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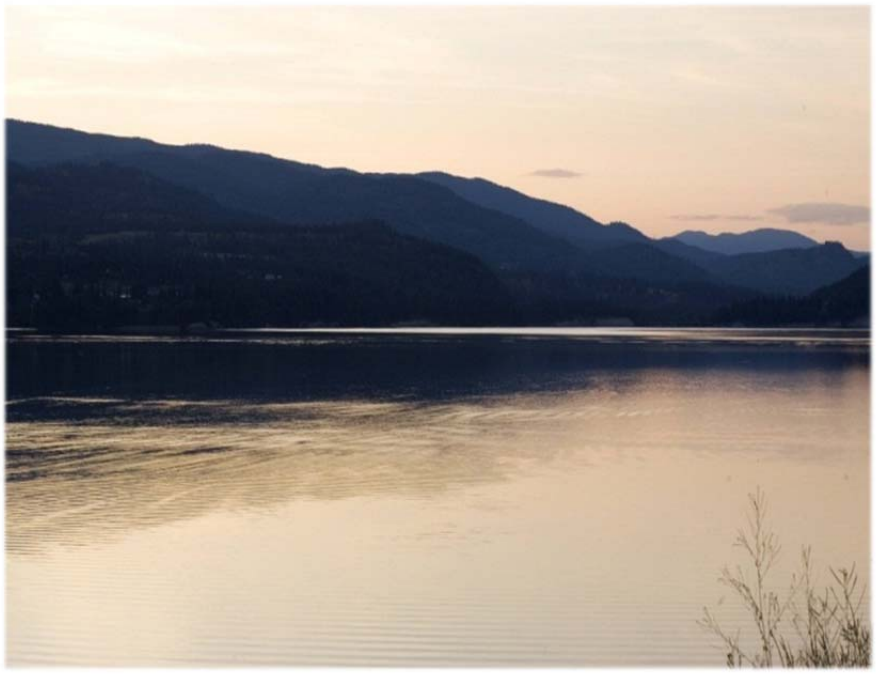
Recreational Consumption and Resource Use Survey for the Upper Columbia River Site Human Health Risk Assessment and Remedial Investigation/Feasibility Study: Data Summary Report

Final Report | May 10, 2013



Prepared for:

U.S. Department of the Interior

National Park Service

Lake Roosevelt National Recreation Area

Coulee Dam, WA

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CHAPTER 1 | INTRODUCTION

BACKGROUND

As requested by the U.S. Environmental Protection Agency (EPA), the U.S. Department of the Interior's National Park Service (NPS) conducted a recreational consumption and resource use survey on the Upper Columbia River (UCR) from the Grand Coulee Dam to the United States-Canada border (Exhibit 1) from October 2010 through September 2011. The survey was conducted as described in the June 2006 Settlement Agreement for the UCR Remedial Investigation and Feasibility Study (RI/FS) entered into by the U.S. Department of Justice, the EPA, Teck Cominco Metals, Ltd. (currently known as Teck Metals Ltd.), and Teck Cominco American Incorporated (currently known as Teck American Incorporated).[1] The purpose of the survey was to obtain site-specific data on human uses of the UCR for use in the baseline human health risk assessment being conducted by the EPA. In addition, the survey provides information to assist in risk communication and risk management. The U.S. Department of the Interior (DOI) was responsible for implementing the survey in coordination with the EPA, the State of Washington, the Confederated Tribes of the Colville Reservation, the Spokane Tribe of Indians, and Teck.

The study was conducted by Industrial Economics, Inc. (IEc) through an on-site survey of visitors to the UCR. This on-site survey consisted of three components: a boating component, a camping component, and a day-use beach component. All three components of the survey effort involved on-site interviews with samples of randomly selected visitors. The interviews took place over a 12-month period from October 2010 to September 2011 to account for seasonal variation in use and exposure. In addition, frequent fish consumers were asked to participate in a three-month fish consumption diary designed to establish fish consumption rates with minimal recall bias. By combining data from the three components of the survey and the diary, EPA will be able to characterize exposure of the overall population of UCR visitors.

OBJECTIVES

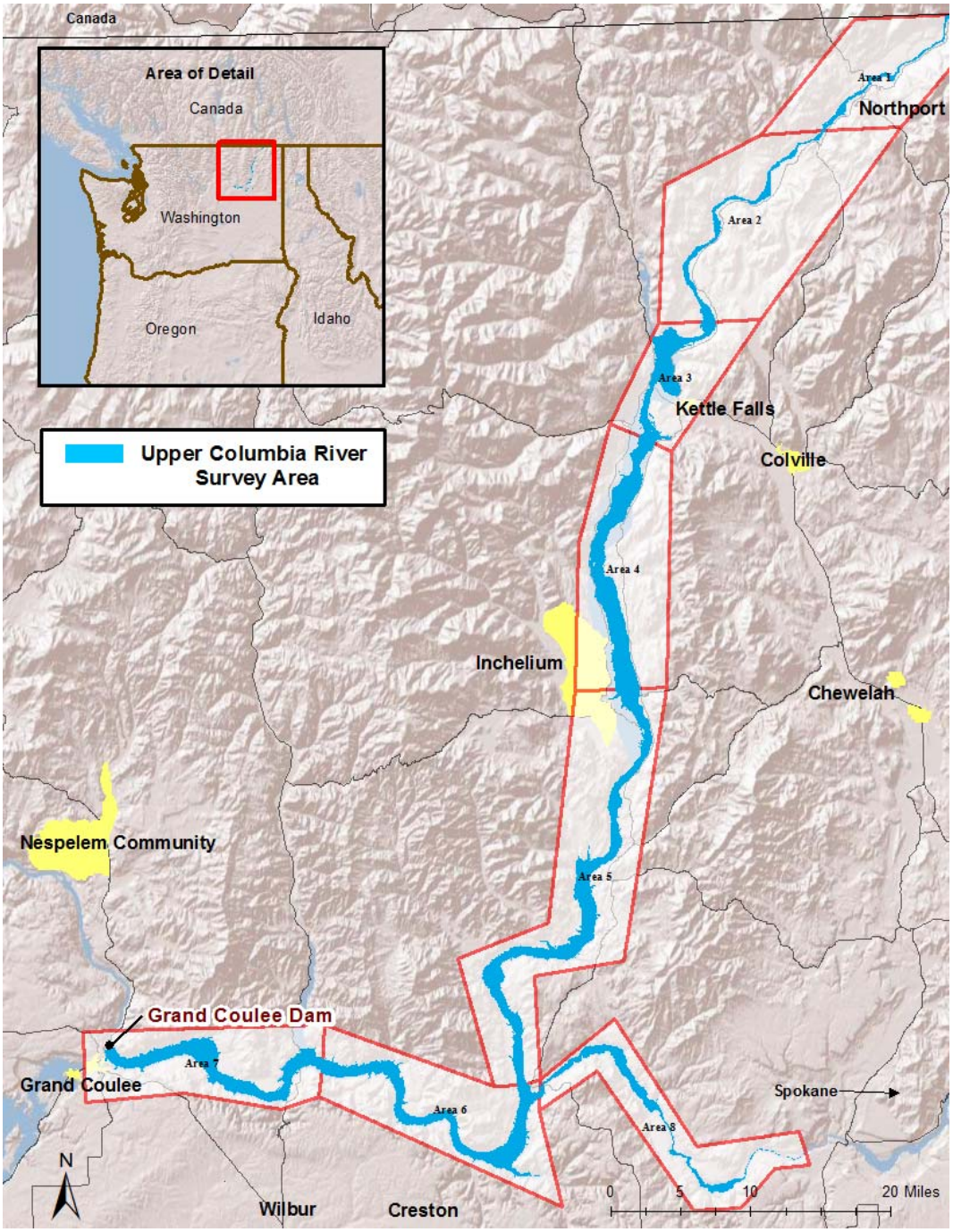
The purpose of the survey was to gather site-specific data that would allow EPA to characterize the population of recreational visitors to the UCR with respect to activities that may involve health risks due to exposure to UCR-related contaminants.[2] The

[1] Throughout the report and survey documents, the term "UCR" is used to refer to the region depicted in Exhibit 1. This region does not correspond with the definition of the "Upper Columbia River Site" in the Settlement Agreement, as it includes the Spokane Arm of Lake Roosevelt. Boat launches on the Spokane Arm of Lake Roosevelt were included in the current study because some boaters use these launches to access areas on the Columbia River.

[2] See "Recreational Consumption and Resource use Survey Sampling and Analysis Plan for the Upper Columbia River Site Human Health Risk Assessment and Remedial Investigation/Feasibility Study," August 30, 2010 for full details.

population of visitors includes both local visitors who reside near the UCR and visitors who have traveled far from their homes.

EXHIBIT 1. OVERVIEW OF SURVEY AREA



EPA specified detailed data quality objectives (DQOs) that describe visitor characteristics required for the human health risk assessment.[3] The survey gathered data on these characteristics, which will allow EPA to quantify exposures associated with typical recreational activities and fish consumption (Exhibit 2). For each exposure scenario, the survey provides data that will allow for the development of central tendency exposure (CTE) and reasonable maximum exposure (RME) estimates for the UCR recreational visitor population.

Three exposure scenarios identified in the DQOs were not addressed by the survey:

- The survey did not collect information on shellfish consumption, as the consumption of shellfish by recreational visitors to the UCR is expected to be rare.
- The survey did not collect information on consumption of game. Although hunters frequently stay overnight at campgrounds within Lake Roosevelt National Recreation Area, they typically hunt either in upland areas away from the lake, or in the case of waterfowl hunting, on upstream sections of UCR tributaries.
- The survey did not collect information on exposures during showering. A review of site amenities found that there are no enclosed private showering facilities at NPS campgrounds. Although major day-use beaches have cold water foot washes, the water source for these wash areas is not untreated UCR water. Therefore, exposure during showering is unlikely to be a complete UCR exposure pathway.

EXHIBIT 2. SUMMARY OF DQO REQUIREMENTS ADDRESSED BY SURVEY

DATA REQUIREMENT (FROM TABLE 1 OF DQOS)	SURVEY QUESTION(S) PROVIDING REQUIRED DATA[1]
Respondent age, gender, and zip code	E1, E2, E4
Total number of visits/year and average days/visit at UCR location 'x'	C3, C4, C7, C8, C9, C11, C12
Average number of hours/day spent outdoors at UCR location 'x'	B1, B2, B5, B6 (boating survey); B1, B4, B5 (camping survey); B1 (beach survey)
Average number of days/visit and hours/day spent swimming in UCR at location 'x'	B3, B7 (beach survey); B3, B4, B5, B6 (boating survey); B4, B5 (camping survey)
Average number of days/visit and hours/day spent performing activity 'a' at UCR location 'x'	B4, B5, B8, B9 (beach survey); B3, B4, B5, B6 (boating survey); B4, B5 (camping survey)
Average number of showers/visit and minutes/shower using facilities at UCR location 'x'	Not applicable
Total number of meals/year, average meal size, and typical size range of fish species 's' and tissue type 't' derived from UCR location 'x'	D3, D4, D5, D6, D7, D8, D9, angler diary
Total number of days/visit and average number of liters ingested/day for untreated UCR surface water from location 'x'	B8 (boating survey); B7 (camping survey), B11 (beach survey)

NOTE:
[1] This column references specific survey questions (e.g., E1). All survey instruments are included in Appendix A.

[3] "Data Quality Objectives for the UCR Recreational Use Survey – Revised", SRC, Inc. Memorandum to Monica Tonel, Marc Stifleman (EPA) from Lynn Woodbury, Bill Brattin (SRC); June 16, 2009.

OVERVIEW OF STUDY

The study consisted of two general components: an on-site survey and a fish consumption diary. These two components are summarized below, with additional detail provided in the methodology section of the report.

ON-SITE SURVEY

The on-site survey was designed to collect data that will allow EPA to characterize visitors' potential exposure to contaminated media at the site. Visitors to the UCR were contacted at major public boat launches, marinas, day-use beaches, and campgrounds. Boaters and day-use beach visitors were contacted as they departed the UCR after completing trips, while campers were contacted during the early evening at their campsites.

The survey consisted of four components:[4]

- *Questions about activities pursued over the past 24 hours (for day trips, the focus was on activities pursued since arriving at the site).* Questions about the most recent 24-hour period were designed to provide information about exposure durations for a variety of activities. For each of several activities (e.g., swimming, wading, spending time on the beach), the survey asked how much time was devoted to that activity over the past 24 hours. Respondents were also asked about the quantity of UCR water that they intentionally consumed over the past 24 hours (e.g., filling a water bottle with lake water).
- *Questions about trips to the site during the most recent 12-month period.* Questions about annual trips to the site provide information that will allow for the calculation of exposure frequencies and sampling weights. The survey asked for information on trips taken to the UCR over the most recent 12-month period, including specific destinations visited.
- *Questions about annual fish consumption from the site.* Given the potential for high exposure rates via fish consumption, every respondent was asked a set of detailed questions about annual fish consumption. The fish consumption questions focused on consumption of UCR fish over the last 12 months, region of the UCR from which fish were obtained, the size range for fish kept for consumption on the current trip, body parts that are typically consumed, responses to fish consumption advisories, and typical meal size.
- *Questions related to respondent demographics.* The survey gathered basic data on demographic characteristics that will be useful as covariates in the risk assessment. These include age, gender, and zip code. The survey did not distinguish tribal from non-tribal visitors in the survey. However, respondents were asked if they were participating in the Confederated Tribes of the Colville Reservation Tribal Use Survey at the time of their interview.

[4] See Appendix A for final survey instruments.

The on-site survey was conducted over a 12-month period, from October 1, 2010 to September 30, 2011. The allocation of sampling effort across time approximately reflected the temporal pattern of visitation at the site, with increased effort on weekends and during the peak season. The allocation of effort across access points approximately reflected the geographic distribution of visitation, with increased sampling rates at more popular sites.

FISH CONSUMPTION DIARY

Visitors who consume fish frequently from the site were expected to have difficulty remembering the number of fish meals consumed over the last twelve months (see, e.g., Chase and Godbey 1983, Chase and Harada 1984, Chu et al. 1992, Harris and Bergersen, 1985, Tarrant et al. 1993). In order to improve the accuracy of consumption information obtained from visitors who consume fish frequently from the site, these high-consumption visitors were asked to complete a fish consumption diary. High-consumption visitors were defined as those who reported eating at least ten fish meals from the UCR over the past 12 months.

Fish consumption diary participants were asked to record all fish meals consumed over a three-month period. For each reported meal, participants were asked to provide the source of the fish, the fish parts consumed, the meal size, and their child's meal size (if applicable).

CHAPTER 2 | METHODOLOGY

BOATER SURVEY

The boater survey was conducted at all major public boat launches and marinas on the UCR between the Grand Coulee Dam and the United States-Canada border (Exhibit 4). Boaters were intercepted immediately after completing a boating trip, either near the launch site or, in the case of marinas, as they left the dock area. The target population consisted of individuals taking boating day trips or boat camping trips on the UCR (i.e., camping trips at remote locations accessible primarily by boat). Boaters who were staying overnight at established, drive-in NPS campgrounds were not targeted in the boater survey effort, as these individuals were interviewed as part of the camper survey effort. The survey instrument and sampling approach for the boater survey effort are described in detail below.

SURVEY INSTRUMENT

The boater survey consisted of the following five sections (see Appendix A for a copy of the survey instrument):

- *Section A: Screening Questions.* The first section of the survey consisted of several screening questions and questions related to the composition of the boating party (i.e., number of adults and children). The screening questions were designed to eliminate boaters who were camping at drive-in NPS campgrounds on the UCR, either before or after their boating trip.
- *Section B: Current Boating Trip.* The second section of the survey asked for information about the current boating trip, including arrival time, areas of the UCR that were visited (see Appendix B for map), and whether or not the respondent spent time waterskiing/tubing, wading, swimming, hanging out on the beach, or sleeping/relaxing in a tent. For each activity, the respondent was asked to indicate how much time was devoted to the activity since the boat was launched. If the boating trip was longer than 24 hours (e.g., boat camping), then these questions focused on the amount of time devoted to each activity during the most recent 24-hour period. Respondents were also asked about the quantity of UCR water that they intentionally consumed (e.g., filling a water bottle with lake water). For reference, the interviewer showed the respondent a water bottle with relevant volumes marked on the outside.
- *Section C: Annual Trips to the UCR.* This section included a series of questions designed to obtain information about trips taken to the UCR over the most recent 12-month period, including specific destinations visited. The trips were separated into (1) camping trips (including boat camping), (2) boating day trips, and (3)

beach day trips. For camping and boating trips, respondents were asked to provide the number of trips/nights at each UCR location for each of the most recent four complete seasons and for the current season up to the interview date. Seasons were defined as Spring (March/April/May), Summer (June/July/August), Fall (September/October/November), and Winter (December/January/February). In addition, for boating trips, respondents were also asked to indicate the area of the lake visited from each location. For beach day trips, respondents were asked to provide the number of trips at each UCR location for the most recent June-to-September period.

- *Section D: Fish Consumption.* The fish consumption questions focused on consumption of UCR fish over the last 12 months, region of the UCR from which fish were obtained, the size range for fish kept for consumption on the current trip, body parts typically consumed, awareness of and responses to fish consumption advisories, and typical meal size. The fish consumption questions focused primarily on four species frequently targeted in the UCR (walleye, rainbow trout, kokanee, and bass), but respondents were also asked about any other fish species consumed. The interviewer showed the respondent photographs of 6-ounce, 8-ounce, and 10-ounce fish fillets (pre-cooked weights) for reference in determining typical meal size (Appendix C).
- *Section E: Respondent Demographics.* The final section of the survey gathered basic data on demographic characteristics that are expected to be useful as covariates in the risk assessment. These include age, gender, and zip code.

SAMPLING APPROACH

As visitor characteristics may differ across access points and times of year, the sampling plan was designed to spread sampled trips across all seasons and across all sampling sites, with higher sampling rates used at high-use sites and during high-use time periods.

The sampling was implemented in three stages. First, a sample of days was selected. Next, for each selected day, one (off-peak season) or three (peak season) sites/shifts were selected for interviews. Finally, at each selected site, interviews were attempted with a sample of visiting parties (i.e., boats) completing UCR trips. These three sampling stages are described in detail below.

Sampling Days

This survey took place over the course of 12 months, from October 1, 2010 to September 30, 2011. The 12-month period was divided into eleven mutually exclusive and exhaustive strata based on type of day (weekend, weekday, or holiday), month, and season (peak or off-peak season).[5]

The "peak season" was defined as May 29, 2011 to September 30, 2011 and consisted of nine temporal strata: (1) June weekdays, (2) June weekends, (3) July weekdays, (4) July

[5] See "Recreational Consumption and Resource use Survey Sampling and Analysis Plan for the Upper Columbia River Site Human Health Risk Assessment and Remedial Investigation/Feasibility Study," August 30, 2010 for additional details.

weekends, (5) August weekdays, (6) August weekends, (7) September weekdays, (8) September weekends, and (9) holidays.[6] Within each stratum, a simple random sample of days for boater interviews was selected (Exhibit 3), with holiday and weekend strata sampled at higher rates than weekday strata. The holidays were selected with certainty (i.e., all days were selected). In addition to holidays, four non-holiday weekdays and four non-holiday weekend days were selected each month throughout June, July, and August. Four non-holiday weekdays and three non-holiday weekend days were selected in September.[7]

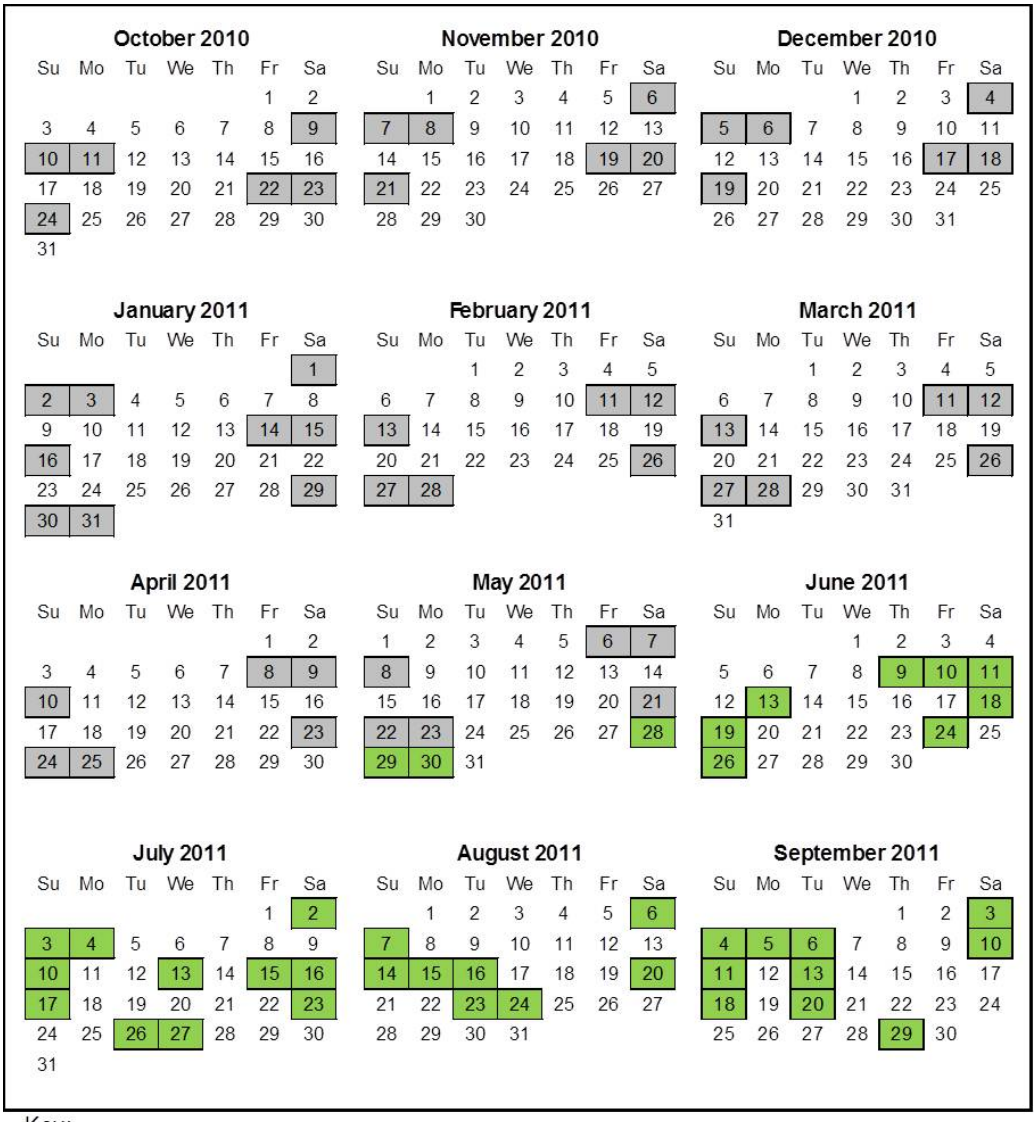
The "off-peak season" was defined as October 1, 2010 to May 28, 2011 and consisted of two temporal strata: (1) weekdays and (2) weekends. Within each off-peak season stratum, a systematic sampling of days to ensure that the sampled days were evenly spread throughout the time period and to simplify the logistics of survey implementation was selected (see Pollock et al. 1994). Off-peak season boater interviews were conducted on every other weekend, on every fourth Monday, and on every fourth Friday.[8] In the interest of efficiency, interviews on Tuesdays, Wednesdays, and Thursdays during the off season were not conducted and instead used interviews conducted on Mondays and Fridays to represent off-season weekday visits.

[6] The following days were classified as holidays: May 28, 29, and 30; July 2, 3, and 4; and September 3, 4, and 5.

[7] September only has six non-holiday weekend days versus eight in each of the other peak-season months.

[8] Although the off-peak season sampling frequency is similar to the peak season sampling frequency, the sampling intensity was lower during the off-peak season (see discussion below).

EXHIBIT 3. SAMPLED DAYS - BOATER SURVEY



Sampling Sites/Shifts

On each selected day, one or more interview sites were randomly selected from a pre-defined set of public access points (Exhibit 4). The set of sampled access points comprises all 21 major public boat launch access points to the UCR between the Grand Coulee Dam and the United States-Canada border, with the following exceptions: North Gorge boat launch and Jones Bay boat launch.[9] The sites were stratified into three regions

[9] At these sites, the campgrounds were sampled but the boat launches were not, as it was expected that mainly campers would use these boat launches, given the extremely limited parking for trailers.

hereafter referred to as Upper, Middle, and Lower UCR (Exhibit 4). "Upper UCR" comprises the access points between Marcus Flats and the United States-Canada border. "Middle UCR" comprises the access points between Marcus Flats and the Spokane River confluence. "Lower UCR" comprises the access points between the Grand Coulee Dam and the Spokane River confluence. There are also 10 boat-in campgrounds in the UCR; visitors using the boat-in campgrounds were intercepted at the selected boat launch sites.

For each selected peak-season day, three sites were randomly selected for interviews: one from each of the three regions. For each selected off-peak season day, one site was randomly selected for interviews. The decreased sampling intensity during the off-peak season (interviewing at one site per day rather than three) reflects the decrease in expected visitation during that period. The interview region rotated every sampling day during the off-peak season, so that interviewing took place in all three regions during each three-day block of off-peak season sampling days.

The site selection probabilities were approximately proportional to expected visitation, which was estimated by reviewing a variety of data sources, including NPS automated vehicle counts; NPS tent, RV, and trailer counts; campground capacities; and parking lot capacities. Expected visitation estimates developed from these data sources were reviewed by NPS personnel familiar with visitor use patterns at the UCR.

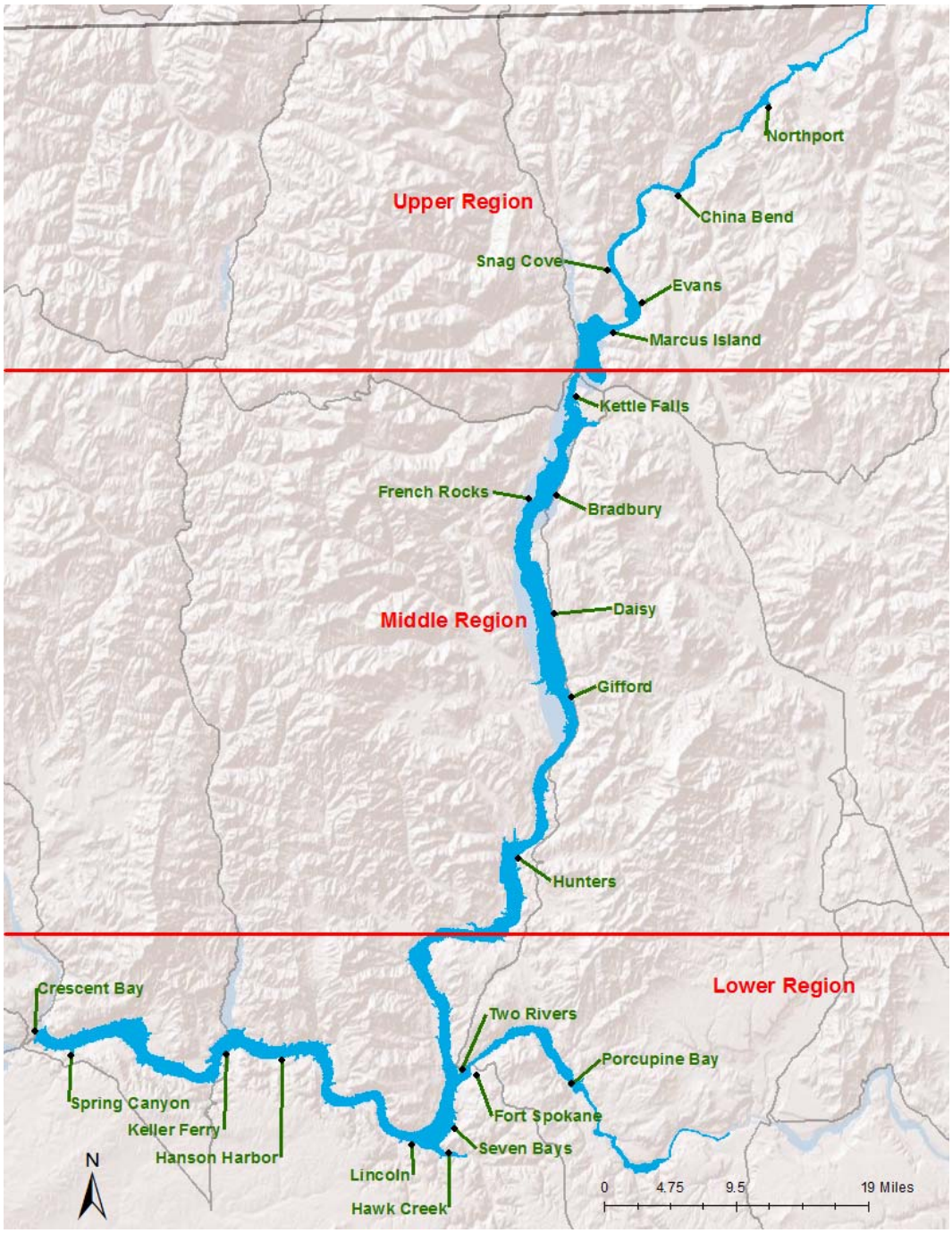
Each selected site was randomly assigned either an AM or a PM interview shift. The AM shift covered the period from 7:00 a.m. to 1:00 p.m., while the PM shift covered the period from 1:00 p.m. to 8:00 p.m. These sampling periods were adjusted as daylight hours changed throughout the year to avoid having interviewers stationed at sites in the dark (see adjusted times in Appendix D). As more boaters were expected to leave the site during the afternoon/evening, PM shifts were selected with probability 0.6, while AM shifts were selected with probability 0.4.

The selection probability for every site/shift combination was equal to the product of the probability assigned to the site and the probability assigned to the shift.[10]

When the selected interview site for a particular day was inaccessible due to low lake levels, an alternate site was randomly chosen using the same selection probabilities that were used for the primary site. Low lake elevations led to the selection of seven alternate sites during the off-peak season and twelve alternate sites during the peak season. See Appendix D for a complete list of shift changes.

[10] All selection probabilities are presented in the "Recreational Consumption and Resource use Survey Sampling and Analysis Plan for the Upper Columbia River Site Human Health Risk Assessment and Remedial Investigation/Feasibility Study," August 30, 2010.

EXHIBIT 4. SAMPLING LOCATIONS FOR BOATER SURVEY



Sampling Visiting Parties

The interviewers followed strict procedures with regard to sampling visiting parties and selecting a single adult within each party for the interview. These procedures helped to avoid selection bias, or a tendency to over-sample individuals who were convenient to interview, who were not busy with other activities, or who appeared friendly. Occasionally, interviewers contacted individuals who had previously completed the

survey. When this occurred, the individual was asked to provide information about his or her current trip only.

For the boating survey, interviewers attempted to contact all visiting parties as they departed the launch site.[11] They approached an adult within the party and asked to interview the adult who had the most recent birthday (i.e., a randomly selected adult). If the targeted adult refused to complete the survey but an alternative adult within the party offered to complete the survey, then the party was recorded as a completed interview, but the use of a substitute adult was noted in the dataset. At heavily used sites, there were occasions where the interviewer could not contact every boating party. If a boat arrived while an interview was being conducted, then the boat was recorded as "missed." At the conclusion of the shift, the interviewer had separate counts of the number of parties that were interviewed, the number of parties that refused to be interviewed, and the number of parties that were missed. These counts sum to the total number of boats that departed the launch site during the shift.

Visitors were not interviewed at boat launches if they were also camping at UCR drive-in campgrounds during their current trip. Visitors who camped at these campgrounds and who brought their boat with them on their trip were characterized through interviews at campgrounds. Thus, interviews at boat launches focused only on boating day trips and on boat-in camping trips. Activities pursued during these two types of UCR trips were captured only through interviews at boat launches.

Four of the boating sites (Kettle Falls, Seven Bays, Two Rivers, and Keller Ferry) have houseboat rentals and/or private marina slips in addition to a launch ramp. Two interviewers were stationed at each of these sites. One interviewer focused only on the launch ramp, while the other interviewer focused only on parties completing trips on houseboats or from private slips.

BEACH VISITOR SURVEY

The beach survey was conducted at all major public beaches on the UCR between the Grand Coulee Dam and the United States-Canada border (Exhibit 6). Beach visitors were intercepted immediately after completing a beach trip, as they left the beach and headed towards the parking lot. The target population consisted of individuals taking beach day trips on the UCR. Beach visitors who were staying overnight at established, drive-in NPS campgrounds were not targeted in the beach survey effort. The survey instrument and sampling approach for the beach survey effort are described in detail below.

SURVEY INSTRUMENT

The beach survey consisted of the following five sections (see Appendix A for a copy of the survey instrument):

- *Section A: Screening Questions.* The first section of the survey consisted of several screening questions and questions related to the composition of the beach

[11] The interviewer location varied by site and depended on the physical layout of each launch area. Interviewers typically were stationed either at the side of the paved approach to the launch or in a nearby truck/trailer parking space.

party (i.e., number of adults and children). The screening questions were designed to eliminate beach visitors who were camping at drive-in NPS campgrounds on the UCR, either before or after their beach trip.

- *Section B: Current Beach Trip.* The second section of the survey asked for information about the current beach trip, including arrival time, and whether or not the respondent spent time in the water (swimming or wading) or on the sand. For each activity, the respondent was asked to indicate how much time was devoted to the activity since the visitor arrived at the beach. Respondents were also asked about the quantity of UCR water that they intentionally consumed (e.g., filling a water bottle with lake water).
- *Section C: Annual Trips to the UCR.* This section was identical to Section C of the boater survey (discussed above).
- *Section D: Fish Consumption.* This section was identical to Section D of the boater survey (discussed above).
- *Section E: Respondent Demographics.* This section was identical to Section E of the boater survey (discussed above).

SAMPLING APPROACH

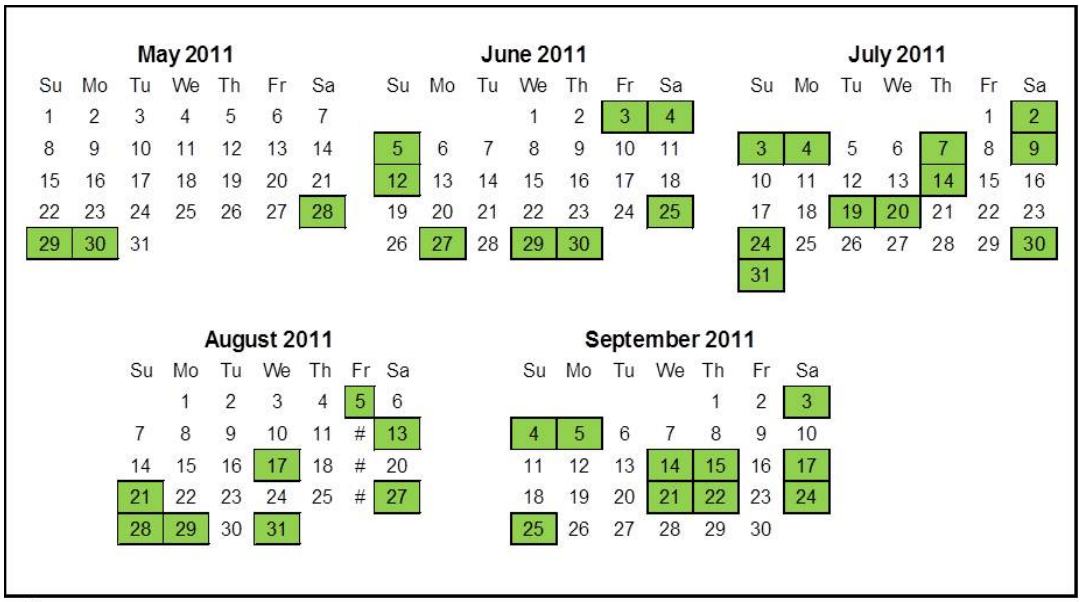
As visitor characteristics may differ across access points and times of year, the sampling plan was designed to spread sampled trips across all months and across all sites, with higher sampling rates used at high-use sites and during high-use time periods.

The sampling was implemented in three stages. First, a sample of days was selected. Next, for each selected day, three sites/shifts were selected for interviews. Finally, at each selected site, interviews were attempted with a sample of visiting parties completing beach day trips. These three sampling stages are described in detail below.

Sampling Days

The survey took place over the course of approximately four months, from May 28, 2011 to September 30, 2011. The period was divided into nine mutually exclusive and exhaustive strata based on type of day (weekend, weekday, or holiday) and month: (1) June weekdays, (2) June weekends, (3) July weekdays, (4) July weekends, (5) August weekdays, (6) August weekends, (7) September weekdays, (8) September weekends, and (9) holidays. After removing days selected for boater interviews, a simple random sample of days for beach interviews from each stratum was selected (Exhibit 5). Beach interviews were not conducted during the off-peak season, as visitation at day-use beaches are expected to be minimal from October to May.

EXHIBIT 5. SAMPLED DAYS – BEACH VISITOR SURVEY



Sampling Sites/Shifts

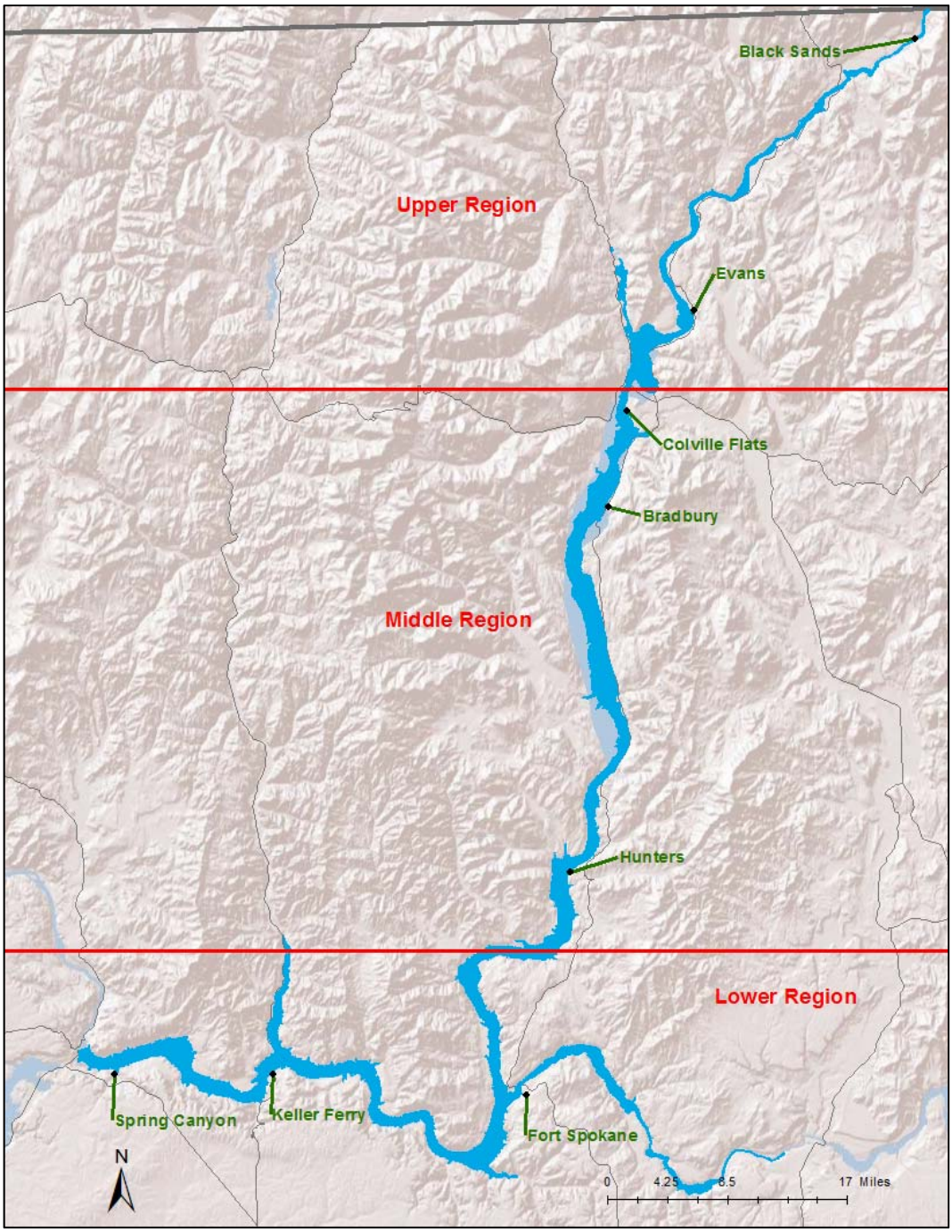
On each selected day, three interview sites were randomly selected from a pre-defined set of beach public access points (Exhibit 6). The set of sampled access points comprises all eight major public beach access points on the UCR between the Grand Coulee Dam and the United States-Canada border, with the following exceptions: Cloverleaf day-use beach, Marcus Island day-use beach, and Kettle Falls day-use beach. At Cloverleaf and Marcus Island, the campground was sampled but the day-use beach was not. At these sites, it is expected that the majority of beach users would be individuals who were camping at the site. At Kettle Falls, the day-use beach does not appear to be utilized for swimming due to stagnant water. The sites were stratified into three regions hereafter referred to as Upper, Middle, and Lower UCR (Exhibit 6).

For each selected day, three sites were randomly selected for interviews: one from each of the three regions. The site selection probabilities were approximately proportional to expected visitation, which was estimated by reviewing a variety of data sources, including NPS automated vehicle counts and parking lot capacities. Expected visitation estimates developed from these data sources were reviewed by NPS personnel familiar with visitor use patterns at the UCR.

Each selected site was randomly assigned either an AM or a PM interview shift. For beach interviews, the AM shift covered the period from 8:00 a.m. to 1:00 p.m., while the PM shift covered the period from 1:00 p.m. to 6:00 p.m. These sampling periods were adjusted as daylight hours changed throughout the year to avoid having interviewers stationed at sites in the dark (see adjusted times in Appendix D). As more beach visitors

are expected to leave the site during the afternoon/evening, PM shifts were selected with probability 0.75, while AM shifts were selected with probability 0.25.

EXHIBIT 6. SAMPLING LOCATIONS FOR BEACH VISITOR SURVEY



The selection probability for every site/shift combination was equal to the product of the probability assigned to the site and the probability assigned to the shift.[12]

When the selected interview site for a particular day was inaccessible, an alternate site was randomly chosen using the same selection probabilities that were used for the primary site. See Appendix D for a complete list of shift changes.

Sampling Visiting Parties

For the day-use beach survey, interviewers attempted to contact all visiting parties after they departed the beach and headed towards the parking lot. They approached an adult within the party and asked to interview the adult who had the most recent birthday (i.e., a randomly selected adult). If the targeted adult refused to complete the survey but an alternative adult within the party offered to complete the survey, then the party was recorded as a completed interview, but the use of a substitute adult was noted in the dataset. At busy sites, there were occasions where the interviewer could not contact every party leaving the beach. If a party departed while an interview was being conducted, then the party was recorded as "missed." At the conclusion of the shift, the interviewer had separate counts of the number of interviews completed, the number of refusals, and the number of missed parties. These counts sum to the total number of parties departing the beach during the shift.

Visitors were not interviewed at day-use beaches if they were also camping at a UCR drive-in campground during their current trip. Visitors who camped at UCR drive-in campgrounds and visited day-use beaches during their camping trip were characterized through interviews at campgrounds. Thus, interviews at day-use beaches focused only on day trips to the beach.

CAMPER SURVEY

The camper survey was conducted at all NPS campgrounds on the UCR between the Grand Coulee Dam and the United States-Canada border. Campers were intercepted at campsites in the early evening. The target population consisted of individuals spending the night at an NPS drive-in campground. The survey instrument and sampling approach for the camper survey effort are described in detail below.

SURVEY INSTRUMENT

The camper survey consisted of the following five sections (see Appendix A for a complete copy of the survey instrument):

- *Section A: Preliminary Questions.* The first section of the survey consisted of questions related to the composition of the camping party (i.e., number of adults and children).

[12] All selection probabilities are presented in the "Recreational Consumption and Resource use Survey Sampling and Analysis Plan for the Upper Columbia River Site Human Health Risk Assessment and Remedial Investigation/Feasibility Study," August 30, 2010.

- *Section B: Current Camping Trip.* The second section of the survey asked for information about the current camping trip, including arrival time, expected departure time, whether or not the visitor brought a boat with them on the trip, and whether or not the visitor spent any time waterskiing/tubing, wading, swimming, hanging out on the beach, or sleeping/relaxing in a tent, camper, or RV. For each activity, the respondent was asked to indicate how much time was devoted to the activity over the past 24 hours. Respondents were also asked about the quantity of UCR water that they intentionally consumed (e.g., filling a water bottle with lake water).
- *Section C: Annual Trips to the UCR.* This section was identical to Section C of the boater survey (discussed above).
- *Section D: Fish Consumption.* This section was identical to Section D of the boater survey (discussed above).
- *Section E: Respondent Demographics.* This section was identical to Section E of the boater survey (discussed above).

SAMPLING APPROACH

As visitor characteristics may differ across access points and times of year, the sampling plan was designed to spread sampled trips across all seasons and across all sites, with higher sampling rates used at high-use sites and during high-use time periods.

The sampling was implemented in three stages. First, a sample of days was selected. Next, for each selected day, one (off-peak season) or three (peak season) sites were selected for interviews. Finally, at each selected site, interviews were attempted with visitors at a sample of occupied campsites. These three sampling stages are described in detail below.

Sampling Days

This survey took place over the course of 12 months, from October 1, 2010 to September 30, 2011. During the peak season (May 29, 2011 to September 30, 2011), camping interviews were conducted on the same days that were randomly selected for beach visitor interviews. During the off-peak season (October 1, 2010 to May 28, 2011), camping interviews were conducted on the same days that were randomly selected for boater interviews (Exhibit 7).

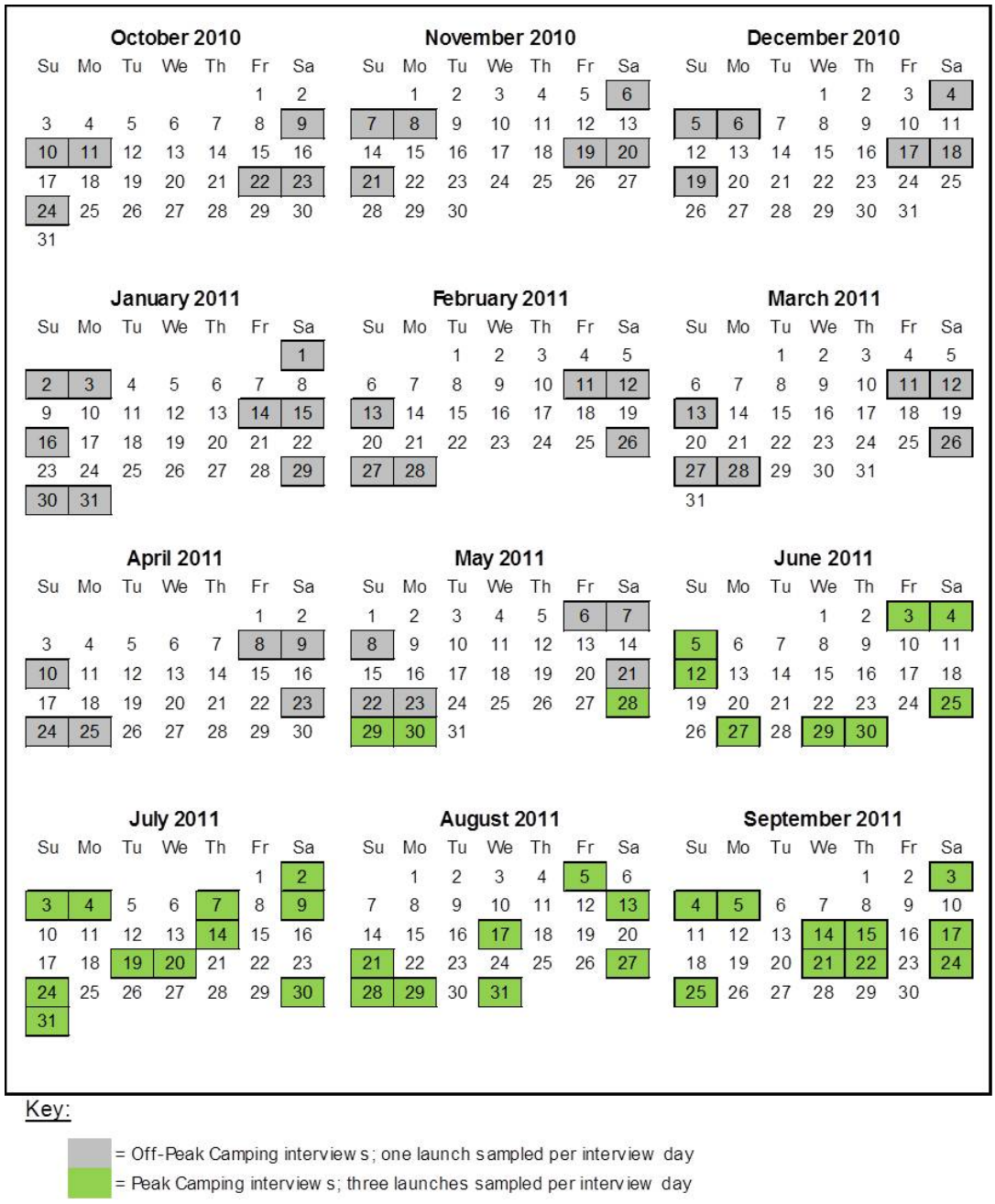
Sampling Sites/Shifts

On each selected day, one or more interview sites were randomly selected from a pre-defined set of NPS campgrounds (Exhibit 8). The sampled campgrounds comprise all 18 major NPS campgrounds on the UCR between the Grand Coulee Dam and the United States-Canada border. Boat-in camping sites were not surveyed as part of the camping survey, as visitors using these sites were contacted in the boater survey.

For each selected peak-season day, three sites were randomly selected for interviews: one from each of the three regions. For each selected off-peak season day, one site was randomly selected for interviews. The decreased sampling intensity during the off-peak

season (interviewing at one site per day rather than three) reflects the decrease in expected visitation during that period. The interview region rotated every sampling day, so that interviewing took place in all three regions during each three-day block of off-season sampling days.

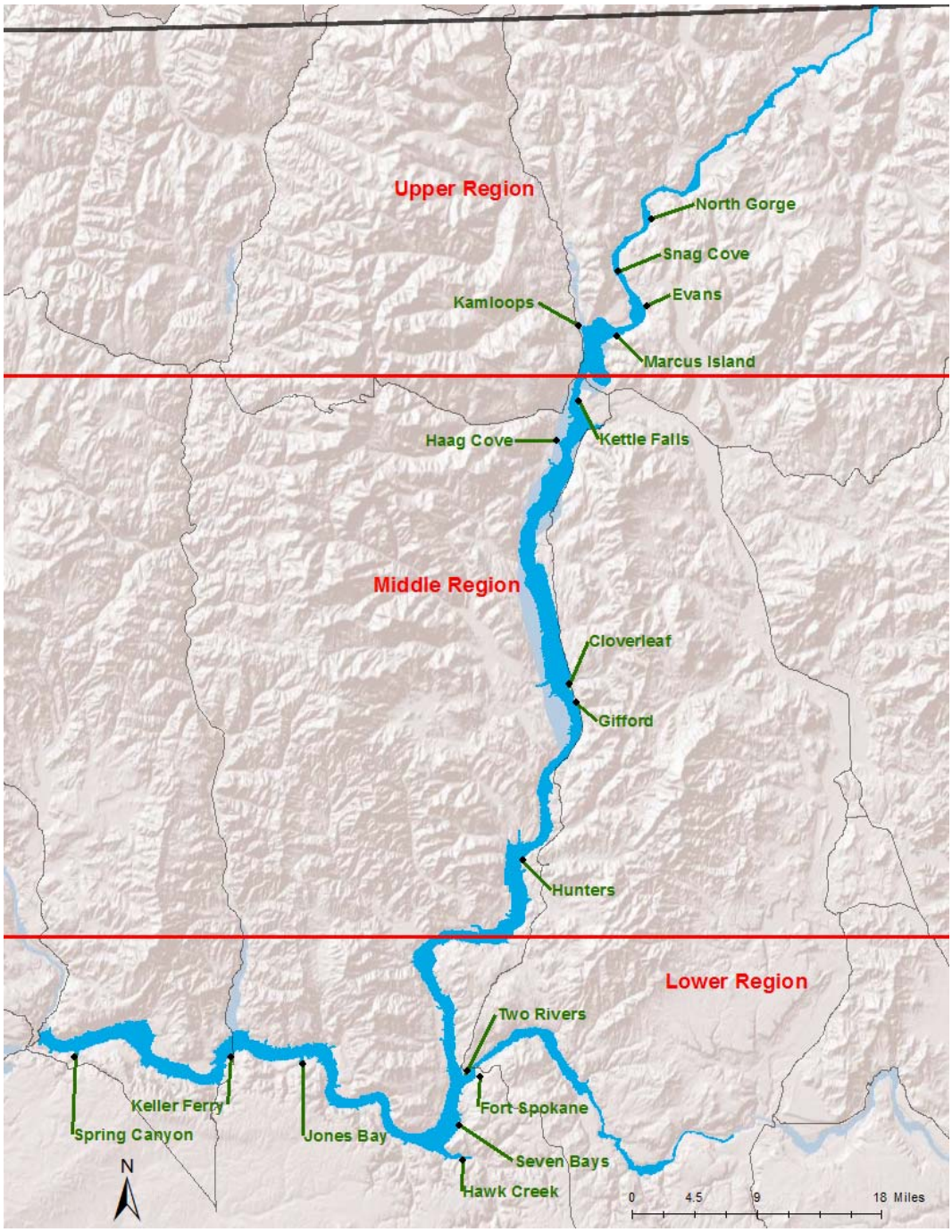
EXHIBIT 7. SAMPLED DAYS – CAMPER SURVEY



The site selection probabilities were approximately proportional to expected visitation, which was estimated by reviewing a variety of data sources, including NPS automated vehicle counts; NPS tent, RV, and trailer counts; campground capacities; and parking lot

capacities. Expected visitation estimates developed from these data sources were reviewed by NPS personnel familiar with visitor use patterns at the UCR.[13]

EXHIBIT 8. SAMPLING LOCATIONS FOR CAMPER SURVEY



[13] All selection probabilities are presented in the "Recreational Consumption and Resource use Survey Sampling and Analysis Plan for the Upper Columbia River Site Human Health Risk Assessment and Remedial Investigation/Feasibility Study," August 30, 2010.

Camping interviews were always conducted in the early evening from 6:00 p.m. to 8:00 p.m., when campers were expected to be at their campsites. This sampling period was adjusted as daylight hours changed throughout the year to avoid having interviewers stationed at sites in the dark (see adjusted times in Appendix D).

When the selected interview site for a particular day was inaccessible, an alternate site was randomly chosen using the same selection probabilities that were used for the primary site. See Appendix D for a complete list of shift changes.

Sampling Visiting Parties

With the camping survey, interviewers began each shift by identifying all occupied campsites. Occupied campsites were defined as numbered campsites that had a tent, camper/RV, or personal equipment at the campsite. The interviewer then attempted interviews at a systematic sample of occupied campsites, with the starting point for the interviews randomly selected. When the number of occupied campsites was less than 24, interviews were attempted at all occupied campsites.[14]

For each camping site selected, the interviewer approached an adult within the campsite and asked to interview the adult who had the most recent birthday (i.e., a randomly selected adult). If the targeted adult refused to complete the survey but an alternative adult within the party offered to complete the survey, then the party was recorded as a completed interview, but the use of a substitute adult was noted in the dataset. At the conclusion of the shift, the interviewer had separate counts of the number of interviews completed, the number of refusals, and the number of parties that were not approached. These counts sum to the total number of occupied campsites counted at the beginning of the shift.

FISH CONSUMPTION DIARY

The fish consumption diary was completed by a subset of the respondents from the boater, beach visitor, and camper surveys. Respondents to these surveys who reported consuming more than ten fish meals per year from the UCR were recruited to complete a fish consumption diary for a period of three months. The survey instrument and implementation approach for the fish consumption diary are described below.

SURVEY INSTRUMENT

The fish consumption diary asked respondents to provide the following details for every fish meal consumed over a three-month period (see Appendix E for a copy of the diary and accompanying materials): date of consumption, fish species, geographic origin, body parts consumed (i.e., fillet, skin, eggs, head, and/or guts), meal size (less than 6 ounces, 6 ounces, 8 ounces, 10 ounces, or greater than 10 ounces), and the size of the child's meal (if applicable). When the meal was from the UCR, the respondent was asked to select the region that it came from (i.e., Areas 1 to 8).

[14] Additional details are provided in the "Recreational Consumption and Resource use Survey Sampling and Analysis Plan for the Upper Columbia River Site Human Health Risk Assessment and Remedial Investigation/Feasibility Study," August 30, 2010.

MAILINGS

At the beginning of each month, all visitors recruited during the previous month were sent a packet of materials consisting of: (1) an introductory letter, (2) a booklet or "diary" for recording fish meals consumed, (3) a photograph depicting 6-ounce, 8-ounce, and 10-ounce fillets, (4) drawings of the primary fish species targeted by anglers in the UCR, and (5) a map of the regions of the UCR (see Appendix E). At the beginning of each of the next two months, participants received a reminder letter and the next month's diary. At the end of the three month period, the participant was asked to return the diaries in a self-addressed, stamped envelope. Every individual who completed the diaries was paid $50 at the end of the three-month period.

TELEPHONE REMINDERS

The fish consumption diary participants were telephoned every month for three months. The monthly calls served several purposes: they provided a reminder to participants to fill out their diary, they provided a regular connection to the research team that encouraged participation, and they provided fish consumption data for respondents who did not want to complete their diary.

WEIGHTS

When estimating population parameters from sample data, weights must be applied when unequal probabilities are used in sampling. That is, elements of the sample with higher selection probabilities must be assigned lower weights than elements with lower selection probabilities when calculating means or other population parameters. The differential weights compensate for the unequal selection probabilities, resulting in unbiased estimates of population parameters.

Unequal sampling probabilities were incorporated in the sampling approach for the current study in three general ways:

- *Stratified Sampling of Survey Days:* The survey days were stratified by peak/off-peak season, month, and weekend/weekday. As total visitation within each stratum was unknown when the sample was drawn, the sampling rates will not necessarily be proportional to actual visitation.
- *Unequal Probabilities of Selection for Access Points and Shifts:* On each survey day, a subset of access points and shifts for surveying were selected using selection probabilities that differed across sites/shifts.
- *On-Site Sampling of Visitors:* As visitors were selected on site, individuals who visit the site more frequently will have a higher probability of selection.

Two different types of sampling weights are required in the analysis: (1) weights for characterizing visitor days and (2) weights for characterizing visitors. Each of these weights is described in detail below.

SAMPLING WEIGHTS FOR VISITOR DAYS

The quantification of exposure from recreational activities requires the calculation of average exposure times for visitor days. Averages by activity (e.g., swimming), type of

recreation day (i.e., camping, boating, beach), time period (peak or off-peak), and location (Upper, Middle, or Lower UCR) were calculated.

Visitor days were not selected with equal probabilities, and they must therefore be weighted before calculating average exposure times. The sampling weight associated with a visitor day is equal to the inverse of that day's probability of selection. Letting p_i represent the probability of selecting visitor day i, the sampling weight is calculated as (Lohr 1999, pg. 103):

(1) $$w_i = \frac{1}{p_i}$$

Letting *S* represent a particular set of visitor days, the weighted average exposure time for *S* would be calculated as:

(2) $$ET = \frac{\sum_{i \in S} w_i ET_i}{\sum_{i \in S} w_i}$$

Note that if the selection probabilities are equal, the sampling weights are identical and this expression simplifies to a standard, unweighted mean.

In this application, the sampling weight is given by:

(3) $$w_{htxqi} = \left(p_{t|h} * p_{x|t} * p_{q|t,x} * p_{i|q}\right)^{-1}$$

where:

w_{htxqi} = Sampling weight for visitor day *i* observed within party *q* at location/shift *x* during day *t* within temporal stratum *h*.

$p_{t|h}$ = Probability of selecting day *t*, conditional on sampling within temporal stratum *h* (i.e., fraction of days selected for sampling within stratum *h*).

$p_{x|t}$ = Probability of selecting location/shift *x*, conditional on sampling during day *t* (i.e., site/shift selection probability from the sampling plan).

$p_{q|t,x}$ = Probability of selecting visiting party *q*, conditional on sampling during day *t* at location/shift *x* (i.e., fraction of visiting parties interviewed during day *t* at location/shift *x*).

$p_{i|q}$ = Probability of selecting visitor *i*, conditional on selecting visiting party *q* (i.e., inverse of the number of adults in the party).

The sum of the sampling weights within each temporal stratum provides an estimate of the number of visitor days within the stratum. However, due to sampling error, these sampling weights may not accurately reflect the temporal distribution of visitor days across strata. For example, if it happens to rain on three out of four weekend days selected for day-use beach sampling in August, August weekend visits to day-use beaches will be under-represented in the dataset. As a result, data from the supplemental vehicle

counters were used, which provide daily vehicle counts throughout the entire year, to adjust these sampling weights, as follows:

(4) $$\tilde{w}_{htxqi} = w_{htxqi} * \left(\frac{\alpha_h}{\beta_h} \right)$$

where:

$\tilde{w}_{htxqi}$ = Adjusted sampling weight for visitor day i in visiting party q observed at location/shift x during day t within temporal stratum h.

w_{htxqi} = Sampling weight for visitor day i in visiting party q observed at location/shift x during day t within temporal stratum h.

α_h = Proportion of visitor days in stratum h as measured by supplemental car counter.

β_h = Proportion of visitor days in stratum h as measured by sampling weights (sum of sampling weights in h divided by sum of sampling weights in all temporal strata).

The proportion of visitor days in each temporal stratum were estimated using data from supplemental vehicle counters deployed at Evans (Upper UCR), Hunters (Middle UCR), and Fort Spokane (Lower UCR). These three sites were selected because each site offers all three activities (boating, camping, and day-use beaches), the site entrance layouts offer the opportunity to obtain separate vehicle counts for each activity, and use levels are high enough to provide accurate estimates of relative use levels. At each site, three counters maintained separate counts of vehicles entering the camping area, the boat launch area, and the day-use swimming area. The counters provided time-stamped data on vehicle entrances, allowing us to estimate relative visitation rates across temporal strata, by region and type of visitor day.

The final weights were trimmed in order to prevent a small number of observations from having outsized influence on the survey estimates. It is common practice to trim the largest weights in the analysis of data from sample surveys, although there are no hard-set rules for weight trimming. Weights were truncated at the median weight plus six times the interquartile range, a commonly used truncation point in sample surveys (Battaglia et al. 2004).

SAMPLING WEIGHTS FOR VISITORS

With on-site sampling, visitors do not have identical probabilities of being selected into the sample, so survey responses need to be weighted when attempting to characterize the visitor population (i.e., through the calculation of CTE and RME exposure estimates). Each sampled visitor must be assigned a weight equal to the inverse of his or her probability of selection (U.S. EPA 1997; Price, Su, and Gray 1994; Ray et al. 2007; Thomson 1991). With a simple random sample, these probabilities are all equal, so the weights are identical and drop out in estimating population parameters. With on-site

sampling, the probability of selection will differ for each visitor, depending on the type, timing, location, and number of trips that the visitor takes to the UCR.

Consider a simple example involving day trips to a hypothetical beach. Suppose 500 of the visitors are "Type A" visitors and visit three times a year, while 500 of the visitors are "Type B" visitors and visit only once a year. Clearly, when averaging across the entire population of 1,000 visitors, the average annual trips to the beach is two visits per year. However, as Type A visitors contribute three times as many trips as Type B visitors, Type A visitors would be three times as likely to be selected in a typical on-site sample. That is, in a typical on-site sample of 100 visitors, approximately 75 would be Type A visitors and approximately 25 would be Type B visitors. The average annual trips calculated from this sample would be 2.5 trips per year: $2.5 = (75 * 3 + 25 * 1)/(75 + 25)$. Thus, in the absence of weighting, the sample average provides an estimate of the population mean that is biased toward avid visitors.

However, if each respondent in this example is weighted by the inverse of his or her probability of selection, an unbiased estimate of average annual trips can be obtained. Let p represent the probability of selection for a Type B visitor, so that the sampling weight for Type B visitors is 1/p. The probability of selection for a Type A visitor (who takes three times as many trips) would then be 3p, with a sampling weight equal to 1/(3p). For the typical sample of 100 visitors described above, the weighted average annual trips would be equal to 2.0 trips per year: $2.0 = (1/(3p) * 75 * 3 + (1/p) * 25 * 1)/(1/(3p) * 75 + (1/p)*25)$.

In the current application, the calculation of sampling weights is considerably more complex, requiring data on: (1) the type, timing, and location of all UCR trips taken during the survey period by visitor i, (2) the probability that visitor i would be interviewed on each recreation day if that particular day and location/shift were randomly selected for the survey, (3) the number of days selected for surveying within each temporal stratum, and (4) the site/shift selection probabilities. While the latter two inputs can be obtained directly from the sampling plan, the first two inputs must be approximated.

The type, timing, and location of all UCR trips taken during the survey period were approximated using responses to questions about UCR trips over a recent 12-month period.[15] The survey provides information about the number of trips by type, season, and location. However, due to potential recall difficulties the survey did not ask respondents to allocate the trips in a given season among temporal sampling strata or between AM and PM shifts.

Trips among the temporal sampling strata were randomly assigned using information from the supplemental vehicle counters on relative visitation levels across strata within each region and for each type of site (beach, boating, or camping).

[15] The 12-month period differs across respondents, as respondents were intercepted at different times of year. The period begins one year prior to the beginning of the intercept season (i.e., the season in which the respondent was interviewed), and it ends just before the intercept season.

Beach and boating trips are randomly assigned to AM or PM shifts based on the proportion of visitors that leave sites during each type of shift, as estimated from survey shift summaries.[16] At beach sites, approximately five percent of visitors were observed leaving during AM survey shifts and approximately 95 percent during PM survey shifts (average across all shifts). For boating sites, the corresponding percentages were 15 percent for AM shifts and 85 percent for PM shifts. Camping interviews were all conducted in the evening, so it was not necessary to assign camping trips to AM/PM shifts.

Some respondents did not take any trips to the UCR during the recent 12-month period, thus potentially resulting in selection probabilities equal to zero (and infinite sampling weights) for these respondents. In order to address this issue, UCR trips during the recent 12-month period were supplemented by the current UCR trip when calculating selection probabilities. For example, an individual intercepted at Bradbury Beach who took no trips to the UCR over the recent 12-month period would be assigned one trip to Bradbury Beach when calculating sampling weights.

The probability that the visitor would be interviewed on a given recreation day if the day/location/shift were randomly selected for interviews is equal to the sampling rate for that particular day/location/shift. As not all days/locations/shifts were sampled, the sampling rate for each location was approximated as follows:[17]

(5) $$\gamma_x = \frac{I_x}{V_x x G_x}$$

where:

γ_x = Sampling rate for location x.

I_x = Total number of interviews completed at location x.

V_x = Total number of visitor groups observed during interview shifts at location x (i.e., boats at boat launch sites, occupied campsites at campgrounds, or visitor groups at beaches).

G_x = Average number of adults per group at location x.

Given these four data sources (UCR visits by visitor i, the sampling rate at each site, number of days sampled within each temporal stratum, and site/shift selection probabilities), one can calculate the probability that visitor i will be selected for the survey within temporal stratum h during a visit of type a, assuming n days are sampled out of a total of N possible days in stratum h.

[16] Automated vehicle counters are not used to estimate the fraction of visitors observed leaving sites during AM versus PM shifts because the vehicle counters do not distinguish between vehicles entering and leaving a site.

[17] The mean sampling rate across all boating sites was used to approximate the sampling rate for boating trips to Hawk Creek and French Rocks, as no interviews were conducted at these two locations.

For simplicity of presentation, focus is on a single stratum and visit type, allowing one to temporarily drop subscripts h and a. When an individual takes only one UCR trip of a given type within a given temporal stratum, the calculation of the person's selection probability is relatively simple. Letting j represent the site/shift that the individual actually visited, the selection probability is equal to the probability of selecting the day that the individual visited $\binom{n}{N}$ times the probability of selecting the site/shift that the individual visited (p_j) times the probability of intercepting the individual while interviewing at the site (γ_j):

$$p(selected|j) = \left(\frac{n}{N}\right) p_j \gamma_j$$

When the individual takes more than one trip to the UCR within a given temporal stratum, the complexity of the probability calculations increases considerably. The selection probability for an individual visiting two sites (sites j and k) is given by:

$$p(selected|j,k) = \frac{n}{N}\left(p_j\gamma_j + p_k\gamma_k\right) - \frac{n(n-1)}{N(N-1)}\left(p_j\gamma_j p_k\gamma_k\right)$$

while the selection probability for an individual visiting three sites (sites *j*, *k*, and *l*), is given by:

$$\begin{aligned} p(selected|j,k,l) &= \frac{n}{N}\left(p_j\gamma_j + p_k\gamma_k + p_l\gamma_l\right) \\ &- \frac{n(n-1)}{N(N-1)}\left(p_j\gamma_j p_k\gamma_k + p_j\gamma_j p_l\gamma_l + p_k\gamma_k p_l\gamma_l\right) \\ &+ \frac{n(n-1)(n-2)}{N(N-1)(N-2)}\left(p_j\gamma_j p_k\gamma_k p_l\gamma_l\right) \end{aligned}$$

Each of these expressions represents the probability that the individual would be selected at least once within a given temporal stratum and visit type. Selection probabilities for individuals visiting four and five sites are provided in Appendix F.

Denoting the selection probability for a particular stratum (*h*) and visit type (*a*) as p_{ahi}, the overall probability that visitor *i* will be selected for the survey is given by:

$$p_i = 1 - \prod_{a=1}^{3}\prod_{h=1}^{H}(1 - p_{ahi}) \quad (7)$$

where:

p_i = Probability that visitor *i* will be selected for the survey.

p_{ahi} = Probability that visitor *i* will be selected for the survey within temporal stratum *h* during a visit of type *a*.

The sampling weight for visitor *i* is then calculated as:

(8) $$w_i = \frac{1}{p_i}$$

Given the complexity of the probability calculations, each visitor is limited to no more than five UCR trips within each temporal stratum and type of visit. If a visitor takes more than five UCR trips of a given type within a single temporal stratum and visit type, five of his or her trips are randomly selected for use in calculating person weights. For these visitors, the additional UCR trips (beyond five in each stratum) do not contribute to the calculated selection probability.[18]

As with the trip weights, the final person weights were trimmed in order to prevent a small number of observations from having an outsized influence on the survey estimates. The weights were truncated at the median weight plus six times the interquartile range.

QUALITY ASSURANCE

This section describes the quality assurance protocols that were followed in testing the survey, implementing the survey, entering the survey data into a database, validating the data, and cleaning the data.

PRE-TEST

A field pretest was conducted at the UCR over a four-day period (two weekdays and two weekend days) from Thursday, June 17, 2010 to Sunday, June 20, 2010. The purpose of the pretest was to evaluate the survey instrument and intercept procedures so that potential problems could be identified and addressed prior to implementing the full survey. IEc staff conducted surveys with visitors at boat launches, campgrounds, and day-use beaches (Exhibit 9) using intercept procedures similar to those planned for the full survey. When feasible, post-interview probes were used to evaluate the survey instrument and visual aids.

Overall, 130 individuals were intercepted during the four-day period, resulting in 106 completed pre-test surveys and 24 refusals, for a response rate of approximately 82 percent. Of the completed pre-test surveys, 36 were at boat launches, 46 were at campgrounds, and 24 were at day-use beaches. Response rates were relatively high for all

[18] Twenty-three percent of the respondents who completed survey Section C reported taking more than five UCR trips in at least one temporal stratum. An alternative to truncating trips for these respondents would be to predict their selection probabilities using regression techniques. Specifically, one could regress selection probability on total UCR trips for the respondents who did not have trips truncated, then use the results to predict selection probabilities for the respondents who did have trips truncated. If this approach were implemented, for example, the estimated annual UCR fish meals would decline from 7.5 meals/year to 6.7 meals/year for UCR fish consumers.

three types of sites, with an 87 percent response rate at boat launches, an 80 percent response rate at campgrounds, and a 75 percent response rate at beaches.[19]

EXHIBIT 9. PRETEST LOCATIONS

BOAT LAUNCHES	CAMPGROUNDS	DAY-USE BEACHES
Northport[1]	Evans	Evans
China Bend	Kettle Falls	Colville Flats
Kettle Falls	Haag Cove	Bradbury
Hunters	Two Rivers	Fort Spokane[1]
Fort Spokane	Fort Spokane	Spring Canyon[1]
Porcupine Bay	Keller Ferry	
Seven Bays	Spring Canyon	
Lincoln		
Keller Ferry		
Spring Canyon		

Note:
[1] Interviewing terminated prior to end of shift due to absence of visitors.

TRAINING AND OVERSIGHT OF SURVEY STAFF

An experienced field supervisor was responsible for the implementation and management of the entire survey effort. This individual was responsible for screening, selecting, training, and managing all field staff. The field supervisor lived at the site throughout the entire peak season (May to September), and visited the site periodically to supervise staff during the off-peak season.

Prior to each season (i.e., peak and off-peak), the field supervisor delivered comprehensive, hands-on training to all interviewers, covering all policies, procedures, and survey forms. Off-peak season training occurred on October 8, 2010 at Fort Spokane; peak season training occurred on May 25, 26, and 27, 2011 at Kettle Falls. Each training session covered all information provided in the employee handbook, including:

- Project background,
- Policies and procedures,
- Shift procedures,
- Survey demonstration and procedures,
- Practice survey implementation (i.e., mock interviews),
- Safety basics, and
- On-site walk-through of procedures.

[19] Significant observations from the pretest regarding the survey instrument and intercept procedures are described in Appendix G of the "Recreational Consumption and Resource use Survey Sampling and Analysis Plan for the Upper Columbia River Site Human Health Risk Assessment and Remedial Investigation/Feasibility Study," August 30, 2010.

Although interviewers were frequently stationed at remote locations throughout the UCR, they were closely supervised by the field supervisor. Interviewers were required to call the field supervisor at the beginning and end of each shift to confirm that they had completed the shift safely and at the correct location. In addition, the field supervisor conducted on-site visits at survey locations to observe field staff performance. These on-site visits were conducted daily throughout the peak season and during every other sampling weekend throughout the off-peak season. During each site visit, the field supervisor verified proper administration of the survey instrument and proper adherence to policies and procedures. Finally, NPS staff were aware of the locations and times for all survey shifts, and they periodically visited interviewers on site.

The field supervisor collected all completed surveys and shift summary forms within two days of shift completion.[20] Every shift summary form and completed survey was reviewed for completeness. Specifically, the field supervisor verified that:

- The total interviews marked as complete on the shift summary form matched the total number of completed surveys.
- All required fields on shift summary forms were completed accurately.
- All introductory information on the survey instruments was completed accurately (e.g., interviewer name, date, etc.).

At the beginning of each season, the field supervisor carefully inspected a sample of completed surveys from each interviewer to identify any potential errors. When problems were identified, they were discussed with the individual interviewer at the beginning of his or her next survey shift. In addition, any errors or inconsistencies identified during data entry or field supervision were communicated to all interviewers.

DATA ENTRY AND VALIDATION

All completed surveys and shift summary sheets were collected on site by the field coordinator, assigned a unique numeric ID, and sent by tracked carrier to IEc's main office in Cambridge, MA. All completed surveys were photocopied, with the originals archived at IEc.

The accuracy of the database was assessed by entering the data from a systematic sample of ten percent of the forms/surveys and comparing these entries to the database.[21] When discrepancies between the two databases were identified, the paper version of the form/survey was consulted to determine which database was correct. Overall, 20 data entry errors were identified out of 21,854 data items reviewed (an error rate of 0.09 percent, or approximately one out of a thousand data items), and these 20 errors were corrected in the final database. A similar review process was followed for the diary data,

[20] Due to the large area covered by the survey, daily form collection from all areas of the lake was not always possible.

[21] A random number between one and ten was selected using Excel's random number generator, then selected every 10th survey starting from that random number (e.g., if the number four was randomly selected, then data from survey ID 4, 14, 24, etc. was entered).

where six data entry errors were identified out of 4,468 data items reviewed (an error rate of 0.13 percent).

PREPARING DATA FOR ANALYSIS

Upon completing the data entry process, the survey data were exported to Stata for additional cleaning and verification prior to statistical analysis. The following logic checks were implemented:

- Each data field was fully tabulated and the distribution of responses was reviewed in order to identify responses that were outside of the permissible range for that field. For example, the recorded survey date must fall on one of the actual survey days, the respondent's age must be between 18 and 120, and the number of fish meals consumed must be non-negative.
- The responses were reviewed to identify survey skip pattern violations. For example, visitors who do not eat fish from the UCR should not have provided responses to questions about fish consumption or fish consumption advisories. Similarly, respondents who had already taken the survey on another occasion should only provide responses to questions about their current trip to the UCR.
- Inconsistent responses were identified. For example, respondents could not have arrived at the site *after* the interview date/time, and the expected departure date cannot be prior to the interview date for camping interviews. In addition, the sum of all activity times should not exceed the length of the current trip (for overnight camping trips it should not exceed 24 hours). When the sum of all activity times was greater than the trip length (or 24 hours), then all activity times were scaled down proportionally.[22]

In addition to these logic checks, the following modifications were also made to the survey data to facilitate analysis:

- All text fields (e.g., names of sites visited, fish species consumed, etc.) were reviewed and responses were standardized/corrected to the extent possible without changing the respondent's intent. For example, "Berbot," "burbot," and "Burbit" would all be replaced with "Burbot."
- When respondents provided numerical ranges (e.g., 20-30 minutes of swimming) the range was replaced with the midpoint of the range (e.g., 25 minutes). When respondents provided an inequality such as "less than X" then the inequality was replaced with X divided by two.[23]

[22] Approximately 15 percent of the activity times were scaled down for this reason.

[23] This occurred primarily with survey question D4 (UCR fish consumption over the past 12 months), as interviewers were told to use the following prompt for respondents who were unsure "Would you say it was less than 10, 10 to 20, 20 to 30…" However only 0.1 percent of the responses to question D4 were in the form of an inequality, so the replacement was rare.

CHAPTER 3 | RESULTS

INTRODUCTION

This section of the report provides a summary of the data collected during the UCR recreational use survey effort. This includes data collected through on-site interviews with visitors at boat launches, beaches, and campgrounds, as well as data collected through the fish consumption diaries.

The section begins by providing a general overview of the on-site intercept data, including the number of completed surveys and response rates. Next, responses to the on-site surveys are summarized, including separate summaries of current boating trips, current beach trips, current camping days, past trips to the UCR, fish consumption, awareness of fishing consumption advisories, and demographics. Finally, fish consumption data provided through the diaries is summarized.[24]

OVERVIEW OF INTERCEPT SURVEY DATA

A total of 2,109 on-site visitor surveys were completed at the UCR between October 1, 2010 and September 30, 2011. Of the 2,109 completed surveys, 803 (38 percent) were conducted at boat launches, 876 (42 percent) were conducted at campgrounds, and 430 (20 percent) were conducted at day-use beaches. Sixteen of the surveys completed at campgrounds were with campground hosts, NPS volunteers who live at designated campsites throughout the summer and provide assistance to campers. These campground host surveys have been removed from all subsequent analyses in this report.

The overall response rate was 82.3 percent, calculated as total completed interviews (prior to eliminating ineligible respondents) divided by total attempted interviews (Exhibit 10). The response rate was highest at campgrounds (87.0 percent), followed by boat launches (81.2 percent) and day-use beaches (77.4 percent).

The distribution of completed surveys by month is displayed in Exhibit 11. The vast majority of the boating (91 percent) and camping (95 percent) surveys were completed during the peak season (May 28, 2011 to September 30, 2011). This is the result of both higher sampling rates and higher visitation rates during those months. All of the beach surveys were completed during the peak season by design.

The distribution of completed surveys across the three UCR regions is displayed in Exhibit 12. Overall, approximately 42 percent of the surveys were completed in the

[24] The consumption of UCR water is not summarized in a separate section, as very little intentional UCR water consumption was reported. Three adults and three children reported consuming less than eight ounces of UCR water, and one adult reported consuming approximately 20 ounces of UCR water.

Middle UCR, approximately 38 percent in the Lower UCR, and approximately 19 percent in the Upper UCR.

EXHIBIT 10. RESPONSE RATE BY SURVEY TYPE

SURVEY TYPE	ATTEMPTED INTERVIEWS	REFUSALS	INELIGIBLE RESPONDENTS[1]	COMPLETED INTERVIEWS	RESPONSE RATE[2]
Beach survey	658	149	79	430	77.4%
Boater survey	1,243	234	206	803	81.2%
Camping survey	1,007	131	0	876	87.0%
Total	2,908	514	285	2,109	82.3%

Notes:
[1] "Ineligible Respondents" are cases where the interviewer at a day-use beach or boat launch terminated the survey because the respondent was camping at a UCR drive-in campground (and would therefore be captured by the camping survey effort).
[2] Response rates are calculated as the number of completed interviews (including ineligible respondents who agreed to complete the survey) divided by the number of attempted interviews.

EXHIBIT 11. NUMBER OF COMPLETED SURVEYS BY MONTH

YEAR	MONTH	BOAT		CAMP		BEACH	
		n	%	n	%	n	%
2011	January	6	0.7%	2	0.2%	N/A[1]	N/A
2011	February	11	1.4%	0	0.0%	N/A	N/A
2011	March	10	1.2%	4	0.5%	N/A	N/A
2011	April	13	1.6%	11	1.3%	N/A	N/A
2011	May	38	4.7%	54	6.3%	14	3.3%
2011	June	98	12.2%	141	16.4%	56	13.0%
2011	July	244	30.4%	287	33.4%	202	47.0%
2011	August	188	23.4%	180	20.9%	109	25.3%
2011	September	172	21.4%	166	19.3%	49	11.4%
2010	October	12	1.5%	15	1.7%	N/A	N/A
2010	November	4	0.5%	0	0.0%	N/A	N/A
2010	December	7	0.9%	0	0.0%	N/A	N/A
	Total	803	100.0%	860	100.0%	430	100.0%

Notes:
[1] Beach surveys were not conducted during the off-peak season.

The distribution of completed surveys and supplemental vehicle counts across the eleven temporal sampling strata and the three UCR regions is displayed in Appendix G. As discussed in the "Weights" section of the report, data from these supplemental vehicle counters are used to adjust the sampling weights for visitor days so that within a given

region, the temporal distribution of weighted visitor days matches the temporal distribution of vehicle counts.

EXHIBIT 12. DISTRIBUTION OF COMPLETED SURVEYS BY REGION

REGION	BOAT		CAMP		BEACH	
	n	%	n	%	n	%
Lower	308	38.3%	337	39.2%	157	36.5%
Middle	410	51.1%	298	34.7%	176	40.9%
Upper	85	10.6%	225	26.2%	97	22.6%
Total	803	100.0%	860	100.0%	430	100.0%

CHARACTERIZATION OF BOATING TRIPS

Interviews conducted with visitors at boat launches and marinas provide information that allows for the characterization of UCR boating trips. This section focuses on the boating trip that the respondent had just completed at the time of the interview.

The number of occupants per boat ranged from one to 14, with an overall average of 3.1 occupants per boat (median of 2.0 occupants). The vast majority of boats had a relatively small number of occupants on board. Ninety percent had five or fewer occupants, while 53 percent only had one or two occupants (Exhibit 13).

The average length of a boating trip was 14.9 hours (median of 6.2 hours), with 85 percent of trips lasting less than 24 hours and 15 percent lasting more than 24 hours (Exhibit 14). Among trips lasting more than 24 hours, 37 percent were 1-2 day trips (24 to 48 hours), 40 percent were 2-3 day trips (48 to 72 hours), 11 percent were 3-4 day trips (72 to 96 hours), and 12 percent were longer than four days (> 96 hours).

Exhibit 15 depicts the areas of the UCR visited by boaters during their recently-completed trip. For each launch site, the exhibit depicts the percentage of boaters from that launch site that visited each of the eight UCR areas (see Appendix B for a map of the eight UCR areas). For example, of the 295 boaters intercepted at Kettle Falls, 100 percent visited Area 3 (the area within which the launch site is located), 15.9 percent traveled upstream to Area 2 before returning to Kettle Falls, and 50.2 percent traveled downstream to Area 4 before returning to Kettle Falls. Only 4.1 percent of boats launching from Kettle Falls made it as far downstream as Area 5, and only 1.7 percent reached Area 6.

EXHIBIT 13. SIZE OF BOATING PARTIES

GROUP SIZE	NUMBER OF GROUPS[1]	PERCENTAGE OF GROUPS	CUMULATIVE PERCENTAGE
1 Visitor	85	10.6%	10.6%
2 Visitors	337	42.2%	52.8%
3 Visitors	132	16.5%	69.3%
4 Visitors	111	13.9%	83.2%
5 Visitors	50	6.3%	89.5%
6 Visitors	38	4.8%	94.2%
7 Visitors	18	2.3%	96.5%
8 Visitors	13	1.6%	98.1%
9 Visitors	7	0.9%	99.0%
10 Visitors	2	0.3%	99.3%
11 Visitors	2	0.3%	99.5%
12 Visitors	1	0.1%	99.6%
13 Visitors	2	0.3%	99.9%
14 Visitors	1	0.1%	100.0%
Total	799	100.0%	

Notes:
[1] Trips with missing group sizes are excluded.

EXHIBIT 14. LENGTH OF BOATING TRIPS

TRIP LENGTH (HOURS) [1]	NUMBER OF TRIPS[2]	PERCENTAGE OF TRIPS	CUMULATIVE PERCENTAGE
0 to 4	165	21.2%	21.2%
4 to 8	383	49.3%	70.5%
8 to 12	97	12.5%	83.0%
12 to 24	15	1.9%	84.9%
24 to 48	43	5.5%	90.5%
48 to 72	47	6.1%	96.5%
72 to 96	13	1.7%	98.2%
>96	14	1.8%	100.0%
Total	777	100.0%	

Notes:
[1] The lower limit is excluded from each trip length category so that the categories are mutually exclusive. For example, trips in the "4 to 8" category are defined as > 4 hours and ≤ 8 hours.
[2] Trips missing an arrival time are excluded.

EXHIBIT 15. AREA OF LAKE VISITED

LAUNCH LOCATION	LAKE AREAS							
	AREA 1	AREA 2	AREA 3	AREA 4	AREA 5	AREA 6	AREA 7	AREA 8
Northport (n=29)	100.0%	34.5%	3.4%	3.4%	0.0%	0.0%	0.0%	0.0%
China Bend (n=18)	27.8%	100.0%	5.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Snag Cove (n=5)	0.0%	100.0%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Evans (n=23)	0.0%	100.0%	65.2%	13.0%	0.0%	0.0%	0.0%	0.0%
Marcus Island (n=10)	0.0%	20.0%	100.0%	10.0%	0.0%	0.0%	0.0%	0.0%
Kettle Falls (n=295)	0.7%	15.9%	100.0%	50.2%	4.1%	1.7%	0.0%	0.3%
Bradbury Beach (n=10)	0.0%	0.0%	30.0%	100.0%	0.0%	0.0%	0.0%	0.0%
Daisy (n=4)	0.0%	0.0%	0.0%	100.0%	25.0%	0.0%	0.0%	0.0%
Gifford (n=17)	0.0%	0.0%	5.9%	41.2%	100.0%	0.0%	0.0%	0.0%
Hunters (n=84)	0.0%	0.0%	4.8%	9.5%	100.0%	7.1%	1.2%	2.4%
Two Rivers (n=2)	0.0%	0.0%	0.0%	0.0%	50.0%	100.0%	50.0%	100.0%
Porcupine Bay (n=55)	0.0%	0.0%	0.0%	1.8%	5.5%	18.2%	1.8%	100.0%
Fort Spokane (n=49)	0.0%	0.0%	0.0%	0.0%	32.7%	67.3%	12.2%	100.0%
Seven Bays (n=26)	0.0%	0.0%	0.0%	0.0%	15.4%	100.0%	23.1%	15.4%
Lincoln (n=14)	0.0%	0.0%	0.0%	0.0%	21.4%	100.0%	7.1%	21.4%
Hanson Harbor (n=10)	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	50.0%	0.0%
Keller Ferry (n=100)	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	100.0%	0.0%
Spring Canyon (n=46)	0.0%	0.0%	0.0%	0.0%	0.0%	13.0%	100.0%	0.0%
Crescent Bay (n=6)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%

Participation in various activities during the current boating trip is summarized in Exhibit 16 (boating day trips) and 17 (boat camping trips).[25] In characterizing activities during boating trips, sampling weights are applied in order to account for differences in selection probabilities across different launch sites and days. With these weights incorporated, the participation rates and durations accurately reflect the population of UCR boating trips.

Participation in water- and shoreline-contact activities generally increases in the downstream direction. For boating day trips, the most common activity during the peak season was spending time on the beach (42 percent of Lower UCR boaters, 30 percent of Middle UCR boaters, and 23 percent of Upper UCR boaters). Wading was the next most popular activity (36 percent of Lower UCR boaters, 24 percent of Middle UCR boaters, and 21 percent of Upper UCR boaters), followed by swimming (28 percent of Lower UCR boaters, 16 percent of Middle UCR boaters, and 11 percent of Upper UCR boaters) and waterskiing or tubing (15 percent of Lower UCR boaters, 14 percent of Middle UCR boaters, and one percent of Upper UCR boaters). During the off-peak season,

[25] Trips lasting less than 24 hours are referred to as "boating day trips," while trips lasting more than 24 hours are referred to as "boat camping trips."

participation rates for all water- and shoreline-contact activities were generally lower than five percent.

For boat camping trips, peak season participation rates were somewhat higher for all water- and shoreline-contact activities, and the pattern of higher participation rates in the downstream direction was not observed. The most common activity was spending time on the beach (69 percent of Lower UCR boaters and 73 percent of Middle UCR boaters), followed by wading (56 percent of Lower UCR boaters and 60 percent of Middle UCR boaters), swimming (56 percent of Lower UCR boaters and 51 percent of Middle UCR boaters), spending time in a tent (37 percent of Lower UCR boaters and 39 percent of Middle UCR boaters), and waterskiing or tubing (28 percent of Lower UCR boaters and 35 percent of Middle UCR boaters).[26]

Average activity durations are reported in Exhibits 18 (boating day trips) and 19 (boat camping trips) for the subset of respondents who reported that they participated in each activity. For boating day trips, mean activity durations during the peak season range from 50 to 96 minutes for waterskiing or tubing, 29 to 54 minutes for wading, 45 to 61 minutes for swimming, and 85 to 123 minutes for spending time on the beach. For boat camping trips, mean activity durations during the peak season are considerably longer, ranging from 132 to 220 minutes for waterskiing or tubing, 119 to 122 minutes for wading, 79 to 105 minutes for swimming, 494 to 506 minutes for spending time on the beach, and 285 to 480 minutes for spending time in a tent. For boat camping trips, the activity times are for the most recent 24-hour period.

EXHIBIT 16. ACTIVITY PARTICIPATION RATES FOR BOATING DAY TRIPS (LESS THAN 24 HOURS IN LENGTH)

SEASON	ACTIVITY	PARTICIPATION RATE[1]		
		LOWER UCR (n=213)	MIDDLE UCR (n=301)	UPPER UCR (n=72)
Peak	Waterskiing or tubing	15.1%	14.3%	1.1%
	Wading	36.0%	23.7%	21.1%
	Swimming	27.6%	16.4%	10.8%
	Hanging out on beach	42.3%	30.1%	22.9%
		LOWER UCR (n=30)	MIDDLE UCR (n=34)	UPPER UCR (n=6)[2]
Off-Peak	Waterskiing or tubing	0.0%	0.0%	--
	Wading	0.0%	1.7%	--
	Swimming	0.0%	0.0%	--
	Hanging out on beach	3.7%	2.1%	--

Notes:
[1] Reported participation rates are weighted averages, with weights equal to the inverse of the trip selection probability (see sampling weights discussion).
[2] Participation rates are not reported due to the small sample size (n < 10).

[26] Activity participation rates are not reported for peak season boat camping in the Upper UCR due to small sample sizes.

EXHIBIT 17. ACTIVITY PARTICIPATION RATES FOR BOAT CAMPING TRIPS (GREATER THAN 24 HOURS IN LENGTH)

SEASON	ACTIVITY	PARTICIPATION RATE[1,2,3]		
		LOWER UCR (n=57)	MIDDLE UCR (n=65)	UPPER UCR (n=4)[2]
Peak	Waterskiing or tubing	27.6%	34.8%	--
	Wading	56.4%	60.3%	--
	Swimming	55.5%	50.9%	--
	Hanging out on beach	68.6%	73.2%	--
	Spending time in tent	37.3%	38.5%	--

Notes:
[1] Reported participation rates are weighted averages, with weights equal to the inverse of the trip selection probability (see sampling weights discussion).
[2] Participation rates are not reported for the Upper UCR or for the off-peak season due to small sample sizes (n < 10).
[3] Participation rates are for the most recent 24-hour period.

EXHIBIT 18. AVERAGE ACTIVITY DURATIONS FOR BOATING DAY TRIPS (LESS THAN 24 HOURS IN LENGTH)

SEASON	ACTIVITY	AVERAGE ACTIVITY DURATION FOR PARTICIPANTS (MINUTES)[1,2]								
		LOWER UCR			MIDDLE UCR			UPPER UCR		
		MEAN	MEDIAN	n	MEAN	MEDIAN	n	MEAN	MEDIAN	n
Peak	Waterskiing or tubing	50	39	27	96	120	37	--	--	--
	Wading	54	30	79	39	30	80	29	15	16
	Swimming	51	30	55	45	30	70	61	30	11
	Hanging out on beach	123	111	94	115	90	94	85	60	15

Notes:
[1] Activity durations are weighted averages, with weights equal to the inverse of the trip selection probability (see sampling weights discussion).
[2] Activity durations are not reported for the off-peak season or for waterskiing/tubing in the Upper UCR due to small sample sizes (n < 10).

EXHIBIT 19. AVERAGE ACTIVITY DURATIONS FOR BOAT CAMPING TRIPS (GREATER THAN 24 HOURS IN LENGTH)

SEASON	ACTIVITY	AVERAGE ACTIVITY DURATION FOR PARTICIPANTS (MINUTES)[1,2,3]								
		LOWER UCR			MIDDLE UCR			UPPER UCR		
		MEAN	MEDIAN	n	MEAN	MEDIAN	n	MEAN	MEDIAN	n
Peak	Waterskiing or tubing	132	120	18	220	120	12	--	--	--
	Wading	119	60	39	122	120	42	--	--	--
	Swimming	79	30	36	105	60	33	--	--	--
	Hanging out on beach	506	480	43	494	420	52	--	--	--
	Spending time in tent	480	480	20	285	120	16	--	--	--

Notes:
[1] Activity durations are weighted averages, with weights equal to the inverse of the trip selection probability (see sampling weights discussion).
[2] Activity durations are not reported for the Upper UCR or for the off-peak season due to small sample sizes (n < 10).
[3] Activity durations are for the most recent 24-hour period.

CHARACTERIZATION OF BEACH DAY TRIPS

Interviews conducted with visitors at day-use beaches provide information that allows for the characterization of UCR beach day trips.[27] This section focuses on the beach trip that the respondent had just completed at the time of the interview.

The number of people in each beach group ranged from one to 119, with an overall average of 5.2 visitors per group (median of 4.0). The very large groups were observed primarily at Spring Canyon, where group picnics and family reunions were common. Only six percent of the groups had one visitor, approximately 71 percent consisted of between two and five visitors, and the remaining 23 percent had six or more visitors (Exhibit 20).

The average length of a beach day trip was 2.4 hours (median of 2.1 hours). Many of the trips were short, with 22 percent lasting less than an hour, 27 percent lasting one to two hours, 21 percent lasting two to three hours, and 15 percent lasting three to four hours. Only 16 percent of the beach day trips lasted longer than four hours (Exhibit 21).

[27] In order to avoid double counting, beach visitors who were camping at NPS campgrounds were not interviewed at day-use beaches. These visitors were only interviewed at campgrounds.

EXHIBIT 20. SIZE OF BEACH PARTIES

GROUP SIZE	NUMBER OF GROUPS	PERCENTAGE OF TRIPS	CUMULATIVE PERCENTAGE
1 visitor	24	5.6%	5.6%
2 visitors	105	24.4%	30.0%
3 visitors	70	16.3%	46.3%
4 visitors	87	20.2%	66.5%
5 visitors	45	10.5%	77.0%
6 visitors	29	6.7%	83.7%
7 visitors	13	3.0%	86.7%
8 visitors	18	4.2%	90.9%
9 visitors	10	2.3%	93.3%
10 visitors	4	0.9%	94.2%
>10 visitors	25	5.8%	100.0%
Total	430	100.0%	

EXHIBIT 21. LENGTH OF BEACH TRIPS

TRIP LENGTH (HOURS) [1]	NUMBER OF TRIPS[2]	PERCENTAGE OF TRIPS	CUMULATIVE PERCENTAGE
0 to 1	93	21.7%	21.7%
1 to 2	115	26.8%	48.5%
2 to 3	88	20.5%	69.0%
3 to 4	65	15.2%	84.2%
4 to 6	58	13.5%	97.7%
6 to 8	9	2.1%	99.8%
>8	1	0.2%	100.0%
Total	429	100.0%	

Notes:
[1] The lower limit is excluded from each trip length category so that the categories are mutually exclusive. For example, trips in the "1 to 2" category are defined as > 1 hour and ≤ 2 hours.
[2] Trips missing an arrival time are excluded.

The rates at which beach visitors participated in various activities during their current beach trip are summarized in Exhibit 22. In characterizing these activities, sampling weights are applied in order to account for differences in selection probabilities across different beaches and different seasons. With these weights incorporated, the quantitative summaries below accurately reflect the population of UCR beach trips.

As with boating day trips, participation in water-contact activities generally increases in the downstream direction for beach day trips. Overall, the most popular activity was spending time on the beach (71 percent of Lower UCR beach visitors, 84 percent of Middle UCR beach visitors, and 59 percent of Upper UCR beach visitors).[28] Wading was the next most popular activity (49 percent of Lower UCR beach visitors, 53 percent of Middle UCR beach visitors, and 29 percent of Upper UCR beach visitors), followed by swimming (43 percent of Lower UCR beach visitors, 29 percent of Middle UCR beach visitors, and 20 percent of Upper UCR beach visitors).

Average activity durations are reported in Exhibit 23 for the subset of respondents who reported that they participated in each activity. The average participant spent between 34 and 54 minutes swimming (54 minutes for the Lower UCR, 49 minutes for the Middle UCR, and 34 minutes for the Upper UCR), between 27 and 45 minutes wading (45 minutes for the Upper and Lower UCR and 27 minutes for the Middle UCR), and between 38 and 68 minutes on the beach (55 minutes for the Lower UCR, 68 minutes for the Middle UCR, and 38 minutes for the Upper UCR).

EXHIBIT 22. ACTIVITY PARTICIPATION RATES FOR BEACH DAY TRIPS

ACTIVITY	PARTICIPATION RATE[1]		
	LOWER UCR (n=157)	MIDDLE UCR (n=176)	UPPER UCR (n=97)
Swimming	43.3%	28.7%	20.4%
Wading	48.5%	53.0%	28.9%
Hanging out on beach	70.8%	83.8%	59.0%

Notes:
[1] Reported participation rates are weighted averages, with weights equal to the inverse of the trip selection probability (see sampling weights discussion).

[28] Participation rates for spending time on the beach were less than 100 percent because most UCR beaches have grassy areas above the beach without any sand.

EXHIBIT 23. AVERAGE ACTIVITY DURATIONS FOR BEACH DAY TRIPS

ACTIVITY	AVERAGE ACTIVITY DURATION FOR PARTICIPANTS (MINUTES)[1]								
	LOWER UCR			MIDDLE UCR			UPPER UCR		
	MEAN	MEDIAN	n	MEAN	MEDIAN	n	MEAN	MEDIAN	n
Swimming	54	45	69	49	43	65	34	29	33
Wading	45	30	85	27	20	100	45	29	41
Hanging out on beach	55	30	116	68	40	153	38	30	53

Notes:
[1] Activity durations are weighted averages, with weights equal to the inverse of the trip selection probability (see sampling weights discussion).

CHARACTERIZATION OF CAMPING DAYS

Interviews conducted with visitors at NPS campgrounds provide information that allows for the characterization of UCR camping days. This section focuses on the camping trip that the respondent was on at the time of the interview.

The number of visitors observed at each campsite ranged from one to 65, with an overall average of 4.2 visitors per campsite (median of three). The large groups of visitors were observed primarily at specially designated "group campsites." Five percent of the campsites had only one visitor, 45 percent had two visitors, nine percent had three visitors, 14 percent had four visitors, eight percent had five visitors, and the remaining 19 percent had six or more visitors (Exhibit 24).

The distribution of camping trip lengths is presented in Exhibit 25. As campers were intercepted during their visit (i.e., not at the end of their trip), trip lengths were calculated by subtracting the arrival time/day from the expected departure time/day. Approximately 71 percent of the trips lasted fewer than four days, with 32 percent lasting only one or two days. Thirteen percent of the trips lasted four to six days, seven percent lasted six to eight days, seven percent lasted eight to fourteen days, and two percent lasted longer than fourteen days.[29]

[29] Lake Roosevelt National Recreation Area limits campground stays to 14 consecutive days, but 16 of the respondents reported trip lengths that exceeded this limit. There are at least two reasons why these respondents may have reported trip lengths longer than 14 days: (1) they may be camping at Two Rivers, which does not limit the length of the stay or (2) they may have reported an incorrect arrival date or expected departure date.

EXHIBIT 24. SIZE OF CAMPING PARTIES

GROUP SIZE	NUMBER OF GROUPS	PERCENTAGE OF GROUPS	CUMULATIVE PERCENTAGE
1 visitor	41	4.8%	4.8%
2 visitors	388	45.1%	49.9%
3 visitors	80	9.3%	59.2%
4 visitors	119	13.8%	73.0%
5 visitors	71	8.3%	81.3%
6 visitors	43	5.0%	86.3%
7 visitors	24	2.8%	89.1%
8 visitors	20	2.3%	91.4%
9 visitors	13	1.5%	92.9%
10 visitors	9	1.1%	94.0%
>10 visitors	52	6.0%	100.0%
Total	860	100.0%	

EXHIBIT 25. LENGTH OF CAMPING TRIPS

TRIP LENGTH (DAYS)[1]	NUMBER OF TRIPS	PERCENTAGE OF TRIPS	CUMULATIVE PERCENTAGE
0 to 2	266	31.8%	31.8%
2 to 4	328	39.2%	71.0%
4 to 6	106	12.7%	83.6%
6 to 8	60	7.2%	90.8%
8 to 14	61	7.3%	98.1%
14 to 28	9	1.1%	99.2%
>28	7	0.8%	100.0%
Total	837	100.0%	

Notes:
[1] The lower limit is excluded from each trip length category so that the categories are mutually exclusive. For example, trips in the "2 to 4" category are defined as > 2 days and ≤ 4 days.

The rates at which campers participated in various activities during their current trip are summarized in Exhibit 26. Specifically, the survey asked campers about participation in these activities over the most recent 24-hour period, or the most recent "camping day." Results are reported for the subset of campers who had been at the UCR for at least 24 hours at the time of the interview. In characterizing these activities, sampling weights are applied in order to account for differences in selection probabilities across different

campgrounds and different seasons. With these weights incorporated, the quantitative summaries below accurately reflect the population of UCR camping days.

The most common activity during the peak season was spending time in a tent, camper, or recreational vehicle (RV) (95 percent of Lower UCR campers, 93 percent of Middle UCR campers, and 97 percent of Upper UCR campers). Spending time on the beach was the next most popular activity (57 percent of Lower UCR campers, 53 percent of Middle UCR campers, and 51 percent of Upper UCR campers), followed by wading (50 percent of Lower UCR campers, 32 percent of Middle UCR campers, and 40 percent of Upper UCR campers), swimming (40 percent of Lower UCR campers, 22 percent of Middle UCR campers, and 23 percent of Upper UCR campers), and waterskiing or tubing (19 percent of Lower UCR campers, nine percent of Middle UCR campers, and 16 percent of Upper UCR campers).[30] During the off-peak season, participation rates were generally near zero for water-related activities, between 35 and 73 percent for spending time on the beach, and 100 percent for spending time in a tent, camper, or RV.

Average activity durations are reported in Exhibit 27 for the subset of respondents who reported that they participated in each activity. Average activity durations during the peak season range from 115 to 170 minutes for waterskiing or tubing, 72 to 114 minutes for wading, 58 to 115 minutes for swimming, 153 to 210 minutes for spending time on the beach, and 544 to 569 minutes for spending time in a tent, camper, or RV. Activity durations during the off-peak season were similar to the peak season for spending time in a tent, camper, or RV (562 to 781 minutes). There were not enough campers who reported spending time in the water or on the beach during the off-peak season to report activity durations for swimming, wading, waterskiing, or spending time on the beach.

[30] Note that some campers took boating trips during their visit to a UCR campground, and activities on these boating trips were characterized through the camping interviews.

EXHIBIT 26. ACTIVITY PARTICIPATION RATES FOR CAMPING DAYS (MOST RECENT 24-HOUR PERIOD)

SEASON	ACTIVITY	PARTICIPATION RATE[1,2]		
		LOWER UCR (n=238)	MIDDLE UCR (n=180)	UPPER UCR (n=144)
Peak	Waterskiing or Tubing	19.3%	9.0%	16.1%
	Wading	49.6%	31.6%	39.7%
	Swimming	40.2%	22.1%	23.4%
	Hanging out on Beach	56.6%	53.0%	51.0%
	Spending time inside a tent, camper or RV	95.2%	93.2%	97.4%
		LOWER UCR (n=13)	MIDDLE UCR (n=11)	UPPER UCR[3] (n=4)
Off-Peak	Waterskiing or Tubing	0.0%	0.0%	--
	Wading	0.0%	0.0%	--
	Swimming	0.0%	0.0%	--
	Hanging out on Beach	34.7%	72.6%	--
	Spending time inside a tent, camper or RV	100.0%	100.0%	--

Notes:
[1] Reported participation rates are weighted averages, with weights equal to the inverse of the trip selection probability (see sampling weights discussion).
[2] Participation rates are for the most recent 24-hour period, focusing on the subset of respondents who had been at the UCR for at least 24 hours at the time of the interview.
[3] Participation rates are not reported for the Upper UCR during the off-peak season due to small sample sizes (n < 10).

EXHIBIT 27. AVERAGE ACTIVITY DURATIONS FOR CAMPING DAYS (MOST RECENT 24-HOUR PERIOD)

SEASON	ACTIVITY	AVERAGE ACTIVITY DURATION FOR PARTICIPANTS (MINUTES)[1,2,3]								
		LOWER UCR			MIDDLE UCR			UPPER UCR		
		MEAN	MEDIAN	n	MEAN	MEDIAN	n	MEAN	MEDIAN	n
Peak	Waterskiing or Tubing	116	60	40	171	120	17	138	90	19
	Wading	116	105	121	80	60	48	72	60	54
	Swimming	117	60	96	56	30	35	61	30	35
	Hanging out on Beach	207	158	147	209	120	93	154	120	75
	Spending time inside a tent, camper or RV	539	480	233	567	540	170	540	540	142
Off-Peak	Waterskiing or Tubing	--		--	--		--	--		--
	Wading	--		--	--		--	--		--
	Swimming	--		--	--		--	--		--
	Hanging out on Beach	--		--	--		--	--		--
	Spending time inside a tent, camper or RV	781	720	13	562	540	11	--		--

Notes:
[1] Reported activity durations are weighted averages, with weights equal to the inverse of the trip selection probability (see sampling weights discussion).
[2] Activity durations are not reported for most activities during the off-peak season due to small sample sizes (n < 10).
[3] Activity durations are for the most recent 24-hour period, focusing on the subset of respondents who had been at the UCR for at least 24 hours at the time of the interview.

TRIPS TO UCR OVER PAST YEAR

Each of the three on-site surveys asked respondents to provide information about the number and destination of trips taken to the UCR over the most recent 12-month period. Exhibits 28 and 29 summarize the responses to these questions, focusing on trips taken to UCR locations where interviews were conducted.

Exhibit 28 provides the percentage of UCR visitors who took boating/beach/camping trips to each of the three UCR regions over the most recent 12-month period. Overall, 10.3 percent of visitors reported taking boating day trips to the Lower UCR over the past 12 months, 4.8 percent reported taking boating day trips to the Middle UCR, and 1.7 percent reporting taking boating day trips to the Upper UCR. Beach day trips were somewhat less popular within the overall population of UCR visitors, with 2.1 percent reporting trips to the Lower UCR, 2.1 percent reporting trips to the Middle UCR, and 0.6 percent reporting trips to the Upper UCR. Finally, 7.5 percent reported taking camping

trips to the Lower UCR, 3.8 percent reported taking camping trips to the Middle UCR, and 1.5 percent reported taking camping trips to the Upper UCR.

The average number of UCR trips over the past 12 months is summarized in Exhibit 29 for participants. Participants are defined as visitors who reported taking at least one trip of a particular type (i.e., boat, beach, or camp) to a particular UCR region (i.e., Lower, Middle or Upper). For example, the 10.3 percent of visitors who reported taking boating day trips to the Lower UCR (i.e., "participants") reported taking an average of 8.4 boating day trips to this area over the most recent 12-month period. Similarly, participants reported an average of 7.4 boating day trips to the Middle UCR and 4.7 boating day trips to the Upper UCR. Beach day trip participants reported an average of 3.7 beach day trips to the Lower UCR, 4.3 beach day trips to the Middle UCR, and 3.8 beach day trips to the Upper UCR. Finally, camping participants reported an average of 6.4 camping nights at the Lower UCR, 5.2 camping nights at the Middle UCR, and 4.4 camping nights at the Upper UCR.

Exhibit 30 summarizes the distribution of UCR trips/nights for visitors who reported taking at least one trip to the UCR over the most recent 12-month period. Separate distributions are presented for each of the three types of trips (boating, beach, camping). The vast majority (83 percent) of visitors who reported taking beach day trips to the UCR over the most recent 12-month period took only one to five trips, with 94 percent reporting 10 trips or fewer. The distribution is slightly more spread out for boaters and campers. Among respondents who reported taking boating day trips to the UCR, 60 percent indicated that they took one to five trips over the most recent 12-month period, and 80 percent reporting 10 trips or fewer. Among respondents who reported camping at the UCR, 60 percent camped for between one and five nights, while 87 percent camped for fewer than 10 nights.

EXHIBIT 28. PERCENTAGE OF ALL VISITORS REPORTING TRIPS TO UCR OVER PAST 12 MONTHS (n = 1,914)

TYPE OF TRIP TAKEN DURING PAST 12 MONTHS	PARTICIPATION RATE[1,2]		
	TRIPS TO LOWER UCR	TRIPS TO MIDDLE UCR	TRIPS TO UPPER UCR
Boating Day Trip	10.3%	4.8%	1.7%
Beach Day Trip	2.1%	2.1%	0.6%
Camping Trip	7.5%	3.8%	1.5%

Notes:
[1] Reported participation rates are weighted averages, with weights equal to the inverse of the individual's selection probability (see sampling weights discussion).
[2] Each of the percentages in the table is calculated independently, and they do not sum to 100 percent. For example, the 10.3 percent figure in the upper-left corner of the table has the following interpretation: 10.3 percent of the 1,914 unique visitors interviewed during the study period at *all* sites (boating, beach, and camping) reported that they took at least one boating day trip to the UCR during the most recent 12-month period.

EXHIBIT 29. AVERERAGE NUMBER OF UCR TRIPS OVER PAST 12 MONTHS (FOR PARTICIPANTS)

TYPE OF TRIP TAKEN DURING PAST 12 MONTHS	AVERAGE NUMBER OF TRIPS FOR PARTICIPANTS[1,2]		
	TRIPS TO LOWER UCR	TRIPS TO MIDDLE UCR	TRIPS TO UPPER UCR
Boating Day Trip	8.4 Trips	7.4 Trips	4.7 Trips
Beach Day Trip	3.7 Trips	4.3 Trips	3.8 Trips
Camping Trip	6.4 Nights	5.2 Nights	4.4 Nights

Notes:
[1] Average trips are weighted averages, with weights equal to the inverse of the individual's selection probability (see sampling weights discussion).
[2] The average trips to each region are not additive, as they are calculated over a different subset of "participants" for each region.

EXHIBIT 30. DISTRIBUTION OF UCR TRIPS/NIGHTS OVER MOST RECENT 12-MONTH PERIOD

NUMBER OF UCR TRIPS/NIGHTS REPORTED BY PARTICIPANTS	PERCENTAGE OF PARTICIPANTS[1,2]					
	UCR BOATING DAY TRIPS (n = 648)	CUMULATIVE PERCENTAGE	UCR BEACH DAY TRIPS (n = 337)	CUMULATIVE PERCENTAGE	UCR CAMPING NIGHTS (n = 522)	CUMULATIVE PERCENTAGE
1 to 5	59.5%	59.5%	83.4%	83.4%	60.1%	60.1%
6 to 10	20.6%	80.0%	10.2%	93.6%	26.7%	86.8%
11 to 15	7.7%	87.7%	2.2%	95.8%	7.2%	94.0%
16 to 20	3.8%	91.5%	1.5%	97.3%	2.0%	96.0%
21 to 25	2.6%	94.1%	0.3%	97.6%	1.7%	97.7%
26 to 30	1.0%	95.1%	0.6%	98.1%	1.3%	98.9%
31 to 35	1.0%	96.0%	0.3%	98.5%	0.2%	99.2%
36 to 40	1.5%	97.5%	0.6%	99.0%	0.2%	99.3%
41 to 45	0.1%	97.7%	0.2%	99.2%	0.3%	99.6%
46 to 50	0.6%	98.2%	0.5%	99.7%	0.3%	99.9%
> 50	1.8%	100.0%	0.4%	100.0%	0.1%	100.0%
Total	100.0%		100.0%		100.0%	

Notes:
[1] Reported percentages are weighted proportions, with weights equal to the inverse of the individual's selection probability (see sampling weights discussion).
[2] Participants are defined as survey respondents who reported at least one UCR boating day (boating day participants), at least one UCR beach day trip (beach day trip participants), or at least one UCR camping night (camping participants) over the most recent 12-month period.

FISH CONSUMPTION

Respondents who indicated that they eat fish from the UCR were asked a series of detailed questions about fish consumption, focusing primarily on their consumption of fish from the UCR over the most recent 12-month period.[31] Overall, 35.5 percent of all survey respondents indicated that they ate fish from the UCR. For the subset of respondents who fish the UCR, the prevalence of fish consumption is considerably higher, with 74.2 percent indicating that they ate fish from the UCR. Among UCR anglers and UCR fish consumers, 38.5 percent reported that they typically share UCR fish with children.

Average annual UCR fish consumption is summarized by species in Exhibit 31 for UCR fish consumers. These averages reflect respondents' estimates of the number of UCR fish meals consumed during the 12-month period prior to the interview. When respondents provided a range for their annual fish consumption (e.g., 10-20 walleye meals), the midpoint of the range was used in the analysis. Rainbow trout and walleye are by far the most popular fish consumed, with average consumption rates of 3.3 meals/year (median = 1.0) and 2.8 meals/year (median = 1.0), respectively. Bass and kokanee are considerably less popular, with average consumption rates of 0.7 meals/year (median = 0.0) and 0.6 meals/year (median = 0.0), respectively. Consumption of other species is relatively insignificant, with an average of 0.1 meals/year (median = 0.0). The average total consumption across all species is 7.5 meals/year (median = 3.0).

Exhibit 32 shows the distribution of annual UCR fish consumption, focusing on the subset of respondents who consume fish from the UCR. Approximately 81 percent of the respondents reported consuming 10 or fewer meals over the last 12 months, approximately 13 percent reported consuming between 11 and 20 meals, and the remaining six percent reported consuming more than 20 meals.

The origins of the UCR fish meals reported by respondents are presented in Exhibit 33. In analyzing the origins of UCR fish meals, all reported meals were allocated equally among selected lake areas if more than one lake area was selected by the respondent.[32] Kokanee and rainbow trout were caught primarily in the lower sections of the lake, with approximately 86 percent of the kokanee and 63 percent of the rainbow trout coming from Area 6 or Area 7. The walleye were much more evenly distributed throughout the UCR, with 28 percent from Areas 1, 2, and 3 (between Kettle Falls and the United States-Canada border), 22 percent from Areas 4 and 5 (between Kettle Falls and Two Rivers), and the remaining 50 percent from Areas 6, 7, and 8 (from Two Rivers to the Coulee Dam, including the Spokane Arm). Bass were obtained primarily from the lower part of the lake, with approximately 83 percent coming from Areas 5, 6, 7, or 8. Other UCR fish species were obtained primarily from Areas 3, 4, and 5 (37 percent) or from Area 7 (43 percent).

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[31] All estimates reported in this section are weighted averages/proportions, with weights equal to the inverse of the respondent's selection probability (see weighting section of report).

[32] For example, if the respondent reported eating ten fish meals from Areas 1 and 2, five of those meals would be allocated to Area 1 and five would be allocated to Area 2.

Anglers who caught fish during their current trip to the UCR were asked to provide the length of the smallest and largest fish that they kept.[33] These average lengths are summarized by species in Exhibit 34. The smallest fish were bass, which ranged in length from six to 17 inches, with an average length of 10 inches (median = 10) for the smallest fish and 11 inches (median = 12) for the largest fish. Rainbow trout and walleye had very similar size distributions. Rainbow trout ranged in length from eight to 28 inches, with an average length of 14 inches (median = 15) for the smallest fish and 18 inches (median = 19) for the largest fish. Walleye ranged in length from six to 26 inches, with an average length of 14 inches (median = 14) for the smallest fish and 18 inches (median = 18) for the largest fish. Kokanee covered a somewhat narrower range, from 12 to 22 inches long, with an average length of approximately 15 inches (median = 14) for the smallest fish and 16 inches (median = 14) for the largest fish. Finally, other species kept ranged from 10 to 24 inches long, with an average length of approximately 15 inches for both the smallest and the largest fish (median = 14 for both).

The distribution of typical UCR fish meal sizes is presented in Exhibit 35. Approximately 80 percent of respondents reported that the typical UCR fish meal size was either 6 ounces (41 percent of respondents) or 8 ounces (39 percent). Eight percent reported a typical meal size of 10 ounces, while the remaining respondents reported a typical meal size that was either larger than 10 ounces (five percent) or smaller than 6 ounces (six percent).

Exhibit 36 summarizes the fish parts that are typically consumed by UCR anglers. The vast majority of respondents reported that they typically consume the fillet (98 percent for kokanee, rainbow trout, and walleye; 95 percent for bass and other species). Ten percent or less of respondents report consuming the skin (ten percent for kokanee, seven percent for rainbow trout, one percent for walleye, three percent for bass, and two percent for other species). Finally, three percent or less of respondents reported consuming the eggs, head, or guts.

[33] When only one fish was kept during a trip, that fish was considered to be both the smallest and the largest fish.

EXHIBIT 31. MEAN ANNUAL UCR FISH CONSUMPTION BY SPECIES FOR UCR FISH CONSUMERS (n = 836)

SPECIES	AVERAGE ANNUAL MEALS CONSUMED[1,2]	
	MEAN	MEDIAN
Kokanee (silvers)	0.6 meals	0.0 meals
Rainbow trout	3.3 meals	1.0 meals
Walleye	2.8 meals	1.0 meals
Bass	0.7 meals	0.0 meals
Other	0.1 meals	0.0 meals
Total	7.5 meals	3.0 meals

Notes:
[1] Reported estimates are weighted averages, with weights equal to the inverse of the individual's selection probability (see sampling weights discussion).
[2] Averages include respondents who said they consume fish from the UCR but did not consume any fish over the past 12 months.

EXHIBIT 32. DISTRIBUTION OF 12-MONTH UCR FISH CONSUMPTION FOR RESPONDENTS WHO EAT FISH FROM THE UCR (n = 836)

NUMBER OF MEALS OVER LAST 12 MONTHS	PERCENTAGE OF FISH CONSUMERS[1]	CUMULATIVE PERCENTAGE
0	18.4%	18.4%
1 to 5	43.7%	62.1%
6 to 10	18.8%	80.9%
11 to 15	6.8%	87.7%
16 to 20	5.8%	93.6%
21 to 25	1.2%	94.7%
26 to 30	1.3%	96.0%
31 to 35	0.9%	96.9%
36 to 40	0.8%	97.7%
41 to 45	0.4%	98.1%
46 to 50	0.3%	98.4%
51 to 100	1.2%	99.6%
> 100	0.4%	100.0%
Total	100.0%	

Notes:
[1] Reported estimates are weighted averages, with weights equal to the inverse of the individual's selection probability (see sampling weights discussion).

EXHIBIT 33. DISTRIBUTION OF FISH CONSUMPTION BY LAKE AREA[1]

UCR AREA	KOKANEE	RAINBOW TROUT	WALLEYE	BASS	OTHER
Area 1	3.1%	4.2%	3.3%	0.6%	0.3%
Area 2	0.2%	2.1%	9.3%	1.4%	4.9%
Area 3	0.2%	3.7%	15.8%	10.9%	13.1%
Area 4	4.7%	9.9%	8.9%	3.7%	5.5%
Area 5	5.0%	13.6%	13.5%	8.9%	18.0%
Area 6	30.6%	27.9%	22.9%	36.9%	2.4%
Area 7	55.0%	34.9%	12.9%	29.6%	43.4%
Area 8	1.3%	3.7%	13.2%	7.9%	12.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Notes:
[1] Reported estimates are weighted averages, with weights equal to the inverse of the individual's selection probability (see sampling weights discussion).

EXHIBIT 34. AVERAGE LENGTH OF UCR FISH KEPT FOR CONSUMPTION DURING CURRENT TRIP

SPECIES	n	AVERAGE SIZE OF SMALLEST FISH (INCHES)[1]		AVERAGE SIZE OF LARGEST FISH (INCHES)[1]	
		MEAN	MEDIAN	MEAN	MEDIAN
Kokanee	9	14.6	14.0	15.5	14.0
Rainbow Trout	75	14.3	15.0	18.1	19.0
Walleye	182	14.3	14.0	17.6	18.0
Bass	34	10.0	10.0	11.1	12.0
Other	7	14.7	14.0	14.8	14.0

Notes:
[1] Reported estimates are weighted averages, with weights equal to the inverse of the individual's selection probability (see sampling weights discussion).

EXHIBIT 35. DISTRIBUTION OF UCR FISH MEAL SIZES (n = 811)

MEAL SIZE	PERCENTAGE OF RESPONDENTS[1]	CUMULATIVE PERCENTAGE
Smaller than 6-ounce fillet	6.4%	6.4%
Similar to 6-ounce fillet	41.5%	47.8%
Similar to 8-ounce fillet	38.5%	86.3%
Similar to 10-ounce fillet	8.5%	94.8%
Larger than 10-ounce fillet	5.2%	100.0%
Total	100%	

Notes:
[1] Reported percentages are weighted proportions, with weights equal to the inverse of the individual's selection probability (see sampling weights discussion).

EXHIBIT 36. UCR FISH PARTS CONSUMED

		FISH PARTS CONSUMED				
SPECIES	n	FILLET	SKIN	EGGS	HEAD	GUTS
Kokanee	125	98.1%	9.8%	2.9%	3.2%	0.0%
Rainbow Trout	451	98.2%	6.8%	0.9%	0.9%	0.0%
Walleye	552	98.2%	1.1%	0.0%	0.0%	0.0%
Bass	179	95.1%	3.0%	0.0%	0.0%	0.0%
Other Fish	70	95.3%	2.4%	0.0%	0.0%	0.0%

ADVISORIES

Fish consumption advisories are currently in effect for the Upper Columbia River from the Grand Coulee Dam to the United States-Canada border. For respondents who indicated that they consume fish from the Upper Columbia River, interviewers asked a series of follow-up questions about advisory awareness, sources of information about the advisories, and behavioral changes due to the advisories (if any).

Overall, 43.0 percent of eligible respondents (i.e., those who reported fishing and/or consuming fish from the UCR) indicated that they were aware of the UCR fish consumption advisories. Advisory awareness was somewhat higher among men, with 47.5 percent aware of the advisories versus 33.3 percent for women. Advisory awareness was also higher among older fish consumers, with 50.7 percent of respondents age 50 or older aware of the advisories versus 32.3 percent of respondents younger than 50.

Among fish consumers who were aware of the advisories, 76.9 percent found them helpful in making decisions about eating fish from the Upper Columbia River and 76.8 percent indicated that they generally do follow the advisory recommendations.

However, respondents reported few behavioral changes due to the advisories (Exhibit 37), with 3.0 percent indicating that they changed how often they fished in the UCR (90.7 percent of these respondents reported that they fished *less* often and 9.3 percent reported that they fished *more* often), 19.9 percent indicating that they changed how often they eat fish from the UCR (100 percent of these respondents indicated that they ate fish from the UCR *less* often), 5.7 percent indicating that they changed how they cleaned fish that they caught from the UCR, 1.4 percent indicating that they changed the species that they target when fishing the UCR, and 6.1 percent indicating that they changed how often they share fish from the UCR with their family (100 percent of these respondents indicated that they share fish *less* often).

The primary sources of information about UCR fish consumption advisories were fishing regulations (36.4 percent), posted signs (28.5 percent), and the newspaper (27.5 percent). Less significant sources included friends or family (14.4 percent), a website (4.1 percent), and other sources (15.8 percent) (Exhibit 38). Other sources frequently mentioned by respondents included word of mouth and television.

EXHIBIT 37. BEHAVIORAL CHANGES DUE TO ADVISORIES

IN RESPONSE TO THE ADVISORIES, HAS THE RESPONDENT CHANGED…	n	PERCENTAGE OF RESPONDENTS[1,2]
How often he/she fishes the UCR?	504	3.0%
How often he/she eats fish from the UCR?	505	19.9%
How he/she cleans the fish that he/she catches from the UCR?	506	5.7%
The species that he/she targets when fishing the UCR?	505	1.4%
How often he/she shares fish from the UCR with his/her family?	507	6.1%

Notes:
[1] Reported estimates are weighted averages, with weights equal to the inverse of the individual's selection probability (see sampling weights discussion).
[2] Each respondent could potentially report multiple changes in response to the advisories.

EXHIBIT 38. SOURCE OF INFORMATION ABOUT ADVISORIES

HOW DID RESPONDENT FIRST HEAR ABOUT THE UCR FISH CONSUMPTION ADVISORIES?	n	PERCENTAGE OF RESPONDENTS[1,2]
Posted signs	506	28.5%
Fishing regulations	508	36.4%
Friend or family	506	14.4%
Website	506	4.1%
Newspaper	506	27.5%
Other	508	15.8%

Notes:
[1] Reported estimates are weighted averages, with weights equal to the inverse of the individual's selection probability (see sampling weights discussion).
[2] Respondents were allowed to report multiple sources, so percentages do not sum to 100%.

DEMOGRAPHICS

The final section of the survey gathered information on the respondent's age and gender, as well as the zip code of his or her primary residence. In addition, all respondents were asked if they were participating in the Colville Confederated Tribes tribal use survey.

Overall, 60.5 percent of the survey respondents were male and 39.5 percent were female. Among UCR fish consumers, the percentage male was somewhat higher, at 70.4 percent. The respondents' average age was 49.1 years (median = 50), with an average age of 51.7 years for UCR fish consumers (median = 52). The distribution of respondent ages is presented in Exhibit 39.

Respondents reported living in thirty different states, three provinces (Alberta, British Columbia and Nova Scotia), and Puerto Rico. The top 10 states/provinces reported by respondents are presented in Exhibit 40, the top 25 counties are presented in Exhibit 41, and the top 25 zip codes are presented in Exhibit 42. The five states/provinces with the highest percentage of respondents were Washington (83.3 percent), British Columbia (5.0 percent), Idaho (2.8 percent), Montana (1.5 percent), and California (1.2 percent). The five counties with the highest percentage of respondents were Spokane, WA (29.0 percent), Stevens, WA (15.5 percent), King, WA (6.0 percent), Grant, WA (3.8 percent), and Yakima, WA (3.5 percent). Finally, the five zip codes with the highest percentage of respondents were 99114 (Colville, WA – 5.7 percent), 99141 (Kettle Falls, WA – 3.5 percent), 99208 (Spokane, WA – 2.3 percent), 99205 (Spokane, WA – 2.2 percent), and 99206 (Spokane, WA – 1.7 percent).[34]

Only four out of 2,094 respondents indicated that they were currently participating in the Colville Confederated Tribes tribal use survey.

EXHIBIT 39. DISTRIBUTION OF RESPONDENT AGES (n = 1,909)

AGE RANGE	PERCENTAGE OF ALL RESPONDENTS[1]	CUMULATIVE PERCENTAGE
18 to 29	12.9%	12.9%
30 to 39	14.2%	27.1%
40 to 49	21.0%	48.0%
50 to 59	25.2%	73.2%
60 to 69	19.8%	93.0%
70 or older	7.0%	100.0%
Total	100.0%	

Notes:
[1] Reported percentages are weighted proportions, with weights equal to the inverse of the individual's selection probability (see sampling weights discussion).

[34] It is important to note that these are weighted percentages designed to characterize the population of UCR visitors rather than the population of UCR visitor days. A characterization of UCR visitor days would likely show higher percentages for local visitors (who are more likely to visit the site multiple times).

EXHIBIT 40. STATE/PROVINCE OF PRIMARY RESIDENCE (n = 1,882)

STATE OR PROVINCE	PERCENTAGE OF RESPONDENTS[1]
Washington	83.3%
British Columbia	5.0%
Idaho	2.8%
Montana	1.5%
California	1.2%
Oregon	1.2%
Alberta	0.9%
Minnesota	0.5%
Indiana	0.5%
Michigan	0.4%
Other	2.7%
Total	100.0%

Notes:
[1] Reported estimates are weighted averages, with weights equal to the inverse of the individual's selection probability (see sampling weights discussion).

EXHIBIT 41. COUNTY OF PRIMARY RESIDENCE (n = 1,882)

COUNTY	PERCENTAGE OF RESPONDENTS[1]
Spokane, WA	29.0%
Stevens, WA	15.5%
King, WA	6.0%
Grant, WA	3.8%
Yakima, WA	3.5%
Snohomish, WA	3.4%
Lincoln, WA	3.3%
Benton, WA	2.9%
Kootenai, ID	2.0%
Pierce, WA	2.0%
Chelan, WA	1.7%
Douglas, WA	1.6%
Kootenay Boundary, BC	1.6%
Franklin, WA	1.4%
Okanogan, WA	1.2%
Whitman, WA	0.9%
Clark, WA	0.9%
Missoula, MT	0.9%
Ferry, WA	0.9%
Kittitas, WA	0.8%
Whatcom, WA	0.8%
Central Okanagan, BC	0.7%
Kitsap, WA	0.7%
Okanagan-Similkameen, BC	0.5%
Pend Oreille, WA	0.5%
Other	13.4%
Total	100.0%

Notes:
[1] Reported estimates are weighted averages, with weights equal to the inverse of the individual's selection probability (see sampling weights discussion).

EXHIBIT 42. ZIP CODE OF PRIMARY RESIDENCE (n = 1,882)

ZIP CODE	PRIMARY CITY	PERCENTAGE OF RESPONDENTS[1]
99114	Colville, WA	5.7%
99141	Kettle Falls, WA	3.5%
99208	Spokane, WA	2.3%
99205	Spokane, WA	2.2%
99206	Spokane, WA	1.7%
99004	Cheney, WA	1.7%
99223	Spokane, WA	1.6%
99224	Spokane, WA	1.6%
99217	Spokane, WA	1.5%
99185	Wilbur, WA	1.5%
98802	East Wenatchee, WA	1.4%
99301	Pasco, WA	1.4%
99026	Nine Mile Falls, WA	1.3%
99109	Chewelah, WA	1.2%
99207	Spokane, WA	1.2%
99122	Davenport, WA	1.2%
99005	Colbert, WA	1.1%
99016	Greenacres, WA	1.0%
99021	Mead, WA	1.0%
98837	Moses Lake, WA	1.0%
99003	Chattaroy, WA	0.9%
99019	Liberty Lake, WA	0.9%
99101	Addy, WA	0.9%
99202	Spokane, WA	0.9%
99212	Spokane, WA	0.9%
Other	n/a	60.6%
Total		100.0%

Notes:
[1] Reported estimates are weighted averages, with weights equal to the inverse of the individual's selection probability (see sampling weights discussion).

FISH CONSUMPTION DIARY

Survey respondents who indicated that they consumed at least ten fish meals from the UCR over the past 12 months were invited to participate in a three-month fish consumption diary study. Of the 255 respondents invited to participate, 199 (78.0 percent) agreed to participate and 145 ultimately completed at least one month of the diary (i.e., 56.9 percent of those invited to participate and 72.9 percent of those who agreed to participate). One hundred thirty-five respondents completed all three months of the fish consumption diary (i.e., 52.9 percent of those invited to participate and 67.8 percent of those who agreed to participate). The diary participants provided a total of 415 person-months of detailed fish consumption data.[35]

To assess the potential for non-response bias in using the diary to determine fish consumption rates, one can compare diary respondents with diary non-respondents. Diary respondents are defined as visitors who participated in at least one month of the diary, while diary non-respondents are defined as visitors who were eligible for the diary but did not choose to participate. These two groups are compared using responses to the fish consumption questions in the on-site survey.[36] Diary respondents consumed an average of 26.5 fish meals annually from the UCR (median = 20, n = 145), while diary non-respondents consumed an average of 29.0 fish meals annually from the UCR (median = 20, n = 109). This difference is relatively small, which indicates that non-response bias is unlikely to be a significant concern.

Diary participants consumed a total of 1,029 UCR fish meals, or an average of 2.7 UCR fish meals per month (average across all 415 person-months of data). Exhibit 43 shows the distribution of monthly UCR fish consumption based on the diary data. The number of reported UCR fish meals ranges from a low of zero to a high of 14 meals per month. In 13.2 percent of the diary months, there was no reported consumption of UCR fish. One UCR fish meal was reported in 24.2 percent of the diary months, two were reported in 13.6 percent of the months, three were reported in 21.5 percent of the months, four were reported in 9.1 percent of the months, five were reported in 9.3 percent of the months, and six or more meals were reported in 9.1 percent of the months.

[35] Each "person-month" of data represents a single participant completing the diary for one full month.

[36] The assessment of non-response bias relies entirely on fish consumption data from the on-site survey, as these data were obtained in a consistent manner for diary respondents and non-respondents. Fish consumption data from the diaries are not used to assess non-response bias, as diary data are not available for non-respondents.

EXHIBIT 43. DISTRIBUTION OF MONTHLY UCR FISH CONSUMPTION (n = 415)

NUMBER OF UCR FISH MEALS CONSUMED	PERCENTAGE OF DIARY MONTHS[1]	CUMULATIVE PERCENTAGE
0 meals	13.2%	13.2%
1 meals	24.2%	37.4%
2 meals	13.6%	51.0%
3 meals	21.5%	72.5%
4 meals	9.1%	81.6%
5 meals	9.3%	90.9%
6 meals	1.7%	92.6%
7 meals	4.5%	97.1%
8 meals	0.3%	97.4%
9 meals	1.5%	98.9%
10 meals	0.6%	99.5%
11 meals	0.2%	99.7%
12 meals	0.1%	99.9%
13 meals	0.1%	99.9%
14 meals	0.1%	100.0%
Total	100.0%	

Notes:
[1] Reported estimates are weighted averages, with weights equal to the inverse of the individual's selection probability (see sampling weights discussion).

The vast majority of the UCR fish meals reported in the diaries were either rainbow trout or walleye. Of the 1,029 UCR fish meals reported, 2.1 percent were kokanee (silvers), 36.3 percent were rainbow trout, 59.9 percent were walleye, 10.4 percent were bass, 0.2 percent were burbot, and 0.1 percent were perch (Exhibit 44).[37] The distribution of fish meals across the eight UCR areas is provided in Exhibit 45. The largest number of meals were obtained from Area 7 (19.7 percent), followed by Area 5 (18.7 percent), Area 6 (16.8 percent), Area 3 (15.3 percent), Area 4 (10.7 percent), Area 8 (10.2 percent), Area 2 (8.8%), and Area 1 (2.5 percent).

With regard to the temporal distribution, the reported fish meals were primarily consumed in July, August, September, or October (Exhibit 46). These four months comprise approximately 73 percent of all reported UCR meals. This is likely due in part to high sampling rates during the peak season. However, the fact that very few meals were consumed in June (3.6 percent of all meals) but a large number of meals were consumed in October (15.7 percent of all meals) likely reflects the implementation

[37] Percentages do not sum to 100% as anglers could select more than one species for each meal.

approach, where diaries were mailed at the beginning of the first full month after the initial on-site intercept.

The distribution of meal sizes is largely centered on the 8-ounce fillet (30.3 percent of meals), followed by the 10-ounce fillet (26.4 percent of meals) and the 6-ounce fillet (21.3 percent of meals). In addition, respondents indicated that their meal size was smaller than the 6-ounce fillet for 5.0 percent of the meals and larger than the 10-ounce fillet for 17.7 percent of the meals (Exhibit 47).

EXHIBIT 44. DISTRIBUTION OF UCR DIARY MEALS ACROSS SPECIES (n = 1,029)

SPECIES	NUMBER OF MEALS	PERCENTAGE OF MEALS[1]
Kokanee (silvers)	22	2.1%
Rainbow trout	373	36.3%
Walleye	616	59.9%
Bass	107	10.4%
Burbot	2	0.2%
Perch	1	0.1%

Notes:
[1] Multiple responses were allowed, so percentages do not sum to 100%.

EXHIBIT 45. DISTRIBUTION OF UCR DIARY MEALS ACROSS AREAS OF UCR (n = 1,029)

UCR AREA	NUMBER OF MEALS	PERCENTAGE OF MEALS[1]
Area 1	26	2.5%
Area 2	91	8.8%
Area 3	157	15.3%
Area 4	110	10.7%
Area 5	192	18.7%
Area 6	173	16.8%
Area 7	203	19.7%
Area 8	105	10.2%

Notes:
[1] Multiple responses were allowed, so percentages do not sum to 100%.

EXHIBIT 46. DISTRIBUTION OF UCR DIARY MEALS ACROSS MONTHS (n = 1,029)

MONTH	NUMBER OF MEALS	PERCENTAGE OF MEALS
January	27	2.6%
February	11	1.1%
March	29	2.8%
April	21	2.0%
May	40	3.9%
June	37	3.6%
July	143	13.9%
August	238	23.1%
September	207	20.1%
October	161	15.7%
November	70	6.8%
December	45	4.4%
Total	1,029	100.0%

EXHIBIT 47. DISTRIBUTION OF UCR DIARY MEAL SIZES (n = 1,029)

MEAL SIZE	NUMBER OF MEALS	PERCENTAGE OF MEALS[1]
Smaller than 6-ounce fillet	49	5.0%
Similar to 6-ounce fillet	211	21.3%
Similar to 8-ounce fillet	300	30.3%
Similar to 10-ounce fillet	261	26.4%
Larger than 10-ounce fillet	175	17.7%

Notes:
[1] Multiple responses were allowed, so percentages do not sum to 100%.

CHAPTER 4 | DISCUSSION

INTRODUCTION

This section of the report discusses three issues that could potentially impact the representativeness of the survey data: (1) very low water levels in Lake Roosevelt in late spring and early summer of 2011, (2) several types of UCR visitation that were not covered by the survey effort, and (3) a time lag between recruitment and completion of the fish consumption diary.

POTENTIAL IMPACTS ASSOCIATED WITH LAKE DRAWDOWN

The U.S. Bureau of Reclamation reduces the water level of Lake Roosevelt in early spring to accommodate anticipated runoff from snowmelt (Exhibit 48). The water level is then allowed to increase steadily throughout late spring and early summer, typically achieving "full pool" elevation by the Fourth of July. During this "drawdown" period, the following changes typically occur at the lake:

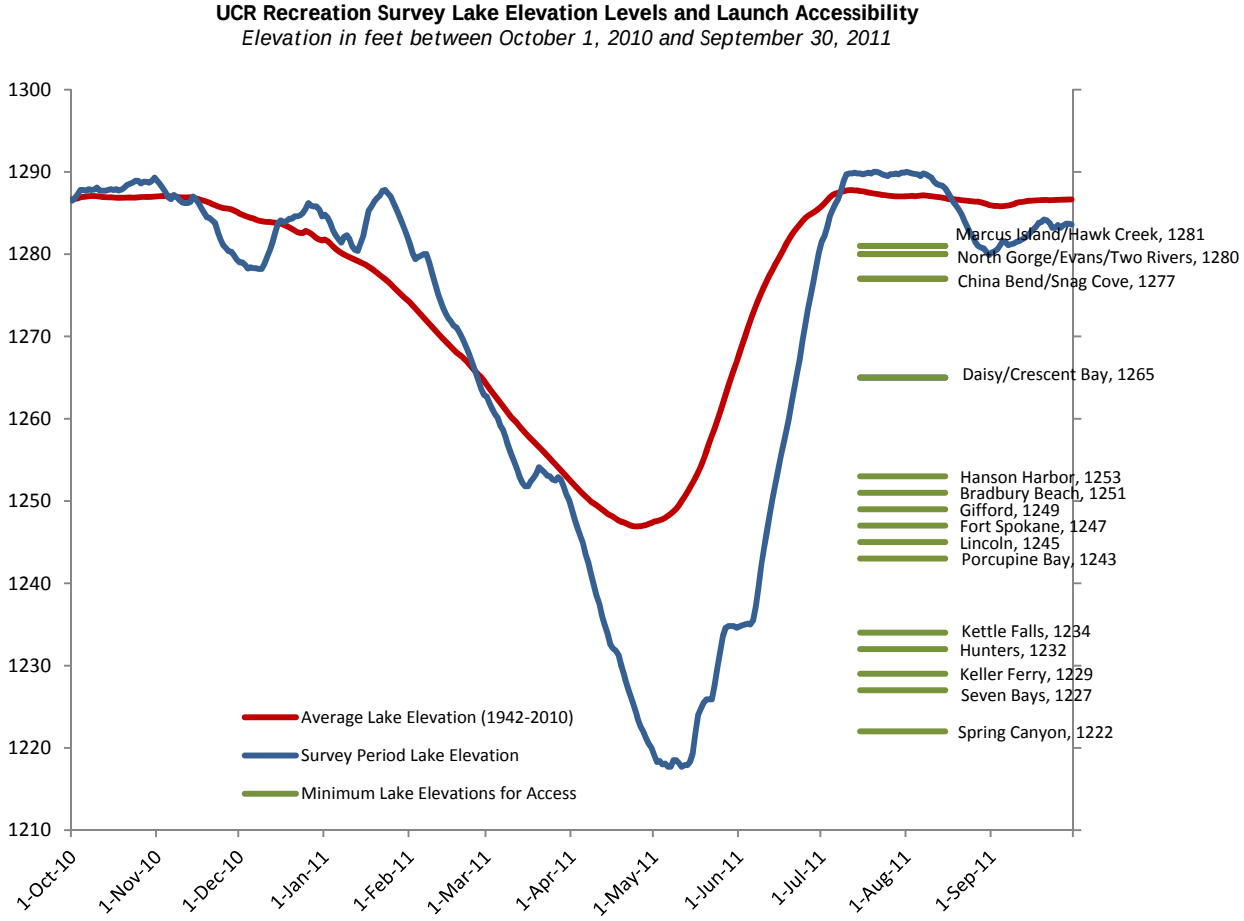
- A subset of the boat launches is unavailable to boaters because the launch ramps are no longer under water.
- At the boat launches that are available, boaters must walk further up the ramp to park after launching a boat and to retrieve their vehicle after completing a trip.
- The lake surface area available for boating is reduced.
- There is more exposed sand/sediment at beaches.
- At a subset of beaches, the swim rafts rest on exposed sand/sediment or in shallow water where diving would be unsafe.

Although this drawdown occurs each year, the Bureau of Reclamation reduced water levels more than usual in 2011 to accommodate meltwater from above-average snowfall upstream of Lake Roosevelt.[38] Between 1942 and 2010, the average minimum elevation of the lake during the drawdown period was 1,250 feet (U.S. DOI, 2013). When the lake elevation is below 1,250 feet, the following launches are no longer available to boaters: Gifford, Fort Spokane, Porcupine Bay, Kettle Falls, Hunters, Keller Ferry, and Spring Canyon. During the spring of 2011, the lake elevation was below 1,250 feet for 75 days, and it was below 1,220 feet for 16 days. When the lake elevation is below 1,220 feet, none of the NPS launches are available to boaters. The lake reached a minimum elevation of 1,217 feet on May 14.

[38] The meltwater from this snowfall caused early summer flooding at Black Sands Beach in 2011, so that five survey shifts originally scheduled for Black Sands had to be moved to Evans Beach (May 30, June 5, June 12, July 2, and July 7).

Due to the severity of the 2011 drawdown, the number of interviews completed during the late spring and early summer was likely lower than one would expect during a typical year.[39] In addition, with fewer interviews completed during this period, the number of visitors recruited for the fish consumption diary was likely also reduced.

EXHIBIT 48. AVERAGE AND SURVEY PERIOD LAKE LEVELS



[39] While alternate launches were selected for interviews when the randomly selected launch site was unavailable, four off-season shifts had to be canceled entirely (on 4/23/11, 5/6/11, 6/8/11, and 5/23/11) because no launches were available in the selected lake region.

VISITATION NOT COVERED BY SURVEY EFFORTS

As the UCR encompasses nearly 150 miles of the Columbia River with numerous access points throughout the region, some visits will inevitably be omitted from any site-specific survey effort. The following types of visitation were omitted from the sampling frame for the UCR Recreational Use Survey:

- **Swimming trips and beach trips at informal locations**: There are roads close to the river along most of the length of the Middle and Upper UCR, so it would be relatively easy for visitors to enter the water at isolated shoreline locations or at a favored swimming hole. In addition, swimmers were occasionally observed at or near boat launches throughout the UCR, including the launches at Northport, Crescent Bay, Gifford, and Snag Cove.
- **Shoreline fishing trips**: The survey was not designed to capture shoreline anglers, but shoreline anglers were occasionally observed by interviewers at boat launches, bridges, and roadside pull-offs. A limited shoreline angler survey effort was initiated in early summer (see Appendix H), but that effort was focused only on shoreline anglers observed at boat launches.[40]
- **Evening trips to beaches:** The interview shifts at beaches ended at approximately 6:00 p.m., and visitors often stayed past that time (e.g., for barbeques and other gatherings). As interviewers intercepted visitors when they *departed* each site, visitors remaining beyond the end of a shift would not have been interviewed.[41] An examination of hourly vehicle counter data from beaches at Evans, Hunters, and Fort Spokane indicates that approximately 13 to 20 percent of all vehicles were counted between 6:00 p.m. and midnight (20 percent at Evans, 19 percent at Hunters, and 13 percent at Fort Spokane).
- **Trips to sites on the Colville Indian Reservation**: There are several boating, camping, and beach sites on the Colville Indian Reservation that provide access to the UCR. These sites were not included in the survey effort.

It is important to note that although some types of visits were excluded from the survey effort, many of these visitors will still be characterized by the study. Specifically, if these visitors took additional trips that were within the sampling frame for the survey (i.e., in addition to these trips to other locations), then their behavior and fish consumption will be characterized by the survey effort.

FISH CONSUMPTION DIARY TIME LAG

Fish consumption diary participants were recruited during the on-site survey. However, the diary was completed during the first three complete calendar months after the on-site

[40] As a convenience sampling approach was applied and the spatial/temporal coverage was incomplete, the shoreline angler survey was intended to be exploratory only. The main report does not incorporate any data from these surveys, but the results are summarized in Appendix H.

[41] Very few visitors were observed early in the morning at any site, so it is unlikely that the survey missed any significant visitation occurring prior to the beginning of the morning shifts.

recruitment. For example, respondents interviewed on site in June would report fish meals consumed in July, August, and September.

The time lag between the on-site recruitment and the diary completion months may cause the temporal distribution of UCR fish meals reported in the diary (i.e., Exhibit 43) to differ from the actual temporal distribution of UCR fish meals. Specifically, the number of UCR fish meals reported by diary participants in month x will be affected by the number of fish consumers who visit the UCR in month x-1, month x-2, and month x-3, as well as the sampling rate for the on-site survey during those three months.

TRUNCATION OF TRIPS IN CALCULATING SAMPLING WEIGHTS FOR VISITORS

The analysis assigns a sampling weight to each individual that is equal to the inverse of his or her selection probability. However, given the complexity of the selection probabilities for visitors who take a large number of trips (see Appendix F), the probability calculations limit visitors to a maximum of five trips within each temporal stratum for each type of visit. If these additional trips (beyond the five in each stratum) were included in the probability calculations, these visitors would have higher selection probabilities, resulting in lower sampling weights. Thus, truncation increases the sampling weights for individuals who take a large number of trips in a single temporal stratum.

The overall impact of this truncation is difficult to assess, as the true selection probabilities are unknown. When the selection probabilities for visitors with truncated trips were replaced with predictions from a linear regression (see footnote 18), average annual UCR fish meals declined from 7.5 meals/year to 6.7 meals/year. However, a linear regression necessarily oversimplifies data on trips, treating all trips as identical and omitting information about the type and timing of the trips. Thus, it does not provide a true "benchmark" against which to measure the results. Alternative approaches to calculating selection probabilities for individuals with truncated trips may lead to different results.

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APPENDIX A: FINAL SURVEY INSTRUMENTS

UPPER COLUMBIA RIVER VISITOR SURVEY -- BEACH

Interviewer _____ Time _____ am / pm

Location _____ Month_____/Day____/2011

Hi, I'm conducting a survey for the National Park Service about how people use Lake Roosevelt and the Upper Columbia River. I'm hoping to speak with the person in your group who had the most recent birthday.

Interviewer check one:

☐ Survey completed by adult with most recent birthday

☐ Survey completed by another adult

After targeted individual has been identified: Would you be willing to answer a few questions about your visits to this area?

PART A: PRELIMINARY QUESTIONS

Before I start, let me show you exactly what area the survey will focus on. It's the area outlined in red on this map, which includes the Columbia River from the Grand Coulee Dam to the Canadian border and part of the Spokane River. Most of Lake Roosevelt is also included in this area. During the survey, I'll refer to this entire area as the "Upper Columbia River." *Point out respondent's current location on the map.*

A1. Have you taken this survey before?

☐ Yes → Great, then I'll only ask you a few quick questions about your current trip.

☐ No

A2. Are you camping at a drive-in campground on the Upper Columbia River tonight?

☐ Yes → Ok. Thank you very much for your time. This version of our survey focuses on visitors who are *not* camping at drive-in sites on the Upper Columbia River. →*Terminate survey*

☐ No

A3. Did you camp at a drive-in campground on the Upper Columbia River last night?

☐ Yes → Ok. Thank you very much for your time. This version of our survey only focuses on visitors who are *not* camping at drive-in sites on the Upper Columbia River. →*Terminate survey*

☐ No

A4. How many people in your group today are…

_____ adults 18 or older?

_____ children 7 to 17 years old?

_____ children under 7?

If no children, skip to B1

A5. A few of my questions will be about the child in your group who had the most recent birthday. Could you tell me that child's first name?

_____ child's first name

A6. How old is *[child]*?

_____ years old

A7. And is *[child]* a boy or a girl?

☐ Boy

☐ Girl

PART B: CURRENT TRIP

B1. When did you arrive at the beach today?

_____ am / pm

B2. Since you arrived, have you personally spent any time in the water?

☐ Yes

☐ No → *Skip to B5*

B3. About how much of your time in the water was spent swimming or wading in water over waist deep?

_____ hours _____ minutes

B4. About how much of your time in the water was spent wading in water shallower than waist deep?

_____ hours _____ minutes

B5. Since you arrived, have you personally spent any time on the sand?

☐ Yes → About how much time? _____ hours _____ minutes

☐ No

If no children in group, skip to B10

B6. Since you arrived, has *[child]* spent any time in the water?

☐ Yes

☐ No → *Skip to B9*

B7. About how much of *[child]'s* time in the water was spent swimming or wading in water over waist deep?

_____ hours _____ minutes

B8. About how much of *[child]'s* time in the water was spent wading in water shallower than waist deep?

_____ hours _____ minutes

B9. Since you arrived, has *[child]* spent any time on the sand?

☐ Yes → About how much time? _____ hours _____ minutes

☐ No

B10. Did you or [child] drink any water from the Upper Columbia River since you arrived? I'm asking only about water that you drank on purpose from the Upper Columbia River. I'm not asking about water that you may have swallowed accidentally, and I'm also not asking about water that you drank from a faucet or water fountain.

☐ Yes

☐ No → *If respondent has completed survey before, skip to E1; otherwise skip to C1*

B11. Approximately how many ounces of water would you say that you drank from the Upper Columbia River since you arrived? *[Read response options.]* How about *[child]*? *[Show respondent water bottle with each amount marked on the outside]*

Respondent:

☐ Less than 8 ounces
☐ Approximately 8 ounces
☐ Approximately 12 ounces
☐ Approximately 16 ounces
☐ Approximately 20 ounces
☐ More than 20 ounces

Child:

☐ Less than 8 ounces
☐ Approximately 8 ounces
☐ Approximately 12 ounces
☐ Approximately 16 ounces
☐ Approximately 20 ounces
☐ More than 20 ounces

If respondent has completed survey before, skip to E1

PART C: PAST TRIPS

Now I'd like to ask you a few questions about other trips that you may have taken to the Upper Columbia River since June of last year.

C1. Have you gone on any overnight camping trips to the Upper Columbia River since June of last year? By "overnight camping trips" I mean trips where you stayed overnight in a tent, RV, camper, or boat.

☐ Yes

☐ No → *Skip to C5*

C2. Did you take any of these trips…	C3. Where did you camp? *(list all locations mentioned; list area of lake if location unknown)*	C4. How many nights did you stay at *[location]*?
Last Summer (Jun/Jul/Aug)?	1.	_____ nights
☐ Yes	2.	_____ nights
☐ No → *Skip to next season*	3.	_____ nights
Last Fall (Sep/Oct/Nov)?	1.	_____ nights
☐ Yes	2.	_____ nights
☐ No → *Skip to next season*	3.	_____ nights
Last Winter (Dec/Jan/Feb)?	1.	_____ nights
☐ Yes	2.	_____ nights
☐ No → *Skip to next season*	3.	_____ nights
Last Spring (Mar/Apr/May)?	1.	_____ nights
☐ Yes	2.	_____ nights
☐ No → *Skip to next season*	3.	_____ nights
So far this Summer (Jun/Jul/Aug)?	1.	_____ nights
☐ Yes	2.	_____ nights
☐ No	3.	_____ nights

C5. Have you gone on any boating day trips to the Upper Columbia River since June of last year? By "boating day trips" I mean boating or boat fishing trips where you <u>didn't</u> stay overnight at the Upper Columbia River.

☐ Yes

☐ No → *Skip to C10*

C6. Did you take any of these trips…	C7. Where did you launch your boat last *[season]*? *(list all locations mentioned; if location unknown, list area of lake)*	C8. How many times did you launch from *[location]* last *[season]*?	C9. What areas of the lake did you visit when you launched from *[location]* last *[season]* ? (circle all that apply)
Last Summer (Jun/Jul/Aug)?	1.	_____ times	1 2 3 4 5 6 7 8
☐ Yes	2.	_____ times	1 2 3 4 5 6 7 8
☐ No → *Skip to next season*	3.	_____ times	1 2 3 4 5 6 7 8
Last Fall (Sep/Oct/Nov)?	1.	_____ times	1 2 3 4 5 6 7 8
☐ Yes	2.	_____ times	1 2 3 4 5 6 7 8
☐ No → *Skip to next season*	3.	_____ times	1 2 3 4 5 6 7 8
Last Winter (Dec/Jan/Feb)?	1.	_____ times	1 2 3 4 5 6 7 8
☐ Yes	2.	_____ times	1 2 3 4 5 6 7 8
☐ No → *Skip to next season*	3.	_____ times	1 2 3 4 5 6 7 8
Last Spring (Mar/Apr/May)?	1.	_____ times	1 2 3 4 5 6 7 8
☐ Yes	2.	_____ times	1 2 3 4 5 6 7 8
☐ No → *Skip to next season*	3.	_____ times	1 2 3 4 5 6 7 8
So far this Summer (Jun/Jul/Aug)?	1.	_____ times	1 2 3 4 5 6 7 8
☐ Yes	2.	_____ times	1 2 3 4 5 6 7 8
☐ No	3.	_____ times	1 2 3 4 5 6 7 8

C10. How about beach <u>day</u> trips? By "beach day trips" I mean beach trips where you <u>didn't</u> stay overnight at the Upper Columbia River. Did you go on any beach day trips to the Upper Columbia River last summer, between June and September?

☐ Yes

☐ No → *Skip to D1*

C11. Which beaches did you visit on these day trips? *(refer to map; list all locations mentioned; use supplemental sheet if necessary)*	C12. How many day trips did you take to *[beach]* ?
1.	_____ trips
2.	_____ trips
3.	_____ trips
4.	_____ trips

PART D: FISH CONSUMPTION

D1. Do you fish in the Upper Columbia River?

☐ Yes → D2. Do you eat fish from the Upper Columbia River?
☐ Yes
☐ No → *Skip to D10*

☐ No → D2. Do you eat fish from the Upper Columbia River?
☐ Yes
☐ No → *Skip to E1*

The next few questions will be about the fish that you've eaten from the Upper Columbia River over the past 12 months, and about any fish you kept on this trip. I will not be asking to see any of the fish that you kept.

D3. Over the past 12 months, have you eaten any *[species]* from the Upper Columbia River?	D4. About how many meals of *[species]* have you eaten over the past 12 months?	D5. Could you tell me where the *[species]* was caught? *(show map; circle all that apply)*	D6. What parts of the *[species]* do you typically eat? (*check all that apply*)	D7. Did you keep any *[species]* today?	D8.How long were the biggest and smallest *[species]* that you kept today?
Kokanee (Silvers) ☐ Yes ☐ No → *Skip to next species*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → *next species*	____ inches (biggest) ____ inches (smallest)
Rainbow Trout ☐ Yes ☐ No → *Skip to next species*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → *next species*	____ inches (biggest) ____ inches (smallest)
Walleye ☐ Yes ☐ No → *Skip to next species*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → *next species*	____ inches (biggest) ____ inches (smallest)
Bass ☐ Yes ☐ No → *Skip to next species*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → *next species*	____ inches (biggest) ____ inches (smallest)
Other fish _____ ☐ Yes ☐ No → *Skip to D9*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → D9	____ inches (biggest) ____ inches (smallest)

D9. Please look at this photo, which shows three different fish fillet serving sizes. How much fillet do you typically eat when you eat a fish fillet meal from the Upper Columbia River? Do you eat an amount… *[read response options]*

- ☐ Less than Photo A
- ☐ Similar to Photo A
- ☐ Similar to Photo B
- ☐ Similar to Photo C
- ☐ More than Photo C

D10. Do you typically share fish from the Upper Columbia River with any children?

☐ Yes → a. Children under the age of 7? ☐ Yes ☐ No

b. Children ages 7 to 17? ☐ Yes ☐ No

☐ No

D11. Are you aware of any fish consumption advisories that have been issued for the Upper Columbia River?

☐ Yes

☐ No → *Offer advisory brochure to respondent; Skip to Section E*

D12. How did you first hear about these advisories? (*check all that apply*)

- ☐ Posted signs
- ☐ Fishing regulations
- ☐ Friend or family
- ☐ Website
- ☐ Newspaper
- ☐ Other _____

D13. Do you find the advisories helpful in making decisions about eating fish from the Upper Columbia River?

☐ Yes

☐ No → Why not? _____

_____

D14. Do you generally follow the advisory recommendations?

☐ Yes

☐ No

D15. In response to the advisories, have you changed…

a. … how often you fish in the Upper Columbia River?

☐ Yes → Do you fish in the Upper Columbia River more or less often? ☐ More ☐ Less

☐ No

b. ….how often you eat fish from the Upper Columbia River?

☐ Yes → Do you eat Upper Columbia River fish more or less often? ☐ More ☐ Less

☐ No

c. ….how you clean the fish that you catch from the Upper Columbia River?

☐ Yes

☐ No

d. …the species that you target when fishing the Upper Columbia River?

☐ Yes

☐ No

e. …how often you share fish from the Upper Columbia River with your family?

☐ Yes → Do you share Upper Columbia River fish with your family more or less often? ☐ More ☐ Less

☐ No

Offer advisory brochure to respondent; proceed to Section E.

PART E: DEMOGRAPHIC CHARACTERISTICS

Now I just have a few final questions…

E1. What year were you born?

_____ year of birth

E2. What is the zip code of your primary residence?

_____ zip code or postal code (write country if respondent not from the United States or Canada)

E3. Are you currently participating in something called the "CCT tribal use survey"?

☐ Yes

☐ No/Don't know

E4. *Interviewer: record gender of respondent*

☐ Male

☐ Female

E5. *Interviewer: has respondent completed survey before*?

☐ Yes → That's the end of the survey. Thank you very much for helping out!

☐ No

E6. *Interviewer: did respondent consume at least 10 fish meals (total across all species) from the Upper Columbia River over the last 12 months (question D4)?*

☐ Yes

☐ No → That's the end of the survey. Thank you very much for helping out!

E7. The National Park Service is conducting a study that focuses on people who eat fish from the Upper Columbia River. They are mailing booklets to every participant for recording fish consumption information over a three-month period. Every participant will receive a $50 check at the end of the study. Would you be interested in helping us out by participating in this study?

☐ Yes

☐ No → That's the end of the survey. Thank you very much for helping out!

If respondent declines but offers his or her companion, say "I'm sorry, but you were randomly selected to participate, and I can't make this offer to anyone else in your group."

E8. That's great. Could I please have your name, address, phone number, and email so that we can contact you?

Name _____

Address _____

_____

Telephone _____

Email _____

That's the end of the survey. Thank you very much for helping out!

END OF SURVEY

UPPER COLUMBIA RIVER VISITOR SURVEY -- BOATING

Interviewer _____ Time _____ am / pm

Location _____ Month_____/Day____/2011

Hi, I'm conducting a survey for the National Park Service about how people use Lake Roosevelt and the Upper Columbia River. I'm hoping to speak with the person in your group who had the most recent birthday.

Interviewer check one:

☐ Survey completed by adult with most recent birthday

☐ Survey completed by another adult

After targeted individual has been identified: Would you be willing to answer a few questions about your visits to this area?

PART A: PRELIMINARY QUESTIONS

Before I start, let me show you exactly what area the survey will focus on. It's the area outlined in red on this map, which includes the Columbia River from the Grand Coulee Dam to the Canadian border and part of the Spokane River. Most of Lake Roosevelt is also included in this area. During the survey, I'll refer to this entire area as the "Upper Columbia River." *Point out respondent's current location on the map.*

A1. Have you taken this survey before?

☐ Yes → Great, then I'll only ask you a few quick questions about your current trip.

☐ No

A2. Are you camping at a drive-in campground on the Upper Columbia River tonight?

☐ Yes → Ok. Thank you very much for your time. This version of our survey only focuses on visitors who are *not* staying at drive-in campgrounds on the Upper Columbia River. →*Terminate survey*

☐ No

A3. Did you camp at the Upper Columbia River last night?

☐ Yes

☐ No → *Skip to A5*

A4. Where did you camp?

_____ Camping site (list area of lake if location unknown or if respondent slept in boat)

Interviewer: Is the camping site a drive-in campground?

☐ Yes → Ok. Thank you very much for your time. This version of our survey only focuses on visitors who are *not* staying at drive-in campgrounds on the Upper Columbia River.

☐ No

A5. How many people on your boat today were…

_____ adults 18 or older?

_____ children 7 to 17 years old?

_____ children under 7?

If no children, skip to B1

A6. A few of my questions will be about the child on your boat who had the most recent birthday. Could you tell me that child's first name?

_____ child's first name

A7. How old is *[child]*?

_____ years old

A8. And is *[child]* a boy or a girl?

☐ Boy

☐ Girl

PART B: CURRENT TRIP

B1. When did you launch your boat for this trip?

Month_____/Day____/2011

_____ am / pm

B2. What areas of the Upper Columbia River did you visit since you launched? *(Show map, circle all areas visited)*

1 2 3 4 5 6 7 8 Don't know

If trip 24 hours or longer, skip to B5

B3. Since you launched your boat, have you <u>personally</u> spent any time…

a. Waterskiing, tubing, or doing similar activities?	☐ Yes ☐ No	→ About how much time?	_____ hours _____ minutes
b. Wading in water shallower than waist deep?	☐ Yes ☐ No	→ About how much time?	_____ hours _____ minutes
c. Swimming or wading in water over waist deep?	☐ Yes ☐ No	→ About how much time?	_____ hours _____ minutes
d. Hanging out on the beach or sand along the shore?	☐ Yes ☐ No	→ About how much time?	_____ hours _____ minutes

If no children in group, skip to B7

B4. Since you launched your boat, has *[child]* spent any time…

a. Waterskiing, tubing, or doing similar activities?	☐ Yes ☐ No	→ About how much time?	_____ hours _____ minutes
b. Wading in water shallower than waist deep?	☐ Yes ☐ No	→ About how much time?	_____ hours _____ minutes
c. Swimming or wading in water over waist deep?	☐ Yes ☐ No	→ About how much time?	_____ hours _____ minutes
d. Hanging out on the beach or sand along the shore?	☐ Yes ☐ No	→ About how much time?	_____ hours _____ minutes

Skip to B7

B5. Over the past 24 hours, have you <u>personally</u> spent any time…

a. Waterskiing, tubing, or doing similar activities?	☐ Yes ☐ No	→ About how much time?	_____ hours _____ minutes
b. Wading in water shallower than waist deep?	☐ Yes ☐ No	→ About how much time?	_____ hours _____ minutes
c. Swimming or wading in water over waist deep?	☐ Yes ☐ No	→ About how much time?	_____ hours _____ minutes
d. Hanging out on the beach or sand along the shore?	☐ Yes ☐ No	→ About how much time? (Please do <u>not</u> include any time spent inside a tent)	_____ hours _____ minutes
e. Sleeping or relaxing inside a tent?	☐ Yes ☐ No	→ About how much time?	_____ hours _____ minutes

If no children in group, skip to B7

B6. Over the past 24 hours, has *[child]* spent any time…

a. Waterskiing, tubing, or doing similar activities?	☐ Yes ☐ No	→ About how much time?	_____ hours _____ minutes
b. Wading in water shallower than waist deep?	☐ Yes ☐ No	→ About how much time?	_____ hours _____ minutes
c. Swimming or wading in water over waist deep?	☐ Yes ☐ No	→ About how much time?	_____ hours _____ minutes
d. Hanging out on the beach or sand along the shore?	☐ Yes ☐ No	→ About how much time? (Please do <u>not</u> include any time spent inside a tent)	_____ hours _____ minutes
e. Sleeping or relaxing inside a tent?	☐ Yes ☐ No	→ About how much time?	_____ hours _____ minutes

B7. Did you or [child] drink any water from the Upper Columbia River since you launched your boat? I'm asking only about water that you drank on purpose from the Upper Columbia River. I'm not asking about water that you may have swallowed accidentally, and I'm also not asking about water that you drank from a faucet or water fountain.

☐ Yes

☐ No → *If respondent has completed survey before, skip to E1; otherwise skip to C1*

B8. *[Interviewer: was trip longer than 24 hours?]*

☐ Yes → Approximately how many ounces of water would you say that you drank from the Upper Columbia River in the last 24 hours? *[Read response options.]* How about *[child]* ?

☐ No → Approximately how many ounces of water would you say that you drank from the Upper Columbia River since you launched your boat? *[Read response options.]* How about *[child]* ?

[Show respondent water bottle with each amount marked on the outside]

Respondent:

☐ Less than 8 ounces
☐ Approximately 8 ounces
☐ Approximately 12 ounces
☐ Approximately 16 ounces
☐ Approximately 20 ounces
☐ More than 20 ounces

Child:

☐ Less than 8 ounces
☐ Approximately 8 ounces
☐ Approximately 12 ounces
☐ Approximately 16 ounces
☐ Approximately 20 ounces
☐ More than 20 ounces

If respondent has completed survey before, skip to E1

PART C: PAST TRIPS

Now I'd like to ask you a few questions about other trips that you may have taken to the Upper Columbia River since June of last year.

C1. Have you gone on any overnight camping trips to the Upper Columbia River since June of last year? By "overnight camping trips" I mean trips where you stayed overnight in a tent, RV, camper, or boat.

☐ Yes
☐ No → *Skip to C5*

C2. Did you take any of these trips…	C3. Where did you camp? *(list all locations mentioned; list area of lake if location unknown)*	C4. How many nights did you stay at *[location]*?
Last Summer (Jun/Jul/Aug)?	1.	_____ nights
☐ Yes	2.	_____ nights
☐ No → *Skip to next season*	3.	_____ nights
Last Fall (Sep/Oct/Nov)?	1.	_____ nights
☐ Yes	2.	_____ nights
☐ No → *Skip to next season*	3.	_____ nights
Last Winter (Dec/Jan/Feb)?	1.	_____ nights
☐ Yes	2.	_____ nights
☐ No → *Skip to next season*	3.	_____ nights
Last Spring (Mar/Apr/May)?	1.	_____ nights
☐ Yes	2.	_____ nights
☐ No → *Skip to next season*	3.	__▫____ n▫ghts
So far this Summer (Jun/Jul/Aug)?	1.	_____ nights
☐ Yes	2.	_____ nights
☐ No	3.	_____ nights

C5. Have you gone on any boating day trips to the Upper Columbia River since June of last year? By "boating day trips" I mean boating or boat fishing trips where you <u>didn't</u> stay overnight at the Upper Columbia River.

☐ Yes

☐ No → *Skip to C10*

C6. Did you take any of these trips…	C7. Where did you launch your boat last *[season]*? *(list all locations mentioned; if location unknown, list area of lake)*	C8. How many times did you launch from *[location]* last *[season]*?	C9. What areas of the lake did you visit when you launched from *[location]* last *[season]*? (circle all that apply)
Last Summer (Jun/Jul/Aug)?	1.	_____ times	1 2 3 4 5 6 7 8
☐ Yes	2.	_____ times	1 2 3 4 5 6 7 8
☐ No → *Skip to next season*	3.	_____ times	1 2 3 4 5 6 7 8
Last Fall (Sep/Oct/Nov)?	1.	_____ times	1 2 3 4 5 6 7 8
☐ Yes	2.	_____ times	1 2 3 4 5 6 7 8
☐ No → *Skip to next season*	3.	_____ times	1 2 3 4 5 6 7 8
Last Winter (Dec/Jan/Feb)?	1.	_____ times	1 2 3 4 5 6 7 8
☐ Yes	2.	_____ times	1 2 3 4 5 6 7 8
☐ No → *Skip to next season*	3.	_____ times	1 2 3 4 5 6 7 8
Last Spring (Mar/Apr/May)?	1.	_____ times	1 2 3 4 5 6 7 8
☐ Yes	2.	_____ times	1 2 3 4 5 6 7 8
☐ No → *Skip to next season*	3.	_____ times	1 2 3 4 5 6 7 8
So far this Summer (Jun/Jul/Aug)?	1.	_____ times	1 2 3 4 5 6 7 8
☐ Yes	2.	_____ times	1 2 3 4 5 6 7 8
☐ No	3.	_____ times	1 2 3 4 5 6 7 8

C10. How about beach <u>day</u> trips? By "beach day trips" I mean beach trips where you <u>didn't</u> stay overnight at the Upper Columbia River. Did you go on any beach day trips to the Upper Columbia River last summer, between June and September?

☐ Yes

☐ No → *Skip to D1*

C11. Which beaches did you visit on these day trips? *(refer to map; list all locations mentioned; use supplemental sheet if necessary)*	C12. How many day trips did you take to *[beach]* ?
1.	_____ trips
2.	_____ trips
3.	_____ trips
4.	_____ trips

PART D: FISH CONSUMPTION

D1. Do you fish in the Upper Columbia River?

☐ Yes → D2. Do you eat fish from the Upper Columbia River?
☐ Yes
☐ No → *Skip to D10*

☐ No → D2. Do you eat fish from the Upper Columbia River?
☐ Yes
☐ No → *Skip to E1*

The next few questions will be about the fish that you've eaten from the Upper Columbia River over the past 12 months, and about any fish you kept on this trip. I will not be asking to see any of the fish that you kept.

D3. Over the past 12 months, have you eaten any *[species]* from the Upper Columbia River?	D4. About how many meals of *[species]* have you eaten over the past 12 months?	D5. Could you tell me where the *[species]* was caught? *(show map; circle all that apply)*	D6. What parts of the *[species]* do you typically eat? (*check all that apply*)	D7. Did you keep any *[species]* today?	D8.How long were the biggest and smallest *[species]* that you kept today?
Kokanee (Silvers) ☐ Yes ☐ No → *Skip to next species*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → *next species*	____ inches (biggest) ____ inches (smallest)
Rainbow Trout ☐ Yes ☐ No → *Skip to next species*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → *next species*	____ inches (biggest) ____ inches (smallest)
Walleye ☐ Yes ☐ No → *Skip to next species*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → *next species*	____ inches (biggest) ____ inches (smallest)
Bass ☐ Yes ☐ No → *Skip to next species*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → *next species*	____ inches (biggest) ____ inches (smallest)
Other fish _____ ☐ Yes ☐ No → *Skip to D9*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → D9	____ inches (biggest) ____ inches (smallest)

D9. Please look at this photo, which shows three different fish fillet serving sizes. How much fillet do you typically eat when you eat a fish fillet meal from the Upper Columbia River? Do you eat an amount… *[read response options]*

- ☐ Less than Photo A
- ☐ Similar to Photo A
- ☐ Similar to Photo B
- ☐ Similar to Photo C
- ☐ More than Photo C

D10. Do you typically share fish from the Upper Columbia River with any children?

☐ Yes → a. Children under the age of 7? ☐ Yes ☐ No

b. Children ages 7 to 17? ☐ Yes ☐ No

☐ No

D11. Are you aware of any fish consumption advisories that have been issued for the Upper Columbia River?

- ☐ Yes
- ☐ No → *Offer advisory brochure to respondent; Skip to Section E*

D12. How did you first hear about these advisories? (*check all that apply*)

- ☐ Posted signs
- ☐ Fishing regulations
- ☐ Friend or family
- ☐ Website
- ☐ Newspaper
- ☐ Other _____

D13. Do you find the advisories helpful in making decisions about eating fish from the Upper Columbia River?

- ☐ Yes
- ☐ No → Why not? _____

_____

D14. Do you generally follow the advisory recommendations?

- ☐ Yes
- ☐ No

D15. In response to the advisories, have you changed…

a. … how often you fish in the Upper Columbia River?

☐ Yes → Do you fish in the Upper Columbia River more or less often? ☐ More ☐ Less

☐ No

b. ….how often you eat fish from the Upper Columbia River?

☐ Yes → Do you eat Upper Columbia River fish more or less often? ☐ More ☐ Less

☐ No

c. ….how you clean the fish that you catch from the Upper Columbia River?

☐ Yes

☐ No

d. …the species that you target when fishing the Upper Columbia River?

☐ Yes

☐ No

e. …how often you share fish from the Upper Columbia River with your family?

☐ Yes → Do you share Upper Columbia River fish with your family more or less often? ☐ More ☐ Less

☐ No

Offer advisory brochure to respondent; proceed to Section E.

PART E: DEMOGRAPHIC CHARACTERISTICS

Now I just have a few final questions…

E1. What year were you born?

_____ year of birth

E2. What is the zip code of your primary residence?

_____ zip code or postal code (write country if respondent not from the United States or Canada)

E3. Are you currently participating in something called the "CCT tribal use survey"?

☐ Yes

☐ No/Don't know

E4. *Interviewer: record gender of respondent*

☐ Male

☐ Female

E5. *Interviewer: record type of boating trip*

☐ Boat launch

☐ Rented boat slip (marinas only)

☐ Rented houseboat (marinas only)

E6. *Interviewer: has respondent completed survey before?*

☐ Yes → That's the end of the survey. Thank you very much for helping out!

☐ No

E7. *Interviewer: did respondent consume at least 10 fish meals (total across all species) from the Upper Columbia River over the last 12 months (question D4)?*

☐ Yes

☐ No → That's the end of the survey. Thank you very much for helping out!

E8. The National Park Service is conducting a study that focuses on people who eat fish from the Upper Columbia River. They are mailing booklets to every participant for recording fish consumption information over a three-month period. Every participant will receive a $50 check at the end of the study. Would you be interested in helping us out by participating in this study?

☐ Yes

☐ No → That's the end of the survey. Thank you very much for helping out!

If respondent declines but offers his or her companion, say "I'm sorry, but you were randomly selected to participate, and I can't make this offer to anyone else in your group."

E9. That's great. Could I please have your name, address, phone number, and email so that we can contact you?

Name _____

Address _____

_____

Telephone _____

Email _____

That's the end of the survey. Thank you very much for helping out!

END OF SURVEY

UPPER COLUMBIA RIVER VISITOR SURVEY -- CAMPING

Interviewer _____ Time _____ am / pm

Location _____ Campsite No. _____ Month_____/Day____/2011

Hi, I'm conducting a survey for the National Park Service about how people use Lake Roosevelt and the Upper Columbia River. I'm hoping to speak with the person in your group who had the most recent birthday.

Interviewer check one:

☐ Survey completed by adult with most recent birthday

☐ Survey completed by another adult

After targeted individual has been identified: Would you be willing to answer a few questions about your visits to this area?

PART A: PRELIMINARY QUESTIONS

Before I start, let me show you exactly what area the survey will focus on. It's the area outlined in red on this map, which includes the Columbia River from the Grand Coulee Dam to the Canadian border and part of the Spokane River. Most of Lake Roosevelt is also included in this area. During the survey, I'll refer to this entire area as the "Upper Columbia River." *Point out respondent's current location on the map.*

A1. Have you taken this survey before?

☐ Yes → Great, then I'll only ask you a few quick questions about your current trip.

☐ No

A2. How many people staying at your campsite tonight are…

_____ adults 18 or older?

_____ children 7 to 17 years old?

_____ children under 7?

If no children, skip to B1

A3. A few of my questions will be about the child at your campsite who had the most recent birthday. Could you tell me that child's first name?

_____ child's first name

A4. How old is *[child]*?

_____ years old

A5. And is *[child]* a boy or a girl?

☐ Boy

☐ Girl

PART B: CURRENT TRIP

B1. When did you arrive at the Upper Columbia River for this camping trip?

Month_____/Day____/2011 At about what time? _____ am / pm

B2. When do you plan to leave?

Month_____/Day____/2011 Do you know about what time? _____ am / pm

☐ Don't know/not sure

B3. Did you bring a boat with you?

☐ Yes

☐ No

B4. Since you arrived, have you personally spent any time…

a. Waterskiing, tubing, or doing similar activities?	☐ Yes ☐ No	→ About how much time over the past 24 hours?	_____ hours _____ minutes
b. Wading in water shallower than waist deep?	☐ Yes ☐ No	→ About how much time over the past 24 hours?	_____ hours _____ minutes
c. Swimming or wading in water over waist deep?	☐ Yes ☐ No	→ About how much time over the past 24 hours?	_____ hours _____ minutes
d. Hanging out on the beach or sand along the shore?	☐ Yes ☐ No	→ About how much time over the past 24 hours?	_____ hours _____ minutes
e. Inside a tent, camper, or RV	☐ Yes ☐ No	→ About how much time over the past 24 hours?	_____ hours _____ minutes

If no children in group, skip to B6

B5. Since you arrived, has *[child]* spent any time…

a. Waterskiing, tubing, or doing similar activities?	☐ Yes ☐ No	→ About how much time over the past 24 hours?	_____ hours _____ minutes
b. Wading in water shallower than waist deep?	☐ Yes ☐ No	→ About how much time over the past 24 hours?	_____ hours _____ minutes
c. Swimming or wading in water over waist deep?	☐ Yes ☐ No	→ About how much time over the past 24 hours?	_____ hours _____ minutes
d. Hanging out on the beach or sand along the shore?	☐ Yes ☐ No	→ About how much time over the past 24 hours?	_____ hours _____ minutes
e. Inside a tent, camper, or RV	☐ Yes ☐ No	→ About how much time over the past 24 hours?	_____ hours _____ minutes

B6. Did you drink any water from the Upper Columbia River since you arrived? I'm asking only about water that you drank on purpose from the Upper Columbia River. I'm not asking about water that you may have swallowed accidentally, and I'm also not asking about water that you drank from a faucet or water fountain.

☐ Yes

☐ No → *If respondent has completed survey before, skip to E1; otherwise skip to C1*

B7. Approximately how many ounces of water would you say that you drank from the Upper Columbia River in the last 24 hours? *[Read response options.]* How about *[child]*? *[Show respondent water bottle with each amount marked on the outside]*

Respondent:

- ☐ Less than 8 ounces
- ☐ Approximately 8 ounces
- ☐ Approximately 12 ounces
- ☐ Approximately 16 ounces
- ☐ Approximately 20 ounces
- ☐ More than 20 ounces

Child:

- ☐ Less than 8 ounces
- ☐ Approximately 8 ounces
- ☐ Approximately 12 ounces
- ☐ Approximately 16 ounces
- ☐ Approximately 20 ounces
- ☐ More than 20 ounces

If respondent has completed survey before, skip to E1

PART C: PAST TRIPS

Now I'd like to ask you a few questions about other trips that you may have taken to the Upper Columbia River since June of last year.

C1. Have you gone on any other overnight camping trips to the Upper Columbia River since June of last year? By "overnight camping trips" I mean trips where you stayed overnight in a tent, RV, camper, or boat.

- ☐ Yes
- ☐ No → *Skip to C5*

C2. Did you take any of these trips…	C3. Where did you camp? *(list all locations mentioned; list area of lake if location unknown)*	C4. How many nights did you stay at *[location]*?
Last Summer (Jun/Jul/Aug)?	1.	_____ nights
☐ Yes	2.	_____ nights
☐ No → *Skip to next season*	3.	_____ nights
Last Fall (Sep/Oct/Nov)?	1.	_____ nights
☐ Yes	2.	_____ nights
☐ No → *Skip to next season*	3.	_____ nights
Last Winter (Dec/Jan/Feb)?	1.	_____ nights
☐ Yes	2.	_____ nights
☐ No → *Skip to next season*	3.	_____ nights
Last Spring (Mar/Apr/May)?	1.	_____ nights
☐ Yes	2.	_____ nights
☐ No → *Skip to next season*	3.	_____ nights
So far this Summer (Jun/Jul/Aug)?	1.	_____ nights
☐ Yes	2.	_____ nights
☐ No	3.	_____ nights

C5. Have you gone on any boating day trips to the Upper Columbia River since June of last year? By "boating day trips" I mean boating or boat fishing trips where you <u>didn't</u> stay overnight at the Upper Columbia River.

☐ Yes

☐ No → *Skip to C10*

C6. Did you take any of these trips…	C7. Where did you launch your boat last *[season]*? *(list all locations mentioned; if location unknown, list area of lake)*	C8. How many times did you launch from *[location]* last *[season]*?	C9. What areas of the lake did you visit when you launched from *[location]* last *[season]* ? (circle all that apply)
Last Summer (Jun/Jul/Aug)?	1.	_____ times	1 2 3 4 5 6 7 8
☐ Yes	2.	_____ times	1 2 3 4 5 6 7 8
☐ No → *Skip to next season*	3.	_____ times	1 2 3 4 5 6 7 8
Last Fall (Sep/Oct/Nov)?	1.	_____ times	1 2 3 4 5 6 7 8
☐ Yes	2.	_____ times	1 2 3 4 5 6 7 8
☐ No → *Skip to next season*	3.	_____ times	1 2 3 4 5 6 7 8
Last Winter (Dec/Jan/Feb)?	1.	_____ times	1 2 3 4 5 6 7 8
☐ Yes	2.	_____ times	1 2 3 4 5 6 7 8
☐ No → *Skip to next season*	3.	_____ times	1 2 3 4 5 6 7 8
Last Spring (Mar/Apr/May)?	1.	_____ times	1 2 3 4 5 6 7 8
☐ Yes	2.	_____ times	1 2 3 4 5 6 7 8
☐ No → *Skip to next season*	3.	_____ times	1 2 3 4 5 6 7 8
So far this Summer (Jun/Jul/Aug)?	1.	_____ times	1 2 3 4 5 6 7 8
☐ Yes	2.	_____ times	1 2 3 4 5 6 7 8
☐ No	3.	_____ times	1 2 3 4 5 6 7 8

C10. How about beach <u>day</u> trips? By "beach day trips" I mean beach trips where you <u>didn't</u> stay overnight at the Upper Columbia River. Did you go on any beach day trips to the Upper Columbia River last summer, between June and September?

☐ Yes

☐ No → *Skip to D1*

C11. Which beaches did you visit on these day trips? *(refer to map; list all locations mentioned; use supplemental sheet if necessary)*	C12. How many day trips did you take to *[beach]* ?
1.	_____ trips
2.	_____ trips
3.	_____ trips
4.	_____ trips

PART D: FISH CONSUMPTION

D1. Do you fish in the Upper Columbia River?

☐ Yes → D2. Do you eat fish from the Upper Columbia River?
☐ Yes
☐ No → *Skip to D10*

☐ No → D2. Do you eat fish from the Upper Columbia River?
☐ Yes
☐ No → *Skip to E1*

The next few questions will be about the fish that you've eaten from the Upper Columbia River over the past 12 months, and about any fish you kept on this trip. I will not be asking to see any of the fish that you kept.

D3. Over the past 12 months, have you eaten any *[species]* from the Upper Columbia River?	D4. About how many meals of *[species]* have you eaten over the past 12 months?	D5. Could you tell me where the *[species]* was caught? *(show map; circle all that apply)*	D6. What parts of the *[species]* do you typically eat? (*check all that apply*)	D7. Did you keep any *[species]* today?	D8.How long were the biggest and smallest *[species]* that you kept today?
Kokanee (Silvers) ☐ Yes ☐ No → *Skip to next species*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → *next species*	____ inches (biggest) ____ inches (smallest)
Rainbow Trout ☐ Yes ☐ No → *Skip to next species*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → *next species*	____ inches (biggest) ____ inches (smallest)
Walleye ☐ Yes ☐ No → *Skip to next species*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → *next species*	____ inches (biggest) ____ inches (smallest)
Bass ☐ Yes ☐ No → *Skip to next species*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → *next species*	____ inches (biggest) ____ inches (smallest)
Other fish _____ ☐ Yes ☐ No → *Skip to D9*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → D9	____ inches (biggest) ____ inches (smallest)

D9. Please look at this photo, which shows three different fish fillet serving sizes. How much fillet do you typically eat when you eat a fish fillet meal from the Upper Columbia River? Do you eat an amount… *[read response options]*

- ☐ Less than Photo A
- ☐ Similar to Photo A
- ☐ Similar to Photo B
- ☐ Similar to Photo C
- ☐ More than Photo C

D10. Do you typically share fish from the Upper Columbia River with any children?

☐ Yes → a. Children under the age of 7? ☐ Yes ☐ No

b. Children ages 7 to 17? ☐ Yes ☐ No

☐ No

D11. Are you aware of any fish consumption advisories that have been issued for the Upper Columbia River?

☐ Yes

☐ No → *Offer advisory brochure to respondent; Skip to Section E*

D12. How did you first hear about these advisories? (*check all that apply*)

- ☐ Posted signs
- ☐ Fishing regulations
- ☐ Friend or family
- ☐ Website
- ☐ Newspaper
- ☐ Other _____

D13. Do you find the advisories helpful in making decisions about eating fish from the Upper Columbia River?

☐ Yes

☐ No → Why not? _____

_____

D14. Do you generally follow the advisory recommendations?

☐ Yes

☐ No

D15. In response to the advisories, have you changed…

a. … how often you fish in the Upper Columbia River?

☐ Yes → Do you fish in the Upper Columbia River more or less often? ☐ More ☐ Less

☐ No

b. ….how often you eat fish from the Upper Columbia River?

☐ Yes → Do you eat Upper Columbia River fish more or less often? ☐ More ☐ Less

☐ No

c. ….how you clean the fish that you catch from the Upper Columbia River?

☐ Yes

☐ No

d. …the species that you target when fishing the Upper Columbia River?

☐ Yes

☐ No

e. …how often you share fish from the Upper Columbia River with your family?

☐ Yes → Do you share Upper Columbia River fish with your family more or less often? ☐ More ☐ Less

☐ No

Offer advisory brochure to respondent; proceed to Section E.

PART E: DEMOGRAPHIC CHARACTERISTICS

Now I just have a few final questions…

E1. What year were you born?

_____ year of birth

E2. What is the zip code of your primary residence?

_____ zip code or postal code (write country if respondent not from the United States or Canada)

E3. Are you currently participating in something called the "CCT tribal use survey"?

☐ Yes

☐ No/Don't know

E4. *Interviewer: record gender of respondent*

☐ Male

☐ Female

E5. *Interviewer: has respondent completed survey before*?

☐ Yes → That's the end of the survey. Thank you very much for helping out!

☐ No

E6. *Interviewer: did respondent consume at least 10 fish meals (total across all species) from the Upper Columbia River over the last 12 months (question D4)*?

☐ Yes

☐ No → That's the end of the survey. Thank you very much for helping out!

E7. The National Park Service is conducting a study that focuses on people who eat fish from the Upper Columbia River. They are mailing booklets to every participant for recording fish consumption information over a three-month period. Every participant will receive a $50 check at the end of the study. Would you be interested in helping us out by participating in this study?

☐ Yes

☐ No → That's the end of the survey. Thank you very much for helping out!
Interviewer note reason for refusal:

If respondent declines but offers his or her companion, say "I'm sorry, but you were randomly selected to participate, and I can't make this offer to anyone else in your group."

E8. That's great. Could I please have your name, address, phone number, and email so that we can contact you?

Name _____

Address _____

_____

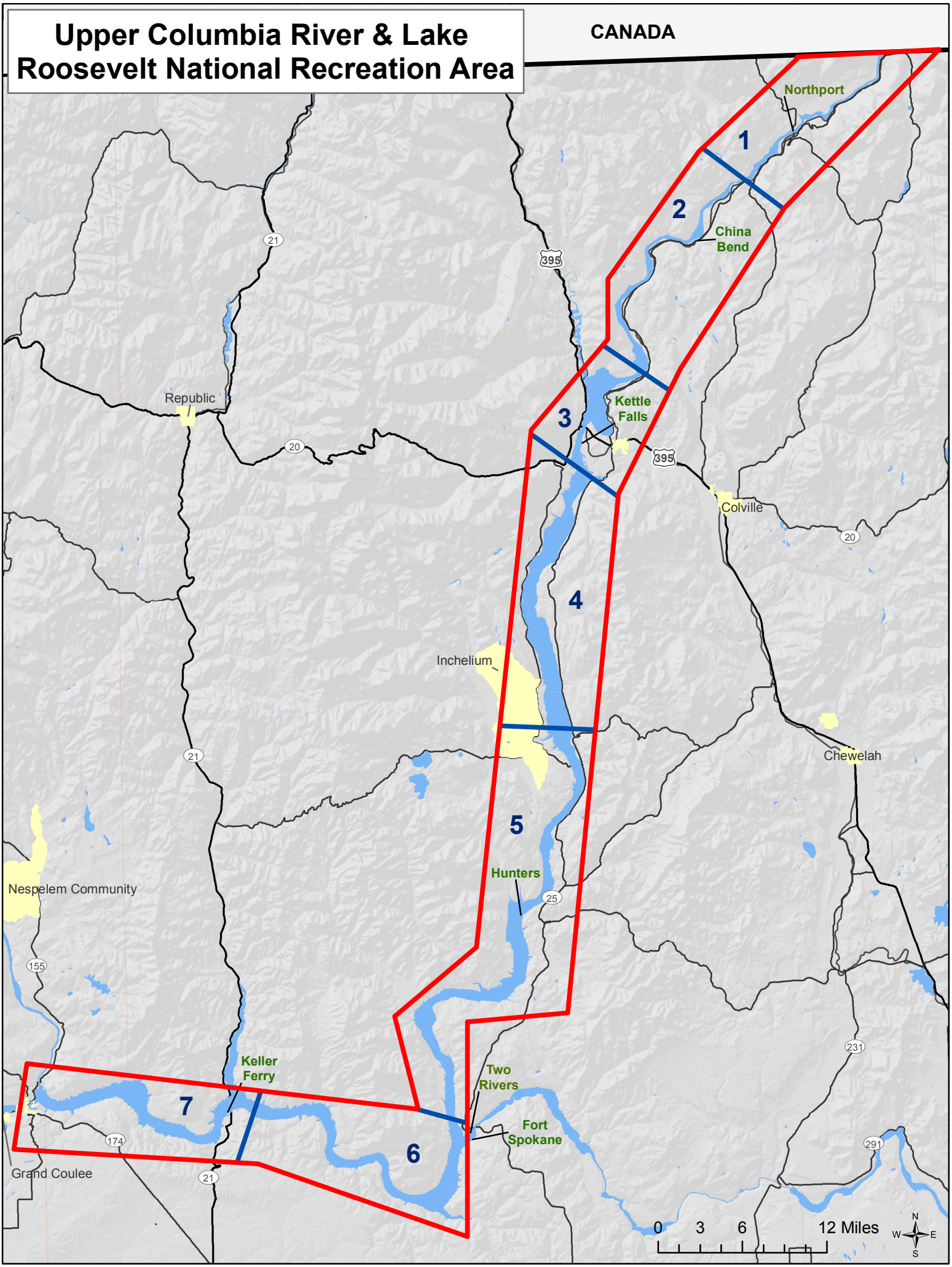
Telephone _____

Email _____

That's the end of the survey. Thank you very much for helping out!

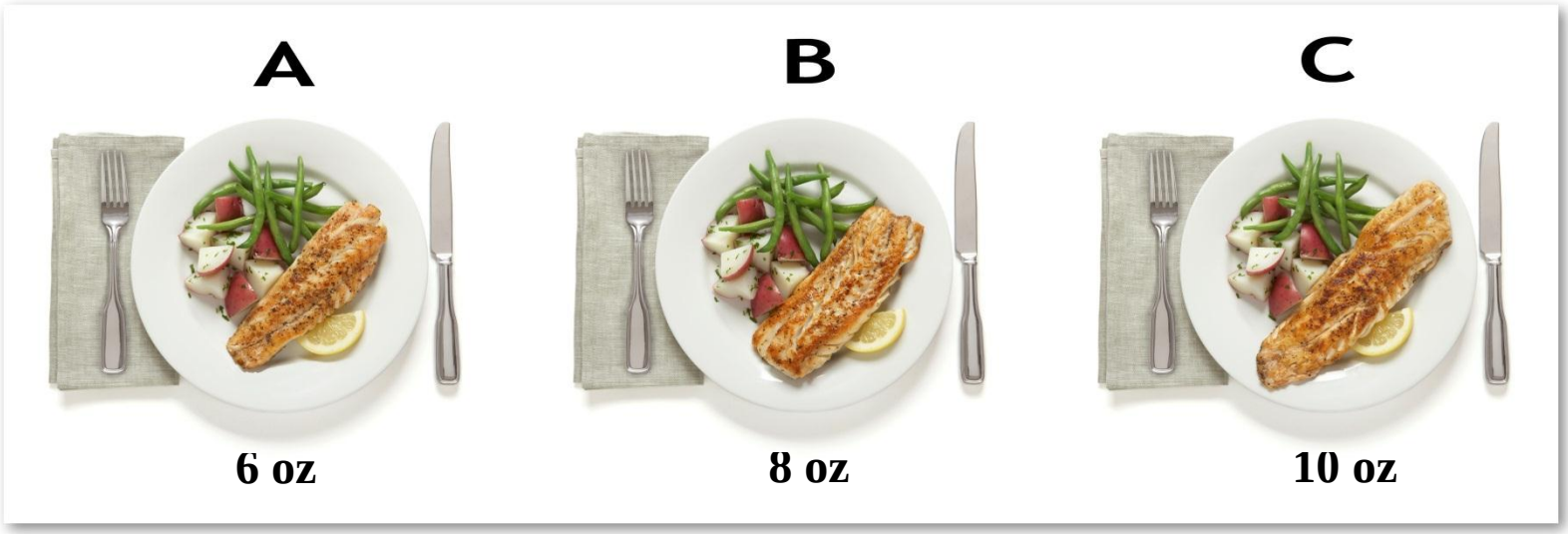
END OF SURVEY

APPENDIX B: MAP DEPICTING UPPER COLUMBIA RIVER AREA FOR SURVEY RESPONDENTS


Upper Columbia River & Lake Roosevelt National Recreation Area
CANADA
Northport
1
2
China Bend
395
21
Republic
20
3
Kettle Falls
395
Colville
20
4
Inchelium
21
Chewelah
5
Hunters
25
Nespelem Community
155
231
Keller Ferry
Two Rivers
7
Fort Spokane
174
6
291
Grand Coulee
21
0 3 6 12 Miles
N
W
E
S

APPENDIX C: PHOTOGRAPHS OF 6-OZ, 8-OZ, AND 10-OZ FISH FILLETS (PRE-COOKED WEIGHTS

Fish Fillet Size Comparison



APPENDIX D: FINAL SHIFT INFORMATION

EXHIBIT D-1: TOTAL SHIFTS BY SITE

SITE		BEACH	BOAT		CAMP		TOTAL
			OFF-PEAK	PEAK	OFF-PEAK	PEAK	
Upper	Black Sands	3	--	--	--		**3**
	Northport	--	11	14	--	--	**25**
	China Bend	--	--	9	--	--	**9**
	North Gorge	--	--	--	1	2	**3**
	Snag Cove	--	--	3	2	4	**9**
	Evans	37	4	9	6	22	**78**
	Kamloops Island	--	--	--	4	6	**10**
	Marcus Island	--	--	5	3	6	**14**
Middle	Kettle Falls	--	7	21	12	25	**65**
	Colville Flats	13	--	--	--	--	**13**
	Haag Cove	--	--	--	1	1	**2**
	Bradbury	15	--	1	--	--	**16**
	French Rocks	--	--	1	--	--	**1**
	Daisy	--	1	2	--	--	**3**
	Cloverleaf	--	--	--	--	2	**2**
	Gifford	--	--	4	2	7	**13**
	Hunters	12	6	11	1	5	**35**
Lower	Two Rivers	--	--	3	5	10	**18**
	Porcupine Bay	--	3	7	--	--	**10**
	Fort Spokane	12	7	5	1	11	**36**
	Seven Bays	--	--	3	--	--	**3**
	Hawk Creek	--	--	--	2	3	**5**
	Lincoln	--	1	3	--	--	**4**
	Jones Bay	--	--	--	1	2	**3**
	Hanson Harbor	--	--	2	--	--	**2**
	Keller Ferry	8	1	11	2	6	**28**
	Spring Canyon	20	3	4	6	8	**41**
	Crescent Bay	--	1	2	--	--	**3**
	TOTAL						**454**

EXHIBIT D-2: FINAL SHIFT INFORMATION

DATE	SHIFT TYPE	SHIFT TIME	SCHEDULED SITE	COMPLETED SITE	START TIME	END TIME	SITE CHANGE REASON
OFF-PEAK							
10/9/2010	BOAT	PM	Northport	Northport	1:00 PM	8:00 PM	
10/9/2010	CAMP	CAMP	Marcus Island	Marcus Island	5:00 PM	7:00 PM	
10/10/2010	BOAT	PM	Hunters	Hunters	1:00 PM	8:00 PM	
10/10/2010	CAMP	CAMP	Kettle Falls	Kettle Falls	5:00 PM	7:00 PM	
10/11/2010	BOAT	AM	Fort Spokane	Fort Spokane	7:00 AM	1:00 PM	
10/11/2010	CAMP	CAMP	Hawk Creek	Hawk Creek	5:00 PM	7:00 PM	
10/22/2010	BOAT	PM	Hunters	Hunters	1:00 PM	8:00 PM	
10/22/2010	CAMP	CAMP	Gifford	Gifford	5:00 PM	7:00 PM	
10/23/2010	BOAT	PM	Fort Spokane	Fort Spokane	1:00 PM	8:00 PM	
10/23/2010	CAMP	CAMP	Two Rivers	Two Rivers	5:00 PM	7:00 PM	
10/24/2010	BOAT	PM	Evans	Evans	1:00 PM	8:00 PM	
10/24/2010	CAMP	CAMP	Evans	Evans	5:00 PM	7:00 PM	
11/6/2010	BOAT	AM	Hunters	Hunters	7:00 AM	1:00 PM	
11/6/2010	CAMP	CAMP	Kettle Falls	Kettle Falls	5:00 PM	7:00 PM	
11/7/2010	BOAT	PM	Fort Spokane	Fort Spokane	1:00 PM	8:00 PM	
11/7/2010	CAMP	CAMP	Spring Canyon	Spring Canyon	5:00 PM	7:00 PM	
11/8/2010	BOAT	PM	Evans	Evans	1:00 PM	8:00 PM	
11/8/2010	CAMP	CAMP	Evans	Evans	5:00 PM	7:00 PM	
11/19/2010	BOAT	AM	Fort Spokane	Fort Spokane	7:00 AM	1:00 PM	
11/19/2010	CAMP	CAMP	Two Rivers	Two Rivers	5:00 PM	7:00 PM	
11/20/2010	BOAT	AM	Northport	Northport	7:00 AM	1:00 PM	
11/20/2010	CAMP	CAMP	Marcus Island	Marcus Island	5:00 PM	7:00 PM	
11/21/2010	BOAT	PM	Hunters	Hunters	1:00 PM	7:00 PM	
11/21/2010	CAMP	CAMP	Kettle Falls	Kettle Falls	5:00 PM	7:00 PM	
12/4/2010	BOAT	PM	Lincoln	Lincoln	1:00 PM	6:00 PM	
12/4/2010	CAMP	CAMP	Jones Bay	Jones Bay	4:00 PM	6:00 PM	
12/5/2010	BOAT	AM	Evans	Evans	7:00 AM	1:00 PM	
12/5/2010	CAMP	CAMP	Evans	Evans	4:00 PM	6:00 PM	
12/6/2010	BOAT	PM	Hunters	Hunters	1:00 PM	6:00 PM	
12/6/2010	CAMP	CAMP	Kettle Falls	Kettle Falls	4:00 PM	6:00 PM	
12/17/2010	BOAT	PM	Northport	Northport	1:00 PM	5:00 PM	
12/17/2010	CAMP	CAMP	Kamloops Island	Kamloops Island	3:00 PM	5:00 PM	
12/18/2010	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	5:00 PM	

DATE	SHIFT TYPE	SHIFT TIME	SCHEDULED SITE	COMPLETED SITE	START TIME	END TIME	SITE CHANGE REASON
12/18/2010	CAMP	CAMP	Kettle Falls	Kettle Falls	3:00 PM	5:00 PM	
12/19/2010	BOAT	AM	Fort Spokane	Fort Spokane	7:00 AM	1:00 PM	
12/19/2010	CAMP	CAMP	Spring Canyon	Spring Canyon	3:00 PM	5:00 PM	
1/1/2011	BOAT	AM	Northport	Northport	7:00 AM	1:00 PM	
1/1/2011	CAMP	CAMP	Snag Cove	Snag Cove	3:00 PM	5:00 PM	
1/2/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	5:00 PM	
1/2/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	3:00 PM	5:00 PM	
1/3/2011	BOAT	PM	Fort Spokane	Fort Spokane	1:00 PM	5:00 PM	
1/3/2011	CAMP	CAMP	Two Rivers	Two Rivers	3:00 PM	5:00 PM	
1/14/2011	BOAT	AM	Kettle Falls	Kettle Falls	7:00 AM	1:00 PM	
1/14/2011	CAMP	CAMP	Kettle Falls	N/A – CANCELLED	3:00 PM	5:00 PM	Shift cancelled due to weather
1/15/2011	BOAT	AM	Porcupine Bay	Porcupine Bay	7:00 AM	1:00 PM	
1/15/2011	CAMP	CAMP	Spring Canyon	Spring Canyon	3:00 PM	5:00 PM	
1/16/2011	BOAT	PM	China Bend	N/A – CANCELLED	1:00 PM	5:00 PM	Shift cancelled due to weather
1/16/2011	CAMP	CAMP	Marcus Island	Snag Cove	3:00 PM	5:00 PM	Original campground not plowed
1/29/2011	BOAT	AM	Daisy	Daisy	7:00 AM	1:00 PM	
1/29/2011	CAMP	CAMP	Haag Cove	Haag Cove	3:00 PM	5:00 PM	
1/30/2011	BOAT	AM	Crescent Bay	Crescent Bay	7:00 AM	1:00 PM	
1/30/2011	CAMP	CAMP	Spring Canyon	Spring Canyon	3:00 PM	5:00 PM	
1/31/2011	BOAT	PM	Evans	Evans	1:00 PM	5:00 PM	
1/31/2011	CAMP	CAMP	Evans	Evans	3:00 PM	5:00 PM	
2/11/2011	BOAT	PM	Seven Bays	Keller Ferry	1:00 PM	5:30 PM	Lake level too low; boat launch not in water at original launch
2/11/2011	CAMP	CAMP	Hawk Creek	Hawk Creek	3:30 PM	5:30 PM	
2/12/2011	BOAT	PM	Northport	Northport	1:00 PM	5:30 PM	
2/12/2011	CAMP	CAMP	Marcus Island	Kamloops Island	3:30 PM	5:30 PM	Original campground not plowed
2/13/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	5:30 PM	
2/13/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	3:30 PM	5:30 PM	
2/26/2011	BOAT	PM	Porcupine Bay	Porcupine Bay	1:00 PM	5:30 PM	
2/26/2011	CAMP	CAMP	Spring Canyon	Spring Canyon	3:30 PM	5:30 PM	
2/27/2011	BOAT	AM	Evans	N/A – CANCELLED	7:00 AM	1:00 PM	Shift cancelled due to weather
2/27/2011	CAMP	CAMP	Snag Cove	N/A – CANCELLED	3:30 PM	5:30 PM	Shift cancelled due to weather
2/28/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	5:30 PM	
2/28/2011	CAMP	CAMP	Gifford	Gifford	3:30 PM	5:30 PM	
3/11/2011	BOAT	PM	China Bend	Northport	1:00 PM	6:00 PM	Lake level too low; boat launch not in water at original launch
3/11/2011	CAMP	CAMP	Evans	Evans	4:00 PM	6:00 PM	
3/12/2011	BOAT	PM	Hunters	Hunters	1:00 PM	6:00 PM	

DATE	SHIFT TYPE	SHIFT TIME	SCHEDULED SITE	COMPLETED SITE	START TIME	END TIME	SITE CHANGE REASON
3/12/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	4:00 PM	6:00 PM	
3/13/2011	BOAT	AM	Porcupine Bay	Porcupine Bay	7:00 AM	1:00 PM	
3/13/2011	CAMP	CAMP	Fort Spokane	Fort Spokane	4:00 PM	6:00 PM	
3/26/2011	BOAT	AM	Marcus Island	Northport	7:00 AM	1:00 PM	Lake level too low; boat launch not in water at original launch
3/26/2011	CAMP	CAMP	Kamloops Island	Kamloops Island	5:30 PM	7:30 PM	
3/27/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	7:30 PM	
3/27/2011	CAMP	CAMP	Hunters	Hunters	5:30 PM	7:30 PM	
3/28/2011	BOAT	PM	Crescent Bay	Fort Spokane	1:00 PM	7:30 PM	Lake level too low; boat launch not in water at original launch
3/28/2011	CAMP	CAMP	Keller Ferry	Keller Ferry	5:30 PM	7:30 PM	
4/8/2011	BOAT	PM	Gifford	Kettle Falls	1:00 PM	7:30 PM	Lake level too low; boat launch not in water at original launch
4/8/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	5:30 PM	7:30 PM	
4/9/2011	BOAT	AM	Porcupine Bay	Spring Canyon	7:00 AM	1:00 PM	Lake level too low; boat launch not in water at original launch
4/9/2011	CAMP	CAMP	Two Rivers	Two Rivers	5:30 PM	7:30 PM	
4/10/2011	BOAT	AM	Northport	Northport	7:00 AM	1:00 PM	
4/10/2011	CAMP	CAMP	Evans	Evans	5:30 PM	7:30 PM	
4/23/2011	BOAT	PM	Kettle Falls	N/A – CANCELLED	1:00 PM	7:30 PM	Lake level too low; no accessible launches in selected lake region
4/23/2011	CAMP	CAMP	Cloverleaf	Kettle Falls	5:30 PM	7:30 PM	Original site closed
4/24/2011	BOAT	AM	Spring Canyon	Spring Canyon	7:00 AM	1:00 PM	
4/24/2011	CAMP	CAMP	Keller Ferry	Keller Ferry	5:30 PM	7:30 PM	
4/25/2011	BOAT	PM	Northport	Northport	1:00 PM	7:30 PM	
4/25/2011	CAMP	CAMP	North Gorge	North Gorge	5:30 PM	7:30 PM	
5/6/2011	BOAT	AM	Crescent Bay	N/A – CANCELLED	7:00 AM	1:00 PM	Lake level too low; no accessible launches in selected lake region
5/6/2011	CAMP	CAMP	Spring Canyon	Spring Canyon	5:30 PM	7:30 PM	
5/7/2011	BOAT	AM	Northport	Northport	7:00 AM	1:00 PM	
5/7/2011	CAMP	CAMP	Kamloops Island	Kamloops Island	5:30 PM	7:30 PM	
5/8/2011	BOAT	PM	Hunters	N/A – CANCELLED	1:00 PM	7:30 PM	Lake level too low; no accessible launches in selected lake region
5/8/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	5:30 PM	7:30 PM	
5/21/2011	BOAT	PM	Spring Canyon	Spring Canyon	1:00 PM	8:00 PM	
5/21/2011	CAMP	CAMP	Two Rivers	Two Rivers	6:00 PM	8:00 PM	
5/22/2011	BOAT	PM	Evans	Northport	1:00 PM	8:00 PM	Lake level too low; boat launch not in water at original launch
5/22/2011	CAMP	CAMP	Marcus Island	Marcus Island	6:00 PM	8:00 PM	
5/23/2011	BOAT	AM	Gifford	N/A – CANCELLED	7:00 AM	1:00 PM	Lake level too low; no accessible launches in selected lake region
5/23/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	

DATE	SHIFT TYPE	SHIFT TIME	SCHEDULED SITE	COMPLETED SITE	START TIME	END TIME	SITE CHANGE REASON
PEAK							
5/28/2011	BOAT	AM	Northport	Northport	7:00 AM	1:00 PM	
5/28/2011	BOAT	AM	Hunters	Hunters	7:00 AM	1:00 PM	
5/28/2011	BOAT	AM	Fort Spokane	Spring Canyon	7:00 AM	1:00 PM	Lake level too low; boat launch not in water at original launch
5/28/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
5/28/2011	BEACH	PM	Bradbury Beach	Bradbury Beach	1:00 PM	6:00 PM	
5/28/2011	BEACH	PM	Spring Canyon	Spring Canyon	1:00 PM	6:00 PM	
5/28/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	
5/28/2011	CAMP	CAMP	Cloverleaf	Cloverleaf	6:00 PM	8:00 PM	
5/28/2011	CAMP	CAMP	Hawk Creek	Hawk Creek	6:00 PM	8:00 PM	
5/29/2011	BOAT	PM	Northport	Northport	1:00 PM	8:00 PM	
5/29/2011	BOAT	PM	Bradbury Beach	Kettle Falls	1:00 PM	8:00 PM	Lake level too low; boat launch not in water at original launch
5/29/2011	BOAT	PM	Keller Ferry	Keller Ferry	1:00 PM	8:00 PM	
5/29/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
5/29/2011	BEACH	AM	Hunters	Hunters	8:00 AM	1:00 PM	
5/29/2011	BEACH	AM	Spring Canyon	Spring Canyon	8:00 AM	1:00 PM	
5/29/2011	CAMP	CAMP	Snag Cove	Snag Cove	6:00 PM	8:00 PM	
5/29/2011	CAMP	CAMP	Gifford	Gifford	6:00 PM	8:00 PM	
5/29/2011	CAMP	CAMP	Two Rivers	Two Rivers	6:00 PM	8:00 PM	
5/30/2011	BOAT	PM	Evans	Northport	1:00 PM	8:00 PM	Lake level too low; boat launch not in water at original launch
5/30/2011	BOAT	AM	Kettle Falls	Kettle Falls	7:00 AM	1:00 PM	
5/30/2011	BOAT	PM	Two Rivers	Keller Ferry	1:00 PM	8:00 PM	Lake level too low; boat launch not in water at original launch
5/30/2011	BEACH	PM	Black Sands Beach	Evans	1:00 PM	6:00 PM	River level too high; original beach completely covered
5/30/2011	BEACH	AM	Hunters	Hunters	8:00 AM	1:00 PM	
5/30/2011	BEACH	PM	Keller Ferry	Keller Ferry	1:00 PM	6:00 PM	
5/30/2011	CAMP	CAMP	Marcus Island	Marcus Island	6:00 PM	8:00 PM	
5/30/2011	CAMP	CAMP	Gifford	Gifford	6:00 PM	8:00 PM	
5/30/2011	CAMP	CAMP	Keller Ferry	Keller Ferry	6:00 PM	8:00 PM	
6/3/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
6/3/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	
6/3/2011	BEACH	AM	Bradbury Beach	Bradbury Beach	8:00 AM	1:00 PM	
6/3/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
6/3/2011	BEACH	PM	Spring Canyon	Spring Canyon	1:00 PM	6:00 PM	
6/3/2011	CAMP	CAMP	Two Rivers	Two Rivers	6:00 PM	8:00 PM	
6/4/2011	BEACH	AM	Evans	Evans	8:00 AM	1:00 PM	

DATE	SHIFT TYPE	SHIFT TIME	SCHEDULED SITE	COMPLETED SITE	START TIME	END TIME	SITE CHANGE REASON
6/4/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	
6/4/2011	BEACH	PM	Hunters	Hunters	1:00 PM	6:00 PM	
6/4/2011	CAMP	CAMP	Gifford	Gifford	6:00 PM	8:00 PM	
6/4/2011	BEACH	AM	Spring Canyon	Spring Canyon	8:00 AM	1:00 PM	
6/4/2011	CAMP	CAMP	Two Rivers	Two Rivers	6:00 PM	8:00 PM	
6/5/2011	BEACH	PM	Black Sands Beach	Evans	1:00 PM	6:00 PM	River level too high; original beach completely covered
6/5/2011	CAMP	CAMP	Marcus Island	Marcus Island	6:00 PM	8:00 PM	
6/5/2011	BEACH	PM	Bradbury Beach	Bradbury Beach	1:00 PM	6:00 PM	
6/5/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
6/5/2011	BEACH	PM	Spring Canyon	Spring Canyon	1:00 PM	6:00 PM	
6/5/2011	CAMP	CAMP	Two Rivers	Two Rivers	6:00 PM	8:00 PM	
6/9/2011	BOAT	AM	Evans	Northport	7:00 AM	1:00 PM	Lake level too low; boat launch not in water at original launch
6/9/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	8:00 PM	
6/9/2011	BOAT	PM	Keller Ferry	Keller Ferry	1:00 PM	8:00 PM	
6/10/2011	BOAT	PM	Marcus Island	Northport	1:00 PM	8:00 PM	Lake level too low; boat launch not in water at original launch
6/10/2011	BOAT	PM	Hunters	Hunters	1:00 PM	8:00 PM	
6/10/2011	BOAT	PM	Crescent Bay	Two Rivers	1:00 PM	8:00 PM	Lake level too low; boat launch not in water at original launch
6/11/2011	BOAT	PM	Northport	Northport	1:00 PM	8:00 PM	
6/11/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	8:00 PM	
6/11/2011	BOAT	AM	Keller Ferry	Keller Ferry	7:00 AM	1:00 PM	
6/12/2011	BEACH	PM	Black Sands Beach	Evans	1:00 PM	6:00 PM	River level too high; original beach completely covered
6/12/2011	CAMP	CAMP	Marcus Island	Marcus Island	6:00 PM	8:00 PM	
6/12/2011	BEACH	PM	Colville Flats	Colville Flats	1:00 PM	6:00 PM	
6/12/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
6/12/2011	BEACH	PM	Fort Spokane	Fort Spokane	1:00 PM	6:00 PM	
6/12/2011	CAMP	CAMP	Fort Spokane	Fort Spokane	6:00 PM	8:00 PM	
6/13/2011	BOAT	AM	Marcus Island	Northport	7:00 AM	1:00 PM	Lake level too low; boat launch not in water at original launch
6/13/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	8:00 PM	
6/13/2011	BOAT	AM	Lincoln	Lincoln	7:00 AM	1:00 PM	
6/18/2011	BOAT	AM	Marcus Island	Northport	7:00 AM	1:00 PM	Lake level too low; boat launch not in water at original launch
6/18/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	8:00 PM	
6/18/2011	BOAT	PM	Keller Ferry	Keller Ferry	1:00 PM	8:00 PM	
6/19/2011	BOAT	PM	Evans	Northport	1:00 PM	8:00 PM	Lake level too low; boat launch not in water at original launch
6/19/2011	BOAT	PM	Hunters	Hunters	1:00 PM	8:00 PM	
6/19/2011	BOAT	AM	Fort Spokane	Fort Spokane	7:00 AM	1:00 PM	

DATE	SHIFT TYPE	SHIFT TIME	SCHEDULED SITE	COMPLETED SITE	START TIME	END TIME	SITE CHANGE REASON
6/24/2011	BOAT	AM	Marcus Island	Northport	7:00 AM	1:00 PM	Lake level too low; boat launch not in water at original launch
6/24/2011	BOAT	AM	Hunters	Hunters	7:00 AM	1:00 PM	
6/24/2011	BOAT	PM	Porcupine Bay	Porcupine Bay	1:00 PM	8:00 PM	
6/25/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
6/25/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	
6/25/2011	BEACH	PM	Colville Flats	Colville Flats	1:00 PM	6:00 PM	
6/25/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
6/25/2011	BEACH	AM	Spring Canyon	Spring Canyon	8:00 AM	1:00 PM	
6/25/2011	CAMP	CAMP	Spring Canyon	Spring Canyon	6:00 PM	8:00 PM	
6/26/2011	BOAT	PM	Marcus Island	Northport	1:00 PM	8:00 PM	Lake level too low; boat launch not in water at original launch
6/26/2011	BOAT	AM	French Rocks	French Rocks	7:00 AM	1:00 PM	
6/26/2011	BOAT	AM	Hanson Harbor	Hanson Harbor	7:00 AM	1:00 PM	
6/27/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
6/27/2011	CAMP	CAMP	Kamloops Island	Kamloops Island	6:00 PM	8:00 PM	
6/27/2011	BEACH	PM	Hunters	Hunters	1:00 PM	6:00 PM	
6/27/2011	CAMP	CAMP	Hunters	Hunters	6:00 PM	8:00 PM	
6/27/2011	BEACH	AM	Spring Canyon	Spring Canyon	8:00 AM	1:00 PM	
6/27/2011	CAMP	CAMP	Hawk Creek	Hawk Creek	6:00 PM	8:00 PM	
6/29/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
6/29/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	
6/29/2011	BEACH	AM	Bradbury Beach	Bradbury Beach	8:00 AM	1:00 PM	
6/29/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
6/29/2011	BEACH	AM	Keller Ferry	Keller Ferry	8:00 AM	1:00 PM	
6/29/2011	CAMP	CAMP	Keller Ferry	Keller Ferry	6:00 PM	8:00 PM	
6/30/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
6/30/2011	CAMP	CAMP	Snag Cove	Snag Cove	6:00 PM	8:00 PM	
6/30/2011	BEACH	AM	Bradbury Beach	Bradbury Beach	8:00 AM	1:00 PM	
6/30/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
6/30/2011	BEACH	PM	Spring Canyon	Spring Canyon	1:00 PM	6:00 PM	
6/30/2011	CAMP	CAMP	Spring Canyon	Spring Canyon	6:00 PM	8:00 PM	
7/2/2011	BOAT	AM	Snag Cove	Snag Cove	7:00 AM	1:00 PM	
7/2/2011	BOAT	PM	Hunters	Hunters	1:00 PM	8:00 PM	
7/2/2011	BOAT	PM	Keller Ferry	Keller Ferry	1:00 PM	8:00 PM	
7/2/2011	BEACH	PM	Black Sands Beach	Evans	1:00 PM	6:00 PM	River level too high; original beach completely covered
7/2/2011	BEACH	PM	Bradbury Beach	Bradbury Beach	1:00 PM	6:00 PM	
7/2/2011	BEACH	PM	Fort Spokane	Fort Spokane	1:00 PM	6:00 PM	

DATE	SHIFT TYPE	SHIFT TIME	SCHEDULED SITE	COMPLETED SITE	START TIME	END TIME	SITE CHANGE REASON
7/2/2011	CAMP	CAMP	North Gorge	North Gorge	6:00 PM	8:00 PM	
7/2/2011	CAMP	CAMP	Cloverleaf	Cloverleaf	6:00 PM	8:00 PM	
7/2/2011	CAMP	CAMP	Fort Spokane	Fort Spokane	6:00 PM	8:00 PM	
7/3/2011	BOAT	PM	Northport	Northport	1:00 PM	8:00 PM	
7/3/2011	BOAT	AM	Kettle Falls	Kettle Falls	7:00 AM	1:00 PM	
7/3/2011	BOAT	PM	Hanson Harbor	Hanson Harbor	1:00 PM	8:00 PM	
7/3/2011	BEACH	AM	Evans	Evans	8:00 AM	1:00 PM	
7/3/2011	BEACH	PM	Bradbury Beach	Colville Flats	1:00 PM	6:00 PM	Location shifted to accommodate University of Idaho survey
7/3/2011	BEACH	PM	Spring Canyon	Spring Canyon	1:00 PM	6:00 PM	
7/3/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	
7/3/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
7/3/2011	CAMP	CAMP	Two Rivers	Two Rivers	6:00 PM	8:00 PM	
7/4/2011	BOAT	PM	China Bend	China Bend	1:00 PM	8:00 PM	
7/4/2011	BOAT	AM	Hunters	Hunters	7:00 AM	1:00 PM	
7/4/2011	BOAT	PM	Porcupine Bay	Porcupine Bay	1:00 PM	8:00 PM	
7/4/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
7/4/2011	BEACH	PM	Bradbury Beach	Bradbury Beach	1:00 PM	6:00 PM	
7/4/2011	BEACH	PM	Keller Ferry	Keller Ferry	1:00 PM	6:00 PM	
7/4/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	
7/4/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
7/4/2011	CAMP	CAMP	Keller Ferry	Keller Ferry	6:00 PM	8:00 PM	
7/7/2011	BEACH	PM	Black Sands Beach	Evans	1:00 PM	6:00 PM	River level too high; original beach completely covered
7/7/2011	CAMP	CAMP	Marcus Island	Marcus Island	6:00 PM	8:00 PM	
7/7/2011	BEACH	AM	Hunters	Hunters	8:00 AM	1:00 PM	
7/7/2011	CAMP	CAMP	Gifford	Gifford	6:00 PM	8:00 PM	
7/7/2011	BEACH	PM	Fort Spokane	Fort Spokane	1:00 PM	6:00 PM	
7/7/2011	CAMP	CAMP	Fort Spokane	Fort Spokane	6:00 PM	8:00 PM	
7/9/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
7/9/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	
7/9/2011	BEACH	PM	Colville Flats	Colville Flats	1:00 PM	6:00 PM	
7/9/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
7/9/2011	BEACH	AM	Keller Ferry	Keller Ferry	8:00 AM	1:00 PM	
7/9/2011	CAMP	CAMP	Jones Bay	Jones Bay	6:00 PM	8:00 PM	
7/10/2011	BOAT	PM	Marcus Island	Marcus Island	1:00 PM	8:00 PM	
7/10/2011	BOAT	PM	Bradbury Beach	Bradbury Beach	1:00 PM	8:00 PM	

DATE	SHIFT TYPE	SHIFT TIME	SCHEDULED SITE	COMPLETED SITE	START TIME	END TIME	SITE CHANGE REASON
7/10/2011	BOAT	PM	Keller Ferry	Keller Ferry	1:00 PM	8:00 PM	
7/13/2011	BOAT	PM	Evans	Evans	1:00 PM	8:00 PM	
7/13/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	8:00 PM	
7/13/2011	BOAT	PM	Lincoln	Lincoln	1:00 PM	8:00 PM	
7/14/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
7/14/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	
7/14/2011	BEACH	PM	Colville Flats	Colville Flats	1:00 PM	6:00 PM	
7/14/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
7/14/2011	BEACH	AM	Fort Spokane	Fort Spokane	8:00 AM	1:00 PM	
7/14/2011	CAMP	CAMP	Fort Spokane	Fort Spokane	6:00 PM	8:00 PM	
7/15/2011	BOAT	AM	Marcus Island	Marcus Island	7:00 AM	1:00 PM	
7/15/2011	BOAT	PM	Hunters	Hunters	1:00 PM	8:00 PM	
7/15/2011	BOAT	AM	Porcupine Bay	Porcupine Bay	7:00 AM	1:00 PM	
7/16/2011	BOAT	PM	Evans	Evans	1:00 PM	8:00 PM	
7/16/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	8:00 PM	
7/16/2011	BOAT	PM	Spring Canyon	Spring Canyon	1:00 PM	8:00 PM	
7/17/2011	BOAT	PM	Northport	Northport	1:00 PM	8:00 PM	
7/17/2011	BOAT	PM	Daisy	Daisy	1:00 PM	8:00 PM	
7/17/2011	BOAT	AM	Keller Ferry	Keller Ferry	7:00 AM	1:00 PM	
7/19/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
7/19/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	
7/19/2011	BEACH	PM	Bradbury Beach	Bradbury Beach	1:00 PM	6:00 PM	
7/19/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
7/19/2011	BEACH	PM	Fort Spokane	Fort Spokane	1:00 PM	6:00 PM	
7/19/2011	CAMP	CAMP	Fort Spokane	Fort Spokane	6:00 PM	8:00 PM	
7/20/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
7/20/2011	CAMP	CAMP	Kamloops Island	Kamloops Island	6:00 PM	8:00 PM	
7/20/2011	BEACH	PM	Bradbury Beach	Bradbury Beach	1:00 PM	6:00 PM	
7/20/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
7/20/2011	BEACH	PM	Fort Spokane	Fort Spokane	1:00 PM	6:00 PM	
7/20/2011	CAMP	CAMP	Fort Spokane	Fort Spokane	6:00 PM	8:00 PM	
7/23/2011	BOAT	AM	Evans	Evans	7:00 AM	1:00 PM	
7/23/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	8:00 PM	
7/23/2011	BOAT	PM	Fort Spokane	Fort Spokane	1:00 PM	8:00 PM	
7/24/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
7/24/2011	CAMP	CAMP	Kamloops Island	Kamloops Island	6:00 PM	8:00 PM	

DATE	SHIFT TYPE	SHIFT TIME	SCHEDULED SITE	COMPLETED SITE	START TIME	END TIME	SITE CHANGE REASON
7/24/2011	BEACH	AM	Bradbury Beach	Bradbury Beach	8:00 AM	1:00 PM	
7/24/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
7/24/2011	BEACH	PM	Keller Ferry	Keller Ferry	1:00 PM	6:00 PM	
7/24/2011	CAMP	CAMP	Keller Ferry	Keller Ferry	6:00 PM	8:00 PM	
7/26/2011	BOAT	PM	Snag Cove	Snag Cove	1:00 PM	8:00 PM	
7/26/2011	BOAT	PM	Gifford	Gifford	1:00 PM	8:00 PM	
7/26/2011	BOAT	PM	Porcupine Bay	Porcupine Bay	1:00 PM	8:00 PM	
7/27/2011	BOAT	PM	Evans	Evans	1:00 PM	8:00 PM	
7/27/2011	BOAT	AM	Hunters	Hunters	7:00 AM	1:00 PM	
7/27/2011	BOAT	PM	Fort Spokane	Fort Spokane	1:00 PM	8:00 PM	
7/30/2011	BEACH	PM	Black Sands Beach	Black Sands Beach	1:00 PM	6:00 PM	
7/30/2011	CAMP	CAMP	Marcus Island	Marcus Island	6:00 PM	8:00 PM	
7/30/2011	BEACH	PM	Colville Flats	Colville Flats	1:00 PM	6:00 PM	
7/30/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
7/30/2011	BEACH	PM	Fort Spokane	Fort Spokane	1:00 PM	6:00 PM	
7/30/2011	CAMP	CAMP	Fort Spokane	Fort Spokane	6:00 PM	8:00 PM	
7/31/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
7/31/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	
7/31/2011	BEACH	PM	Bradbury Beach	Bradbury Beach	1:00 PM	6:00 PM	
7/31/2011	CAMP	CAMP	Haag Cove	Haag Cove	6:00 PM	8:00 PM	
7/31/2011	BEACH	PM	Spring Canyon	Spring Canyon	1:00 PM	6:00 PM	
7/31/2011	CAMP	CAMP	Two Rivers	Two Rivers	6:00 PM	8:00 PM	
8/5/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
8/5/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	
8/5/2011	BEACH	PM	Hunters	Hunters	1:00 PM	6:00 PM	
8/5/2011	CAMP	CAMP	Gifford	Gifford	6:00 PM	8:00 PM	
8/5/2011	BEACH	PM	Keller Ferry	Keller Ferry	1:00 PM	6:00 PM	
8/5/2011	CAMP	CAMP	Keller Ferry	Keller Ferry	6:00 PM	8:00 PM	
8/6/2011	BOAT	AM	China Bend	China Bend	7:00 AM	1:00 PM	
8/6/2011	BOAT	PM	Gifford	Gifford	1:00 PM	8:00 PM	
8/6/2011	BOAT	AM	Two Rivers	Two Rivers	7:00 AM	1:00 PM	
8/7/2011	BOAT	PM	Evans	Evans	1:00 PM	8:00 PM	
8/7/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	8:00 PM	
8/7/2011	BOAT	PM	Fort Spokane	Fort Spokane	1:00 PM	8:00 PM	
8/13/2011	BEACH	AM	Evans	Evans	8:00 AM	1:00 PM	
8/13/2011	CAMP	CAMP	Snag Cove	Snag Cove	6:00 PM	8:00 PM	

DATE	SHIFT TYPE	SHIFT TIME	SCHEDULED SITE	COMPLETED SITE	START TIME	END TIME	SITE CHANGE REASON
8/13/2011	BEACH	PM	Colville Flats	Colville Flats	1:00 PM	6:00 PM	
8/13/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
8/13/2011	BEACH	PM	Spring Canyon	Spring Canyon	1:00 PM	6:00 PM	
8/13/2011	CAMP	CAMP	Two Rivers	Two Rivers	6:00 PM	8:00 PM	
8/14/2011	BOAT	PM	China Bend	China Bend	1:00 PM	8:00 PM	
8/14/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	8:00 PM	
8/14/2011	BOAT	AM	Keller Ferry	Keller Ferry	7:00 AM	1:00 PM	
8/15/2011	BOAT	PM	China Bend	China Bend	1:00 PM	8:00 PM	
8/15/2011	BOAT	AM	Kettle Falls	Kettle Falls	7:00 AM	1:00 PM	
8/15/2011	BOAT	AM	Porcupine Bay	Porcupine Bay	7:00 AM	1:00 PM	
8/16/2011	BOAT	AM	Marcus Island	Marcus Island	7:00 AM	1:00 PM	
8/16/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	8:00 PM	
8/16/2011	BOAT	PM	Lincoln	Lincoln	1:00 PM	8:00 PM	
8/17/2011	BEACH	AM	Evans	Evans	8:00 AM	1:00 PM	
8/17/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	
8/17/2011	BEACH	PM	Colville Flats	Colville Flats	1:00 PM	6:00 PM	
8/17/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
8/17/2011	BEACH	AM	Spring Canyon	Spring Canyon	8:00 AM	1:00 PM	
8/17/2011	CAMP	CAMP	Two Rivers	Two Rivers	6:00 PM	8:00 PM	
8/20/2011	BOAT	PM	Marcus Island	Marcus Island	1:00 PM	8:00 PM	
8/20/2011	BOAT	PM	Gifford	Gifford	1:00 PM	8:00 PM	
8/20/2011	BOAT	PM	Seven Bays	Seven Bays	1:00 PM	8:00 PM	
8/21/2011	BEACH	PM	Black Sands Beach	Black Sands Beach	1:00 PM	6:00 PM	
8/21/2011	CAMP	CAMP	Marcus Island	Marcus Island	6:00 PM	8:00 PM	
8/21/2011	BEACH	PM	Hunters	Hunters	1:00 PM	6:00 PM	
8/21/2011	CAMP	CAMP	Hunters	Hunters	6:00 PM	8:00 PM	
8/21/2011	BEACH	PM	Fort Spokane	Fort Spokane	1:00 PM	6:00 PM	
8/21/2011	CAMP	CAMP	Fort Spokane	Fort Spokane	6:00 PM	8:00 PM	
8/23/2011	BOAT	AM	China Bend	China Bend	7:00 AM	1:00 PM	
8/23/2011	BOAT	PM	Hunters	Hunters	1:00 PM	8:00 PM	
8/23/2011	BOAT	PM	Fort Spokane	Fort Spokane	1:00 PM	8:00 PM	
8/24/2011	BOAT	PM	Evans	Evans	1:00 PM	8:00 PM	
8/24/2011	BOAT	PM	Hunters	Hunters	1:00 PM	8:00 PM	
8/24/2011	BOAT	AM	Seven Bays	Seven Bays	7:00 AM	1:00 PM	
8/27/2011	BEACH	AM	Evans	Evans	8:00 AM	1:00 PM	
8/27/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	

DATE	SHIFT TYPE	SHIFT TIME	SCHEDULED SITE	COMPLETED SITE	START TIME	END TIME	SITE CHANGE REASON
8/27/2011	BEACH	PM	Colville Flats	Colville Flats	1:00 PM	6:00 PM	
8/27/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
8/27/2011	BEACH	PM	Spring Canyon	Spring Canyon	1:00 PM	6:00 PM	
8/27/2011	CAMP	CAMP	Spring Canyon	Spring Canyon	6:00 PM	8:00 PM	
8/28/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
8/28/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	
8/28/2011	BEACH	AM	Bradbury Beach	Bradbury Beach	8:00 AM	1:00 PM	
8/28/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
8/28/2011	BEACH	PM	Spring Canyon	Spring Canyon	1:00 PM	6:00 PM	
8/28/2011	CAMP	CAMP	Spring Canyon	Spring Canyon	6:00 PM	8:00 PM	
8/29/2011	BEACH	PM	Black Sands Beach	Black Sands Beach	1:00 PM	6:00 PM	
8/29/2011	CAMP	CAMP	North Gorge	North Gorge	6:00 PM	8:00 PM	
8/29/2011	BEACH	PM	Colville Flats	Colville Flats	1:00 PM	6:00 PM	
8/29/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
8/29/2011	BEACH	AM	Spring Canyon	Spring Canyon	8:00 AM	1:00 PM	
8/29/2011	CAMP	CAMP	Two Rivers	Two Rivers	6:00 PM	8:00 PM	
8/31/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
8/31/2011	CAMP	CAMP	Kamloops Island	Kamloops Island	6:00 PM	8:00 PM	
8/31/2011	BEACH	PM	Bradbury Beach	Bradbury Beach	1:00 PM	6:00 PM	
8/31/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
8/31/2011	BEACH	PM	Fort Spokane	Fort Spokane	1:00 PM	6:00 PM	
8/31/2011	CAMP	CAMP	Fort Spokane	Fort Spokane	6:00 PM	8:00 PM	
9/3/2011	BOAT	AM	Northport	Northport	7:00 AM	1:00 PM	
9/3/2011	BOAT	PM	Hunters	Hunters	1:00 PM	8:00 PM	
9/3/2011	BOAT	PM	Keller Ferry	Keller Ferry	1:00 PM	8:00 PM	
9/3/2011	BEACH	PM	Colville Flats	Colville Flats	1:00 PM	6:00 PM	
9/3/2011	BEACH	AM	Keller Ferry	Keller Ferry	8:00 AM	1:00 PM	
9/3/2011	BEACH	AM	Evans	Evans	8:00 AM	1:00 PM	
9/3/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	
9/3/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
9/3/2011	CAMP	CAMP	Keller Ferry	Keller Ferry	6:00 PM	8:00 PM	
9/4/2011	BOAT	PM	Evans	Evans	1:00 PM	8:00 PM	
9/4/2011	BOAT	AM	Daisy	Daisy	7:00 AM	1:00 PM	
9/4/2011	BOAT	AM	Porcupine Bay	Porcupine Bay	7:00 AM	1:00 PM	
9/4/2011	BEACH	AM	Evans	Evans	8:00 AM	1:00 PM	
9/4/2011	BEACH	PM	Colville Flats	Colville Flats	1:00 PM	6:00 PM	

DATE	SHIFT TYPE	SHIFT TIME	SCHEDULED SITE	COMPLETED SITE	START TIME	END TIME	SITE CHANGE REASON
9/4/2011	BEACH	PM	Fort Spokane	Fort Spokane	1:00 PM	6:00 PM	
9/4/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	
9/4/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	6:00 PM	8:00 PM	
9/4/2011	CAMP	CAMP	Fort Spokane	Fort Spokane	6:00 PM	8:00 PM	
9/5/2011	BOAT	AM	China Bend	China Bend	7:00 AM	1:00 PM	
9/5/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	8:00 PM	
9/5/2011	BOAT	PM	Spring Canyon	Spring Canyon	1:00 PM	8:00 PM	
9/5/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
9/5/2011	BEACH	PM	Hunters	Hunters	1:00 PM	6:00 PM	
9/5/2011	BEACH	PM	Spring Canyon	Spring Canyon	1:00 PM	6:00 PM	
9/5/2011	CAMP	CAMP	Evans	Evans	6:00 PM	8:00 PM	
9/5/2011	CAMP	CAMP	Hunters	Hunters	6:00 PM	8:00 PM	
9/5/2011	CAMP	CAMP	Spring Canyon	Spring Canyon	6:00 PM	8:00 PM	
9/6/2011	BOAT	AM	China Bend	China Bend	7:00 AM	1:00 PM	
9/6/2011	BOAT	AM	Gifford	Gifford	7:00 AM	1:00 PM	
9/6/2011	BOAT	PM	Seven Bays	Seven Bays	1:00 PM	8:00 PM	
9/10/2011	BOAT	PM	Evans	Evans	1:00 PM	7:30 PM	
9/10/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	7:30 PM	
9/10/2011	BOAT	PM	Two Rivers	Two Rivers	1:00 PM	7:30 PM	
9/11/2011	BOAT	AM	Evans	Evans	7:00 AM	1:00 PM	
9/11/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	7:30 PM	
9/11/2011	BOAT	AM	Keller Ferry	Keller Ferry	7:00 AM	1:00 PM	
9/13/2011	BOAT	PM	Snag Cove	Snag Cove	1:00 PM	7:30 PM	
9/13/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	7:30 PM	
9/13/2011	BOAT	PM	Porcupine Bay	Porcupine Bay	1:00 PM	7:30 PM	
9/14/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
9/14/2011	CAMP	CAMP	Evans	Evans	5:30 PM	7:30 PM	
9/14/2011	BEACH	PM	Hunters	Hunters	1:00 PM	6:00 PM	
9/14/2011	CAMP	CAMP	Hunters	Hunters	5:30 PM	7:30 PM	
9/14/2011	BEACH	AM	Keller Ferry	Keller Ferry	8:00 AM	1:00 PM	
9/14/2011	CAMP	CAMP	Jones Bay	Jones Bay	5:30 PM	7:30 PM	
9/15/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
9/15/2011	CAMP	CAMP	Evans	Evans	5:30 PM	7:30 PM	
9/15/2011	BEACH	AM	Hunters	Hunters	8:00 AM	1:00 PM	
9/15/2011	CAMP	CAMP	Gifford	Gifford	5:30 PM	7:30 PM	
9/15/2011	BEACH	PM	Spring Canyon	Spring Canyon	1:00 PM	6:00 PM	

DATE	SHIFT TYPE	SHIFT TIME	SCHEDULED SITE	COMPLETED SITE	START TIME	END TIME	SITE CHANGE REASON
9/15/2011	CAMP	CAMP	Hawk Creek	Hawk Creek	5:30 PM	7:30 PM	
9/17/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
9/17/2011	CAMP	CAMP	Evans	Evans	5:30 PM	7:30 PM	
9/17/2011	BEACH	PM	Bradbury Beach	Bradbury Beach	1:00 PM	6:00 PM	
9/17/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	5:30 PM	7:30 PM	
9/17/2011	BEACH	AM	Spring Canyon	Fort Spokane	8:00 AM	1:00 PM	Site closed for triathlon event
9/17/2011	CAMP	CAMP	Two Rivers	Two Rivers	5:30 PM	7:30 PM	
9/18/2011	BOAT	AM	Marcus Island	Marcus Island	7:00 AM	1:00 PM	
9/18/2011	BOAT	AM	Kettle Falls	Kettle Falls	7:00 AM	1:00 PM	
9/18/2011	BOAT	PM	Spring Canyon	Spring Canyon	1:00 PM	7:30 PM	
9/20/2011	BOAT	AM	China Bend	China Bend	7:00 AM	1:00 PM	
9/20/2011	BOAT	PM	Kettle Falls	Kettle Falls	1:00 PM	7:30 PM	
9/20/2011	BOAT	PM	Crescent Bay	Crescent Bay	1:00 PM	7:30 PM	
9/21/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
9/21/2011	CAMP	CAMP	Snag Cove	Snag Cove	5:30 PM	7:30 PM	
9/21/2011	BEACH	PM	Bradbury Beach	Bradbury Beach	1:00 PM	6:00 PM	
9/21/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	5:30 PM	7:30 PM	
9/21/2011	BEACH	PM	Spring Canyon	Spring Canyon	1:00 PM	6:00 PM	
9/21/2011	CAMP	CAMP	Spring Canyon	Spring Canyon	5:30 PM	7:30 PM	
9/22/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
9/22/2011	CAMP	CAMP	Kamloops Island	Kamloops Island	5:30 PM	7:30 PM	
9/22/2011	BEACH	AM	Hunters	Hunters	8:00 AM	1:00 PM	
9/22/2011	CAMP	CAMP	Hunters	Hunters	5:30 PM	7:30 PM	
9/22/2011	BEACH	PM	Spring Canyon	Spring Canyon	1:00 PM	6:00 PM	
9/22/2011	CAMP	CAMP	Spring Canyon	Spring Canyon	5:30 PM	7:30 PM	
9/24/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
9/24/2011	CAMP	CAMP	Evans	Evans	5:30 PM	7:30 PM	
9/24/2011	BEACH	PM	Colville Flats	Colville Flats	1:00 PM	6:00 PM	
9/24/2011	CAMP	CAMP	Kettle Falls	Kettle Falls	5:30 PM	7:30 PM	
9/24/2011	BEACH	PM	Fort Spokane	Fort Spokane	1:00 PM	6:00 PM	
9/24/2011	CAMP	CAMP	Fort Spokane	Fort Spokane	5:30 PM	7:30 PM	
9/25/2011	BEACH	PM	Evans	Evans	1:00 PM	6:00 PM	
9/25/2011	CAMP	CAMP	Kamloops Island	Kamloops Island	5:30 PM	7:30 PM	
9/25/2011	BEACH	PM	Hunters	Hunters	1:00 PM	6:00 PM	
9/25/2011	CAMP	CAMP	Gifford	Gifford	5:30 PM	7:30 PM	
9/25/2011	BEACH	PM	Spring Canyon	Spring Canyon	1:00 PM	6:00 PM	

DATE	SHIFT TYPE	SHIFT TIME	SCHEDULED SITE	COMPLETED SITE	START TIME	END TIME	SITE CHANGE REASON
9/25/2011	CAMP	CAMP	Spring Canyon	Spring Canyon	5:30 PM	7:30 PM	
9/29/2011	BOAT	AM	China Bend	China Bend	7:00 AM	1:00 PM	
9/29/2011	BOAT	AM	Kettle Falls	Kettle Falls	7:00 AM	1:00 PM	
9/29/2011	BOAT	PM	Crescent Bay	Crescent Bay	1:00 PM	7:30 PM	

APPENDIX E: FINAL FISH CONSUMPTION DIARY

FIRST FISH CONSUMPTION DIARY LETTER

Dear Angler,

On a recent trip to the Upper Columbia River, you participated in a visitor survey for the National Park Service. At the end of that survey, you agreed to participate in a follow-up study that focuses on people who eat fish from the Upper Columbia River. The purpose of this follow-up study is to collect information on fish consumption so that the U.S. Environmental Protection Agency can evaluate potential health risks from contamination in the Upper Columbia River.

Thank you for participating! Each month for the next three months, we will send you a diary to record every fish meal that you eat. Your first diary is enclosed along with instructions for filling it out. At the end of each month, we will call you for your entries. After you have completed diaries for all three months, we will send you a self-addressed, stamped envelope so that you can send us your completed diaries. We will also send a check for $50 to show our appreciation for your time helping with this study.

All of the information that we collect from you is confidential. Your name, address, and phone number will not be shared with anyone, and are being used only to communicate with you during this three-month process.

If you lose any of the materials from this packet, please let us know immediately so that we can send you replacements. If you have any questions about your participation in this study, or about how to fill out your diary, please let me know. You can reach me at:

(617) 354-0074	or	nscherer@indecon.com

Thank you very much for your time. We look forward to speaking with you soon.

Sincerely,

Nora Scherer

SECOND FISH CONSUMPTION DIARY LETTER

Dear Angler,

One month down, and two to go!

For the last month, you have been filling out your angler diary, and we will be calling you this week to ask you for those records. In this packet, you will find your diary for the month of March. Please start using this diary on March 1st and stop using it on March 31st.

If you have any questions about filling out your diary, or need any replacement materials, please send me an email or give me a call at:

(617) 354-0074	or	nscherer@indecon.com

Again, thank you so much for participating!

Sincerely,

Nora Scherer
(617) 354-0074
nscherer@indecon.com

THIRD FISH CONSUMPTION DIARY LETTER

Dear Angler,

You're almost there!

For the last two months, you have been filling out your angler diary, and we really appreciate you sticking with it. We will be calling you again sometime this week to ask you for your records for the month of December. In this packet, you will find your diary for the month of April. Please start using this diary on April 1st and stop using it on April 30th.

At the end of this month, we will be sending you a self-addressed stamped envelope for you to return all three diaries to us. We will also be sending you a check for $50!

If you have any questions about filling out your diary, or need any replacement materials, please send me an email or give me a call at:

(617) 354-0074	or	nscherer@indecon.com

Again, thank you so much for participating!

Sincerely,

Nora Scherer
(617) 354-0074
nscherer@indecon.com

FOURTH FISH CONSUMPTION DIARY LETTER

Dear Angler,

You made it! The three months are over! We want to thank you so much for participating in our survey. Your responses will be very helpful for us.

Please find enclosed a self-addressed stamped envelope for you to return your diaries to us. Please put all three diaries that you have been filling out for the last three months in the envelope, drop it in the mail, and you're done! Once we receive your diaries, we will send you a check for $50 as a token of our appreciation for your participation in this survey.

We would also like to remind you that all of the information that we have collected from you over the last three months both over the phone and in the diaries that you are sending back today will be kept completely confidential. Your name, address, and phone number will not be shared with anyone.

Again, thank you so much for participating!

Sincerely,

Nora Scherer
(617) 354-0074
nscherer@indecon.com

FINAL FISH CONSUMPTION DIARY LETTER

Dear Angler,

We have received all of your angler diaries! Please find enclosed a check for $50 as a token of our appreciation for your participation in this survey effort. We want to thank you again for participating in our survey. Your responses will be very helpful for us.

Again, we would like to remind you that all of the information that we have collected from you over the last three months both over the phone and in the diaries that you are sending back today will be kept completely confidential. Your name, address, and phone number will not be shared with anyone.

Again, thank you so much for participating!

Sincerely,

Nora Scherer
(617) 354-0074
nscherer@indecon.com

This is your

FISH CONSUMPTION DIARY

for the month of

Please start using this diary on:

Please stop using this diary on:

Thanks again for participating!

Every time you eat a fish meal, please record that meal in the tables in the following pages of this booklet. You will find instructions for filling out these tables and an example on the next page.

Here are some details to keep in mind:

- **WE CHOSE YOU!** Please complete the diary yourself. Do not let other members of your family fill out the diary for you.

- **EACH MEAL COUNTS!** Your responses are very important to us. Please fill out this diary even if you don't eat fish very often.

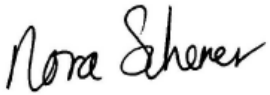
At the beginning of each month, we will call you to ask you about the meals you recorded for the previous month. At the end of three months, we will send you a self-addressed stamped envelope to return all your diaries, and your $50.

If you have any questions about this diary, please call or email **Nora Scherer** at:

Your responses are very important to us.

Please don't hesitate to call or email me if you have any questions about how to fill out this diary, or if you need any replacement materials.

Happy fishing and we'll talk to you soon!



NORA SCHERER

(617) 354-0074
nscherer@indecon.com

INSTRUCTIONS

Please fill out one table in this booklet after every meal of fish that you eat this month.

1 Date
At the top of the table, write the date that you ate any fish meal. If you had more than one meal per day, please fill out another table for that meal.

2 Species
We'd like to know which fish you eat. Circle ALL the types of fish that you ate during that meal. We've included a set of pictures that show some of the most common fish in the area, which you may use to help identify the fish you eat. If you eat a fish that is not listed, please write it in the "Other" line.

3 Source
We'd like to know where you catch your fish. For fish that you caught in the lake/river, we've included a map that divides the lake/river into 8 sections. Please use the map and identify ALL of the areas of the lake where the fish were caught: 1 through 8. Circle "don't know" if you're not sure.

4 Parts Consumed
We'd like to know which parts of the fish you eat. Circle ALL of the parts of the fish that you ate during the meal.

5 Meal Size
We'd like to know how much fish you ate during the meal. Your packet includes a picture of three plates of cooked fish labeled "A", "B", and "C". Look at the picture and estimate the amount of fish you ate.

6 Child's Meal
If you have children in your household, pick the child whose birthday is closest to January 1. When you eat fish, we want to know whether this child also ate fish during this meal. If they did, circle YES and record the amount of fish they ate using the meal size picture. If the child did not eat fish, circle NO. If there are no children in your household, circle N/A.

1 DATE: November 3, 2010

2 SPECIES (circle all that apply)

Kokanee (Silvers) (Rainbow Trout) Walleye Bass Other_____

3 SOURCE (circle all that apply)

UPPER COLUMBIA RIVER: 1 2 (3) 4 5 6 7 8 don't know

LOCAL AREA: Sanpoil River Columbia River below Coulee Dam

Other local fishing site: _____ (please specify)

OTHER: Store Restaurant Non-local fishing site

4 PARTS CONSUMED (circle all that apply)

(Fillet) (Skin) Eggs Head Guts

5 MEAL SIZE (circle one)

Less than A Similar to A Similar to B (Similar to C) More than C

6 Did the child with the birthday closest to January 1 also eat fish during this meal?

(YES)

NO

N/A

→ If YES, what was the child's meal size? (circle one)

Less than A

Similar to A

(Similar to B)

Similar to C

More than C

EXAMPLE

YOUR NAME: _____

In addition to recording your fish meals, we also ask whether any children in your family eat fish. If you have children in your household, please select the child whose birthday is closest to January 1 and record their initials and age below. Every time you eat fish, we ask you if your child also ate this fish as part of this meal. If you have more than one child, always record the information for the child whose birthday is closest to January 1.

AGE OF CHILD: _____

INITIALS OF CHILD: _____

1 DATE:

_____

2 SPECIES (circle all that apply)

Kokanee (Silvers) Rainbow Trout Walleye Bass Other_____

_____

3 SOURCE (circle all that apply)

UPPER COLUMBIA RIVER: 1 2 3 4 5 6 7 8 don't know

LOCAL AREA: Sanpoil River Columbia River below Coulee Dam

Other local fishing site: _____ (please specify)

OTHER: Store Restaurant Non-local fishing site

_____

4 PARTS CONSUMED (circle all that apply)

Fillet Skin Eggs Head Guts

_____

5 MEAL SIZE (circle one)

Less than A Similar to A Similar to B Similar to C More than C

_____

6 Did the child with the birthday closest to January 1 also eat fish during this meal? → If YES, what was the child's meal size? (circle one)

YES

NO

N/A

Less than A

Similar to A

Similar to B

Similar to C

More than C

IEc

1 DATE:

2 SPECIES (circle all that apply)

Kokanee (Silvers) Rainbow Trout Walleye Bass Other_____

3 SOURCE (circle all that apply)

UPPER COLUMBIA RIVER: 1 2 3 4 5 6 7 8 don't know

LOCAL AREA: Sanpoil River Columbia River below Coulee Dam

Other local fishing site: _____ (please specify)

OTHER: Store Restaurant Non-local fishing site

4 PARTS CONSUMED (circle all that apply)

Fillet Skin Eggs Head Guts

5 MEAL SIZE (circle one)

Less than A Similar to A Similar to B Similar to C More than C

6 Did the child with the birthday closest to January 1 also eat fish during this meal? → If YES, what was the child's meal size? (circle one)

YES — Less than A / Similar to A / Similar to B / Similar to C / More than C

NO

N/A

1 DATE:

2 SPECIES (circle all that apply)

Kokanee (Silvers) Rainbow Trout Walleye Bass Other_____

3 SOURCE (circle all that apply)

UPPER COLUMBIA RIVER: 1 2 3 4 5 6 7 8 don't know

LOCAL AREA: Sanpoil River Columbia River below Coulee Dam

Other local fishing site: _____ (please specify)

OTHER: Store Restaurant Non-local fishing site

4 PARTS CONSUMED (circle all that apply)

Fillet Skin Eggs Head Guts

5 MEAL SIZE (circle one)

Less than A Similar to A Similar to B Similar to C More than C

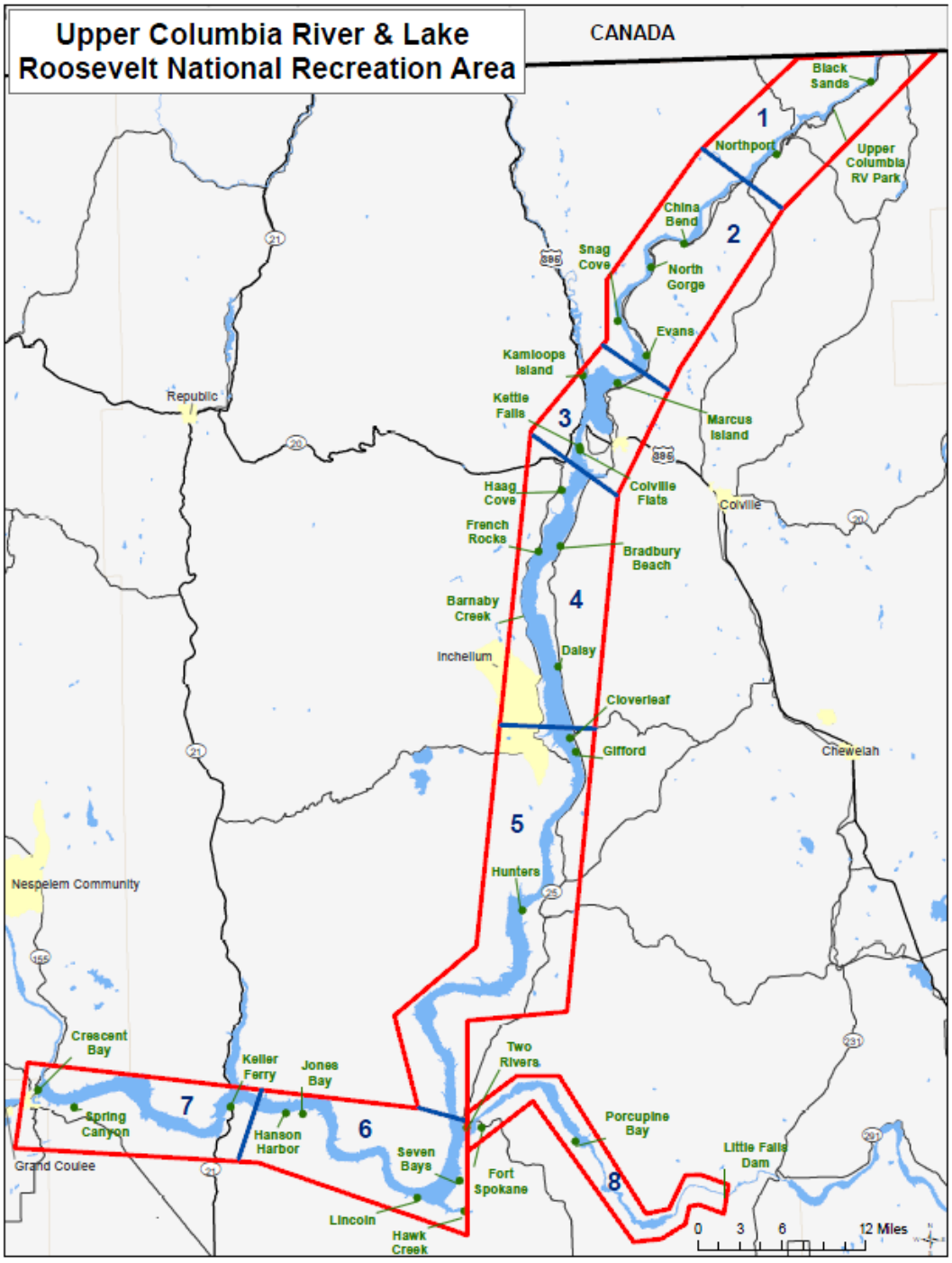
6 Did the child with the birthday closest to January 1 also eat fish during this meal? → If YES, what was the child's meal size? (circle one)

YES — Less than A / Similar to A / Similar to B / Similar to C / More than C

NO

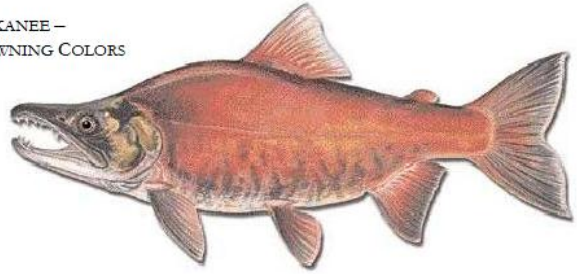
N/A

Fourteen additional pages were included in the angler consumption diary that are identical to the previous page.


Upper Columbia River & Lake Roosevelt National Recreation Area
CANADA
Black Sands
Northport
Upper Columbia RV Park
China Bend
Snag Cove
North Gorge
Evans
Kamloops Island
Kettle Falls
Marcus Island
Republic
Haag Cove
Colville Flats
Colville
French Rocks
Bradbury Beach
Barnaby Creek
Inchelium
Daisy
Cloverleaf
Gifford
Chewelah
Hunters
Nespelem Community
Crescent Bay
Keller Ferry
Jones Bay
Spring Canyon
Hanson Harbor
Grand Coulee
Seven Bays
Two Rivers
Porcupine Bay
Fort Spokane
Little Falls Dam
Lincoln
Hawk Creek
1
2
3
4
5
6
7
8
0 3 6 12 Miles

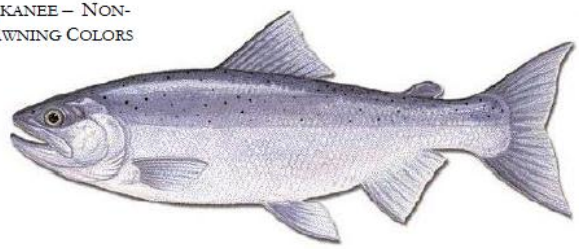
UPPER COLUMBIA RIVER FISH SPECIES

KOKANEE – SPAWNING COLORS

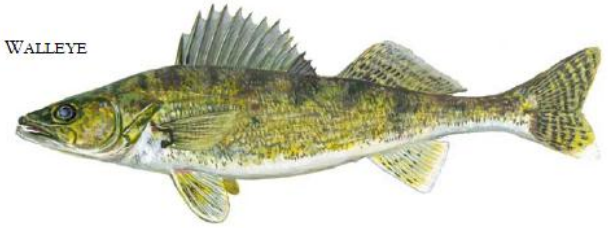


RAINBOW TROUT

KOKANEE – NON-SPAWNING COLORS

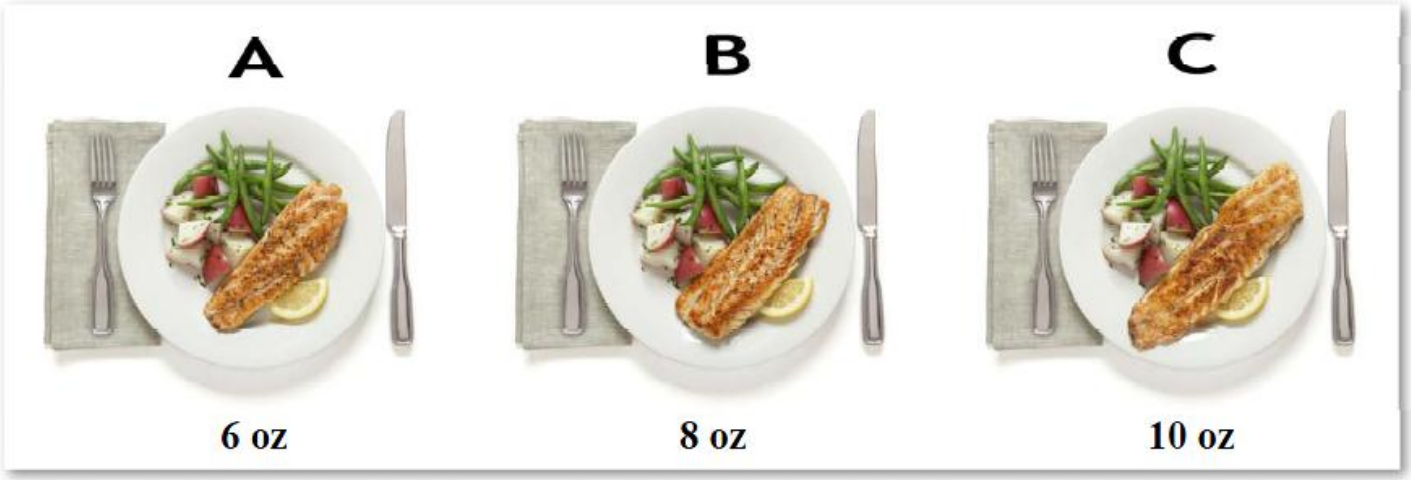


WALLEYE



BASS

Fish Fillet Size Comparison



APPENDIX F: SELECTION PROBABILITIES FOR PERSON WEIGHTS

This appendix provides an overview of the probability calculations used in developing person weights, focusing on a single temporal stratum and survey type (i.e., boating, camping, or beach). The main text of the report describes how selection probabilities for temporal strata and survey types are combined to develop an overall selection probability for each individual.

Within a given temporal stratum and survey type, visitor interviews are conducted on *n* out of *N* randomly selected days. For example, *n* = 5 and *N* = 20 for boating interviews on July weekdays. On each selected day, a single site/shift (*x*) is randomly selected for interviews with probability given by p_x. The sampling rate (i.e., fraction of adult visitors interviewed) at site/shift *x* is represented by γ_x.

When an individual takes only one trip to the UCR of a given type within a given temporal stratum, the calculation of the person's selection probability is relatively simple. Letting *j* represent the site/shift that the individual visited, the selection probability is equal to the probability of selecting the day that the individual visited $\left(\frac{n}{N}\right)$ times the probability of selecting the site/shift that the individual visited (p_j) times the probability of intercepting the individual while interviewing at the site (γ_j): $P(selected) = \left(\frac{n}{N}\right) p_j \gamma_j$.

When the individual takes more than one trip to the UCR of a given type within a given temporal stratum, the complexity of the probability calculations increases considerably. The selection probabilities for an individual visiting one site (site *j*), two sites (sites *j* and *k*), three sites (sites *j*, *k*, and l), four sites (sites *j, k, l,* and *m*), and five sites (sites *j, k, l, m*, and *n*) are given below. These represent the probability that the individual would be selected <u>at least once</u> within a given temporal stratum and type of trip.

<u>One Site Visited</u>:

$$P(selected|j) = \frac{n}{N} p_j \gamma_j$$

<u>Two Sites Visited</u>:

$$P(selected|j,k) = \frac{n}{N}\left(p_j\gamma_j + p_k\gamma_k\right) - \frac{n(n-1)}{N(N-1)}\left(p_j\gamma_j p_k\gamma_k\right)$$

Three Sites Visited:

$$P(selected|j,k,l) = \frac{n}{N}(p_j\gamma_j + p_k\gamma_k + p_l\gamma_l) - \frac{n(n-1)}{N(N-1)}(p_j\gamma_j p_k\gamma_k + p_j\gamma_j p_l\gamma_l + p_k\gamma_k p_l\gamma_l) + \frac{n(n-1)(n-2)}{N(N-1)(N-2)}(p_j\gamma_j p_k\gamma_k p_l\gamma_l)$$

Four Sites Visited:

$$P(selected|j,k,l,m) = \frac{n}{N}(p_j\gamma_j + p_k\gamma_k + p_l\gamma_l + p_m\gamma_m) - \frac{n(n-1)}{N(N-1)}(p_j\gamma_j p_k\gamma_k + p_j\gamma_j p_l\gamma_l + p_j\gamma_j p_m\gamma_m + p_k\gamma_k p_l\gamma_l + p_k\gamma_k p_m\gamma_m + p_l\gamma_l p_m\gamma_m) + \frac{n(n-1)(n-2)}{N(N-1)(N-2)}(p_j\gamma_j p_k\gamma_k p_l\gamma_l + p_j\gamma_j p_k\gamma_k p_m\gamma_m + p_j\gamma_j p_l\gamma_l p_m\gamma_m + p_k\gamma_k p_l\gamma_l p_m\gamma_m) - \frac{n(n-1)(n-2)(n-3)}{N(N-1)(N-2)(N-3)}(p_j\gamma_j p_k\gamma_k p_l\gamma_l p_m\gamma_m)$$

Five Sites Visited:

$$P(selected|j,k,l,m,n) = \frac{n}{N}(p_j\gamma_j + p_k\gamma_k + p_l\gamma_l + p_m\gamma_m + p_n\gamma_n) - \frac{n(n-1)}{N(N-1)}(p_j\gamma_j p_k\gamma_k + p_j\gamma_j p_l\gamma_l + p_j\gamma_j p_m\gamma_m + p_j\gamma_j p_n\gamma_n + p_k\gamma_k p_l\gamma_l + p_k\gamma_k p_m\gamma_m + p_k\gamma_k p_n\gamma_n + p_l\gamma_l p_m\gamma_m + p_l\gamma_l p_n\gamma_n + p_m\gamma_m p_n\gamma_n) + \frac{n(n-1)(n-2)}{N(N-1)(N-2)}(p_j\gamma_j p_k\gamma_k p_l\gamma_l + p_j\gamma_j p_k\gamma_k p_m\gamma_m + p_j\gamma_j p_k\gamma_k p_n\gamma_n + p_j\gamma_j p_l\gamma_l p_m\gamma_m + p_j\gamma_j p_l\gamma_l p_n\gamma_n + p_j\gamma_j p_m\gamma_m p_n\gamma_n + p_k\gamma_k p_l\gamma_l p_m\gamma_m + p_k\gamma_k p_l\gamma_l p_n\gamma_n + p_k\gamma_k p_m\gamma_m p_n\gamma_n + p_l\gamma_l p_m\gamma_m p_n\gamma_n) - \frac{n(n-1)(n-2)(n-3)}{N(N-1)(N-2)(N-3)}(p_j\gamma_j p_k\gamma_k p_l\gamma_l p_m\gamma_m + p_j\gamma_j p_k\gamma_k p_l\gamma_l p_n\gamma_n + p_j\gamma_j p_k\gamma_k p_m\gamma_m p_n\gamma_n + p_j\gamma_j p_l\gamma_l p_m\gamma_m p_n\gamma_n + p_k\gamma_k p_l\gamma_l p_m\gamma_m p_n\gamma_n) + \frac{n(n-1)(n-2)(n-3)(n-4)}{N(N-1)(N-2)(N-3)(N-4)}(p_j y_j p_k y_k p_l y_l p_m y_m p_n y_n)$$

APPENDIX G: COMPLETED SURVEYS AND VEHICLE COUNTS BY TEMPORAL STRATUM

EXHIBIT G-1: DISTRIBUTION OF VEHICLE COUNTS ACROSS TEMPORAL SAMPLING STRATA

TEMPORAL STRATUM	LOWER UCR (FORT SPOKANE VEHICLE COUNTERS)			MIDDLE UCR (HUNTERS VEHICLE COUNTERS)			UPPER UCR (EVANS VEHICLE COUNTERS)		
	BEACH[3]	BOAT	CAMP	BEACH[3]	BOAT	CAMP	BEACH[3]	BOAT	CAMP
Off-peak weekends[1]	N/A	10.4%	10.3%	N/A	10.6%	7.1%	N/A	9.5%	6.1%
Off-peak weekdays[1]	N/A	15.9%	21.6%	N/A	17.1%	13.4%	N/A	16.2%	12.2%
June weekends	4.9%	4.6%	5.2%	5.7%	4.1%	3.9%	6.1%	2.6%	3.5%
July weekends	13.0%	8.1%	6.8%	12.0%	8.5%	6.6%	10.6%	11.2%	9.4%
August weekends	12.4%	8.5%	5.2%	11.8%	7.9%	8.2%	14.3%	9.9%	8.8%
September weekends	2.9%	2.9%	1.8%	3.6%	3.4%	2.6%	3.5%	3.3%	2.0%
June weekdays	9.1%	9.6%	10.5%	9.5%	7.9%	8.6%	8.9%	5.4%	8.3%
July weekdays	17.2%	12.6%	14.6%	18.2%	11.5%	17.8%	15.9%	12.8%	17.9%
August weekdays	20.9%	11.9%	12.3%	21.9%	13.6%	18.6%	22.7%	12.7%	15.9%
September weekdays	7.2%	5.8%	6.1%	6.3%	5.5%	6.8%	6.0%	6.2%	6.4%
Summer holidays[2]	12.5%	9.6%	5.5%	11.0%	9.8%	6.3%	12.0%	10.1%	9.5%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Notes:
[1] The off-season is defined as October 1 to May 27.
[2] The following days are classified as summer holidays: May 28, 29, and 30, July 2, 3, and 4, and September 3,4, and 5.
[3] The off-peak strata are excluded as beach sites were not sampled during the off-peak season.

EXHIBIT G-2: DISTRIBUTION OF WEIGHTED VISITOR DAYS ACROSS TEMPORAL SAMPLING STRATA

TEMPORAL STRATUM	LOWER UCR			MIDDLE UCR			UPPER UCR		
	BEACH[3]	BOAT	CAMP	BEACH[3]	BOAT	CAMP	BEACH[3]	BOAT	CAMP
Off-peak weekends[1]	N/A	7.9%	4.3%	N/A	4.8%	1.6%	N/A	7.8%	7.7%
Off-peak weekdays[1]	N/A	8.3%	5.4%	N/A	13.7%	8.3%	N/A	14.5%	0.0%
June weekends	6.4%	0.8%	4.5%	10.6%	3.5%	2.9%	1.4%	2.5%	3.1%
July weekends	22.3%	11.5%	11.9%	24.4%	13.2%	8.7%	25.1%	10.5%	8.3%
August weekends	25.9%	19.2%	7.7%	10.5%	20.8%	6.5%	15.2%	18.7%	9.2%
September weekends	2.4%	0.7%	3.0%	6.0%	9.8%	2.3%	3.3%	3.3%	3.0%
June weekdays	9.2%	5.0%	14.4%	2.8%	4.5%	19.5%	3.8%	5.1%	11.3%
July weekdays	7.3%	9.2%	12.5%	5.1%	9.0%	10.1%	19.3%	6.7%	17.7%
August weekdays	11.2%	13.1%	21.8%	27.6%	8.2%	20.7%	22.2%	14.9%	20.8%
September weekdays	0.4%	4.0%	3.3%	1.7%	3.2%	8.9%	0.8%	7.1%	7.0%
Summer holidays[2]	15.0%	20.3%	11.3%	11.3%	9.3%	10.4%	9.0%	8.9%	11.9%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Notes:
[1] The off-season is defined as October 1 to May 27.
[2] The following days are classified as summer holidays: May 28, 29, and 30, July 2, 3, and 4, and September 3,4, and 5.
[3] The off-peak strata are excluded as beach sites were not sampled during the off-peak season.

EXHIBIT G-3: ADJUSTMENT RATIOS FOR VISITOR DAY WEIGHTS

TEMPORAL STRATUM	LOWER UCR			MIDDLE UCR			UPPER UCR		
	BEACH[3]	BOAT	CAMP	BEACH[3]	BOAT	CAMP	BEACH[3]	BOAT	CAMP
Off-peak weekends[1]	N/A	1.32	2.37	N/A	2.22	4.38	N/A	1.21	2.38[4]
Off-peak weekdays[1]	N/A	1.92	4.02	N/A	1.25	1.62	N/A	1.12	
June weekends	0.77	5.69	1.17	0.54	1.17	1.34	4.24	1.05	1.13
July weekends	0.58	0.70	0.57	0.49	0.64	0.77	0.42	1.07	1.13
August weekends	0.48	0.44	0.68	1.12	0.38	1.26	0.95	0.53	0.95
September weekends	1.20	3.97	0.61	0.59	0.34	1.09	1.06	1.03	0.67
June weekdays	0.99	1.93	0.73	3.37	1.75	0.44	2.39	1.05	0.74
July weekdays	2.34	1.37	1.17	3.54	1.28	1.76	0.82	1.92	1.01
August weekdays	1.87	0.90	0.57	0.79	1.66	0.90	1.02	0.85	0.76
September weekdays	20.24	1.47	1.87	3.80	1.73	0.76	7.33	0.87	0.92
Summer holidays[2]	0.83	0.47	0.49	0.97	1.05	0.61	1.34	1.13	0.80

Notes:
[1] The off-season is defined as October 1 to May 27.
[2] The following days are classified as summer holidays: May 28, 29, and 30, July 2, 3, and 4, and September 3,4, and 5.
[3] The off-peak strata are excluded as beach sites were not sampled during the off-peak season.
[4] The off-peak weekday and weekend strata were combined in calculating the adjustment ratio for Upper UCR camping, as no weekday interviews were completed with campers on the Upper UCR during the off-peak season.

APPENDIX H: SHORELINE SURVEY INSTRUMENT

SHORELINE SURVEY

During the first seven months of the survey effort, interviewers at boat launches and marinas occasionally observed anglers fishing from docks or the nearby shoreline (hereafter referred to as "shore anglers"). Survey staff were instructed not to intercept shore anglers, as the survey instrument was designed specifically for boaters. Many of the observed shore anglers were likely camping at the UCR (most launches were located next to a campground) and would therefore be captured through the camping interview effort. In addition, shore anglers who visited day-use beaches or took boating trips to the UCR would be captured through the boating and beach interview efforts.

However, shore anglers who do not camp at the UCR, do not visit UCR beaches, and do not take boating trips on the UCR would not be captured by the primary survey effort. As a result, a targeted shore angler survey was implemented from May 6, 2011 to September 30, 2011. The purpose of the effort was to gather fish consumption data from shore anglers observed during the boating shifts without interfering with the primary survey effort.

The shore angler survey differed from the primary survey effort in the following ways:

- Interviewers approached all adult shore anglers rather than targeting the adult from each group who celebrated the most recent birthday. All shore anglers were approached because shore anglers were not necessarily organized in identifiable groups.
- The survey focused on fish consumption (i.e., Section D of the survey) and did not collect detailed information about the current trip or about past trips to the UCR.
- The survey included a general question about the number of shore fishing trips taken to the UCR over the past 12 months. This question was included so that approximate sampling weights could be developed (i.e., adjustments for avidity bias).

The shore angler survey was only administered at boat launch sites where interviewers were already stationed and only when no boats were approaching the launch (i.e., when the interviewer had time available); it was not administered at beach or camping sites. In addition, the survey included a screening question designed to eliminate any anglers who would potentially be intercepted during other visits to the UCR (i.e., boating, camping, or beach trips). This approach allowed for the collection of targeted information on shore anglers without interfering with the primary survey effort. Shore anglers were recruited for the angler consumption diary if they were eligible.

Throughout the survey period, 32 shore angler surveys were conducted. Of the 32 shore angler surveys, 23 were terminated early because the respondent had previously taken the survey or had taken a boating, beach or camping trip to the UCR in the previous 12 months. The nine remaining shore anglers were primarily male (78 percent) with an average age of 46.1 years (median = 45). Three of the nine shore anglers were interviewed at Northport, two at Hunters, two at Gifford, one at Spring Canyon, and one

at China Bend. Three of the nine shore anglers indicated that they were aware of the fish consumption advisories.

Eight of the nine shore anglers reported that they consume fish from the UCR (Exhibit H-1). Four of the eight fish consumers reported consuming rainbow trout within the last 12 months (mean 7.0 meals, median = 0.5 meals), five reported consuming walleye (mean = 1.6 meals, median = 2.0 meals), and one reported consuming bass (mean = 0.4 meals, median = 0.0 meals). The average UCR fish consumption was 8.9 meals (median = 2.5 meals). Respondents indicated that they obtained rainbow trout from UCR Areas 1, 7, and 8; walleye from UCR Areas 1, 3, and 5; and bass from UCR Area 3.

Five of the eight UCR fish consumers reported that the size of a typical UCR fish meal was similar to the 6-ounce fillet, two reported that it was similar to the 8-ounce fillet, and one reported that it was larger than the 10-ounce fillet. With the exception of one respondent who reported consuming rainbow trout skin, the respondents only consumed the fillets from the fish (i.e., no eggs, head, or guts). Two of the eight UCR fish consumers reported sharing the fish with their children (age seven to 17).

EXHIBIT H-1: ANNUAL UCR FISH CONSUMPTION BY SPECIES FOR UCR FISH CONSUMERS (n = 8)

RESPONDENT ID	ANNUAL MEALS CONSUMED					
	KOKANEE	RAINBOW TROUT	WALLEYE	BASS	OTHER	TOTAL
297	0	1	0	0	0	1
367	0	3	0	0	0	3
727	0	0	3	3	0	6
816	0	2	0	0	0	2
1071	0	0	2	0	0	2
1145	0	50	2	0	0	52
1282	0	0	3	0	0	3
1530	0	0	3	0	0	2
MEAN	0.0	7.0	1.6	0.4	0.0	8.9
MEDIAN	0.0	0.5	2.0	0.0	0.0	2.5

UPPER COLUMBIA RIVER VISITOR SURVEY – SHORE FISHING

Interviewer _____ Time _____ am / pm

Location _____ Month_____/Day____/2010

Hi, I'm conducting a survey for the National Park Service about how people use Lake Roosevelt and the Upper Columbia River.

Would you be willing to answer a few questions about your visits to this area?

PART A: PRELIMINARY QUESTIONS

Before I start, let me show you exactly what area the survey will focus on. It's the area outlined in red on this map, which includes the Columbia River from the Grand Coulee Dam to the Canadian border and part of the Spokane River. Most of Lake Roosevelt is also included in this area. During the survey, I'll refer to this entire area as the "Upper Columbia River." *Point out respondent's current location on the map.*

A1. Have you taken this survey before?

□ Yes → Ok. Thank you very much for your time. →*Terminate survey*

□ No

A2. Over the last 12 months, have you gone on any camping trips, boating trips, or beach trips to the Upper Columbia River?

□ Yes → Ok. Thank you very much for your time. This version of our survey only focuses on visitors who do *not* camp, boat, or visit beaches on the Upper Columbia River. →*Terminate survey*

□ No

A3. Over the last 12 months, approximately how many fishing trips have you taken to the Upper Columbia River, including today's trip?

_____ trips

A4. What time did you start fishing today?

_____ am / pm

A5. What time do you plan to stop fishing?

_____ am / pm

PART D: FISH CONSUMPTION

D1. Do you eat fish from the Upper Columbia River?

☐ Yes

☐ No → *Skip to D9*

The next few questions will be about the fish that you've eaten from the Upper Columbia River over the past 12 months, and about any fish you kept on this trip. I will <u>not</u> be asking to see any of the fish that you kept.

D2. Over the past 12 months, have you eaten any *[species]* from the Upper Columbia River?	D3. About how many meals of *[species]* have you eaten over the past 12 months?	D4. Could you tell me where the *[species]* was caught? *(show map; circle all that apply)*	D5. What parts of the *[species]* do you typically eat? (*check all that apply*)	D6. Did you keep any *[species]* today?	D7.How long were the biggest and smallest *[species]* that you kept today?
Kokanee (Silvers) ☐ Yes ☐ No → *Skip to next species*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → *next species*	____ inches (biggest) ____ inches (smallest)
Rainbow Trout ☐ Yes ☐ No → *Skip to next species*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → *next species*	____ inches (biggest) ____ inches (smallest)
Walleye ☐ Yes ☐ No → *Skip to next species*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → *next species*	____ inches (biggest) ____ inches (smallest)
Bass ☐ Yes ☐ No → *Skip to next species*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → *next species*	____ inches (biggest) ____ inches (smallest)
Other fish _____ ☐ Yes ☐ No → *Skip to D8*	_____ meals *If unsure:* Would you say it was less than 10, 10 to 20, 20 to 30…	1 2 3 4 5 6 7 8 Don't know _____	☐ Fillet ☐ Skin ☐ Eggs ☐ Head ☐ Guts	☐ Yes ☐ No → D8	____ inches (biggest) ____ inches (smallest)

D8. Please look at this photo, which shows three different fish fillet serving sizes. How much fillet do you typically eat when you eat a fish fillet meal from the Upper Columbia River? Do you eat an amount... *[read response options]*

- ☐ Less than Photo A
- ☐ Similar to Photo A
- ☐ Similar to Photo B
- ☐ Similar to Photo C
- ☐ More than Photo C

D9. Do you typically share fish from the Upper Columbia River with any children?

☐ Yes → a. Children under the age of 7? ☐ Yes ☐ No

b. Children ages 7 to 17? ☐ Yes ☐ No

☐ No

D10. Are you aware of any fish consumption advisories that have been issued for the Upper Columbia River?

- ☐ Yes
- ☐ No → *Offer advisory brochure to respondent; Skip to Section E*

D11. How did you first hear about these advisories? (*check all that apply*)

- ☐ Posted signs
- ☐ Fishing regulations
- ☐ Friend or family
- ☐ Website
- ☐ Newspaper
- ☐ Other _____

D12. Do you find the advisories helpful in making decisions about eating fish from the Upper Columbia River?

- ☐ Yes
- ☐ No → Why not? _____

_____

D13. Do you generally follow the advisory recommendations?

- ☐ Yes
- ☐ No

D14. In response to the advisories, have you changed…

a. … how often you fish in the Upper Columbia River?

☐ Yes → Do you fish in the Upper Columbia River more or less often? ☐ More ☐ Less

☐ No

b. ….how often you eat fish from the Upper Columbia River?

☐ Yes → Do you eat Upper Columbia River fish more or less often? ☐ More ☐ Less

☐ No

c. ….how you clean the fish that you catch from the Upper Columbia River?

☐ Yes

☐ No

d. …the species that you target when fishing the Upper Columbia River?

☐ Yes

☐ No

e. …how often you share fish from the Upper Columbia River with your family?

☐ Yes → Do you share Upper Columbia River fish with your family more or less often? ☐ More ☐ Less

☐ No

Offer advisory brochure to respondent; proceed to Section E.

PART E: DEMOGRAPHIC CHARACTERISTICS

Now I just have a few final questions…

E1. What year were you born?

_____ year of birth

E2. What is the zip code of your primary residence?

_____ zip code or postal code (write country if respondent not from the United States or Canada)

E3. Are you currently participating in something called the "CCT tribal use survey"?

☐ Yes

☐ No/Don't know

E4. *Interviewer: record gender of respondent*

☐ Male

☐ Female

E5. *Interviewer: did respondent consume at least 10 fish meals (total across all species) from the Upper Columbia River over the last 12 months (question D3)?*

☐ Yes

☐ No → That's the end of the survey. Thank you very much for helping out!

E6. The National Park Service is conducting a study that focuses on people who eat fish from the Upper Columbia River. They are mailing booklets to every participant for recording fish consumption information over a three-month period. Every participant will receive a $50 check at the end of the study. Would you be interested in helping us out by participating in this study?

□ Yes

□ No → That's the end of the survey. Thank you very much for helping out!

If respondent declines but offers his or her companion, say "I'm sorry, but you were randomly selected to participate, and I can't make this offer to anyone else in your group."

E7. That's great. Could I please have your name, address, phone number, and email so that we can contact you?

Name _____

Address _____

_____

Telephone _____

Email _____

That's the end of the survey. Thank you very much for helping out!

END OF SURVEY

APPENDIX I: SURVEY CODEBOOK

SURVEY CODEBOOK

As discussed in the report, four different survey instruments were administered on site: a boater survey, a beach visitor survey, a camper survey, and a shore angler survey. The data from each of these surveys is represented as a separate data file. In addition, on-site survey respondents who reported consuming a large number of UCR fish meals were recruited for a three-month fish consumption diary. The fish consumption diary data is represented by two different data files, one that characterizes every diary participant and one that characterizes every fish meal reported.

The survey data reside in six comma-delimited files:

1. boat.csv – one row for every completed boater survey (803 rows, 304 columns)
2. beach.csv – one row for every completed beach survey (430 rows, 239 columns)
3. camp.csv – one row for every completed camper survey (876 rows, 269 columns)
4. shore.csv – one row for every completed shore angler survey (32 rows, 108 columns)
5. diaryparticipants.csv – one row for every diary participant (146 rows, 16 columns)
6. diarymeals.csv – one row for every diary meal reported (1,515 rows, 40 columns)

Each of the columns in these six data files is described in the tables that follow. The columns are listed in the order in which they appear in the data files.

Boat.csv (803 rows, 304 columns)

Variable Name	Type	Question Number	Description
id	Numeric	N/A	Unique ID assigned to every completed survey
interviewer	Character	N/A	Name of interviewer
location	Character	N/A	Location of interview (e.g., Kettle Falls)
intdate	Character	N/A	Interview date
stratum	Numeric	N/A	Temporal sampling stratum (1 to 11) -- see Exhibit 3 of Sampling and Analysis Plan
region	Character	N/A	Spatial sampling stratum (Upper, Middle, or Lower UCR)
ucrarea	Numeric	N/A	UCR Lake Area (1 to 8)
inttime	Character	N/A	Time of interview
intampm	Numeric	N/A	Time of interview: AM/PM (1 = AM, 0 = PM)
inthourmin	Numeric	N/A	Numeric interview time (hours since midnight)
numintdatetime	Numeric	N/A	Numeric interview date and time (hours since 1960)
targeted	Numeric	N/A	Was the survey completed by the adult with the most recent birthday? (1 = Yes, 0 = No)
a1	Numeric	A1	Has respondent completed the survey before? (1 = Yes, 0 = No)
a2	Numeric	A2	Camping at the UCR tonight? (1 = Yes, 0 = No)
a3	Numeric	A3	Camped at UCR last night? (1 = Yes, 0 = No)
a4	Numeric	A4	Camping site a drive-in campground? (1 = Yes, 0 = No)
a4site	Character	A4	Camping site name
a5adults	Numeric	A5	Number of adults on boat
a5kids0to7	Numeric	A5	Number of kids 0 to 7 on boat
a5kids7to17	Numeric	A5	Number of kids 7 to 17 on boat
a7	Numeric	A7	Age of child with most recent birthday
a8	Numeric	A8	Gender of child with most recent birthday (1 = Boy, 0 = Girl)
b1date	Character	B1	Date respondent launched boat
b1ampm	Numeric	B1	Time respondent launched boat AM/PM (1 = AM, 0 = PM)
b1time	Character	B1	Time respondent launched boat
b1hourmin	Numeric	B1	Numeric launch time (hours since midnight)
numb1datetime	Numeric	B1	Numeric launch date and time (hours since 1960)
cutriplength	Numeric	N/A	Current trip length in hours (numintdatetime - numb1datetime)
b2a1	Numeric	B2	Visited Area 1 during current trip (1 = Yes, 0 = No)
b2a2	Numeric	B2	Visited Area 2 during current trip (1 = Yes, 0 = No)
b2a3	Numeric	B2	Visited Area 3 during current trip (1 = Yes, 0 = No)
b2a4	Numeric	B2	Visited Area 4 during current trip (1 = Yes, 0 = No)
b2a5	Numeric	B2	Visited Area 5 during current trip (1 = Yes, 0 = No)
b2a6	Numeric	B2	Visited Area 6 during current trip (1 = Yes, 0 = No)
b2a7	Numeric	B2	Visited Area 7 during current trip (1 = Yes, 0 = No)
b2a8	Numeric	B2	Visited Area 8 during current trip (1 = Yes, 0 = No)
b3ayesno	Numeric	B3	Any time waterskiing, tubing, or doing similar activities? (1 = Yes, 0 = No)
b3ahr	Numeric	B3	Hours waterskiing, tubing, or doing similar activities
b3amin	Numeric	B3	Minutes waterskiing, tubing, or doing similar activities
b3aduration	Numeric	B3	Adult's total hours spent waterskiing,tubing, similar activities
b3byesno	Numeric	B3	Any time wading in water shallower than waist deep? (1 = Yes, 0 = No)
b3bhr	Numeric	B3	Hours wading in water shallower than waist deep
b3bmin	Numeric	B3	Minutes wading in water shallower than waist deep
b3bduration	Numeric	B3	Adult's total hours spent wading in water shallower than waist deep
b3cyesno	Numeric	B3	Any time swimming or wading in water over waist deep? (1 = Yes, 0 = No)
b3chr	Numeric	B3	Hours swimming or wading in water over waist deep
b3cmin	Numeric	B3	Minutes swimming or wading in water over waist deep
b3cduration	Numeric	B3	Adult's total hours spent swimming in water deeper than waist deep
b3dyesno	Numeric	B3	Any time hanging out on the beach or sand along the shore? (1 = Yes, 0 = No)
b3dhr	Numeric	B3	Hours hanging out on the beach or sand along the shore
b3dmin	Numeric	B3	Minutes hanging out on the beach or sand along the shore
b3dduration	Numeric	B3	Adult's total hours spent on the beach or sand along shore
b4ayesno	Numeric	B4	Child -- Any time waterskiing, tubing, or doing similar activities? (1 = Yes, 0 = No)
b4ahr	Numeric	B4	Child -- Hours waterskiing, tubing, or doing similar activities
b4amin	Numeric	B4	Child -- Minutes waterskiing, tubing, or doing similar activities
b4aduration	Numeric	B4	Child's total hours spent waterskiing,tubing, similar activities
b4byesno	Numeric	B4	Child -- Any time wading in water shallower than waist deep? (1 = Yes, 0 = No)
b4bhr	Numeric	B4	Child -- Hours wading in water shallower than waist deep
b4bmin	Numeric	B4	Child -- Minutes wading in water shallower than waist deep
b4bduration	Numeric	B4	Child's total hours spent wading in water shallower than waist deep
b4cyesno	Numeric	B4	Child -- Any time swimming or wading in water over waist deep? (1 = Yes, 0 = No)

b4chr	Numeric	B4	Child -- Hours swimming or wading in water over waist deep
b4cmin	Numeric	B4	Child -- Minutes swimming or wading in water over waist deep
b4cduration	Numeric	B4	Child's total hours spent swimming in water deeper than waist deep
b4dyesno	Numeric	B4	Child -- Any time hanging out on the beach or sand along the shore? (1 = Yes, 0 = No)
b4dhr	Numeric	B4	Child -- Hours hanging out on the beach or sand along the shore
b4dmin	Numeric	B4	Child -- Minutes hanging out on the beach or sand along the shore
b4dduration	Numeric	B4	Child's total hours spent on the beach or sand along shore
b5ayesno	Numeric	B5	Any time waterskiing, tubing, or doing similar activities? (1 = Yes, 0 = No)
b5ahr	Numeric	B5	Hours waterskiing, tubing, or doing similar activities
b5amin	Numeric	B5	Minutes waterskiing, tubing, or doing similar activities
b5aduration	Numeric	B5	Adult's total hours spent waterskiing,tubing, similar activities
b5byesno	Numeric	B5	Any time wading in water shallower than waist deep? (1 = Yes, 0 = No)
b5bhr	Numeric	B5	Hours wading in water shallower than waist deep
b5bmin	Numeric	B5	Minutes wading in water shallower than waist deep
b5bduration	Numeric	B5	Adult's total hours spent wading in water shallower than waist deep
b5cyesno	Numeric	B5	Any time swimming or wading in water over waist deep? (1 = Yes, 0 = No)
b5chr	Numeric	B5	Hours swimming or wading in water over waist deep
b5cmin	Numeric	B5	Minutes swimming or wading in water over waist deep
b5cduration	Numeric	B5	Adult's total hours spent swimming in water deeper than waist deep
b5dyesno	Numeric	B5	Any time hanging out on the beach or sand along the shore? (1 = Yes, 0 = No)
b5dhr	Numeric	B5	Hours hanging out on the beach or sand along the shore
b5dmin	Numeric	B5	Minutes hanging out on the beach or sand along the shore
b5dduration	Numeric	B5	Adult's total hours spent on the beach or sand along shore
b5eyesno	Numeric	B5	Any time sleeping or relaxing inside a tent? (1 = Yes, 0 = No)
b5ehr	Numeric	B5	Hours sleeping or relaxing inside a tent
b5emin	Numeric	B5	Minutes sleeping or relaxing inside a tent
b5eduration	Numeric	B5	Adult's total hours spent inside a tent
b6ayesno	Numeric	B6	Child -- Any time waterskiing, tubing, or doing similar activities? (1 = Yes, 0 = No)
b6ahr	Numeric	B6	Child -- Hours waterskiing, tubing, or doing similar activities
b6amin	Numeric	B6	Child -- Minutes waterskiing, tubing, or doing similar activities
b6aduration	Numeric	B6	Child's total hours spent waterskiing,tubing, similar activities
b6byesno	Numeric	B6	Child -- Any time wading in water shallower than waist deep? (1 = Yes, 0 = No)
b6bhr	Numeric	B6	Child -- Hours wading in water shallower than waist deep
b6bmin	Numeric	B6	Child -- Minutes wading in water shallower than waist deep
b6bduration	Numeric	B6	Child's total hours spent wading in water shallower than waist deep
b6cyesno	Numeric	B6	Child -- Any time swimming or wading in water over waist deep? (1 = Yes, 0 = No)
b6chr	Numeric	B6	Child -- Hours swimming or wading in water over waist deep
b6cmin	Numeric	B6	Child -- Minutes swimming or wading in water over waist deep
b6cduration	Numeric	B6	Child's total hours spent swimming in water deeper than waist deep
b6dyesno	Numeric	B6	Child -- Any time hanging out on the beach or sand along the shore? (1 = Yes, 0 = No)
b6dhr	Numeric	B6	Child -- Hours hanging out on the beach or sand along the shore
b6dmin	Numeric	B6	Child -- Minutes hanging out on the beach or sand along the shore
b6dduration	Numeric	B6	Child's total hours spent on the beach or sand along shore
b6eyesno	Numeric	B6	Child -- Any time sleeping or relaxing inside a tent? (1 = Yes, 0 = No)
b6ehr	Numeric	B6	Child -- Hours sleeping or relaxing inside a tent
b6emin	Numeric	B6	Child -- Minutes sleeping or relaxing inside a tent
b6eduration	Numeric	B6	Child's total hours spent inside a tent
b7	Numeric	B7	Drink any UCR water since launching boat? (1 = Yes, 0 = No)
b8yesno	Numeric	B8	Was the trip longer than 24 hours? (1 = Yes, 0 = No)
b8adult	Numeric	B8	Adult -- Amount of UCR water consumed (1 = less than 8 oz., 2 = 8 oz., 3 = 12 oz., 4 = 16 oz., 5 = 20 oz., 6 = more than 20 oz.)
b8child	Numeric	B8	Child -- Amount of UCR water consumed (1 = less than 8 oz., 2 = 8 oz., 3 = 12 oz., 4 = 16 oz., 5 = 20 oz., 6 = more than 20 oz.)
c1	Numeric	C1	Any overnight camping trips to UCR in last year? (1 = Yes, 0 = No)
c2spyesno	Numeric	C2	Any UCR camping trips last spring (Apr/May/Jun)? (1 = Yes, 0 = No)
c3sploc1	Character	C3	UCR camping trips taken last spring (Mar/Apr/May), first location listed
c4spnights1	Numeric	C4	UCR camping trips taken last spring (Mar/Apr/May), first location listed, number of nights
c3sploc2	Character	C3	UCR camping trips taken last spring (Mar/Apr/May), second location listed
c4spnights2	Numeric	C4	UCR camping trips taken last spring (Mar/Apr/May), second location listed, number of nights
c3sploc3	Character	C3	UCR camping trips taken last spring (Mar/Apr/May), third location listed
c4spnights3	Numeric	C4	UCR camping trips taken last spring (Mar/Apr/May), third location listed, number of nights
c2suyesno	Numeric	C2	Any UCR camping trips last summer (Jun/Jul/Aug)? (1 = Yes, 0 = No)
c3suloc1	Character	C3	UCR camping trips taken last summer (Jun/Jul/Aug), first location listed
c4sunights1	Numeric	C4	UCR camping trips taken last summer (Jun/Jul/Aug), first location listed, number of nights
c3suloc2	Character	C3	UCR camping trips taken last summer (Jun/Jul/Aug), second location listed

c4sunights2	Numeric	C4	UCR camping trips taken last summer (Jun/Jul/Aug), second location listed, number of nights
c3suloc3	Character	C3	UCR camping trips taken last summer (Jun/Jul/Aug), third location listed
c4sunights3	Numeric	C4	UCR camping trips taken last summer (Jun/Jul/Aug), third location listed, number of nights
c2fayesno	Numeric	C2	Any UCR camping trips last fall (Sep/Oct/Nov)? (1 = Yes, 0 = No)
c3faloc1	Character	C3	UCR camping trips taken last fall (Sep/Oct/Nov), first location listed
c4fanights1	Numeric	C4	UCR camping trips taken last fall (Sep/Oct/Nov), first location listed, number of nights
c3faloc2	Character	C3	UCR camping trips taken last fall (Sep/Oct/Nov), second location listed
c4fanights2	Numeric	C4	UCR camping trips taken last fall (Sep/Oct/Nov), second location listed, number of nights
c3faloc3	Character	C3	UCR camping trips taken last fall (Sep/Oct/Nov), third location listed
c4fanights3	Numeric	C4	UCR camping trips taken last fall (Sep/Oct/Nov), third location listed, number of nights
c2wiyesno	Numeric	C2	Any UCR camping trips last winter (Dec/Jan/Feb)? (1 = Yes, 0 = No)
c3wiloc1	Character	C3	UCR camping trips taken last winter (Dec/Jan/Feb), first location listed
c4winights1	Numeric	C4	UCR camping trips taken last winter (Dec/Jan/Feb), first location listed, number of nights
c3wiloc2	Character	C3	UCR camping trips taken last winter (Dec/Jan/Feb), second location listed
c4winights2	Numeric	C4	UCR camping trips taken last winter (Dec/Jan/Feb), second location listed, number of nights
c3wiloc3	Character	C3	UCR camping trips taken last winter (Dec/Jan/Feb), third location listed
c4winights3	Numeric	C4	UCR camping trips taken last winter (Dec/Jan/Feb), third location listed, number of nights
c2cuyesno	Numeric	C2	Any UCR camping trips so far this season? (1 = Yes, 0 = No)
c3culoc1	Character	C3	UCR camping trips taken so far this season, first location listed
c4cunights1	Numeric	C4	UCR camping trips taken so far this season, first location listed, number of nights
c3culoc2	Character	C3	UCR camping trips taken so far this season, second location listed
c4cunights2	Numeric	C4	UCR camping trips taken so far this season, second location listed, number of nights
c3culoc3	Character	C3	UCR camping trips taken so far this season, third location listed
c4cunights3	Numeric	C4	UCR camping trips taken so far this season, third location listed, number of nights
c5	Numeric	C5	Any boating day trips to UCR in last year? (1 = Yes, 0 = No)
c6spyesno	Numeric	C6	Any UCR boating day trips last spring (Mar/Apr/May)? (1 = Yes, 0 = No)
c7sploc1	Character	C7	UCR boating day trips taken last spring (Mar/Apr/May), first location listed
c8sptrips1	Numeric	C8	UCR boating day trips taken last spring (Mar/Apr/May), first location listed, number of day trips
c9sparea1	Character	C9	UCR boating day trips taken last spring (Mar/Apr/May), first location listed, area of lake visited (1-8)
c7sploc2	Character	C7	UCR boating day trips taken last spring (Mar/Apr/May), second location listed
c8sptrips2	Numeric	C8	UCR boating day trips taken last spring (Mar/Apr/May), second location listed, number of day trips
c9sparea2	Character	C9	UCR boating day trips taken last spring (Mar/Apr/May), second location listed, area of lake visited (1-8)
c7sploc3	Character	C7	UCR boating day trips taken last spring (Mar/Apr/May), third location listed
c8sptrips3	Numeric	C8	UCR boating day trips taken last spring (Mar/Apr/May), third location listed, number of day trips
c9sparea3	Character	C9	UCR boating day trips taken last spring (Mar/Apr/May), third location listed, area of lake visited (1-8)
c6suyesno	Numeric	C6	Any UCR boating day trips last summer (Jun/Jul/Aug)? (1 = Yes, 0 = No)
c7suloc1	Character	C7	UCR boating day trips taken last summer (Jun/Jul/Aug), first location listed
c8sutrips1	Numeric	C8	UCR boating day trips taken last summer (Jun/Jul/Aug), first location listed, number of day trips
c9suarea1	Character	C9	UCR boating day trips taken last summer (Jun/Jul/Aug), first location listed, area of lake visited (1-8)
c7suloc2	Character	C7	UCR boating day trips taken last summer (Jun/Jul/Aug), second location listed
c8sutrips2	Numeric	C8	UCR boating day trips taken last summer (Jun/Jul/Aug), second location listed, number of day trips
c9suarea2	Character	C9	UCR boating day trips taken last summer (Jun/Jul/Aug), second location listed, area of lake visited (1-8)
c7suloc3	Character	C7	UCR boating day trips taken last summer (Jun/Jul/Aug), third location listed
c8sutrips3	Numeric	C8	UCR boating day trips taken last summer (Jun/Jul/Aug), third location listed, number of day trips
c9suarea3	Character	C9	UCR boating day trips taken last summer (Jun/Jul/Aug), third location listed, area of lake visited (1-8)
c6fayesno	Numeric	C6	Any UCR boating day trips last fall (Sep/Oct/Nov)? (1 = Yes, 0 = No)
c7faloc1	Character	C7	UCR boating day trips taken last fall (Sep/Oct/Nov), first location listed
c8fatrips1	Numeric	C8	UCR boating day trips taken last fall (Sep/Oct/Nov), first location listed, number of day trips
c9faarea1	Character	C9	UCR boating day trips taken last fall (Sep/Oct/Nov), first location listed, area of lake visited (1-8)
c7faloc2	Character	C7	UCR boating day trips taken last fall (Sep/Oct/Nov), second location listed
c8fatrips2	Numeric	C8	UCR boating day trips taken last fall (Sep/Oct/Nov), second location listed, number of day trips
c9faarea2	Character	C9	UCR boating day trips taken last fall (Sep/Oct/Nov), second location listed, area of lake visited (1-8)
c7faloc3	Character	C7	UCR boating day trips taken last fall (Sep/Oct/Nov), third location listed
c8fatrips3	Numeric	C8	UCR boating day trips taken last fall (Sep/Oct/Nov), third location listed, number of day trips
c9faarea3	Character	C9	UCR boating day trips taken last fall (Sep/Oct/Nov), third location listed, area of lake visited (1-8)
c6wiyesno	Numeric	C6	Any UCR boating day trips last winter (Dec/Jan/Feb)? (1 = Yes, 0 = No)
c7wiloc1	Character	C7	UCR boating day trips taken last winter (Dec/Jan/Feb), first location listed
c8witrips1	Numeric	C8	UCR boating day trips taken last winter (Dec/Jan/Feb), first location listed, number of day trips
c9wiarea1	Character	C9	UCR boating day trips taken last winter (Dec/Jan/Feb), first location listed, area of lake visited (1-8)
c7wiloc2	Character	C7	UCR boating day trips taken last winter (Dec/Jan/Feb), second location listed
c8witrips2	Numeric	C8	UCR boating day trips taken last winter (Dec/Jan/Feb), second location listed, number of day trips
c9wiarea2	Character	C9	UCR boating day trips taken last winter (Dec/Jan/Feb), second location listed, area of lake visited (1-8)
c7wiloc3	Character	C7	UCR boating day trips taken last winter (Dec/Jan/Feb), third location listed
c8witrips3	Numeric	C8	UCR boating day trips taken last winter (Dec/Jan/Feb), third location listed, number of day trips
c9wiarea3	Character	C9	UCR boating day trips taken last winter (Dec/Jan/Feb), third location listed, area of lake visited (1-8)

c6cuyesno	Numeric	C6	Any UCR boating day trips so far in the current season? (1 = Yes, 0 = No)
c7culoc1	Character	C7	UCR boating day trips taken so far this season, first location listed
c8cutrips1	Numeric	C8	UCR boating day trips taken so far this season, first location listed, number of day trips
c9cuarea1	Character	C9	UCR boating day trips taken so far this season, first location listed, area of lake visited (1-8)
c7culoc2	Character	C7	UCR boating day trips taken so far this season, second location listed
c8cutrips2	Numeric	C8	UCR boating day trips taken so far this season, second location listed, number of day trips
c9cuarea2	Character	C9	UCR boating day trips taken so far this season, second location listed, area of lake visited (1-8)
c7culoc3	Character	C7	UCR boating day trips taken so far this season, third location listed
c8cutrips3	Numeric	C8	UCR boating day trips taken so far this season, third location listed, number of day trips
c9cuarea3	Character	C9	UCR boating day trips taken so far this season, third location listed, area of lake visited (1-8)
c10	Numeric	C10	Any UCR beach day trips taken last summer (Jun/Jul/Aug/Sep)? (1 = Yes, 0 = No)
c11loc1	Character	C11	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), first location listed
c12trips1	Numeric	C12	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), first location listed, number of day trips
c11loc2	Character	C11	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), second location listed
c12trips2	Numeric	C12	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), second location listed, number of day trips
c11loc3	Character	C11	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), third location listed
c12trips3	Numeric	C12	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), third location listed, number of day trips
c11loc4	Character	C11	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), fourth location listed
c12trips4	Numeric	C12	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), fourth location listed, number of day trips
d1	Numeric	D1	Fish in the Upper Columbia River? (1 = Yes, 0 = No)
d2	Numeric	D2	Eat fish from the Upper Columbia River? (1 = Yes, 0 = No)
d3koyesno	Numeric	D3	Eaten kokanee from UCR over past 12 months? (1 = Yes, 0 = No)
d4komeals	Character	D4	Meals of kokanee from UCR over past 12 months
d4komealsnum	Numeric	D4	Numeric meals of Kokanee from UCR over past 12 months
d5koarea	Character	D5	Area of UCR where kokanee was caught
d6kofillet	Numeric	D6	Eat fillet from kokanee? (1 = Yes, 0 = No)
d6koskin	Numeric	D6	Eat skin from kokanee? (1 = Yes, 0 = No)
d6koeggs	Numeric	D6	Eat eggs from kokanee? (1 = Yes, 0 = No)
d6kohead	Numeric	D6	Eat head from kokanee? (1 = Yes, 0 = No)
d6koguts	Numeric	D6	Eat guts from kokanee? (1 = Yes, 0 = No)
d7kokeep	Numeric	D7	Kept kokanee on current trip? (1 = Yes, 0 = No)
d8kosmall	Numeric	D8	Length of smallest kokanee kept on current trip (inches)
d8kolarge	Numeric	D8	Length of biggest kokanee kept on current trip (inches)
d3rtyesno	Numeric	D3	Eaten rainbow trout from UCR over past 12 months? (1 = Yes, 0 = No)
d4rtmeals	Character	D4	Meals of rainbow trout from UCR over past 12 months
d4rtmealsnum	Numeric	D4	Numeric meals of Rainbow Trout from UCR over past 12 months
d5rtarea	Character	D5	Area of UCR where rainbow trout was caught
d6rtfillet	Numeric	D6	Eat fillet from rainbow trout? (1 = Yes, 0 = No)
d6rtskin	Numeric	D6	Eat skin from rainbow trout? (1 = Yes, 0 = No)
d6rteggs	Numeric	D6	Eat eggs from rainbow trout? (1 = Yes, 0 = No)
d6rthead	Numeric	D6	Eat head from rainbow trout? (1 = Yes, 0 = No)
d6rtguts	Numeric	D6	Eat guts from rainbow trout? (1 = Yes, 0 = No)
d7rtkeep	Numeric	D7	Kept rainbow trout on current trip? (1 = Yes, 0 = No)
d8rtsmall	Numeric	D8	Length of smallest rainbow trout kept on current trip (inches)
d8rtlarge	Numeric	D8	Length of biggest rainbow trout kept on current trip (inches)
d3wayesno	Numeric	D3	Eaten walleye from UCR over past 12 months? (1 = Yes, 0 = No)
d4wameals	Character	D4	Meals of walleye from UCR over past 12 months
d4wamealsnum	Numeric	D4	Numeric meals of Walleye from UCR over past 12 months
d5waarea	Character	D5	Area of UCR where walleye was caught
d6wafillet	Numeric	D6	Eat fillet from walleye? (1 = Yes, 0 = No)
d6waskin	Numeric	D6	Eat skin from walleye? (1 = Yes, 0 = No)
d6waeggs	Numeric	D6	Eat eggs from walleye? (1 = Yes, 0 = No)
d6wahead	Numeric	D6	Eat head from walleye? (1 = Yes, 0 = No)
d6waguts	Numeric	D6	Eat guts from walleye? (1 = Yes, 0 = No)
d7wakeep	Numeric	D7	Kept walleye on current trip? (1 = Yes, 0 = No)
d8wasmall	Numeric	D8	Length of smallest walleye kept on current trip (inches)
d8walarge	Numeric	D8	Length of biggest walleye kept on current trip (inches)
d3bayesno	Numeric	D3	Eaten bass from UCR over past 12 months? (1 = Yes, 0 = No)
d4bameals	Character	D4	Meals of bass from UCR over past 12 months
d4bamealsnum	Numeric	D4	Numeric meals of Bass from UCR over past 12 months
d5baarea	Character	D5	Area of UCR where bass was caught
d6bafillet	Numeric	D6	Eat fillet from bass? (1 = Yes, 0 = No)
d6baskin	Numeric	D6	Eat skin from bass? (1 = Yes, 0 = No)
d6baeggs	Numeric	D6	Eat eggs from bass? (1 = Yes, 0 = No)
d6bahead	Numeric	D6	Eat head from bass? (1 = Yes, 0 = No)

d6baguts	Numeric	D6	Eat guts from bass? (1 = Yes, 0 = No)
d7bakeep	Numeric	D7	Kept bass on current trip? (1 = Yes, 0 = No)
d8basmall	Numeric	D8	Length of smallest bass kept on current trip (inches)
d8balarge	Numeric	D8	Length of biggest bass kept on current trip (inches)
d3otyesno	Numeric	D3	Eaten other species from UCR over past 12 months? (1 = Yes, 0 = No)
d3otspecies	Character	D3	Name of other species eaten from UCR over past 12 months
d4otmeals	Character	D4	Meals of other species from UCR over past 12 months
d4otmealsnum	Numeric	D4	Numeric meals of other fish from UCR over past 12 months
d5otarea	Character	D5	Area of UCR where other species was caught
d6otfillet	Numeric	D6	Eat fillet from other species? (1 = Yes, 0 = No)
d6otskin	Numeric	D6	Eat skin from other species? (1 = Yes, 0 = No)
d6oteggs	Numeric	D6	Eat eggs from other species? (1 = Yes, 0 = No)
d6othead	Numeric	D6	Eat head from other species? (1 = Yes, 0 = No)
d6otguts	Numeric	D6	Eat guts from other species? (1 = Yes, 0 = No)
d7otkeep	Numeric	D7	Kept other species on current trip? (1 = Yes, 0 = No)
d8otsmall	Numeric	D8	Length of smallest other species kept on current trip (inches)
d8otlarge	Numeric	D8	Length of biggest other species kept on current trip (inches)
d9	Numeric	D9	Typical fillet size (1 = less than 6 oz., 2 = 6 oz., 3 = 8 oz., 4 = 10 oz., 5 = more than 10 oz.)
d10	Numeric	D10	Typically share UCR fish with children (1 = Yes, 0 = No)
d10kids0to6	Numeric	D10	Typically share UCR fish with children 0 to 6? (1 = Yes, 0 = No)
d10kids7to17	Numeric	D10	Typically share UCR fish with children 7 to 17? (1 = Yes, 0 = No)
d11	Numeric	D11	Aware of fish consumption advisories for Upper Columbia River? (1 = Yes, 0 = No)
d12signs	Numeric	D12	First heard about the advisories through posted signs (1 = Yes, 0 = No)
d12regs	Numeric	D12	First heard about the advisories through fishing regulations (1 = Yes, 0 = No)
d12friends	Numeric	D12	First heard about the advisories through friend or family (1 = Yes, 0 = No)
d12web	Numeric	D12	First heard about the advisories through website (1 = Yes, 0 = No)
d12news	Numeric	D12	First heard about the advisories through newspaper (1 = Yes, 0 = No)
d12other	Numeric	D12	First heard about the advisories through other means (1 = Yes, 0 = No)
d12specify	Character	D12	Other source of advisory information
d13	Numeric	D13	Advisories helpful in making decisions about eating fish from the UCR? (1 = Yes, 0 = No)
d13why	Character	D13	Why the advisories are not helpful in making decisions about eating fish from the UCR
d14	Numeric	D14	Generally follow the advisory recommendations? (1 = Yes, 0 = No)
d15a	Numeric	D15	Advisory response: Have you changed how often you fish in the UCR? (1 = Yes, 0 = No)
d15ahow	Numeric	D15	Fish in the UCR more or less often? (1 = More, 0 = Less)
d15b	Numeric	D15	Advisory response: Have you changed how often you eat fish from the UCR? (1 = Yes, 0 = No)
d15bhow	Numeric	D15	Eat UCR fish more or less often? (1 = More, 0 = Less)
d15c	Numeric	D15	Advisory response: Have you changed how you clean the fish that you catch from the UCR? (1 = Yes, 0 = No)
d15d	Numeric	D15	Advisory response: Have you changed the species that you target when fishing the UCR? (1 = Yes, 0 = No)
d15e	Numeric	D15	Advisory response: Have you changed how often you share fish from the UCR with family? (1 = Yes, 0 = No)
d15ehow	Numeric	D15	Share UCR fish with your family more or less often? (1 = More, 0 = Less)
e1	Numeric	E1	Year of birth
e2	Character	E2	Zip code or postal code
e3	Numeric	E3	CCT tribal use survey participant? (1 = Yes, 0 = No)
e4	Numeric	E4	Gender (1 = Male, 0 = Female)
e5	Numeric	E5	Type of boating trip (1 = Boat launch, 2 = Rented boat slip, 3 = Rented houseboat)
e6	Numeric	E6	Has respondent completed survey before (1 = Yes, 0 = No)
e7	Numeric	E7	Did respondent consume at least 10 fish meals from UCR in last 12 months? (1 = Yes, 0 = No)
e8	Numeric	E8	Respondent interested in participating in diary study? (1 = Yes, 0 = No)
w_trip	Numeric	N/A	Sampling weight for characterizing boating trips
w_person	Numeric	N/A	Sampling weight for characterizing respondents

Beach.csv (430 rows, 239 columns)

Variable Name	Type	Question Number	Description
id	Numeric	N/A	Unique ID assigned to every completed survey
interviewer	Character	N/A	Name of interviewer
location	Character	N/A	Location of interview (e.g., Kettle Falls)
intdate	Character	N/A	Interview date
stratum	Numeric	N/A	Temporal sampling stratum (1 to 11) -- see Exhibit 3 of Sampling and Analysis Plan
region	Character	N/A	Spatial sampling stratum (Upper, Middle, or Lower UCR)
ucrarea	Numeric	N/A	UCR Lake Area (1 to 8)
inttime	Character	N/A	Time of interview
intampm	Numeric	N/A	Time of interview: AM/PM (1 = AM, 0 = PM)
inthourmin	Numeric	N/A	Numeric interview time (hours since midnight)
targeted	Numeric	N/A	Was the survey completed by the adult with the most recent birthday? (1 = Yes, 0 = No)
a1	Numeric	A1	Has respondent completed the survey before? (1 = Yes, 0 = No)
a2	Numeric	A2	Camping at the UCR tonight? (1 = Yes, 0 = No)
a3	Numeric	A3	Camped at UCR last night? (1 = Yes, 0 = No)
a4adults	Numeric	A4	Number of adults in group
a4kids0to7	Numeric	A4	Number of kids 0 to 7 in group
a4kids7to17	Numeric	A4	Number of kids 7 to 17 in group
a6	Numeric	A6	Age of child with most recent birthday
a7	Numeric	A7	Gender of child with most recent birthday (1 = Boy, 0 = Girl)
b1time	Character	B1	Time respondent arrived at beach
b1ampm	Numeric	B1	Time respondent arrived at beach AM/PM (1 = AM, 0 = PM)
b1hourmin	Numeric	B1	Numeric arrival time (hours since midnight)
cutriplength	Numeric	N/A	Current trip length in hours (b1hourmin-inthourmin)
b2	Numeric	B2	Spent any time in the water? (1 = Yes, 0 = No)
b3hr	Numeric	B3	Hours swimming or wading over waist deep
b3min	Numeric	B3	Minutes swimming or wading over waist deep
b3duration	Numeric	B3	Adult's total hours spent swimming in water deeper than waist deep
b4hr	Numeric	B4	Hours wading in water shallower than waist deep
b4min	Numeric	B4	Minutes wading in water shallower than waist deep
b4duration	Numeric	B4	Adult's total hours spent wading in water shallower than waist deep
b5	Numeric	B5	Spent any time on the sand? (1 = Yes, 0 = No)
b5hr	Numeric	B5	Hours on sand
b5min	Numeric	B5	Minutes on sand
b5duration	Numeric	B5	Adult's total hours spent on the sand
b6	Numeric	B6	Child -- Spent any time in the water? (1 = Yes, 0 = No)
b7hr	Numeric	B7	Child -- Hours swimming or wading over waist deep
b7min	Numeric	B7	Child -- Minutes swimming or wading over waist deep
b7duration	Numeric	B7	Child's total hours spent swimming in water deeper than waist deep
b8hr	Numeric	B8	Child -- Hours wading in water shallower than waist deep
b8min	Numeric	B8	Child -- Minutes wading in water shallower than waist deep
b8duration	Numeric	B8	Child's total hours spent wading in water shallower than waist deep
b9	Numeric	B9	Child -- Spent any time on the sand? (1 = Yes, 0 = No)
b9hr	Numeric	B9	Child -- Hours on sand
b9min	Numeric	B9	Child -- Minutes on sand
b9duration	Numeric	B9	Child's total hours spent on the sand
b10	Numeric	B10	Drink any UCR water since arrival at beach? (1 = Yes, 0 = No)
b11adult	Numeric	B11	Adult -- Amount of UCR water consumed (1 = less than 8 oz., 2 = 8 oz., 3 = 12 oz., 4 = 16 oz., 5 = 20 oz., 6 = more than 20 oz.)
b11child	Numeric	B11	Child -- Amount of UCR water consumed (1 = less than 8 oz., 2 = 8 oz., 3 = 12 oz., 4 = 16 oz., 5 = 20 oz., 6 = more than 20 oz.)
c1	Numeric	C1	Any overnight camping trips to UCR in last year? (1 = Yes, 0 = No)
c2spyesno	Numeric	C2	Any UCR camping trips last spring (Apr/May/Jun)? (1 = Yes, 0 = No)
c3sploc1	Character	C3	UCR camping trips taken last spring (Mar/Apr/May), first location listed
c4spnights1	Numeric	C4	UCR camping trips taken last spring (Mar/Apr/May), first location listed, number of nights
c3sploc2	Character	C3	UCR camping trips taken last spring (Mar/Apr/May), second location listed
c4spnights2	Numeric	C4	UCR camping trips taken last spring (Mar/Apr/May), second location listed, number of nights
c3sploc3	Character	C3	UCR camping trips taken last spring (Mar/Apr/May), third location listed
c4spnights3	Numeric	C4	UCR camping trips taken last spring (Mar/Apr/May), third location listed, number of nights
c2suyesno	Numeric	C2	Any UCR camping trips last summer (Jun/Jul/Aug)? (1 = Yes, 0 = No)
c3suloc1	Character	C3	UCR camping trips taken last summer (Jun/Jul/Aug), first location listed
c4sunights1	Numeric	C4	UCR camping trips taken last summer (Jun/Jul/Aug), first location listed, number of nights

c3suloc2	Character	C3	UCR camping trips taken last summer (Jun/Jul/Aug), second location listed
c4sunights2	Numeric	C4	UCR camping trips taken last summer (Jun/Jul/Aug), second location listed, number of nights
c3suloc3	Character	C3	UCR camping trips taken last summer (Jun/Jul/Aug), third location listed
c4sunights3	Numeric	C4	UCR camping trips taken last summer (Jun/Jul/Aug), third location listed, number of nights
c2fayesno	Numeric	C2	Any UCR camping trips last fall (Sep/Oct/Nov)? (1 = Yes, 0 = No)
c3faloc1	Character	C3	UCR camping trips taken last fall (Sep/Oct/Nov), first location listed
c4fanights1	Numeric	C4	UCR camping trips taken last fall (Sep/Oct/Nov), first location listed, number of nights
c3faloc2	Character	C3	UCR camping trips taken last fall (Sep/Oct/Nov), second location listed
c4fanights2	Numeric	C4	UCR camping trips taken last fall (Sep/Oct/Nov), second location listed, number of nights
c3faloc3	Character	C3	UCR camping trips taken last fall (Sep/Oct/Nov), third location listed
c4fanights3	Numeric	C4	UCR camping trips taken last fall (Sep/Oct/Nov), third location listed, number of nights
c2wiyesno	Numeric	C2	Any UCR camping trips last winter (Dec/Jan/Feb)? (1 = Yes, 0 = No)
c3wiloc1	Character	C3	UCR camping trips taken last winter (Dec/Jan/Feb), first location listed
c4winights1	Numeric	C4	UCR camping trips taken last winter (Dec/Jan/Feb), first location listed, number of nights
c3wiloc2	Character	C3	UCR camping trips taken last winter (Dec/Jan/Feb), second location listed
c4winights2	Numeric	C4	UCR camping trips taken last winter (Dec/Jan/Feb), second location listed, number of nights
c3wiloc3	Character	C3	UCR camping trips taken last winter (Dec/Jan/Feb), third location listed
c4winights3	Numeric	C4	UCR camping trips taken last winter (Dec/Jan/Feb), third location listed, number of nights
c2cuyesno	Numeric	C2	Any UCR camping trips so far this season? (1 = Yes, 0 = No)
c3culoc1	Character	C3	UCR camping trips taken so far this season, first location listed
c4cunights1	Numeric	C4	UCR camping trips taken so far this season, first location listed, number of nights
c3culoc2	Character	C3	UCR camping trips taken so far this season, second location listed
c4cunights2	Numeric	C4	UCR camping trips taken so far this season, second location listed, number of nights
c3culoc3	Character	C3	UCR camping trips taken so far this season, third location listed
c4cunights3	Numeric	C4	UCR camping trips taken so far this season, third location listed, number of nights
c5	Numeric	C5	Any boating day trips to UCR in last year? (1 = Yes, 0 = No)
c6spyesno	Numeric	C6	Any UCR boating day trips last spring (Mar/Apr/May)? (1 = Yes, 0 = No)
c7sploc1	Character	C7	UCR boating day trips taken last spring (Mar/Apr/May), first location listed
c8sptrips1	Numeric	C8	UCR boating day trips taken last spring (Mar/Apr/May), first location listed, number of day trips
c9sparea1	Character	C9	UCR boating day trips taken last spring (Mar/Apr/May), first location listed, area of lake visited (1-8)
c7sploc2	Character	C7	UCR boating day trips taken last spring (Mar/Apr/May), second location listed
c8sptrips2	Numeric	C8	UCR boating day trips taken last spring (Mar/Apr/May), second location listed, number of day trips
c9sparea2	Character	C9	UCR boating day trips taken last spring (Mar/Apr/May), second location listed, area of lake visited (1-8)
c7sploc3	Character	C7	UCR boating day trips taken last spring (Mar/Apr/May), third location listed
c8sptrips3	Numeric	C8	UCR boating day trips taken last spring (Mar/Apr/May), third location listed, number of day trips
c9sparea3	Character	C9	UCR boating day trips taken last spring (Mar/Apr/May), third location listed, area of lake visited (1-8)
c6suyesno	Numeric	C6	Any UCR boating day trips last summer (Jun/Jul/Aug)? (1 = Yes, 0 = No)
c7suloc1	Character	C7	UCR boating day trips taken last summer (Jun/Jul/Aug), first location listed
c8sutrips1	Numeric	C8	UCR boating day trips taken last summer (Jun/Jul/Aug), first location listed, number of day trips
c9suarea1	Character	C9	UCR boating day trips taken last summer (Jun/Jul/Aug), first location listed, area of lake visited (1-8)
c7suloc2	Character	C7	UCR boating day trips taken last summer (Jun/Jul/Aug), second location listed
c8sutrips2	Numeric	C8	UCR boating day trips taken last summer (Jun/Jul/Aug), second location listed, number of day trips
c9suarea2	Character	C9	UCR boating day trips taken last summer (Jun/Jul/Aug), second location listed, area of lake visited (1-8)
c7suloc3	Character	C7	UCR boating day trips taken last summer (Jun/Jul/Aug), third location listed
c8sutrips3	Numeric	C8	UCR boating day trips taken last summer (Jun/Jul/Aug), third location listed, number of day trips
c9suarea3	Character	C9	UCR boating day trips taken last summer (Jun/Jul/Aug), third location listed, area of lake visited (1-8)
c6fayesno	Numeric	C6	Any UCR boating day trips last fall (Sep/Oct/Nov)? (1 = Yes, 0 = No)
c7faloc1	Character	C7	UCR boating day trips taken last fall (Sep/Oct/Nov), first location listed
c8fatrips1	Numeric	C8	UCR boating day trips taken last fall (Sep/Oct/Nov), first location listed, number of day trips
c9faarea1	Character	C9	UCR boating day trips taken last fall (Sep/Oct/Nov), first location listed, area of lake visited (1-8)
c7faloc2	Character	C7	UCR boating day trips taken last fall (Sep/Oct/Nov), second location listed
c8fatrips2	Numeric	C8	UCR boating day trips taken last fall (Sep/Oct/Nov), second location listed, number of day trips
c9faarea2	Character	C9	UCR boating day trips taken last fall (Sep/Oct/Nov), second location listed, area of lake visited (1-8)
c7faloc3	Character	C7	UCR boating day trips taken last fall (Sep/Oct/Nov), third location listed
c8fatrips3	Numeric	C8	UCR boating day trips taken last fall (Sep/Oct/Nov), third location listed, number of day trips
c9faarea3	Character	C9	UCR boating day trips taken last fall (Sep/Oct/Nov), third location listed, area of lake visited (1-8)
c6wiyesno	Numeric	C6	Any UCR boating day trips last winter (Dec/Jan/Feb)? (1 = Yes, 0 = No)
c7wiloc1	Character	C7	UCR boating day trips taken last winter (Dec/Jan/Feb), first location listed
c8witrips1	Numeric	C8	UCR boating day trips taken last winter (Dec/Jan/Feb), first location listed, number of day trips
c9wiarea1	Character	C9	UCR boating day trips taken last winter (Dec/Jan/Feb), first location listed, area of lake visited (1-8)
c7wiloc2	Character	C7	UCR boating day trips taken last winter (Dec/Jan/Feb), second location listed
c8witrips2	Numeric	C8	UCR boating day trips taken last winter (Dec/Jan/Feb), second location listed, number of day trips
c9wiarea2	Character	C9	UCR boating day trips taken last winter (Dec/Jan/Feb), second location listed, area of lake visited (1-8)
c7wiloc3	Character	C7	UCR boating day trips taken last winter (Dec/Jan/Feb), third location listed
c8witrips3	Numeric	C8	UCR boating day trips taken last winter (Dec/Jan/Feb), third location listed, number of day trips

c9wiarea3	Character	C9	UCR boating day trips taken last winter (Dec/Jan/Feb), third location listed, area of lake visited (1-8)
c6cuyesno	Numeric	C6	Any UCR boating day trips so far in the current season? (1 = Yes, 0 = No)
c7culoc1	Character	C7	UCR boating day trips taken so far this season, first location listed
c8cutrips1	Numeric	C8	UCR boating day trips taken so far this season, first location listed, number of day trips
c9cuarea1	Character	C9	UCR boating day trips taken so far this season, first location listed, area of lake visited (1-8)
c7culoc2	Character	C7	UCR boating day trips taken so far this season, second location listed
c8cutrips2	Numeric	C8	UCR boating day trips taken so far this season, second location listed, number of day trips
c9cuarea2	Character	C9	UCR boating day trips taken so far this season, second location listed, area of lake visited (1-8)
c7culoc3	Character	C7	UCR boating day trips taken so far this season, third location listed
c8cutrips3	Numeric	C8	UCR boating day trips taken so far this season, third location listed, number of day trips
c9cuarea3	Character	C9	UCR boating day trips taken so far this season, third location listed, area of lake visited (1-8)
c10	Numeric	C10	Any UCR beach day trips taken last summer (Jun/Jul/Aug/Sep)? (1 = Yes, 0 = No)
c11loc1	Character	C11	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), first location listed
c12trips1	Numeric	C12	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), first location listed, number of day trips
c11loc2	Character	C11	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), second location listed
c12trips2	Numeric	C12	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), second location listed, number of day trips
c11loc3	Character	C11	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), third location listed
c12trips3	Numeric	C12	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), third location listed, number of day trips
c11loc4	Character	C11	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), fourth location listed
c12trips4	Numeric	C12	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), fourth location listed, number of day trips
d1	Numeric	D1	Fish in the Upper Columbia River? (1 = Yes, 0 = No)
d2	Numeric	D2	Eat fish from the Upper Columbia River? (1 = Yes, 0 = No)
d3koyesno	Numeric	D3	Eaten kokanee from UCR over past 12 months? (1 = Yes, 0 = No)
d4komeals	Character	D4	Meals of kokanee from UCR over past 12 months
d4komealsnum	Numeric	D4	Numeric meals of Kokanee from UCR over past 12 months
d5koarea	Character	D5	Area of UCR where kokanee was caught
d6kofillet	Numeric	D6	Eat fillet from kokanee? (1 = Yes, 0 = No)
d6koskin	Numeric	D6	Eat skin from kokanee? (1 = Yes, 0 = No)
d6koeggs	Numeric	D6	Eat eggs from kokanee? (1 = Yes, 0 = No)
d6kohead	Numeric	D6	Eat head from kokanee? (1 = Yes, 0 = No)
d6koguts	Numeric	D6	Eat guts from kokanee? (1 = Yes, 0 = No)
d7kokeep	Numeric	D7	Kept kokanee on current trip? (1 = Yes, 0 = No)
d8kosmall	Numeric	D8	Length of smallest kokanee kept on current trip (inches)
d8kolarge	Numeric	D8	Length of biggest kokanee kept on current trip (inches)
d3rtyesno	Numeric	D3	Eaten rainbow trout from UCR over past 12 months? (1 = Yes, 0 = No)
d4rtmeals	Character	D4	Meals of rainbow trout from UCR over past 12 months
d4rtmealsnum	Numeric	D4	Numeric meals of Rainbow Trout from UCR over past 12 months
d5rtarea	Character	D5	Area of UCR where rainbow trout was caught
d6rtfillet	Numeric	D6	Eat fillet from rainbow trout? (1 = Yes, 0 = No)
d6rtskin	Numeric	D6	Eat skin from rainbow trout? (1 = Yes, 0 = No)
d6rteggs	Numeric	D6	Eat eggs from rainbow trout? (1 = Yes, 0 = No)
d6rthead	Numeric	D6	Eat head from rainbow trout? (1 = Yes, 0 = No)
d6rtguts	Numeric	D6	Eat guts from rainbow trout? (1 = Yes, 0 = No)
d7rtkeep	Numeric	D7	Kept rainbow trout on current trip? (1 = Yes, 0 = No)
d8rtsmall	Numeric	D8	Length of smallest rainbow trout kept on current trip (inches)
d8rtlarge	Numeric	D8	Length of biggest rainbow trout kept on current trip (inches)
d3wayesno	Numeric	D3	Eaten walleye from UCR over past 12 months? (1 = Yes, 0 = No)
d4wameals	Character	D4	Meals of walleye from UCR over past 12 months
d4wamealsnum	Numeric	D4	Numeric meals of Walleye from UCR over past 12 months
d5waarea	Character	D5	Area of UCR where walleye was caught
d6wafillet	Numeric	D6	Eat fillet from walleye? (1 = Yes, 0 = No)
d6waskin	Numeric	D6	Eat skin from walleye? (1 = Yes, 0 = No)
d6waeggs	Numeric	D6	Eat eggs from walleye? (1 = Yes, 0 = No)
d6wahead	Numeric	D6	Eat head from walleye? (1 = Yes, 0 = No)
d6waguts	Numeric	D6	Eat guts from walleye? (1 = Yes, 0 = No)
d7wakeep	Numeric	D7	Kept walleye on current trip? (1 = Yes, 0 = No)
d8wasmall	Numeric	D8	Length of smallest walleye kept on current trip (inches)
d8walarge	Numeric	D8	Length of biggest walleye kept on current trip (inches)
d3bayesno	Numeric	D3	Eaten bass from UCR over past 12 months? (1 = Yes, 0 = No)
d4bameals	Character	D4	Meals of bass from UCR over past 12 months
d4bamealsnum	Numeric	D4	Numeric meals of Bass from UCR over past 12 months
d5baarea	Character	D5	Area of UCR where bass was caught
d6bafillet	Numeric	D6	Eat fillet from bass? (1 = Yes, 0 = No)
d6baskin	Numeric	D6	Eat skin from bass? (1 = Yes, 0 = No)
d6baeggs	Numeric	D6	Eat eggs from bass? (1 = Yes, 0 = No)

d6bahead	Numeric	D6	Eat head from bass? (1 = Yes, 0 = No)
d6baguts	Numeric	D6	Eat guts from bass? (1 = Yes, 0 = No)
d7bakeep	Numeric	D7	Kept bass on current trip? (1 = Yes, 0 = No)
d8basmall	Numeric	D8	Length of smallest bass kept on current trip (inches)
d8balarge	Numeric	D8	Length of biggest bass kept on current trip (inches)
d3otyesno	Numeric	D3	Eaten other species from UCR over past 12 months? (1 = Yes, 0 = No)
d3otspecies	Character	D3	Name of other species eaten from UCR over past 12 months
d4otmeals	Character	D4	Meals of other species from UCR over past 12 months
d4otmealsnum	Numeric	D4	Numeric meals of other fish from UCR over past 12 months
d5otarea	Character	D5	Area of UCR where other species was caught
d6otfillet	Numeric	D6	Eat fillet from other species? (1 = Yes, 0 = No)
d6otskin	Numeric	D6	Eat skin from other species? (1 = Yes, 0 = No)
d6oteggs	Numeric	D6	Eat eggs from other species? (1 = Yes, 0 = No)
d6othead	Numeric	D6	Eat head from other species? (1 = Yes, 0 = No)
d6otguts	Numeric	D6	Eat guts from other species? (1 = Yes, 0 = No)
d7otkeep	Numeric	D7	Kept other species on current trip? (1 = Yes, 0 = No)
d8otsmall	Numeric	D8	Length of smallest other species kept on current trip (inches)
d8otlarge	Numeric	D8	Length of biggest other species kept on current trip (inches)
d9	Numeric	D9	Typical fillet size (1 = less than 6 oz., 2 = 6 oz., 3 = 8 oz., 4 = 10 oz., 5 = more than 10 oz.)
d10	Numeric	D10	Typically share UCR fish with children (1 = Yes, 0 = No)
d10kids0to6	Numeric	D10	Typically share UCR fish with children 0 to 6? (1 = Yes, 0 = No)
d10kids7to17	Numeric	D10	Typically share UCR fish with children 7 to 17? (1 = Yes, 0 = No)
d11	Numeric	D11	Aware of fish consumption advisories for Upper Columbia River? (1 = Yes, 0 = No)
d12signs	Numeric	D12	First heard about the advisories through posted signs (1 = Yes, 0 = No)
d12regs	Numeric	D12	First heard about the advisories through fishing regulations (1 = Yes, 0 = No)
d12friends	Numeric	D12	First heard about the advisories through friend or family (1 = Yes, 0 = No)
d12web	Numeric	D12	First heard about the advisories through website (1 = Yes, 0 = No)
d12news	Numeric	D12	First heard about the advisories through newspaper (1 = Yes, 0 = No)
d12other	Numeric	D12	First heard about the advisories through other means (1 = Yes, 0 = No)
d12specify	Character	D12	Other source of advisory information
d13	Numeric	D13	Advisories helpful in making decisions about eating fish from the UCR? (1 = Yes, 0 = No)
d13why	Character	D13	Why the advisories are not helpful in making decisions about eating fish from the UCR
d14	Numeric	D14	Generally follow the advisory recommendations? (1 = Yes, 0 = No)
d15a	Numeric	D15	Advisory response: Have you changed how often you fish in the UCR? (1 = Yes, 0 = No)
d15ahow	Numeric	D15	Fish in the UCR more or less often? (1 = More, 0 = Less)
d15b	Numeric	D15	Advisory response: Have you changed how often you eat fish from the UCR? (1 = Yes, 0 = No)
d15bhow	Numeric	D15	Eat UCR fish more or less often? (1 = More, 0 = Less)
d15c	Numeric	D15	Advisory response: Have you changed how you clean the fish that you catch from the UCR? (1 = Yes, 0 = No)
d15d	Numeric	D15	Advisory response: Have you changed the species that you target when fishing the UCR? (1 = Yes, 0 = No)
d15e	Numeric	D15	Advisory response: Have you changed how often you share fish from the UCR with family? (1 = Yes, 0 = No)
d15ehow	Numeric	D15	Share UCR fish with your family more or less often? (1 = More, 0 = Less)
e1	Numeric	E1	Year of birth
e2	Character	E2	Zip code or postal code
e3	Numeric	E3	CCT tribal use survey participant? (1 = Yes, 0 = No)
e4	Numeric	E4	Gender (1 = Male, 0 = Female)
e5	Numeric	E5	Has respondent completed survey before (1 = Yes, 0 = No)
e6	Numeric	E6	Did respondent consume at least 10 fish meals from UCR in last 12 months? (1 = Yes, 0 = No)
e7	Numeric	E7	Respondent interested in participating in diary study? (1 = Yes, 0 = No)
w_trip	Numeric	N/A	Sampling weight for characterizing beach trips
w_person	Numeric	N/A	Sampling weight for characterizing respondents

Camp.csv (876 rows, 269 columns)

Variable Name	Type	Question Number	Description
id	Numeric	N/A	Unique ID assigned to every completed survey
interviewer	Character	N/A	Name of interviewer
campsite	Character	N/A	Campsite number
hostsite	Numeric	N/A	Campground host (1 = Yes, 0 = No)
groupsite	Numeric	N/A	Group campsite (1 = Yes, 0 = No)
location	Character	N/A	Location of interview (e.g., Kettle Falls)
intdate	Character	N/A	Interview date
stratum	Numeric	N/A	Temporal sampling stratum (1 to 11) -- see Exhibit 3 of Sampling and Analysis Plan
region	Character	N/A	Spatial sampling stratum (Upper, Middle, or Lower UCR)
ucrarea	Numeric	N/A	UCR Lake Area (1 to 8)
inttime	Character	N/A	Time of interview
intampm	Numeric	N/A	Interview time: AM/PM (1 = AM, 0 = PM)
inthourmin	Numeric	N/A	Numeric interview time (hours since midnight)
numintdatetime	Numeric	N/A	Numeric interview date and time (hours since 1960)
targeted	Numeric	N/A	Was the survey completed by the adult with the most recent birthday? (1 = Yes, 0 = No)
a1	Numeric	A1	Has respondent completed the survey before? (1 = Yes, 0 = No)
a2adults	Numeric	A2	Number of adults at campsite
a2kids0to7	Numeric	A2	Number of kids 0 to 7 at campsite
a2kids7to17	Numeric	A2	Number of kids 7 to 17 at campsite
a4	Numeric	A4	Age of child with most recent birthday
a5	Numeric	A5	Gender of child with most recent birthday (1 = Boy, 0 = Girl)
b1date	Character	B1	Date respondent arrived at UCR
b1time	Character	B1	Time respondent arrived at UCR
b1ampm	Numeric	B1	Time respondent arrived at UCR AM/PM (1 = AM, 0 = PM)
b1hourmin	Numeric	B1	Numeric arrival time (hours since midnight)
numb1datetime	Numeric	B1	Numeric arrival date and time (hours since 1960)
b2date	Character	B2	Date respondent plans to leave UCR
b2time	Character	B2	Time respondent plans to leave UCR
b2ampm	Numeric	B2	Time respondent plans to leave AM/PM (1 = AM, 0 = PM)
b2dk	Numeric	B2	Time respondent plans to leave -- DK (1 = Selected "Don't know", 0 = Did not select "Don't know"
b2hourmin	Numeric	B2	Numeric departure time (hours past midnight)
numb2datetime	Numeric	B2	Numeric departure date and time (hours since 1960)
cutriplength	Numeric	N/A	Length of trip at time of interview in hours (numintdatetime - numb1datetime)
exptriplength	Numeric	N/A	Expected total trip length in hours (numb2datetime - numb1datetime)
b3	Numeric	B3	Did respondent bring boat? (1 = Yes, 0 = No)
b4ayesno	Numeric	B4	Any time waterskiing, tubing, or doing similar activities? (1 = Yes, 0 = No)
b4ahr	Numeric	B4	Hours waterskiing, tubing, or doing similar activities
b4amin	Numeric	B4	Minutes waterskiing, tubing, or doing similar activities
b4aduration	Numeric	B4	Adult's total hours spent waterskiing, tubing, or doing similar activities
b4byesno	Numeric	B4	Any time wading in water shallower than waist deep? (1 = Yes, 0 = No)
b4bhr	Numeric	B4	Hours wading in water shallower than waist deep
b4bmin	Numeric	B4	Minutes wading in water shallower than waist deep
b4bduration	Numeric	B4	Adult's total hours spent wading in water shallower than waist deep
b4cyesno	Numeric	B4	Any time swimming or wading in water over waist deep? (1 = Yes, 0 = No)
b4chr	Numeric	B4	Hours swimming or wading in water over waist deep
b4cmin	Numeric	B4	Minutes swimming or wading in water over waist deep
b4cduration	Numeric	B4	Adult's total hours spent swimming in water deeper than waist deep
b4dyesno	Numeric	B4	Any time hanging out on the beach or sand along the shore? (1 = Yes, 0 = No)
b4dhr	Numeric	B4	Hours hanging out on the beach or sand along the shore
b4dmin	Numeric	B4	Minutes hanging out on the beach or sand along the shore
b4dduration	Numeric	B4	Adult's total hours spent on the beach or sand along shore
b4eyesno	Numeric	B4	Any time inside a tent, camper, or RV? (1 = Yes, 0 = No)
b4ehr	Numeric	B4	Hours inside a tent, camper, or RV
b4emin	Numeric	B4	Minutes inside a tent, camper, or RV
b4eduration	Numeric	B4	Adult's total hours spent inside a tent
b5ayesno	Numeric	B5	Child -- Any time waterskiing, tubing, or doing similar activities? (1 = Yes, 0 = No)
b5ahr	Numeric	B5	Child -- Hours waterskiing, tubing, or doing similar activities
b5amin	Numeric	B5	Child -- Minutes waterskiing, tubing, or doing similar activities
b5aduration	Numeric	B5	Child's total hours spent waterskiing,tubing, similar activities
b5byesno	Numeric	B5	Child -- Any time wading in water shallower than waist deep? (1 = Yes, 0 = No)
b5bhr	Numeric	B5	Child -- Hours wading in water shallower than waist deep

b5bmin	Numeric	B5	Child -- Minutes wading in water shallower than waist deep
b5bduration	Numeric	B5	Child's total hours spent wading in water shallower than waist deep
b5cyesno	Numeric	B5	Child -- Any time swimming or wading in water over waist deep? (1 = Yes, 0 = No)
b5chr	Numeric	B5	Child -- Hours swimming or wading in water over waist deep
b5cmin	Numeric	B5	Child -- Minutes swimming or wading in water over waist deep
b5cduration	Numeric	B5	Child's total hours spent swimming in water deeper than waist deep
b5dyesno	Numeric	B5	Child -- Any time hanging out on the beach or sand along the shore? (1 = Yes, 0 = No)
b5dhr	Numeric	B5	Child -- Hours hanging out on the beach or sand along the shore
b5dmin	Numeric	B5	Child -- Minutes hanging out on the beach or sand along the shore
b5dduration	Numeric	B5	Child's total hours spent on the beach or sand along shore
b5eyesno	Numeric	B5	Child -- Any time inside a tent, camper, or RV? (1 = Yes, 0 = No)
b5ehr	Numeric	B5	Child -- Hours inside a tent, camper, or RV
b5emin	Numeric	B5	Child -- Minutes inside a tent, camper, or RV
b5eduration	Numeric	B5	Child's total hours spent inside a tent
b6	Numeric	B6	Drink any UCR water since arrival? (1 = Yes, 0 = No)
b7adult	Numeric	B7	Adult -- Amount of UCR water consumed in last 24 hours (1 = less than 8 oz., 2 = 8 oz., 3 = 12 oz., 4 = 16 oz., 5 = 20 oz., 6 = more than 20 oz.)
b7child	Numeric	B7	Child -- Amount of UCR water consumed in last 24 hours (1 = less than 8 oz., 2 = 8 oz., 3 = 12 oz., 4 = 16 oz., 5 = 20 oz., 6 = more than 20 oz.)
c1	Numeric	C1	Any overnight camping trips to UCR in last year? (1 = Yes, 0 = No)
c2spyesno	Numeric	C2	Any UCR camping trips last spring (Apr/May/Jun)? (1 = Yes, 0 = No)
c3sploc1	Character	C3	UCR camping trips taken last spring (Mar/Apr/May), first location listed
c4spnights1	Numeric	C4	UCR camping trips taken last spring (Mar/Apr/May), first location listed, number of nights
c3sploc2	Character	C3	UCR camping trips taken last spring (Mar/Apr/May), second location listed
c4spnights2	Numeric	C4	UCR camping trips taken last spring (Mar/Apr/May), second location listed, number of nights
c3sploc3	Character	C3	UCR camping trips taken last spring (Mar/Apr/May), third location listed
c4spnights3	Numeric	C4	UCR camping trips taken last spring (Mar/Apr/May), third location listed, number of nights
c2suyesno	Numeric	C2	Any UCR camping trips last summer (Jun/Jul/Aug)? (1 = Yes, 0 = No)
c3suloc1	Character	C3	UCR camping trips taken last summer (Jun/Jul/Aug), first location listed
c4sunights1	Numeric	C4	UCR camping trips taken last summer (Jun/Jul/Aug), first location listed, number of nights
c3suloc2	Character	C3	UCR camping trips taken last summer (Jun/Jul/Aug), second location listed
c4sunights2	Numeric	C4	UCR camping trips taken last summer (Jun/Jul/Aug), second location listed, number of nights
c3suloc3	Character	C3	UCR camping trips taken last summer (Jun/Jul/Aug), third location listed
c4sunights3	Numeric	C4	UCR camping trips taken last summer (Jun/Jul/Aug), third location listed, number of nights
c2fayesno	Numeric	C2	Any UCR camping trips last fall (Sep/Oct/Nov)? (1 = Yes, 0 = No)
c3faloc1	Character	C3	UCR camping trips taken last fall (Sep/Oct/Nov), first location listed
c4fanights1	Numeric	C4	UCR camping trips taken last fall (Sep/Oct/Nov), first location listed, number of nights
c3faloc2	Character	C3	UCR camping trips taken last fall (Sep/Oct/Nov), second location listed
c4fanights2	Numeric	C4	UCR camping trips taken last fall (Sep/Oct/Nov), second location listed, number of nights
c3faloc3	Character	C3	UCR camping trips taken last fall (Sep/Oct/Nov), third location listed
c4fanights3	Numeric	C4	UCR camping trips taken last fall (Sep/Oct/Nov), third location listed, number of nights
c2wiyesno	Numeric	C2	Any UCR camping trips last winter (Dec/Jan/Feb)? (1 = Yes, 0 = No)
c3wiloc1	Character	C3	UCR camping trips taken last winter (Dec/Jan/Feb), first location listed
c4winights1	Numeric	C4	UCR camping trips taken last winter (Dec/Jan/Feb), first location listed, number of nights
c3wiloc2	Character	C3	UCR camping trips taken last winter (Dec/Jan/Feb), second location listed
c4winights2	Numeric	C4	UCR camping trips taken last winter (Dec/Jan/Feb), second location listed, number of nights
c3wiloc3	Character	C3	UCR camping trips taken last winter (Dec/Jan/Feb), third location listed
c4winights3	Numeric	C4	UCR camping trips taken last winter (Dec/Jan/Feb), third location listed, number of nights
c2cuyesno	Numeric	C2	Any UCR camping trips so far this season? (1 = Yes, 0 = No)
c3culoc1	Character	C3	UCR camping trips taken so far this season, first location listed
c4cunights1	Numeric	C4	UCR camping trips taken so far this season, first location listed, number of nights
c3culoc2	Character	C3	UCR camping trips taken so far this season, second location listed
c4cunights2	Numeric	C4	UCR camping trips taken so far this season, second location listed, number of nights
c3culoc3	Character	C3	UCR camping trips taken so far this season, third location listed
c4cunights3	Numeric	C4	UCR camping trips taken so far this season, third location listed, number of nights
c5	Numeric	C5	Any boating day trips to UCR in last year? (1 = Yes, 0 = No)
c6spyesno	Numeric	C6	Any UCR boating day trips last spring (Mar/Apr/May)? (1 = Yes, 0 = No)
c7sploc1	Character	C7	UCR boating day trips taken last spring (Mar/Apr/May), first location listed
c8sptrips1	Numeric	C8	UCR boating day trips taken last spring (Mar/Apr/May), first location listed, number of day trips
c9sparea1	Character	C9	UCR boating day trips taken last spring (Mar/Apr/May), first location listed, area of lake visited (1-8)
c7sploc2	Character	C7	UCR boating day trips taken last spring (Mar/Apr/May), second location listed
c8sptrips2	Numeric	C8	UCR boating day trips taken last spring (Mar/Apr/May), second location listed, number of day trips
c9sparea2	Character	C9	UCR boating day trips taken last spring (Mar/Apr/May), second location listed, area of lake visited (1-8)
c7sploc3	Character	C7	UCR boating day trips taken last spring (Mar/Apr/May), third location listed
c8sptrips3	Numeric	C8	UCR boating day trips taken last spring (Mar/Apr/May), third location listed, number of day trips

c9sparea3	Character	C9	UCR boating day trips taken last spring (Mar/Apr/May), third location listed, area of lake visited (1-8)
c6suyesno	Numeric	C6	Any UCR boating day trips last summer (Jun/Jul/Aug)? (1 = Yes, 0 = No)
c7suloc1	Character	C7	UCR boating day trips taken last summer (Jun/Jul/Aug), first location listed
c8sutrips1	Numeric	C8	UCR boating day trips taken last summer (Jun/Jul/Aug), first location listed, number of day trips
c9suarea1	Character	C9	UCR boating day trips taken last summer (Jun/Jul/Aug), first location listed, area of lake visited (1-8)
c7suloc2	Character	C7	UCR boating day trips taken last summer (Jun/Jul/Aug), second location listed
c8sutrips2	Numeric	C8	UCR boating day trips taken last summer (Jun/Jul/Aug), second location listed, number of day trips
c9suarea2	Character	C9	UCR boating day trips taken last summer (Jun/Jul/Aug), second location listed, area of lake visited (1-8)
c7suloc3	Character	C7	UCR boating day trips taken last summer (Jun/Jul/Aug), third location listed
c8sutrips3	Numeric	C8	UCR boating day trips taken last summer (Jun/Jul/Aug), third location listed, number of day trips
c9suarea3	Character	C9	UCR boating day trips taken last summer (Jun/Jul/Aug), third location listed, area of lake visited (1-8)
c6fayesno	Numeric	C6	Any UCR boating day trips last fall (Sep/Oct/Nov)? (1 = Yes, 0 = No)
c7faloc1	Character	C7	UCR boating day trips taken last fall (Sep/Oct/Nov), first location listed
c8fatrips1	Numeric	C8	UCR boating day trips taken last fall (Sep/Oct/Nov), first location listed, number of day trips
c9faarea1	Character	C9	UCR boating day trips taken last fall (Sep/Oct/Nov), first location listed, area of lake visited (1-8)
c7faloc2	Character	C7	UCR boating day trips taken last fall (Sep/Oct/Nov), second location listed
c8fatrips2	Numeric	C8	UCR boating day trips taken last fall (Sep/Oct/Nov), second location listed, number of day trips
c9faarea2	Character	C9	UCR boating day trips taken last fall (Sep/Oct/Nov), second location listed, area of lake visited (1-8)
c7faloc3	Character	C7	UCR boating day trips taken last fall (Sep/Oct/Nov), third location listed
c8fatrips3	Numeric	C8	UCR boating day trips taken last fall (Sep/Oct/Nov), third location listed, number of day trips
c9faarea3	Character	C9	UCR boating day trips taken last fall (Sep/Oct/Nov), third location listed, area of lake visited (1-8)
c6wiyesno	Numeric	C6	Any UCR boating day trips last winter (Dec/Jan/Feb)? (1 = Yes, 0 = No)
c7wiloc1	Character	C7	UCR boating day trips taken last winter (Dec/Jan/Feb), first location listed
c8witrips1	Numeric	C8	UCR boating day trips taken last winter (Dec/Jan/Feb), first location listed, number of day trips
c9wiarea1	Character	C9	UCR boating day trips taken last winter (Dec/Jan/Feb), first location listed, area of lake visited (1-8)
c7wiloc2	Character	C7	UCR boating day trips taken last winter (Dec/Jan/Feb), second location listed
c8witrips2	Numeric	C8	UCR boating day trips taken last winter (Dec/Jan/Feb), second location listed, number of day trips
c9wiarea2	Character	C9	UCR boating day trips taken last winter (Dec/Jan/Feb), second location listed, area of lake visited (1-8)
c7wiloc3	Character	C7	UCR boating day trips taken last winter (Dec/Jan/Feb), third location listed
c8witrips3	Numeric	C8	UCR boating day trips taken last winter (Dec/Jan/Feb), third location listed, number of day trips
c9wiarea3	Character	C9	UCR boating day trips taken last winter (Dec/Jan/Feb), third location listed, area of lake visited (1-8)
c6cuyesno	Numeric	C6	Any UCR boating day trips so far in the current season? (1 = Yes, 0 = No)
c7culoc1	Character	C7	UCR boating day trips taken so far this season, first location listed
c8cutrips1	Numeric	C8	UCR boating day trips taken so far this season, first location listed, number of day trips
c9cuarea1	Character	C9	UCR boating day trips taken so far this season, first location listed, area of lake visited (1-8)
c7culoc2	Character	C7	UCR boating day trips taken so far this season, second location listed
c8cutrips2	Numeric	C8	UCR boating day trips taken so far this season, second location listed, number of day trips
c9cuarea2	Character	C9	UCR boating day trips taken so far this season, second location listed, area of lake visited (1-8)
c7culoc3	Character	C7	UCR boating day trips taken so far this season, third location listed
c8cutrips3	Numeric	C8	UCR boating day trips taken so far this season, third location listed, number of day trips
c9cuarea3	Character	C9	UCR boating day trips taken so far this season, third location listed, area of lake visited (1-8)
c10	Numeric	C10	Any UCR beach day trips taken last summer (Jun/Jul/Aug/Sep)? (1 = Yes, 0 = No)
c11loc1	Character	C11	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), first location listed
c12trips1	Numeric	C12	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), first location listed, number of day trips
c11loc2	Character	C11	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), second location listed
c12trips2	Numeric	C12	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), second location listed, number of day trips
c11loc3	Character	C11	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), third location listed
c12trips3	Numeric	C12	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), third location listed, number of day trips
c11loc4	Character	C11	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), fourth location listed
c12trips4	Numeric	C12	UCR beach day trips taken last summer (Jun/Jul/Aug/Sep), fourth location listed, number of day trips
d1	Numeric	D1	Fish in the Upper Columbia River? (1 = Yes, 0 = No)
d2	Numeric	D2	Eat fish from the Upper Columbia River? (1 = Yes, 0 = No)
d3koyesno	Numeric	D3	Eaten kokanee from UCR over past 12 months? (1 = Yes, 0 = No)
d4komeals	Character	D4	Meals of kokanee from UCR over past 12 months
d4komealsnum	Numeric	D4	Numeric meals of Kokanee from UCR over past 12 months
d5koarea	Character	D5	Area of UCR where kokanee was caught
d6kofillet	Numeric	D6	Eat fillet from kokanee? (1 = Yes, 0 = No)
d6koskin	Numeric	D6	Eat skin from kokanee? (1 = Yes, 0 = No)
d6koeggs	Numeric	D6	Eat eggs from kokanee? (1 = Yes, 0 = No)
d6kohead	Numeric	D6	Eat head from kokanee? (1 = Yes, 0 = No)
d6koguts	Numeric	D6	Eat guts from kokanee? (1 = Yes, 0 = No)
d7kokeep	Numeric	D7	Kept kokanee on current trip? (1 = Yes, 0 = No)
d8kosmall	Numeric	D8	Length of smallest kokanee kept on current trip (inches)
d8kolarge	Numeric	D8	Length of biggest kokanee kept on current trip (inches)
d3rtyesno	Numeric	D3	Eaten rainbow trout from UCR over past 12 months? (1 = Yes, 0 = No)

d4rtmeals	Character	D4	Meals of rainbow trout from UCR over past 12 months
d4rtmealsnum	Numeric	D4	Numeric meals of Rainbow Trout from UCR over past 12 months
d5rtarea	Character	D5	Area of UCR where rainbow trout was caught
d6rtfillet	Numeric	D6	Eat fillet from rainbow trout? (1 = Yes, 0 = No)
d6rtskin	Numeric	D6	Eat skin from rainbow trout? (1 = Yes, 0 = No)
d6rteggs	Numeric	D6	Eat eggs from rainbow trout? (1 = Yes, 0 = No)
d6rthead	Numeric	D6	Eat head from rainbow trout? (1 = Yes, 0 = No)
d6rtguts	Numeric	D6	Eat guts from rainbow trout? (1 = Yes, 0 = No)
d7rtkeep	Numeric	D7	Kept rainbow trout on current trip? (1 = Yes, 0 = No)
d8rtsmall	Numeric	D8	Length of smallest rainbow trout kept on current trip (inches)
d8rtlarge	Numeric	D8	Length of biggest rainbow trout kept on current trip (inches)
d3wayesno	Numeric	D3	Eaten walleye from UCR over past 12 months? (1 = Yes, 0 = No)
d4wameals	Character	D4	Meals of walleye from UCR over past 12 months
d4wamealsnum	Numeric	D4	Numeric meals of Walleye from UCR over past 12 months
d5waarea	Character	D5	Area of UCR where walleye was caught
d6wafillet	Numeric	D6	Eat fillet from walleye? (1 = Yes, 0 = No)
d6waskin	Numeric	D6	Eat skin from walleye? (1 = Yes, 0 = No)
d6waeggs	Numeric	D6	Eat eggs from walleye? (1 = Yes, 0 = No)
d6wahead	Numeric	D6	Eat head from walleye? (1 = Yes, 0 = No)
d6waguts	Numeric	D6	Eat guts from walleye? (1 = Yes, 0 = No)
d7wakeep	Numeric	D7	Kept walleye on current trip? (1 = Yes, 0 = No)
d8wasmall	Numeric	D8	Length of smallest walleye kept on current trip (inches)
d8walarge	Numeric	D8	Length of biggest walleye kept on current trip (inches)
d3bayesno	Numeric	D3	Eaten bass from UCR over past 12 months? (1 = Yes, 0 = No)
d4bameals	Character	D4	Meals of bass from UCR over past 12 months
d4bamealsnum	Numeric	D4	Numeric meals of Bass from UCR over past 12 months
d5baarea	Character	D5	Area of UCR where bass was caught
d6bafillet	Numeric	D6	Eat fillet from bass? (1 = Yes, 0 = No)
d6baskin	Numeric	D6	Eat skin from bass? (1 = Yes, 0 = No)
d6baeggs	Numeric	D6	Eat eggs from bass? (1 = Yes, 0 = No)
d6bahead	Numeric	D6	Eat head from bass? (1 = Yes, 0 = No)
d6baguts	Numeric	D6	Eat guts from bass? (1 = Yes, 0 = No)
d7bakeep	Numeric	D7	Kept bass on current trip? (1 = Yes, 0 = No)
d8basmall	Numeric	D8	Length of smallest bass kept on current trip (inches)
d8balarge	Numeric	D8	Length of biggest bass kept on current trip (inches)
d3otyesno	Numeric	D3	Eaten other species from UCR over past 12 months? (1 = Yes, 0 = No)
d3otspecies	Character	D3	Name of other species eaten from UCR over past 12 months
d4otmeals	Character	D4	Meals of other species from UCR over past 12 months
d4otmealsnum	Numeric	D4	Numeric meals of other fish from UCR over past 12 months
d5otarea	Character	D5	Area of UCR where other species was caught
d6otfillet	Numeric	D6	Eat fillet from other species? (1 = Yes, 0 = No)
d6otskin	Numeric	D6	Eat skin from other species? (1 = Yes, 0 = No)
d6oteggs	Numeric	D6	Eat eggs from other species? (1 = Yes, 0 = No)
d6othead	Numeric	D6	Eat head from other species? (1 = Yes, 0 = No)
d6otguts	Numeric	D6	Eat guts from other species? (1 = Yes, 0 = No)
d7otkeep	Numeric	D7	Kept other species on current trip? (1 = Yes, 0 = No)
d8otsmall	Numeric	D8	Length of smallest other species kept on current trip (inches)
d8otlarge	Numeric	D8	Length of biggest other species kept on current trip (inches)
d9	Numeric	D9	Typical fillet size (1 = less than 6 oz., 2 = 6 oz., 3 = 8 oz., 4 = 10 oz., 5 = more than 10 oz.)
d10	Numeric	D10	Typically share UCR fish with children (1 = Yes, 0 = No)
d10kids0to6	Numeric	D10	Typically share UCR fish with children 0 to 6? (1 = Yes, 0 = No)
d10kids7to17	Numeric	D10	Typically share UCR fish with children 7 to 17? (1 = Yes, 0 = No)
d11	Numeric	D11	Aware of fish consumption advisories for Upper Columbia River? (1 = Yes, 0 = No)
d12signs	Numeric	D12	First heard about the advisories through posted signs (1 = Yes, 0 = No)
d12regs	Numeric	D12	First heard about the advisories through fishing regulations (1 = Yes, 0 = No)
d12friends	Numeric	D12	First heard about the advisories through friend or family (1 = Yes, 0 = No)
d12web	Numeric	D12	First heard about the advisories through website (1 = Yes, 0 = No)
d12news	Numeric	D12	First heard about the advisories through newspaper (1 = Yes, 0 = No)
d12other	Numeric	D12	First heard about the advisories through other means (1 = Yes, 0 = No)
d12specify	Character	D12	Other source of advisory information
d13	Numeric	D13	Advisories helpful in making decisions about eating fish from the UCR? (1 = Yes, 0 = No)
d13why	Character	D13	Why the advisories are not helpful in making decisions about eating fish from the UCR
d14	Numeric	D14	Generally follow the advisory recommendations? (1 = Yes, 0 = No)
d15a	Numeric	D15	Advisory response: Have you changed how often you fish in the UCR? (1 = Yes, 0 = No)
d15ahow	Numeric	D15	Fish in the UCR more or less often? (1 = More, 0 = Less)

d15b	Numeric	D15	Advisory response: Have you changed how often you eat fish from the UCR? (1 = Yes, 0 = No)
d15bhow	Numeric	D15	Eat UCR fish more or less often? (1 = More, 0 = Less)
d15c	Numeric	D15	Advisory response: Have you changed how you clean the fish that you catch from the UCR? (1 = Yes, 0 = No)
d15d	Numeric	D15	Advisory response: Have you changed the species that you target when fishing the UCR? (1 = Yes, 0 = No)
d15e	Numeric	D15	Advisory response: Have you changed how often you share fish from the UCR with family? (1 = Yes, 0 = No)
d15ehow	Numeric	D15	Share UCR fish with your family more or less often? (1 = More, 0 = Less)
e1	Numeric	E1	Year of birth
e2	Character	E2	Zip code or postal code
e3	Numeric	E3	CCT tribal use survey participant? (1 = Yes, 0 = No)
e4	Numeric	E4	Gender (1 = Male, 0 = Female)
e5	Numeric	E5	Has respondent completed survey before (1 = Yes, 0 = No)
e6	Numeric	E6	Did respondent consume at least 10 fish meals from UCR in last 12 months? (1 = Yes, 0 = No)
e7	Numeric	E7	Respondent interested in participating in diary study? (1 = Yes, 0 = No)
w_trip	Numeric	N/A	Sampling weight for characterizing camping days
w_person	Numeric	N/A	Sampling weight for characterizing respondents

Shore.csv (32 rows, 108 columns)

Variable Name	Type	Question Number	Description
id	Numeric	N/A	Unique ID assigned to every completed survey
interviewer	Character	N/A	Name of interviewer
location	Character	N/A	Location of interview (e.g., Kettle Falls)
intdate	Character	N/A	Interview date
stratum	Numeric	N/A	Temporal sampling stratum (1 to 11)
ucrarea	Numeric	N/A	UCR Lake Area (1 to 8)
region	Character	N/A	Spatial sampling stratum (Upper, Middle, or Lower UCR)
inttime	Character	N/A	Time of interview
intampm	Numeric	N/A	Time of interview: AM/PM (1 = AM, 0 = PM)
inthourmin	Numeric	N/A	Numeric interview time (hours since midnight)
numintdatetime	Numeric	N/A	Numeric interview date and time (hours since 1960)
a1	Numeric	A1	Has respondent completed the survey before? (1 = Yes, 0 = No)
a2	Numeric	A2	Has respondent taken any UCR trips in last 12 months? (1 = Yes, 0 = No)
a3	Numeric	A3	Approximate number of fishing trips in last 12 months
a4	Character	A4	Time respondent started fishing
a4ampm	Numeric	A4	Time respondent started fishing: AM/PM (1 = AM, 0 = PM)
a4hourmin	Numeric	A4	Time respondent started fishing: numeric (hours since midnight)
a5	Character	A5	Time respondent plans to stop fishing
a5ampm	Numeric	A5	Time respondent plans to stop fishing: AM/PM (1 = AM, 0 = PM)
a5hourmin	Numeric	A5	Time respondent plans to stop fishing: numeric (hours since midnight)
cutriplength	Numeric	N/A	Current trip length in hours (inthourmin-a4hourmin)
exptriplength	Numeric	N/A	Expected trip length in hours (a5hourmin-a4hourmin)
d1	Numeric	D1	Eat fish from the Upper Columbia River? (1 = Yes, 0 = No)
d2koyesno	Numeric	D2	Eaten kokanee from UCR over past 12 months? (1 = Yes, 0 = No)
d3komeals	Character	D3	Meals of kokanee from UCR over past 12 months
d4koarea	Character	D4	Area of UCR where kokanee was caught
d5kofillet	Numeric	D5	Eat fillet from kokanee? (1 = Yes, 0 = No)
d5koskin	Numeric	D5	Eat skin from kokanee? (1 = Yes, 0 = No)
d5koeggs	Numeric	D5	Eat eggs from kokanee? (1 = Yes, 0 = No)
d5kohead	Numeric	D5	Eat head from kokanee? (1 = Yes, 0 = No)
d5koguts	Numeric	D5	Eat guts from kokanee? (1 = Yes, 0 = No)
d6kokeep	Numeric	D6	Kept kokanee on current trip? (1 = Yes, 0 = No)
d7kosmall	Numeric	D7	Length of smallest kokanee kept on current trip (inches)
d7kolarge	Numeric	D7	Length of biggest kokanee kept on current trip (inches)
d2rtyesno	Numeric	D2	Eaten rainbow trout from UCR over past 12 months? (1 = Yes, 0 = No)
d3rtmeals	Character	D3	Meals of rainbow trout from UCR over past 12 months
d4rtarea	Character	D4	Area of UCR where rainbow trout was caught
d5rtfillet	Numeric	D5	Eat fillet from rainbow trout? (1 = Yes, 0 = No)
d5rtskin	Numeric	D5	Eat skin from rainbow trout? (1 = Yes, 0 = No)
d5rteggs	Numeric	D5	Eat eggs from rainbow trout? (1 = Yes, 0 = No)
d5rthead	Numeric	D5	Eat head from rainbow trout? (1 = Yes, 0 = No)
d5rtguts	Numeric	D5	Eat guts from rainbow trout? (1 = Yes, 0 = No)
d6rtkeep	Numeric	D6	Kept rainbow trout on current trip? (1 = Yes, 0 = No)
d7rtsmall	Numeric	D7	Length of smallest rainbow trout kept on current trip (inches)
d7rtlarge	Numeric	D7	Length of biggest rainbow trout kept on current trip (inches)
d2wayesno	Numeric	D2	Eaten walleye from UCR over past 12 months? (1 = Yes, 0 = No)
d3wameals	Character	D3	Meals of walleye from UCR over past 12 months
d4waarea	Character	D4	Area of UCR where walleye was caught
d5wafillet	Numeric	D5	Eat fillet from walleye? (1 = Yes, 0 = No)
d5waskin	Numeric	D5	Eat skin from walleye? (1 = Yes, 0 = No)
d5waeggs	Numeric	D5	Eat eggs from walleye? (1 = Yes, 0 = No)
d5wahead	Numeric	D5	Eat head from walleye? (1 = Yes, 0 = No)
d5waguts	Numeric	D5	Eat guts from walleye? (1 = Yes, 0 = No)
d6wakeep	Numeric	D6	Kept walleye on current trip? (1 = Yes, 0 = No)
d7wasmall	Numeric	D7	Length of smallest walleye kept on current trip (inches)
d7walarge	Numeric	D7	Length of biggest walleye kept on current trip (inches)
d2bayesno	Numeric	D2	Eaten bass from UCR over past 12 months? (1 = Yes, 0 = No)
d3bameals	Character	D3	Meals of bass from UCR over past 12 months
d4baarea	Character	D4	Area of UCR where bass was caught
d5bafillet	Numeric	D5	Eat fillet from bass? (1 = Yes, 0 = No)
d5baskin	Numeric	D5	Eat skin from bass? (1 = Yes, 0 = No)

d5baeggs	Numeric	D5	Eat eggs from bass? (1 = Yes, 0 = No)
d5bahead	Numeric	D5	Eat head from bass? (1 = Yes, 0 = No)
d5baguts	Numeric	D5	Eat guts from bass? (1 = Yes, 0 = No)
d6bakeep	Numeric	D6	Kept bass on current trip? (1 = Yes, 0 = No)
d7basmall	Numeric	D7	Length of smallest bass kept on current trip (inches)
d7balarge	Numeric	D7	Length of biggest bass kept on current trip (inches)
d2otyesno	Numeric	D2	Eaten other species from UCR over past 12 months? (1 = Yes, 0 = No)
d2otspecies	Character	D2	Name of other species eaten from UCR over past 12 months
d3otmeals	Character	D3	Meals of other species from UCR over past 12 months
d4otarea	Character	D4	Area of UCR where other species was caught
d5otfillet	Numeric	D5	Eat fillet from other species? (1 = Yes, 0 = No)
d5otskin	Numeric	D5	Eat skin from other species? (1 = Yes, 0 = No)
d5oteggs	Numeric	D5	Eat eggs from other species? (1 = Yes, 0 = No)
d5othead	Numeric	D5	Eat head from other species? (1 = Yes, 0 = No)
d5otguts	Numeric	D5	Eat guts from other species? (1 = Yes, 0 = No)
d6otkeep	Numeric	D6	Kept other species on current trip? (1 = Yes, 0 = No)
d7otsmall	Numeric	D7	Length of smallest other species kept on current trip (inches)
d7otlarge	Numeric	D7	Length of biggest other species kept on current trip (inches)
d8	Numeric	D8	Typical fillet size (1 = less than 6 oz., 2 = 6 oz., 3 = 8 oz., 4 = 10 oz., 5 = more than 10 oz.)
d9	Numeric	D9	Typically share UCR fish with children (1 = Yes, 0 = No)
d9kids0to6	Numeric	D9	Typically share UCR fish with children 0 to 6? (1 = Yes, 0 = No)
d9kids7to17	Numeric	D9	Typically share UCR fish with children 7 to 17? (1 = Yes, 0 = No)
d10	Numeric	D10	Aware of fish consumption advisories for Upper Columbia River? (1 = Yes, 0 = No)
d11signs	Numeric	D11	First heard about the advisories through posted signs (1 = Yes, 0 = No)
d11regs	Numeric	D11	First heard about the advisories through fishing regulations (1 = Yes, 0 = No)
d11friends	Numeric	D11	First heard about the advisories through friend or family (1 = Yes, 0 = No)
d11web	Numeric	D11	First heard about the advisories through website (1 = Yes, 0 = No)
d11news	Numeric	D11	First heard about the advisories through newspaper (1 = Yes, 0 = No)
d11other	Numeric	D11	First heard about the advisories through other means (1 = Yes, 0 = No)
d11specify	Character	D11	Other source of advisory information
d12	Numeric	D12	Advisories helpful in making decisions about eating fish from the UCR? (1 = Yes, 0 = No)
d12why	Character	D12	Why the advisories are not helpful in making decisions about eating fish from the UCR
d13	Numeric	D13	Generally follow the advisory recommendations? (1 = Yes, 0 = No)
d14a	Numeric	D14	Advisory response: Have you changed how often you fish in the UCR? (1 = Yes, 0 = No)
d14ahow	Numeric	D14	Fish in the UCR more or less often? (1 = More, 0 = Less)
d14b	Numeric	D14	Advisory response: Have you changed how often you eat fish from the UCR? (1 = Yes, 0 = No)
d14bhow	Numeric	D14	Eat UCR fish more or less often? (1 = More, 0 = Less)
d14c	Numeric	D14	Advisory response: Have you changed how you clean the fish that you catch from the UCR? (1 = Yes, 0 = No)
d14d	Numeric	D14	Advisory response: Have you changed the species that you target when fishing the UCR? (1 = Yes, 0 = No)
d14e	Numeric	D14	Advisory response: Have you changed how often you share fish from the UCR with family? (1 = Yes, 0 = No)
d14ehow	Numeric	D14	Share UCR fish with your family more or less often? (1 = More, 0 = Less)
e1	Numeric	E1	Year of birth
e2	Character	E2	Zip code or postal code
e3	Numeric	E3	CCT tribal use survey participant (1 = Yes, 0 = No)
e4	Numeric	E4	Gender (1 = Male, 0 = Female)
e5	Numeric	E5	Did respondent consume at least 10 fish meals from UCR in last 12 months? (1 = Yes, 0 = No)
e6	Numeric	E6	Respondent interested in participating in diary study? (1 = Yes, 0 = No)

Diaryparticipants.csv (146 rows, 16 columns)

Variable Name	Type	Question Number	Description
id	Numeric	N/A	Unique ID assigned to every completed survey (from on-site intercept survey)
childage	Numeric	N/A	Age of child with birthday closest to January 1
diarymonth1	Character	N/A	First diary month
month1complete	Numeric	N/A	First diary month: data collection complete? (1 = Yes, 0 = No)
month1source	Numeric	N/A	First diary month: data source (1 = diary; 2 = phone)
month1phonedate	Character	N/A	First diary month: date of phone interview
diarymonth2	Character	N/A	Second diary month
month2complete	Numeric	N/A	Second diary month: data collection complete? (1 = Yes, 0 = No)
month2source	Numeric	N/A	Second diary month: data source (1 = diary; 2 = phone)
month2phonedate	Character	N/A	Second diary month: date of phone interview
diarymonth3	Character	N/A	Third diary month
month3complete	Numeric	N/A	Third diary month: data collection complete? (1 = Yes, 0 = No)
month3source	Numeric	N/A	Third diary month: data source (1 = diary; 2 = phone)
month3phonedate	Character	N/A	Third diary month: date of phone interview
notes	Character	N/A	Notes from phone interview
w_person	Numeric	N/A	Sampling weight for characterizing respondents

Diarymeals.csv (1,515 rows, 40 columns)

Variable Name	Type	Question Number	Description
mealid	Numeric	N/A	Unique ID assigned to every meal
id	Numeric	N/A	Unique ID assigned to every completed survey (from on-site intercept survey)
q1	Character	1	Date that fish meal was consumed
month	Numeric	1	Month that fish meal was consumed
q2ko	Numeric	2	Consumed kokanee (silvers) (1 = Yes, 0 = No)
q2rt	Numeric	2	Consumed rainbow trout (1 = Yes, 0 = No)
q2wa	Numeric	2	Consumed walleye (1 = Yes, 0 = No)
q2ba	Numeric	2	Consumed bass (1 = Yes, 0 = No)
q2ot	Numeric	2	Consumed other species (1 = Yes, 0 = No)
q2otname	Character	2	Name of other species consumed
q3area1	Numeric	3	Source of fish consumed: UCR Area 1 (1 = Yes, 0 = No)
q3area2	Numeric	3	Source of fish consumed: UCR Area 2 (1 = Yes, 0 = No)
q3area3	Numeric	3	Source of fish consumed: UCR Area 3 (1 = Yes, 0 = No)
q3area4	Numeric	3	Source of fish consumed: UCR Area 4 (1 = Yes, 0 = No)
q3area5	Numeric	3	Source of fish consumed: UCR Area 5 (1 = Yes, 0 = No)
q3area6	Numeric	3	Source of fish consumed: UCR Area 6 (1 = Yes, 0 = No)
q3area7	Numeric	3	Source of fish consumed: UCR Area 7 (1 = Yes, 0 = No)
q3area8	Numeric	3	Source of fish consumed: UCR Area 8 (1 = Yes, 0 = No)
q3ucrdk	Numeric	3	Source of fish consumed: UCR (don't know) (1 = Yes, 0 = No)
q3sanpoil	Numeric	3	Source of fish consumed: Sanpoil River (1 = Yes, 0 = No)
q3belowdam	Numeric	3	Source of fish consumed: Columbia River below Coulee Dam (1 = Yes, 0 = No)
q3local	Numeric	3	Source of fish consumed: Other local fishing site (1 = Yes, 0 = No)
q3localname	Character	3	Name of other local fishing site
q3store	Numeric	3	Source of fish consumed: Store (1 = Yes, 0 = No)
q3restaurant	Numeric	3	Source of fish consumed: Restaurant (1 = Yes, 0 = No)
q3nonlocal	Numeric	3	Source of fish consumed: Non-local fishing site (1 = Yes, 0 = No)
q3nonlocalname	Character	3	Name of non-local fishing site
q3other	Numeric	3	Source of fish consumed: Other (1 = Yes, 0 = No)
q4fillet	Numeric	4	Consumed fillet? (1 = Yes, 0 = No)
q4skin	Numeric	4	Consumed skin? (1 = Yes, 0 = No)
q4eggs	Numeric	4	Consumed eggs? (1 = Yes, 0 = No)
q4head	Numeric	4	Consumed head? (1 = Yes, 0 = No)
q4guts	Numeric	4	Consumed guts? (1 = Yes, 0 = No)
q5_1	Numeric	5	Meal size: Less than Photo A (6 oz.) (1 = Yes, 0 = No)
q5_2	Numeric	5	Meal size: Similar to Photo A (6 oz.) (1 = Yes, 0 = No)
q5_3	Numeric	5	Meal size: Similar to Photo B (8 oz.) (1 = Yes, 0 = No)
q5_4	Numeric	5	Meal size: Similar to Photo C (10 oz.) (1 = Yes, 0 = No)
q5_5	Numeric	5	Meal size: More than Photo C (10 oz.) (1 = Yes, 0 = No)
q6	Numeric	6	Did child also eat fish during this meal? (1 = Yes, 2 = No, 3 = N/A)
q6size	Numeric	6	Size of child's meal (1 = less than 6 oz., 2 = 6 oz., 3 = 8 oz., 4 = 10 oz., 5 = more than 10 oz.)