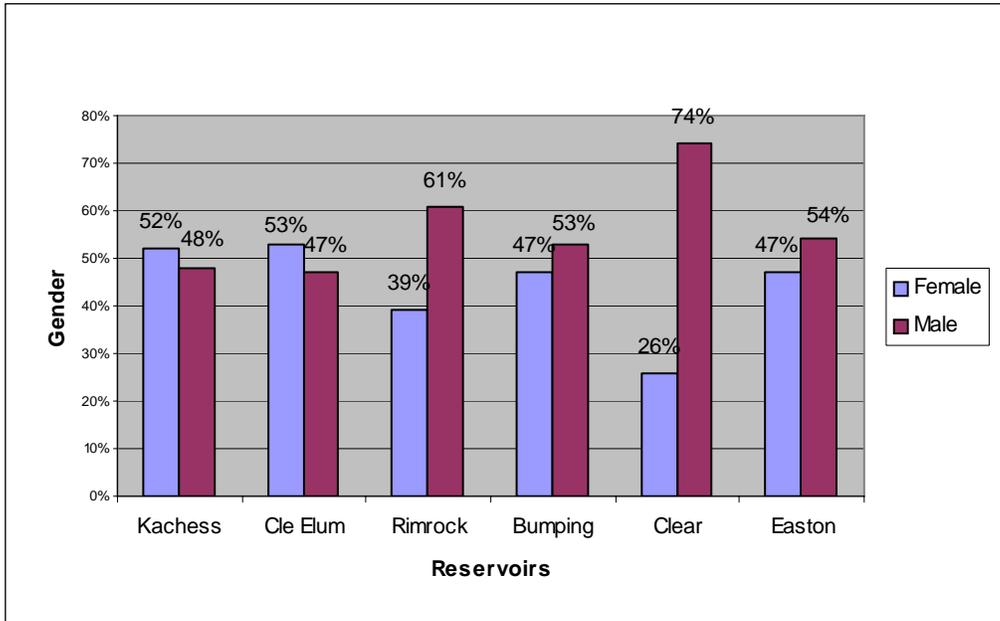


Figure 6. Reservoir visitors' gender.

Table 24 displays the percentages for *Q.29: What is your age?* At all of the reservoirs, the age group with the most representation was thirty-five to forty-nine years old. Fifty to sixty-five year olds were represented second most often, followed by twenty-one to thirty-four year olds.

Table 24. Reservoir visitors' age

Age:	Kachess Lake	Cle Elum Lake	Rimrock Lake	Bumping Lake	Clear Lake	Lake Easton
Under 15	0 %	0 %	0 %	0 %	2 %	1 %
15 – 20	0 %	4 %	1 %	0 %	2 %	0 %
21 – 34	22 %	27 %	15 %	19 %	29 %	19 %
35 – 49	44 %	38 %	41 %	41 %	33 %	50 %
50 – 65	28 %	23 %	31 %	37 %	27 %	22 %
Over 65	7 %	8 %	13 %	3 %	6 %	8 %

Percentages do not always add to 100 percent due to rounding error.

Table 25 displays the results for *Q.30: What was your household income last year?* Household incomes were almost evenly distributed between \$25,000 and \$99,999, although household incomes of \$100,000 or more were also common.

Table 25. Reservoir visitors' household income last year

Household income:	Kachess Lake	Cle Elum Lake	Rimrock Lake	Bumping Lake	Clear Lake	Lake Easton
Less than \$25,000	6 %	3 %	17 %	6 %	16 %	5 %
\$25,000 – \$49,999	15 %	19 %	20 %	28 %	34 %	15 %
\$50,000 – \$74,999	14 %	25 %	26 %	22 %	29 %	33 %
\$75,000 – \$99,999	24 %	22 %	17 %	21 %	10 %	22 %
\$100,000 – \$149,999	28 %	17 %	17 %	15 %	7 %	18 %
\$150,000 or more	12 %	15 %	5 %	9 %	5 %	7 %

Percentages do not always add to 100 percent due to rounding error.

Most of Kachess Lake visitors (28 percent) had a household income of \$100,000 to \$149,999; most of Cle Elum Lake (25 percent), Rimrock Lake (26 percent), and Lake Easton (33 percent) visitors reported a household income of \$50,000 to \$74,999; most of Bumping Lake (28 percent) and Clear Lake (34 percent) visitors had a household income of \$25,000 to \$49,000.

Please see Appendix F for the results to *Q.31: Is there anything else you would like to share with us about your recreation experiences or concerns on the reservoir?* The appendix provides a list of complete general comments from respondents for each of the reservoirs.

## Rivers

### Recreation Activities Participated In

Table 26 displays responses to *Q.4: Check all the recreation activities that you are doing on this trip*. Respondents participated in a diversity of recreation activities at the rivers visited. Camping, picnicking, sightseeing, trail use, and swimming were popular activities at all of the rivers. Private rafting (38 percent) and private boat fishing (17 percent) were favorite activities on the Yakima River. Although responses for guided boat fishing were low (mainly due to the limited survey opportunities for this user group), we know that it is a very popular activity on the Yakima River. Private rafting (40 percent), guided rafting (11 percent), and whitewater kayaking (29 percent) were popular activities on the Tieton River during the September dam releases. The Bumping and Naches Rivers were favorite locations for shoreline fishing (41 percent and 46 percent), wade fishing (23 percent and 27 percent), and wading (47 percent and 42 percent). The Cle Elum River was a very popular location for wading (57 percent).

Table 26. All recreation activities participated in by river visitors on this trip

Activities:	Tieton River	Yakima River	Bumping River	Naches River	Cle Elum River
Rafting (guided)	11 %	1 %	0 %	0 %	2 %
Rafting (private)	40 %	38 %	3 %	8 %	10 %
Kayaking/canoeing	29 %	9 %	2 %	1 %	12 %
Boat fishing (guided)	1 %	2 %	0 %	0 %	2 %
Boat fishing (private)	2 %	17 %	3 %	3 %	3 %
Shoreline fishing	21 %	15 %	41 %	46 %	14 %
Wade fishing	16 %	14 %	23 %	27 %	12 %
Picnicking/day use	26 %	30 %	26 %	32 %	41 %
Sightseeing	45 %	31 %	63 %	52 %	60 %
Trail use	33 %	11 %	63 %	56 %	55 %
Nature study	21 %	17 %	23 %	22 %	14 %
Swimming	22 %	27 %	36 %	33 %	53 %
Tubing	9 %	17 %	13 %	8 %	12 %
Wading	29 %	19 %	47 %	42 %	57 %
PWC (jet-skiing)	1 %	5 %	1 %	0 %	5 %
Camping	79 %	42 %	97 %	96 %	91 %
Other	16 %	8 %	1 %	9 %	16 %

Table 27 displays the results for *Q.5: Check the one activity that is your primary (main) activity on this trip.* At the Bumping, Naches, and Cle Elum Rivers, the majority of visitors (between 68 percent and 86 percent) considered camping their number one primary activity. At the Tieton and Yakima Rivers, camping was an important primary activity (32 percent and 21 percent) in conjunction with private rafting (30 percent and 33 percent). Guided rafting (12 percent) and whitewater kayaking (18 percent) were also important primary activities on the Tieton River, while private boat fishing (11 percent) was an another important primary activity on the Yakima River. The Bumping River respondents indicated that wade fishing (12 percent) was an important primary activity during the trip when they were surveyed.

Table 27. River visitors' primary activities on this trip

<b>Primary Activities:</b>	<b>Tieton River</b>	<b>Yakima River</b>	<b>Bumping River</b>	<b>Naches River</b>	<b>Cle Elum River</b>
Rafting (guided)	12 %	0 %	0 %	1 %	0 %
Rafting (private)	30 %	33 %	0 %	4 %	3 %
Kayaking/canoeing	18 %	7 %	0 %	0 %	10 %
Boat fishing (guided)	1 %	1 %	0 %	0 %	0 %
Boat fishing (private)	1 %	11 %	1 %	1 %	0 %
Shoreline fishing	3 %	6 %	6 %	8 %	7 %
Wade fishing	5 %	7 %	12 %	7 %	9 %
Picnicking/day use	4 %	9 %	5 %	4 %	7 %
Sightseeing	7 %	2 %	3 %	5 %	3 %
Trail use	2 %	1 %	1 %	4 %	3 %
Nature study	1 %	1 %	1 %	1 %	0 %
Swimming	1 %	3 %	2 %	4 %	9 %
Tubing	1 %	7 %	1 %	1 %	3 %
Wading	2 %	2 %	0 %	1 %	2 %
PWC (jet-skiing)	0 %	5 %	0 %	0 %	0 %
Camping	32 %	21 %	86 %	84 %	68 %
Other	2 %	7 %	0 %	1 %	5 %

Table 28 displays the average and the mode for *Q.6: Number of people in your group on this trip who participated in the primary activity?* (Please see page v for a definition of the terms mean and mode). The average visitor group sizes for guided and private rafting and whitewater kayaking on the Tieton River were large, consisting of approximately 15 to 24 people. The September dam releases at Rimrock Reservoir create a unique opportunity for whitewater boating on the Tieton River (also known as the “flip-flop” effect). This limited seasonal whitewater boating opportunity attracts large numbers and big groups of guided and private rafters and kayakers to the area.

Average camping group sizes were also relatively large, with approximately 5 to 12 people. For most other primary activities, the average visitor group consisted of 2 to 7 people. In general, social activities such as rafting, picnicking, swimming, tubing, and camping had larger average group sizes than more solitary or quiet activities such as private boat fishing, shoreline fishing, wade fishing, or nature study.

The symbol \*\* in table 28 and many of the following tables in this section of the report was used to indicate that there were not enough responses to provide a number in the table. The assumption is that these were not popular activities at any or all of the rivers. (Please also see footnotes beneath the tables.)

Table 28. Number of people in group for primary river activity

Primary Activities:	Tieton River		Yakima River		Bumping River		Naches River		Cle Elum River	
	Mean	Mode	Mean	Mode	Mean	Mode	Mean	Mode	Mean	Mode
Rafting (guided)	23.6	7	**	**	**	**	**	**	**	**
Rafting (private)	14.7	6	6.6	2	**	**	**	**	5.0	4
Kayaking/canoeing	16.4	3	2.5	2	**	**	**	**	2.8	2
Boat fishing (guided)	**	**	**	**	**	**	**	**	**	**
Boat fishing (private)	**	**	2.4	2	**	**	**	**	**	**
Shoreline fishing	5.0	2	1.4	1	2.9	2	2.9	2	3.5	2
Wade fishing	4.3	2	1.5	1	2.5	2	2.5	2	3.8	4
Picnicking/day use	3.4	2	4.0	2	8.0	2	5.0	3	6.0	3
Sight-seeing	3.0	2	3.7	2	4.9	2	5.2	2	4.9	2
Trail use	2.9	2	4.0	1	5.2	2	4.2	2	3.8	2
Nature study	2.8	2	**	**	3.4	2	4.3	2	5.8	3
Swimming	**	**	5.2	2	6.0	4	5.1	4	4.5	3
Tubing	**	**	6.8	5	5.6	2	**	**	5.0	4
Wading	3.0	2	6.1	4	6.9	2	3.6	2	7.1	3
PWC (jet-skiing)	**	**	3.8	1	**	**	**	**	**	**
Camping	9.7	2	7.3	2	5.0	2	4.9	2	11.9	2
Other	**	**	3.3	1	**	**	2.3	2	5.6	4

\*\* Denotes that there were not sufficient responses.

Note: If multiple modes exist, the lowest value is shown.

## Visitor Experience

Table 29 summarizes the responses to *Q.8a: For your primary (main) river recreation activity on this trip, please describe what contributes to and makes for an enjoyable recreation experience.* A majority of visitors (between 33 percent and 48 percent) mentioned that the beautiful river environment, and the sights and sounds of the river made for an enjoyable recreation experience. The well-maintained campsites, cleanliness of facilities, and easy access to the water were other important factors (between 17 percent and 32 percent) contributing to an enjoyable recreation experience for visitors. Many of the respondents felt that the rivers offered great water-based recreation opportunities, and visitors liked the diversity of activities available (between 17 percent and 30 percent). High river flows were mentioned by 58 percent of Tieton River respondents while 19 percent of Yakima River visitors preferred medium to low flows. The lack of crowding and the opportunity to experience peace and quiet (between 10 percent and 16 percent) were also important for visitors' enjoyment at all study rivers.

Table 29. Factors contributing to an enjoyable river recreation experience

<b>Categorized Responses:</b>	<b>Tieton River</b>	<b>Yakima River</b>	<b>Bumping River</b>	<b>Naches River</b>	<b>Cle Elum River</b>
Being close to the river; beautiful river environment; sound of the river; natural flora and fauna; trees; mountains; nature; open space; sunshine; clear water; wildlife	33 %	37 %	44 %	48 %	34 %
Good campground; clean bathrooms; running water; well maintained facilities; well supervised; good camp host; nice parking areas; good access to put-in and take-out sites; easy access to water; good road access	17 %	25 %	32 %	31 %	28 %
Great whitewater rafting and kayaking; riverside camping; tubing; area offers many activities; beaches; good fishing; wade fishing; hiking; floating the river; swimming; picnicking	17 %	29 %	22 %	24 %	30 %
High river flows; dam releases; big rapids, fun waves; enough water to raft and kayak; high water for floating and tubing; higher water for better fish habitat	58 %	10 %	9 %	13 %	18 %
Slow, gentle, relaxing flow; medium-to-low flows; low flow makes wading and shallow water swimming safe; medium or low flows best for fishing; slow flow for safety	0 %	19 %	10 %	13 %	7 %

Table 29. Factors contributing to an enjoyable river recreation experience – continued

<b>Categorized Responses:</b>	<b>Tieton River</b>	<b>Yakima River</b>	<b>Bumping River</b>	<b>Naches River</b>	<b>Cle Elum River</b>
Not too many people; no crowds; not too many commercial rafters; no motorized boats; not too much development; away from major roads and traffic; peace and quiet; solitude; polite people; people that respect the river	14 %	14 %	10 %	15 %	16 %
The rafting community; the other boaters we boat with; the other fishermen; family camping; good friends; our dogs	7 %	6 %	12 %	5 %	5 %
Close to home; close distance; easy to get to	1 %	4 %	4 %	1 %	0 %
Other	6 %	10 %	7 %	11 %	16 %

Table 30 displays the categorized responses to *Q.8b: On this stretch of river, what detracts from your river recreation experience?* For the Tieton, Yakima, Naches, and Cle Elum Rivers (between 18 percent and 27 percent), and, to some extent, the Bumping River (12 percent), crowding and noise detracted most from visitors’ recreation experience. A lack of facilities, poor maintenance of facilities and insufficient river access were other factors mentioned relatively often, especially by Yakima River visitors (22 percent). Many respondents mentioned that too many boats and inconsiderate boaters detracted from their recreation experience (between 8 percent at Cle Elum River and 22 percent at the Yakima River). Twenty-seven percent of Tieton River respondents mentioned low river flows and any attempt to change the September releases as negative factors. According to these respondents, lower river flows made it more difficult to navigate the river with a raft or kayak. Eighteen percent of Cle Elum River visitors were also negatively affected by low river flows. For some visitors, bad weather and insects had a negative effect. Twelve percent of Yakima River respondents mentioned that high river flows detracted from their recreation experience because it made wade fishing, swimming, and floating the river less safe.

It is also worth noting that a relatively high percentage of visitors surveyed at the Bumping (30 percent) and Naches Rivers (29 percent) said that nothing detracted from their recreation experience.

Table 30. Factors detracting from an enjoyable river recreation experience

<b>Categorized Responses:</b>	<b>Tieton River</b>	<b>Yakima River</b>	<b>Bumping River</b>	<b>Naches River</b>	<b>Cle Elum River</b>
Too many people; crowds; big groups of people; congestion at the take-out; long lines at play spots; noise; loud people; loud music; drunk people; garbage and human waste; big motor homes (noise); generators; dogs not on leash	27 %	22 %	12 %	19 %	18 %
Lack of facilities; no bathrooms; no potable water; not well maintained campsites; garbage in undeveloped camps; not enough river access; lack of parking at the take-out; no designated hiking trails; unpleasant camp hosts; closed roads; fees; short motorized section; private property; too much development	17 %	22 %	16 %	11 %	13 %
Too many boats; inconsiderate boaters; commercial rafting outfitters; drunk, loud floaters; guided fishing trips; too many fishermen; motorized boats; loud, stinky jet-skis; noise from road; too much traffic	17 %	22 %	11 %	15 %	8 %
Very low flows; any attempt to change the September drawdown; less water and rapids; hitting rocks in river; very low flow detracts from scenic river; exposed rocks makes kayaking difficult	27 %	5 %	3 %	6 %	18 %
Bad weather; rain; dust; high wind; heat; bees; flies and mosquitoes; murky water; cold water; steep banks in canyon	7 %	8 %	14 %	14 %	13 %
High river flow; fast moving water; too high for comfortable wading; less beach with high water level; dangerous waters	3 %	12 %	8 %	8 %	8 %
Poor fishing; not catching fish; lack of fish; no bait allowed	1 %	1 %	4 %	3 %	0 %
Nothing	14 %	13 %	30 %	29 %	10 %
Other	3 %	4 %	2 %	3 %	3 %

Figure 7 displays the results for *Q.9: For this trip and for your primary activity, what type of visitor experience do you most desire/seek?* The majority of respondents for all of the rivers (between 52 percent and 63 percent) desired a rural visitor experience. Almost half of the Tieton and Cle Elum River visitors desired a primitive recreation experience. Between 35 percent and 42 percent of Yakima, Bumping, and Naches River respondents also desired a primitive experience. Only a slight minority of respondents desired an urban visitor experience at any of the rivers, with the greatest percentage (4 percent) at the Yakima River.

For the attributes used to describe “urban,” “rural,” and “primitive,” please see Q.9 of the survey in Appendix B.

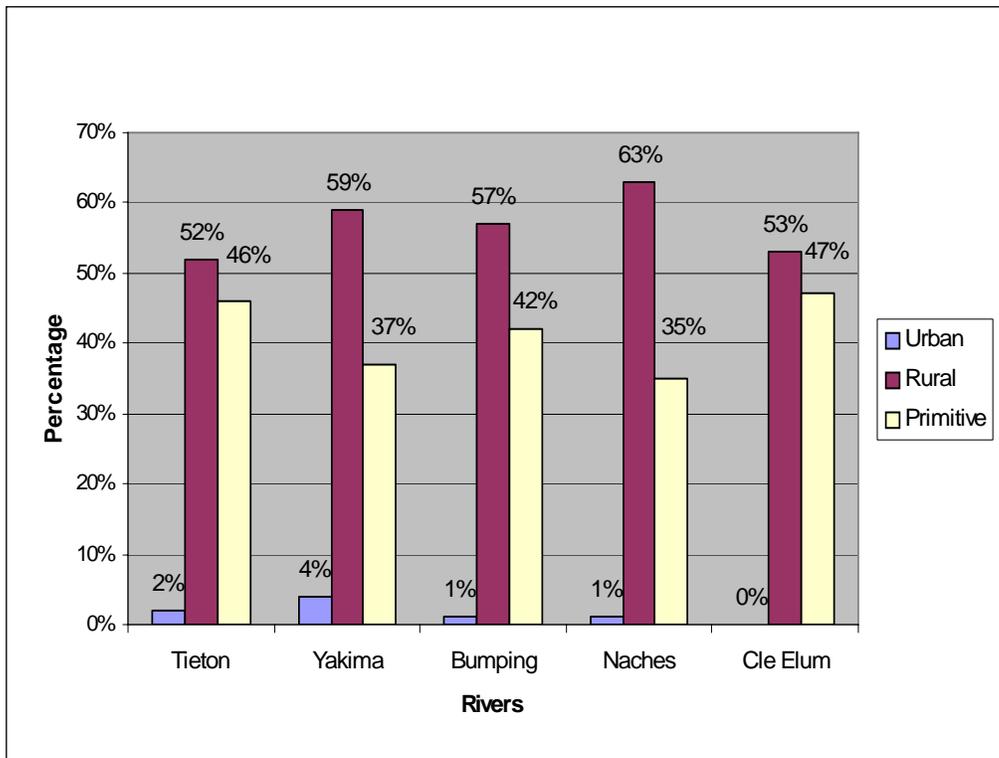


Figure 7. Type of river visitor experience desired for primary activity.

Figure 8 displays the responses for *Q.10a: Can you find your desired experience somewhere on the river you are currently visiting?* A large majority of respondents (between 79 percent and 93 percent) indicated that they were able to find their desired experience at the river they visited. Twenty-one percent of respondents at the Yakima River could not find their desired recreation experience.

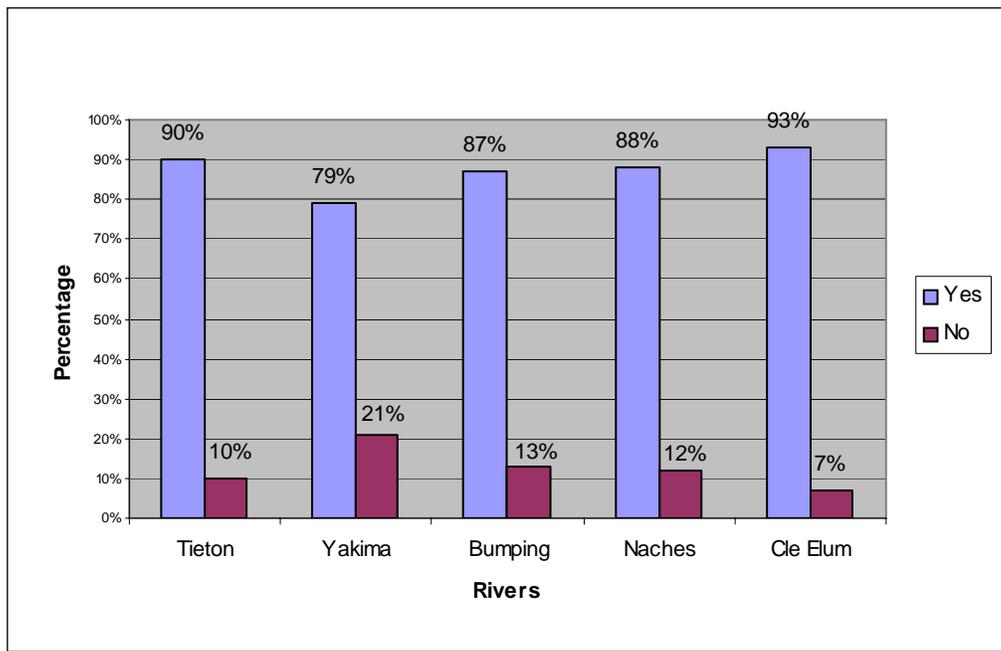


Figure 8. Can visitors find their desired experience on the river visited?

*Q.10b* in the survey asked *where* visitors could find their desired experience on the river visited. A majority of Tieton River respondents mentioned the Tieton River in general (53 percent), followed by Windy Point (7 percent) and Hause Creek (6 percent). Most of the Yakima River visitors found their desired experience in the Yakima River Canyon along Highway 821 (36 percent), followed by Umtanum (11 percent), the stretch of river from Cle Elum to Ellensburg along Highway 10 (9 percent), and Roza recreation area (9 percent). Many Bumping River visitors mentioned the Bumping River in general (31 percent), Soda Springs (26 percent) and Bumping Crossing (11 percent). At the Naches River, many respondents found their desired experience at Halfway Flat (26 percent), Sawmill Flat (23 percent), and the Naches River in general (17 percent). Cle Elum River visitors frequently mentioned Salmon La Sac (27 percent), the Cle Elum River in general (21 percent), and the stretch of river above Cle Elum Lake (21 percent). Please see Appendix I for the complete results to this question.

Figure 9 displays the results for *Q.11a: Can you find your desired experience at other nearby rivers within the Yakima River basin?* A majority of respondents at the Cle Elum River (95 percent), Bumping River (63 percent), and Naches River (78 percent) could find their desired recreation experience at other nearby rivers. Approximately half of the respondents at the Tieton and Yakima Rivers indicated that they could not find their desired experience at other nearby rivers.

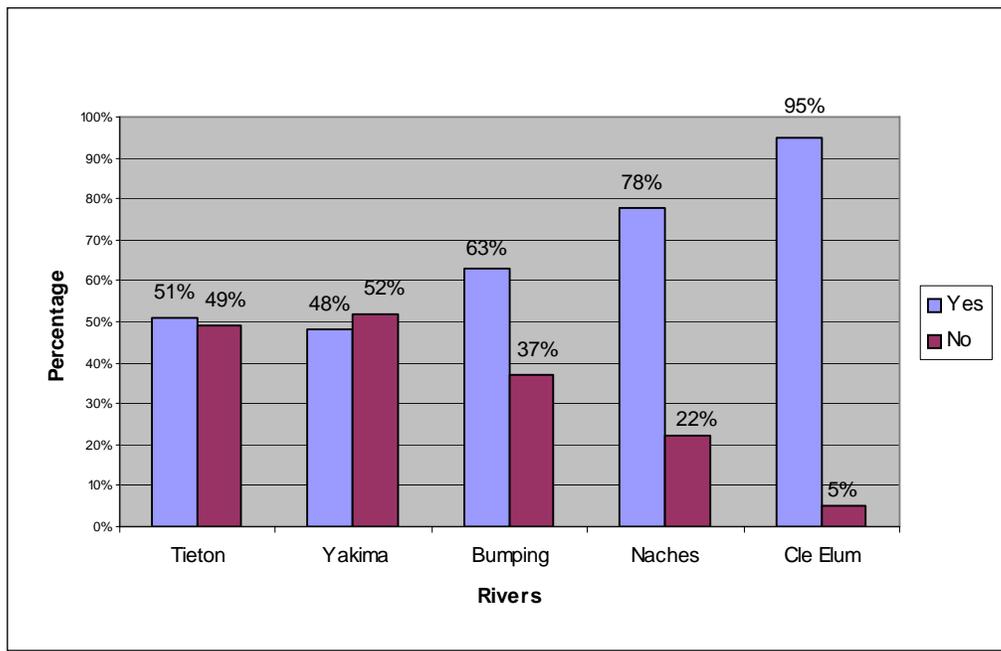


Figure 9. Can visitors find their desired experience at nearby rivers?

*Q.11b* in the survey asked *where* visitors could find their desired experience at other nearby rivers within the Yakima River basin. Twelve percent of Tieton River respondents mentioned the Naches River, followed by 5 percent each who mentioned the Bumping and Yakima Rivers. Six percent of Yakima River respondents found their desired experience on the Naches River, followed by the Tieton River (5 percent). Some Bumping River visitors could also find their desired experience on the Naches River (12 percent), the Tieton River (9 percent), and the Yakima River (7 percent). Naches River respondents mentioned the Bumping River (19 percent), the Yakima River (11 percent), and the Tieton River (10 percent) as alternatives. Cle Elum River visitors most often found their desired experience at the Yakima River (16 percent), followed by the Teanaway River (5 percent). Please see Appendix J for the complete results to this question.

### Facilities Used

Table 31 displays the results for *Q.12: What facilities do you use along the river corridor?* Facilities most often used by visitors at virtually all of the rivers were river camps (between 44 percent and 92 percent) and restroom facilities (between 53 percent and 80 percent). Compared with the other rivers, Yakima River visitors used fewer river camps (44 percent) and Tieton River visitors used fewer restroom facilities (53 percent). A possible explanation could be that the Yakima River receives a considerable amount of day use from fishermen and river floaters and many of the Tieton River users use temporary restrooms provided by the rafting companies during the September rafting season. Boat launches were popular facilities on the Tieton River (31 percent) as well as the Yakima River (48 percent). Trails were especially popular near the Bumping River (64 percent), Naches River (52 percent), and the Cle Elum River (59 percent). Beaches and sandbars were used frequently at all rivers (between 33 percent and 49 percent) and parking areas were especially popular at the Yakima River (75 percent).

Table 31. Percent of river visitors who used facilities

Facilities:	Tieton River	Yakima River	Bumping River	Naches River	Cle Elum River
River camps	77 %	44 %	91 %	92 %	84 %
Parking area	47 %	75 %	40 %	60 %	48 %
Boat launch	31 %	48 %	14 %	4 %	10 %
Picnic site/day use site	19 %	26 %	38 %	42 %	39 %
Sandbars/beaches	34 %	39 %	34 %	33 %	49 %
Trail	36 %	18 %	64 %	52 %	59 %
Restroom facilities	53 %	70 %	77 %	79 %	80 %
Other	8 %	10 %	7 %	5 %	7 %

*Q.12b* asked visitors to give specific *facility names* for the facilities they used along the river corridor. Tieton River respondents mentioned Windy Point most often for river camps (31 percent) and parking areas (29 percent). Hause Creek was most often mentioned for sandbars and beaches (29 percent), trails (43 percent), and restroom facilities (33 percent). Tieton River boaters most often used primitive boat launches (33 percent), followed by Windy Point (25 percent). On the Yakima River, many respondents used Umtanum (39 percent) or Big Pines (32 percent) for river camps, Roza (35 percent) and Ringer (20 percent) for parking areas, Ringer (29 percent) and Umtanum (21 percent) for boat launches, and Roza (67 percent) for picnic areas and beaches (57 percent). A majority of visitors mentioned Umtanum (83 percent) for trail use and Roza (53 percent) for restroom facilities. Other facilities used on the Yakima River were highway pullouts, garbage cans, and the Umtanum Bridge. Bumping River visitors used Soda Springs (50 percent) most often for river camps, Bumping Lake for parking areas (46 percent), boat launch (86 percent), and picnic areas (33 percent). Sandbars and beaches (36 percent), trails (52 percent), and restroom facilities (52 percent) were most often used at Soda Springs campground. On the Naches River, Sawmill Flat campground and day use area were most popular for river camps (40 percent), picnic areas (30 percent), and sandbars and beaches (38 percent). Halfway Flat was mentioned most often for parking areas (40 percent) and restrooms (35 percent). The Boulder Cave trail was especially popular among Naches River respondents (39 percent). At the Cle Elum River, the Salmon La Sac campground and recreation area was mentioned most often for all facilities used, except for the boat launch at Wish Poosh. The Cle Elum River campground was also popular among visitors for a majority of facilities. Please see Appendix K for the complete results to this question.

### Number of Trips, Days Per Trip and Recreation Use by Season

Table 32 displays the results for *Q.13: Number of trips for each primary activity in past 12 months* and *Q.14: Average number of days per trip*. The number of trips varied greatly by primary activity pursued and river visited. The highest average number of trips was taken for shoreline fishing at the Cle Elum River (10.8). The average visitor spent 2 to 4 days per trip to participate in his or her primary activity.

Table 32. Average number of trips and days per trip to the rivers for each primary activity in the past 12 months

Primary Activities:	Tieton River		Yakima River		Bumping River		Naches River		Cle Elum River	
	Trips	Days	Trips	Days	Trips	Days	Trips	Days	Trips	Days
Rafting (guided)	7.8	2.1	**	**	**	**	**	**	**	**
Rafting (private)	4.4	2.8	2.9	1.7	**	**	2.3	2.0	4.0	1.8
Kayaking/canoeing	2.9	2.7	7.6	1.2	**	**	**	**	8.1	1.9
Boat fishing (guided)	**	**	**	**	**	**	**	**	**	**
Boat fishing (private)	5.3	3.8	7.7	1.7	2.2	1.9	3.3	2.8	6.0	3.3
Shoreline fishing	3.2	3.2	6.5	1.7	4.6	2.7	3.1	2.8	10.8	1.3
Wade fishing	2.4	3.7	9.0	1.6	2.9	2.9	5.7	2.2	3.3	2.3
Picnicking/day use	1.8	2.9	4.9	1.1	2.9	2.6	2.9	1.5	3.4	2.5
Sight-seeing	2.7	2.5	4.9	1.7	4.0	3.0	2.9	2.9	7.1	2.6
Trail use	2.6	2.6	9.7	1.8	3.2	3.0	3.0	2.1	5.0	2.7
Nature study	3.3	2.3	2.6	1.8	3.0	3.1	3.3	2.4	**	**
Swimming	4.8	3.6	3.3	1.6	4.3	3.0	2.3	2.1	4.2	2.5
Tubing	1.0	3.6	1.9	1.4	3.3	3.6	1.3	**	2.0	3.3
Wading	1.3	3.9	2.8	2.3	5.2	3.1	1.8	2.2	3.2	2.8
PWC (jet-skiing)	**	**	5.5	1.5	**	**	**	**	1.3	**
Camping	4.2	3.5	3.0	2.4	3.8	3.1	3.5	3.1	3.4	3.2
Other	3.4	4.5	3.6	1.2	2.3	3.6	3.0	5.8	2.3	**

\*\* Denotes that there were not sufficient responses or activity not applicable.

Table 33 summarizes the results for *Q.15: Percent of time that you participated in each primary activity on this river by season*. A large majority of visitors participated in their primary activity during the summer, followed by spring and fall. The Tieton River is an exception due to the “flip-flop” or dam releases occurring in September, which create a unique whitewater boating experience at a time of year when most other rivers recede to low flows. Therefore, a majority of guided and private rafting and whitewater kayaking (59 percent to 66 percent) took place in the fall. On the Yakima River, shoreline fishing, wade fishing, and private boat fishing (between 33 percent and 45 percent) were popular activities in the fall due to lower river flows after the irrigation season. Participation in winter recreation (mainly wade and shoreline fishing, nature study, and sightseeing) was minor at all of the rivers.

Table 33. Percent of time river visitors participated in their primary activity by season

Primary Activities:	Tieton River				Yakima River				Bumping River				Naches River				Cle Elum River			
	Sp	Su	F	W	Sp	Su	F	W	Sp	Su	F	W	Sp	Su	F	W	Sp	Su	F	W
	Percentage				Percentage				Percentage				Percentage				Percentage			
Rafting (guided)	8	26	65	0	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Rafting (private)	3	39	59	0	5	90	6	0	**	**	**	**	8	93	0	0	24	76	0	0
Kayaking/canoeing	4	29	66	0	16	52	32	0	**	**	**	**	**	**	**	**	48	44	5	4
Boat fishing (guided)	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**	**
Boat fishing (private)	30	60	10	0	25	31	39	4	20	80	0	0	26	59	11	4	**	**	**	**
Shoreline fishing	4	93	3	0	9	44	45	2	11	79	10	1	7	80	13	0	42	50	8	0
Wade fishing	19	77	4	0	36	24	33	7	4	85	11	0	5	87	8	0	0	100	0	0
Picnicking/day use	0	89	11	0	1	96	3	0	18	77	6	0	16	70	12	2	21	65	8	6
Sightseeing	10	51	35	4	22	70	5	3	14	77	6	3	15	65	12	9	23	57	11	9
Trail use	2	72	22	4	55	30	10	5	9	81	8	1	7	75	13	5	11	83	4	2
Nature study	8	50	17	25	42	56	2	0	17	74	9	0	10	80	10	0	**	**	**	**
Swimming	0	90	10	0	0	96	4	0	5	87	8	0	3	97	0	0	10	90	0	0
Tubing	0	100	0	0	0	98	2	0	0	92	8	0	0	100	0	0	17	83	0	0
Wading	0	100	0	0	0	96	4	0	8	84	9	0	2	98	0	0	8	93	0	0
PWC (jet-skiing)	**	**	**	**	0	94	6	0	**	**	**	**	**	**	**	**	**	**	**	**
Camping	6	66	28	0	20	67	10	2	8	82	9	1	10	78	12	1	13	83	4	1
Other	6	44	38	13	9	70	18	3	0	50	40	10	0	25	63	13	**	**	**	**

Sp = Spring; Su = Summer; F = Fall; W = Winter.

\*\* Denotes that there were not sufficient responses or activity not applicable.

Percentages do not always add to 100 percent due to rounding error.

## River Flows and Effect of Additional Water Supply

Table 34 summarizes the responses for *Q.2: Do you consider the river flow today “very high,” “high,” “medium,” “low,” or “very low”?* The majority of Yakima and Cle Elum River visitors considered the river flows in May to be high. In June and July, most visitors at the Bumping, Naches, and Cle Elum Rivers perceived the flows as high and medium. In August, most visitors at the Tieton and Yakima Rivers considered the river flows as high and medium. Bumping, Naches, and Cle Elum River respondents, on the other hand, perceived the river flows to be medium and low. In September, respondents’ opinions varied considerably depending on the river visited. Most of the Tieton River respondents found the river flows to be high and medium. Many Yakima, Bumping, and Naches River respondents considered the flow either medium or low. Cle Elum River visitors perceived the flow to be low or very low.

Table 34. Visitors’ perception of river flows by month of year

River Flows:	Tieton River	Yakima River	Bumping River	Naches River	Cle Elum River
<b>May</b>					
Very high	**	13 %	**	**	14 %
High	**	63 %	**	**	71 %
Medium	**	25 %	**	**	14 %
Low	**	0 %	**	**	0 %
Very low	**	0 %	**	**	0 %
<b>June</b>					
Very high	**	**	8 %	0 %	13 %
High	**	**	23 %	40 %	63 %
Medium	**	**	58 %	50 %	19 %
Low	**	**	12 %	10 %	6 %
Very low	**	**	0 %	0 %	0 %
<b>July</b>					
Very high	6 %	0 %	0 %	0 %	0 %
High	41 %	62 %	14 %	8 %	38 %
Medium	47 %	28 %	64 %	85 %	50 %
Low	0 %	10 %	21 %	5 %	13 %
Very low	6 %	0 %	2 %	3 %	0 %
<b>August</b>					
Very high	0 %	5 %	0 %	0 %	0 %
High	31 %	49 %	0 %	0 %	0 %
Medium	54 %	46 %	77 %	80 %	21 %
Low	15 %	0 %	23 %	20 %	64 %
Very low	0 %	0 %	0 %	0 %	14 %
<b>September</b>					
Very high	4 %	0 %	0 %	0 %	0 %
High	46 %	17 %	0 %	0 %	0 %
Medium	44 %	59 %	0 %	80 %	0 %
Low	7 %	24 %	100 %	20 %	50 %
Very low	0 %	0 %	0 %	0 %	50 %

\*\* Denotes that there were not sufficient responses.

Percentages do not always add to 100 percent due to rounding error.

Table 35 displays the responses for *Q.3: Do you like this flow?* In general, most visitors seemed to be satisfied with the river flows at the study rivers. Half of the Tieton River respondents were not satisfied with the river flows in June. At the Bumping River, 50 percent of visitors were not satisfied with the river flows in September. Forty-three percent of respondents at the Cle Elum River were dissatisfied with the flows in May, and all of the Cle Elum River respondents were dissatisfied with the flows in September. (Please note that there was only a small number of responses for the Cle Elum River in September.)

Table 35. Percentage of visitors satisfied with the river flows by month of year

River Flows:	Tieton River	Yakima River	Bumping River	Naches River	Cle Elum River
<b>May</b>					
Yes	**	86 %	**	**	57 %
No	**	14 %	**	**	43 %
<b>June</b>					
Yes	50 %	**	75 %	70 %	80 %
No	50 %	**	25 %	30 %	20 %
<b>July</b>					
Yes	74 %	82 %	89 %	92 %	88 %
No	26 %	18 %	11 %	8 %	13 %
<b>August</b>					
Yes	87 %	81 %	92 %	90 %	64 %
No	13 %	19 %	8 %	10 %	36 %
<b>September</b>					
Yes	94 %	96 %	50 %	100 %	0 %
No	6 %	4 %	50 %	0 %	100 %

\*\* Denotes that there were not sufficient responses.  
Percentages do not always add to 100 percent due to rounding error.

Table 36 categorizes responses to *Q.7: In what ways do the flows affect you and your primary (main) recreation activity?* Forty-six percent of Tieton River visitors were positively affected by the river flow if it was high because it improved their whitewater rafting and kayaking experience. Some respondents also mentioned that a higher river flow added positively to the visual and sound environment. A majority of Yakima River respondents (60 percent) was negatively affected by high flows. According to those respondents, higher river flows made shoreline access difficult; created unsafe conditions for wading, floating, and swimming; and negatively impacted fishing.

Some respondents (between 11 percent and 19 percent) mentioned that low river flows had an adverse effect on whitewater boating. Respondents said that their boats hit too many rocks and that the activity was not as fun with reduced flows. Visitors also mentioned that activities such as hiking and camping were not as enjoyable because the low river flows made for a less scenic environment.

In addition, there was a considerable amount of visitors (between 11 percent and 43 percent) who were not affected in any way by the river flow on the day of their visit.

Table 36. Effect of today's river flow on visitors and their primary activity

<b>Categorized Responses:</b>	<b>Tieton River</b>	<b>Yakima River</b>	<b>Bumping River</b>	<b>Naches River</b>	<b>Cle Elum River</b>
Higher river flows improve rafting and kayaking; longer season; whitewater boating is more exciting; adds to scenery and sound	46 %	12 %	17 %	21 %	27 %
Low river flows destroy whitewater boating opportunities and scenic environment; boats hit too many rocks; not as fun; hiking and camping not as scenic; reduced fish habitat; swimming not as nice	18 %	12 %	11 %	12 %	19 %
Too high flow not good for shore fishing; unsafe wading; difficult shoreline, water access; dangerous float; dangerous swimming and shoreline playing for kids	17 %	60 %	26 %	32 %	27 %
No effect	17 %	11 %	43 %	33 %	25 %
Other	2 %	5 %	3 %	3 %	2 %

Table 37 summarizes the results for *Q.16: Do you have a preferred river flow for each primary activity?* The preference for river flows depended strongly on the primary activity pursued and on the river visited. The majority of visitors at all of the rivers preferred high or medium flows for guided and private rafting, kayaking/canoeing, tubing, guided boat fishing, jet-skiing, and some land-based activities such as picnicking and camping. On the Tieton River, more visitors preferred high river flows for guided rafting (67 percent), private rafting (57 percent), and kayaking/canoeing (71 percent), whereas on the Yakima River, more visitors preferred medium river flows for private rafting (76 percent) and kayaking and canoeing (64 percent).

In general, visitors were more tolerant about river flows when they participated in land-based activities next to the river such as sightseeing, trail use, or nature study. Most visitors approved of river flows anywhere from high to low for those activities.

For all other primary activities and rivers, the majority of visitors preferred medium to low flows, especially for activities such as swimming, wading, and wade fishing, where visitors are in direct contact with the water without any kind of floating device.

Table 37. Visitors' preferred river flows for their primary activities

<b>Primary Activities:</b>	<b>Tieton River</b>	<b>Yakima River</b>	<b>Bumping River</b>	<b>Naches River</b>	<b>Cle Elum River</b>
<b>Rafting (guided)</b>					
Very high	17 %	0 %	**	11 %	**
High	67 %	60 %	**	56 %	**
Medium	17 %	20 %	**	33 %	**
Low	0 %	20 %	**	0 %	**
Very low	0 %	0 %	**	0 %	**
<b>Rafting (private)</b>					
Very high	0 %	0 %	25 %	0 %	0 %
High	57 %	19 %	25 %	41 %	75 %
Medium	43 %	76 %	25 %	53 %	25 %
Low	0 %	5 %	25 %	6 %	0 %
Very low	0 %	0 %	0 %	0 %	0 %
<b>Kayaking/canoeing</b>					
Very high	0 %	7 %	0 %	0 %	0 %
High	71 %	21 %	40 %	50 %	43 %
Medium	29 %	64 %	40 %	40 %	57 %
Low	0 %	7 %	20 %	10 %	0 %
Very low	0 %	0 %	0 %	0 %	0 %
<b>Boat fishing (guided)</b>					
Very high	**	0 %	**	17 %	**
High	**	33 %	**	17 %	**
Medium	**	33 %	**	50 %	**
Low	**	33 %	**	17 %	**
Very low	**	0 %	**	0 %	**
<b>Boat fishing (private)</b>					
Very high	**	0 %	20 %	0 %	**
High	**	7 %	0 %	30 %	**
Medium	**	57 %	80 %	60 %	**
Low	**	36 %	0 %	10 %	**
Very low	**	0 %	0 %	0 %	**
<b>Shoreline fishing</b>					
Very high	0 %	0 %	0 %	0 %	0 %
High	8 %	6 %	16 %	8 %	17 %
Medium	69 %	29 %	81 %	67 %	67 %
Low	23 %	65 %	3 %	25 %	17 %
Very low	0 %	0 %	0 %	0 %	0 %

Table 37. Visitors' preferred river flows for their primary activities – continued

<b>Primary Activities:</b>	<b>Tieton River</b>	<b>Yakima River</b>	<b>Bumping River</b>	<b>Naches River</b>	<b>Cle Elum River</b>
<b>Wade fishing</b>					
Very high	0 %	0 %	0 %	0 %	0 %
High	20 %	8 %	5 %	0 %	0 %
Medium	60 %	31 %	77 %	70 %	60 %
Low	20 %	54 %	18 %	26 %	40 %
Very low	0 %	8 %	0 %	4 %	0 %
<b>Picnicking/day use</b>					
Very high	0 %	0 %	0 %	0 %	0 %
High	13 %	17 %	5 %	17 %	0 %
Medium	88 %	67 %	95 %	67 %	100 %
Low	0 %	17 %	0 %	17 %	0 %
Very low	0 %	0 %	0 %	0 %	0 %
<b>Sightseeing</b>					
Very high	10 %	0 %	5 %	6 %	0 %
High	10 %	40 %	15 %	31 %	40 %
Medium	70 %	40 %	75 %	56 %	60 %
Low	10 %	20 %	5 %	6 %	0 %
Very low	0 %	0 %	0 %	0 %	0 %
<b>Trail use</b>					
Very high	0 %	0 %	0 %	0 %	0 %
High	17 %	40 %	5 %	19 %	14 %
Medium	67 %	40 %	84 %	63 %	86 %
Low	17 %	20 %	11 %	19 %	0 %
Very low	0 %	0 %	0 %	0 %	0 %
<b>Nature study</b>					
Very high	0 %	0 %	0 %	0 %	**
High	0 %	40 %	25 %	22 %	**
Medium	67 %	40 %	75 %	56 %	**
Low	33 %	20 %	0 %	22 %	**
Very low	0 %	0 %	0 %	0 %	**
<b>Swimming</b>					
Very high	0 %	0 %	0 %	0 %	0 %
High	7 %	14 %	10 %	0 %	6 %
Medium	64 %	71 %	80 %	74 %	94 %
Low	21 %	14 %	10 %	26 %	0 %
Very low	7 %	0 %	0 %	0 %	0 %

Table 37. Visitors' preferred river flows for their primary activities – continued

<b>Primary Activities:</b>	<b>Tieton River</b>	<b>Yakima River</b>	<b>Bumping River</b>	<b>Naches River</b>	<b>Cle Elum River</b>
<b>Tubing</b>					
Very high	0 %	0 %	0 %	0 %	0 %
High	38 %	15 %	8 %	17 %	60 %
Medium	63 %	77 %	77 %	67 %	40 %
Low	0 %	8 %	15 %	17 %	0 %
Very low	0 %	0 %	0 %	0 %	0 %
<b>Wading</b>					
Very high	0 %	0 %	0 %	0 %	0 %
High	17 %	11 %	8 %	0 %	0 %
Medium	50 %	67 %	75 %	85 %	67 %
Low	25 %	22 %	17 %	15 %	33 %
Very low	8 %	0 %	0 %	0 %	0 %
<b>PWC (jet-skiing)</b>					
Very high	**	0 %	**	**	**
High	**	33 %	**	**	**
Medium	**	50 %	**	**	**
Low	**	17 %	**	**	**
Very low	**	0 %	**	**	**
<b>Camping</b>					
Very high	0 %	16 %	0 %	2 %	0 %
High	24 %	58 %	9 %	7 %	35 %
Medium	66 %	26 %	87 %	80 %	60 %
Low	10 %	0 %	4 %	11 %	5 %
Very low	0 %	0 %	0 %	0 %	0 %
<b>Other</b>					
Very high	**	0 %	**	0 %	**
High	**	50 %	**	0 %	**
Medium	**	50 %	**	100 %	**
Low	**	0 %	**	0 %	**
Very low	**	0 %	**	0 %	**

\*\*Denotes that there were not sufficient responses or activity is not applicable.

<sup>1</sup>Percentages do not always add to 100 percent due to rounding error.

For the Tieton and Yakima Rivers, some respondents gave preferred flows in cfs (cubic feet per second) for certain primary activities. See below for an average river flow:

**Tieton River:**

Preferred cfs for rafting (guided):	2,156
Preferred cfs for rafting (private):	2,007
Preferred cfs for kayaking/canoeing:	1,927

**Yakima River:**

Preferred cfs for boat fishing (private):	2,029
Preferred cfs for wade fishing:	1,159

Table 38 displays how many additional trips and days per trip the average visitor would take per year for their primary activities if his or her preferred river flows were met (*Q.17: Additional number of trips per year and days per trip if preferred flows were met.*) The numbers indicate that visitors would somewhat increase visitation for most of their primary activities (between one and four trips and 2 and 5 days per trip for most activities).

From the information provided in table 38, it appears that the greatest increase in number of trips and days per trip with preferred water levels would occur for visitors' favorite primary activities at a specific location. For example, Tieton River visitors indicated a high increase of 5.7 trips and 5.9 days per year for guided rafting if preferred water levels were met. Guided rafting is one of the most popular recreation activities on the Tieton River. On the other hand, the average Tieton River visitor would only take 1.2 additional trips and 2.4 additional days per trip for trail use, which is a less popular activity on the Tieton River.

Table 38. Additional number of trips per year and days per trip if visitors' preferred flows were met

Primary Activities:	Tieton River		Yakima River		Bumping River		Naches River		Cle Elum River	
	Trips <sup>1</sup>	Days	Trips	Days	Trips	Days	Trips	Days	Trips	Days
Rafting (guided)	5.7	5.9	**	**	**	**	1.3	2.2	**	**
Rafting (private)	4.4	3.6	2.6	2.5	1.7	1.7	2.4	2.4	2.3	3.3
Kayaking/canoeing	3.2	4.3	4.4	6.1	**	**	2.8	3.0	3.8	6.3
Boat fishing (guided)	**	**	5.7	4.7	**	**	**	**	**	**
Boat fishing (private)	**	**	6.6	5.2	**	**	3.7	4.0	**	**
Shoreline fishing	2.3	2.0	4.0	2.9	2.3	4.1	4.2	4.0	**	**
Wade fishing	**	**	8.3	7.6	1.3	4.7	5.4	4.1	**	**
Picnicking/day use	1.8	2.8	2.0	**	1.8	3.2	3.1	1.8	4.0	4.3
Sight-seeing	**	**	**	**	1.3	1.8	4.0	2.5	3.5	4.0
Trail use	1.2	2.4	**	**	2.5	5.0	2.3	2.5	2.0	2.8
Nature study	**	**	**	**	1.7	3.0	2.2	2.5	**	**
Swimming	4.8	5.0	2.8	1.7	2.6	3.3	1.8	2.8	2.7	5.3
Tubing	1.5	2.6	2.4	1.9	**	**	2.0	3.3	2.3	4.3
Wading	1.8	2.6	**	**	3.1	4.6	2.0	2.8	**	**
PWC (jet-skiing)	**	**	7.0	4.7	**	**	**	**	**	**
Camping	2.2	3.8	4.6	3.4	2.9	3.4	3.2	5.1	2.8	5.2
Other	**	**	**	**	**	**	**	**	**	**

<sup>1</sup> All numbers shown in the table are averages.

\*\* Denotes that there were not sufficient responses or activity not applicable.

Table 39 displays the results for *Q.18: Are there high and/or low flow levels that would stop you from pursuing each of your primary activities on the river?*

Depending on the activity pursued, most visitors would stop their primary activity at a very high, high, or medium *upper* flow level and a medium, low, or very low *lower* flow level.

Table 39. Upper and lower flow levels where visitors would stop their primary recreation activities

Primary Activities:	Tieton River		Yakima River		Bumping River		Naches River		Cle Elum River	
	UFL	LFL	UFL	LFL	UFL	LFL	UFL	LFL	UFL	LFL
<b>Rafting (guided)</b>										
Very high	33 %	0 %	100 %	**	**	**	50 %	0 %	**	0 %
High	67 %	0 %	0 %	**	**	**	25 %	0 %	**	0 %
Medium	0 %	25 %	0 %	**	**	**	25 %	20 %	**	33 %
Low	0 %	75 %	0 %	**	**	**	0 %	60 %	**	33 %
Very low	0 %	0 %	0 %	**	**	**	0 %	20 %	**	33 %
<b>Rafting (private)</b>										
Very high	80 %	0 %	81 %	0 %	**	**	56 %	0 %	67 %	0 %
High	20 %	0 %	14 %	5 %	**	**	44 %	0 %	33 %	0 %
Medium	0 %	13 %	5 %	0 %	**	**	0 %	0 %	0 %	0 %
Low	0 %	50 %	0 %	27 %	**	**	0 %	78 %	0 %	80 %
Very low	0 %	38 %	0 %	68 %	**	**	0 %	22 %	0 %	20 %
<b>Kayaking/canoeing</b>										
Very high	**	0 %	100 %	0 %	**	**	83 %	0 %	75 %	0 %
High	**	0 %	0 %	0 %	**	**	17 %	0 %	25 %	0 %
Medium	**	25 %	0 %	0 %	**	**	0 %	0 %	0 %	13 %
Low	**	50 %	0 %	57 %	**	**	0 %	25 %	0 %	25 %
Very low	**	25 %	0 %	43 %	**	**	0 %	75 %	0 %	63 %
<b>Boat fishing (guided)</b>										
Very high	**	**	33 %	**	**	**	33 %	**	**	**
High	**	**	33 %	**	**	**	67 %	**	**	**
Medium	**	**	33 %	**	**	**	0 %	**	**	**
Low	**	**	0 %	**	**	**	0 %	**	**	**
Very low	**	**	0 %	**	**	**	0 %	**	**	**
<b>Boat fishing (private)</b>										
Very high	**	**	67 %	0 %	**	0 %	60 %	0 %	**	**
High	**	**	25 %	0 %	**	0 %	40 %	0 %	**	**
Medium	**	**	8 %	0 %	**	0 %	0 %	25 %	**	**
Low	**	**	0 %	33 %	**	75 %	0 %	25 %	**	**
Very low	**	**	0 %	67 %	**	25 %	0 %	50 %	**	**
<b>Shoreline fishing</b>										
Very high	71 %	0 %	78 %	**	67 %	0 %	40 %	0 %	20 %	0 %
High	29 %	0 %	11 %	**	33 %	0 %	47 %	0 %	40 %	0 %
Medium	0 %	0 %	11 %	**	0 %	0 %	13 %	7 %	40 %	20 %
Low	0 %	0 %	0 %	**	0 %	42 %	0 %	47 %	0 %	20 %
Very low	0 %	100 %	0 %	**	0 %	58 %	0 %	47 %	0 %	60 %

Table 39. Upper and lower flow levels where visitors would stop their primary recreation activities – continued

Primary Activities:	Tieton River		Yakima River		Bumping River		Naches River		Cle Elum River	
	UFL	LFL	UFL	LFL	UFL	LFL	UFL	LFL	UFL	LFL
<b>Wade fishing</b>										
Very high	67 %	**	46 %	**	44 %	0 %	25 %	0 %	0 %	**
High	33 %	**	27 %	**	56 %	0 %	63 %	0 %	75 %	**
Medium	0 %	**	9 %	**	0 %	0 %	13 %	11 %	25 %	**
Low	0 %	**	18 %	**	0 %	63 %	0 %	56 %	0 %	**
Very low	0 %	**	0 %	**	0 %	38 %	0 %	33 %	0 %	**
<b>Picnicking/day use</b>										
Very high	**	**	100 %	**	80 %	0 %	25 %	**	**	**
High	**	**	0 %	**	20 %	0 %	75 %	**	**	**
Medium	**	**	0 %	**	0 %	20 %	0 %	**	**	**
Low	**	**	0 %	**	0 %	20 %	0 %	**	**	**
Very low	**	**	0 %	**	0 %	60 %	0 %	**	**	**
<b>Sight-seeing</b>										
Very high	**	**	**	**	**	**	67 %	0 %	**	**
High	**	**	**	**	**	**	33 %	0 %	**	**
Medium	**	**	**	**	**	**	0 %	0 %	**	**
Low	**	**	**	**	**	**	0 %	67 %	**	**
Very low	**	**	**	**	**	**	0 %	33 %	**	**
<b>Trail use</b>										
Very high	**	**	**	**	**	**	33 %	0 %	**	**
High	**	**	**	**	**	**	67 %	0 %	**	**
Medium	**	**	**	**	**	**	0 %	0 %	**	**
Low	**	**	**	**	**	**	0 %	67 %	**	**
Very low	**	**	**	**	**	**	0 %	33 %	**	**
<b>Nature study</b>										
Very high	**	**	**	**	**	**	67 %	**	**	**
High	**	**	**	**	**	**	33 %	**	**	**
Medium	**	**	**	**	**	**	0 %	**	**	**
Low	**	**	**	**	**	**	0 %	**	**	**
Very low	**	**	**	**	**	**	0 %	**	**	**
<b>Swimming</b>										
Very high	0 %	**	63 %	0 %	30 %	0 %	29 %	0 %	38 %	0 %
High	67 %	**	25 %	0 %	50 %	0 %	64 %	0 %	44 %	0 %
Medium	33 %	**	13 %	0 %	20 %	17 %	7 %	0 %	19 %	20 %
Low	0 %	**	0 %	100 %	0 %	67 %	0 %	88 %	0 %	40 %
Very low	0 %	**	0 %	0 %	0 %	17 %	0 %	13 %	0 %	40 %

Table 39. Upper and lower flow levels where visitors would stop their primary recreation activities – continued

Primary Activities:	Tieton River		Yakima River		Bumping River		Naches River		Cle Elum River	
	UFL	LFL	UFL	LFL	UFL	LFL	UFL	LFL	UFL	LFL
<b>Tubing</b>										
Very high	**	**	60 %	0 %	**	0 %	40 %	0 %	40 %	0 %
High	**	**	40 %	0 %	**	0 %	40 %	0 %	40 %	0 %
Medium	**	**	0 %	0 %	**	33 %	20 %	0 %	20 %	14 %
Low	**	**	0 %	38 %	**	67 %	0 %	67 %	0 %	71 %
Very low	**	**	0 %	63 %	**	0 %	0 %	33 %	0 %	14 %
<b>Wading</b>										
Very high	50 %	**	50 %	**	20 %	**	25 %	0 %	33 %	**
High	50 %	**	33 %	**	60 %	**	63 %	0 %	50 %	**
Medium	0 %	**	17 %	**	20 %	**	13 %	0 %	17 %	**
Low	0 %	**	0 %	**	0 %	**	0 %	60 %	0 %	**
Very low	0 %	**	0 %	**	0 %	**	0 %	40 %	0 %	**
<b>Camping</b>										
Very high	71 %	0 %	60 %	0 %	83 %	0 %	58 %	0 %	40 %	0 %
High	29 %	0 %	40 %	0 %	17 %	0 %	38 %	0 %	40 %	0 %
Medium	0 %	0 %	0 %	0 %	0 %	7 %	4 %	4 %	20 %	0 %
Low	0 %	22 %	0 %	33 %	0 %	36 %	0 %	39 %	0 %	50 %
Very low	0 %	78 %	0 %	67 %	0 %	57 %	0 %	57 %	0 %	50 %

UFL = Upper flow level; LFL = Lower flow level.

\*\*Denotes that there were not sufficient responses or activity is not applicable.

Jet-skiing and the “other” category are not shown due to insufficient responses at any of the rivers.

<sup>1</sup>Percentages do not always add to 100 percent due to rounding error.

For the Tieton and Yakima Rivers, some respondents gave upper and lower flows in cfs (cubic feet per second) for certain primary activities. See below for an average river flow:

**Tieton River – Upper Flow:**

Rafting (guided): 2,620 cfs  
 Rafting (private): 2,892 cfs  
 Kayaking/canoeing: 2,613 cfs

**Tieton River – Lower Flow:**

Rafting (guided): 1,133 cfs  
 Rafting (private): 1,259 cfs  
 Kayaking/canoeing: 1,127 cfs

**Yakima River – Upper Flow:**

Boat fishing (private): 4,113 cfs  
 Wade fishing: 2,480 cfs

**Yakima River – Lower Flow:**

Boat fishing (private): 1,117 cfs

Table 40 displays the categorized responses for *Q.1: At this river, what effect might an additional water supply in the Yakima River basin have on your recreation experience?* Forty-three percent of Tieton River respondents indicated that, if an increased water supply in the Yakima River basin meant more water and a longer whitewater boating season for the Tieton River, the effect would be positive. Between 18 percent and 23 percent of respondents at the other rivers also thought that an additional water supply would have a positive effect on their recreation experience. Twenty-one percent of Tieton River respondents feared that, if the additional water supply lowered the flows on the Tieton River, it could eliminate all opportunities for whitewater boating. Some respondents at the other study rivers said that lower flows would negatively affect the visual quality of the area and the recreation experience in general.

Approximately 30 percent of visitors at the Yakima, Bumping and Naches Rivers feared that an increased water supply could raise the river flows and inundate campgrounds and make activities such as wade fishing, swimming, and floating more difficult and dangerous.

Table 40. Effect of additional water supply in the Yakima River basin on river visitors' recreation experience

<b>Categorized Responses:</b>	<b>Tieton River</b>	<b>Yakima River</b>	<b>Bumping River</b>	<b>Naches River</b>	<b>Cle Elum River</b>
An increased water supply would improve whitewater boating experience; longer season would allow for more trips per year; higher water would make kayaking and drift boating easier; more pools for fishing and swimming; better fishing	43 %	18 %	22 %	23 %	23 %
It might lower the river flow and eliminate all opportunities for whitewater boating; too low is hard on canoe/boat; negative effect on surrounding environment; negative effect on camping and recreation experience	21 %	10 %	5 %	11 %	5 %
Raised water level would inundate campgrounds; additional water would destroy shallow wading areas; shoreline erosion; high water will reduce recreational use and fish population; difficult wade fishing; dangerous floating and swimming; limited shoreline/trail access	8 %	35 %	30 %	27 %	16 %
No effect	16 %	16 %	27 %	26 %	36 %
Unknown	6 %	9 %	6 %	4 %	9 %
Other	6 %	13 %	11 %	8 %	11 %

## **Trip Expenditures**

Table 41 displays the results for *Q.19: How much money do you and members of your household expect to spend on this trip for each of the expenditure categories listed below both in total and within the local area?* Table 41 is divided into two columns for each of the rivers. The first column displays the average amount spent by visitors for their entire trip to the river; the second column displays the average amount spent by visitors only within the local area. The local area was described to respondents as the Yakima River basin as shown on the map at the end of the survey. (See Appendix B.)

The table indicates that the average visitor spent a considerable dollar amount on groceries and liquor, gas and oil for auto and boat, restaurants, and recreation supplies for their river-related recreation, both within the local area and in total. Camping fees varied slightly from river to river, with total and local expenditures highest for Tieton River visits (around \$65) and lowest for Yakima River visits (around \$35). The large majority of visitors, with the exception of Tieton River visitors, did not spend any money on guide services, automobile rentals, or public transportation fares for their trip to any of the rivers. (Please note that the number of completed surveys from guided rafting and boat fishing clients was low; therefore, no dollar amount was given for guide services on the Yakima River.)

Table 41. River visitors' average total and within local area trip expenditures by expenditure category

Expenditure Categories:	Tieton River		Yakima River		Bumping River		Naches River		Cle Elum River	
	Total \$ spent	Local \$ spent								
Camping fees	\$63.30	\$67.00	\$29.80	\$37.50	\$54.00	\$59.89	\$39.72	\$47.38	\$46.11	\$50.13
Day use fees	**	**	\$9.83	\$10.30	**	**	**	**	**	**
Hotels/motels and other lodging	\$91.67	\$258.33	\$128.33	\$121.25	**	**	**	**	**	**
Restaurants	\$47.55	\$47.23	\$81.85	\$86.47	\$49.43	\$41.92	\$58.69	\$59.86	\$49.17	\$44.67
Groceries and liquor	\$88.18	\$74.05	\$70.84	\$58.55	\$117.75	\$94.37	\$126.85	\$113.36	\$86.43	\$62.04
Gas and oil for auto and boat	\$83.00	\$76.32	\$57.72	\$50.71	\$98.75	\$79.81	\$93.60	\$78.78	\$64.21	\$38.95
Recreation supplies	\$239.14	\$29.38	\$55.97	\$48.44	\$89.81	\$53.67	\$60.61	\$63.36	\$74.72	\$79.38
Recreation equipment rentals	**	**	\$101.67	\$101.67	**	**	**	**	\$87.50	**
Guide services	\$82.50	**	**	**	**	**	**	**	**	**
Automobile rentals	**	**	**	**	**	**	**	**	**	**
Public transportation fares	**	**	**	**	**	**	**	**	**	**
Souvenirs/gifts	\$40.00	\$24.44	\$35.00	\$35.00	\$26.00	\$30.30	\$65.00	\$63.57	\$16.67	\$25.00
Other	\$512.50	**	\$83.75	\$136.50	\$76.50	\$89.00	\$92.50	\$45.00	\$30.00	\$23.33

\*\* Denotes that there were not sufficient responses.

Table 42 displays results for *Q.20: Please estimate, on average, how much you and members of your household spent per trip to the river for each of your primary activities in the past 12 months.* The dollar amount spent varied greatly by activity and river visited. Visitors spent as little as \$20 for tubing to as much as \$400 for guided boat fishing. In general, visitors spent the highest average dollar amounts on rafting, kayaking, boat fishing, wade fishing, and camping, and the least amounts on picnicking, trail use, swimming, and tubing.

Table 42. River visitors' average expenditures per trip for each primary activity

Primary Recreation Activities:	Tieton River	Yakima River	Bumping River	Naches River	Cle Elum River
Rafting (guided)	\$165.56	**	**	**	**
Rafting (private)	\$264.85	\$251.67	**	\$46.67	\$115.00
Kayaking/canoeing	\$146.58	\$88.00	**	\$175.00	\$82.86
Boat fishing (guided)	**	\$412.50	**	\$350.00	**
Boat fishing (private)	\$135.00	\$138.03	\$213.75	\$138.57	\$385.00
Shoreline fishing	\$100.00	\$73.89	\$111.91	\$97.67	\$45.00
Wade fishing	\$104.44	\$78.39	\$154.50	\$95.36	\$205.00
Picnicking/day use	\$45.71	\$88.08	\$61.50	\$44.44	\$61.88
Sightseeing	\$141.67	\$86.67	\$35.77	\$80.56	\$105.00
Trail use	\$94.00	\$79.67	\$70.67	\$59.67	\$61.57
Nature study	**	**	\$92.50	\$20.00	\$125.50
Swimming	**	\$34.00	\$35.71	\$47.50	\$100.83
Tubing	\$21.25	\$88.00	\$78.00	\$83.33	**
Wading	\$40.00	\$155.00	\$152.50	\$30.00	\$116.67
PWC (jet-skiing)	**	\$82.50	**	**	**
Camping	\$217.78	\$139.70	\$199.75	\$265.34	\$179.26
Other	\$305.00	\$101.25	\$150.00	\$325.00	**

\*\* Denotes that there were not sufficient responses or activity not applicable.

## Conflicts Experienced

Table 43 displays the results for *Q.21: Have you had any conflicts with other users while recreating here?* The majority of visitors did not experience any conflicts with other user groups at any of the rivers. Most of the conflicts that visitors did experience during their visit were with partiers, campers, guided and private rafters, and jet-skiers.

Tieton River visitors experienced most conflicts with partiers (21 percent), followed by campers and guided rafters (15 percent each); Yakima River visitors with partiers (18 percent), followed by private rafters (14 percent) and jet-skiers (12 percent); Bumping River visitors with partiers (21 percent), followed by

campers (15 percent); Naches River visitors with campers (19 percent), followed by picnickers (13 percent) and partiers (13 percent); Cle Elum River visitors with campers (27 percent) and partiers (13 percent).

The “other category” most often included conflicts with gun shooters, people littering, and prospectors (Naches River).

Table 43. Conflicts that river visitors experienced with other user groups

User Groups:	Tieton River		Yakima River		Bumping River		Naches River		Cle Elum River	
	Conflicts		Conflicts		Conflicts		Conflicts		Conflicts	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Kayakers/canoists	8 %	93 %	0 %	100 %	0 %	100 %	3 %	97 %	0 %	100 %
Shoreline anglers	0 %	100 %	3 %	97 %	0 %	100 %	0 %	100 %	0 %	100 %
Wildlife viewers	0 %	100 %	1 %	99 %	0 %	100 %	0 %	100 %	0 %	100 %
Wade fishers	0 %	100 %	1 %	99 %	0 %	100 %	3 %	97 %	3 %	97 %
Trail users	0 %	100 %	1 %	99 %	3 %	97 %	3 %	97 %	3 %	97 %
Waders	0 %	100 %	1 %	99 %	3 %	97 %	3 %	97 %	0 %	100 %
Sightseers	2 %	98 %	1 %	99 %	0 %	100 %	0 %	100 %	3 %	97 %
Picnickers	6 %	94 %	1 %	99 %	3 %	97 %	13 %	88 %	0 %	100 %
Campers	15 %	85 %	6 %	94 %	15 %	85 %	19 %	81 %	27 %	73 %
Rafters (guided)	15 %	85 %	1 %	99 %	0 %	100 %	0 %	100 %	3 %	97 %
Tubers	0 %	100 %	7 %	93 %	0 %	100 %	6 %	94 %	7 %	93 %
Partiers	21 %	79 %	18 %	82 %	21 %	79 %	13 %	88 %	13 %	87 %
Rafters (private)	8 %	93 %	14 %	87 %	0 %	100 %	3 %	97 %	0 %	100 %
Boat anglers (guided)	0 %	100 %	5 %	96 %	0 %	100 %	0 %	100 %	0 %	100 %
Boat anglers (private)	0 %	100 %	3 %	97 %	0 %	100 %	0 %	100 %	0 %	100 %
PWC (jet-skiers)	2 %	98 %	12 %	88 %	3 %	97 %	3 %	97 %	10 %	90 %
Swimmers	2 %	98 %	1 %	99 %	3 %	97 %	6 %	94 %	0 %	100 %
Others	2 %	98 %	11 %	89 %	12 %	88 %	13 %	88 %	7 %	93 %

Percentages do not always add to 100 percent due to rounding error.

Table 44 summarizes of the responses to *Q.22: Describe any conflicts you have experienced on the river*. The type of conflict most often mentioned by respondents was noise from campers and partiers. The Yakima (19 percent) and Cle Elum Rivers (21 percent) showed the largest number of conflicts related to noise. Some visitors, especially at the Naches and Cle Elum Rivers, experienced conflicts with crowding and inconsiderate boaters. Other conflicts mentioned were related to people littering and ATV and car drivers speeding in the campgrounds and on dirt roads.

Many of the respondents (between 13 percent at the Yakima River and 43 percent at the Naches River) mentioned that they did not experience any conflicts while recreating on the rivers.

Table 44. Types of conflicts river visitors experienced while recreating

<b>Categorized Responses:</b>	<b>Tieton River</b>	<b>Yakima River</b>	<b>Bumping River</b>	<b>Naches River</b>	<b>Cle Elum River</b>
Noise; noise in campsites; noise across river; generator noise; very loud music; too much partying; large groups; people shooting guns; noise from jet-skis; mining noise	10 %	19 %	11 %	15 %	21 %
Crowding in campgrounds; crowded beach; crowded parking lots; crowding on weekends; congested put-in; too many rafts launching at the same time; too many commercial and private rafting parties; rafting trips travel in too large of groups; too crowded with private and guided anglers	7 %	7 %	2 %	13 %	11 %
Inconsiderate boaters; commercial boaters; tubers; rafting guides; floaters not respecting fishing space; boaters and jet-skiers not knowing the basic rules; jet boat going upriver creating wake; waders and swimmers throwing rocks in water; people playing on the boat launch; horses and hikers on the same trails	6 %	9 %	1 %	13 %	10 %
Too much trash; very trashed campsites; human feces and toilet paper; broken glass at boat launch areas; kids shooting bottles and cans in river; floaters throwing beer bottles in water	9 %	4 %	4 %	1 %	2 %
ATVs and others driving too fast raising a lot of dust; traffic speed through campground; noise from ATVs; too much traffic on dirt roads; noise from highway	3 %	0 %	1 %	8 %	3 %
None	32 %	13 %	36 %	43 %	21 %
Other	4 %	6 %	5 %	5 %	3 %

Table 45 displays percentages for *Q.23: What did you do about each conflict?* A majority of respondents (between 46 percent and 78 percent) indicated that they did something other than the answer choices provided in the survey. Many of the respondents tried to ignore the other party causing the conflict and decided to do

nothing about it (between 42 percent and 65 percent). Visitors also frequently confronted the person or party, talked to them, and tried to resolve the conflict themselves (between 8 percent and 22 percent). Twelve percent of Yakima River respondents said that they started using the river during the week and off-season to avoid crowding. Many of the river visitors went to another area to avoid conflicts (between 20 percent and 41 percent), left the area (between 17 percent and 28 percent), or complained to a manager (between 7 percent and 21 percent). Twenty-seven percent of Naches River respondents who did experience a conflict went home.

Table 45. What river visitors did about each conflict

<b>Response to Conflict:</b>	<b>Tieton River</b>	<b>Yakima River</b>	<b>Bumping River</b>	<b>Naches River</b>	<b>Cle Elum River</b>
Went to another area	20 %	20 %	21 %	41 %	13 %
Left the area	17 %	28 %	16 %	27 %	17 %
Complained to a manager	7 %	8 %	21 %	14 %	9 %
Went home	0 %	4 %	0 %	27 %	9 %
Other	73 %	55 %	63 %	46 %	78 %
▪ Ignored person or party/Put up with it/Did nothing	43 %	65 %	42 %	60 %	53 %
▪ Approached/confronted/Talked to person or party	22 %	8 %	17 %	10 %	18 %
▪ Picked up garbage/Cleaned up/Put out fires	17 %	8 %	17 %	0 %	0 %
▪ Called police/Reported to ranger/camp host	4 %	0 %	17 %	20 %	0 %
▪ Expressed concern to others	0 %	0 %	8 %	0 %	6 %
▪ Use non-weekends/Use river on weekdays/off-season	0 %	12 %	0 %	0 %	0 %
▪ Other	0 %	8 %	0 %	10 %	24 %

### Visitor Demographics

The results for Q.24: *From where does your river trip usually originate* can be found in Appendix L, where a list of respondents' zip codes is provided for each river.

Figure 10 displays results for Q.25: *How many miles (one way) do you usually travel to visit the river?* Visitors traveled between 97 and 155 miles each way to visit the rivers. The average visitor to the Tieton River traveled farthest with 155 miles one way, while the average Naches River visitor traveled the shortest distance with 97 miles each way.

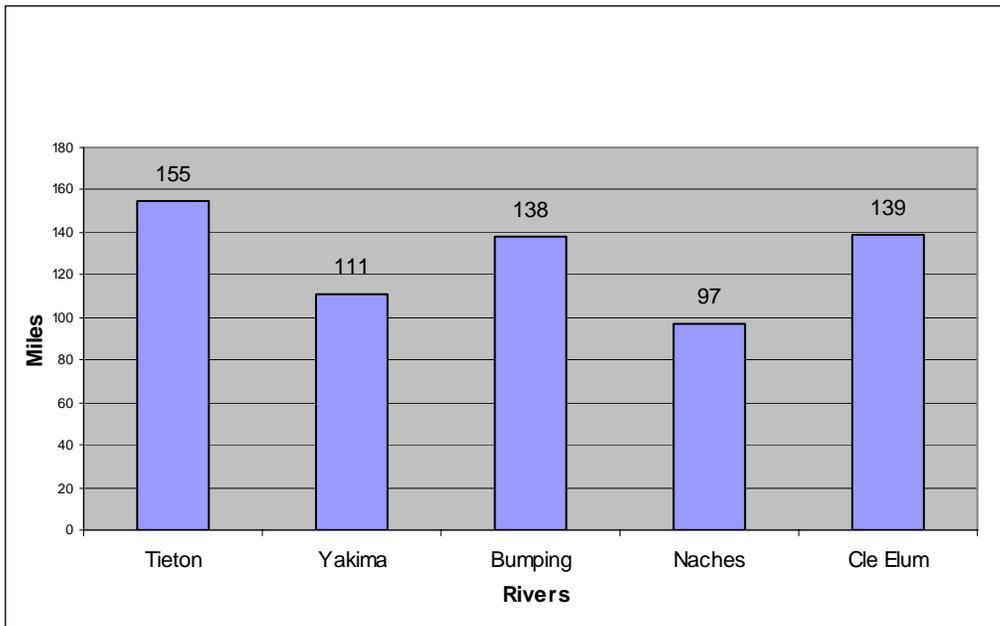


Figure 10. Average number of miles visitors traveled each way to visit rivers.

Figure 11 displays results for *Q.26: How many years have you been recreating on the river?* Respondents had been recreating on the rivers between 11 and 19 years. Visitors, on average, had been recreating at the Bumping and Naches Rivers for the longest period of time and at the Tieton and Yakima Rivers for the shortest amount of time.

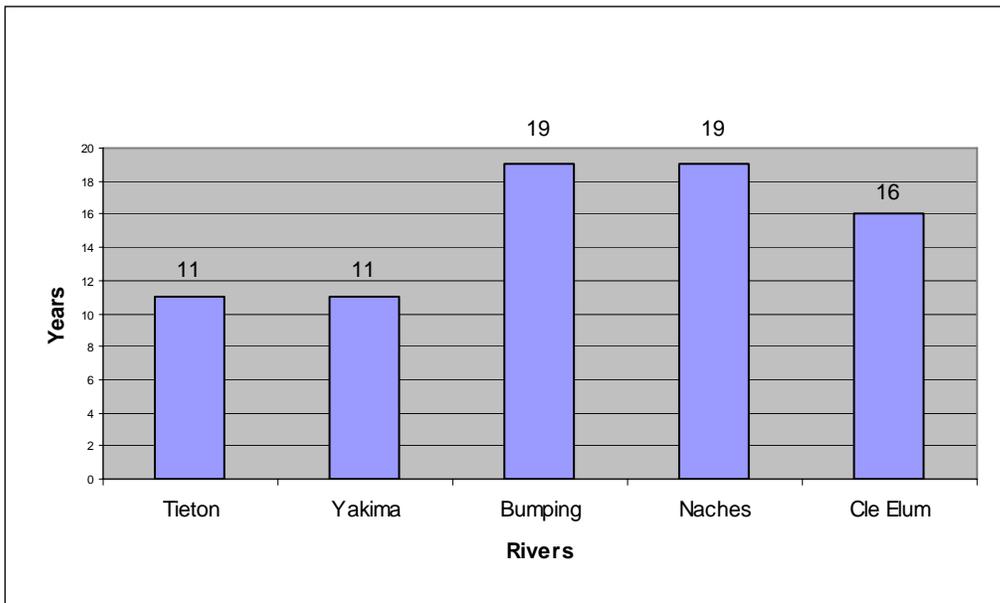


Figure 11. Average number of years visitors have been recreating on rivers.

Figure 12 displays results for *Q.27: Are you female or male?* At all of the rivers, male visitors outweighed female visitors. At the Naches River, distribution of female (45 percent) and male (55 percent) respondents was almost equal.

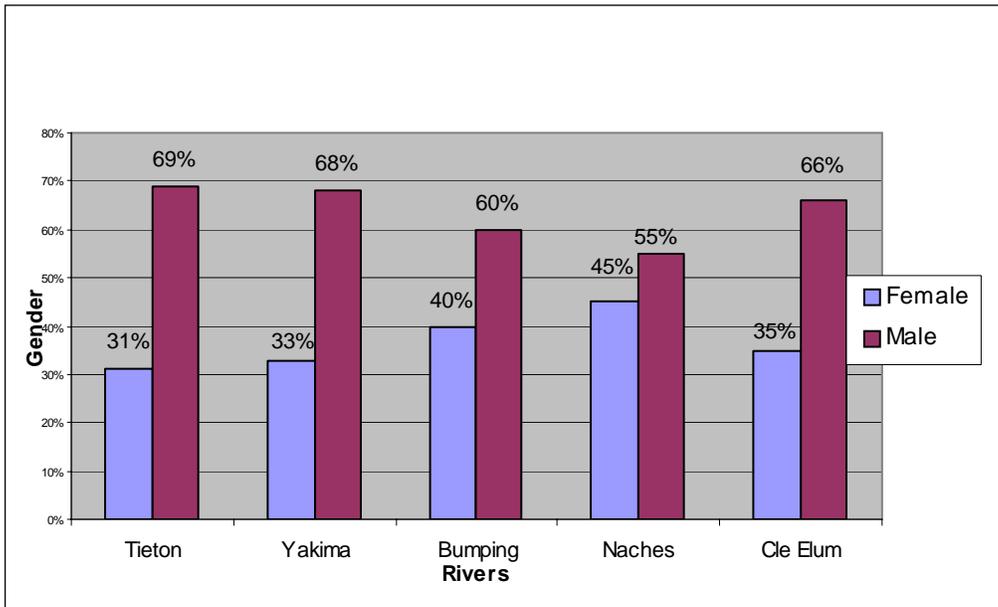


Figure 12. River visitors' gender.

Table 46 displays the percentages for *Q.28: What is your age?* At all of the reservoirs, the age group with the most representation was 35 to 49. Fifty to sixty-five year olds were represented second most often, followed by 21 to 34 year olds.

Table 46. River visitors' age

Age:	Tieton River	Yakima River	Bumping River	Naches River	Cle Elum River
Under 15	0 %	0 %	0 %	0 %	0 %
15 – 20	0 %	6 %	4 %	1 %	2 %
21 – 34	18 %	29 %	13 %	26 %	36 %
35 – 49	45 %	35 %	44 %	33 %	27 %
50 – 65	33 %	28 %	33 %	34 %	25 %
Over 65	5 %	2 %	6 %	7 %	11 %

Percentages do not always add to 100 % due to rounding error.

Table 47 displays the results for *Q.29: What was your household income last year?* Household incomes were almost evenly distributed between \$25,000 and \$74,999, although household incomes of \$75,000 to \$149,999 were also common. Most of the Tieton River (27 percent) and Yakima River (31 percent) visitors had a household income of \$25,000 to \$49,999; most of the Bumping River visitors had either household incomes of \$50,000 to \$74,999 or \$75,000 to \$99,999 (26 percent each); most of the Naches River (30 percent) and Cle Elum River (33 percent) visitors reported a household income of \$50,000 to \$74,999.

Table 47. River visitors' household income last year

<b>Household income:</b>	<b>Tieton River</b>	<b>Yakima River</b>	<b>Bumping River</b>	<b>Naches River</b>	<b>Cle Elum River</b>
Less than \$25,000	10 %	10 %	7 %	10 %	10 %
\$25,000 – \$49,999	27 %	31 %	16 %	26 %	14 %
\$50,000 – \$74,999	26 %	29 %	26 %	30 %	33 %
\$75,000 – \$99,999	17 %	14 %	26 %	18 %	14 %
\$100,000 – \$149,999	14 %	9 %	23 %	14 %	22 %
\$ 150,000 or more	6 %	8 %	3 %	3 %	8 %

Percentages do not always add to 100 % due to rounding error.

Please see Appendix M for the results to *Q.30: Is there anything else you would like to share with us about your recreation experiences or concerns on the river?* The appendix provides a list of complete general comments from respondents for each of the rivers.

# Visitor Count Results

This chapter of the report summarizes the results of the Yakima River basin visitor counts conducted during the 2006 and 2007 recreation seasons. Visitors were counted at the most popular and accessible recreation areas (such as campgrounds, day use areas, boat ramps, marinas, or highway pullouts) at each of the study reservoirs and rivers. The visitor count numbers for each activity observed at a specific location were recorded on a visitor count sheet (Appendix N). For the complete number of count days at each of the reservoirs and rivers and the dates when visitors were counted, please see Appendix O. An electronic file with a more detailed presentation of the visitor counts, including all the count locations, is available at Reclamation's Pacific Northwest Region, Upper Columbia Area Office.

The total number of visitors per year to the reservoirs and rivers should be considered an estimate, not an exact number. It was derived by dividing the actual number of visitors counted at the individual reservoirs or rivers by the number of actual count days to arrive at the average number of visitors per day. Then, the average number of visitors per day was multiplied by 132 visitor days (for Kachess, Cle Elum, Rimrock, Bumping, and Clear Lakes, and for the Tieton, Bumping, Naches and Cle Elum Rivers) or by 180 visitor days (for Lake Easton) or by 240 visitor days (for the Yakima River) to arrive at the total number of visitors per year.

According to the reservoir visitor counts (table 48), the total number of visitors per year was highest at Lake Easton with 19,260 visitors, followed by Kachess Lake (17,292), Rimrock Lake (10,824), Bumping Lake (7,524), Cle Elum Lake (6,996), and Clear Lake (4,620).

A majority of visitors at all of the reservoirs (with the exception of Clear Lake) was counted camping, which was their main primary activity according to the visitor survey results. At Clear Lake, most of the visitors counted were bank fishing (684), followed by picnicking (616). A large amount of people was also observed and counted swimming, sightseeing, picnicking, and motor boating.

The visitor counts for the rivers (table 49) showed that the total number of visitors per year for the Yakima River (18,000) was much higher than at any of the other rivers. The total number of visitors per year on the Tieton River was 8,844, followed by the Cle Elum River (5,280), Bumping River (5,016), and Naches River (3,696).

A majority of Tieton River visitors counted were commercial rafting clients (623), followed by campers (620). Most visitors on the Yakima River were counted camping (1,402), followed by private rafting (1,291). Many Yakima River visitors were also observed and counted guided (397) and private (254) riverboat fly-fishing. Most visitors on the Bumping (684), Naches (584), and Cle Elum Rivers (1,259) were counted camping.

Table 48. Visitor counts by activity for all reservoirs

Activities:	Kachess Lake	Cle Elum Lake	Rimrock Lake	Bumping Lake	Clear Lake	Lake Easton
Riverboat fly fishing – guided	-	-	-	-	-	-
Riverboat fly fishing – private	-	-	-	-	-	-
Wade fly fishing	3	1	5	-	-	-
Bank fishing	34	64	156	126	684	25
Rafting – guided	-	-	-	-	-	-
Rafting – private	3	23	8	18	9	27
Tubing	25	42	46	48	9	11
Kayaking	46	8	32	27	32	10
Canoeing	49	25	33	79	54	12
Swimming/wading	444	334	220	234	169	225
Sightseeing	311	215	148	106	100	103
Picnicking	595	227	210	285	616	543
Camping	3,826	1,067	968	300	327	1,997
Motor boating	237	395	526	233	176	8
Lake boat fishing	72	146	330	141	450	10
Water-skiing/wakeboarding	6	117	134	21	-	-
Jet-skiing	33	108	120	47	-	-
Other (name)						
Driving on beach/flats	-	4	-	-	-	-
Playing/sitting on beach	19	-	4	-	-	-
Biking	50	11	4	12	-	187
Dumping garbage	-	3	-	-	-	-
Sunbathing	-	35	-	100	-	159
Collecting driftwood	-	2	-	-	-	-
Walking/running	7	1	-	-	-	23
Walking dog	6	-	-	-	-	23
Motor biking/riding scooters	-	-	1	-	-	2
Sailing	-	-	6	1	-	-
Tube fishing	-	-	-	-	12	-
Hiking/backpacking	-	-	-	-	-	5
Big toy structure	-	-	-	-	-	21
Throwing football	-	-	-	-	-	2
Loading vehicles	-	-	-	-	-	8
Wind boarding	-	-	-	-	-	2
Mormon trek event	-	-	-	-	-	26
Other	-	-	-	-	1	2
Total users counted	5,766	2,828	2,951	1,778	2,639	3,431
Total count days	44	53	36	31	76	32
Average # of visitors/day	131	53	82	57	35	107
Total number of visitors/year <sup>1</sup>	17,292	6,996	10,824	7,524	4,620	19,260

<sup>1</sup> Numbers are based on 132 visitor days (or 4.4 visitor months) per year for Kachess, Cle Elum, Rimrock, Bumping, and Clear Lakes and 180 visitor days (or 6 visitor months) per year for Lake Easton.

**Note:** 77 total visitors were counted at Keechelus Lake during 16 total count days for an average of 5 visitors per day or 660 total number of visitors per year.

Table 49. Visitor counts by activity for all rivers

Activities:	Tieton River	Yakima River	Bumping River	Naches River	Cle Elum River
Riverboat fly fishing – guided	-	397	-	-	-
Riverboat fly fishing – private	-	254	-	-	1
Wade fly fishing	23	135	18	26	1
Bank fishing	63	102	30	40	13
Rafting – guided	623	140	-	-	-
Rafting – private	116	1,291	1	12	11
Tubing	12	272	9	-	4
Kayaking	133	8	1	4	5
Canoeing	-	28	2	6	6
Swimming/wading	60	181	68	67	58
Sightseeing	83	173	45	27	34
Picnicking	142	305	62	47	30
Camping	620	1,402	684	584	1,259
Motor boating	-	45	-	-	9
Lake boat fishing	-	-	-	-	-
Water-skiing/wakeboarding	-	2	-	-	4
Jet-skiing	-	56	1	-	8
Other (name)					
Biking	-	13	9	-	5
Mountain biking	-	6	-	-	-
Getting gear ready	-	1	-	-	-
Dog swimming/walking	-	7	-	-	2
Walking	-	4	-	-	-
Go-cart	-	6	-	-	-
Shuttling	-	28	-	-	-
Painting	-	1	-	-	-
Jumping off rocks	-	8	-	-	-
Float tube fishing	-	40	-	-	-
Birding	-	4	-	-	-
Hiking	-	27	6	-	-
Special event	-	62	-	-	-
Hang gliding	-	10	-	-	-
Hunting	-	5	-	-	-
Relaxing by river	-	-	2	-	-
Sunbathing	-	-	-	-	2
Partying	-	-	-	-	10
Other	-	22	-	-	-
Total users counted	1,875	5,035	938	813	1,462
Total count days	28	67	25	29	37
Average # of visitors/day	67	75	38	28	40
Total number of visitors/year <sup>1</sup>	8,844	18,000	5,016	3,696	5,280

<sup>1</sup> Numbers are based on 132 visitor days (or 4.4 visitor months) per year for the Tieton, Bumping, Naches, and Cle Elum Rivers and 240 visitor days (or 8 visitor months) per year for the Yakima River.

# Guide and Outfitter Information

This chapter of the report provides a summary of recreation information provided by fly-fishing and rafting guides and outfitters on the rivers included in this study. Please see Appendix P for a general list of Yakima River basin guide companies.

Two fly-fishing outfitters and seven rafting companies provided input on the number of guided trips taken, the number of clients, river flow preferences for guiding clients, the quality of different river sections for guiding clients, the determining factors why certain river sections were chosen for guiding, conflicts between user groups, the number of people on the rivers, and possible changes in guided raft trips and recreation activity patterns with changes in river flows.

## Fly-Fishing Outfitter Information

The two fly-fishing companies that provided information for this section of the report took five guided trips each on the Cle Elum River in 2006. One of the companies took 600 guided trips on the Yakima River in 2006, while the other took 60 trips. One of the companies also took 25 trips on the Naches River. Neither one of the two companies used the Bumping or Tieton Rivers for guiding. The numbers for the past year were slightly higher than the average number of guided trips taken per year.

One of the companies indicated that the best flow levels for guiding clients on the Cle Elum River occurred in March, April, and May, and that the river flow was too high in the summer. The other company mentioned May and September as the best months for guiding clients on the Cle Elum River. The company operating on the Naches River liked the months of June, July, and October for guided fly-fishing because the river flows were high enough to float the river. One of the outfitters thought that the river flows on the Yakima River were favorable all year long, while the other company preferred the flows from September until April, and in July and August. They noted that the only time the river flows were not as good for fly-fishing were when the water was dirty from runoff (typically from April to June).

Both fly-fishing companies that provided information used the entire stretch of the Yakima River from below Lake Easton to the end of the Yakima River Canyon along Highway 821 for guiding clients. Both companies used the Cle Elum River below Cle Elum Lake to the confluence with the Yakima River. One of the outfitters also used the Naches River for guided fly-fishing trips from near the town of Cliffdell downstream below the town of Naches along Highway 410 and Highway 12. One of the companies indicated that all of the river sections used met their clients' needs. The other company rated the Yakima River Canyon as excellent for meeting their clients' needs due to the large number of fish and the beautiful scenery. The only aspect that detracted from the experience was the

fact that it could be crowded in the canyon at times. The other river sections were rated good or fair by this outfitter because they were either less scenic or the fishing was more difficult and the fish were smaller.

One fly-fishing outfitter provided information about the time of year when the flows on the different river sections were best for guided trips, and the river flows (in cfs) they preferred for guiding clients on the different sections of the rivers. For the Cle Elum River below Cle Elum Lake to the confluence with the Yakima River, the outfitter stated that the river flows were best in May and September because the water was not as high. The preferred river flow for this section was 1,000 cfs year-round. For the Yakima River from Cle Elum to Ellensburg and for the Yakima River section from Ellensburg to the Yakima River Canyon, river flows were best from March to September and March to October, respectively; river flows provided for clear water and good fishing conditions during that timeframe. According to the outfitter, river flows for those sections were best at 2,000 cfs. The river flows in the Yakima River Canyon section were good all year long for guiding trips due to the high fish counts; the preferred river flow for this section of river was 2,000 cfs. The river flows for the Yakima River section below Lake Easton to the confluence with the Cle Elum River was best from April to September at a flow rate of 1,000 cfs. The reason given was that the float in this section of river was different from any of the other floats.

Both fly-fishing companies provided information about important factors that determined whether they guided on certain rivers. For the Cle Elum River, an important factor was the water level and another factor mentioned was the water clarity on the Yakima River, which influenced the water conditions on the Cle Elum River. For the Yakima River, important factors were the water level, water clarity, insect hatches, and water temperature. A determining factor for guiding trips on the Naches River was the opening day for fishing season, which was June 1.

The average number of clients that accompanied each guide on each fly-fishing trip was two according to both outfitters. The minimum number of clients for each trip was one, and the maximum number was two or three, depending on the company. One fly-fishing company reported that their total number of clients per year was 100, compared to 1,200 clients per year for the other company. One of the companies took one guided trip per day, on average; the other took one and one half to two trips per day. The total number of trips per month averaged ten for one company and fifty for the other.

One company indicated that they had not experienced or heard of any conflicts between different user groups on the Cle Elum or Yakima Rivers. This outfitter also provided estimates on the average number of people they saw on the river per day by river sections. On the Cle Elum River below Cle Elum Lake, the guides saw an average of five people boat fishing (unguided) and two people wade fishing per day. For the section of the Yakima River below the town of Cle Elum, the guides saw approximately 35 people per day on the river (5 private rafters, 10 guided boat fishers, 10 private boat fishers, and 10 wade fishers). For the section of the Yakima River above Ellensburg, the estimate was 45 people, on average (20 private rafters, 10 guided boat fishers, 10 private boat fishers, and 5 wade fishers). For the Yakima River section between Ellensburg and the Yakima River Canyon, the guides estimated seeing approximately 40 people on the

river (10 guided boat fishers, 20 private boat fishers, and 10 wade fishers). For the Yakima River Canyon, the average number of recreationists was highest, with an estimate of 75 people per day (20 private rafters, 10 guided boat fishers, 25 private boat fishers, and 20 wade fishers). The Yakima River section with the lowest average number of people was the section just below Lake Easton with approximately five people observed wade fishing per day.

The comments of outfitters on how potential changes in river flows could influence guided fishing trips and recreation activity patterns are provided below in their full length:

1. There are several factors which contribute to the number of fishermen on the river. Mainly water flows restrict or provide more opportunities for fishermen. High flows restrict wade fishing and in my opinion negatively impact the biodiversity of the river. High flows scour the river reducing the number of invertebrates and what they feed on, in turn reducing the forage for fish. Siltation and washing away of in stream woody debris removes habitat. This woody debris then masses at high flow sweepers making it dangerous for recreationists. Find a way to moderate the flow and meet the contractual obligation to irrigators. Find a way to capture the millions of gallons of water that are lost in the irrigation systems throughout Yakima and Kittitas counties.
2. We have adapted to the flow schedules in this valley, and we feel it is the most beneficial way to run it for the FISHERY! Water temperatures can be an issue in July and August, which is the time when flows are the highest. These high flows keep water temperatures low and move the trout to the banks where they can focus on terrestrials (i.e., grasshoppers, ants, bees, etc...) and actually less fishing pressure because of the high flows – wading is difficult. We are in strong support of keeping flow patterns and levels just the way they are!

## **Rafting Outfitter Information**

All of the seven rafting companies that provided information for this section of the report offered guided rafting trips on the Tieton River. The outfitters took between 3 and 20 guided trips on the Tieton River in 2006, with an average of eight trips per company. Two of the seven companies also provided one to two guided rafting trips on the Yakima River in 2006, and one outfitter offered one guided trip on the Naches River. None of the seven companies used the Bumping or Cle Elum Rivers for guiding. The numbers for the past year were the same or slightly lower than the average number of guided trips taken per year.

All seven rafting outfitters that used the Tieton River indicated that the river flows were best for guided raft trips during the “flip-flop” releases in September (mainly the first two weeks of September) due to the higher water levels. One outfitter indicated that the flow levels were sometimes favorable for guided rafting all the way into early October. One company commented that the September flows on the Tieton River provided the only whitewater in the entire State of Washington at that time of year. One company that used

the Yakima River for guided rafting stated that the best flows occurred during August when the water levels were high. The other outfitter found the flows on the Yakima River to be best from June until August.

Each of the rafting companies used the Tieton River below the dam to above Windy Point along Highway 12. Five of the seven companies that provided information rated this section of river as excellent for meeting their clients' needs. Two of them indicated that the quality of the Tieton River for guided rafting was good. Reasons given were the availability of whitewater and the beautiful scenery, that the river provided a great flow for the end of the year and that it was a fun rafting trip. One of the companies used the Yakima River Canyon for guided raft trips and stated that this section of river was good for meeting their clients' needs. The other company used the Yakima River below Cle Elum to Ellensburg along Highway 10 and found this stretch of river to be excellent for guiding clients. The one company that used the Naches River below Cliffdell to the confluence with the Tieton River for guided raft trips rated this stretch of river as good. This outfitter stated that it was a moderate trip, suitable for families.

All of the rafting companies operating on the Tieton River mentioned that the river flows in September were best for guided raft trips due to the good dam releases, which made for a higher river flow. Several companies stated that this was the only time that the Tieton River was runnable for river rafting. Two of the seven outfitters said that they would like the Tieton River flows to stay the same during September. One company would like higher flows during the month of August. Four of the outfitters preferred higher flows during September or September and October. Two of these outfitters gave their preferred river flows in cfs, namely 1,800 + cfs and 2,000 + cfs, respectively. The rafting company offering guided trips in the Yakima River Canyon stated that the river flows were best in August due to the high water and that they would like the flows to stay the same. The outfitter that provided guided raft trips on the Yakima River below Cle Elum indicated that the river flows were best from June to August due to the favorable weather conditions and water levels. The one company that guided clients on the Naches River mentioned that the river provided for good rafting during or after the spring flow and that they would like a moderate river flow during the month of July in order to enhance the quality of their clients' experience.

The seven rafting companies that provided information said that low river flows would prevent them from using the Tieton River for guided trips. The outfitters mentioned a relatively wide range of low river levels where they would stop offering guided raft trips, from below 1,800 cfs to below 800 cfs. Three of the seven companies gave a river flow of less than 1,200 cfs where they would stop using the river for guiding. One of the companies mentioned that they typically do not run trips below 1,800 cfs because the river becomes too low to be considered a class III whitewater trip. One of the outfitters said that they would stop using the river if it was flowing at a rate of more than 2,200 cfs because the raft trip would become dangerous for their guests. The two companies operating guided raft trips on the Yakima River indicated that they would stop using the river if the water level was too low.

The majority of rafting outfitters stated that they would offer more guided trips if water levels on the rivers better met their needs. Some stated that it would depend on the time

of year since most of the companies run river trips on other rivers (outside the Yakima River basin) as well. The three companies that provided numbers said that they would offer between 6 and 20 more raft trips per year on the Tieton River. No numbers were given for the Yakima or Naches Rivers.

The most important factors that determined whether the rafting companies guided on the Tieton River were the water volume and the time of year. Two of the seven outfitters stated that they needed at least 1,200+ cfs for decent whitewater rafting because their clients liked good rapids above all else. Some companies mentioned that the Tieton River does not have enough water for rafting during most of the year, but that it does have enough water to raft during the fall season when other rivers have no water. For one of the companies operating on the Naches River, an important factor was that no permit was required to run the river; another company said that they could only run the Naches and Yakima Rivers if they had a volunteer available to lead the trip.

An average of 10 clients accompany each guide on each rafting trip, according to six of the companies. The average minimum number of clients for each trip was four, and the average maximum number was between 6 and 96, depending on the company. The average total number of clients per year for six of the companies was 120. The average total number of trips per day was five, with most companies taking only one or two trips per day. The average total number of trips per month was 12. Five of the rafting companies indicated that they would run an average of 13 more trips if the water levels met their needs. The five companies stated that this would represent approximately 187 people, on average. One company commented that these numbers were rough estimates, not exact numbers.

Three of the seven rafting companies that provided information said that they had not experienced or heard of any conflicts on any of the rivers they used for rafting. Two of the companies guiding on the Tieton River mentioned crowded access points and conflicts between commercial rafters and private rafters and kayakers at the put-in and take-out locations. One of the companies operating on the Yakima River reported having heard about conflicts between rafters and fishermen.

Six of seven companies provided information about the average number of people they saw on the river on any given day for different activities. The number of guided rafters far outweighed any of the other activity groups on the Tieton River, with an average of 157 guided rafters observed per day. On average, the guides also saw 23 private rafters, 3 wade fishers, 3 shoreline fishers, 16 picnickers, 24 campers, 10 sightseers, and 17 kayakers. The rafting company guiding in the Yakima River Canyon reported having seen an average of 75 people per day in that section of the river (3 guided rafters, 35 private rafters, 3 guided boat fishers, 2 private boat fishers, 4 wade fishers, 1 miner, 20 tubers, 5 picnickers, and 2 canoeists). The outfitter offering raft trips below Cle Elum reported seeing an average of 10 people per day swimming in that section of the Yakima River. The company guiding on the Naches River reported seeing an average of 24 people per day on the river (15 guided rafters, 5 private rafters, and 4 kayakers).

The comments of outfitters on how potential changes in river flows could influence guided raft trips and recreation activity patterns are provided below in their full length:

1. The Tieton is great for most outfitters because it has water in the fall when our core rivers are running very low. If the Tieton flows stayed above 2,000 cfs all of the way through September and October, we would run a lot more on the Tieton. Currently, we primarily operate the 1<sup>st</sup>. half of September when the flows are highest. If Tieton flows stopped peaking above 2,000 cfs in September (a decrease in the flip-flop release), we would probably have to stop running Tieton trips. As far as the rest of the year, running trips on the Tieton would be a big decision for us. Allocating resources to a river such as the Tieton during our busy periods on what are currently our core rivers would be a big switch in our operating procedures with a lot of factors to consider. Without knowing the proposed water flows and times, it is impossible to predict how we would use the Tieton.
2. Commercial rafting would not be desirable at flows less than 1,200 cfs and we would not book many clients on the Tieton River. Flows over 2,500 cfs would be unsafe and decrease commercial rafting activity.
3. Raft trips would certainly increase on the Tieton with a guaranteed longer season.
4. Everything depends on water flow. The Tieton will be run whenever there is sufficient water to do so.
5. Lower water would most definitely decrease the number of trips that I would do.
6. Our number of trips are based on volunteers to lead the trip. If the trips are interesting, we receive more volunteers and more participants. This would also apply for private trips of rafters and kayakers.

## **Appendix A: Survey Instrument – Reservoirs**

# Yakima Basin Reservoir Recreation Survey

**Paper Reduction Act (Act):** This information is needed to assess the current recreation environment in the Yakima River basin. Response to this request is voluntary. In accordance with the Act, the reporting burden to the public for this form is estimated to average 20 minutes per response, including time for reviewing the instructions and completing and reviewing the form. In accordance with the Act, the Bureau of Reclamation may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid Office of Management and Budget control number. Direct comments regarding the burden estimate or any other aspect of these forms to the Bureau of Reclamation, Attention: Darrell Welch, P.O. Box 25007, Denver, CO 80225.

**Privacy Act Statement:** No Privacy Act information is being collected, and complete anonymity is guaranteed. Information collected will be compiled in a statistical database; therefore, no direct link to the individual(s) filling out the questionnaire will be available.

Dear Reservoir Recreation User,

We need your help! You are one of only a chosen few to represent all recreation users on the reservoir. Answering these questions will take only around 20 minutes, and the answers you give could improve your recreation experience. Consideration is currently being given to creating an additional water supply in the Yakima River basin to benefit endangered and threatened fish, irrigated agriculture, and the municipal water supply. This effort may affect reservoir water elevations (levels) and your recreation experience. We need to know how reservoir water level changes might affect your recreation. Your answers will be used to determine the possible impacts associated with adjusted riverflows. Your answers will be kept strictly confidential. Thank you for taking the time to answer these very important questions.

Reservoir name \_\_\_\_\_

What areas of this reservoir you using on this visit? \_\_\_\_\_  
*(or place an X on the attached map)*

Date you visited the reservoir \_\_\_\_\_

1. At this reservoir, what effect might an additional water supply in the Yakima River basin have on your recreation experience?

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2. Do you consider the water level **today** (check [✓] **one** using the guide below)

\_\_\_ Very high \_\_\_ High \_\_\_ Medium \_\_\_ Low \_\_\_ Very low

*Very high water:* Reservoir full to overfull. Some flooding occurring. Trees and bushes in the water. No exposed shoreline and mudflats. Water way up on boat ramps and docks high. Water often muddy and carrying sticks and other debris.

*High water:* Reservoir full to nearly full.

*Medium water:* Reservoir water below full. High water line exposed. Some sandbars and mud area exposed.

*Low water:* Lots of exposed shoreline area, mudflats, and sandbars. Some exposed rocks and stumps. Trees and bushes that are submerged during very high water are now out of water. Water low on the boat ramp. Rocks and other hazards near the water surface.

*Very low water:* Lots of exposed shoreline, mudflats, rocks, and stumps. Water very low on boat ramps. Sometimes ramps are out of the water and are unusable and docks are on the bottom. Difficult, if not impossible, to get to the water from the shore. Sometimes coves are dry, and a good part of the reservoir bottom is dry with only a stream showing.

3. Do you like this water level? \_\_\_ Yes \_\_\_ No

4. In column 1 of the table below, check **all** the recreation activities that you are doing on **this trip**.

5. In column 2 of the table below, check the **one** activity that is your **primary (main)** activity on **this trip**.

6. In column 3 of the table below and in the rows you have checked, enter the number of people in your group on **this trip** who participated in the **primary** activity.

Motorboating			
Boat fishing (guided)			
Boat fishing (private)			
Bank fishing			
Kayaking/canoeing			
Hunting			
Sailing			
Water skiing			
Jet-skiing			
Swimming			
Camping			
Sightseeing			
Wildlife viewing			
Nature study			
Other			

7. In what ways does this water level affect you and your **primary (main)** recreation activity?

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8. For your **primary (main)** reservoir recreation activity on **this trip**:

(a). Please describe, at this reservoir, what contributes to and makes for an enjoyable recreation experience

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(b). At this reservoir, what detracts you from your recreation experience?

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9. For **this trip** and for your **primary** activity, what type of visitor experience do you most desire/seek? (Please check [] *one*.)

___ Urban	___ Rural	___ Primitive
<b>Descriptors</b>		
Highly developed/not pristine or natural	Partly natural/moderately developed	Pristine/very little or no development
No or very little solitude/tranquility	Some tranquility and solitude	Solitude/tranquil
Safe/secure/help present	Somewhat safe/secure/help nearby	Self reliant/some danger present
Socialize/large groups/partying	Small or moderate size groups recreating together	Mainly on my own/sometimes with a friend or two

10. Can you find your desired experience somewhere on this reservoir?

\_\_\_ Yes \_\_\_ No If yes, where? \_\_\_\_\_

*(or place a letter Y on the attached map)*

11. Can you find your desired experience at other nearby reservoirs within the Yakima River basin? \_\_\_ Yes \_\_\_ No If yes, where? \_\_\_\_\_  
*(or place a letter Z on the attached map)*

12. What facilities do you use at the reservoir?

Facility	✓ Facility used	Facility name
Boat ramps		
Campgrounds		
Picnic sites		
Beaches		
Floating docks		
Marinas		
Boat camps		
Private concessions		
Parking lots		
Restrooms		
Other		

13. In the table below, record the number of trips for each **primary** activity that you made to the reservoir in the **past 12 months**. The total number of trips across all primary activities should equal the number of visits you made to this reservoir over the past 12 months.

14. In the table below for each **primary** activity, give the average number of days you spent per trip.

15. In the table below for trips taken in the **past 12 months**, write in the percent of time that you participated in each **primary** activity on this reservoir by season. For example, boat fishing–private: 60% spring, 40% summer over the past 12 months. The sum of the percentages for each primary activity should total 100% across all four seasons.

*(Note: The seasons correspond to the times of use and are loosely defined as: Spring is March 1 – May 31, summer is June 1 – August 31, fall is September 1 – October 31, and winter is November 1 – February 28.)*

Primary recreation activities in past 12 months	Q. 13 – Number of trips for each primary activity in past 12 months	Q. 14 – Average number of days per trip	Q. 15. – Percent of time by season (primary activities ONLY)			
			Spring	Summer	Fall	Winter
Motorboating			%	%	%	%
Boat fishing (guided)			%	%	%	%
Boat fishing (private)			%	%	%	%
Bank fishing			%	%	%	%
Kayaking/canoeing			%	%	%	%
Hunting			%	%	%	%
Sailing			%	%	%	%
Water skiing			%	%	%	%
Jet-skiing			%	%	%	%
Swimming			%	%	%	%
Camping			%	%	%	%
Sightseeing			%	%	%	%
Wildlife viewing			%	%	%	%
Nature study			%	%	%	%
Other			%	%	%	%

16. Do you have a preferred reservoir level for each **primary** activity? In the table below, please give water elevation in feet (if you know what it is) or write in a preferred water level description of *very high*, *high*, *medium*, *low*, or *very low*. (See question 2 for water level descriptions).
17. In the table below, compared to the results of questions 13 and 14, give the additional number of annual trips and the additional number of days per trip that you would take for each **primary** activity if your preferred water levels were met.

Primary recreation activity	Q. 16 – Preferred water level (feet)	Q. 17 – Additional number of trips per year and days per trip if preferred water levels were met	
		Trips	Days
Motorboating			
Boat fishing (guided)			
Boat fishing (private)			
Bank fishing			
Kayaking/canoeing			
Hunting			
Sailing			
Water skiing			
Jet-skiing			
Swimming			
Camping			
Sightseeing			
Wildlife viewing			
Nature study			
Picnicking			
Other			

18. Are there high and/or low water level elevations that would stop you from pursuing your **primary** activity on the reservoir? In the following table, write in an actual water level elevation in feet or a water elevation description of **very high, high, medium, low, or very low**. (See question 2 for a description of water levels).

Primary recreation activity	Q. 18 – Write in below the water level elevation in feet or the water elevation description where you would stop activity	
	Upper elevation level	Lower elevation level
Motorboating		
Boat fishing (guided)		
Boat fishing (private)		
Bank fishing		
Kayaking/canoeing		
Sailing		
Water skiing		
Jet-skiing		
Swimming		
Camping		
Sightseeing		
Wildlife viewing		
Houseboating		
Picnicking		
Other		

19. How much money do you and members of your household expect to spend on **this trip** for each of the expenditure categories listed below both in total and within the local area? The local area is described as the Yakima River basin as shown on the map at the end.  
 (Note: If you live in the local area, your dollars spent would be the same for both columns. If you traveled to the area on vacation, your dollars spent would likely be different for each column.)

Items	Total dollars spent on this trip	Dollars spent within the local area (see map)
Camping fees		
Day-use fees		
Hotels/motels and other lodging		
Restaurants		
Groceries and liquor		
Gas and oil for auto and boat		
Recreation supplies		
Recreation equipment rentals		
Guide services		
Automobile rentals		
Public transportation fares (plane, train, bus, etc.)		
Souvenirs/gifts		
Other (list)		

20. Total spending per trip often varies depending on your primary activity. Please estimate, on average, how much you and members of your household spent per trip to the reservoir for each of your **primary** activities in the **past 12 months**. (Answer in the table below).

Primary recreation activity	Q. 20 – Average dollars spent per trip
Motorboating	
Boat fishing (guided)	
Boat fishing (private)	
Bank fishing	
Kayaking/canoeing	
Hunting	
Sailing	
Water skiing	
Jet-skiing	
Swimming	
Camping	
Sightseeing	
Wildlife viewing	
Nature study	
Picnicking	
Other	

21. Have you had any conflicts with other users while recreating here? (Check [✓] all that apply.)

- |  |                                       |   |
|--|---------------------------------------|---|
| <input type="checkbox"/> Kayakers/Canoers  | <input type="checkbox"/> Partiers     | <input type="checkbox"/> Boat anglers (guided)  |
| <input type="checkbox"/> Shoreline anglers | <input type="checkbox"/> Picnickers   | <input type="checkbox"/> Boat anglers (private) |
| <input type="checkbox"/> Wildlife viewers  | <input type="checkbox"/> Campers      | <input type="checkbox"/> Motorboaters           |
| <input type="checkbox"/> Houseboaters      | <input type="checkbox"/> Jet-skiers   | <input type="checkbox"/> Bank fishers           |
| <input type="checkbox"/> Sightseers        | <input type="checkbox"/> Swimmers     | <input type="checkbox"/> Others (list) _____    |
| <input type="checkbox"/> Sailors           | <input type="checkbox"/> Water skiers |   |

22. Describe any conflicts you have experienced on the reservoir (e.g., noise, crowding, etc.).

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23. What did you do about each conflict? (Check [✓] all that apply.)

- Went to another area       Left the area       Other \_\_\_\_\_
- Complained to a manager       Went home

24. What additional reservoir recreation-related opportunities do you most desire in the Yakima River basin? (Please list.)

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25. From where does your river trip usually originate:

If a U.S. resident: Zip code: \_\_\_\_\_

If a non-resident: City/Town and Country \_\_\_\_\_

26. How many miles (one way) do you usually travel to visit the reservoir? \_\_\_\_\_ miles

27. How many years have you been recreating on the reservoir? \_\_\_\_\_ years

**Note:** The following questions will be used strictly for statistical analysis purposes.

28. Are you \_\_\_\_\_ Female? \_\_\_\_\_ Male?

29. What is your age?

- Under 15       35 – 49
- 15 – 20       50 – 65
- 21 – 34       Over 65

30. What was your household income last year?

- Less than \$25,000       \$75,000 – \$99,999
- \$25,000 – \$49,999       \$100,000 – \$149,999
- \$50,000 – \$74,999       \$150,000 or more

31. Is there anything else you would like to share with us about your recreation experiences or concerns on the reservoir?

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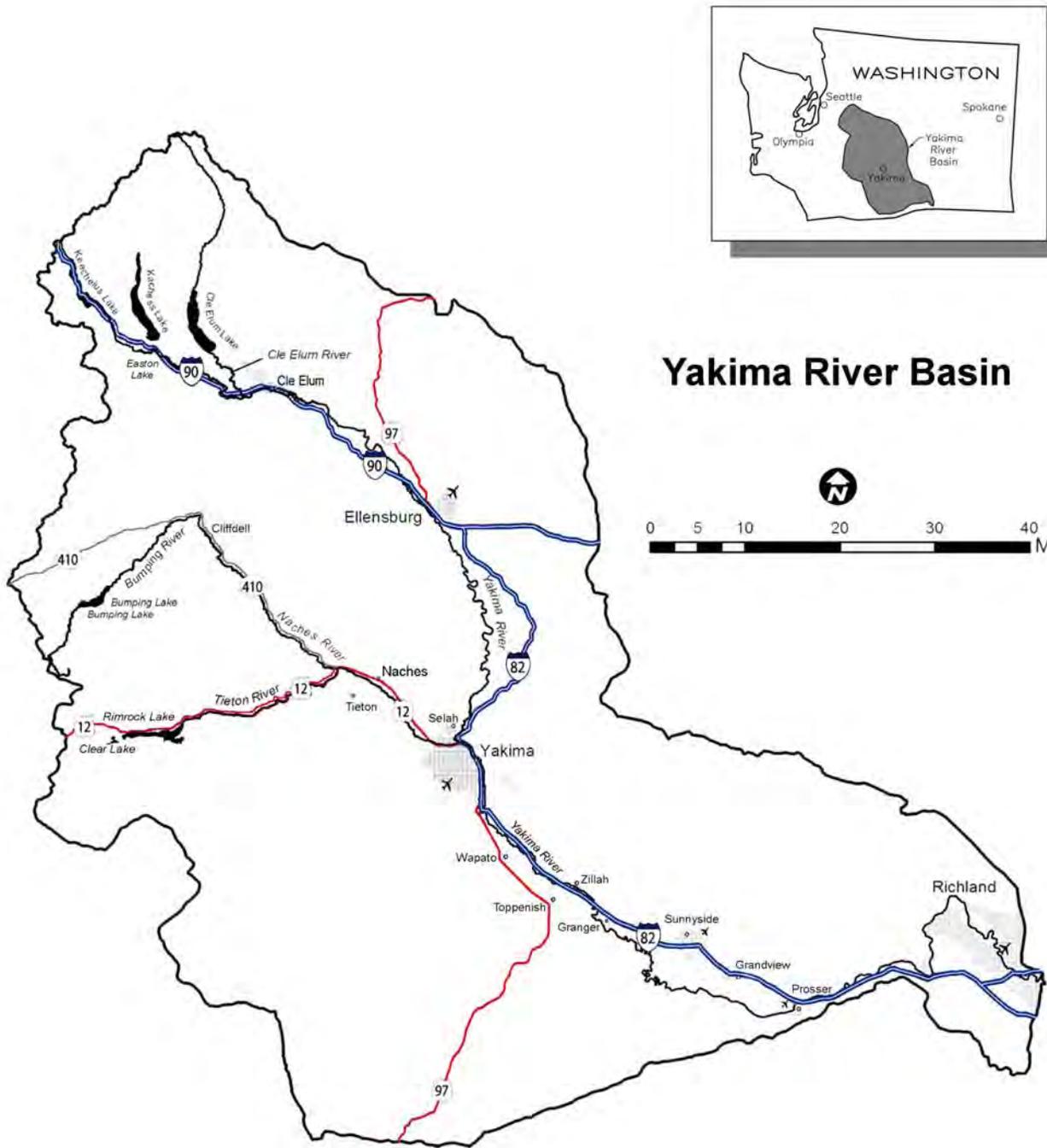


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**For official use only:** Water elevation on day of visit was \_\_\_\_\_ feet.



## Yakima River Basin

## **Appendix B: Survey Instrument – Rivers**

# Yakima Basin River Recreation Survey

**Paper Reduction Act (Act):** This information is needed to assess the current recreation environment in the Yakima River basin. Response to this request is voluntary. In accordance with the Act, the reporting burden to the public for this form is estimated to average 20 minutes per response, including time for reviewing the instructions and completing and reviewing the form. In accordance with the Act, the Bureau of Reclamation may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid Office of Management and Budget control number. Direct comments regarding the burden estimate or any other aspect of these forms to the Bureau of Reclamation, Attention: Darrell Welch, P.O. Box 25007, Denver, CO 80225.

**Privacy Act Statement:** No Privacy Act information is being collected, and complete anonymity is guaranteed. Information collected will be compiled in a statistical database; therefore, no direct link to the individual(s) filling out the questionnaire will be available.

Dear River Recreation User,

We need your help! You are one of only a chosen few to represent all recreation users on the river. Answering these questions will take only around 20 minutes, and the answers you give could improve your recreation experience. Consideration is currently being given to creating an additional water supply in the Yakima River basin to benefit endangered and threatened fish, irrigated agriculture, and the municipal water supply. This effort may affect riverflows and your recreation experience. Your answers will be used to determine the possible impacts adjusted flows will have on river recreation. Your answers will be kept strictly confidential. Thank you for taking the time to answer these very important questions.

River name \_\_\_\_\_

What river stretch (area) are you using today? \_\_\_\_\_  
*(or place an X on the attached map)*

Date you visited this river stretch \_\_\_\_\_

1. At this river, what effect might an additional water supply in the Yakima River basin have on your recreation experience?

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- 2 Do you consider the riverflow **today** (check [✓] **one** using the guide below)  
 \_\_\_ Very high \_\_\_ High \_\_\_ Medium \_\_\_ Low \_\_\_ Very low

*Very high flow:* Very fast moving, deep water; some very big rapids; waterbank high or overbanks; a few exposed large rocks.

*High flow:* Fast-moving, moderately deep water; many big rapids; water close to bank high; a number of big exposed rocks.

*Medium flow:* Steady-moving, moderately deep water; many large and smaller exposed rocks in rapids; water slightly down from high water line.

*Low:* Water slow moving; many exposed rocks; river bottom exposed for a few feet out from high water shoreline.

*Very low:* Very slow-moving, shallow water; exposed mudflats; river rocks and bottom exposed; water barely covering bottom in rapids; must choose carefully floatable areas; bottom exposed for several feet out from high water shoreline.

3. Do you like this flow? \_\_\_ Yes \_\_\_ No
4. In column 1 of the table below, check **all** the recreation activities that you are doing on **this trip**.
5. In column 2 of the table below, check the **one** activity that is your **primary (main)** activity on **this trip**.
6. In column 3 of the table below and in the rows you have checked, enter the number of people in your group on **this trip** who participated in the **primary** activity.

Activities	Column 1 Q. 4 – ✓ activities this trip	Column 2 Q.5 – ✓ primary activity this trip	Column 3 Q.6 – Number of people in your group on this trip
Rafting (guided)			
Rafting (private)			
Kayaking/canoeing			
Boat fishing (guided)			
Boat fishing (private)			
Shoreline fishing			
Wade fishing			
Picnicking/day use			
Sightseeing			
Trail use			
Nature study			
Swimming			
Tubing			
Wading			
PWC (jetskiing)			
Camping			
Other			

7. In what ways do the flows mentioned in question 2 affect you and your **primary (main)** recreation activity?

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8. For your **primary (main)** river recreation activity on **this trip**:

(a). Please describe, on this stretch of river, what contributes to and makes for an enjoyable recreation experience.

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(b). On this stretch of river, what detracts from your river recreation experience?

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9. For **this trip** and for your **primary** activity, what type of visitor experience do you most desire/seek? (Please check [] **one**.)

___ Urban	___ Rural	___ Primitive
<b>Descriptors</b>		
Highly developed/not pristine or natural	Partly natural/moderately developed	Pristine/very little or no development
No or very little solitude/tranquility	Some tranquility and solitude	Solitude/tranquil
Safe/secure/help present	Somewhat safe/secure/ help nearby	Self reliant/some danger present
Socialize/large groups/partying	Small or moderate size groups recreating together	Mainly on my own/sometimes with a friend or two

10. Can you find your desired experience somewhere on the river you are currently visiting?

\_\_\_ Yes \_\_\_ No If yes, where? \_\_\_\_\_  
*(or place a Y on the attached map)*

11. Can you find your desired experience at other nearby rivers within the Yakima River basin? \_\_\_ Yes \_\_\_ No If yes, where? \_\_\_\_\_

*(or place a Z on the attached map)*

12. What facilities do you use along the river corridor?

Facility	✓ Facility used	Facility name, if known
River camps		
Parking area		
Boat launch		
Picnic site/day-use site		
Sandbars/beaches		
Trail		
Restroom facilities		
Other		

13. In the table below, record the number of trips for each primary activity that you made to the river in the **past 12 months**.

(*Note:* The total number of trips across all primary activities should equal the number of trips you made to this river in the past 12 months.)

14. In the table below for each primary activity, give the average number of days you spent per trip.

15. In the table below for trips taken in the **past 12 months**, write in the percent of time that you participated in each **primary** activity on this river by season. For example, boat fishing–private: 60% spring, 40% summer over the past 12 months. The sum of the percentages for each primary activity should total 100% across all four seasons.

(*Note:* The seasons correspond to the times of use and are loosely defined as: Spring is March 1 – May 31, summer is June 1 – August 31, fall is September 1 – October 31, and winter is November 1 – February 28.)

Primary recreation activities in past 12 months	Q. 13 – Number of trips for each primary activity in past 12 months	Q. 14 – Average number of days per trip	Q. 15. – Percent of time by season (primary activities ONLY)			
			Spring	Summer	Fall	Winter
Rafting (guided)			%	%	%	%
Rafting (private)			%	%	%	%
Kayaking/canoeing			%	%	%	%
Boat fishing (guided)			%	%	%	%
Boat fishing (private)			%	%	%	%
Shoreline fishing			%	%	%	%
Wade fishing			%	%	%	%
Picnicking/day use			%	%	%	%
Sightseeing			%	%	%	%
Trail use			%	%	%	%
Nature study			%	%	%	%
Swimming			%	%	%	%
Tubing			%	%	%	%
Wading			%	%	%	%
PWC (jetskiing)			%	%	%	%
Camping			%	%	%	%
Other			%	%	%	%

16. Do you have a preferred riverflow for each **primary** activity? In the table below, please give the flow in cubic feet per second (cfs) (if you know what it is) or write in a preferred flow level description of *very high, high, medium, low, or very low*. (See question 2 for flow descriptions.)
17. In the table below, compared to the results of questions 13 and 14, give the additional number of annual trips and the additional number of days per trip that you would take for each **primary** activity if your preferred flows were met.

Primary recreation activity	Q. 16 – Preferred cfs or flow level	Q. 17 – Additional number of trips per year and days per trip if preferred flows were met	
		Trips	Days
Rafting (guided)			
Rafting (private)			
Kayaking/canoeing			
Boat fishing (guided)			
Boat fishing (private)			
Shoreline fishing			
Wade fishing			
Picnicking/day use			
Sightseeing			
Trail use			
Nature study			
Swimming			
Tubing			
Wading			
PWC (jetskiing)			
Camping			
Other			

18. Are there high and/or low flow levels that would stop you from pursuing each of your **primary** activities on the river? In the following table, write in an actual flow level (cfs) or a flow description of *very high, high, medium, low, or very low*. (See question 2 for a description of water levels.)

Primary recreation activity	Q. 18 – Write in below the cfs or flow level description where you would stop activity	
	Upper flow level	Lower flow level
Rafting (guided)		
Rafting (private)		
Kayaking/canoeing		
Boat fishing (guided)		
Boat fishing (private)		
Shoreline fishing		
Wade fishing		
Picnicking/day use		
Sightseeing		
Trail use		
Nature study		
Swimming		
Tubing		
Wading		
PWC (jetskiing)		
Camping		
Other		

19. How much money do you and members of your household expect to spend on **this trip** for each of the expenditure categories listed below both in total and within the local area? The local area is described as the Yakima River basin as shown on the map at the end of this survey.  
*(Note: If you live in the local area, your dollars spent would be the same for both columns. If you traveled to the area on vacation, your dollars spent would likely be different for each column.)*

Items	Total dollars spent on this trip	Dollars spent within the local area (see map)
Camping fees		
Hotels/motels and other lodging		
Restaurants		
Groceries and liquor		
Gas and oil for auto and boat		
Recreation supplies		
Recreation equipment rentals		
Guide services		
Automobile rentals		
Public transportation fares (plane, train, bus, etc.)		
Souvenirs/gifts		
Other (list)		

20. Total spending per trip often varies depending on your primary recreation activity. Please estimate, on average, how much you spent per trip to the river for each of your **primary** activities in the **past 12 months**. (*Answer in the table below.*)

Primary recreation activity	Q. 20 – Average dollars spent per trip
Rafting (guided)	
Rafting (private)	
Kayaking/canoeing	
Boat fishing (guided)	
Boat fishing (private)	
Shoreline fishing	
Wade fishing	
Picnicking/day use	
Sightseeing	
Trail use	
Nature study	
Swimming	
Tubing	
Wading	
PWC (jetskiing)	
Camping	
Other	

21. Have you had any conflicts with other users while recreating here?  
(*Check [✓] all that apply.*)

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Kayakers/Canoers  | <input type="checkbox"/> Sightseers       | <input type="checkbox"/> Rafters (private)      |
| <input type="checkbox"/> Shoreline anglers | <input type="checkbox"/> Picnickers       | <input type="checkbox"/> Boat anglers (guided)  |
| <input type="checkbox"/> Wildlife viewers  | <input type="checkbox"/> Campers          | <input type="checkbox"/> Boat anglers (private) |
| <input type="checkbox"/> Wade fishers      | <input type="checkbox"/> Rafters (guided) | <input type="checkbox"/> PWC (jetskiers)        |
| <input type="checkbox"/> Trail users       | <input type="checkbox"/> Tubers           | <input type="checkbox"/> Swimmers               |
| <input type="checkbox"/> Waders            | <input type="checkbox"/> Partiers         | <input type="checkbox"/> Others (list) _____    |

22. Describe any conflicts you have experienced on the river (e.g., noise, crowding, etc.).

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23. What did you do about each conflict? (Check [✓] all that apply.)

Went to another area       Left the area       Other \_\_\_\_\_  
 Complained to a manager       Went home

24. From where does your river trip usually originate:

If a U.S. resident: Zip code: \_\_\_\_\_

If a non-resident: City/Town and Country \_\_\_\_\_

25. How many miles (one way) do you usually travel to visit the river? \_\_\_\_\_ miles

26. How many years have you been recreating on the river? \_\_\_\_\_ years

*Note: The following questions will be used strictly for statistical analysis purposes.*

27. Are you \_\_\_\_\_ Female? \_\_\_\_\_ Male?

28. What is your age?

Under 15       35 – 49  
 15 – 20       50 – 65  
 21 – 34       Over 65

29. What was your household income last year?

Less than \$25,000       \$75,000 – \$99,999  
 \$25,000 – \$49,999       \$100,000 – \$149,999  
 \$50,000 – \$74,999       \$150,000 or more

30. Is there anything else you would like to share with us about your recreation experiences or concerns on the river?

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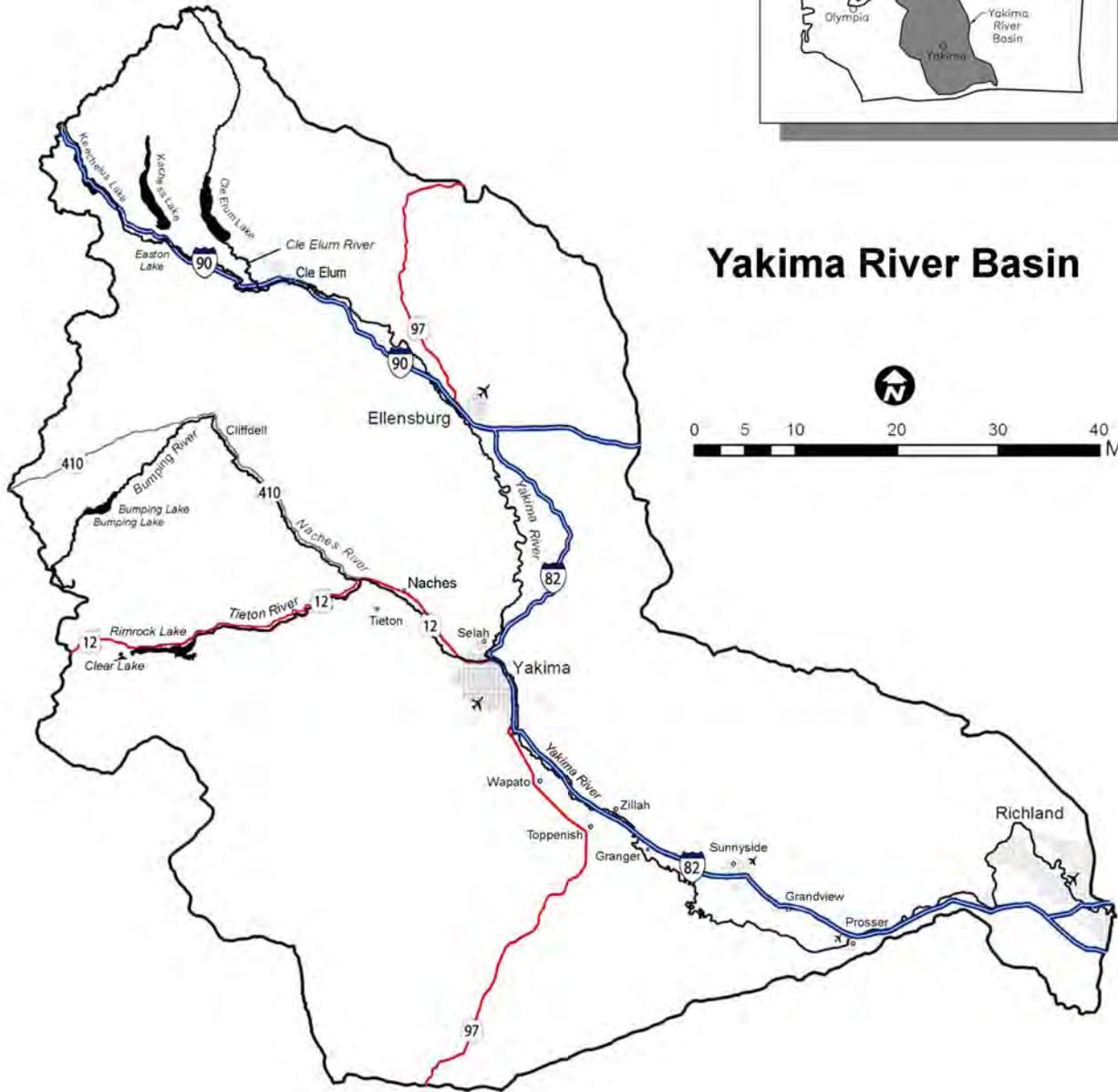
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**For official use only:** Today's riverflow for this stretch in cubic feet per second is \_\_\_\_\_ cfs.



## Yakima River Basin



## **Appendix C: Code of Conduct and Instructions for Surveyors**

# **Code of Conduct and Instructions for Surveyors**

The following list is intended to help surveyors with the process of conducting a successful survey and to establish certain guidelines and proper etiquette for communicating with potential survey respondents. Reclamation's employees and contractor will discuss/explain these guidelines and survey conduct items with all potential surveyors.

## General guidelines:

- The surveys will be handed out on-site during a predetermined survey period (specific locations will be visited during specific times of the week and day as established in the sampling plan).
- Each surveyor will have a sufficient amount of surveys, clipboards and pencils to hand out for the established survey period.
- The preferred survey method is to have respondents fill out the survey on-site, which gives them the opportunity to ask questions and usually results in better response rates. If this method is not an option (i.e., the respondent has to leave immediately after his or her activity), ask politely if the respondent would fill out the survey later and drop it off at a predetermined drop-off location (i.e., with the campground host or a drop box) or send it in by mail. The surveyor may also make arrangements to pick up the survey questionnaire from the respondent at a later time at a campsite, beach, or boat ramp area etc.
- Surveyors should be dressed professionally, preferably in a campground host uniform. If uniforms are not available, the surveyors should wear appropriate attire and name tags.

## How to survey recreationists:

- Please always be polite, friendly and neutral. When you approach a single person or a group of recreationists, please greet them in a friendly, professional and non-threatening way and introduce yourself. Respect their privacy. Explain to them that you are conducting a survey for the Bureau of Reclamation, the purpose of the study [...], and the approximate time it will take to fill out the survey (20 minutes). Assure them that the responses will be treated with anonymity and confidentiality (respondents do not have to provide their names and/or addresses). Explain what the information will be used for (i.e., to determine what impacts the Yakima River basin Storage Study alternatives will have on the water-based recreation activities in the Yakima River basin). After this short introduction, ask

them if they would like to participate. If they agree, hand them a survey, clipboard and pencil and let them fill out the survey. Take the survey back from them after they are finished and put them with the other filled-out surveys.

- Most of the recreationists will be happy to fill out a survey, but be prepared that some people will refuse. If they are not willing to fill out the survey on-site or at a later point in time, that is perfectly fine. It is important to keep in mind that this is a voluntary effort and nobody can or should be forced to give their opinion. Please be polite and thank them anyway.
- When a small group of people (i.e., two friends or a family unit) recreates together, please ask only one person out of that group to fill out a survey. If the group is large (i.e., two separate family units recreating together, but traveling separately), you can hand out a survey to one person of each family unit. You can ask them politely if they are separate or not.
- Please only target survey respondents, which you actually observed recreating (i.e., boaters who just finished their fishing trip or current campers in the campground). If there is any doubt, ask them politely if they have participated in a specific recreation activity on/next to the river or reservoir today.
- Please try to survey each group of recreationists that you see during the assigned survey period. In a campground, approach each separate group of campers and ask one person out of the group to fill out a survey. At a boat ramp, approach each group of boaters after they are finished with their boating trip (i.e., at the boat ramp or parking lot when they are loading up and cleaning the boat) and ask one person out of the group to fill out a survey. If there are several groups exiting the river or reservoir at the same time, try to talk to each of the groups. You can introduce yourself to the first group, explain the purpose of the study, ask them to participate, hand them the survey, clipboard and pencil and tell them that you will be back in a few minutes to pick up the survey. In the meantime, you can go to the next group of boaters and do the same. If the survey location is a high use area, you will not be able to talk to all groups of recreationists. Just try to talk to as many as you can.
- If possible, please alternate between male and female respondents. However, do not miss a potential respondent or group of respondents, because there is no male or female in that particular group. It is important to get a representative sample of the recreating population. Some recreational activities are preferred by one gender versus the other.
- Only ask recreationists to fill out a survey who are at least 18 years old. If there is any doubt, ask them politely how old they are and why you need to know their age. If they are younger than 18, please apologize to them and explain that the survey procedures do not allow for minors to fill out a survey.

- Please assist respondents and try to answer any questions that they might have about the survey in general or specific questions to the best of your knowledge. Please try to give unbiased answers, that is, do not take one side over another on certain issues. If you are unsure about the answer to a question, please be honest and apologize. If you know of a qualified person/agency that might know the answer (i.e., the survey coordinator, principal survey investigator or your supervisor), suggest giving them a call. If respondents do not know the answer to a question, tell them to leave it blank. However, try to get as many responses as possible by clarifying any questions or uncertainties.
- Please take the survey(s), pencils and clipboards back from the respondents after they are finished and thank them politely for their participation. If they would like to have a copy of the results (executive summary) of the survey, write their names and addresses down on a separate sheet of paper and assure them that they will receive the results after they are available. Give the names and addresses to the survey coordinator the next time she will visit. Please keep all the filled-out surveys together in a safe place and hand them to the survey coordinator the next time she will visit.
- Please always be safe. Although it is important that you approach as many of the boaters and campers as possible during your assigned survey period, it is much more important to be safe. If you have the feeling that a group of recreationists could be threatening or dangerous, please do not approach them and/or leave the scene immediately. If, during a survey, a respondent or group of respondents acts threatening or makes threatening or unqualified personal remarks, you can and should terminate the survey and leave the person or group right away. Do not put yourself at risk! Be careful of highway traffic. Use common sense and wear appropriate clothing for the weather conditions. Protect yourself with hat, rain gear, sunscreen, water, etc. You may want to take a folding chair along for your own comfort.
- Make sure that all surveyors have an appropriate number of business cards available to supply potential respondents that display the name and telephone number of a Reclamation person who they may contact to ask specific questions or to verify the legitimacy of the information collection.

## **Appendix D: Where Visitors Can Find Their Desired Experience on the Reservoirs**

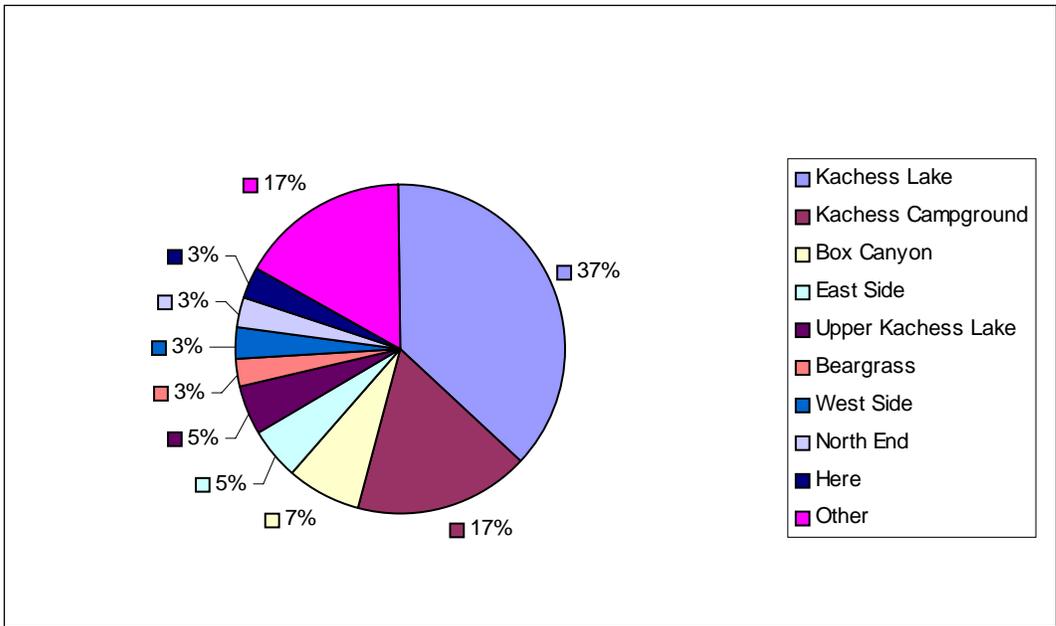


Figure 13. Where visitors find their desired experience at Kachess Lake.

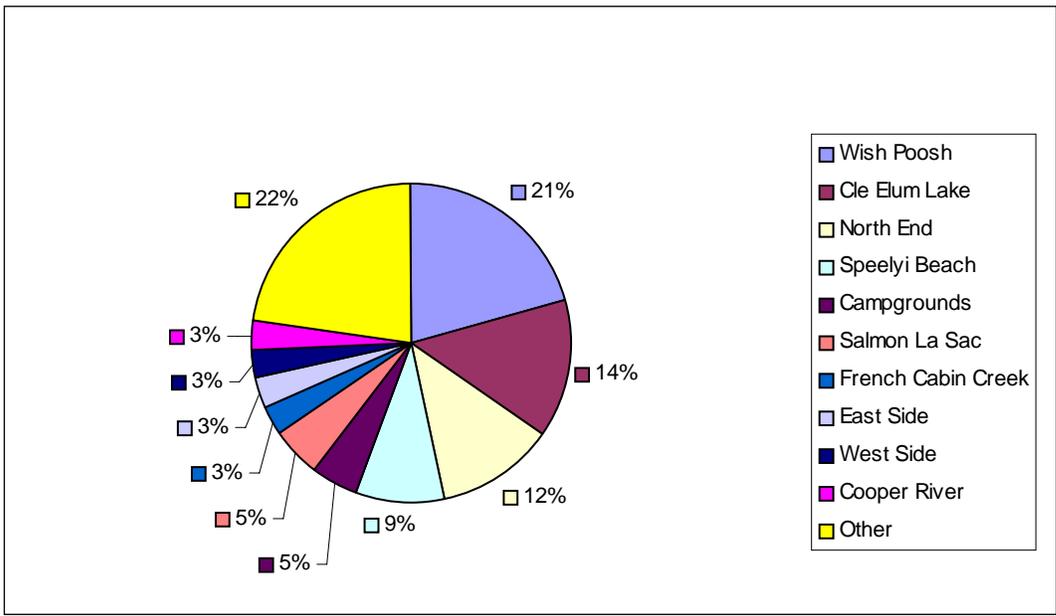


Figure 14. Where visitors find their desired experience at Cle Elum Lake.

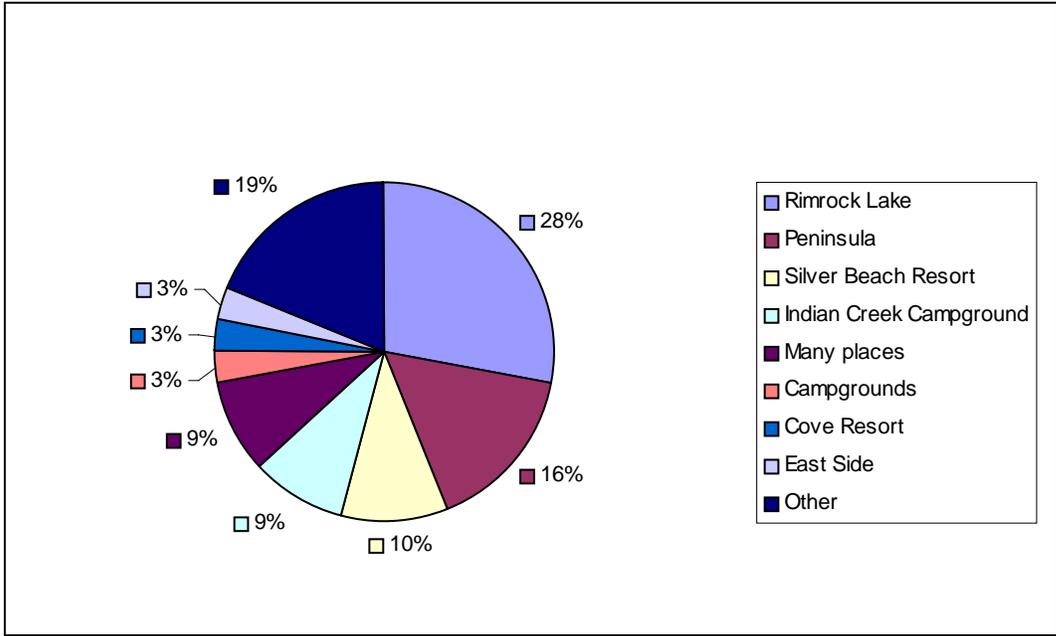


Figure 15. Where visitors find their desired experience at Rimrock Lake.

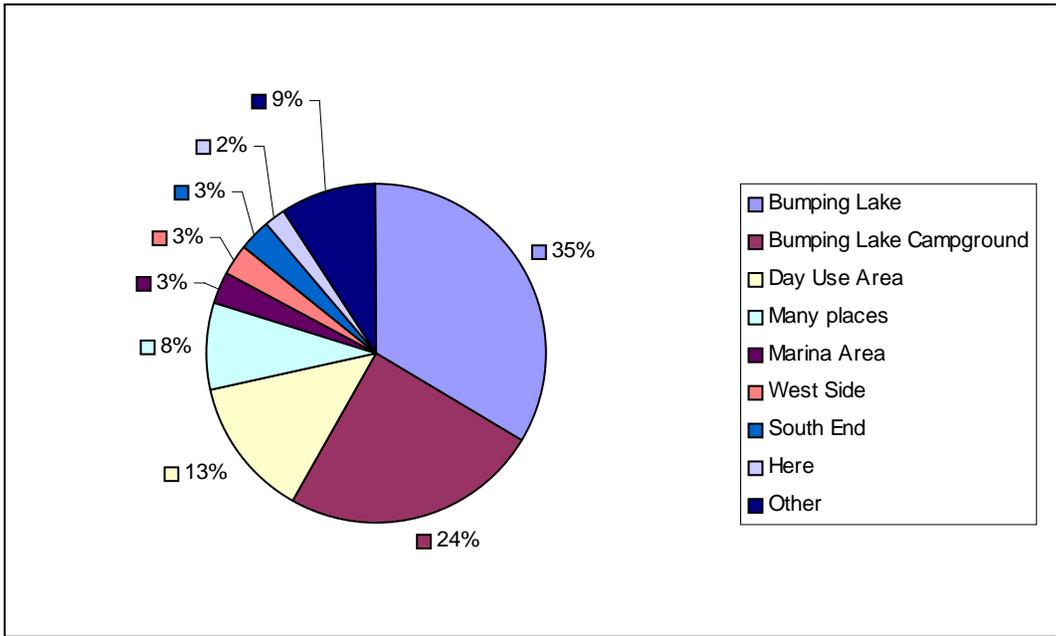


Figure 16. Where visitors find their desired experience at Bumping Lake.

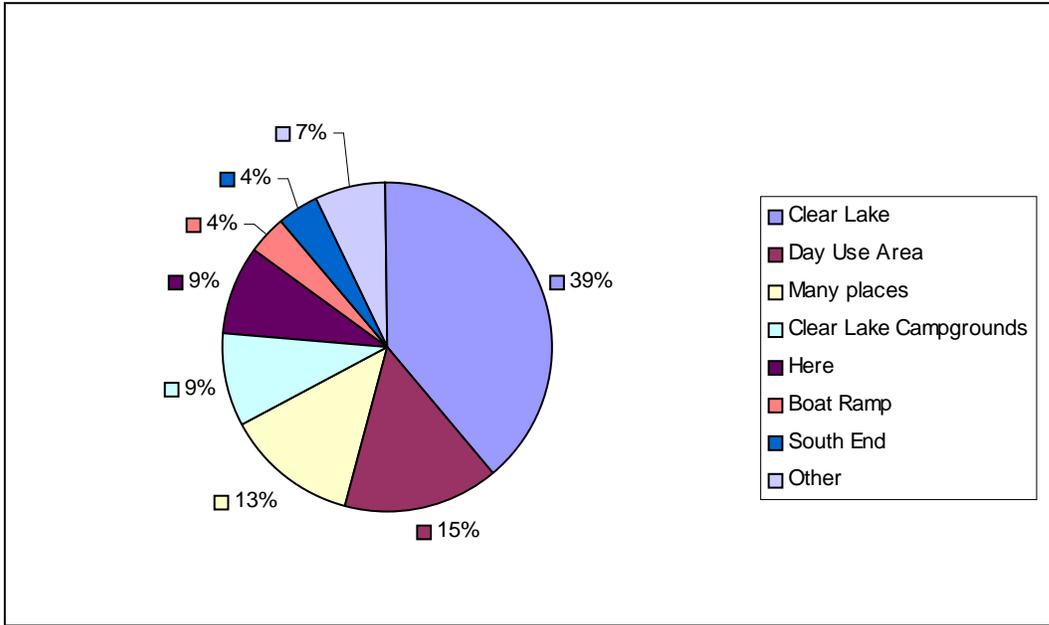


Figure 17. Where visitors find their desired experience at Clear Lake.

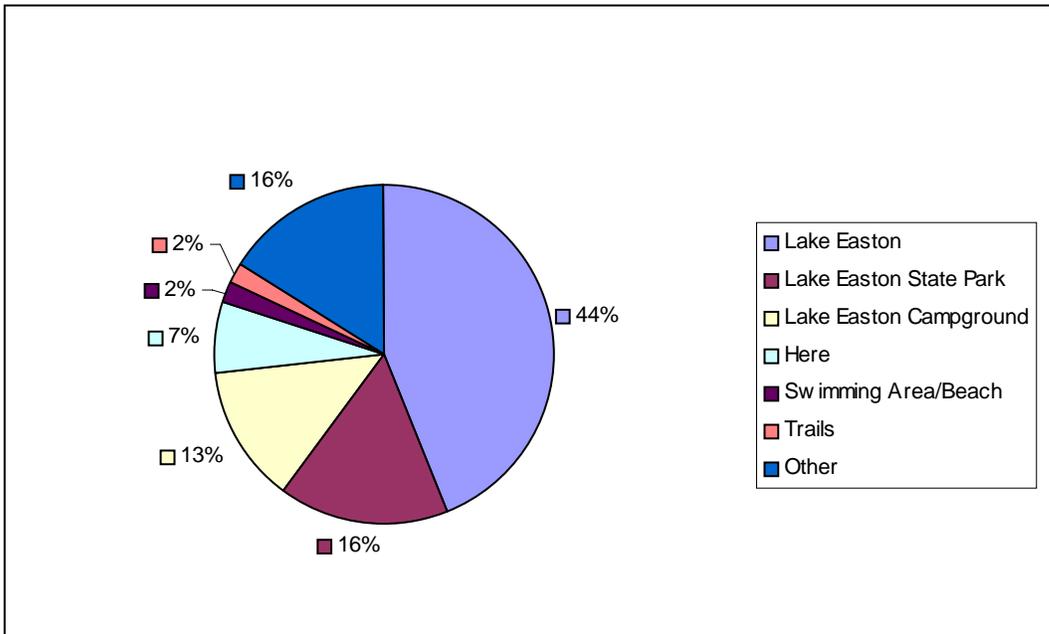


Figure 18. Where visitors find their desired experience at Lake Easton.

**Appendix E: Where Visitors Can Find Their Desired  
Experience at Other Nearby Reservoirs Within the  
Yakima River Basin**

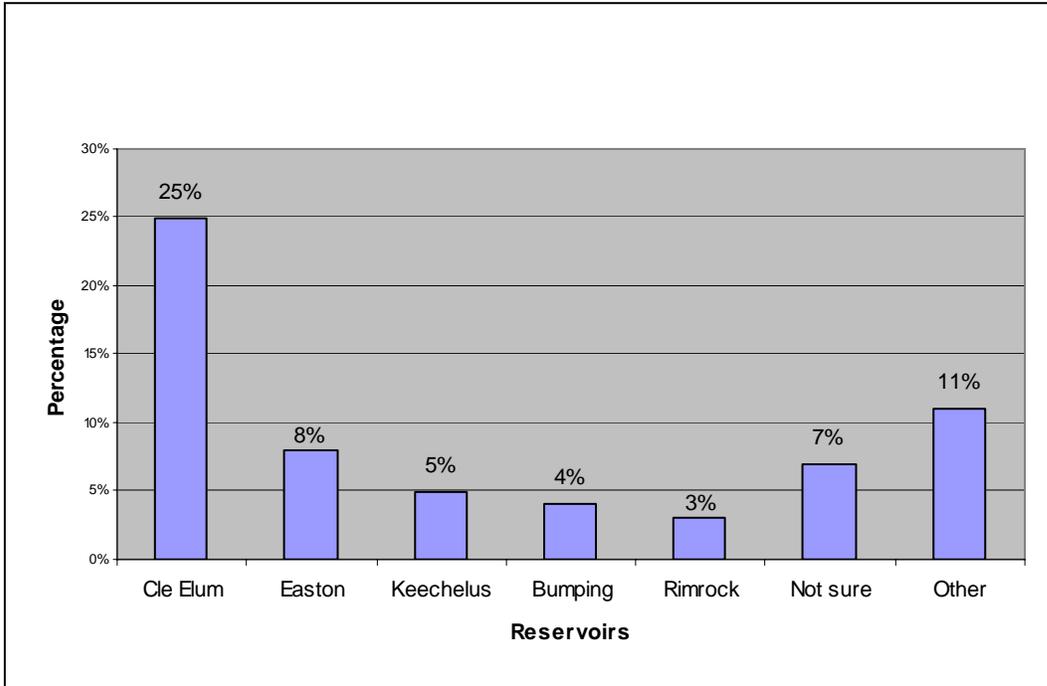


Figure 19. Nearby reservoirs where Kachess Lake visitors find desired experience.

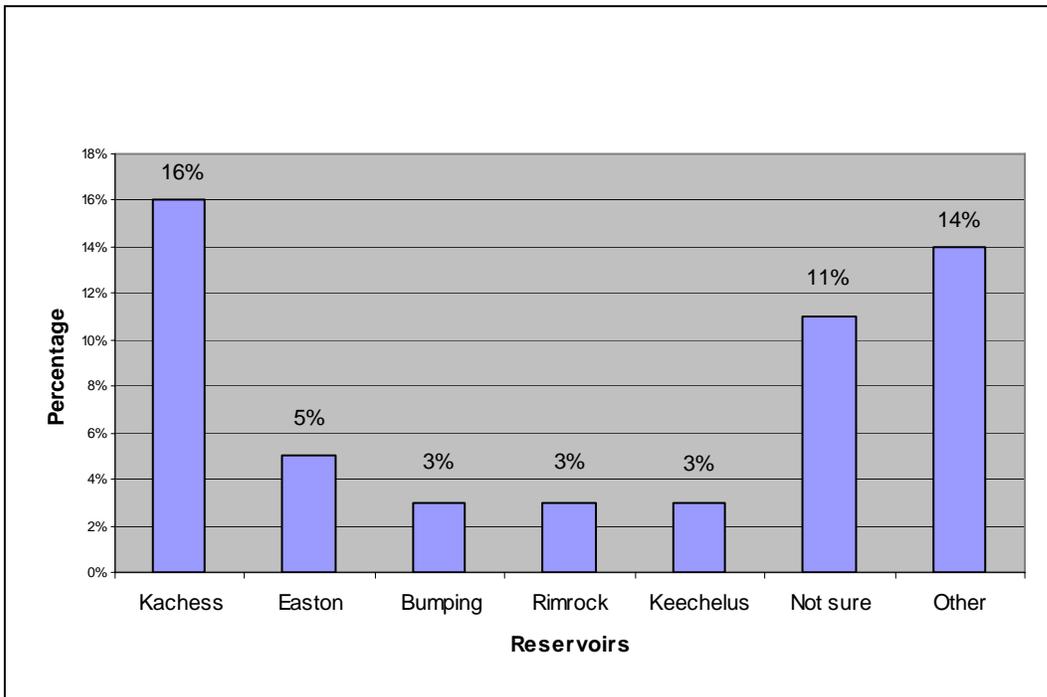


Figure 20. Other nearby reservoirs where Cle Elum Lake visitors find their desired experience.

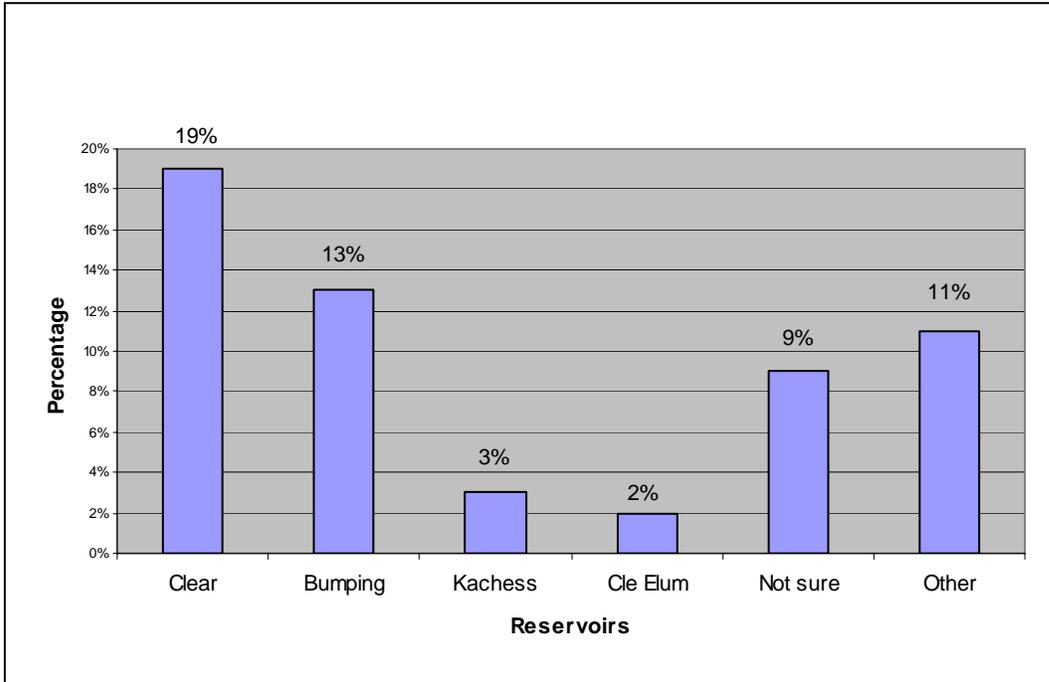


Figure 21. Nearby reservoirs where Rimrock Lake visitors find desired experience.

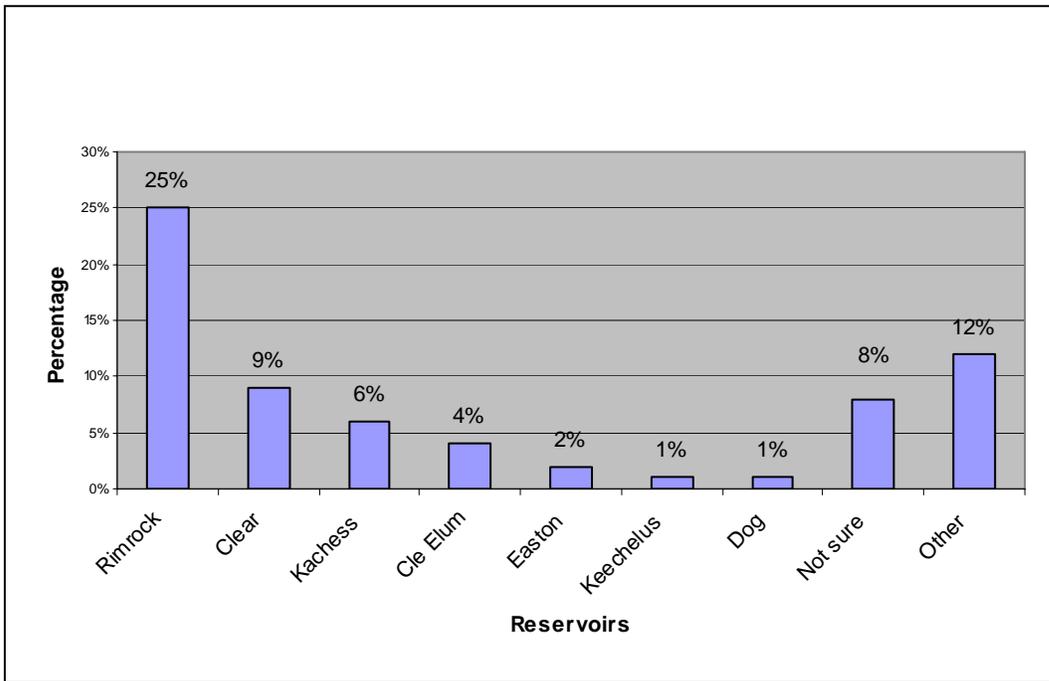


Figure 22. Nearby reservoirs where Bumping Lake visitors find desired experience.

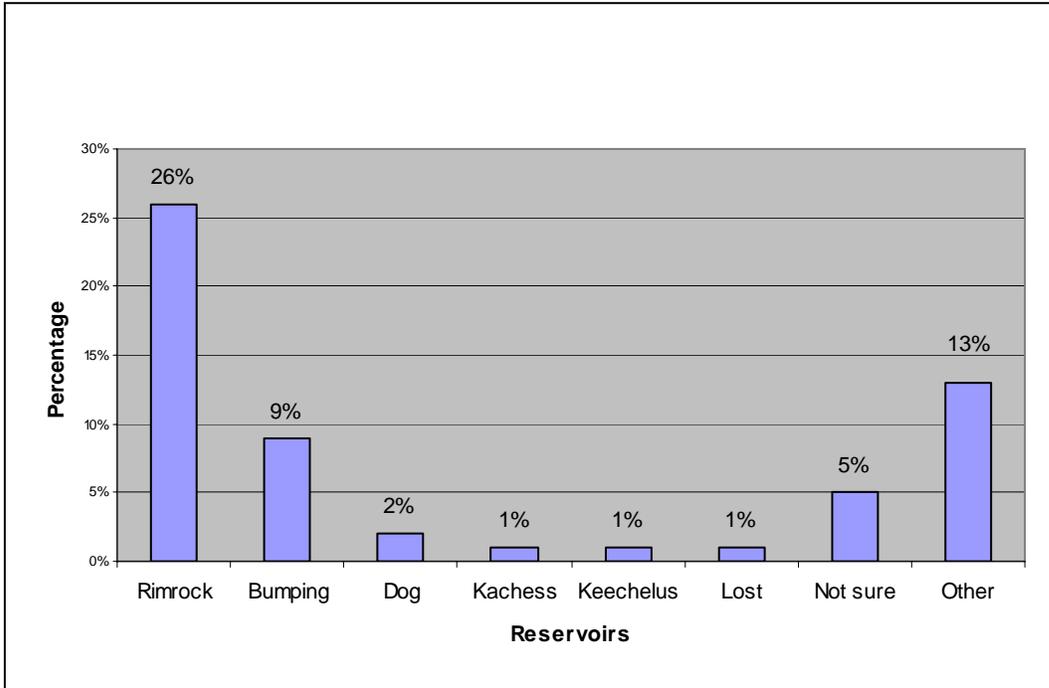


Figure 23. Nearby reservoirs where Clear Lake visitors find desired experience.

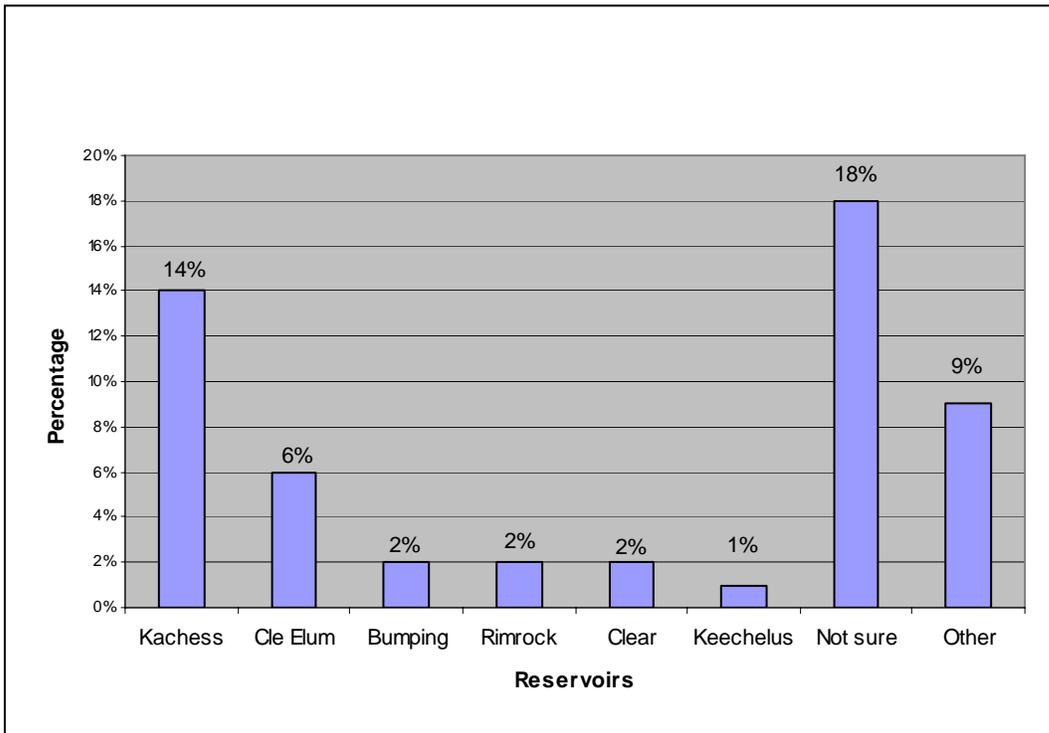


Figure 24. Nearby reservoirs where Lake Easton visitors find desired experience.

## **Appendix F: Names and Locations of Facilities Used at the Reservoirs**

Table 50. Names and locations of facilities used by visitors at Kachess Lake

Facility names and locations	Percentage
<b>Boat Ramps:</b>	
Kachess Campground	96%
Box Canyon	4%
<b>Campgrounds:</b>	
Kachess Campground	59%
Beargrass Flats	12%
Box Canyon	9%
Lodge Creek	9%
Gale Creek	5%
Mineral Creek	2%
Other	5%
<b>Picnic sites:</b>	
Kachess Lake	64%
Kachess Campground	23%
Other	14%
<b>Beaches:</b>	
Kachess Lake	66%
Kachess Campground	16%
Box Canyon	5%
Gale Creek	5%
Lodge Creek	3%
Other	5%
<b>Floating docks: <sup>1</sup></b>	
Kachess Lake	50%
Private beach	50%
<b>Boat camps: <sup>1</sup></b>	
Kachess Lake	50%
North End	50%
<b>Parking lots:</b>	
Kachess Lake	71%
Kachess Campground	18%
Box Canyon	6%
Other	6%
<b>Restrooms:</b>	
Kachess Lake	61%
Kachess Campground	13%
Beargrass Flats	5%
Gale Creek	5%
Lodge Creek	5%
Box Canyon	3%
Mineral Creek	3%
Other	5%
<b>Other facilities:</b>	
Hiking trails	78%
Fire pits	11%
Private cabin	11%

<sup>1</sup> Only two respondents gave facility names.

Table 51. Names and locations of facilities used by visitors at Cle Elum Lake

Facility names and locations	Percentage
<b>Boat Ramps:</b>	
Wish Poosh	74%
Speelyi Beach	11%
Cle Elum Lake	6%
Cle Elum River Camp	3%
Other	6%
<b>Campgrounds:</b>	
Wish Poosh	63%
Cle Elum River Camp	9%
French Cabin Creek	7%
Bear Creek	4%
Cle Elum Lake	4%
Salmon La Sac	4%
Red Mountain	2%
Other	7%
<b>Picnic sites:</b>	
Wish Poosh	78%
Cle Elum Lake	6%
Red Mountain	6%
Salmon La Sac	6%
Other	6%
<b>Beaches:</b>	
Speelyi Beach	42%
Wish Poosh	23%
Cle Elum Lake	21%
Cle Elum River	2%
Drift Wood Acres	2%
Salmon La Sac	2%
Other	8%
<b>Boat camps: <sup>1</sup></b>	
Cle Elum River Camp	100%
<b>Parking lots:</b>	
Wish Poosh	50%
Speelyi Beach	27%
Cle Elum Lake	15%
Cle Elum River	4%
Other	4%
<b>Restrooms:</b>	
Wish Poosh	55%
Speelyi Beach	23%
Cle Elum Lake	8%
Cle Elum River Camp	8%
Salmon La Sac	3%
Other	5%
<b>Other facilities:<sup>2</sup></b>	
Hiking trails	67%
Small grocery store on 903	33%

<sup>1</sup> Only two respondents gave facility names; <sup>2</sup> Only three respondents gave facility names.

Table 52. Names and locations of facilities used by visitors at Rimrock Lake

Facility names and locations	Percentage
<b>Boat Ramps:</b>	
Rimrock East	43%
Silver Beach Resort	29%
Peninsula	14%
Cove Resort	4%
Horseshoe Cove	4%
Snug Harbor	4%
Other	4%
<b>Campgrounds:</b>	
Indian Creek	44%
Silver Beach Resort	17%
Peninsula/Airport Camp	15%
Rimrock Lake	13%
Cove Resort	2%
Snug Harbor	2%
Other	7%
<b>Picnic sites:</b>	
Rimrock Lake	25%
Silver Beach Resort	25%
Peninsula	13%
Indian Creek	13%
Cove Resort	6%
Horseshoe Cove	6%
Snug Harbor	6%
Other	6%
<b>Beaches:</b>	
Silver Beach Resort	35%
Rimrock Lake	17%
Peninsula	9%
Indian Creek	9%
Snug Harbor	9%
Cove Resort	4%
Horseshoe Cove	4%
Other	13%
<b>Floating docks:</b>	
Silver Beach Resort	67%
Rimrock Lake	13%
Cove Resort	7%
Other	13%
<b>Private concessions:</b>	
Silver Beach Resort	73%
Snug Harbor	9%
Stones	9%
Other	9%
<b>Parking lots:</b>	
Rimrock Lake	29%
Silver Beach Resort	29%

Table 52. Names and locations of facilities used by visitors at Rimrock Lake – continued

Peninsula	14%
Indian Creek	14%
Horseshoe Cove	7%
Snug Harbor	7%
Restrooms:	
Indian Creek	29%
Rimrock Lake	21%
Silver Beach Resort	14%
Peninsula	11%
Cove Resort	7%
Horseshoe Cove	4%
Snug Harbor	4%
Other	11%

Table 53. Names and locations of facilities used by visitors at Bumping Lake

Facility names and locations	Percentage
<b>Boat Ramps:</b>	
Bumping Lake Day Use	69%
Bumping Lake Day Use	15%
Bumping Lake Marina	15%
<b>Campgrounds:</b>	
Bumping Lake	52%
Bumping Lake Upper Campground	10%
Bumping Lake Marina	8%
Bumping Lake Campground	6%
Bumping Lake Lower Campground	6%
Dispersed camping	4%
Other	13%
<b>Picnic sites:</b>	
Bumping Lake	63%
Bumping Lake Day Use	20%
Bumping Lake Marina	7%
Bumping Lake Campground	7%
Other	3%
<b>Beaches:</b>	
Bumping Lake	73%
Bumping Lake Day Use	9%
Bumping Lake Marina	6%
Other	12%
<b>Floating docks:</b>	
Bumping Lake Boat Ramp	69%
Bumping Lake Marina	23%
Other	8%
<b>Marinas:</b>	
Bumping Lake Marina	100%
<b>Boat camps: <sup>1</sup></b>	
Bumping Lake	50%
Bumping Lake Campground	50%
<b>Private concessions:</b>	
Bumping Lake Marina	100%
<b>Parking lots:</b>	
Bumping Lake	69%
Bumping Lake Day Use	19%
Bumping Lake Campground	8%
Bumping Lake Marina	4%
<b>Restrooms:</b>	
Bumping Lake	58%
Bumping Lake Day Use	15%
Bumping Lake Campground	13%
Bumping Lake Marina	10%
Other	5%
<b>Other facilities: <sup>2</sup></b>	
Dump station	67%
Relatives' property	33%

<sup>1</sup> Only two respondents gave facility names.

<sup>2</sup> Only three respondents gave facility names.

Table 54. Names and locations of facilities used by visitors at Clear Lake

Facility names and locations	Percentage
<b>Boat Ramps:</b>	
Clear Lake	58%
Clear Lake South Campground	17%
Other	25%
<b>Campgrounds:</b>	
Clear Lake	46%
Clear Lake North	17%
Clear Lake South	11%
Spillway/Dam Area	6%
Dudley	6%
Clear Lake West	3%
Camp Zarahemla	3%
Other	6%
<b>Picnic sites:</b>	
Clear Lake Day Use	39%
Clear Lake	31%
Clear Lake South	12%
Clear Lake Campground	4%
Clear Lake North	4%
Dam Area	4%
Other	8%
<b>Beaches:</b>	
Clear Lake	36%
Clear Lake South	27%
Clear Lake Day Use	27%
Clear Lake Campground	9%
<b>Floating docks:</b>	
Clear Lake Day Use	50%
Clear Lake	25%
Masters Resort	8%
South Clear Lake	8%
Other	8%
<b>Parking lots:</b>	
Clear Lake Day Use	50%
Clear Lake	30%
Clear Lake South	10%
Clear Lake Campground	5%
Other	5%
<b>Restrooms:</b>	
Clear Lake	45%
Clear Lake Day Use	28%
Clear Lake North	7%
Clear Lake South	7%
Other	10%

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Table 55. Names and locations of facilities used by visitors at Lake Easton

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Facility names and locations <sup>1</sup>	Percentage
Other facilities:	
Hot showers/Utilities/Hookups	32%
Hiking trails	24%
Bike trails	16%
Big Toy Structure	12%
Amphitheater	8%
Fishing bridge	8%

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<sup>1</sup> With the exception of “other facilities”, all of the responses for facility categories could be summarized under “Lake Easton State Park”.

## **Appendix G: Respondents' Zip Codes – Reservoirs**

**Q.25: Zip codes (U.S. residents) – Kachess Lake**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	92926	1	1.0	1.2	1.2
	98001	1	1.0	1.2	2.3
	98005	2	2.0	2.3	4.7
	98006	3	3.0	3.5	8.1
	98011	1	1.0	1.2	9.3
	98012	1	1.0	1.2	10.5
	98014	1	1.0	1.2	11.6
	98019	1	1.0	1.2	12.8
	98020	1	1.0	1.2	14.0
	98021	1	1.0	1.2	15.1
	98027	2	2.0	2.3	17.4
	98030	2	2.0	2.3	19.8
	98032	1	1.0	1.2	20.9
	98033	1	1.0	1.2	22.1
	98034	1	1.0	1.2	23.3
	98038	2	2.0	2.3	25.6
	98040	2	2.0	2.3	27.9
	98042	3	3.0	3.5	31.4
	98045	7	7.0	8.1	39.5
	98051	1	1.0	1.2	40.7
	98052	1	1.0	1.2	41.9
	98056	2	2.0	2.3	44.2
	98059	2	2.0	2.3	46.5
	98065	1	1.0	1.2	47.7
	98070	1	1.0	1.2	48.8
	98072	1	1.0	1.2	50.0
	98074	1	1.0	1.2	51.2
	98101	1	1.0	1.2	52.3
	98105	1	1.0	1.2	53.5
	98106	1	1.0	1.2	54.7
	98115	2	2.0	2.3	57.0
	98116	1	1.0	1.2	58.1
	98119	1	1.0	1.2	59.3
	98122	1	1.0	1.2	60.5
	98125	2	2.0	2.3	62.8
	98126	1	1.0	1.2	64.0
	98146	2	2.0	2.3	66.3
	98166	1	1.0	1.2	67.4
	98198	2	2.0	2.3	69.8
	98199	1	1.0	1.2	70.9
	98203	1	1.0	1.2	72.1
	98208	1	1.0	1.2	73.3
	98236	1	1.0	1.2	74.4

	Frequency	Percent	Valid Percent	Cumulative Percent
98272	1	1.0	1.2	75.6
98290	1	1.0	1.2	76.7
98335	1	1.0	1.2	77.9
98359	1	1.0	1.2	79.1
98373	1	1.0	1.2	80.2
98375	1	1.0	1.2	81.4
98387	1	1.0	1.2	82.6
98466	1	1.0	1.2	83.7
98503	1	1.0	1.2	84.9
98801	2	2.0	2.3	87.2
98802	1	1.0	1.2	88.4
98908	1	1.0	1.2	89.5
98922	2	2.0	2.3	91.9
98925	2	2.0	2.3	94.2
98926	1	1.0	1.2	95.3
98950	1	1.0	1.2	96.5
99004	1	1.0	1.2	97.7
99338	2	2.0	2.3	100.0

**Q.25: Zip codes (U.S. residents) – Cle Elum Lake**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	94941	1	1.0	1.1	1.1
	97045	1	1.0	1.1	2.3
	98003	1	1.0	1.1	3.4
	98006	1	1.0	1.1	4.6
	98008	1	1.0	1.1	5.7
	98012	2	2.0	2.3	8.0
	98026	1	1.0	1.1	9.2
	98034	4	4.0	4.6	13.8
	98042	1	1.0	1.1	14.9
	98043	1	1.0	1.1	16.1
	98045	1	1.0	1.1	17.2
	98055	1	1.0	1.1	18.4
	98058	2	2.0	2.3	20.7
	98059	1	1.0	1.1	21.8
	98072	3	3.0	3.4	25.3
	98092	2	2.0	2.3	27.6
	98105	1	1.0	1.1	28.7
	98106	1	1.0	1.1	29.9
	98107	2	2.0	2.3	32.2
	98112	2	2.0	2.3	34.5
	98122	1	1.0	1.1	35.6
	98142	1	1.0	1.1	36.8
	98155	1	1.0	1.1	37.9
	98168	2	2.0	2.3	40.2
	98177	1	1.0	1.1	41.4
	98188	2	2.0	2.3	43.7
	98290	1	1.0	1.1	44.8
	98292	2	2.0	2.3	47.1
	98338	2	2.0	2.3	49.4
	98360	1	1.0	1.1	50.6
	98373	1	1.0	1.1	51.7
	98374	1	1.0	1.1	52.9
	98375	1	1.0	1.1	54.0
	98405	1	1.0	1.1	55.2
	98422	2	2.0	2.3	57.5
	98466	1	1.0	1.1	58.6
	98520	1	1.0	1.1	59.8
	98541	1	1.0	1.1	60.9
	98661	1	1.0	1.1	62.1
	98837	2	2.0	2.3	64.4
	98901	1	1.0	1.1	65.5
	98908	3	3.0	3.4	69.0
	98922	9	9.1	10.3	79.3

	Frequency	Percent	Valid Percent	Cumulative Percent
98926	5	5.1	5.7	85.1
98940	3	3.0	3.4	88.5
98941	5	5.1	5.7	94.3
98942	1	1.0	1.1	95.4
98943	1	1.0	1.1	96.6
98944	1	1.0	1.1	97.7
99115	1	1.0	1.1	98.9
99156	1	1.0	1.1	100.0

**Q.25: Zip codes (U.S. residents) – Rimrock Lake**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	23188	1	1.0	1.1	1.1
	55019	1	1.0	1.1	2.2
	82901	1	1.0	1.1	3.2
	89591	1	1.0	1.1	4.3
	92241	1	1.0	1.1	5.4
	97207	1	1.0	1.1	6.5
	97948	1	1.0	1.1	7.5
	98001	1	1.0	1.1	8.6
	98004	1	1.0	1.1	9.7
	98007	1	1.0	1.1	10.8
	98034	1	1.0	1.1	11.8
	98105	1	1.0	1.1	12.9
	98125	1	1.0	1.1	14.0
	98335	1	1.0	1.1	15.1
	98337	1	1.0	1.1	16.1
	98350	1	1.0	1.1	17.2
	98361	1	1.0	1.1	18.3
	98374	1	1.0	1.1	19.4
	98418	1	1.0	1.1	20.4
	98446	1	1.0	1.1	21.5
	98520	1	1.0	1.1	22.6
	98531	1	1.0	1.1	23.7
	98552	1	1.0	1.1	24.7
	98570	1	1.0	1.1	25.8
	98901	12	11.9	12.9	38.7
	98902	10	9.9	10.8	49.5
	98903	2	2.0	2.2	51.6
	98908	11	10.9	11.8	63.4
	98922	1	1.0	1.1	64.5
	98926	4	4.0	4.3	68.8
	98928	1	1.0	1.1	69.9
	98930	2	2.0	2.2	72.0
	98936	4	4.0	4.3	76.3
	98937	5	5.0	5.4	81.7
	98942	6	5.9	6.5	88.2
98943	1	1.0	1.1	89.2	
98947	2	2.0	2.2	91.4	
98951	1	1.0	1.1	92.5	
99201	1	1.0	1.1	93.5	
99224	1	1.0	1.1	94.6	
99338	1	1.0	1.1	95.7	
99350	2	2.0	2.2	97.8	
99352	2	2.0	2.2	100.0	

**Q.25: Zip codes (U.S. residents) – Bumping Lake**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	23188	1	1.0	1.1	1.1
	55019	1	1.0	1.1	2.2
	82901	1	1.0	1.1	3.2
	89591	1	1.0	1.1	4.3
	92241	1	1.0	1.1	5.4
	97207	1	1.0	1.1	6.5
	97948	1	1.0	1.1	7.5
	98001	1	1.0	1.1	8.6
	98004	1	1.0	1.1	9.7
	98007	1	1.0	1.1	10.8
	98034	1	1.0	1.1	11.8
	98105	1	1.0	1.1	12.9
	98125	1	1.0	1.1	14.0
	98335	1	1.0	1.1	15.1
	98337	1	1.0	1.1	16.1
	98350	1	1.0	1.1	17.2
	98361	1	1.0	1.1	18.3
	98374	1	1.0	1.1	19.4
	98418	1	1.0	1.1	20.4
	98446	1	1.0	1.1	21.5
	98520	1	1.0	1.1	22.6
	98531	1	1.0	1.1	23.7
	98552	1	1.0	1.1	24.7
	98570	1	1.0	1.1	25.8
	98901	12	11.9	12.9	38.7
	98902	10	9.9	10.8	49.5
	98903	2	2.0	2.2	51.6
	98908	11	10.9	11.8	63.4
	98922	1	1.0	1.1	64.5
	98926	4	4.0	4.3	68.8
	98928	1	1.0	1.1	69.9
	98930	2	2.0	2.2	72.0
	98936	4	4.0	4.3	76.3
	98937	5	5.0	5.4	81.7
	98942	6	5.9	6.5	88.2
	98943	1	1.0	1.1	89.2
	98947	2	2.0	2.2	91.4
	98951	1	1.0	1.1	92.5
	99201	1	1.0	1.1	93.5
	99224	1	1.0	1.1	94.6
	99338	1	1.0	1.1	95.7
	99350	2	2.0	2.2	97.8
	99352	2	2.0	2.2	100.0

**Q.25: Zip codes (U.S. residents) – Clear Lake**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	75071	1	1.2	1.2	1.2
	98004	1	1.2	1.2	2.4
	98012	1	1.2	1.2	3.7
	98022	1	1.2	1.2	4.9
	98028	1	1.2	1.2	6.1
	98037	1	1.2	1.2	7.3
	98087	1	1.2	1.2	8.5
	98103	1	1.2	1.2	9.8
	98105	1	1.2	1.2	11.0
	98112	1	1.2	1.2	12.2
	98118	1	1.2	1.2	13.4
	98133	3	3.5	3.7	17.1
	98204	1	1.2	1.2	18.3
	98361	3	3.5	3.7	22.0
	98377	1	1.2	1.2	23.2
	98387	1	1.2	1.2	24.4
	98397	1	1.2	1.2	25.6
	98403	1	1.2	1.2	26.8
	98520	1	1.2	1.2	28.0
	98532	1	1.2	1.2	29.3
	98550	1	1.2	1.2	30.5
	98642	1	1.2	1.2	31.7
	98663	1	1.2	1.2	32.9
	98801	2	2.4	2.4	35.4
	98807	1	1.2	1.2	36.6
	98901	11	12.9	13.4	50.0
	98902	7	8.2	8.5	58.5
	98903	7	8.2	8.5	67.1
	98908	4	4.7	4.9	72.0
	98909	2	2.4	2.4	74.4
	98926	4	4.7	4.9	79.3
	98930	1	1.2	1.2	80.5
	98936	1	1.2	1.2	81.7
	98937	4	4.7	4.9	86.6
	98938	1	1.2	1.2	87.8
	98942	1	1.2	1.2	89.0
	98944	1	1.2	1.2	90.2
	98948	1	1.2	1.2	91.5
	98951	2	2.4	2.4	93.9
	98953	2	2.4	2.4	96.3
	99320	1	1.2	1.2	97.6
	99321	1	1.2	1.2	98.8
	99353	1	1.2	1.2	100.0

**Q.25: Zip code (U.S. residents) – Lake Easton**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	55066	1	.6	.7	.7
	95687	1	.6	.7	1.4
	97080	1	.6	.7	2.2
	97405	1	.6	.7	2.9
	97810	1	.6	.7	3.6
	98001	2	1.2	1.4	5.0
	98002	1	.6	.7	5.8
	98006	2	1.2	1.4	7.2
	98008	1	.6	.7	7.9
	98011	2	1.2	1.4	9.4
	98012	3	1.8	2.2	11.5
	98021	2	1.2	1.4	12.9
	98023	2	1.2	1.4	14.4
	98024	2	1.2	1.4	15.8
	98027	1	.6	.7	16.5
	98028	1	.6	.7	17.3
	98029	2	1.2	1.4	18.7
	98030	1	.6	.7	19.4
	98031	2	1.2	1.4	20.9
	98032	1	.6	.7	21.6
	98034	3	1.8	2.2	23.7
	98037	1	.6	.7	24.5
	98038	3	1.8	2.2	26.6
	98042	3	1.8	2.2	28.8
	98045	2	1.2	1.4	30.2
	98056	2	1.2	1.4	31.7
	98058	2	1.2	1.4	33.1
	98059	3	1.8	2.2	35.3
	98072	1	.6	.7	36.0
	98074	1	.6	.7	36.7
	98075	1	.6	.7	37.4
	98092	1	.6	.7	38.1
	98103	1	.6	.7	38.8
	98108	1	.6	.7	39.6
	98115	1	.6	.7	40.3
	98119	1	.6	.7	41.0
	98126	1	.6	.7	41.7
	98136	1	.6	.7	42.4
	98146	1	.6	.7	43.2
	98155	1	.6	.7	43.9
	98198	1	.6	.7	44.6
	98201	1	.6	.7	45.3

	Frequency	Percent	Valid Percent	Cumulative Percent
98203	1	.6	.7	46.0
98208	2	1.2	1.4	47.5
98270	1	.6	.7	48.2
98271	1	.6	.7	48.9
98311	1	.6	.7	49.6
98329	1	.6	.7	50.4
98335	1	.6	.7	51.1
98354	1	.6	.7	51.8
98363	1	.6	.7	52.5
98367	1	.6	.7	53.2
98371	1	.6	.7	54.0
98374	3	1.8	2.2	56.1
98375	1	.6	.7	56.8
98382	3	1.8	2.2	59.0
98383	1	.6	.7	59.7
98387	1	.6	.7	60.4
98406	1	.6	.7	61.2
98444	2	1.2	1.4	62.6
98445	3	1.8	2.2	64.7
98498	1	.6	.7	65.5
98512	1	.6	.7	66.2
98563	1	.6	.7	66.9
98589	1	.6	.7	67.6
98597	1	.6	.7	68.3
98801	3	1.8	2.2	70.5
98823	1	.6	.7	71.2
98826	1	.6	.7	71.9
98837	1	.6	.7	72.7
98840	1	.6	.7	73.4
98901	2	1.2	1.4	74.8
98902	4	2.4	2.9	77.7
98903	2	1.2	1.4	79.1
98908	1	.6	.7	79.9
98922	1	.6	.7	80.6
98925	2	1.2	1.4	82.0
98926	6	3.6	4.3	86.3
98930	1	.6	.7	87.1
98937	1	.6	.7	87.8
98946	1	.6	.7	88.5
98953	1	.6	.7	89.2
98980	1	.6	.7	89.9
99013	1	.6	.7	90.6
99203	1	.6	.7	91.4
99206	1	.6	.7	92.1
99216	1	.6	.7	92.8

	Frequency	Percent	Valid Percent	Cumulative Percent
99223	1	.6	.7	93.5
99224	1	.6	.7	94.2
99301	1	.6	.7	95.0
99320	1	.6	.7	95.7
99336	1	.6	.7	96.4
99338	1	.6	.7	97.1
99344	1	.6	.7	97.8
99350	1	.6	.7	98.6
99354	1	.6	.7	99.3
99361	1	.6	.7	100.0

## **Appendix H: Respondents' Comments – Reservoirs**

**Q.31: Comments about recreation experiences or concerns – Kachess Lake**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	49	49.0	49.0	49.0
A better survey	1	1.0	1.0	50.0
All is good, the water table seems very low now	1	1.0	1.0	51.0
Bathrooms were clean and kept up. Maybe a light would be helpful and soap. More spots at Gayle Creek	1	1.0	1.0	52.0
Beautiful views, serene	1	1.0	1.0	53.0
Consistently high levels on the reservoir will bring more users. Will need to expand camping areas. Will also need docks for public use	1	1.0	1.0	54.0
Do what you have to with the reservoir level. We enjoyed our stay and the Iron Horse Trail	1	1.0	1.0	55.0
Don't drain the lakes! We went to Rimrock one year and it was a puddle. We packed up and left	1	1.0	1.0	56.0
Everyone likes a nice water level, but the irrigation needs should come first. I enjoy the lake either way, very full or very low. There's always something one can do. P.S.: I would like to see the campgrounds kept open later in the fall and so you could get a boat into the lake for fishing after they close	1	1.0	1.0	57.0
Fill the reservoir	1	1.0	1.0	58.0
First time visitor. Very nice campground with the exception of limited restroom facilities	1	1.0	1.0	59.0
Get the Feds to hire park rangers to patrol areas around Lake to stop littering, firing of guns, leaving unattended campfires, etc. It's way out of control!!!	1	1.0	1.0	60.0
Glad to have found a place on earth like heaven!	1	1.0	1.0	61.0
Great management by Thousand Trails	1	1.0	1.0	62.0
Great site	1	1.0	1.0	63.0
Greatly enjoyed my stay. Campground Host friendly, helpful	1	1.0	1.0	64.0
Grounds-Keepers are very nice!	1	1.0	1.0	65.0
I don't like Yakima Basin but love Lake Kachess and I don't want you guys to share your water	1	1.0	1.0	66.0
I had a great time - It was our first time camping	1	1.0	1.0	67.0
I like campgrounds/sites where there is vegetated space between them for more privacy. I don't like being able to see the camper next/around me	1	1.0	1.0	68.0

	Frequency	Percent	Valid Percent	Cumulative Percent
Increase the reservoir level	1	1.0	1.0	69.0
Indians should not have preferential treatment. The US Senate should abrogate all treaties	1	1.0	1.0	70.0
It is a very pleasant experience coming here. Little annoyances are not that bad. It's a big reservoir. Speed limit on Little Kachess is not enforced - Jet-skis	1	1.0	1.0	71.0
It seems like there are more and more folks ignoring the rules. We come here for peace and quiet with our families. Not for drunk, loud, obnoxious partying	1	1.0	1.0	72.0
Keep it natural	1	1.0	1.0	73.0
Keep water level up high	1	1.0	1.0	74.0
Lake Kachess is the most beautiful lake I have ever been to	1	1.0	1.0	75.0
Less dust	1	1.0	1.0	76.0
More and more private residences concern us. Don't want the CG facilities to go away. Love it!	1	1.0	1.0	77.0
More campsites + I wish they would stock the lake with fish	1	1.0	1.0	78.0
More toilet paper and showers	1	1.0	1.0	79.0
N/A	1	1.0	1.0	80.0
No	1	1.0	1.0	81.0
Pete and Linda Lewis were great camp hosts. Friendly and informative people. They kept campsites clean and safe as well as provided comfort and safety to campers	1	1.0	1.0	82.0
Please don't allow other campers to destroy our camping experience by being obnoxious and rude and not caring that they spoil others camping experience	1	1.0	1.0	83.0
Please hand out rules when people visit and give camp hosts more authority to deal with unruly folks	1	1.0	1.0	84.0
Please have the water level very high so we can use the Lake for motorboating and fishing	1	1.0	1.0	85.0
Please keep this facility	1	1.0	1.0	86.0
Please, please rejuvenate and start keeping up the nature trails. We went through by trees, it was the most enjoyable part of our trip but some trails were tougher to navigate. The info signs were damaged by people taking a knife to them. Please, these trails are very informative and educational. When they are gone we will have nothing to show our kids and their kids. These trees and animals and vegetation are a part of the ecosystem and the planet, they should be taken care of	1	1.0	1.0	87.0

	Frequency	Percent	Valid Percent	Cumulative Percent
The camp hosts at Kachess Campground are wonderful	1	1.0	1.0	88.0
The Host - Bunnie + Jay are the best!	1	1.0	1.0	89.0
The operators of this Park are very good and keep things clean	1	1.0	1.0	90.0
This is our first time here	1	1.0	1.0	91.0
Very well maintained facilities. Hiking trails and interpretive trails need work	1	1.0	1.0	92.0
We love it here!!	1	1.0	1.0	93.0
We meet here as an extended family one weekend a year. The campground is quiet, in beautiful woods, with a friendly staff. The Lake gives opportunity for swimming, wading, sailing and lounging. Ability to make reservations very important	1	1.0	1.0	94.0
We usually begin our camping weekend on Thursday and commute to work in Seattle on Friday because it is hard to get reservations and spots fill fast Friday evening	1	1.0	1.0	95.0
When the lake is below the medium level it takes away from the experience	1	1.0	1.0	96.0
Why close Box Canyon so early in fall - could it stay open through September at least?	1	1.0	1.0	97.0
Worried about species in area - negative human impact	1	1.0	1.0	98.0
Years with very low water levels make Lake Kachess much less desirable. Keep water high!	1	1.0	1.0	99.0
Your survey was overkill, simplify it and you may get more response. Most Lake uses would best be served at about 65% to 80% of capacity	1	1.0	1.0	100.0

**Q.31: Comments about recreation experiences or concerns – Cle Elum Lake**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	51	51.5	51.5	51.5
A longer boat ramp for low water conditions would be nice	1	1.0	1.0	52.5
Any additional water storage would be good!	1	1.0	1.0	53.5
Better fishing. I like this campground because it is peaceful and very clean but my kids don't like to come because fishing is poor compared to other areas. If fishing were good we would come more often	1	1.0	1.0	54.5
Camp hosts are very nice	1	1.0	1.0	55.6
Clean campsites and friendly staff	1	1.0	1.0	56.6
Do not like how low the water level gets in the fall!	1	1.0	1.0	57.6
For the amount of water available in this State - we need more reservoirs for irrigation, recreation and wildlife to preserve for the future	1	1.0	1.0	58.6
Gravel at campsite please	1	1.0	1.0	59.6
I am a little concerned that the Black Rock Reservoir will be tied to energy legislation that changes how we obtain electricity!	1	1.0	1.0	60.6
I am concerned about the water levels. The year we had more water than in the past. But I'm concerned about future water levels	1	1.0	1.0	61.6
I enjoy this reservoir but want it to remain secluded because it is a beautiful place to spend time	1	1.0	1.0	62.6
I like water	1	1.0	1.0	63.6
I live to go to the beach during the summer months in Upper Kittitas County!	1	1.0	1.0	64.6
I love this lake (Lake Cle Elum), and love the memories I'm making with my family here. A higher average water level would give us more opportunities for further memories each year	1	1.0	1.0	65.7
I would prefer showers	1	1.0	1.0	66.7
It is a great area - We liked the campsite a lot - Everybody is very nice	1	1.0	1.0	67.7
It is difficult to get vehicles out of sand when water is very low	1	1.0	1.0	68.7
Keep the lake as full as possible for as long as possible during the summer and fall. Thanks!	1	1.0	1.0	69.7
Keep the water levels higher	1	1.0	1.0	70.7

	Frequency	Percent	Valid Percent	Cumulative Percent
Keeping Lake Cle Elum fuller during the summer is more pleasurable. I understand that it goes for irrigation but it's bad when they drain it so low that if we have a mild winter it never fills back up	1	1.0	1.0	71.7
Love it!	1	1.0	1.0	72.7
Maintain natural surroundings	1	1.0	1.0	73.7
More water would be nice in late summer	1	1.0	1.0	74.7
N/A	1	1.0	1.0	75.8
Need place to put trash	1	1.0	1.0	76.8
Need to create a usable boat launch for use when water is low	1	1.0	1.0	77.8
No	2	2.0	2.0	79.8
No boat ramps on lower water table for boaters to launch on. This intermingles boaters with beach swimmers	1	1.0	1.0	80.8
No, thanks. Just too many mosquitoes	1	1.0	1.0	81.8
Over developing land along Cle Elum Reservoir. Taking out flush toilets at Salmon La Sac Campground and no drying hand dispensers in bathroom	1	1.0	1.0	82.8
Please keep the lake levels high, best for everyone in this area and with all the new cabin owners coming in, it's just going to get busier	1	1.0	1.0	83.8
Put up a gate, daytime only. No driving on beach. Law was passed in 1992 about driving on beach	1	1.0	1.0	84.8
The camp fees are too high! Our camp hosts are the greatest. They are the reason we come back	1	1.0	1.0	85.9
The campsites need gravel, they are nothing but dirt	1	1.0	1.0	86.9
The Forest Service needs to learn to manage people and resources not just keep locking it up every time there's some problem! We all do not want to be in developed sites!!	1	1.0	1.0	87.9
The Hosts at the campgrounds have done a great job and are very helpful!	1	1.0	1.0	88.9
The hosts at Wish Poosh are great! They work hard and are very kind	1	1.0	1.0	89.9
The lake is beautiful - we love it - will continue to come here	1	1.0	1.0	90.9

	Frequency	Percent	Valid Percent	Cumulative Percent
The water in this reservoir is emptied rapidly. By the end of July, access is slim and is a mile or more walk to get to the lake and back, so swimming and fishing is not desirable	1	1.0	1.0	91.9
The water level at Cle Elum Lake should never be drawn down this low. It should be kept at medium or low in all months of year!	1	1.0	1.0	92.9
There are limited campground facilities and most campgrounds are full by Friday afternoons	1	1.0	1.0	93.9
This year seemed to be extreme in water levels. At the 4th of July it was so high there was no room to sit at beach. By Labor Day it was so low the beach was muddy and lots of stumps making it hard to put boats in water	1	1.0	1.0	94.9
Too much to fill out	1	1.0	1.0	96.0
Very nice host/hostess. Very clean camping. We greatly enjoyed our first camping trip of the season. Disappointed that the lake was so high, but we will be back throughout the summer to camp, hike, fish	1	1.0	1.0	97.0
Water level is drawn down to low cannot launch our boat. Fees for camping and launching are getting too high. Please put some gravel around the campsites	1	1.0	1.0	98.0
We love the lake - If the water level did not go extreme it would be better	1	1.0	1.0	99.0
Would like to see it the way it is for the public use	1	1.0	1.0	100.0

**Q.31: Comments about recreation experiences or concerns – Rimrock Lake**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	53	52.5	52.5	52.5
Campsite should be larger, spaced farther apart. Access to showers at site	1	1.0	1.0	53.5
Concerned about Game Dept. (Biology) planting bull trout in Rimrock. These fish feed on Kokanee molts and could eventually wipe out the Kokanee population!!	1	1.0	1.0	54.5
Did not use Rimrock Lake this trip. Camped here for fly fishing at Leech Lake	1	1.0	1.0	55.4
Don't ruin something great. Need more public access to the Lake	1	1.0	1.0	56.4
Fantastic area	1	1.0	1.0	57.4
Great experience - Thanks	1	1.0	1.0	58.4
Have many wonderful experiences	1	1.0	1.0	59.4
Hope the dam is maintained	1	1.0	1.0	60.4
I had a lot of fun, I would come again. Thanks for all you guys do!	1	1.0	1.0	61.4
I truly enjoy Rimrock. It's a great place	1	1.0	1.0	62.4
I would hate to see the reservoir become so empty that it would harm fish production and fishing in general	1	1.0	1.0	63.4
I would just like to see enough water flowing year round below the dam	1	1.0	1.0	64.4
Increased price and lack of amenities - Sites are not able to accommodate modern length RV's	1	1.0	1.0	65.3
Litter - make fines hefty and one might be surprised how fast the problem will cure itself!	1	1.0	1.0	66.3
Make surveys more detailed for individuals who don't use the reservoirs much	1	1.0	1.0	67.3
Make the game wardens go away	1	1.0	1.0	68.3
More garbage service. More picnic tables would be nice. We would not like to see the water much higher as we would lose our campsite	1	1.0	1.0	69.3
More water carry over would provide larger fish and much more recreational opportunity	1	1.0	1.0	70.3
My family has fished and hunted in this area for many years. The recreation of this area has improved and lowering the water levels would devastate this recreation area	1	1.0	1.0	71.3
N/A	1	1.0	1.0	72.3

	Frequency	Percent	Valid Percent	Cumulative Percent
Need lakes/river that you could water-ski closer to Yakima	1	1.0	1.0	73.3
Need more patrols to take care of the rude!	1	1.0	1.0	74.3
No	3	3.0	3.0	77.2
On occasion, the restrooms omit offensive odors - years 2004-2006. Not sure about this year	1	1.0	1.0	78.2
On Rimrock Lake - Figure out a way to have holdover fish remaining for the next year - and beyond	1	1.0	1.0	79.2
Please consider recreation opportunities at this lake instead of other concerns	1	1.0	1.0	80.2
Preventing 4 wheelers from polluting and tearing up lake bed in the fall! Less littering	1	1.0	1.0	81.2
Priorities for this reservoir are not being used as per original agreement	1	1.0	1.0	82.2
Quite, peaceful, unforgettable	1	1.0	1.0	83.2
Rimrock is an excellent location for families to spend quality time together and offers a wide variety of opportunities/activities. The water level greatly affects these activities already, so please do not draw it down any sooner!	1	1.0	1.0	84.2
Some type of posting on how close Jet-skis and motorboats are allowed to shoreline, swimmers safety	1	1.0	1.0	85.1
Thank you!	1	1.0	1.0	86.1
That when the reservoir was first built, recreation was second on the list but tends to be last in the years past for consideration	1	1.0	1.0	87.1
The flies and mosquitoes, pretty bad!	1	1.0	1.0	88.1
The Rimrock Lake is drained off very early in the season (End of Aug) which limits fall activities	1	1.0	1.0	89.1
They need more forest rangers in area, mostly at night. I'm a single mother with two small children. I would feel safer	1	1.0	1.0	90.1
To come here and relax is paradise. It is very peaceful, stress-relieving, and beautiful taking into account what it looks like today and all other days I have come here	1	1.0	1.0	91.1
Too low of water. Put in Black Rock Reservoir	1	1.0	1.0	92.1
Try to talk to people to take care of the trees more	1	1.0	1.0	93.1
Very friendly Forest Service	1	1.0	1.0	94.1
Very nice place to visit	1	1.0	1.0	95.0

	Frequency	Percent	Valid Percent	Cumulative Percent
We had a very pleasurable experience. The campground attendant was very pleasant and helpful. A little rain once in a while would be nice so we could have a campfire, can you arrange that?	1	1.0	1.0	96.0
We need to keep the water level high. More campsites	1	1.0	1.0	97.0
We need water storage	1	1.0	1.0	98.0
We really enjoyed the area. Love the trees, birds and water, also cool temps	1	1.0	1.0	99.0
Yes. I have had a great time here. Thanks	1	1.0	1.0	100.0

**Q.31: Comments about recreation experiences or concerns – Bumping Lake**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	60	51.7	51.7	51.7
A few more stumps removed from the shore would be nice	1	.9	.9	52.6
A great place for families - don't let out too much water for fish	1	.9	.9	53.4
Always enjoyable	1	.9	.9	54.3
Awesome ADA Facility	1	.9	.9	55.2
Beautiful place - clean. Relaxing	1	.9	.9	56.0
Bumping Lake is a beautiful and safe Lake when full - but can become dangerous very fast when level drops daily	1	.9	.9	56.9
Bumping Lake is great because it's remote, quiet, relatively undeveloped. Better than lakes and campsites along I-90	1	.9	.9	57.8
Enjoy getting out	1	.9	.9	58.6
Generators should run certain amounts of time. Pull out the stumps	1	.9	.9	59.5
Glad that Bumping Lake has seen very little development compared to some other sites - Changes have been made since I've been visiting here - but still remains primitive and unblemished	1	.9	.9	60.3
I don't know what more we could want. Electricity at RV sites would be very good for more people	1	.9	.9	61.2
I just appreciate what we have now. One concern I have is the area around the reservoir and beyond - the trees are dying from the "spruce worm" - I hope this changes - I love the White and Chinook Pass areas	1	.9	.9	62.1
I love Bumping Lake	1	.9	.9	62.9
It seems the recreation areas are having heavier usage and minor expansion would be good. Keep expansion simple with minor amenities (keeps Jet-skiing scumbags away)	1	.9	.9	63.8
It would be nice if stumps were removed	1	.9	.9	64.7
It would help to build Black Rock so we would not have to go so far	1	.9	.9	65.5
Just your doing a great job and thank you!	1	.9	.9	66.4
Keep it as is	1	.9	.9	67.2
Keep it rustic	1	.9	.9	68.1
Love it	1	.9	.9	69.0

	Frequency	Percent	Valid Percent	Cumulative Percent
Love that it is not overused	1	.9	.9	69.8
More camping spots on the reservoir	1	.9	.9	70.7
N/A	2	1.7	1.7	72.4
Needs showers, more fish	1	.9	.9	73.3
Nice lake, nice map	1	.9	.9	74.1
No	7	6.0	6.0	80.2
No motorboats - health of lake/rivers. More hiking trails or marking of them	1	.9	.9	81.0
None	1	.9	.9	81.9
Not enough rangers	1	.9	.9	82.8
People vacationing are a business here, couldn't have asked for better help and advice	1	.9	.9	83.6
Please don't ruin what we have	1	.9	.9	84.5
Please keep horse activities open for people in the roadless areas	1	.9	.9	85.3
Please keep it as natural as possible!	1	.9	.9	86.2
Please replace recreational facilities sunken when the reservoir level is raised	1	.9	.9	87.1
Preserve this unique area	1	.9	.9	87.9
Remove the stumps and dredge out the bottom closer to the dam	1	.9	.9	88.8
Start charging for picnicking at the boat launch day use area. Maybe that would reduce some of the trash problems	1	.9	.9	89.7
Stock more fish. I would love to come here if I knew there was more fish	1	.9	.9	90.5
Stock the lake with more fish and restrict jet-skis and jet boats. Make it a no wake lake	1	.9	.9	91.4
Stumps removed	1	.9	.9	92.2
Take out the stumps	1	.9	.9	93.1
The fish are more important than my swimming and picnicking	1	.9	.9	94.0
The form was the most confusing thing I have ever filled out. We want water high enough to not get hurt or hurt the boat	1	.9	.9	94.8
The large number of trees that are dying from disease	1	.9	.9	95.7
This form was very complicated. Most people are trying to relax	1	.9	.9	96.6
Wonderful place - we enjoyed our visit	1	.9	.9	97.4
Would like to be able to use Bumping Campground again and again	1	.9	.9	98.3

	Frequency	Percent	Valid Percent	Cumulative Percent
Would like to have propane available, small store	1	.9	.9	99.1
Would prefer Black Rock and Wymer Reservoirs if there is a choice. Especially if will keep other reservoirs fuller longer!	1	.9	.9	100.0

**Q.31: Comments about recreation experiences or concerns – Clear Lake**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	44	51.8	51.8	51.8
Beautiful	1	1.2	1.2	52.9
Beautiful place that I can't wait to visit again. Quiet, beautiful, plenty to do	1	1.2	1.2	54.1
Best place to be by myself, pretty safe	1	1.2	1.2	55.3
Camping is one of the few old fashioned activities still available to the public and should be preserved and funded to help society in general	1	1.2	1.2	56.5
Everything is pretty much great, but there does need to be some sort of mosquito control. 100% deet doesn't work!!	1	1.2	1.2	57.6
Great rangers	1	1.2	1.2	58.8
Greatest lake that I have ever been at so far!!!	1	1.2	1.2	60.0
Hope additional reservoirs are built because of this. It would help take some of the people pressure off this place	1	1.2	1.2	61.2
I have camped and fished this area for more than 60 years! The area is extremely important to me. My mother's ashes were put into Naches River. Mine will be also!	1	1.2	1.2	62.4
I would be closer to Black Rock if it ever gets built in my lifetime	1	1.2	1.2	63.5
If river or lake levels are lower due to this project - then my vote is NO!	1	1.2	1.2	64.7
Just the broken glass around the lake	1	1.2	1.2	65.9
Keep it clean, everybody does their part so we all can enjoy	1	1.2	1.2	67.1
Keep it clean/simple	1	1.2	1.2	68.2
Keep them open!	1	1.2	1.2	69.4
Liked the walkways and dock areas. Great for people with W/C or older people	1	1.2	1.2	70.6
Love the views and clear water	1	1.2	1.2	71.8
More gas stations around	1	1.2	1.2	72.9
Mosquitoes are very bad at this reservoir	1	1.2	1.2	74.1
N/A	4	4.7	4.7	78.8
Need more rangers	1	1.2	1.2	80.0
Nice rangers	1	1.2	1.2	81.2
No	2	2.4	2.4	83.5

	Frequency	Percent	Valid Percent	Cumulative Percent
No matter how intolerable conditions are I will keep going to my favorite recreation	1	1.2	1.2	84.7
Nope	1	1.2	1.2	85.9
Rimrock Reservoir drain early fall for what they call the "flip flop". It's said to aid the fish, however it seems to be driven by the whitewater companies	1	1.2	1.2	87.1
Thanks for fixing the floating dock	1	1.2	1.2	88.2
The camp ranger (female) was very inconsiderate and treating us like kids. Black Rock Dam should be done. Complete it, necessary for irrigation	1	1.2	1.2	89.4
The Lake is in great shape. Best I've seen it in years thanks to adequate snow pack. Good fishing!	1	1.2	1.2	90.6
The reservoir at the time of my visit was great. Thanks for the hard work	1	1.2	1.2	91.8
Very dry conditions	1	1.2	1.2	92.9
We enjoy coming, peaceful	1	1.2	1.2	94.1
We have always enjoyed camping at Clear Lake. It's close but far enough away to get away from the normal routine	1	1.2	1.2	95.3
We like the day use because it's quiet and clean. Two more docks would be nice but not a must	1	1.2	1.2	96.5
We paid \$80 for an access pass which we were told would cover everything; but it doesn't cover day use sites managed by private companies	1	1.2	1.2	97.6
We used to have a dock! Where is it?	1	1.2	1.2	98.8
We would be willing to give up recreating in portions of the reservoir to protect T&E or sensitive species. Seeing a wide variety of plants and animals while boating is an important part of what we want to experience	1	1.2	1.2	100.0

**Q.31: Comments about recreation experiences or concerns – Lake Easton**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	91	54.2	54.2	54.2
A great day today!	1	.6	.6	54.8
Add recreational uses/accesses to spread users out	1	.6	.6	55.4
All good	1	.6	.6	56.0
Beautiful State Park, could use ATM and firewood deliveries in park	1	.6	.6	56.5
Camping is crowded - so provide more to disperse users	1	.6	.6	57.1
Camping space too close. No fish in Easton	1	.6	.6	57.7
Close to home town for quick getaway	1	.6	.6	58.3
Couldn't launch at bigger reservoirs, horsepower limit on Lake Easton, so - motorized use through good weather Aug-Sept. desirable in Kittitas County	1	.6	.6	58.9
Didn't use or come for "the reservoir". Easy access along our trip to Montana, nice services	1	.6	.6	59.5
Don't lower the lake - it's great as it is	1	.6	.6	60.1
First experience here - will be back two or three times per year	1	.6	.6	60.7
Freeway is loud - help with sound barrier here - beautiful scenery is the draw for us	1	.6	.6	61.3
Get some cool surveys. These are worse than tests at school	1	.6	.6	61.9
Grand-daughters love to come here - enjoy woods, bike trails and lake beach	1	.6	.6	62.5
Great camping for multi-generation families	1	.6	.6	63.1
Great Park	1	.6	.6	63.7
I'd rather see changes being made to protect fish and wildlife than to benefit recreation. Recreation is important to us but not the priority in long term	1	.6	.6	64.3
I am very concerned about additional flooding for recreational uses - is detrimental to wildlife habitats	1	.6	.6	64.9
I enjoy my visits here. I don't want them to change anything with the lake	1	.6	.6	65.5
I was surprised at the amount of garbage on the ground at the beach and the State Park campground	1	.6	.6	66.1
Improve fishery	1	.6	.6	66.7

	Frequency	Percent	Valid Percent	Cumulative Percent
Irrigation of crops is important as well as fish habitat. If the lake was used and became too high/low, we would find another location for our yearly family camp	1	.6	.6	67.3
Is this lake planted with fish?	1	.6	.6	67.9
It gets busier and busier - harder to get a campsite unless well in advance	1	.6	.6	68.5
It is enjoyable how it is now	1	.6	.6	69.0
It would be nice if they would have more restrooms and showers. Also, if there was more camping areas available	1	.6	.6	69.6
Just passing through	1	.6	.6	70.2
Keep reservations right	1	.6	.6	70.8
Keep the quality of the State Park up to present status	1	.6	.6	71.4
Lack of grey water dump sites at Lake Easton State Park. Lack of recycling items other than aluminum cans	1	.6	.6	72.0
Last year with parking fees - seemed to lessen crowded parking lot	1	.6	.6	72.6
Long survey and I know little about the area	1	.6	.6	73.2
More access places would disperse users	1	.6	.6	73.8
More areas to access!	1	.6	.6	74.4
More shoreline access points. Plant fish to improve catches	1	.6	.6	75.0
N/A	1	.6	.6	75.6
Need fish hatchery	1	.6	.6	76.2
Need pier/docks	1	.6	.6	76.8
Need more campgrounds	1	.6	.6	77.4
Nice place, Lake Easton	1	.6	.6	78.0
No	6	3.6	3.6	81.5
No river activities on Upper Yakima/tubes to rent/boats, etc. More water facets	1	.6	.6	82.1
No, it was great	1	.6	.6	82.7
None	2	1.2	1.2	83.9
Nope	1	.6	.6	84.5
Not enough campsites	1	.6	.6	85.1
Once a year family reunion centrally located, we would reserve a kitchen. Shelter family spot if there was one	1	.6	.6	85.7
Plant fish!	1	.6	.6	86.3

	Frequency	Percent	Valid Percent	Cumulative Percent
Plant or improve native fishery	1	.6	.6	86.9
Please clean up shoreline debris	1	.6	.6	87.5
Please don't destroy this Park by eliminating the beacy - it's our family favorite place to camp	1	.6	.6	88.1
Please keep making it family friendly. Thank you for keeping it clean and nice	1	.6	.6	88.7
Some reservoirs are unterutilized for recreation due to: 1. underdevelopment, 2. Low levels at late summer recreation periods	1	.6	.6	89.3
Sound barrier by freeway would help	1	.6	.6	89.9
Survey too long for recreationists not impacted here by level of this reservoir	1	.6	.6	90.5
Survey was too complicated - don't understand irrigation/water issues to know impact of adding storage	1	.6	.6	91.1
Thanks for making parks clean. Put more recycle bins out for plastic, glass, paper	1	.6	.6	91.7
The only beach area is a long walk with kids from the campground	1	.6	.6	92.3
The Rangers at Lake Easton are great!	1	.6	.6	92.9
Things are getting crowded, especially during later summer, provide new areas on reservoirs you have already	1	.6	.6	93.5
This reservoir need stocked for kids	1	.6	.6	94.0
Very nice place, very peaceful, we're all having a good time, very clean	1	.6	.6	94.6
Was willing to pay entrance fee, but nice no longer have to	1	.6	.6	95.2
Water levels appeared low at Lake Kachess and Keechelus, which means we cannot visit the area for recreation	1	.6	.6	95.8
We've enjoyed the facilities and the picnic	1	.6	.6	96.4
We bought a new cabin right across from Lake Easton for the recreation and like the reservoir filled in the summer	1	.6	.6	97.0

	Frequency	Percent	Valid Percent	Cumulative Percent
We love the area and are excited to plan our next trip!	1	.6	.6	97.6
We love to kayak on this lake - we find it very fun and scenic	1	.6	.6	98.2
Well you change the water everything will change with nature could be good or bad	1	.6	.6	98.8
Wonderful spot	1	.6	.6	99.4
Would hate to see lake(s) drained to point where they are not useable by citizens for many/all of activities listed	1	.6	.6	100.0

## **Appendix I: Where Visitors Can Find Their Desired Experience on the Rivers**

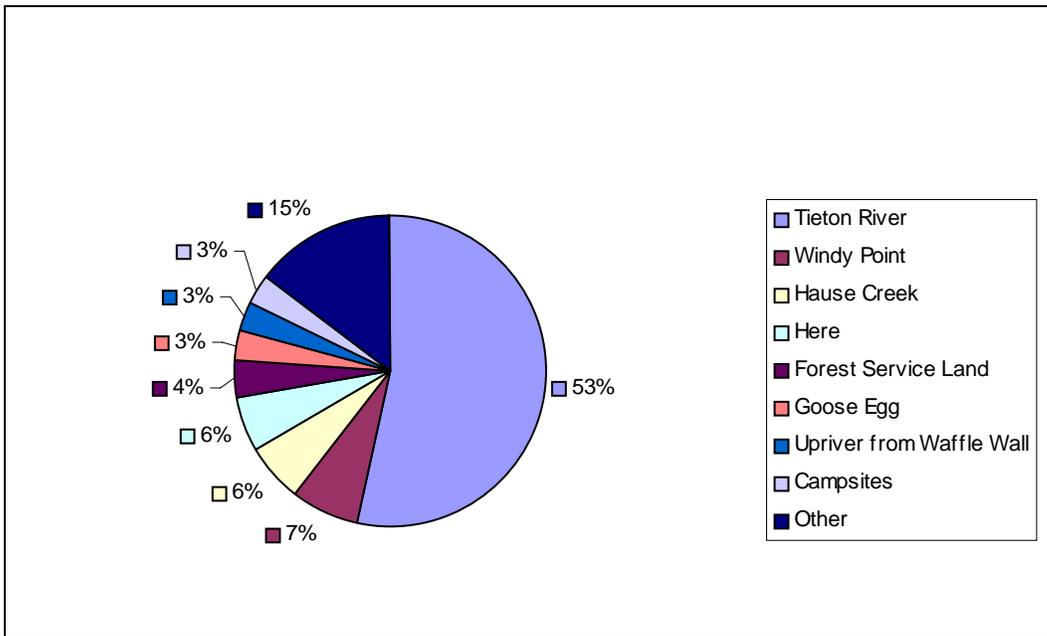


Figure 25. Where visitors find their desired experience on the Tieton River.

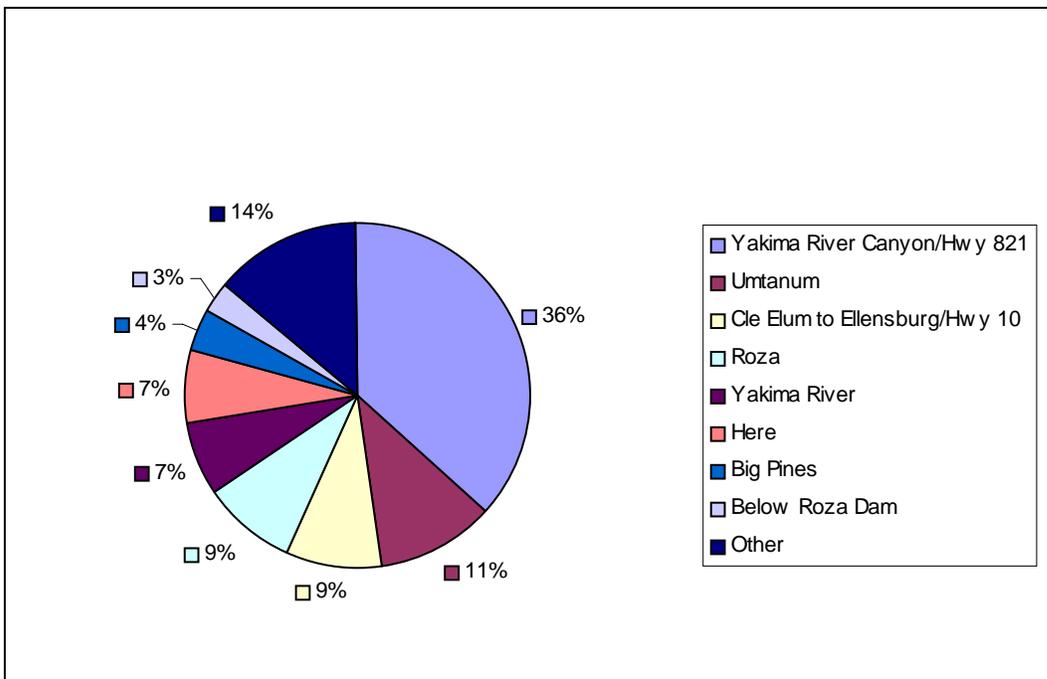


Figure 26. Where visitors find their desired experience on the Yakima River.

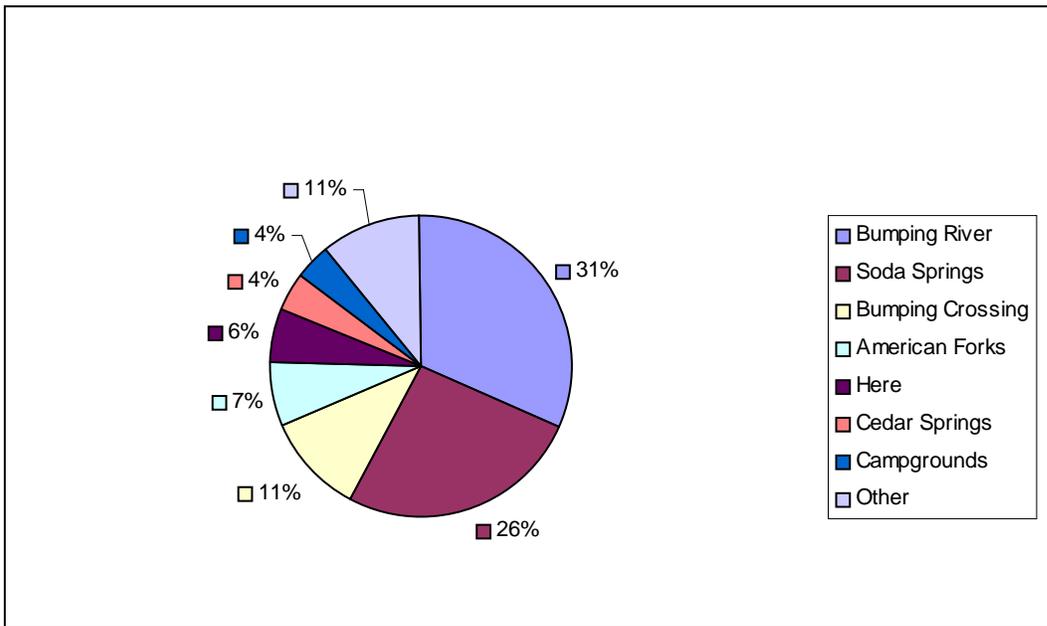


Figure 27. Where visitors find their desired experience on the Bumping River.

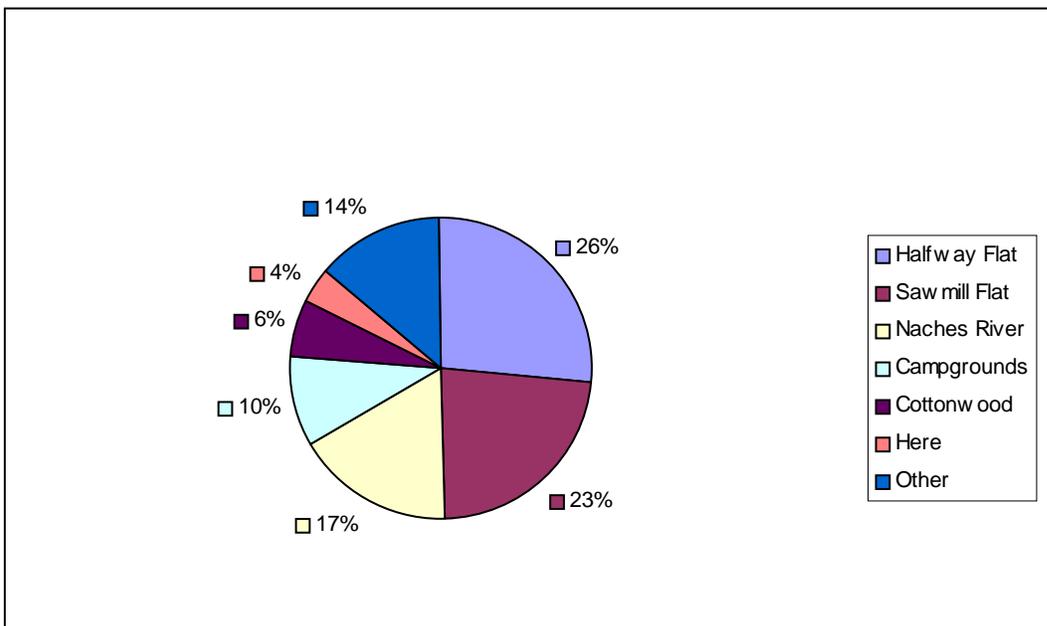


Figure 28. Where visitors find their desired experience on the Naches Rivers.

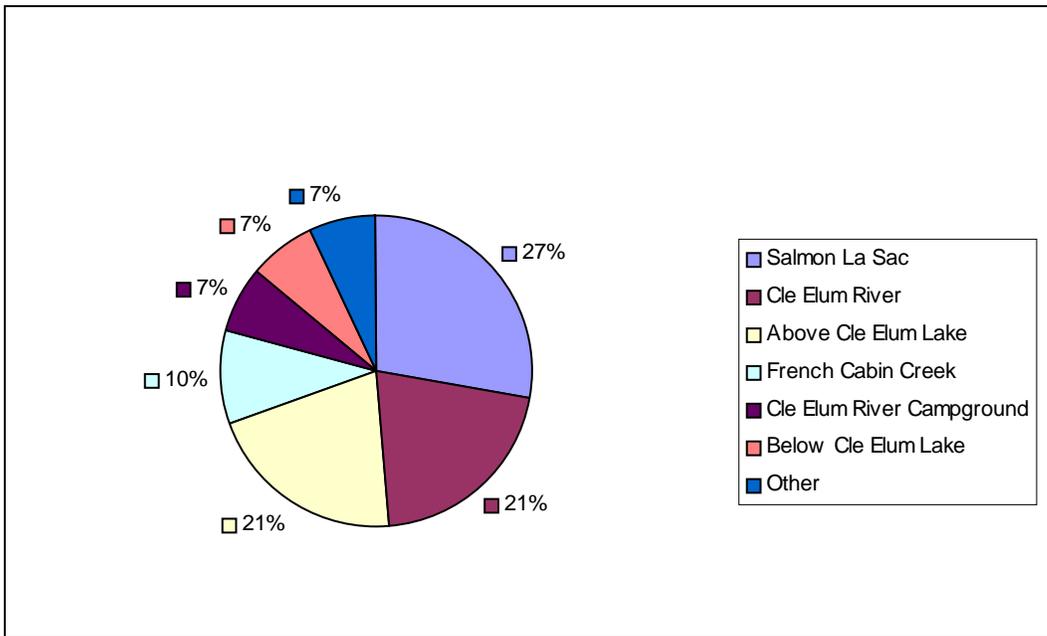


Figure 29. Where visitors find their desired experience on the Cle Elum River.

**Appendix J: Where Visitors Can Find Their Desired Experience at Other Nearby Rivers Within the Yakima River Basin**

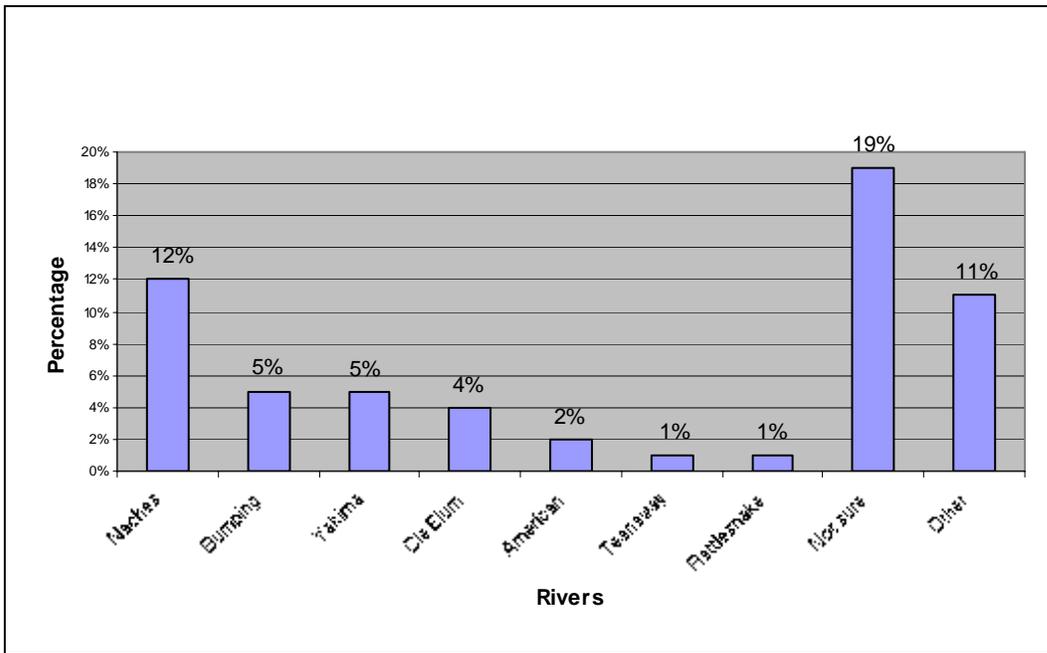


Figure 30. Nearby rivers where Tieton River visitors find desired experience.

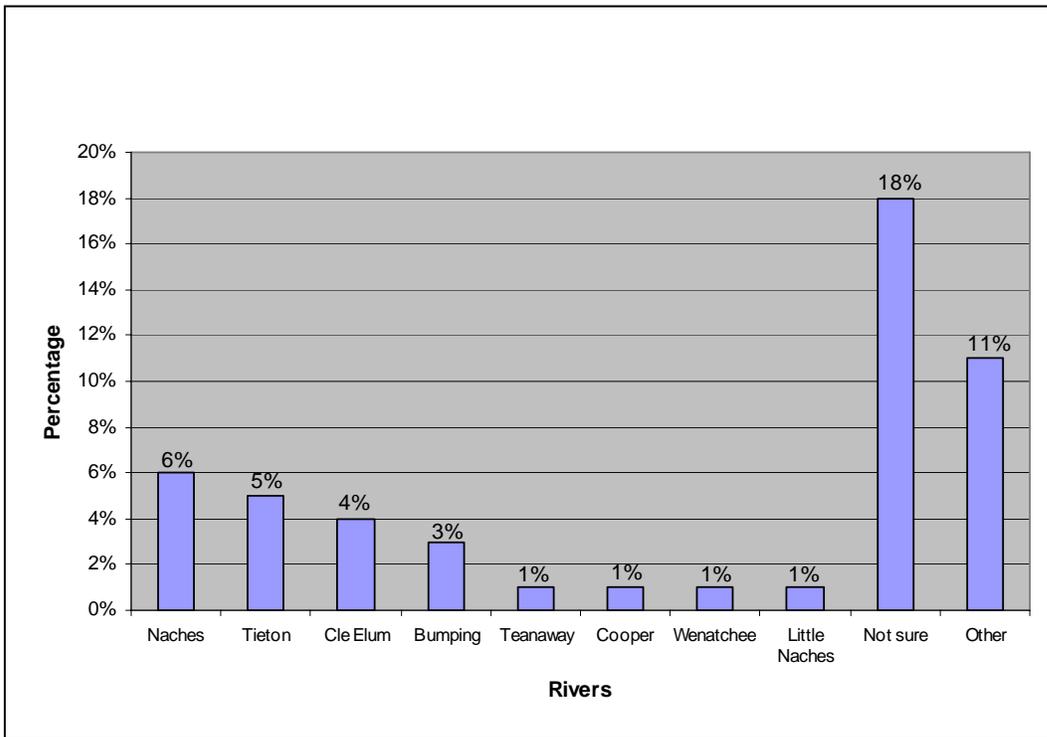


Figure 31. Nearby rivers where Yakima River visitors find desired experience.

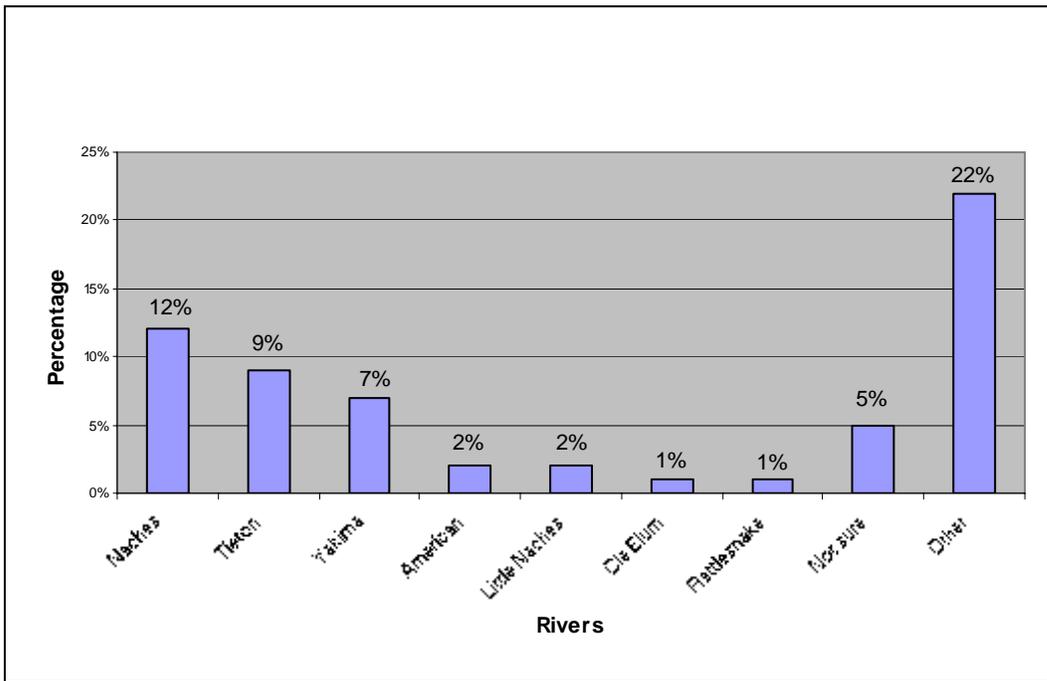


Figure 32. Nearby rivers where Bumping River visitors find desired experience.

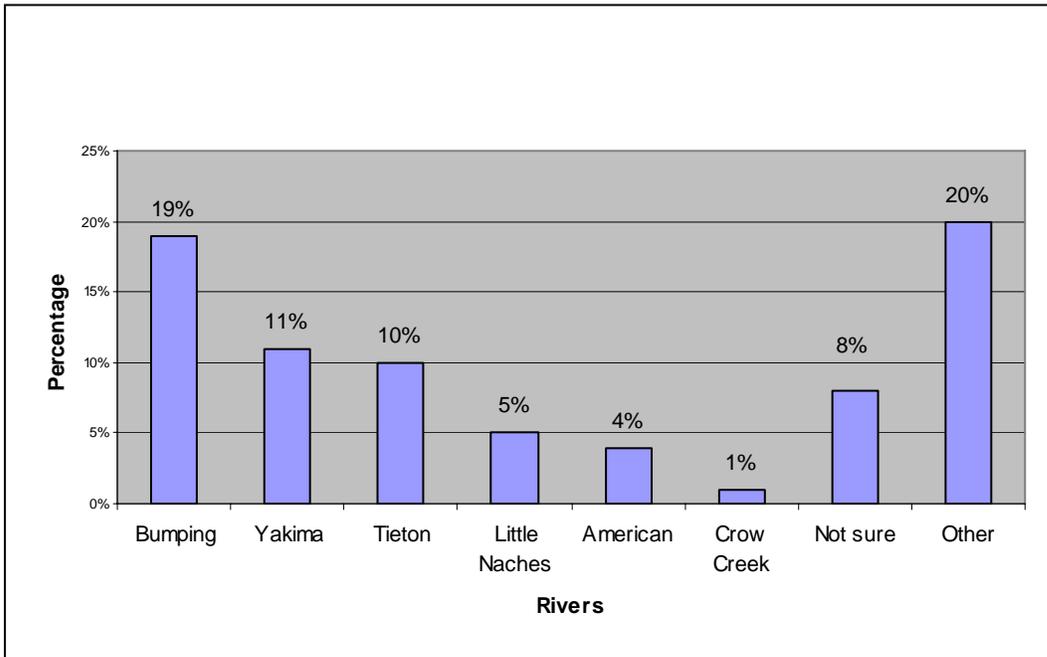


Figure 33. Nearby rivers where Naches River visitors find desired experience.

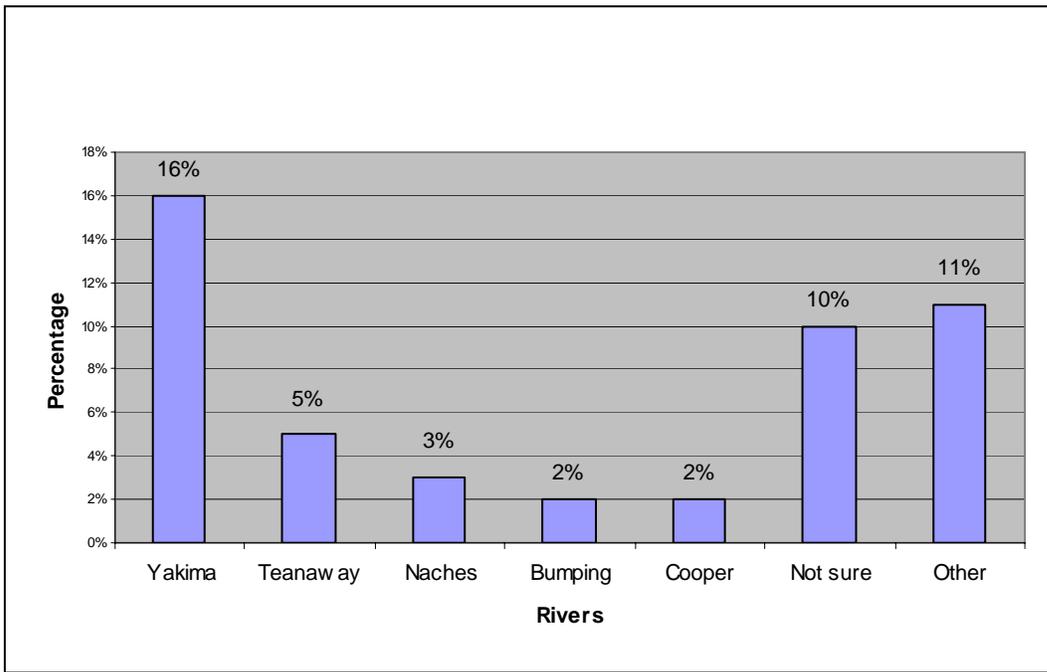


Figure 34. Nearby rivers where Cle Elum River visitors find desired experience.

## **Appendix K: Names and Locations of Facilities Used at the Rivers**

Table 56. Names and locations of facilities used by Tieton River visitors

Facility names and locations	Percentage
River camps:	
Windy Point	31%
Hause Creek	26%
Dispersed/Forest Service Land	20%
Tieton Road	9%
Willows	6%
Goose Egg	3%
Other	6%
Parking areas:	
Windy Point	29%
Tieton Road	24%
Bridge take-out	19%
Hause Creek	14%
Tim's Pond	10%
Goose Egg	5%
Boat launch:	
Primitive launch	33%
Windy Point	25%
Tieton Road	8%
Other	33%
Picnic areas: <sup>1</sup>	
Goose Egg	100%
Sandbars/Beaches:	
Hause Creek	29%
Tieton Road	29%
Goose Egg	14%
Tim's Pond	14%
Other	14%
Trails:	
Hause Creek	43%
Bear Creek	14%
Goose Egg	14%
Windy Point	14%
Other	14%
Restrooms:	
Hause Creek	33%
Windy Point	28%
Goose Egg	6%
Tim's Pond	6%
Wild Rose	6%
Willows	6%
Other	17%

<sup>1</sup> Only two respondents gave facility names.

Table 57. Names and locations of facilities used by Yakima River visitors

Facility names and locations	Percentage
<b>River camps:</b>	
Umtanum	39%
Big Pines	32%
Roza	11%
Red's	7%
Other	11%
<b>Parking areas:</b>	
Roza	35%
Ringer	20%
Umtanum	15%
Big Pines	7%
Along Hwy 821	4%
Red's	4%
Other	9%
<b>Boat launch:</b>	
Ringer	29%
Umtanum	21%
Roza	14%
Red's	11%
Irene Reinhart	7%
Big Pines	4%
Other	14%
<b>Picnic areas:</b>	
Roza	67%
Other	33%
<b>Sandbars/Beaches:</b>	
Roza	57%
Other	43%
<b>Trails:</b>	
Umtanum	83%
Other	17%
<b>Restrooms:</b>	
Roza	53%
Umtanum	29%
Big Pines	12%
Other	6%
<b>Other facilities:</b>	
Highway pullouts	57%
Garbage cans	29%
Umtanum Bridge	14%

Table 58. Names and locations of facilities used by Bumping River visitors

Facility names and locations	Percentage
<b>River camps:</b>	
Soda Springs	50%
American Forks	18%
Cougar Flats	8%
Bumping Crossing	6%
Pleasant Valley	4%
Other	4%
<b>Parking areas:</b>	
Bumping Lake	46%
Soda Springs	18%
Bumping Crossing	9%
Other	27%
<b>Boat launch:</b>	
Bumping Lake	86%
Other	14%
<b>Picnic areas:</b>	
Bumping Lake	33%
Soda Springs	20%
Bumping Crossing	7%
Cedar Springs	7%
Cougar Flats	7%
Other	27%
<b>Sandbars/Beaches:</b>	
Soda Springs	36%
Bumping River	27%
American Forks	9%
Bumping Crossing	9%
Bumping Lake	9%
Other	9%
<b>Trails:</b>	
Soda Springs	52%
American Forks	8%
Boulder Cave	8%
Bumping Crossing	8%
Cougar Flats	4%
Deep Creek	4%
Indian Flat	4%
Other	12%
<b>Restrooms:</b>	
Soda Springs	52%
Campgrounds	16%
Bumping Lake	10%
Bumping Crossing	7%
Cedar Springs	7%
Barton Creek	3%
Cougar Flats	3%

Table 59. Names and locations of facilities used by Naches River visitors

Facility names and locations	Percentage
<b>River camps:</b>	
Sawmill Flats	40%
Halfway Flats	29%
Cottonwood	14%
Other	17%
<b>Parking areas:</b>	
Halfway Flats	40%
Boulder Cave	20%
Sawmill Flats	20%
Cottonwood	10%
Other	10%
<b>Picnic areas:</b>	
Sawmill Flats	30%
Halfway Flats	20%
Boulder Cave	10%
Cottonwood	10%
Other	30%
<b>Sandbars/Beaches:</b>	
Sawmill Flats	38%
Halfway Flats	25%
Cottonwood	13%
Other	25%
<b>Trails:</b>	
Boulder Cave	39%
Halfway Flats	31%
Edgar Rock	8%
Other	23%
<b>Restrooms:</b>	
Halfway Flats	35%
Sawmill Flats	30%
Cottonwood	10%
Other	25%

Table 60. Names and locations of facilities used by Cle Elum River visitors

Facility names and locations	Percentage
<b>River camps:</b>	
Salmon La Sac	50%
Cle Elum River Camp	21%
Red Mountain	13%
French Cabin Creek	4%
Wish Poosh	4%
Other	8%
<b>Parking areas:</b>	
Salmon La Sac	55%
Cle Elum River Camp	18%
Cooper River trailhead	9%
French Cabin Creek	9%
Wish Poosh	9%
<b>Boat launch: <sup>1</sup></b>	
Wish Poosh	100%
<b>Picnic areas:</b>	
Salmon La Sac	70%
Red Mountain	20%
Cle Elum River Camp	10%
<b>Sandbars/Beaches:</b>	
Salmon La Sac	56%
Cle Elum River Camp	11%
Cooper River	11%
Cle Elum Lake	11%
Red Mountain	11%
<b>Trails:</b>	
Salmon La Sac	50%
Cooper Lake	8%
Cooper River	8%
Wapplus Creek	8%
Other	25%
<b>Restrooms:</b>	
Salmon La Sac	57%
Cle Elum River Camp	14%
Cooper River	14%
Wish Poosh	7%
Other	7%

<sup>1</sup> Only two respondents gave facility names.

## **Appendix L: Respondents' Zip Codes – Rivers**

**Q.24: Zip codes (U.S. residents) – Tieton River**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	59601	1	1.0	1.0	1.0
	59801	1	1.0	1.0	2.0
	59912	1	1.0	1.0	3.0
	89041	1	1.0	1.0	4.0
	97006	1	1.0	1.0	5.1
	97009	1	1.0	1.0	6.1
	97028	2	1.9	2.0	8.1
	97030	1	1.0	1.0	9.1
	97051	1	1.0	1.0	10.1
	97202	1	1.0	1.0	11.1
	97206	1	1.0	1.0	12.1
	97211	1	1.0	1.0	13.1
	97213	1	1.0	1.0	14.1
	97214	1	1.0	1.0	15.2
	97219	1	1.0	1.0	16.2
	97267	1	1.0	1.0	17.2
	97401	1	1.0	1.0	18.2
	97701	2	1.9	2.0	20.2
	98001	1	1.0	1.0	21.2
	98010	1	1.0	1.0	22.2
	98019	2	1.9	2.0	24.2
	98021	1	1.0	1.0	25.3
	98022	1	1.0	1.0	26.3
	98026	1	1.0	1.0	27.3
	98032	1	1.0	1.0	28.3
	98038	1	1.0	1.0	29.3
	98042	2	1.9	2.0	31.3
	98045	3	2.9	3.0	34.3
	98057	1	1.0	1.0	35.4
	98058	1	1.0	1.0	36.4
	98059	1	1.0	1.0	37.4
	98103	2	1.9	2.0	39.4
	98105	1	1.0	1.0	40.4
	98106	1	1.0	1.0	41.4
	98107	1	1.0	1.0	42.4
	98109	1	1.0	1.0	43.4
	98112	2	1.9	2.0	45.5
	98115	2	1.9	2.0	47.5
	98117	1	1.0	1.0	48.5
	98122	1	1.0	1.0	49.5
	98136	1	1.0	1.0	50.5
	98177	1	1.0	1.0	51.5
	98198	1	1.0	1.0	52.5

	Frequency	Percent	Valid Percent	Cumulative Percent
98223	1	1.0	1.0	53.5
98296	2	1.9	2.0	55.6
98349	1	1.0	1.0	56.6
98366	1	1.0	1.0	57.6
98368	2	1.9	2.0	59.6
98371	2	1.9	2.0	61.6
98387	1	1.0	1.0	62.6
98390	1	1.0	1.0	63.6
98405	1	1.0	1.0	64.6
98408	1	1.0	1.0	65.7
98444	3	2.9	3.0	68.7
98467	1	1.0	1.0	69.7
98502	1	1.0	1.0	70.7
98503	1	1.0	1.0	71.7
98532	2	1.9	2.0	73.7
98568	1	1.0	1.0	74.7
98570	1	1.0	1.0	75.8
98580	1	1.0	1.0	76.8
98663	1	1.0	1.0	77.8
98826	2	1.9	2.0	79.8
98902	2	1.9	2.0	81.8
98903	1	1.0	1.0	82.8
98908	4	3.9	4.0	86.9
98937	2	1.9	2.0	88.9
98944	2	1.9	2.0	90.9
98951	1	1.0	1.0	91.9
99301	2	1.9	2.0	93.9
99320	2	1.9	2.0	96.0
99337	1	1.0	1.0	97.0
99352	1	1.0	1.0	98.0
99353	1	1.0	1.0	99.0
99354	1	1.0	1.0	100.0

**Q.24: Zip codes (U.S. residents) – Yakima River**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12046	1	.7	1.0	1.0
	47401	1	.7	1.0	2.0
	83843	1	.7	1.0	3.0
	98001	2	1.5	2.0	5.0
	98003	1	.7	1.0	5.9
	98019	1	.7	1.0	6.9
	98031	1	.7	1.0	7.9
	98032	1	.7	1.0	8.9
	98033	2	1.5	2.0	10.9
	98034	1	.7	1.0	11.9
	98036	1	.7	1.0	12.9
	98045	2	1.5	2.0	14.9
	98052	1	.7	1.0	15.8
	98055	1	.7	1.0	16.8
	98065	1	.7	1.0	17.8
	98072	1	.7	1.0	18.8
	98075	1	.7	1.0	19.8
	98092	2	1.5	2.0	21.8
	98103	1	.7	1.0	22.8
	98105	1	.7	1.0	23.8
	98109	2	1.5	2.0	25.7
	98115	1	.7	1.0	26.7
	98119	1	.7	1.0	27.7
	98122	1	.7	1.0	28.7
	98125	2	1.5	2.0	30.7
	98146	1	.7	1.0	31.7
	98155	1	.7	1.0	32.7
	98168	1	.7	1.0	33.7
	98188	1	.7	1.0	34.7
	98201	1	.7	1.0	35.6
	98272	1	.7	1.0	36.6
	98290	1	.7	1.0	37.6
	98310	1	.7	1.0	38.6
	98329	1	.7	1.0	39.6
	98337	1	.7	1.0	40.6
	98344	1	.7	1.0	41.6
	98346	1	.7	1.0	42.6
	98366	1	.7	1.0	43.6
	98367	1	.7	1.0	44.6
	98374	1	.7	1.0	45.5
	98433	1	.7	1.0	46.5
	98443	1	.7	1.0	47.5
	98444	1	.7	1.0	48.5

	Frequency	Percent	Valid Percent	Cumulative Percent
98499	1	.7	1.0	49.5
98506	1	.7	1.0	50.5
98528	1	.7	1.0	51.5
98801	2	1.5	2.0	53.5
98901	3	2.2	3.0	56.4
98902	4	3.0	4.0	60.4
98903	4	3.0	4.0	64.4
98908	3	2.2	3.0	67.3
98909	1	.7	1.0	68.3
98922	5	3.7	5.0	73.3
98925	1	.7	1.0	74.3
98926	19	14.2	18.8	93.1
98932	1	.7	1.0	94.1
98936	1	.7	1.0	95.0
98937	1	.7	1.0	96.0
98941	1	.7	1.0	97.0
98953	1	.7	1.0	98.0
99336	1	.7	1.0	99.0
99338	1	.7	1.0	100.0

**Q.24: Zip codes (U.S. residents) – Bumping River**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	6830	1	1.1	1.3	1.3
	83836	1	1.1	1.3	2.5
	85653	1	1.1	1.3	3.8
	96744	1	1.1	1.3	5.0
	98002	1	1.1	1.3	6.3
	98010	1	1.1	1.3	7.5
	98023	1	1.1	1.3	8.8
	98029	1	1.1	1.3	10.0
	98038	1	1.1	1.3	11.3
	98042	4	4.4	5.0	16.3
	98058	2	2.2	2.5	18.8
	98092	2	2.2	2.5	21.3
	98116	2	2.2	2.5	23.8
	98125	1	1.1	1.3	25.0
	98133	1	1.1	1.3	26.3
	98146	1	1.1	1.3	27.5
	98198	1	1.1	1.3	28.8
	98225	1	1.1	1.3	30.0
	98312	1	1.1	1.3	31.3
	98323	1	1.1	1.3	32.5
	98335	2	2.2	2.5	35.0
	98370	1	1.1	1.3	36.3
	98373	1	1.1	1.3	37.5
	98374	2	2.2	2.5	40.0
	98390	1	1.1	1.3	41.3
	98391	2	2.2	2.5	43.8
	98397	1	1.1	1.3	45.0
	98528	1	1.1	1.3	46.3
	98580	1	1.1	1.3	47.5
	98901	2	2.2	2.5	50.0
	98902	4	4.4	5.0	55.0
	98903	1	1.1	1.3	56.3
	98908	3	3.3	3.8	60.0
	98909	1	1.1	1.3	61.3
	98923	1	1.1	1.3	62.5
	98926	1	1.1	1.3	63.8
	98930	3	3.3	3.8	67.5
	98937	2	2.2	2.5	70.0
	98942	4	4.4	5.0	75.0
	98944	2	2.2	2.5	77.5
	98947	1	1.1	1.3	78.8
	98948	1	1.1	1.3	80.0
	98953	5	5.5	6.3	86.3

	Frequency	Percent	Valid Percent	Cumulative Percent
99138	1	1.1	1.3	87.5
99301	1	1.1	1.3	88.8
99336	1	1.1	1.3	90.0
99337	2	2.2	2.5	92.5
99338	1	1.1	1.3	93.8
99341	1	1.1	1.3	95.0
99350	1	1.1	1.3	96.3
99352	3	3.3	3.8	100.0

**Q.24: Zip codes (U.S. residents) – Naches River**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	86431	1	1.3	1.3	1.3
	97031	1	1.3	1.3	2.6
	97739	1	1.3	1.3	3.9
	98003	1	1.3	1.3	5.3
	98010	1	1.3	1.3	6.6
	98012	1	1.3	1.3	7.9
	98023	1	1.3	1.3	9.2
	98032	1	1.3	1.3	10.5
	98038	2	2.5	2.6	13.2
	98040	1	1.3	1.3	14.5
	98047	1	1.3	1.3	15.8
	98058	1	1.3	1.3	17.1
	98063	2	2.5	2.6	19.7
	98115	1	1.3	1.3	21.1
	98122	1	1.3	1.3	22.4
	98168	1	1.3	1.3	23.7
	98198	1	1.3	1.3	25.0
	98252	1	1.3	1.3	26.3
	98329	1	1.3	1.3	27.6
	98338	1	1.3	1.3	28.9
	98366	2	2.5	2.6	31.6
	98367	1	1.3	1.3	32.9
	98370	1	1.3	1.3	34.2
	98374	1	1.3	1.3	35.5
	98390	2	2.5	2.6	38.2
	98391	1	1.3	1.3	39.5
	98399	1	1.3	1.3	40.8
	98445	1	1.3	1.3	42.1
	98466	2	2.5	2.6	44.7
	98503	1	1.3	1.3	46.1
	98837	1	1.3	1.3	47.4
	98901	2	2.5	2.6	50.0
	98902	4	5.0	5.3	55.3
	98903	3	3.8	3.9	59.2
	98908	9	11.3	11.8	71.1
	98932	1	1.3	1.3	72.4
	98933	1	1.3	1.3	73.7
	98936	2	2.5	2.6	76.3
	98937	2	2.5	2.6	78.9
	98942	2	2.5	2.6	81.6
	98944	3	3.8	3.9	85.5
	98948	2	2.5	2.6	88.2
	99206	1	1.3	1.3	89.5

	Frequency	Percent	Valid Percent	Cumulative Percent
99208	1	1.3	1.3	90.8
99301	1	1.3	1.3	92.1
99320	1	1.3	1.3	93.4
99322	1	1.3	1.3	94.7
99337	2	2.5	2.6	97.4
99352	2	2.5	2.6	100.0

**Q.24: Zip codes (U.S. residents) – Cle Elum River**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	59840	1	1.6	1.9	1.9
	85365	1	1.6	1.9	3.8
	97022	1	1.6	1.9	5.7
	97058	2	3.3	3.8	9.4
	97225	1	1.6	1.9	11.3
	98012	1	1.6	1.9	13.2
	98020	1	1.6	1.9	15.1
	98021	1	1.6	1.9	17.0
	98022	1	1.6	1.9	18.9
	98023	1	1.6	1.9	20.8
	98026	1	1.6	1.9	22.6
	98031	1	1.6	1.9	24.5
	98043	1	1.6	1.9	26.4
	98051	1	1.6	1.9	28.3
	98052	1	1.6	1.9	30.2
	98055	1	1.6	1.9	32.1
	98075	2	3.3	3.8	35.8
	98077	1	1.6	1.9	37.7
	98087	1	1.6	1.9	39.6
	98103	5	8.2	9.4	49.1
	98119	1	1.6	1.9	50.9
	98121	1	1.6	1.9	52.8
	98144	1	1.6	1.9	54.7
	98166	1	1.6	1.9	56.6
	98178	1	1.6	1.9	58.5
	98188	1	1.6	1.9	60.4
	98226	2	3.3	3.8	64.2
	98275	1	1.6	1.9	66.0
	98312	2	3.3	3.8	69.8
	98338	1	1.6	1.9	71.7
	98390	1	1.6	1.9	73.6
	98407	1	1.6	1.9	75.5
	98408	1	1.6	1.9	77.4
	98801	1	1.6	1.9	79.2
	98837	1	1.6	1.9	81.1
	98903	1	1.6	1.9	83.0
	98908	1	1.6	1.9	84.9
	98922	4	6.6	7.5	92.5
	98926	2	3.3	3.8	96.2
	99216	1	1.6	1.9	98.1
	99353	1	1.6	1.9	100.0

## **Appendix M: Respondents' Comments – Rivers**

**Q.30: Comments about recreation experiences or concerns – Tieton River**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	38	36.9	36.9	36.9
A longer rafting season!	1	1.0	1.0	37.9
Always a pleasure/Great way to end a summer	1	1.0	1.0	38.8
An access point just below Hause Creek Campground has been shut down, I would like to see it open again: it had outhouses and good public access to the river	1	1.0	1.0	39.8
As long as the cfs is up, I plan on attending at least once a year	1	1.0	1.0	40.8
Birding - Pine issues - Spruce issues - Forest - Burning etc.	1	1.0	1.0	41.7
Clean Park and bathrooms. Very pleasant experience	1	1.0	1.0	42.7
Garbage left by people who don't seem to care	1	1.0	1.0	43.7
Great time. It is wonderful to see so many people and outfitters on the river	1	1.0	1.0	44.7
Have always enjoyed the whole area. Prefer to have minimal development in the camping areas - wonderful area year round!	1	1.0	1.0	45.6
How will Black Rock Reservoir affect the Tieton?	1	1.0	1.0	46.6
I'm from out of town	1	1.0	1.0	47.6
I am a professional river guide for Wildwater River Tours	1	1.0	1.0	48.5
I do enjoy using the campsite and the service manager that visited our campsite. Was very helpful to our every need if we did need his service, but none was needed at this time	1	1.0	1.0	49.5
I don't want campsites flooded, that's why we come to the area	1	1.0	1.0	50.5
I hope it will continue	1	1.0	1.0	51.5
I hope we don't ever lose our various access points along the Tieton River, or the September flows	1	1.0	1.0	52.4
I love coming here every year - we look forward to doing this section every fall but if the flow gets too low then we are unable to raft and unwilling to drive all this way	1	1.0	1.0	53.4
I only hope that it's not all about who has the most money in the end. I like spontaneous activity and strongly oppose the "Fee Demo" program and all that the "Rec. Pass" entails	1	1.0	1.0	54.4

	Frequency	Percent	Valid Percent	Cumulative Percent
I think better facilities need to be implemented for camping on the river, i.e. potable water and a restroom facility	1	1.0	1.0	55.3
I would like to see everything stay the same. This is a beautiful and exciting river, and is an important income source for my business	1	1.0	1.0	56.3
If the area were regulated like the wilderness areas, i.e. for backcountry (horseback) riders, it would be a lot cleaner. Post the area and enforce litter laws. Utilize a volunteer program for adults and children to take care of the areas	1	1.0	1.0	57.3
Increase awareness about littering and eliminate dumpsite!	1	1.0	1.0	58.3
It is a fabulous opportunity to join the WRRR Club to experience rafting and open my world to more primitive outdoor activities	1	1.0	1.0	59.2
It is a pleasure to share the Tieton with so many people who would otherwise never get the chance. Please continue the September release	1	1.0	1.0	60.2
It would be awesome if the river would flow more often. It would help us to come to the Tieton more often. Usually we make trips to BC in September, so I can only afford one weekend on the Tieton	1	1.0	1.0	61.2
It would be nice to have signs posted to advise campers of rafter access to the river. It would be nice to have manmade firepits (when fires are allowed)	1	1.0	1.0	62.1
Keep the release on the Tieton	1	1.0	1.0	63.1
Keep up the good work. Camp host was pleasant and congenial	1	1.0	1.0	64.1
Longer release season	1	1.0	1.0	65.0
Love Hause Creek campsite!	1	1.0	1.0	66.0
Love it at Windy Point and on the river	1	1.0	1.0	67.0
Loved it! Not too crowded	1	1.0	1.0	68.0
More months of water release. We rafters/kayakers love this river and would love to be able to run it more often	1	1.0	1.0	68.9

	Frequency	Percent	Valid Percent	Cumulative Percent
More water in river over longer period of time. Keep as much water in river on weekends as possible	1	1.0	1.0	69.9
New reservoir will open new boating sites - Rimrock and Clear Lake should restrict power boats. River flows should be moderated as well	1	1.0	1.0	70.9
No	1	1.0	1.0	71.8
Our family loves coming to the Tieton River at Windy Point Campground with our friends every year	1	1.0	1.0	72.8
Outfitters pay a fee and should have a good place to launch and take out	1	1.0	1.0	73.8
Please continue boatable flows on the Tieton!! And add more days if possible!	1	1.0	1.0	74.8
Please continue the September Rimrock draw down for the ability to kayak/raft in September	1	1.0	1.0	75.7
Please don't overdevelop the area by allowing further development. Maybe limit the commercial and private rafters. Offer more security patrols to limit the trash and partiers. Keep it primitive as much as possible. The river doesn't need more human intervention, just leave it alone and the surrounding area for river paddlers to enjoy the natural beauty. If you develop it further it just will make it easier for more multitudes of people to ruin the natural beauty and what solitude is left. If the dam drawdown can be extended fine, but don't ruin the higher longer flows with more development. Let the river be a river despite the artificial dam releases	1	1.0	1.0	76.7
Please keep recreational activity available for boaters	1	1.0	1.0	77.7
Please keep the boatable flows on the Tieton!	1	1.0	1.0	78.6
Please keep the "flip/flop" program in place	1	1.0	1.0	79.6
Rattlesnake Campground is as beautiful and pristine Class 3 river as any in the west. It rivals the N. Fork Skykomish and the Smith forks of N. California. It should be placed on the Wild and Scenic protection system. Its loss would be a tragedy	1	1.0	1.0	80.6
Release water over longer period to extend boating/rafting season, brings more tourism	1	1.0	1.0	81.6

	Frequency	Percent	Valid Percent	Cumulative Percent
Salmon conservation in the basin is more important than our recreation	1	1.0	1.0	82.5
The only problem we have is with the fire season and the total bans of wood campfires. No campfires reduces the enjoyment of the trip. We understand the reasoning, but that does not mean we have to like it	1	1.0	1.0	83.5
The Tieton flow seems fine the way it is. Please consider not changing it	1	1.0	1.0	84.5
The Tieton provides a quality river boating experience if the flows are high enough. Fire pan use should be encouraged. Campgrounds are overused and stressed, i.e. mutilated trees, excessive fire pits and garbage	1	1.0	1.0	85.4
The Tieton River Canyon is such a tremendous resource for the State. Wonderful scenery, canyon, wildlife and of course the water releases in month of September. Ideal recreation flow is 1200 to 1900 cfs. Higher flows, such as this year, are not as enjoyable and risky for many boaters if they swim. Plus, it takes less than two hours to go from Rimrock to Windy Point. Over 2100 cfs too high	1	1.0	1.0	86.4
There are too many commercial rafting permits! Private rafters and kayakers need to pay a use fee!	1	1.0	1.0	87.4
They are very enjoyable	1	1.0	1.0	88.3
This is a very rare area where one can stay and enjoy and the geology is superb	1	1.0	1.0	89.3
Very nice, Hwy noise a bit on the high side	1	1.0	1.0	90.3
We always enjoy every visit	1	1.0	1.0	91.3
We generally enjoy the quiet of the area. Convenience of getting here. We often police own area for garbage left behind by other campers and remove it to be taken home and disposed of properly by us	1	1.0	1.0	92.2
We like it here and look forward to coming back for years to come	1	1.0	1.0	93.2
We love it here - but a shower would be a great addition (even a solar one)	1	1.0	1.0	94.2
We love this area and I would not like to see a drastic change in what is taking place currently	1	1.0	1.0	95.1

	Frequency	Percent	Valid Percent	Cumulative Percent
We love visiting the Tieton every year, as long as the flows stay good we will be back	1	1.0	1.0	96.1
We really do love it	1	1.0	1.0	97.1
We would like to see this area policed more	1	1.0	1.0	98.1
Why was the American River not included in this study?	1	1.0	1.0	99.0
Windy Point and the Tieton River are wonderful	1	1.0	1.0	100.0

**Q.30: Comments about recreation experiences or concerns – Yakima River**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	58	43.3	43.3	43.3
Again - only do what is best for the National Scenic Wild Fishery/River	1	.7	.7	44.0
Appreciate having a park manager. Keeps area much cleaner and ...	1	.7	.7	44.8
Because of popularity, I like to seeing armed officers etc.	1	.7	.7	45.5
Best to create fully dammed reservoir - in long run - more storage, more regulated flow/irrigation. Balance power needs - fill excess during non peak time	1	.7	.7	46.3
BLM, should monitor number of people from private campground nearby, who dump trash and use facilities who do not pay fees. This private campground should provide services for its campers not the taxpayer/fee payers at this site. Thank you!	1	.7	.7	47.0
Brand new to this area and Country, so not aware of any concerns yet	1	.7	.7	47.8
Concerned about: over development along banks. Keep flows stabilized between 1400 - 2400 year round: better for trout and fishing	1	.7	.7	48.5
Could improve loading surfaces - gravel/rocks to set rig down on. Could be softer stuff? Grassy?	1	.7	.7	49.3
Day use fee should be on a sliding scale: \$6 boats, PWC; \$2 day use; \$1 park	1	.7	.7	50.0
Deepen Keechelus basin	1	.7	.7	50.7
Do what is best for the fishery	1	.7	.7	51.5
Don't change much - restrooms at Teanaway?	1	.7	.7	52.2
Don't change this experience too much - but Black Rock Project at least will not impact forested area	1	.7	.7	53.0
Don't like change, but we need the water storage. Don't like price of Black Rock - any water storage up there. Doesn't want to accept change or \$ it would mean	1	.7	.7	53.7
Drinking water would be nice	1	.7	.7	54.5
First time to river - like it. Could bulletin boards identify plants or risk issues	1	.7	.7	55.2
Fresh water well would be nice. Single fee area	1	.7	.7	56.0
Fun!	1	.7	.7	56.7

	Frequency	Percent	Valid Percent	Cumulative Percent
Great day and good luck with project	1	.7	.7	57.5
Great fun place each Labor Day	1	.7	.7	58.2
Great times, great people	1	.7	.7	59.0
Great trip for our youth group	1	.7	.7	59.7
I find it enjoyable every time out, but more so when fishing flows are conducive	1	.7	.7	60.4
I like what you have	1	.7	.7	61.2
I would like to see more shade trees in camping areas; large time length indicator signs at all put-ins for the lower pullout per the daily river flow	1	.7	.7	61.9
I would love to see summer flows reduced as much as possible w/o hurting farmers	1	.7	.7	62.7
If you limit/deplete the recreation use, families tend to fall apart, adding less ability for family time and outings	1	.7	.7	63.4
In general, additional dams on the river is ok if used for a specific purpose	1	.7	.7	64.2
Just trying different things out/locations/services/user types, etc.	1	.7	.7	64.9
Keep it simple - the irrigation, storage solutions, don't change things too much	1	.7	.7	65.7
Like this site the best	1	.7	.7	66.4
Love tubing and camping on the Yakima River. Love for it to stay as it is	1	.7	.7	67.2
Make no wake zone signs more noticeable. They are buried behind trees	1	.7	.7	67.9
Might like to see one campground with fuel service, with better roadmap to sites, etc.	1	.7	.7	68.7
Might need to stop farming in the desert - lessen need for more and more irrigation	1	.7	.7	69.4
More camp/RV spots	1	.7	.7	70.1
More group camping, shade, water	1	.7	.7	70.9
More shade	1	.7	.7	71.6
My concern is pollution - over population	1	.7	.7	72.4

	Frequency	Percent	Valid Percent	Cumulative Percent
My greatest concerns are: 1. Large artificial variations in flow; and 2. either perpetually high or low flow rates. The Yakima Canyon is a unique fishery and that should be protected	1	.7	.7	73.1
Need more places with tables and beach	1	.7	.7	73.9
Needs more garbage collection sites and port-a-potties	1	.7	.7	74.6
No	4	3.0	3.0	77.6
No houses. I'm worried about public access!!	1	.7	.7	78.4
None	2	1.5	1.5	79.9
Not at this time	1	.7	.7	80.6
Note: Wilson Creek turbidity is bad for fishery	1	.7	.7	81.3
Ok as is managed. Fresh water somewhere? Registration too far away - not near launch or camping	1	.7	.7	82.1
Ok, very nice people taking care of area	1	.7	.7	82.8
Proper flow regulation to be conducive for fish habitat	1	.7	.7	83.6
Protect fish - catch and release only, no bait, single barbless hooks. Even close the river to fishing some parts of the year	1	.7	.7	84.3
Reduce the flow - please!	1	.7	.7	85.1
Relaxing, wonderful bird life	1	.7	.7	85.8
Rock alluvial or washouts are natural and free - appreciate pullout access	1	.7	.7	86.6
Shade and water services	1	.7	.7	87.3
Shade is important, agency patrols very nice now	1	.7	.7	88.1
Signs not located/not visible, rules not known and Sheriff's citing. Pay station moved and not handy. Separate motorized launch from non would help also	1	.7	.7	88.8
Survey too long. CFS?	1	.7	.7	89.6
Thank you	1	.7	.7	90.3
Thank you for keeping these areas open for our enjoyment	1	.7	.7	91.0

	Frequency	Percent	Valid Percent	Cumulative Percent
The Yakima River is WA States jewel river fishing. It generates a lot of recreational activity and dollars to the State and local economies. Please don't do anything that will change the character of this river. Thank you.	1	.7	.7	91.8
This is a fantastic area! Can't believe it is not all protected. This is in incredible wildlife resource and destination for tourism. I am very concerned that the current "private" property next to the BLM parking lot will not be available for public use. This fragile environment should be protected permanently, so that it is not further degraded. I wonder if the Umtanum Canyon riverfront could be purchased to make a park? campground?	1	.7	.7	92.5
This river needs more regulation. There should be a daily use fee that could be used to clean up the river after the partiers and floaters destroy it every year! Also limit the number of fishing guides per day	1	.7	.7	93.3
This survey isn't exactly user-friendly! But I'm glad to help out if I can... Please keep gun-shooters away from campers / hikers / fishers / boaters! Very important!	1	.7	.7	94.0
Two young men (sons) with them - very informed and taught the respect a river requires - i.e., talked about dangers of drinking and floating on rafts, etc.	1	.7	.7	94.8
We (my family) love and greatly respect this outdoor treasure. Please keep it available for our use. We would have no problem paying a usage or launch fee to help support the river	1	.7	.7	95.5
We enjoy the Canyon very much in the "off seasons". Would hate to see it developed into an "amusement park"	1	.7	.7	96.3
We just retired, so we hope to recreate more often here. We have always enjoyed our trips floating the Yakima	1	.7	.7	97.0
We like both nice lots at both ends. Improve launch drop off/load area at Umtanum	1	.7	.7	97.8
Willing to give up this style of fishing this stretch if Roza raised and impounded waters changed the flow cfs at this location	1	.7	.7	98.5
Would appreciate more development, such as water supply	1	.7	.7	99.3

	Frequency	Percent	Valid Percent	Cumulative Percent
Would like to see future improvements to BLM sites and is very interested as an 'engineer' in volunteering for stream rehab, data analysis and collecting	1	.7	.7	100.0

**Q.30: Comments about recreation experiences or concerns – Bumping River**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	48	52.7	52.7	52.7
Always enjoy camping - outdoor trails - river	1	1.1	1.1	53.8
Clean bathrooms and a kind campground host makes all the difference. Day use parking passes should be purchased at each trailhead	1	1.1	1.1	54.9
Enforce quiet time before 8am and after 9pm!	1	1.1	1.1	56.0
Establish fish passage at the dam, before adding more capacity	1	1.1	1.1	57.1
Flow on the lower Yakima River is excellent now	1	1.1	1.1	58.2
Have inmates pick up trash	1	1.1	1.1	59.3
I love Soda Springs Campground and have sent many friends here to camp. Please do not overflow the Bumping River it would totally change our experience and make it unremarkable. We could go elsewhere to find similar experiences if flooded	1	1.1	1.1	60.4
I love this river and I would like to see it improved	1	1.1	1.1	61.5
I really enjoy the Soda Springs camp area. The river was nice, trees provided good protection, easy walking but would like some bike trails	1	1.1	1.1	62.6
I would like to see that quality of fishing improve - size and number. Fly fishing only - catch and release would be great!	1	1.1	1.1	63.7
It's a beautiful area. Campsites are well maintained	1	1.1	1.1	64.8
It's perfect just how it is. If you change the flow or level your risking having return campers	1	1.1	1.1	65.9
It is a very clear, pretty river	1	1.1	1.1	67.0
It is perfect the way it is	1	1.1	1.1	68.1
It would be unpreferred to change the Bumping River Area Recreation	1	1.1	1.1	69.2
Leave it the way it is. This is our family vacation	1	1.1	1.1	70.3
Less mosquitoes!	1	1.1	1.1	71.4
Maps of trails would be nice, drinking water on Soda Springs campground. Other than that it's been great!	1	1.1	1.1	72.5

	Frequency	Percent	Valid Percent	Cumulative Percent
Mud Jeepers and trail bikers have no place in natural forests unless they are showroom clean and leave no disturbed track	1	1.1	1.1	73.6
My family was raised with this area and now it's my grandchildren's turn. Maybe some day great grand kids	1	1.1	1.1	74.7
N/A	2	2.2	2.2	76.9
Need more dumpsters	1	1.1	1.1	78.0
Nice relaxing area	1	1.1	1.1	79.1
No	4	4.4	4.4	83.5
No, we just hope we will be able to continue to visit this area in the future!	1	1.1	1.1	84.6
None	1	1.1	1.1	85.7
Not enough garbage cans around and not enough people that use them	1	1.1	1.1	86.8
Please don't over develop sites along the Bumping, Tieton and Naches rivers - the biggest draw for my family is peacefully relaxing by the river	1	1.1	1.1	87.9
Please keep the campsites clean. They look really nice now. Could clear trails on south side of River for better trailing	1	1.1	1.1	89.0
Please try to have a smaller survey next time. I would like wood cut up and potable water	1	1.1	1.1	90.1
Stock the river	1	1.1	1.1	91.2
The Bumping River area has produced many enjoyable memories for my children and grand children	1	1.1	1.1	92.3
The trees are dying! There's worms dropping all over. Please save our forests! Too many flies too!	1	1.1	1.1	93.4
Toilets need repair. Doors don't close properly	1	1.1	1.1	94.5
Too many flies!!	1	1.1	1.1	95.6
We absolutely loved the campground	1	1.1	1.1	96.7
We found this site by chance and enjoyed	1	1.1	1.1	97.8
We like it the way it is	1	1.1	1.1	98.9
Would like to have campfires in later summer months. No picnic table in site #1, no fire pit in site #3	1	1.1	1.1	100.0

**Q.30: Comments about recreation experiences or concerns – Naches River**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	37	46.3	46.3	46.3
Absolutely lovely. Has treated us very well this far. Will certainly be back. Would love to fish/hike/raft here again	1	1.3	1.3	47.5
Build Black Rock soon	1	1.3	1.3	48.8
Clean and enjoyable	1	1.3	1.3	50.0
Easier turnaround at end of trail	1	1.3	1.3	51.3
Environmental impacts are a primary concern	1	1.3	1.3	52.5
Fees. 15 dollars a night is pretty expensive. Extra \$5 for another car. The limit of people in the camping party	1	1.3	1.3	53.8
First time here, beautiful well maintained area. Thank you	1	1.3	1.3	55.0
Fishing isn't what it used to be	1	1.3	1.3	56.3
Halfway Flat Dispersal Campground hasn't had a working lock on the restroom for several years - and now have to pay to camp, and a non-locking restroom, complained to ranger for over two years, ridiculous!	1	1.3	1.3	57.5
I really like this campground. If possible it might be nice to have running water and a shower in the restrooms	1	1.3	1.3	58.8
I want bigger fish in the River	1	1.3	1.3	60.0
I would like to have a hand sanitizer station or a hand washing at the site bathrooms	1	1.3	1.3	61.3
It's always been a nice experience	1	1.3	1.3	62.5
It's important that the water stays at its natural levels	1	1.3	1.3	63.8
It is not good news that you need water for growth demand in the cities. It is good to use it to improve fish habitat	1	1.3	1.3	65.0
Joel - the campground host is very good. Runs a comfortable campground and keeps it all smooth. Super host!!	1	1.3	1.3	66.3
Like the River about what it is today it is perfect. Additional or less water would make otters loose habitat	1	1.3	1.3	67.5
Love it!	1	1.3	1.3	68.8

	Frequency	Percent	Valid Percent	Cumulative Percent
Love the fact that there are maintained and clean port-a-potties/bathrooms	1	1.3	1.3	70.0
Loved it and the camp host was extremely helpful	1	1.3	1.3	71.3
Maintaining natural wildlife	1	1.3	1.3	72.5
More fish please!	1	1.3	1.3	73.8
N/A	1	1.3	1.3	75.0
Need to open the lower campsites by May 1, not the end of May. Many good camping days go wasted by opening so late. Need larger - longer sites for trailers - motor homes, not all of us enjoy sleeping on the ground. A while lot of us are older now. Thank you for any basic camper improvements you can make!	1	1.3	1.3	76.3
Nice campground, but worried if the water gets too low or too high if changes are made to flows in the river	1	1.3	1.3	77.5
No	2	2.5	2.5	80.0
No, thanks	1	1.3	1.3	81.3
Nope - everything is good! No complaints here! Thank you!	1	1.3	1.3	82.5
Please make RV camping only available in designated campgrounds. You can't go anywhere in this area without running into RV's. It takes from the "get away from it all" experience	1	1.3	1.3	83.8
Please replace any campsites lost. We know that Yakima needs more water but we also need to keep weekend and vacation camping a desired recreation. Plus, the boys go to Camp Fife and take day trips for rafting, canoe etc. Thank you	1	1.3	1.3	85.0
The flow on this stretch of the river has been perfect for our activities every time we've visited	1	1.3	1.3	86.3
We feel the miners should not be allowed to mine during fishing season or when the salmon are trying to get up these waters. Thank you	1	1.3	1.3	87.5
We like lots of public access to the river - pullouts, etc.	1	1.3	1.3	88.8
We like more secluded or private campsites but enjoy the host and the clean campsites. Everyone we talked to has been very polite and helpful	1	1.3	1.3	90.0

	Frequency	Percent	Valid Percent	Cumulative Percent
We love this place! We are uncertain of the water potability	1	1.3	1.3	91.3
Well kept up campground. Rocks around the toilets	1	1.3	1.3	92.5
With 40+ years of recreating on the river I have noticed the increased incidence of underage drinking and partying, vandalism, littering and theft in the camping areas, especially the more remote ones. The fish are so much less than 10, 20 years ago	1	1.3	1.3	93.8
Words cannot express what a retreat in the mountains gives to the individual	1	1.3	1.3	95.0
Would like to see management of campgrounds in the Naches District return to the USDA Forest Service - No contract vendors	1	1.3	1.3	96.3
Yes! Closing sites and harassing the public (the owners) is not the answer. It's education! I know it's difficult but it's like driving an infinitely long nail - Just keep hammering - most people are capable of learning. Note: with minimum fish flows, recreation is hardly affected	1	1.3	1.3	97.5
Yes, for additional water storage	1	1.3	1.3	98.8
You might consider making the camping parking spots a little wider - we have a 35' motor home and had a little trouble parking and getting out of our spot (5) at American	1	1.3	1.3	100.0

**Q.30: Comments about recreation experiences or concerns – Cle Elum River**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	34	55.7	55.7	55.7
Campgrounds are immaculate!	1	1.6	1.6	57.4
Continue your good stewardship efforts	1	1.6	1.6	59.0
Create smaller campgrounds, and more of them - instead of 50 to 100 site huge campgrounds	1	1.6	1.6	60.7
Don't need more development, except as needed to maintain/improve sanitation at the established campgrounds	1	1.6	1.6	62.3
Educational materials addressing the noise issue should be widely used to "suppress" noise	1	1.6	1.6	63.9
Enjoyed our trip	1	1.6	1.6	65.6
Excellent facilities. Enjoyed watching the Washington Kayak Club's regatta. Friendly camp managers	1	1.6	1.6	67.2
I hope that it mostly stays the same. But I would like to see some motorcycle, ORV's in this area	1	1.6	1.6	68.9
It seems to be all big toys. Big trucks, campers, motorcycles and 4-5 horses for 2 people on what looked like a day trip. Maybe they were just practicing. The campground was clean and not noisy	1	1.6	1.6	70.5
It was really great! We loved the river, the large group site. There were no yellow jackets! And the camp host did a great job	1	1.6	1.6	72.1
Keep it as it is	1	1.6	1.6	73.8
Leave the river as it is. Host more campgrounds	1	1.6	1.6	75.4
Love it!	1	1.6	1.6	77.0
More policing on the tubers	1	1.6	1.6	78.7
Nope	1	1.6	1.6	80.3
Please note: This survey is too long, too detailed, and too redundant. Reformat it, simplify the questions and target specific information before you submit it to the public again. I have a Masters Degree and found the questions difficult to read and understand!	1	1.6	1.6	82.0
Put screen and solar fan over outhouse vent - Check site at 10 to stop noise	1	1.6	1.6	83.6
Repair the washed out areas at Salmon La Sac	1	1.6	1.6	85.2

	Frequency	Percent	Valid Percent	Cumulative Percent
Thank you	1	1.6	1.6	86.9
Thanks!	1	1.6	1.6	88.5
Thanks. Keep it flowing	1	1.6	1.6	90.2
The ranger was very helpful and very friendly. Thank you!	1	1.6	1.6	91.8
The river is a great place to see wildlife and is fun to cool off in the summer	1	1.6	1.6	93.4
Very peaceful at Salmon La Sac Campground. Clean, clean, clean. Thank you!	1	1.6	1.6	95.1
We love the area and closeness	1	1.6	1.6	96.7
Would encourage the State to consider building Black Rock. Keep water in up county. Provide lower basin with water	1	1.6	1.6	98.4
Yakima River basin rules!!!	1	1.6	1.6	100.0

## **Appendix N: Visitor Count Sheet**

### Yakima River basin Visitor Counts

<b>Water Body:</b> <i>(Please write name of Reservoir or River)</i>	<b>Date:</b> <i>(Please write date)</i>	<b>Time of Day:</b> <i>(Please circle one)</i>	<b>Weather:</b> <i>(Please circle one)</i>
		Morning: 6-10 a.m. Noontime: 10-2 p.m. Afternoon: 2-5 p.m. Evening 5-9 p.m.	Sunny Partly cloudy Cloudy Rainy/Stormy

<b>Activities:</b>	<b>Number of Visitors:</b>	<b>Location of visitors counted:</b> <i>(Name of campground, day use site, boat ramp, stretch of river, reservoir location etc.)</i>
Riverboat fly fishing – commercial guided		
Riverboat fly fishing – private unguided		
Wade fly fishing		
Bank fishing		
Rafting – commercial guided		
Rafting – private unguided		
Tubing		
Kayaking		
Canoeing		
Swimming/Wading		
Sightseeing		
Picnicking		
Camping		
Motor boating		
Lake boat fishing		
Water-skiing/Wakeboarding		
Jet-skiing		
Other <i>(name)</i> :		

<b>Conveyances:</b>	<b>Number of Conveyances:</b>	<b>Location of conveyances counted:</b> <i>(Name of campground, day use site, boat ramp, stretch of river, reservoir location etc.)</i>
<b>Boats:</b>		
Riverboats (commercial)		
Riverboats (private)		
Rafts (commercial)		
Rafts (private)		
Inner tubes		
Kayaks		
Canoes		
Motor boats		
Other <i>(name)</i> :		
<b>Camping:</b>		
RV's		
Tents		
<b>Vehicles:</b>		
<b>Trailers:</b>		
<b>State on license plate:</b>		

## **Appendix O: Visitor Count Day Matrix**

Yakima River basin – Visitor Count Days (as of 09-04-2007)

Days	Cle Elum Reservoir	Cle Elum River	Kachess Reservoir	Keechelus Reservoir	Lake Easton	Yakima River	Bumping Lake	Bumping River	Clear Lake	Naches River	Rimrock Lake	Tieton River
<b>2006</b>												
05-16	X					X						
05-17						X	X		X		X	
05-18			X	X		X						
05-26						X						
05-27	X	X	X	X	X	X	X	X	X	X	X	X
05-28	X	X	X	X	X	X	X	X	X	X	X	X
05-29	X					X	X		X	X	X	X
06-02						X					X	
06-07						X						
06-09						X			X		X	
06-10						X			X		X	X
06-11					X	X						
06-15			X									
06-16									X		X	
06-17					X	X						
06-18					X	X						
06-23					X	X		X	X		X	
06-24									X		X	X
06-26					X	X						
06-27	X								X		X	
06-28					X	X				X		
06-29						X						
06-30	X	X	X			X			X		X	X
07-01	X		X	X	X	X		X	X		X	X
07-02	X	X	X				X	X			X	X
07-03	X		X							X		
07-04	X	X	X			X			X		X	X
07-06						X						
07-07	X		X		X						X	X
07-08		X	X	X		X	X					

Days	Cle Elum Reservoir	Cle Elum River	Kachess Reservoir	Keechelus Reservoir	Lake Easton	Yakima River	Bumping Lake	Bumping River	Clear Lake	Naches River	Rimrock Lake	Tieton River
07-09	X		X			X			X		X	
07-10			X									
07-11											X	
07-12			X			X			X			
07-13	X		X	X		X			X			
07-14			X	X					X	X		
07-15	X	X	X			X			X			
07-16	X	X	X	X	X	X			X			
07-17									X			
07-18	X	X	X			X			X			
07-19		X	X	X		X			X			
07-20			X						X			
07-21		X							X			
07-22		X		X		X			X			
07-23	X		X			X			X			
07-24		X							X			
07-25									X			
07-26				X	X				X			
07-27						X			X			
07-28	X	X					X	X	X	X	X	X
07-29			X	X		X	X	X	X	X		
07-30	X						X	X	X	X		
07-31						X			X			
08-01									X			
08-02					X				X			
08-03			X						X	X		
08-04	X								X	X		
08-05		X				X			X		X	X
08-06	X			X	X	X			X		X	X
08-07						X			X		X	X
08-08						X			X			
08-09									X			
08-10						X			X			
08-11	X	X							X		X	X
08-12	X		X	X		X	X	X	X		X	X

Days	Cle Elum Reservoir	Cle Elum River	Kachess Reservoir	Keechelus Reservoir	Lake Easton	Yakima River	Bumping Lake	Bumping River	Clear Lake	Naches River	Rimrock Lake	Tieton River
08-13	X					X	X	X	X	X		
08-14									X		X	X
08-15									X			
08-16									X			
08-17									X	X		
08-18	X		X	X					X		X	X
08-19						X			X		X	X
08-20	X	X				X	X	X	X	X		
08-21					X				X			
08-22			X	X	X				X			
08-23									X			
08-24						X			X			
08-25							X	X	X	X	X	X
08-26	X					X	X	X	X	X		
08-27	X		X						X		X	X
08-28									X			
08-29									X			
08-30									X			
08-31				X		X	X	X	X	X		
09-01			X			X	X	X	X	X		
09-02		X			X		X	X		X		X
09-03						X			X		X	X
09-04									X		X	X
09-07										X		
09-08										X		
09-09			X							X		
09-10	X					X						
09-12												X
09-15			X									
09-16				X					X		X	X
09-17	X					X						X
09-23	X		X			X						
09-30					X							
10-01				X		X						

Days	Cle Elum Reservoir	Cle Elum River	Kachess Reservoir	Keechelus Reservoir	Lake Easton	Yakima River	Bumping Lake	Bumping River	Clear Lake	Naches River	Rimrock Lake	Tieton River
11-13						X						
11-16	X											
11-18						X						
11-25						X						
<b>2007</b>												
04-20						X						
04-21						X						
04-22	X			X	X	X						
04-28						X						
05-05	X	X				X						
05-06	X	X				X						
05-09						X						
05-11						X						
05-12		X							X		X	
05-13	X	X		X								
05-17									X			
05-18						X			X			
05-19	X	X										
05-20	X	X		X								
05-24							X	X				
05-25	X	X								X		
05-26			X			X			X		X	
05-27	X	X	X	X	X					X		
06-01	X											
06-02	X	X	X	X								
06-03		X	X				X					
06-07				X								
06-08							X					
06-09	X		X				X					
06-10	X	X		X			X					
06-15	X										X	
06-16	X	X	X				X			X		
06-17				X			X					

Days	Cle Elum Reservoir	Cle Elum River	Kachess Reservoir	Keechelus Reservoir	Lake Easton	Yakima River	Bumping Lake	Bumping River	Clear Lake	Naches River	Rimrock Lake	Tieton River
06-23	X	X	X				X	X		X		
06-24			X				X	X				
06-27	X	X										
06-29	X			X						X	X	
06-30	X	X	X				X	X	X			
07-01	X	X					X	X		X		
07-04			X				X	X				
07-05									X			
07-06							X		X			X
07-07	X	X					X	X		X		
07-08			X									
07-13		X										
07-14	X		X									
07-21								X				

	Cle Elum Reservoir	Cle Elum River	Kachess Reservoir	Keechelus Reservoir	Lake Easton	Yakima River	Bumping Lake	Bumping River	Clear Lake	Naches River	Rimrock Lake	Tieton River
Number of Count Days	53	37	44	16	32	67	31	25	76	29	36	28

## **Appendix P: List of Commercial Fly-Fishing and Rafting Companies**

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List of Yakima River basin commercial fly-fishing and rafting companies

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Action Rafting Co., Inc., PO Box 348, Monitor, WA 98835

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Alpine Adventures/Wild & Scenic Tours, Inc., PO Box 22606, Seattle, WA 98122

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Blue Sky Outfitters, 9674 50<sup>th</sup>. Ave SW, Seattle, WA 98136

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Boeing White Water (BWET), PO Box 954, North Bend, WA 98045

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Downstream River Runners, 3924 SW 106<sup>th</sup> Street, Seattle, WA 98146

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North Cascades River Expeditions, PO Box 116, Arlington, WA 98223

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Northwest Whitewater Assn., PO Box 4941, Spokane, WA 99202

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Orion River Expeditions, 12681 Wilson, Leavenworth, WA 98826

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Osprey Rafting Co., PO Box 668, Leavenworth, WA 98826

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Red's Fly Shop, PO Box 186, Ellensburg, WA 98926

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River Recreation Inc., PO Box 2124, Bothell, WA 98041

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River Rider.com, 2149 W. Cascade #106A-178, Hood River, OR 97031

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Rivers, Inc. (Unlimited), PO Box 2092, Kirkland, WA 98083

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The Evening Hatch, PO Box 1295, Ellensburg, WA 98926

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Washington Recreation River Runners, 1412 Livingston Ct. NE, Olympia, WA 98516

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Wet Planet Rafting, PO Box 1980, White Salmon, WA 98672

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Wild Water River Tours, PO Box 3623, Federal Way, WA 98063

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Worley Bugger Fly Co., 306 S. Main #3, Ellensburg, WA 98926

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Yakima River Fly Shop, 118 East 1<sup>st</sup> Street, Cle Elum, WA 98922

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This list was compiled by contacting fly-fishing companies in the study area, and with the help of the Naches Ranger District's commercial permit records. It reflects information available in 2006 and should not be considered all-inclusive.