# Susitna-Watana Hydroelectric Project
# (FERC No. 14241)

# River Recreation Flow and Access Study
# Study Plan Section 12.7

# Initial Study Report
# Part A: Sections 1-6, 8-10

Prepared for

Alaska Energy Authority

SUSITNA-WATANA HYDRO

*Clean, reliable energy for the next 100 years.*

Prepared by

ERM

June 2014

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# LIST OF ACRONYMS, ABBREVIATIONS, AND DEFINITIONS

| Abbreviation | Definition |
|---|---|
| AEA | Alaska Energy Authority |
| ATV | All-terrain vehicle |
| cfs | cubic feet per second |
| FERC | Federal Energy Regulatory Commission |
| FPYC | Fossil Potential Yield Classification |
| ILP | Integrated Licensing Process |
| IP | Internet Protocol |
| ISR | Initial Study Report |
| NOLS | National Outdoor Leadership School |
| OS | Operational scenario |
| PRM | Project River Mile |
| Project | Susitna-Watana Hydroelectric Project |
| REI | Recreation Equipment Incorporated |
| RM | River Mile(s) referencing those of the 1980s Alaska Power Authority Project. |
| RSP | Revised Study Plan |
| SPD | study plan determination |
| TWG | Technical Workgroup |
| USGS | United States Geological Survey |

# 1. INTRODUCTION

On December 14, 2012, Alaska Energy Authority (AEA) filed with the Federal Energy Regulatory Commission (FERC or Commission) its Revised Study Plan (RSP) for the Susitna-Watana Hydroelectric Project No. 14241 (Project), which included 58 individual study plans (AEA 2012). Included within the RSP was the River Recreation Flow and Access Study, Section 12.7. RSP Section 12.7 focused on conducting a recreation flow analysis on mainstem reaches of the Susitna River that considers the relationship between river flows and ice conditions, and river recreation and transportation. RSP Section 12.7 provided goals, objectives, and proposed methods for river recreation flow and access data collection and analysis.

On February 1, 2013, FERC staff issued its study plan determination (February 1 SPD) for 44 of the 58 studies, approving 31 studies as filed and 13 with modifications. RSP Section 12.7 was one of the 13 approved with modifications. In its February 1 SPD, FERC recommended the following:

> *Much of the flow-dependent information to be gathered for the study would be done remotely (e.g., interviews and online surveys), although the study would also utilize data collected during the recreation intercept surveys to be conducted in the field as part of the Recreation Resources Study (study 12.6). At little additional cost ($20,000), AEA could add focus group discussions, as suggested by the [National Park Service], that would substantially add to the information base for, and the analysis of, flow preferences for whitewater boating and ice conditions needed for motorized and non-motorized travel.*
>
> *Therefore, we recommend AEA modify the study plan to include at least one focus group discussion on whitewater boating and one on winter ice and snow travel in the river corridor for motorized and non-motorized users. Focus group participants would be identified by building on the executive interviews with commercial and noncommercial users of the river to include boating clubs, dogsled clubs, etc. Opportunities for online or teleconference participation should be provided for the focus group discussions.*

In accordance with the February 1 SPD, AEA has adopted the FERC requested modification.

Following the first study season, FERC's regulations for the Integrated Licensing Process (ILP) require AEA to "prepare and file with the Commission an initial study report describing its overall progress in implementing the study plan and schedule and the data collected, including an explanation of any variance from the study plan and schedule" (18 CFR 5.15(c)(1)). This Initial Study Report on the River Recreation Flow and Access Study has been prepared in accordance with FERC's ILP regulations and details AEA's status in implementing the study, as set forth in the FERC-approved RSP and as modified by FERC's February 1 SPD (collectively referred to herein as the "Study Plan").

# 2. STUDY OBJECTIVES

As set forth in the Study Plan (RSP Section 12.7.1), the goals and objectives of the River Recreation Flow and Access Study are to contribute data to the Recreation Resource Study (12.5) concerning the relationship between river flows and river recreation opportunities and uses, by:

- Documenting river recreation use and experience for the respective river recreation and transportation opportunities on three mainstem Susitna river reaches.
- Describing the potential effects of altered river flows on existing and potential boating activity and other river recreational uses of the Susitna River.
- Understanding river ice preferences for the respective river ice-dependent winter recreation and transportation on the Susitna River.
- Describing new boating or other flow-dependent recreational opportunities that may be created by Project construction and operation.

# 3. STUDY AREA

The study area for the River Recreation Flow and Access Study is set forth in RSP Section 12.7.3. During the 2012 recreation study, three distinct river recreation reaches were identified on the Susitna River, as shown in Figure 3-1, for gathering baseline river recreation information on the Susitna River. The three river recreation reach breaks comprising the study area are as follows: (a) River Recreation Reach 1, the section of river from the Susitna River bridge (RM 291/PRM 291.6) on the Denali Highway to Fog Creek (RM 177/PRM 179.3); (b) River Recreation Reach 2, Fog Creek to the confluence with Portage Creek (RM 149/PRM 152.3) downstream of Devils Canyon; and (c) River Recreation Reach 3, Portage Creek to the confluence with the George Parks Highway Bridge (also known as Sunshine) downstream of the confluence with the Talkeetna and Chulitna Rivers (RM 83/PRM 88.9). The three river recreation reach designations overlap other reach breaks delineated for other resource studies.

# 4. METHODS AND VARIANCES IN 2013

This study is designed to document the range of flows for a variety of motorized and non-motorized watercraft using the Susitna River for recreation as well as for a transportation corridor. Likewise, the study is designed to document river ice-dependent recreation and transportation activities during the winter period. River ice variables likely include temporal and spatial extent for channel bridging, and longitudinal length for transportation. The methods and analysis will use practices and survey techniques for recreational flow study design, as described in Whittaker et al. (1993) and Whittaker et al. (2005).

## 4.1. River Recreation Surveys

In conducting the river recreation surveys during the 2013 field season, AEA followed the methodologies described in Section 12.7.4 of the RSP, with no variances. The River Recreation and Access Survey was used to gather information on river recreation uses, location, frequency, seasonal patterns, primary trip purpose, secondary activities, access, campsites, and river recreation quality relative to trip flow evaluations (Appendix A). The survey was posted on the Internet (www.susitnariversurvey.com) on June 25, 2013, and served as the primary means for gathering information from river users. The Internet survey helped expand the collection of responses geographically and temporally. The expansive study area, remote location, dispersed access points, and anticipated low number of annual user days were not conducive to an on-site intercept survey. Furthermore, the electronic survey provides a means for capturing both past and current recreation use.

Survey participation was solicited by advertising the river recreation survey electronically through a multitude of forums including, but not limited to, national and regional whitewater groups; forums for outdoor recreation including adventure races, fishing, hunting, motorized and non-motorized user groups, message boards, commercial outfitters and guides, and adventure schools; and transportation services to the study area (Table 4.1-1). Information advertising the Internet survey was distributed at key locations including outdoor retail shops, key convenience stores in the study area, restaurants, train station, and commercial transportation service locations for the study area (Table 4.1-1). Postcards describing the Internet survey, including the URL to access the survey, were also distributed at key access points and staging areas (Table 4.1-1). Hard copy surveys identical to the Internet survey were prepared for chance encounters in the field. For the Internet surveys, the platform allows for identification of Internet Protocol (IP) addresses for entry; therefore, unique responses can be identified.

Whitewater organizations at the national and regional level serve as a portal for disseminating information to the paddling community through websites, journal articles, and electronic communication. The Internet link for the Susitna River Recreation and Access Survey was forwarded to the national and regional paddling groups as well as to whitewater message boards in Alaska. In addition, efforts were made to identify boaters known to have paddled Devils Canyon and notify them about the Internet survey. A fairly comprehensive list was assembled of paddlers who have attempted or completed runs on Devils Canyon dating back to the 1970s. Individuals on this list were directed to the Internet survey. At the third quarter Technical Workgroup (TWG) meeting, stakeholders requested that AEA's consultant become a member of a number of Alaska outdoor online forums and directly post the Internet survey link to solicit additional Susitna River recreators to complete the survey. In response, an Internet survey announcement and link to the Internet survey were posted to additional online forums including the Alaska Outdoor Directory, Alaska Canoeing, Alaska Freshwater Kayaking, Alaska Rafting, Alaska Powerboating, Alaska Airboating, Alaska Float Hunting, Alaska Freshwater Fishing, Alaska Bushflying, Interior Alaska Airboat Association, and the Anchorage Paddling Club. Formal and informal interviews will be conducted to supplement the Internet survey data as well as gather additional information about user groups, trip purposes, use patterns, access, flows, and other recreation information. A set of pre-established executive interview questions were asked in each interview (Appendix B). A form will be completed for each interview including the name

of the interviewee, date, name of individual being interviewed, responses to interview questions, and additional comments and discussion in the interview.

Identifying and contacting individuals who have recreated on the Susitna River is challenging when they are recreational users who tend not to be part of organized groups, for example, trappers, hunters, and cabin owners. Recreation contact lists were generated through outreach to recreation groups, resource agency land managers, and commercial providers such as air taxis, lodges, hunting outfitters, rental shops, rafting companies, jet boat companies, tourism services, and adventure schools. In addition to commercial operators currently utilizing the Susitna River, resource agency staff as well as owners and employees of commercial companies may have personal experience or provide names of individuals who have recreated on the three reaches of the Susitna. Non-commercial contacts included paddling clubs, university recreation centers, adventure racers, outdoor clubs, and motorized boat user groups, as well as area residents potentially using the river corridor for recreation and/or transportation purposes.

Data analysis and reporting includes summaries of the Internet survey data and interviews (Section 5). River recreation use information obtained through the electronic Internet survey and interviews was summarized for respective recreation opportunities including primary purpose, secondary activities, demographics of the respective recreational user groups, recreation flow conditions, seasonal use patterns, frequency of use, access points, campsites, trip length, comparisons with recreation opportunities on other Alaska rivers, and quality of experience. Likewise, information gathered through the River Recreation and Access Survey supplements the analysis of river recreation activities.

### 4.1.1. Variances

There were no variances in implementing the river recreation surveys in 2013.

## 4.2. River Ice-Dependent Winter Recreation

In conducting the river ice-dependent recreation surveys during the 2013 field season, AEA followed the methodologies described in Section 12.7.4 of the RSP, with no variances. Information on winter recreation activities and transportation on the ice-covered Susitna River was obtained through interviews with regional officials, winter recreation users, event organizers, event participants, and other knowledgeable area residents. Contact lists were organized and recreation participants solicited in a similar fashion to that described for river recreation. Commercial providers such as lodges, snowmobile service providers, rental shops, and winter recreation vendors were contacted. Trappers using the river corridor were interviewed. Winter residents in cabins upstream of Talkeetna were queried relative to their use patterns on the river corridor.

A set of pre-established winter recreation and transportation questions was asked in each interview (Appendix C). Interview questions were tailored specifically to activities associated with winter ice conditions on the Susitna. Questions focused on timing, frequency and location of activities, type of activity, ice thickness, trip lengths, trip purpose, crossing river channel vs. using river corridor as a route, alternative transportation routes, and alternative winter recreation

locations. Draft interview questions were circulated for review and comment by agencies prior to finalizing in early 2013.

A form was completed for each interview including the name of the interviewer, date, name of individual being interviewed, responses to interview questions, and additional comments and discussion in the interview. River ice-dependent winter recreation and transportation information obtained through the interviews was summarized for respective recreation opportunities including primary purpose, secondary activities, ice thickness required, need for ice bridges versus longitudinal ice cover, seasonal use patterns, frequency of use, access points, and winter recreation quality on the Susitna.

### 4.2.1. Variances

There were no variances in implementing the river ice-dependent recreation surveys in 2013.

## 4.3. Focus Group Discussions

FERC's February 1 SPD recommended two focus group discussions: (1) whitewater boating, and (2) winter ice and snow travel in the river corridor for motorized and non-motorized users. Although a Study Plan objective was to collect all baseline data in 2013, this study component did not take place in 2013.

### 4.3.1. Variance

As noted above, AEA did not convene the focus group discussions in 2013 due to scheduling challenges relative to the winter season. AEA will meet Study Plan objectives by convening the focus groups in the next study season.

# 5. RESULTS

Initial study results for the River Recreation Flow and Access study are presented below. The results are based on information from the river recreation Internet survey through October 4, 2013, intercept surveys, and executive interviews describing a specific or series of river recreation experiences at different river flows and/or ice conditions on Study Reaches 1, 2, and/or 3. Flow information from four U.S. Geological Survey (USGS) gaging stations (Susitna R. at Sunshine River Mile (RM) 84; Susitna R. at Gold Creek RM 137; Susitna R. above Tsusena C Nr Chulitna, RM 182; Susitna R. Nr Denali, RM 291) was used to describe present and historic flows in the study reaches during recorded recreation events. Each study reach is discussed separately starting with Reach 1 and ending with Reach 3.

Data developed in support of this study are available for download at http://gis.suhydro.org/reports/isr.

## 5.1. River Recreation Reach 1 (PRM 291.6–PRM 179.3)

River Recreation Reach 1 is a 113-mile section of the Susitna River beginning at the Denali Highway Bridge and ending downstream at Fog Creek. Motor vehicles can only access Reach 1

at the Denali Highway Bridge and there is an established unimproved boat launch on the immediate east side of the Denali Highway Bridge. There is only 1,000 feet of elevation drop over the course of 112 river miles in Reach 1. This relatively gentle gradient provides numerous options for floatplane access throughout Reach 1.

Reach 1 from the confluence with the Tyone River to just downstream of V-Canyon drops 350 feet in elevation in just 22 miles. This is steeper than the other sections of Reach 1 upstream and downstream. Egress from River Reach 1 is challenging for river runners due to the remote location. Reach 1 terminates at Project River Mile (PRM) 179.3, approximately 15 miles upstream from the start of Devils Canyon at PRM 164.8.

Flows listed on the USGS National Water Information website for the period of record (May 30, 1957 to September 30, 2012) at USGS Gage No. 15291000 (Susitna R. Nr Denali) were reviewed for the ice-free months (assumed May through October). Data for this location were not available for the period between August 1, 1986 and May 22, 2012. Average recorded flows at the Susitna R. Nr. Denali gage were 5,166 cubic feet per second (cfs) and median recorded flows were 4,315 cfs. The highest recorded flow at this gage was 33,400 cfs in August 1971. There is a second gage in Reach 1, 109 miles downriver: USGS Gage No. 15291700 Susitna R. AB Tsusena C NR Chulitna, AK (Susitna R. AB Tsusena). Average recorded flows at the Susitna R. AB Tsusena gage during ice-free months over the period of record (October 1, 2011 to November 15, 2013) were 15,785 cfs and median recorded flows were 14,200 cfs. The highest recorded flow at this gage for this period was 72,800 cfs in June 2013.

### 5.1.1. Reach 1 Susitna River Recreation Internet Survey Information

Table 5.1-1 includes general information about the 29 Internet survey participants who recreated in Reach 1. Participants' ages ranged from 22 to 82 with a median age of 39. Only 3 of the participants were female and 61% were Alaska residents. A variety of skill levels and craft types were recorded in Reach 1. Whitewater kayakers were the largest single group, with the majority of them utilizing Reach 1 to access Reach 2. Rafters, packrafters, airboaters, prop boaters, and airplanes all had the same number of participants in the Reach 1 survey (3 per craft). The majority of Reach 1 survey participants identified themselves as having expert skill levels in operating their craft, and use their respective craft more than 20 days per year. The majority of recreators had more than one person in their party, with a median party size of 4 and range of 1 to 9.

Table 5.1-2 includes general information on put-in and take-out options for river recreators on Reach 1. The majority of participants put-in at the Denali Highway Bridge and used a car or truck to access the put-in. However, a number of participants utilized tributaries to access Reach 1 including the Maclaren River, Tyone River, and Watana Creek or floated down the Susitna River from upstream of the Denali Highway Bridge.

Take-out options for Reach 1 are limited due to the remote location at the terminus of the reach. The majority of participants identified use of a car or truck, indicating two-way navigation back upstream to the Denali Highway Bridge, or, alternatively, floating downstream through Reach 2 and into Reach 3. Four participants took out at the Denali Highway Bridge, six floated through to Reach 2, 3 exited on the Tyone River, 1 exited on Watana Creek, one exited via tributary, and

3 exited via remote location. The largest group of Reach 1 participants (7) chose "Other" in response to their take-out location. Based on write-in responses recorded for this question, the majority of these participants took out in Reach 3, yet did not choose "floated through to Reach 2" as their Reach 1 take-out option in the survey. The majority of Reach 1 survey participants indicated that current access to Reach 1 is sufficient (Figure 5.1-1).

Participants were asked to list the primary and secondary purposes of their trip on Reach 1 and were given 12 purposes to choose from, including a write-in option for "other" primary and secondary trip purposes. Figure 5.1-2 illustrates the primary recreation purposes for aircraft, motorized craft, and non-motorized craft in Reach 1. Non-motorized craft participants listed whitewater recreation (25%) as their primary trip purpose, followed by wilderness and solitude (21%). Motorized craft participants listed hunting as their primary trip purpose (21%), followed by transportation (17%). Similarly, aircraft participants listed hunting (43%) as their primary trip purpose, followed by photography (29%). Figure 5.1-3 illustrates the secondary recreation purposes for aircraft, motorized craft, and non-motorized craft in Reach 1. The most common secondary trip purposes for non-motorized crafts were camping (20%), wildlife viewing (20%), and photography (23%). The most common secondary trip purpose for motorized watercraft was transportation (20%) and wilderness/solitude (20%). Fishing (67%) was the most commonly reported secondary trip purpose for aircraft recreators on Reach 1.

Participants were asked a series of questions about factors that influenced the timing of their trip and how they checked river flows prior to recreating in Reach 1 (Table 5.1-3). The majority of participants listed flows as a factor that influenced their decision to take a trip in Reach 1. In addition, the majority of participants checked the flows prior to their trip and used USGS gage information available on the Internet to do so. The majority of Reach 1 recreators used flow information from the Gold Creek gage in Reach 3 even though there are two existing stream gages in Reach 1 (Susitna R. at Nr. Denali and Susitna R. above Tsusena C.). The Gold Creek gage has the longest continuous flow data record of the three gages and is the gage reference point in river recreation guidebooks (Embick 1994 and Jettmar 2008) for suitable flow ranges.

Figure 5.1-4 illustrates the timing of air, motorized, and non-motorized trips in Reach 1 from 1975 to 2013 in comparison to recorded flows at the Gold Creek gage. The earliest Reach 1 trip recorded by a survey participant was a non-motorized trip in 1977. The majority of participants entered trip information for Reach 1 trips that occurred within the last 5 years. Figure 5.1-5 illustrates the timing of 2013 air, motorized, and non-motorized trips in Reach 1 in comparison to recorded flows at the Gold Creek gage. Most Reach 1 participants felt that the flow experienced on their trip was about the same as their preferred flow, and that they were very likely to return to Reach 1 based on this preferred flow (Table 5.1-4). Only two participants had to cut their trip short because flows were too high in Reach 1; none reported that trip length was cut short because flows were too low.

When asked to compare Susitna River Reach 1 recreation opportunities with other river opportunities in Alaska, 60% rated it as above average, 24% average, 12% below average, and 4% did not know. Compared to other rivers in the Pacific Northwest and Canada, 52% rated it as above average, 24% average, 8% below average, and 16% did not know. Finally, in comparison to other rivers in the USA 56% rated Reach 1 as above average, 16% average, 16% below average, and 12% did not know (Table 5.1-5).

### 5.1.2. Reach 1 Susitna River Recreation (Summer) Executive Interviews

Executive interviews were conducted with 10 individuals recreating on Reach 1 during open water conditions. Of these 10 summer use interviewees, 3 indicated use exclusively involving a motor (motorboat or airplane), 3 indicated exclusive non-motorized use, and the remaining four individuals indicated use of Reach 1 involved both motorized and non-motorized transportation. Of the 10 summer users in Reach 1, 5 indicated that their use was commercial in nature; 2 indicated use was exclusively non-commercial, and the remaining 3 individuals indicated that they used Reach 1 for both commercial and non-commercial purposes.

When asked about flow preferences for transportation, recreation, and whitewater, Reach 1 interviewee responses varied considerably. Most interviewees did not specify discharge and instead provided a qualitative description of cues utilized for determining flow preferences.

In general, interviewees began using Reach 1 in June and continued Reach 1 use through September and in some years into early October (weather dependent). Seven out of ten Reach 1 interviewees responded to questions about timing of peak summer use. Several named months or a range of months, others simply indicated summer or summer to fall. Months named for peak use were May to August, June to August, August, September, and August to the end of September and into early October.

Furthermore, interviewees indicated that summer access to Reach 1 is most often from the Denali Highway and trails parallel or adjacent to the Denali Highway. Other summer access points are fly-in landings on Susitna River gravel bars or adjacent lakes, the Maclaren River, and Lake Louise via the Tyone River.

### 5.1.3. Reach 1 Susitna River Winter Ice-Dependent River Recreation

Eight winter use interviewees out of a total of 20 interviews identified Reach 1 as an area they used in the winter. Of these 8 winter use interviewees, 3 indicated use exclusively involving a motorized vehicle (snow machine or airplane), 1 indicated exclusive non-motorized use, and the remaining 4 individuals indicated use of Reach 1 involving both motorized and non-motorized transportation.

Of the 8 winter users in Reach 1, 4 indicated that their use was commercial in nature; 1 indicated use was exclusively non-commercial, and the remaining 3 individuals indicated that they used Reach 1 for both commercial and non-commercial purposes.

Commercial winter use activities in Reach 1 include owning or operating a lodge, trapping of fur-bearers, flight seeing, wildlife photography, creative writing, guided hunting, and aurora viewing.

Non-commercial winter use activities in Reach 1 included snow machining (either as a primary activity or secondary activity, i.e., means of access/transportation or trail grooming/ maintenance), skiing, skijoring, dog mushing, wood cutting, snowshoeing, cabin access, adventure racing, hunting (including predator calling), trapping, ice fishing, sightseeing (including bird watching and wildlife viewing), and photography (Figure 5.1-6).

Primary activities of winter users of the Susitna River corridor in Reach 1 include skiing, snow machining, dog mushing, skijoring, woodcutting, cabin access, trapping, hunting, and ice fishing.

Snow machining is commonly a secondary activity when used to access the river corridor in pursuit of other activities (e.g., trapping or ice fishing) or when used for trail grooming and maintenance. Snowshoeing as a secondary activity is also common and several interviewees pack snowshoes along while pursuing primary activities in case they are needed.

When asked about ice thickness for safe river use, Reach 1 interviewees provide varying responses. Some interviewees did not specify an ice thickness in inches and instead provided a narrative of cues utilized for determining the safety of the river ice and travel across it.

Two Reach 1 interviewees indicated that the use of the river corridor required crossing of the river, 2 interviewees indicated longitudinal use (river travel up or downstream on the ice), and the remaining 4 interviewees indicated river use involving both river crossing and longitudinal use.

Interviewees began using Reach 1 in November or December and continued Reach 1 use until close to the time of ice breakup (typically April). Peak winter use was in the late winter months of February, March, and April, except for one user (a lodge owner) who indicated peak use was the period from November through April.

The frequency of use indicated by Reach 1 interviewees ranged from daily, heavy use (reported by 1 individual), to regular use (reported by 5 individuals), to sporadic use (reported by 2 individuals).

Winter access to Reach 1 is most often from the Denali Highway and trails parallel or adjacent to the Denali Highway. Other winter access points are the Maclaren River, and Lake Louise via the Tyone River.

## 5.2. River Recreation Reach 2 (PRM 179.3–PRM 152.3)

River Recreation Reach 2 is a 27-mile section of the Susitna River from Fog Creek to Portage Creek that includes Devils Canyon. Access to Reach 2 is limited. There is no motor vehicle access or recommended float/wheeled plane access within the Reach 2 river corridor, although it has been used historically by floatplanes for rescues of Devils Canyon boaters and for drop-offs. Floatplane operators indicated that they no longer land on the river in Reach 2 for safety reasons. Most motorized boats cannot make it beyond the lower portions of Devils Canyon just above Portage Creek. Floating into Reach 2 from Reach 1 is the primary means of non-motorized boat access to Reach 2. River recreators in this portion of the Susitna River typically exit the river in Reach 3 either floating to Talkeetna or boarding the train at Gold Creek. Reach 2 has been accessed from High Lake but no established trail exists.

Flows listed on the USGS National Water Information website for the period of record (August 1, 1949 to January 15, 2014) at USGS Gage No. 15292000 Susitna R. at Gold Creek (Gold Creek gage) were reviewed for the ice-free months (assumed to be May through October). Data for this location were not available for the period between October 1, 1996 and May 24, 2001.

Average recorded flows at Gold Creek gage were 17,711 cfs, and median recorded flows were 17,800 cfs. The historic maximum recorded daily flow at the Gold Creek gage was 86,800 cfs in June 2013. The Gold Creek gage is located in Reach 3 downstream of Devils Canyon, but some Reach 2 recreators reference the Gold Creek gage as the gage most often used to determine flow conditions in Reach 2. Features and potential boat routes/portages through Devils Canyon can change considerably with changes in flow.

### 5.2.1. Reach 2 Susitna River Recreation Internet Survey Information

Table 5.2-1 includes general information about the 27 Internet survey participants who recreated in Reach 2. Participants' ages ranged from 22 to 82 with a median age of 38. Only 2 of the participants were female and approximately half of the Reach 2 participants were Alaska residents. Twenty-one of the 28 recreators in Reach 2 responded that their skill level was expert. The majority of participants had more than one person in their party with a median party size of 4 and range of 1 to 35.

Table 5.2-2 includes general information on put-in and take-out options for river recreators on Reach 2. Three used a motorized boat for the put-in, 3 hiked in, 10 used a floatplane, 2 used a wheeled plane, and 9 participants chose N/A or a transportation mode not listed on the survey for Reach 2. Put-in locations for Reach 2 also varied. Seven participants floated in from Reach 1 and 7 put in at an undesignated remote location in Reach 2. Three individuals used Devils Creek and 5 more used Fog Creek as the put-in for Reach 2. An additional 7 participants listed "other" as the put-in location. The majority of Reach 2 recreators floated through to Reach 3 to take out. Slightly less than 50% of Reach 2 survey participants indicated that current access to Reach 2 is sufficient (Figure 5.2-1).

Participants were asked to list the primary and secondary purposes of their trip on Reach 2 and were given 12 purposes to choose from including write-in options for "other" primary and secondary trip purposes. Figure 5.2-2 illustrates the primary recreation purposes for aircraft, motorized craft, and non-motorized craft in Reach 2. Non-motorized craft participants listed whitewater recreation (48%) as their primary trip purpose, followed by wilderness and solitude (23%). Twenty percent of motorized craft participants reported motorized recreation, fishing, and wilderness/solitude as their primary purposes. The single aircraft participant for Reach 2 listed hunting and photography as the primary trip purpose. Figure 5.2-3 illustrates the secondary recreation purposes for aircraft, motorized craft, and non-motorized craft in Reach 2. The most common non-motorized craft secondary trip purposes were camping, photography, wildlife viewing, and wilderness and solitude. The most common motorized craft secondary trip purpose was wildlife viewing. Fishing was the only reported secondary trip purpose for the single Reach 2 aircraft participant.

Participants were asked a series of questions about factors that influenced the timing of their trip and how they checked river flows prior to recreating in Reach 2 (Table 5.2-3). The majority of participants listed flows as a factor that influenced their decision to take a trip in Reach 2. In addition, the majority of participants checked the flows prior to their trip and used USGS gage information available on the Internet to do so. For those Reach 2 recreators who did check the gage, the majority used flow information from the Gold Creek gage (RM 137) in Reach 2. Figure 5.2-4 illustrates the timing of air, motorized, and non-motorized trips in Reach 2 in

comparison to recorded flows at the Gold Creek gage (1975-2013). The earliest Reach 2 trip recorded by a survey participant was a non-motorized trip in 1977. Figure 5.2-5 illustrates the timing of 2013 air, motorized, and non-motorized trips in Reach 2 in comparison to recorded flows at the Gold Creek gage. Most Reach 2 participants felt that the flow experienced on their trip was about the same as their preferred flow, and that they were very likely to return to Reach 1 based on this preferred flow (Table 5.2-4). Only one participant had to cut the trip short because flows were too high in Reach 2; none reported that trip length was cut short because flows were too low.

When asked to compare Susitna River Reach 2 recreation opportunities with other river opportunities in Alaska, 62% rated it as above average, 15% average, 15% below average, and 8% did not know. Compared to other rivers in the Pacific Northwest and Canada, 69% rated it as above average, 15% average, and 15% below average. Finally, in comparison to other rivers in the USA, 69% rated Reach 2 as above average, 8% average, and 23% below average (Table 5.2-5).

### 5.2.2. Reach 2 Susitna River Recreation (Summer) Executive Interviews

Five summer use interviewees were Reach 2 recreators. Of these 5 Reach 2 summer use interviewees, 3 indicated use of a motor boat or airplane, 1 individual participated in both motorized and non-motorized recreation, and 1 individual was a whitewater kayaker.

### 5.2.3. Reach 2 Susitna River Winter Ice-Dependent River Recreation

Seven winter use interviewees out of a total of 20 indicated use of Reach 2. Of these 7 winter use interviewees, 3 indicated use exclusively involving a motorized vehicle (snow machine or airplane), 1 indicated exclusive non-motorized use, and the remaining 3 individuals indicated use of Reach 2 involving both motorized and non-motorized transportation.

Of the 7 winter users of Reach 2 interviewed, 2 indicated that their use was commercial in nature; 2 indicated that they used Reach 2 exclusively for non-commercial purposes, and the remaining 3 indicated use of Reach 1 for both commercial and non-commercial purposes.

Commercial winter use activities in Reach 2 include owning or operating a lodge (supporting unguided cross-country ski trips and dog mushing in Reach 2), trapping of fur-bearers (including access of remote cabins), flight seeing, wildlife photography, creative writing, and guided hunting.

Non-commercial winter use activities in Reach 2 include snow machining (either as a primary activity or secondary activity, i.e., means of access/transportation or trail grooming/ maintenance), skiing, skijoring, snowshoeing, cabin access, hunting, trapping, and recreational aviation (Figure 5.2-6).

Primary activities of winter users of the Susitna River corridor in Reach 2 include skiing, snow machining, dog mushing, skijoring, cabin access, trapping, hunting (including predator calling), photography, sightseeing (including bird watching and wildlife viewing), and flight seeing.

As noted for Reach 1, snow machining is commonly a secondary activity in Reach 2 when used to access the river corridor in pursuit of other activities (e.g., trapping or ice fishing), or when used for trail grooming and maintenance. Snowshoeing as a secondary activity is also prevalent and many interviewees pack snowshoes along while pursing primary activities in case they are needed for variable snow/trail conditions.

When asked about ice thickness for safe river use, Reach 2 interviewees provide varying responses. Some interviewees did not specify an ice thickness in inches and instead provided a narrative of cues utilized for determining the safety of the river ice and travel across it.

Two Reach 2 interviewees indicated use of the river corridor required crossing of the river, 3 interviewees indicated longitudinal use (river travel up or downstream on the ice), and the remaining 2 Reach 2 interviewees indicated river use involving both river crossing and longitudinal use.

Interviewees began using Reach 2 in November and December or in one case as late as January. Reach 2 use continued until close to the time of ice breakup. Peak winter use was in the months of January, February, March, and April. In 2013, winter use extended into May but it was the result of an atypically late breakup and is considered an anomaly.

Access points to Reach 2 in winter include Talkeetna, Alaska Railroad whistle stops, the Denali Highway (Alaska Route 8), Parks Highway (Alaska Route 8), and potentially the Glenn Highway (Alaska Route 1). Reach 2 can be accessed in the winter by snow machine, bush plane, dog team, skiing, and skijoring.

## 5.3. River Recreation Reach 3 (PRM 152.3–PRM 88.9)

River Recreation Reach 3 is a 63-mile section of the Susitna River beginning at Portage Creek and terminating at the George Parks Highway Bridge over the Susitna River. Motor vehicles can access Reach 3 at established unimproved boat launches at the George Parks Highway Bridge on river right, the terminus of Susitna River Road at PRM 99.2, and the southern terminus of D Street in Talkeetna. Motor vehicles can also access the Susitna River via an improved boat launch on the Talkeetna River northeast of the town of Talkeetna, about 3,000 feet upstream of the confluence of the Talkeetna and Susitna rivers. The Alaska Railroad's Hurricane Turn Whistle Stop Train offers Reach 3 access for non-motorized boaters at Chase, Curry, Gold Creek, and other stops along the rail line.

Motorized and non-motorized boating is a common recreation and commercial activity on Reach 3. A number of companies from Talkeetna including Denali View Raft Adventures, Denali River Guides, Mahay's Riverboat Service, and Talkeetna River Guides advertise boating and fishing tours in Reach 3. Only Mahay's runs a commercial motorized trip from Talkeetna, above Reach 3, into the lower portion of Devils Canyon. The Alaska Railroad, in concert with Denali View River Raft Adventures, advertises a flag stop rail and Susitna River float, with a train ride to Chase, and a gentle float back to Talkeetna with views of Mt. McKinley. Mahay's Riverboat Service advertises its Reach 3 commercial jet boat trips internationally and has as many as 25,000 customers annually (Steve Mahay, Owner of Mahay's Riverboat Service, Personal Communication, August 12, 2013).

There are two USGS gaging stations in Reach 3. Recorded flows for the Gold Creek gage are described in Section 5.2. Flows listed on the USGS National Water Information website were reviewed for the period of record (May 1, 1981 to January 12, 2014) at USGS Gage No. 15292780 Susitna R. at Sunshine, AK (Sunshine gage), during the ice-free months (assumed to be May through October). Data from this location were not available between July 1, 1986 and September 30, 2011. Average recorded flows at the Sunshine gage were 45,246 cfs and median recorded flows were 45,150 cfs. A high flow of 168,000 cfs was recorded in September.

### 5.3.1. Reach 3 Susitna River Recreation Internet Survey Information

Table 5.3-1 includes general information about the 63 Internet survey participants who recreated in Reach 3. Participant ages ranged from 22 to 82 with a median age of 44. Eighteen participants were female and 45 were male. Over three-quarters of the Reach 3 participants were Alaska residents (84%). A variety of skill levels and craft types was recorded in Reach 3. Reach 3 participants included whitewater boaters, jet boaters, prop boaters, rafters, catarafters, inflatable kayakers, canoers, and packrafters. Reach 3 survey participants reported skill levels that were fairly evenly divided between intermediate, advanced, and expert. The majority of Reach 3 participants had more than one person in their party with a median party size of 4 and a range of 1 to 47.

Table 5.3-2 includes general information on put-in and take-out options for river recreators on Reach 3. The largest single category (36%) of participants used a car or truck to access the put-in location in Talkeetna, with access via train a close second (29%). Train put-in locations included Gold Creek, Curry, and a single participant whose put-in location was described as "other train location." Other participant put-in locations included the Chulitna River, George Parks Highway Bridge, Indian River, Portage Creek, a remote Reach 3 put-in, and Deshka Landing downstream of Reach 3. Similarly, at the take-out, the majority of participants used a car or truck to take out in Talkeetna (43%). Sixteen participants took out at the George Parks Highway Bridge, 5 at Gold Creek, 2 at a remote Reach 3 location, 1 at Sherman, 1 on the Chulitna River, 1 below the George Parks Highway Bridge, and 1 at Deshka Landing. Forty-six percent of Reach 3 survey participants indicated that current access in Reach 3 was sufficient (Figure 5.3-1).

Participants were asked to list the primary and secondary purposes of their trip on Reach 3 and were given 12 purposes to choose from including a write-in option for "other" primary and secondary trip purposes. Figure 5.3-2 illustrates the primary recreation purposes for aircraft, motorized craft, and non-motorized craft in Reach 3. Non-motorized craft participants listed non-motorized recreation (28%) as their primary trip purpose, followed by wilderness and solitude (19%). Twenty-three percent of motorized craft participants reported fishing as their primary trip purpose, followed by motorized recreation (19%). The two aircraft participants for Reach 3 listed hunting and photography as their primary trip purposes. Figure 5.3-3 illustrates the secondary recreation purposes for aircraft, motorized craft, and non-motorized craft in Reach 3. The most common non-motorized craft secondary trip purposes were wildlife viewing and photography. The most common motorized craft secondary trip purposes included motorized recreation, camping, wildlife viewing, and wilderness/solitude. Fishing and wilderness/solitude were the secondary trip purposes for the 2 Reach 3 aircraft participants.

Similar to Reach 1 and 2, participants were asked a series of questions about factors that influenced the timing of their trip and how they checked river flows prior to recreating in Reach 3 (Table 5.3-3). The majority of participants listed flows as a factor that influenced their decision to take a trip in Reach 3. In addition, the majority of participants checked the flows prior to their trip and used USGS gage information available on the Internet to do so. Also similar to recreators on Reaches 1 and 2, the majority of Reach 3 recreators used flow information from the Gold Creek gage. Figure 5.3-4 illustrates the timing of air, motorized, and non-motorized trips in Reach 3 from 1975 to 2013 in comparison to recorded flows at the Gold Creek gage. The earliest Reach 3 trip recorded by a survey participant was a non-motorized trip in 1983. Figure 5.3-5 illustrates the timing of 2013 air, motorized, and non-motorized trips in Reach 3 in comparison to recorded flows at the Gold Creek gage. Most Reach 3 participants felt that the flow experienced on their trip was about the same as their preferred flow, and that they were very likely to return to Reach 3 based on this preferred flow (Table 5.3-4). Two participants had to cut their trips short because flows were too high in Reach 3; none reported that trip length was cut short because flows were too low.

When asked to compare Susitna River Reach 3 recreation opportunities with other river opportunities in Alaska, 54% rated it as above average, 15% average, 15% below average, and 15% did not know. Compared to other rivers in the Pacific Northwest and Canada, 46% rated it as above average, 15% average, 23% below average, and 15% did not know. Finally, in comparison to other rivers in the USA, 46% rated Reach 3 as above average, 8% average, 31% below average, and 15% did not know (Table 5.3-5).

### 5.3.2. Reach 3 Susitna River Recreation (Summer) Executive Interviews

Fourteen individuals were interviewed who recreate on Reach 3 during open water conditions. Of the 14 summer use interviewees, 7 indicated use exclusively involving a motorized vehicle (motorboat or airplane), 3 indicated exclusive non-motorized use, and the remaining 4 individuals indicated use of Reach 3 involving both motorized and non-motorized transportation.

Of the 14 interviewees who identified Reach 3 summer use, 5 indicated that their use was commercial in nature, 5 indicated exclusively non-commercial use, and the remaining 4 indicated use of Reach 3 for both commercial and non-commercial purposes.

When asked about flow preferences for transportation, recreation, and whitewater, Reach 3 interviewee responses varied considerably. Most interviewees did not specify discharge and instead provided a qualitative description of cues utilized for determining flow preferences.

Summer use of Reach 3 begins as early as May and as late as early October (weather dependent). Thirteen out of 14 Reach 3 interviewees provided some form of timing of peak summer use information. Two responses were simply “summer” and one was “summer and fall.” Of the 10 remaining interviews, 4 provided a range of months for peak use and these ranges were May to October, May to August, June to August, and August to September. The remaining 6 interviewees indicated peak summer use occurring in single months and these were May (n=1), July (n=2), August (n=1), and September (n=2).

Reach 3 experiences the highest summer use frequency because of its proximity to the Parks Highway corridor.

Interviewee access points to Reach 3 included Talkeetna, the Parks Highway, and the Alaska Railroad. Additional Reach 3 access options mentioned by interviewees included the train, motorboat, all-terrain vehicle (ATV), bush plane, hiking, and bicycling.

### 5.3.3. Reach 3 Susitna River Winter Ice-Dependent River Recreation

Seventeen winter use interviewees out of a total of 20 indicated use of Reach 3. Of these 17 winter use interviewees, 3 indicated use exclusively involving a motorized vehicle (snow machine or airplane), 5 indicated exclusive non-motorized use, and the remaining 9 individuals indicated use of Reach 3 involved both motorized and non-motorized transportation.

Of the 17 interviewees who identified Reach 3 winter use, 2 indicated that their use was commercial in nature, 10 indicated exclusively non-commercial use, and the remaining 5 indicated use of Reach 3 for both commercial and non-commercial purposes.

Commercial winter use activities in Reach 3 include operating a lodge and providing or supporting guided snow machine tours, trapping of fur-bearers (including access to remote cabins), wood cutting, fat tire biking, wildlife photography, and guided hunting.

Non-commercial winter use activities in Reach 3 include snow machining (either as a primary activity or secondary activity, i.e., means of access/transportation or trail grooming/ maintenance), skiing, skijoring, wood cutting, dog mushing, snowshoeing, adventure racing, fat tire biking, cabin access, hunting/predator calling, trapping, ice fishing, sightseeing/photography (including bird watching and wildlife viewing), and recreational aviation (Figure 5.3-6).

Primary activities of winter users of the Susitna River corridor in Reach 3 include cross-country skiing, snow machining, dog mushing, skijoring, fat tire biking, woodcutting, cabin access, trapping, hunting (including predator calling) ice fishing, photography, sightseeing (including bird watching and wildlife viewing), and flight seeing.

Snow machining is commonly a secondary activity when used to access the river corridor in pursuit of other activities (e.g., trapping or ice fishing) or when used for trail grooming and maintenance. Snowshoeing as a secondary activity is also common and many interviewees pack snowshoes along while pursing primary activities in case they are needed for variable snow/trail conditions.

When asked about ice thickness for safe river use, Reach 3 interviewees provide varying responses. Some interviewees did not specify an ice thickness in inches and instead provided a narrative of cues utilized for determining the safety of the river ice and travel across it.

Three Reach 3 interviewees indicated use of the river corridor required crossing of the river, 5 interviewees indicated longitudinal use (river travel up or downstream on the ice), and 9 Reach 3 interviewees indicated river use involving both river crossing and longitudinal use. One other response indicated use of trails that neither crossed nor were on the Susitna River ice.

Winter use of Reach 3 ice begins as early as November or as late as February. Approximately half of the responses indicated winter river use beginning in December. Reach 3 use continued until March or April for most interviewees. In 2013, winter use extended into May, but it was the result of a late breakup and is considered an anomaly. Peak winter use was in the months of January, February, March, and April. Among the peak use months, March is the most heavily used month for winter use of the Susitna River.

Reach 3 experiences the highest winter use frequency because of its proximity to the Parks Highway corridor. Winter access Points to Reach 3 include the village of Talkeetna, the Parks Highway, and the Alaska Railroad. Reach 3 can be accessed by snow machine, bush plane, dog team, skiing, snowshoes, and skijoring.

# 6. DISCUSSION

As described in Section 12.7.4 of the RSP, River Recreation Flow and Access Study efforts to date have involved documenting river uses including transportation river uses. The Susitna River Recreation and Access Internet Survey was used to gather information on river recreation uses, location, frequency, seasonal patterns, primary trip purpose, secondary activities, access, campsites, and river recreation quality relative to trip flow evaluations for three distinct Susitna River Recreation reaches described in Section 12.7.3 of the RSP.

Survey participation was solicited by advertising the river recreation survey electronically through a multitude of forums. Formal and informal interviews were conducted to supplement the Internet survey data as well as gather additional information about user groups, trip purposes, use patterns, access, flows, and other recreation information. Information on winter recreation activities and transportation on the ice-covered Susitna River was obtained through interviews with regional officials, winter recreation users, event organizers, event participants, and other knowledgeable area residents. River ice-dependent winter recreation and transportation information obtained through the interviews was summarized for respective recreation opportunities including primary purpose, secondary activities, ice thickness required, need for ice bridges versus longitudinal ice cover, seasonal use patterns, frequency of use, access points, and winter recreation quality on the Susitna.

The Study Plan (RSP Section 12.7.3) provides that if 2013 study results indicate that the Project may affect river flows in a way that recreationists currently use the reach of the river downstream of the Parks Highway Bridge (PRM 88.9), the study effort for the next study season may extend farther downstream. During 2013, the study team collected information on river recreation use and experience and coordinated with the study teams for the Instream Flow Study (Study 8.6), Ice Processes in the Susitna River Study (Study 7.6), Geomorphology Study (Study 6.5), Recreation Resources Study (Study 12.5), and Aesthetics Resources Study (Study 12.6).

On January 31, 2013, the results of the Open Water HEC-RAS Flow Routing Model were filed with FERC. This report included in part, simulated flow releases from the Watana Dam to the Susitna River for a maximum load-following operational scenario (OS-1) using historical flows recorded during the calendar year 1984. OS-1 is based on the assumption that the entire load fluctuation of the Railbelt would be provided by the Susitna-Watana Project, and that all other

sources of electrical power in the Railbelt would be running at base load. This assumed condition is not realistic for an entire year. The results of this condition are conservative with respect to assessing downstream impacts of load-following and represent an extreme condition that would not occur for an entire year. The year 1984 was selected because USGS gaging records were available for the entire year for the Susitna, Chulitna, and Talkeetna Rivers, and 1984 is representative of average conditions on both an annual and monthly basis. OS-1 flow and stage hydrographs are illustrated for the entire year on the Susitna River at a number of locations including the end of River Reach 3 at the Parks Highway Bridge. This location is referred to in the January 2013 report as the Sunshine gage (USGS 15292780). The results of the January 31, 2013 report indicate that OS-1 changes in both stage and flow are minimal at the end of Reach 3.

The report goes on to conclude that modeled changes in stage in flow at the end of Reach 3 are actually exaggerated as the Susitna River is confined to an unusually narrow channel in the vicinity of the George Parks Highway Bridge. A wider and more typical channel location just downstream of Reach 3 at PRM 87.1 was also measured as part of the study. The river at this location is about twice as wide as the wetted channel at the USGS gage. A comparison of stage changes at the end of River Reach 3 and the wider transect at PRM 87.1 under pre-Project conditions and OS-1 resulted in 12 to 19% less stage change in response to flow fluctuations than observed at the more narrow location at the end of Reach 3. The results of the January 31, 2013 Open Water HEC-RAS Flow Routing Model do not support increasing the longitudinal scope of the river recreation studies below the George Parks Highway Bridge.

# 7. COMPLETING THE STUDY

[Section 7 appears in the Part C section of this ISR.]

# 8. LITERATURE CITED

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# 9. TABLES

**Table 4.1-1. Susitna River Recreation Internet Survey Distribution**

| Organization | Electronic Solicitation | Personal Solicitation | Distribution of Postcards |
|---|---|---|---|
| Above Alaska Aviation | x | x | x |
| Alaska Department of Fish and Game; Glennallen | x | | |
| Alaska Airmen's Association | x | | |
| Alaska Backcountry Adventure Tours | x | | |
| Alaska Bush Float Plane Service | x | x | x |
| Alaska Fish Bone Charters | x | | |
| Alaska Flyfishers Association | x | | |
| Alaska Mountaineering School | x | | |
| Alaska Outdoor Council | x | | |
| Alaska Raft and Kayak | x | x | x |
| Alaska Railroad | x | x | x |
| Alaska Tour and Travel | x | | |
| Alaska Outdoor Recreation Forum | x | | |
| Alaska Freshwater Kayaking Forum | x | | |
| Alaska Rafting Forum | x | | |
| Alaska Powerboating Forum | x | | |
| Alaska Airboating Forum | x | | |
| Alaska Float Hunting Forum | x | | |
| Alaska Freshwater Fishing Forum | x | | |
| Alaska Flyfishing Forum | x | | |
| Alaska Bushflying Forum | x | | |
| American Whitewater Association | x | | |
| Anchorage Paddling Club | x | | |
| Black Bear ATV/Air-Boat Tours | x | | |
| Bureau of Land Management, Glennallen; Heath Emmons & Denton Hamby | x | | |

| Organization | Electronic Solicitation | Personal Solicitation | Distribution of Postcards |
|---|---|---|---|
| Boy Scouts of America, Blair Lake Project | x | | |
| Cross Country Alaska | x | | |
| Dave Fish Alaska | x | | |
| Denali Guides and Outfitters/Denali Trekking Co. | x | | |
| Denali Outdoor Center | x | x | x |
| Denali Raft Adventures | x | x | x |
| Denali Southside River Guides | x | x | x |
| Denali View Raft Adventures | x | x | x |
| Deshka Landing | x | x | x |
| Fairbanks Paddlers | x | | |
| High Lake Lodge | x | | |
| Huskeytown Kennel | x | | |
| Gracious House Lodge | x | x | x |
| Interior Alaska Airboat Association Inc. | x | | |
| Just Fly Fish | x | | |
| K2 Aviation | x | x | x |
| Lake Louise Lodge | x | | |
| Maclaren River Lodge | x | | |
| Mahay's Riverboat Service | x | x | x |
| Mckinley Flight Tours/Talkeetna Aero Services | x | x | x |
| National Outdoor Leadership School (NOLS), Alaska | x | x | |
| Nova River Guides | x | x | x |
| Paxson Alpine Tours | x | | |
| Phantom Salmon Charters | x | | |
| Recreation Equipment Incorporated (REI) Anchorage | x | x | x |
| River Wranglers | x | | |
| Rust's Flying Service | x | | |
| Sheldon Air Service | x | | |
| Sportsmen for Fish and Wildlife | x | | |
| Sportsman's Warehouse Anchorage | x | x | x |
| Stephan Lake Lodge | x | | |
| Talkeetna Adventure Company | x | | |
| Talkeetna Air Taxi | x | x | x |

| Organization | Electronic Solicitation | Personal Solicitation | Distribution of Postcards |
|---|---|---|---|
| **Talkeetna Chamber of Commerce** | x | | |
| **Talkeetna River Guides** | x | | |
| **Talkeetna Sundog Kennel** | x | | |
| **Talkeetna Travel and Reservations** | x | | |
| **Talkeetna/Denali Visitor Center** | x | | |
| **Talkeetna Roadhouse** | | | x |
| **Three Rivers Fly Shop** | x | x | x |
| **Tri Rivers Charter** | x | x | x |
| **University of Alaska Kayak Club** | x | | |
| **Willow Air** | x | | |

**Table 5.1-1 Susitna River Reach 1 Internet Survey Participant Information**

| | |
|---|---|
| **Age; Gender** | Age: Mean (44), Median (39), Range (22-82); Gender: M(26) F (3) |
| **Resident or Non-Resident** | Non-Residents (7) Residents (18) |
| **Type of Craft** | Motorized (5), Non-Motorized (17), Airplane (3) |
| **Specific Watercraft** | Whitewater Kayak (10) Raft (3) Packraft (3) Closed deck canoe (1) Airboat (3) Prop Boat(3) |
| **Skill Level** | Novice (1), Intermediate (3), Advanced (6), Expert (12) |
| **Years Using the Craft** | Mean (18), Median (18), Range (2-42) |
| **How many days/year using this craft** | >5 (0) 6-10 (1) 11-20 (4) <20 (20) |
| **How many times have you recreated on this Reach** | 1 (8) 2-5 (6) 6-10 (3) >10 (8) |
| **How many people were in your party** | Mean (5) , Median (4), Range (1-9) |
| **Use of Commercial Outfitter or Rental** | 36% Yes 64% No |

**Table 5.1-2 Susitna River Reach 1 Put in and Take out Information**

| | |
|---|---|
| **Put IN** | Transportation Car/Truck (15) Hike (2) Float Plane (5) Wheeled Plane (3) |
| **Location Name** | Float in from upstream of Denali Hwy (3) Denali Highway Bridge (11) Access via tributary float (3) Reach 1 remote location (4) Maclaren River (1) Tyone River (1) Watana Creek (1) Other is (1-float plane to Fog lake) |
| **Take OUT** | Car/Truck (12) Motorized Boat (1) Hike (2) Float Plane (2) Wheeled Plane (4) Not Applicable (4) |
| **Location Name** | Denali Highway Bridge (4) Float through to Reach 2 (6) Exit Via Tributary (1) Reach 1 remote location (3) Tyone River (3) Watana Creek (1) Other (7) |

**Table 5.1-3 Susitna River Reach 1 Put in and Take out Information**

| | |
|---|---|
| **Do they typically check flows for the trip; For this trip?** | Typically (22Yes; 3No) This Trip (20 Yes; 5 No) |
| **How do they check flows for the trip** | Internet Gage (14) , Internet Gages for Adjacent Rivers (7), Observation (9) , Local Knowledge (4), Weather Patterns (12) Other (1; used a telephone 1980's trip) |
| **Gage (s) Used for Flow Information** | Su. R. at Sunshine, RM 84 (4); Su. R. at Gold RM 137 (11); Su. R. above Tsusena C. RM 182 (5); Su. R. at Nr. Denali RM 291 (5); |
| **Factors that influenced the decision to take the trip** | Flow (15) Weather (12) Vacation time ( 6) Hunting/fishing season (12) Availability with friends/family (9) Other (4: Fall colors 2; big game guiding1; hiking 1) |

**Table 5.1-4 Susitna River Reach 1 Flow Preference Information**

| | |
|---|---|
| **Compared to the recent trip should the flows be lower, higher, or the same** | Much lower (2) slightly lower (3) About the same (15) slightly higher (5) |
| **Likeliness of returning to the River Reach based on preferred flow** | Very likely (21) Somewhat likely (3) Unlikely (1) |
| **Did lack of water clarity contribute to hits, stops, drags and boat running aground** | A lot (1) Somewhat (4) Not at all (20) |
| **Trip length cut short because flows were too high or too low** | Too high (2) Too Low (0) Not Applicable (23) |

**Table 5.1-5 Susitna River Reach 1 Comparison to other rivers statewide, regionally, and nationally; (Rating Scale: 1-Below Average, 2-Average, 3-Above Average, 0-Don't know)**

| **Compared to other rivers in:** | Median | Mean | Below Average | Average | Above Average | Don't Know |
|---|---|---|---|---|---|---|
| **Alaska** | 3 | 2.56 | 12% rating (25) | 24% | 60% | 4% |
| **Pacific Northwest & Canada** | 3 | 2.76 | 8% (25) | 24% | 52% | 16% |
| **USA** | 3 | 2.64 | 16% | 16% | 56% | 12% |

**Table 5.2-1 Susitna River Reach 2 Internet Survey Participant Information**

| | |
|---|---|
| **Age; Gender** | Age: Mean (43), Median (38), Range (22-82); Gender: M(25) F (2) |
| **Resident or Non-Resident** | Non-Residents (14) Residents (13) |
| **Type of Craft** | Motorized (3), Non-Motorized (23), Airplane (1) |
| **Specific Watercraft** | Whitewater Kayak (21) Packraft (1) Closed deck canoe (8) Jetboat (3) |
| **Skill Level** | Intermediate (2), Advanced (3), Expert (21) |
| **Years Using the Craft** | Mean (24), Median (22), Range (4-45) |
| **How many days/year using this craft** | >5 (0) 6-10 (1) 11-20 (2) <20 (24) |
| **How many times have you recreated on this Reach** | 1 (9) 2-5 (9) 6-10 (3) >10 (6) |
| **How many people were in your party** | Mean (6) , Median (4), Range (1-35) |
| **Use of Commercial Outfitter or Rental** | 63% Yes 37% No |

**Table 5.2-2 Susitna River Reach 2 Put in and Take out Information**

| | |
|---|---|
| **Put IN** | Motorized Boat (3) Hike (3) Float Plane (10) Wheeled Plane (2) N/A (9) |
| **Location Name/RM** | Float in from Reach 1 (7) Reach 2 Remote location (7) Devil Creek (3) Fog Creek (5) Other (7: 1 Foglake 2 Talkeetna; 1 small lake above because river was too swift; 3 unknown ) |
| **Take OUT** | Motorized boat (4) Hike (3) Float Plane (1) Wheeled Plane (1) Helicopter (1) N/A (17) |
| **Location Name/RM** | Float through to Reach 3 (18), Reach 2 remote location (2), Devil Creek (1), Portage Creek (4), Other (2:1 Chuvena lake, 1 unknown) |

**Table 5.2-3 Susitna River Reach 2 Put in and Take out Information**

| | |
|---|---|
| **Do they typically check flows for the trip; For this trip?** | Typically (23Yes; 4No) This Trip (23 Yes; 4 No) |
| **How do they check flows for the trip** | Internet Gage (15) , Internet Gages for Adjacent Rivers (6), Observation (9) , Local Knowledge (11), Weather Patterns (11) Other (3: used a telephone) |
| **Gage (s) Used for Flow Information** | Su. R. at Gold RM 137 (14); Su. R. above Tsusena C. RM 182 (2); Su. R. at Nr. Denali RM 291 (1); |
| **Factors that influenced the decision to take the trip** | Flow (22) Weather (18) Vacation time ( 7) Hunting/fishing season (4) Availability with friends/family (12) Other (3: 1 fall colors; 1 big game guiding; 1 site seeing ) |

**Table 5.2-4 Susitna River Reach 2 Flow Preference Information**

| | |
|---|---|
| **Compared to the recent trip should the flows be lower, higher, or the same** | Much lower (0) slightly lower (5) About the same (14) slightly higher (8) |
| **Likeliness of returning to the River Reach based on preferred flow** | Very likely (19) Somewhat likely (5) Unlikely (3) |
| **Did lack of water clarity contribute to hits, stops, drags and boat running aground** | A lot (0) Somewhat (3) Not at all (24) |
| **Trip length cut short because flows were too high or too low** | Too high (1) Too Low (0) Not Applicable (26) |

**Table 5.2-5 Susitna River Reach 2 Comparison to other rivers statewide, regionally, and nationally; (Rating Scale: 1-Below Average, 2-Average, 3-Above Average, 0-Don't know)**

| **Compared to other rivers in:** | Median | Mean | Below Average | Average | Above Average | Don't Know |
|---|---|---|---|---|---|---|
| **Alaska** | 3 | 2.6 | 15% | 15% | 62% | 8% |
| **Pacific Northwest & Canada** | 3 | 2.5 | 15% | 15% | 69% | 0% |
| **USA** | 3 | 2.5 | 23% | 8% | 69% | 0% |

**Table 5.3-1 Susitna River Reach 3 Internet Survey Participant Information**

| | |
|---|---|
| **Age; Gender** | Age: Mean (47), Median (44), Range (22-82); Gender: M(45) F (18) |
| **Resident or Non-Resident** | Non-Residents (10) Residents (53) |
| **Type of Craft** | Motorized (16), Non-Motorized (45), Airplane (2) |
| **Specific Watercraft** | Whitewater Kayak (15) Packraft (9) Jetboat (13) Airboat (1) Prop Boat (2) Raft (12) Cataraft (1) Inflatable Kayak (5) Open Canoe (2) Other (1) |
| **Skill Level** | Novice (3) Intermediate (18), Advanced (20), Expert (20) |
| **Years Using the Craft** | Mean (17), Median (15), Range (0-54) |
| **How many days/year using this craft** | >5 (3) 6-10 (3) 11-20 (18) <20 (39) |
| **How many times have you recreated on this Reach** | 1 (9) 2-5 (9) 6-10 (3) >10 (6) |
| **How many people were in your party** | Mean (6) , Median (4), Range (1-47) |
| **Use of Commercial Outfitter or Rental** | 40% Yes 60% No |

**Table 5.3-2 Susitna River Reach 3 Put in and Take out Information**

| | |
|---|---|
| **Put IN** | Car/Truck (21) Motorized Boat (4) Hike (1) Train (17) Float Plane (2) Wheeled Plane (3) N/A (10) |
| **Location Name/RM** | Reach 3 remote location (4) Float in from Reach 2 (7) Curry (6) Chulitna River (10) George Parks Highway Bridge (aka Sunshine) (3) Gold Creek (8) Indian River (1) Portage Creek (3) Talkeetna (14) Other (2: 1 up from Deska; 1 other train location) |
| **Take OUT** | Car/Truck (35) ATV (2) Motorized Boat (4) Hike (2) Train (4) Wheeled Plane (1) N/A (10) |
| **Location Name/RM** | Reach 3 remote location (2) Chulitna River (1) Downstream George Parks Highway Bridge (1) George Parks Highway Bridge (aka Sunshine) (16) Gold Creek (5) Sherman (1) Talkeetna (30) Other (2; 1 at Deska; 1 unknown) |

**Table 5.3-3 Susitna River Reach 3 Put in and Take out Information**

| | |
|---|---|
| **Do they typically check flows for the trip; For this trip?** | Typically (52Yes; 11No) This Trip (47 Yes; 16 No) |
| **How do they check flows for the trip** | Internet Gage (35) , Internet Gages for Adjacent Rivers (13), Observation (23) , Local Knowledge (20), Weather Patterns (19) Other (2used a telephone; 2 smartphone/IPAD App.; called a guide ) |
| **Gage (s) Used for Flow Information** | Su. R. at Sunshine RM 84 (10); Su. R. at Gold RM 137 (25); Su. R. above Tsusena C. RM 182 (4); Su. R. at Nr. Denali RM 291 (4); |
| **Factors that influenced the decision to take the trip** | Flow (32) Weather (32) Vacation time ( 13) Hunting/fishing season (13) Availability with friends/family (36) Other (11:1 fall colors; 1 big game guiding; 1 site seeing; 3 unique whistle stop train ride/schedule; agency trip; 2 work schedule or holiday weekend; summer solstice; 3 unknown) |

**Table 5.3-4 Susitna River Reach 3 Flow Preference Information**

| | |
|---|---|
| **Compared to the recent trip should the flows be lower, higher, or the same** | Much lower (31) slightly lower (6) About the same (46) slightly higher (9) Much higher (1) |
| **Likeliness of returning to the River Reach based on preferred flow** | Very likely (50) Somewhat likely (12) Unlikely (1) |
| **Did lack of water clarity contribute to hits, stops, drags and boat running aground** | A lot (2) Somewhat (8) Not at all (53) |
| **Trip length cut short because flows were too high or too low** | Too high (2) Too Low (0) Not Applicable (61) |

**Table 5.3-5 Susitna River Reach 3 Comparison to other rivers statewide, regionally, and nationally; (Rating Scale: 1-Below Average, 2-Average, 3-Above Average, 0-Don't know)**

| **Compared to other rivers in:** | Median | Mean | Below Average | Average | Above Average | Don't Know |
|---|---|---|---|---|---|---|
| **Alaska** | 3 | 2.7 | 15% | 15% | 54% | 15% |
| **Pacific Northwest & Canada** | 3 | 2.5 | 23% | 15% | 46% | 15% |
| **USA** | 3 | 2.5 | 31% | 8% | 46% | 15% |

# 10. FIGURES

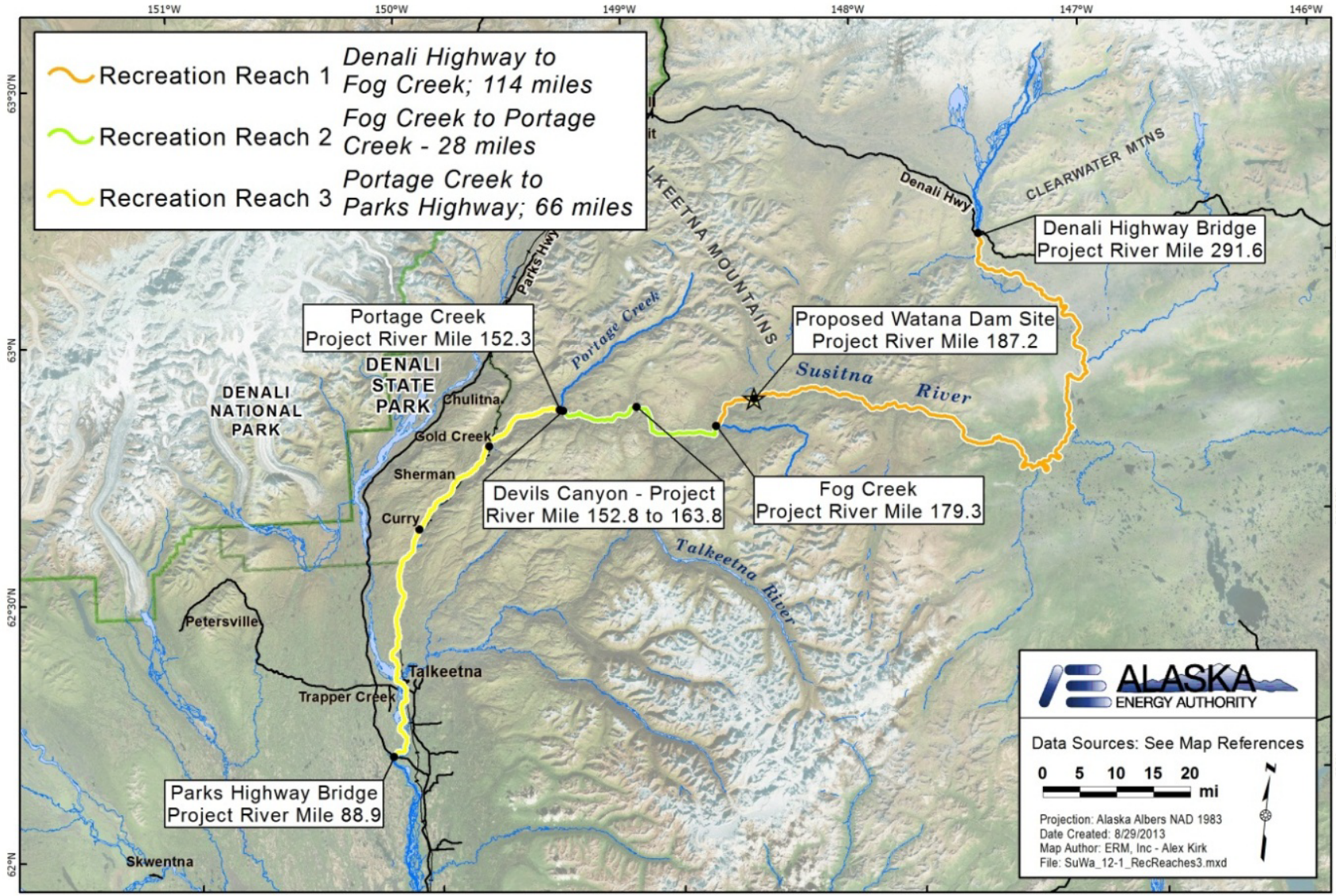



**Figure 3-1. River Recreation Study Area.**

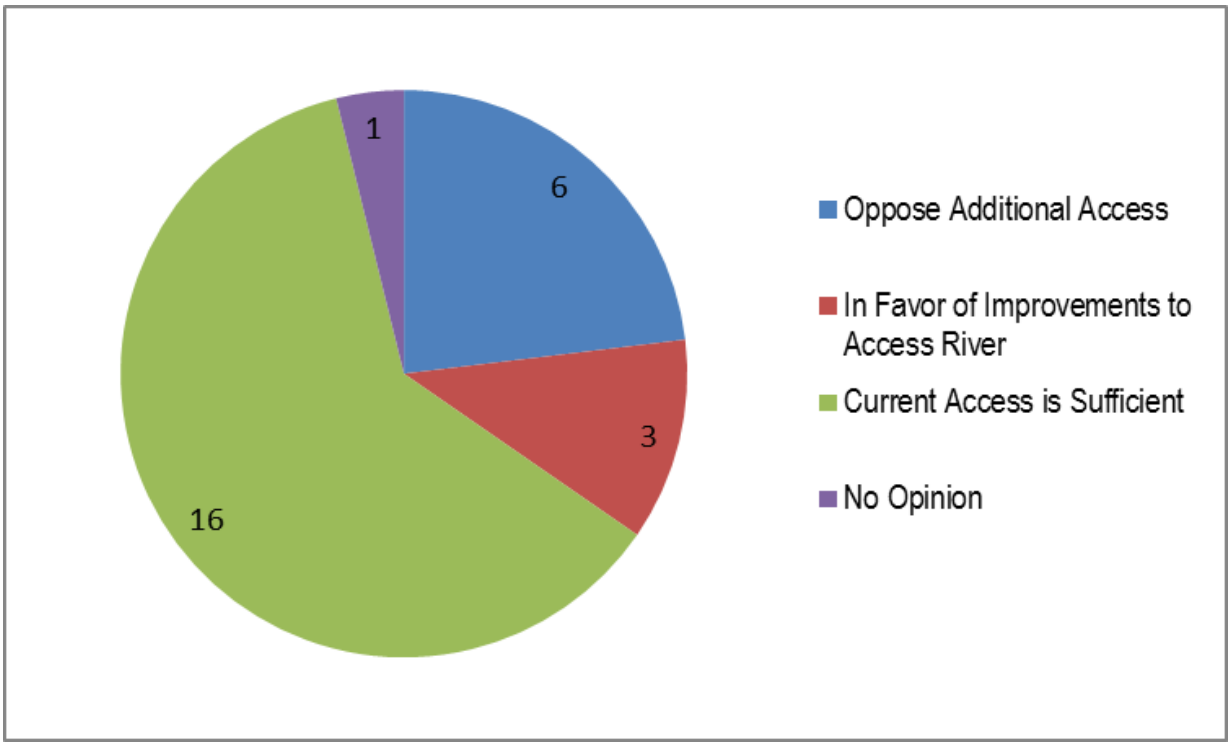



**Figure 5.1-1. Reach 1 Internet Survey Participant Access Responses for 26 Recreators**

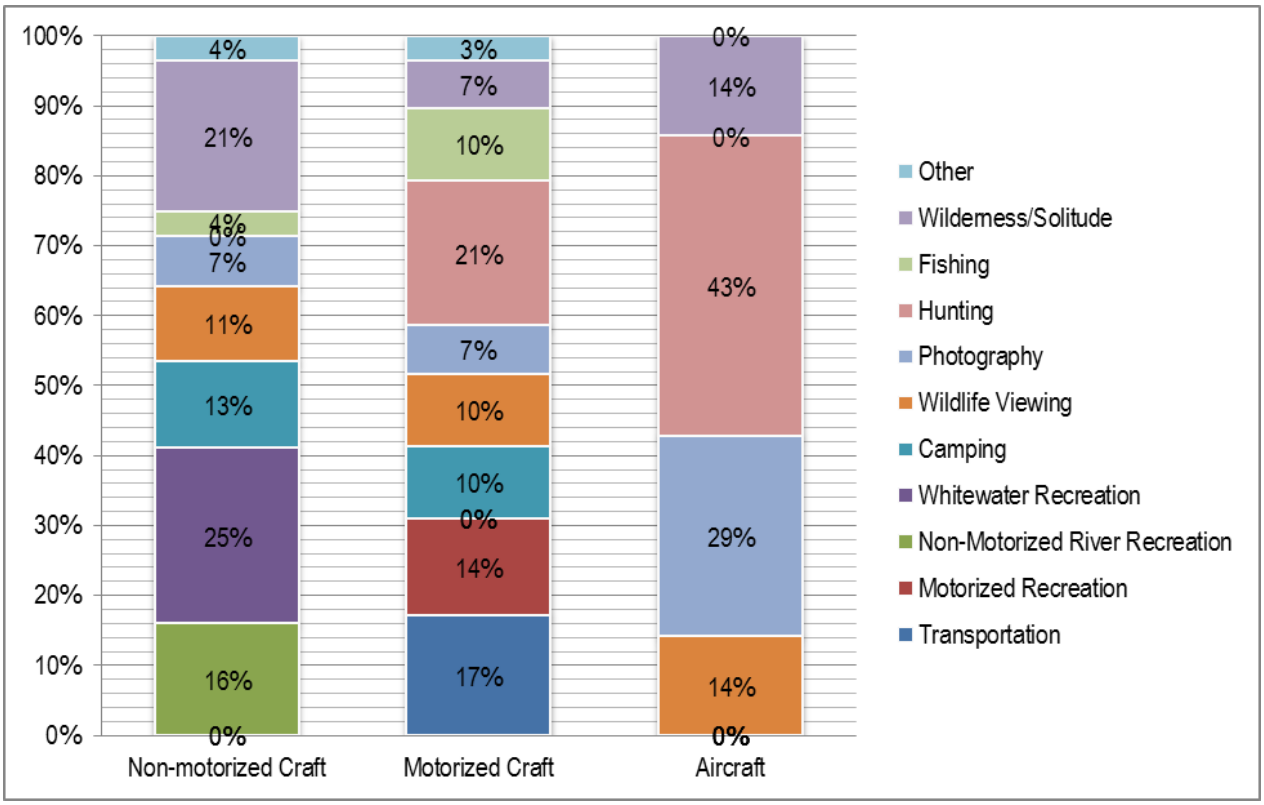



**Figure 5.1-2. Primary Purposes of Recreation in Reach 1**

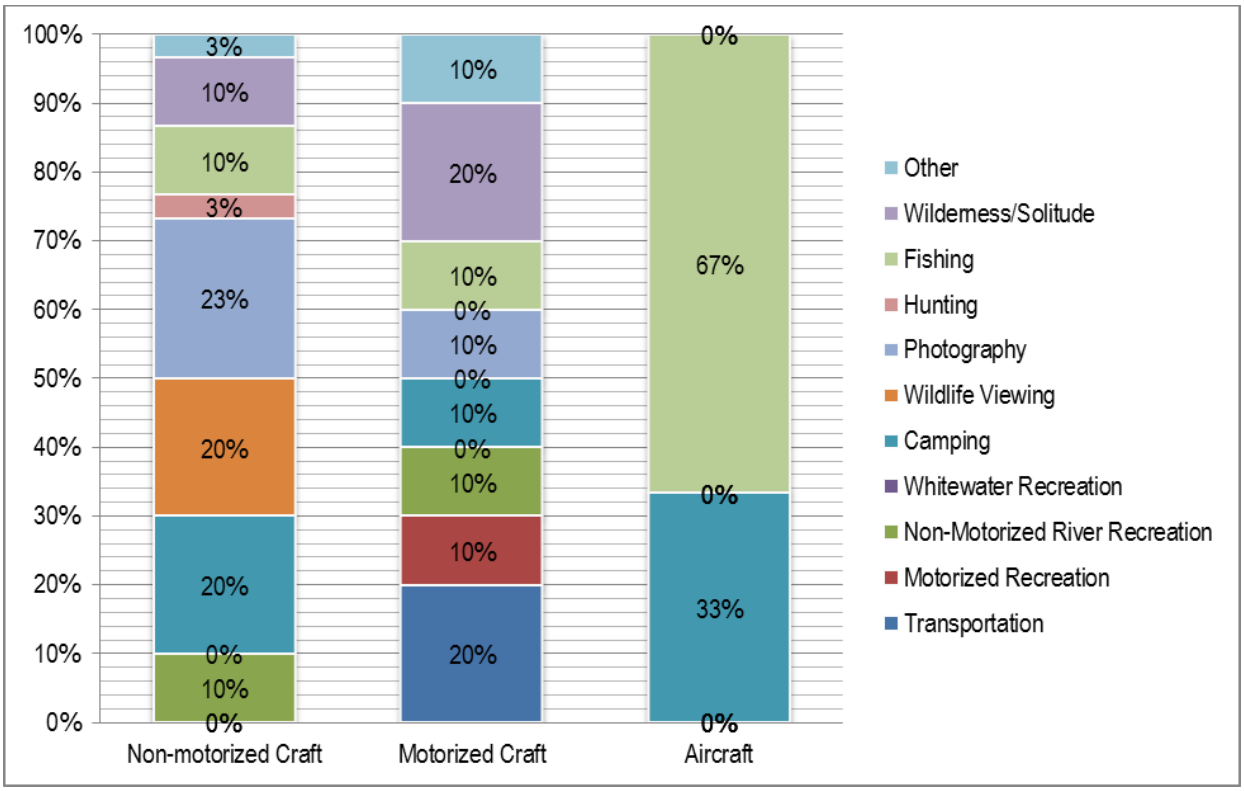



**Figure 5.1-3. Secondary Purposes of Recreation in Reach 1**

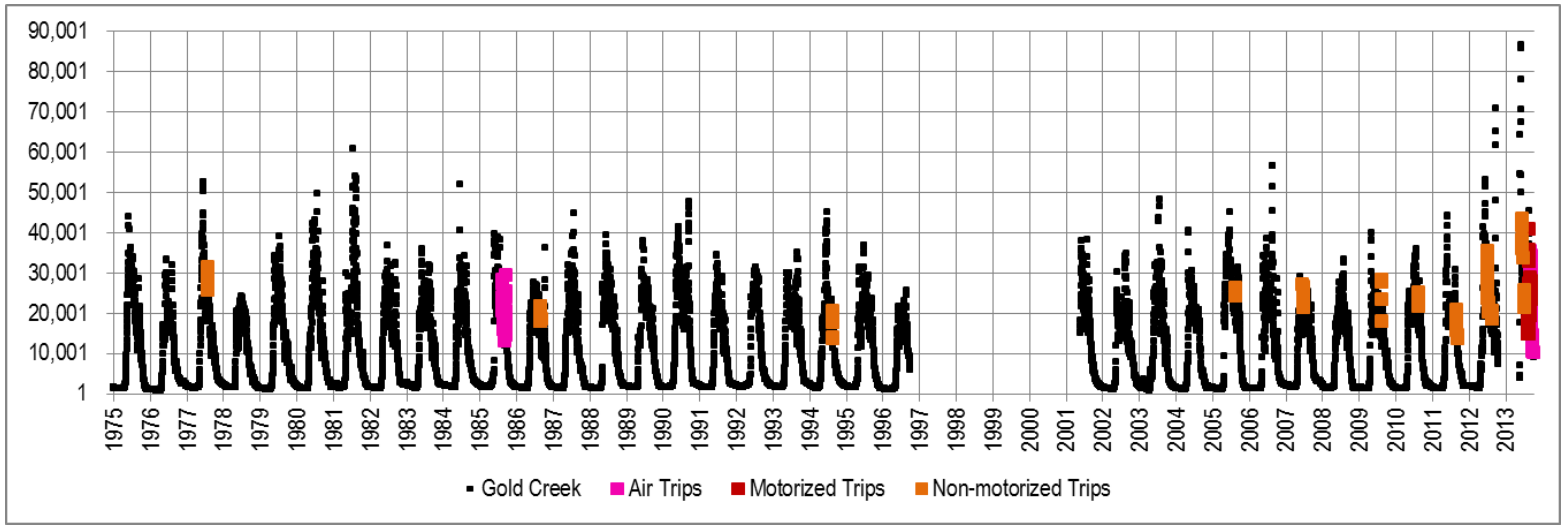



**Figure 5.1-4. Timing of Air, Motorized, and Non-motorized Trips in Reach 1 (1975-2013)**

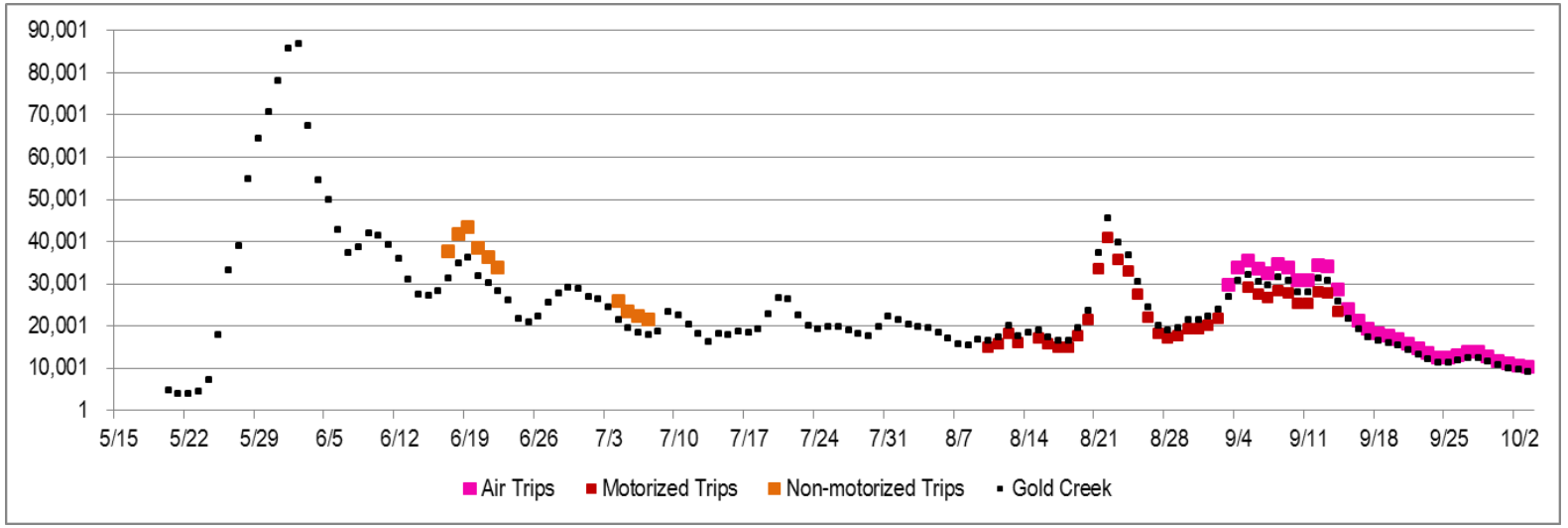



**Figure 5.1-5. Timing of Air, Motorized, and Non-motorized Trips in Reach 1 (2013)**

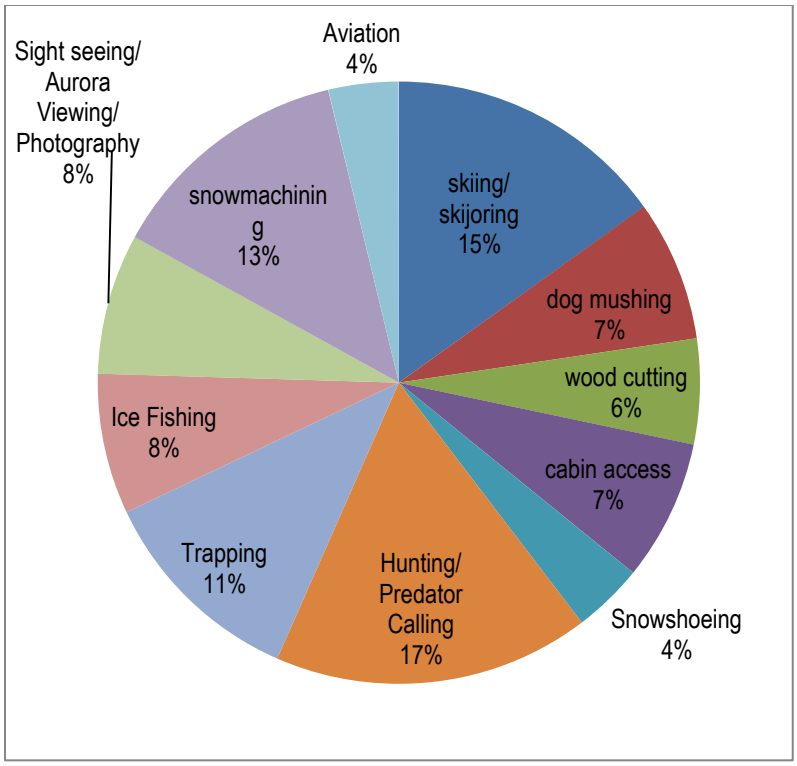



**Figure 5.1-6. Reach 1 Executive Interviewees Winder Activities (8 Interviewees)**

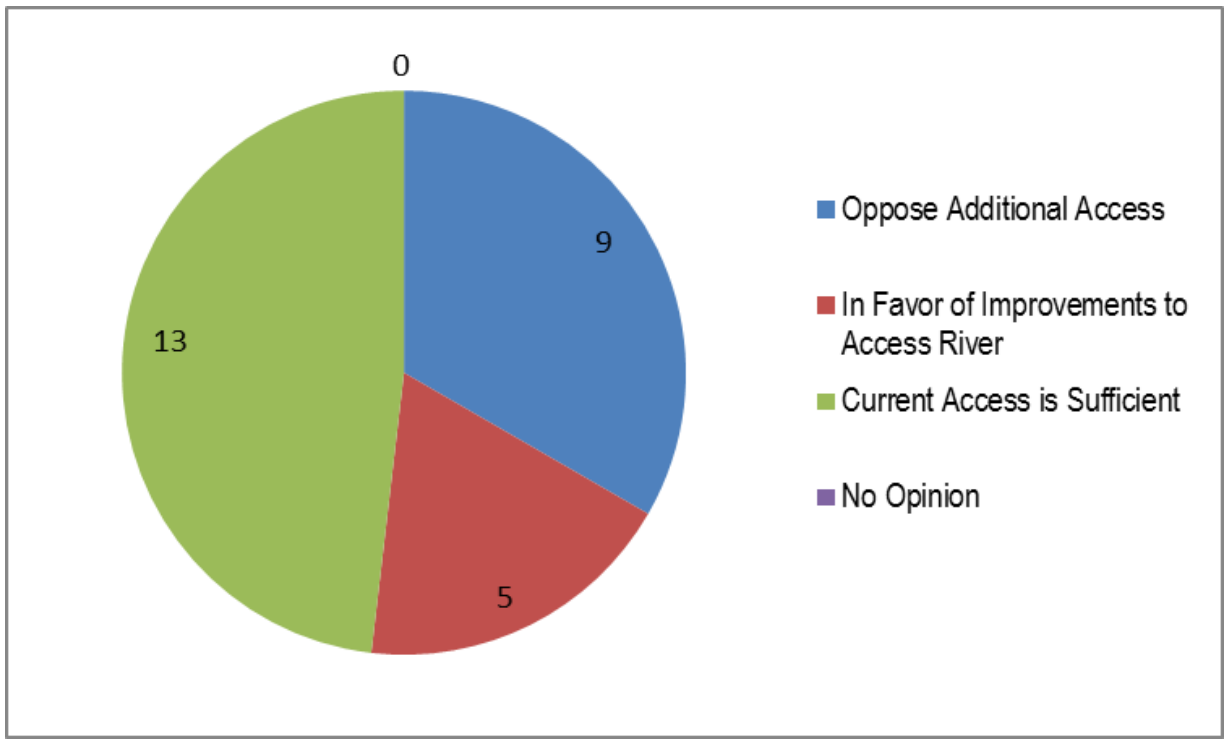



**Figure 5.2-1. Reach 2 Internet Survey Participant Access Responses for 27 Recreators**

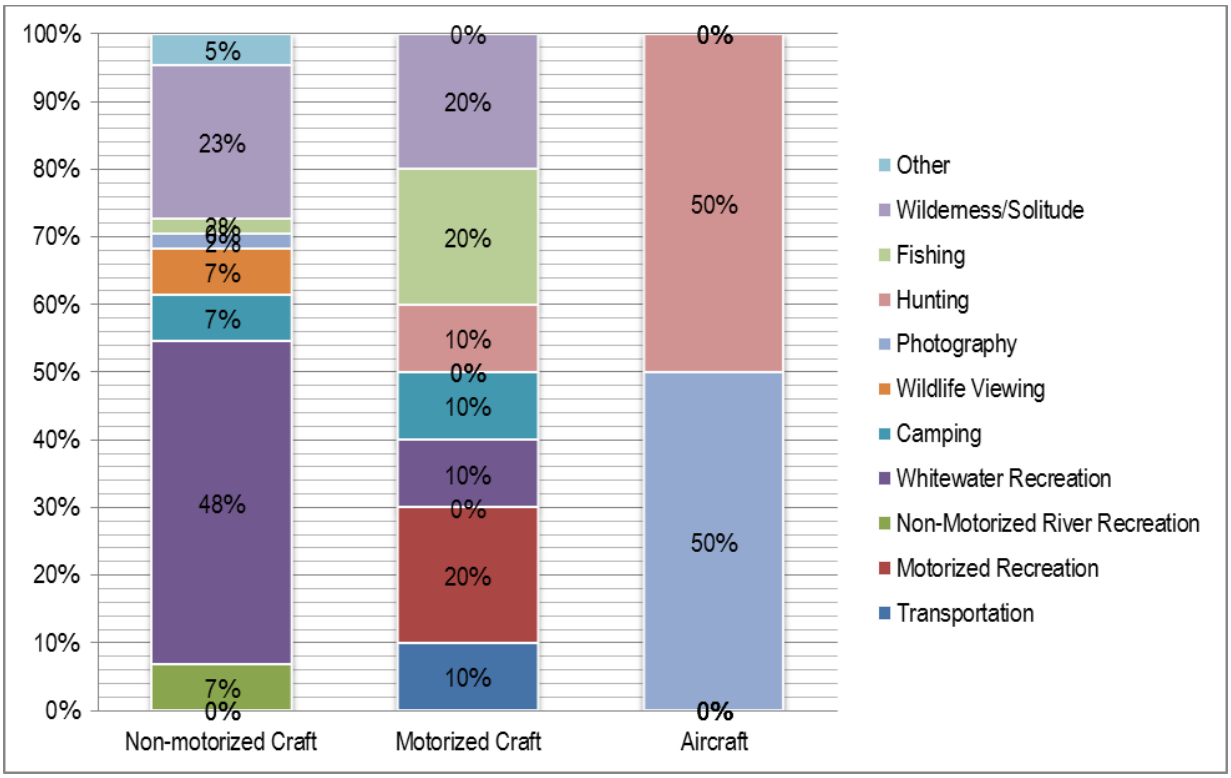



**Figure 5.2-2. Reach 2 Primary Purposes of Recreation**

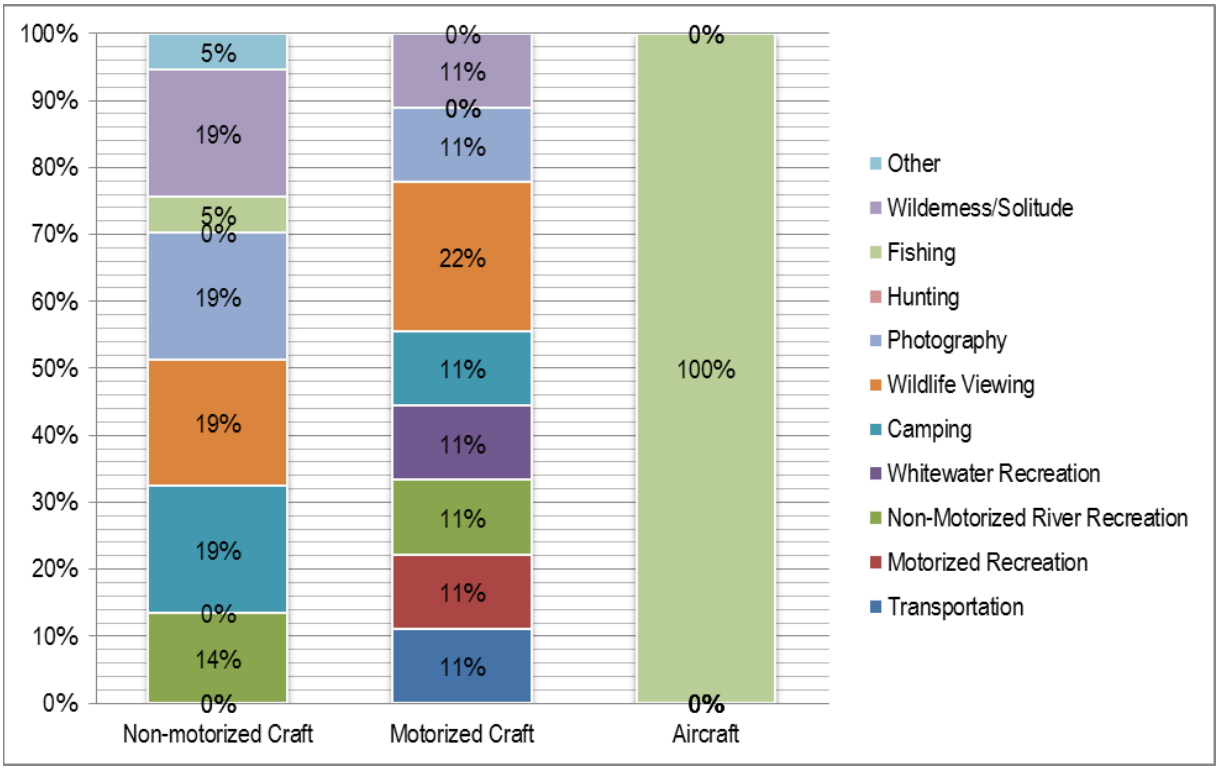



**Figure 5.2-3. Reach 2 Secondary Purposes of Recreation**

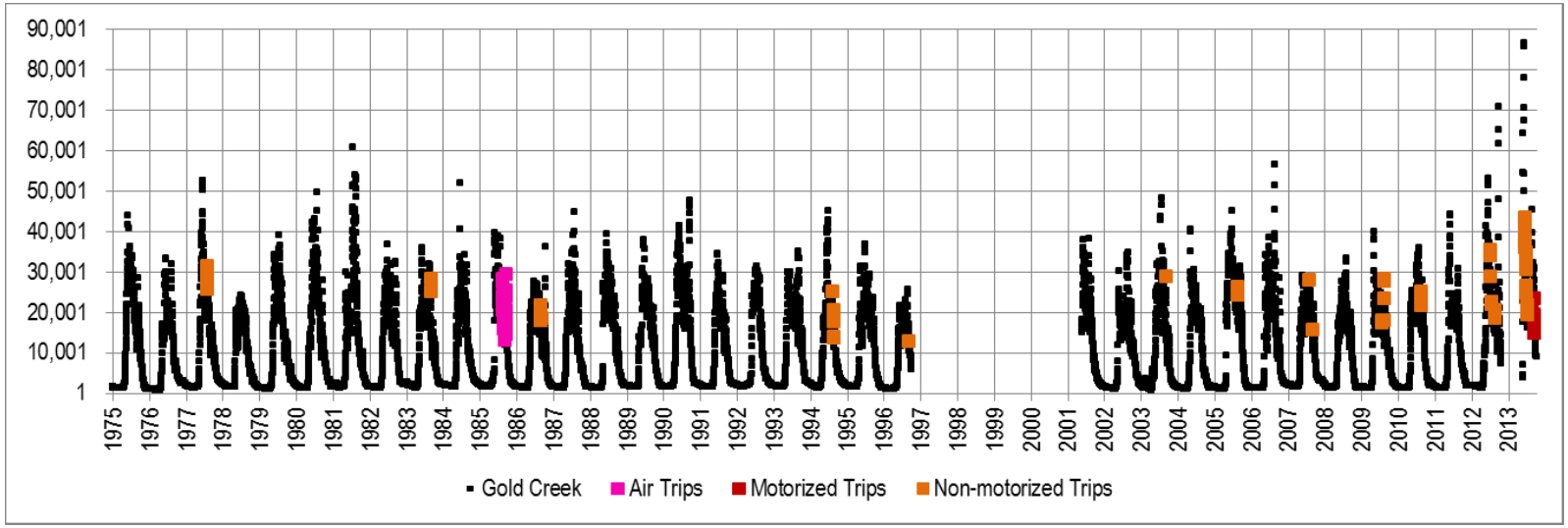



**Figure 5.2-4. Timing of Air, Motorized, and Non-motorized trips in Reach 2 (1975-2013)**

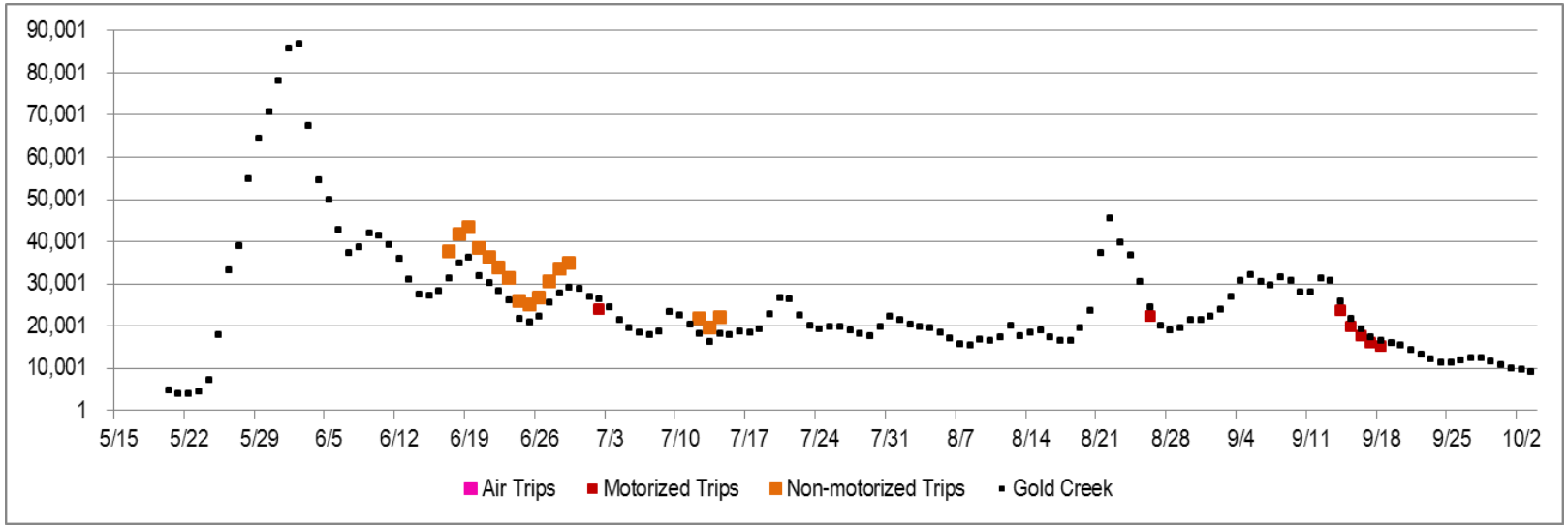



**Figure 5.2-5. Timing of Air, Motorized, and Non-motorized Trips in Reach 2 (2013)**

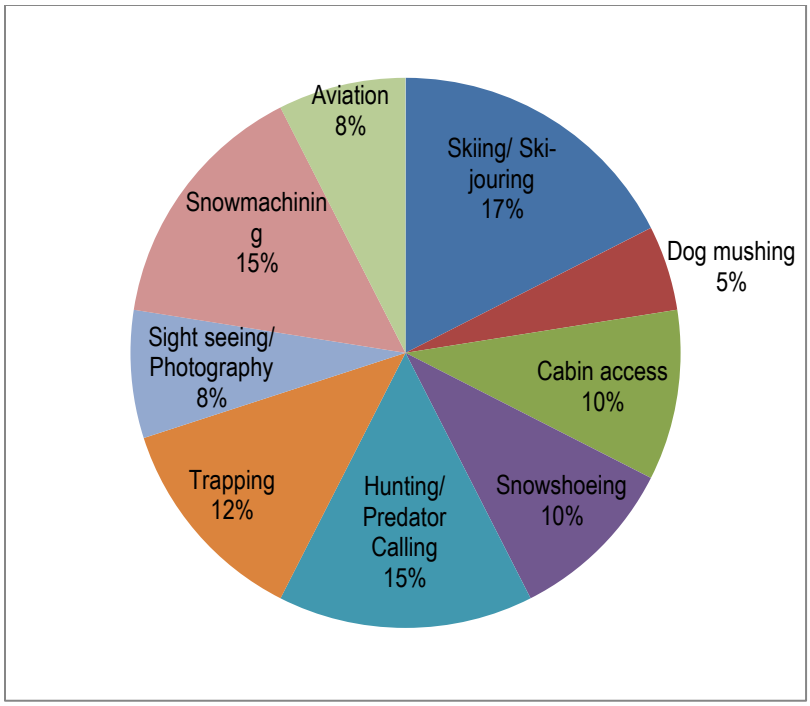



**Figure 5.2-6. Reach 2 Executive Interviewees Winter Activities (7 Interviewees)**

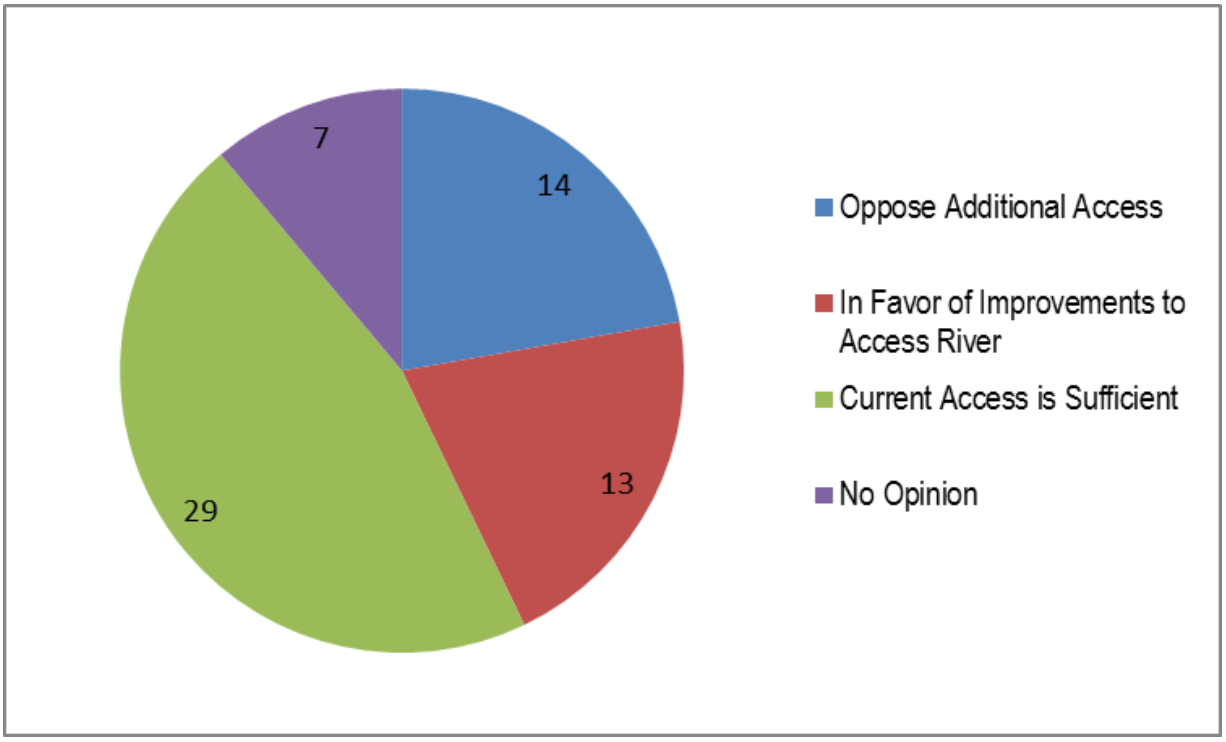



**Figure 5.3-1. Reach 3 Internet Survey Participant Access Responses for 63 Recreators**

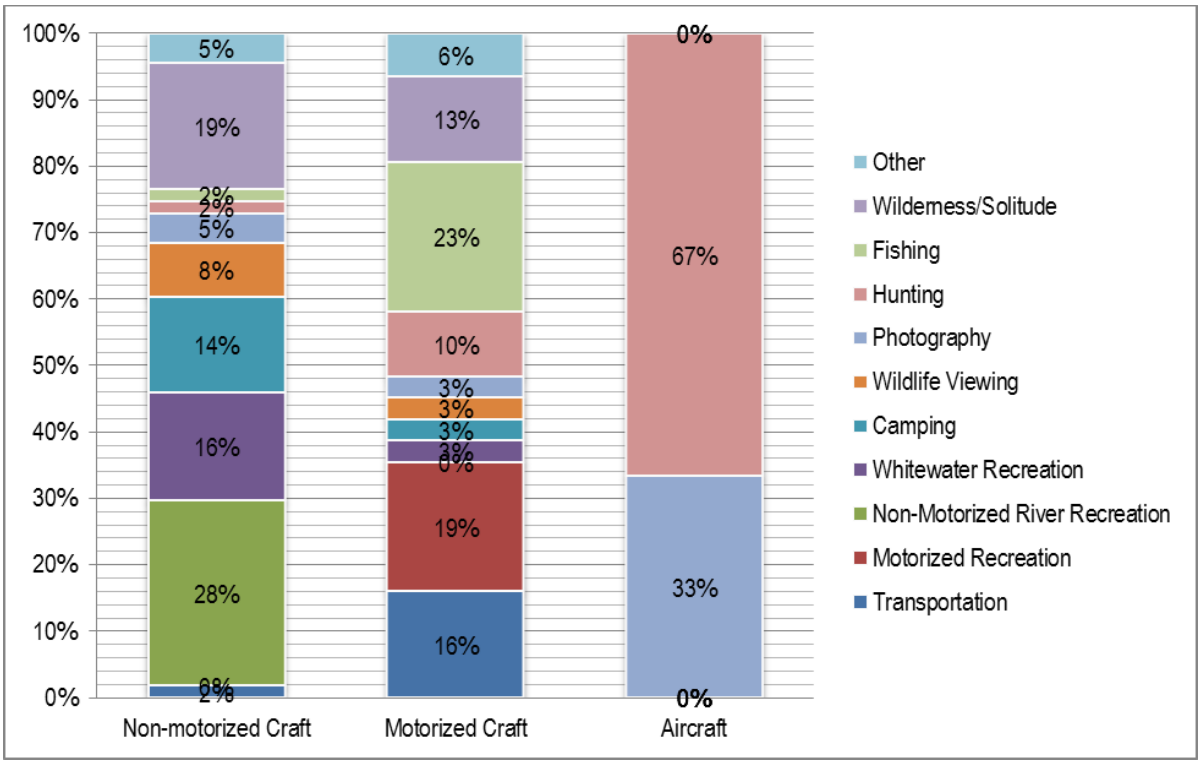



**Figure 5.3-2. Reach 3 Primary Purposes of Recreation**

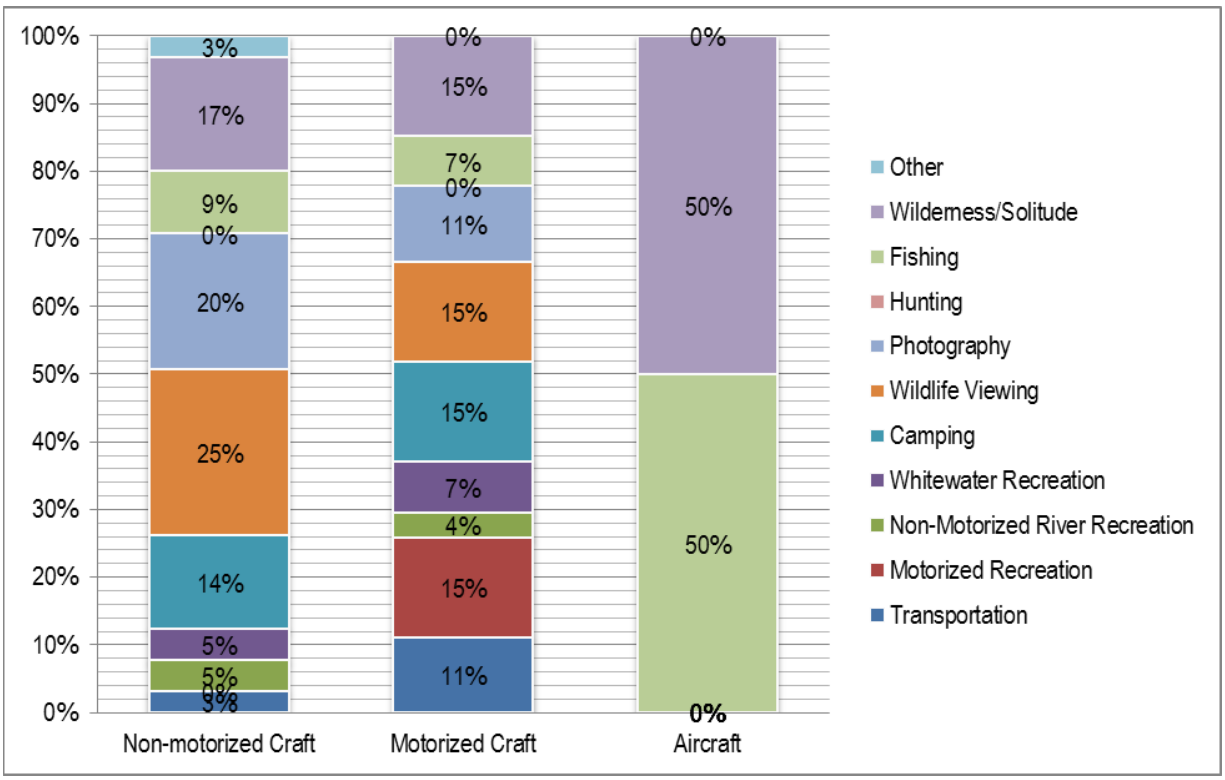



**Figure 5.3-3. Reach 3 Secondary Purposes of Recreation**

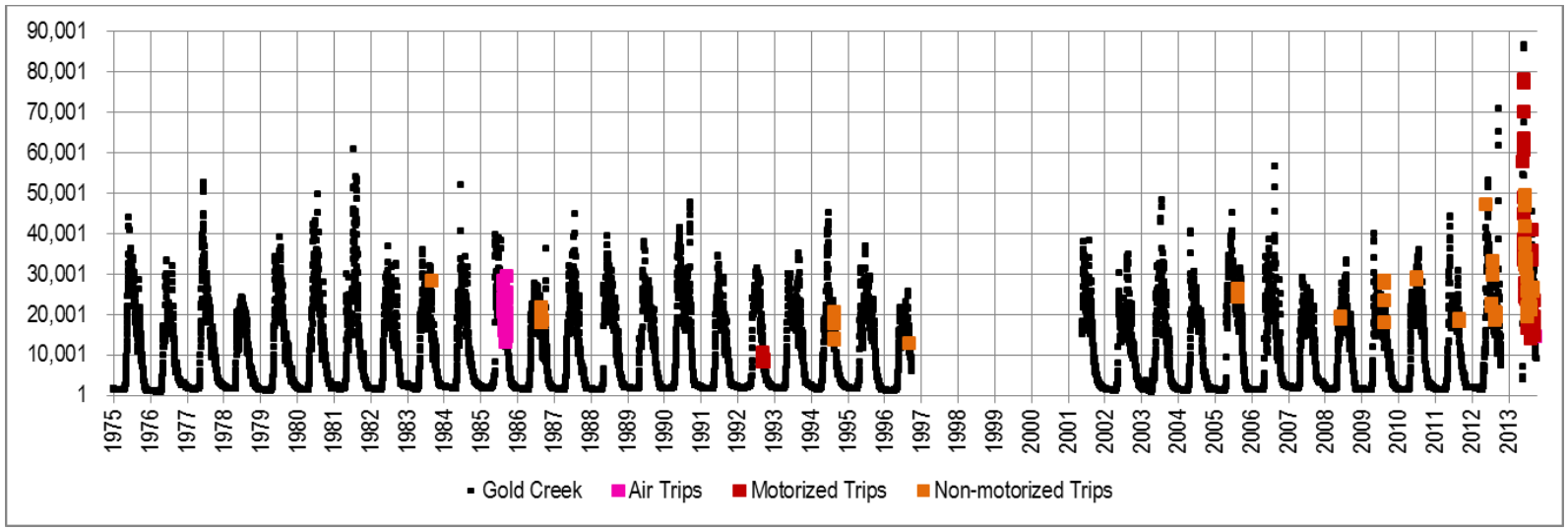



**Figure 5.3-4. Timing of Air, Motorized, and Non-motorized Trips in Reach 3 (1975-2013)**

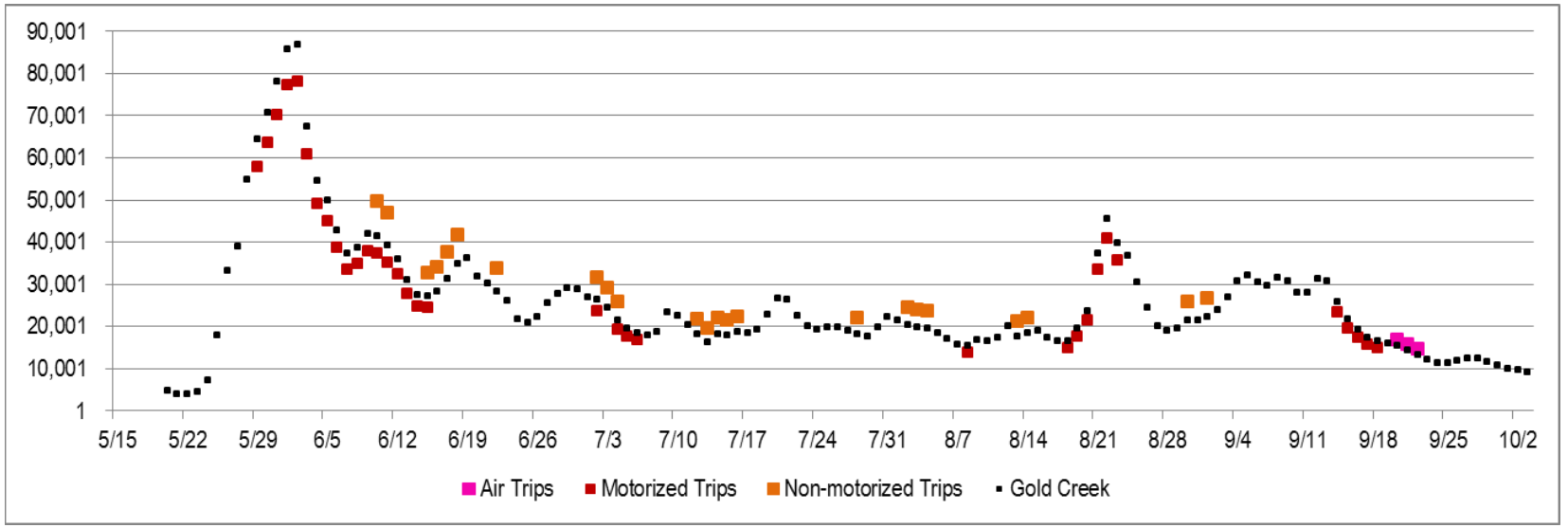



**Figure 5.3-5. Timing of Air, Motorized, and Non-motorized Trips in Reach 3 (2013)**

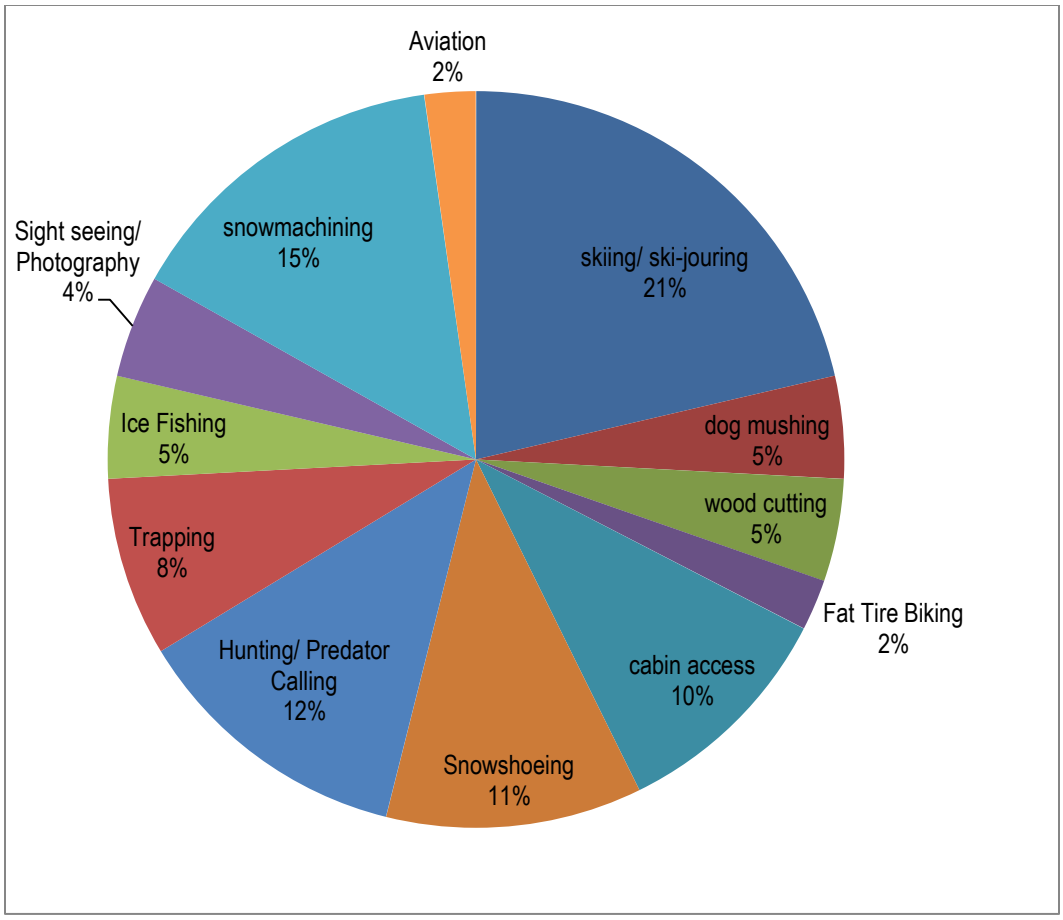



**Figure 5.3-6. Reach 3 Executive Interviewees Winter Activities (17 Interviewees)**

# PART A - APPENDIX A: RIVER RECREATION AND ACCESS INTERNET SURVEY

# SUSITNA RIVER SURVEY

**Welcome!**

**Please create a user name for this entry:**

Note: the user name allows you to restart the survey from where you left off if you cannot complete it in one session.
Multiple survey entries are allowed, but each requires a unique user name. Only one survey entry per river recreation trip will be allowed; one drawing entry per person.

**Select today's date below:**

| Month | Day | Year |
|---|---|---|
| select | select | select |

# SUSITNA RIVER SURVEY

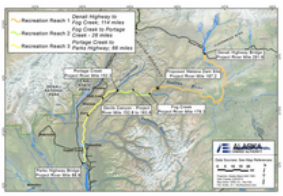
**Please read this introductory section before starting the survey.**

This survey is part of a study collecting information on existing motorized and non-motorized river recreation for three river reaches on the Susitna River using a variety of watercraft. The survey gathers information on river recreation opportunities, use patterns, access and quality.

If you are using the Susitna River in one of these three reaches (see map below) for recreation or transportation purposes please complete this form. If you have completed multiple trips using different watercraft and/or river reaches please complete a new survey for each trip and reach. Your participation in this survey is important to the study's success. Please base responses on your direct experience from your trip rather than guidebooks.

Respondents completing a survey will be entered into a drawing for a $250 gift certificate redeemable at Northwest River Supply or Cabela's.

Instruction: place mouse pointer over the map to enlarge.



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If you experience any difficulties please email our help desk.

# SUSITNA RIVER SURVEY

**Is this the first time you have participated in the Susitna River survey?**
- Yes
- No

**Are you an Alaska resident?**
- Yes
- No

**What is your age?**

**Please specify your gender.**
- Male
- Female

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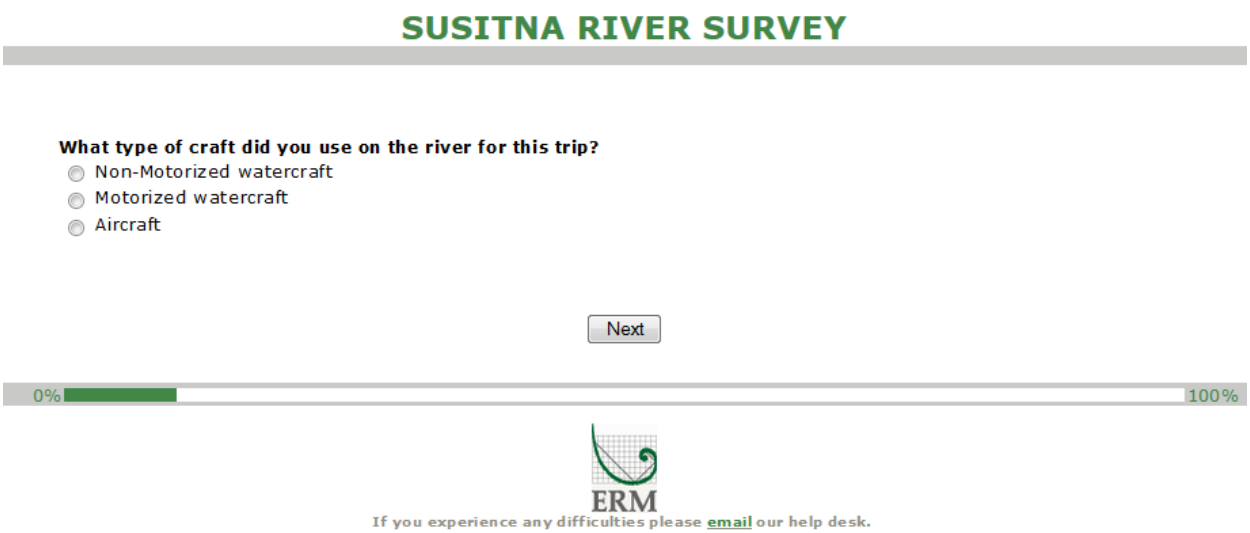
If you experience any difficulties please email our help desk.


SUSITNA RIVER SURVEY
What type of craft did you use on the river for this trip?
Non-Motorized watercraft
Motorized watercraft
Aircraft
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If you experience any difficulties please email our help desk.

## SUSITNA RIVER SURVEY

**What type of non-motorized watercraft did you use on the river for this trip?**

- ○ Raft
- ○ Cataraft
- ○ Packraft
- ○ Inflatable kayak
- ○ Whitewater kayak
- ○ Sea kayak
- ○ Open canoe
- ○ Closed-deck canoe
- ○ Other (specify):

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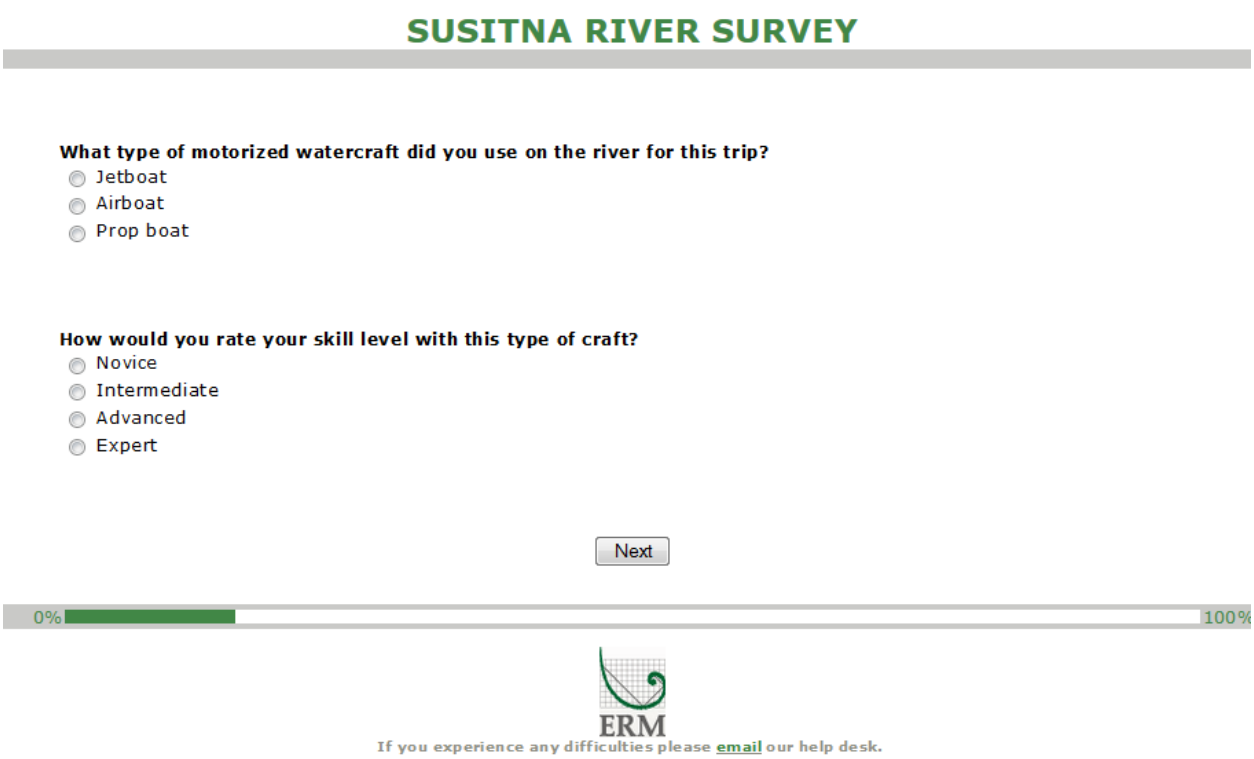
SUSITNA RIVER SURVEY
What type of motorized watercraft did you use on the river for this trip?
Jetboat
Airboat
Prop boat
How would you rate your skill level with this type of craft?
Novice
Intermediate
Advanced
Expert
Next
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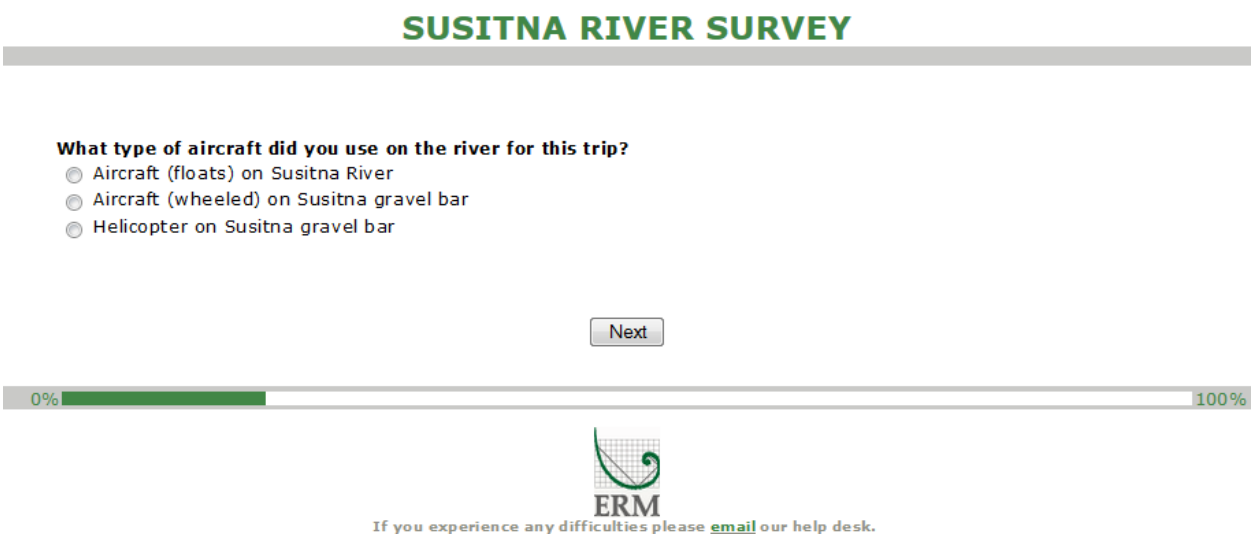
If you experience any difficulties please email our help desk.


SUSITNA RIVER SURVEY
What type of aircraft did you use on the river for this trip?
Aircraft (floats) on Susitna River
Aircraft (wheeled) on Susitna gravel bar
Helicopter on Susitna gravel bar
Next
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If you experience any difficulties please email our help desk.

## SUSITNA RIVER SURVEY

**How many years have you been operating/piloting this type of craft?**
Years:

**In general, how many days a year do you spend using this craft?**
- <5 days
- 6-10 days
- 11-20 days
- >20 days

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If you experience any difficulties please email our help desk.

## SUSITNA RIVER SURVEY

**When you do a river trip do you typically check flow conditions prior to going?**

- Yes
- No

**Did you know the flow conditions before heading out on your most recent Susitna River trip?**

- Yes
- No

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If you experience any difficulties please email our help desk.

## SUSITNA RIVER SURVEY

**How did you obtain Susitna River flow information for your most recent Susitna River trip?** (Select all that apply)

- ☐ Internet gage for Susitna River
- ☐ Internet gage(s) for adjacent representative river(s)
- ☐ Observe the Susitna River firsthand
- ☐ Contact friends with local knowledge
- ☐ Rely on weather patterns to predict flows
- ☐ Other (specify):

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If you experience any difficulties please email our help desk.

## SUSITNA RIVER SURVEY

**What gage did you use for flow information for your most recent Susitna River trip?** (Select all that apply)

- ☐ Susitna R at Sunshine, River Mile - 84
- ☐ Susitna R at Gold Creek, River Mile - 137
- ☐ Susitna R above Tsusena C Nr Chulitna, River Mile - 182
- ☐ Susitna R Nr Denali, River Mile - 291

Instruction: place mouse pointer over the map to enlarge.

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If you experience any difficulties please email our help desk.

# SUSITNA RIVER SURVEY

**Please provide the start and end date for this trip on the Susitna River.**

| | Month | Day | Year |
|---|---|---|---|
| Start Date: | select | select | select |
| End Date: | select | select | select |

**For your most recent trip to the Susitna River, please identify the factors that influenced your decision to take your trip on the dates listed above as opposed to another time period.** (Select all that apply)

- ☐ Suitable river flow conditions
- ☐ Suitable weather conditions
- ☐ Scheduled vacation time in advance
- ☐ Hunting/fishing season
- ☐ Availability with family/friends
- ☐ Other (specify):

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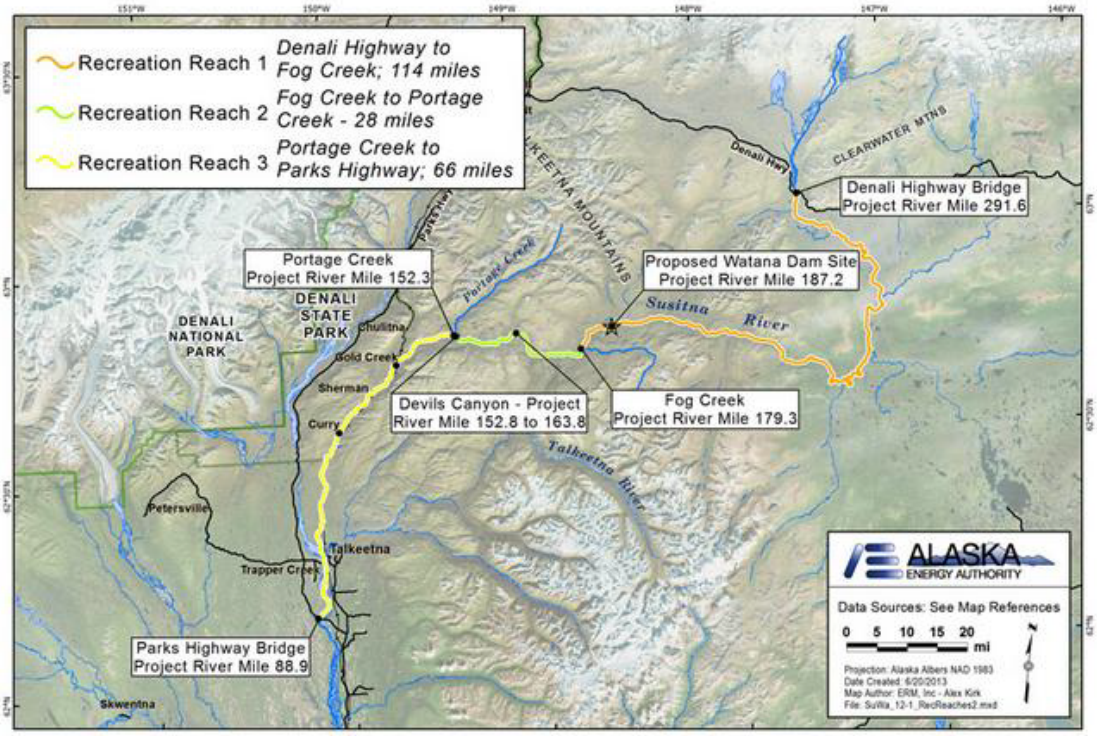
## SUSITNA RIVER SURVEY




**For this trip, which river reach(es) did you recreate on?** Include all reaches even those used for part of your trip. RM equals river mile. (Select all that apply)

- ☐ Reach 1 (Denali HWY Bridge to Fog Creek - RM 292 to 179)
- ☐ Reach 2 (Fog CK to Portage Ck including Devils Canyon - RM 179 to 153)
- ☐ Reach 3 (Portage CK to George Parks HWY - RM 153 to 89)

**Including this most recent trip, how many times have you recreated on the Susitna River reach(s) selected above?**

- ○ 1 time
- ○ 2 to 5 times
- ○ 6 to 10 times
- ○ More than 10 times

# SUSITNA RIVER SURVEY

**What were the primary and secondary purpose(s) of this trip on the Susitna River?**

- Enter the number 1 in front of all the primary purposes
- Enter the number 2 in front of all the secondary purposes

You can enter more than one primary and secondary purpose.

| | |
|---|---|
| ☐ | Transportation |
| ☐ | Motorized river recreation trip |
| ☐ | Non-motorized river recreation trip |
| ☐ | Whitewater recreation |
| ☐ | Camping |
| ☐ | Wildlife viewing |
| ☐ | Photography |
| ☐ | Hunting |
| ☐ | Fishing |
| ☐ | Wilderness/Solitude |
| ☐ | Other Primary (specify): |
| ☐ | Other Secondary (specify): |

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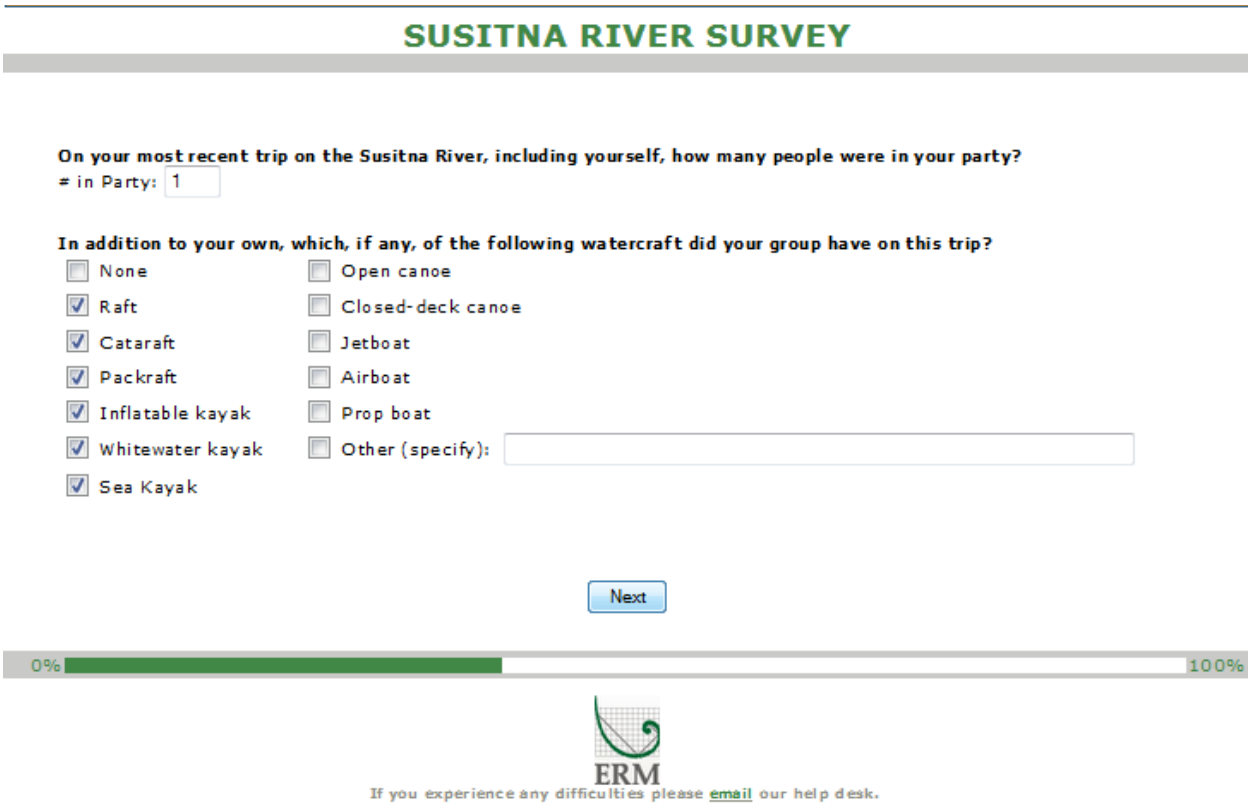
If you experience any difficulties please email our help desk.


SUSITNA RIVER SURVEY
On your most recent trip on the Susitna River, including yourself, how many people were in your party?
# in Party: 1
In addition to your own, which, if any, of the following watercraft did your group have on this trip?
None
Raft
Cataraft
Packraft
Inflatable kayak
Whitewater kayak
Sea Kayak
Open canoe
Closed-deck canoe
Jetboat
Airboat
Prop boat
Other (specify):
Next
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100%
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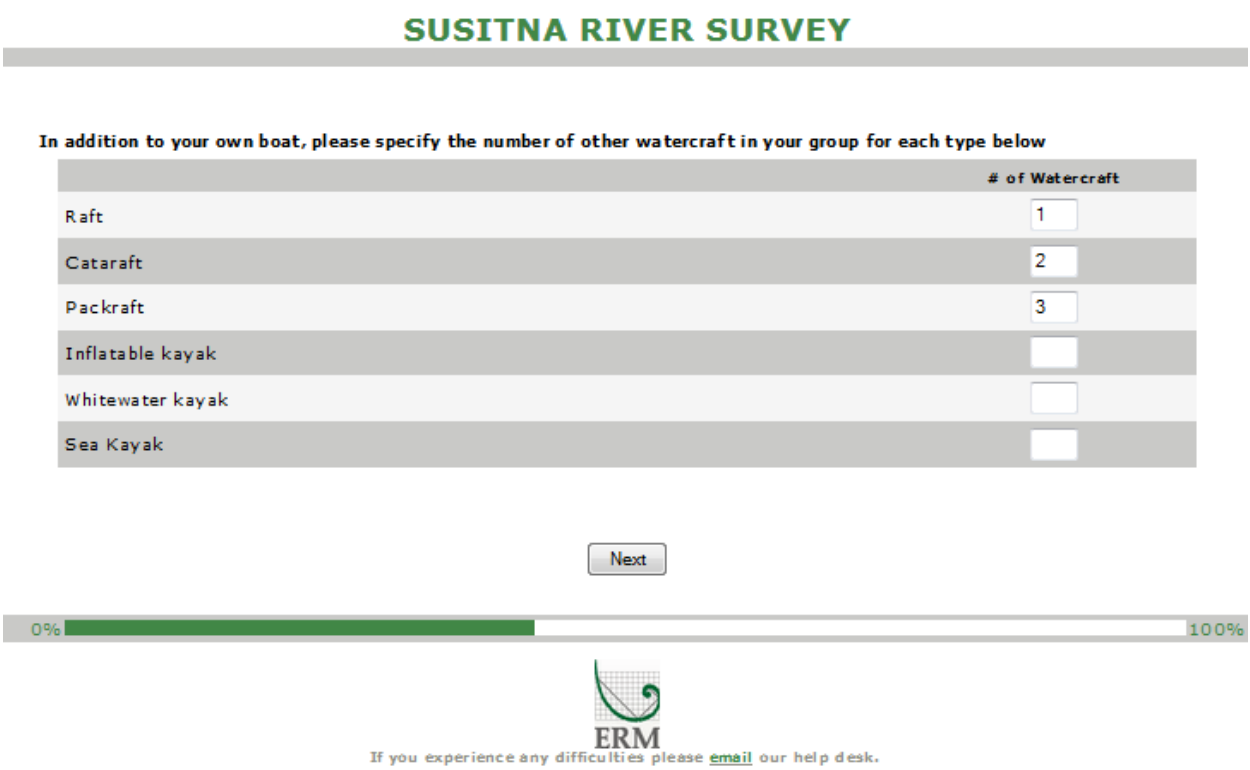
If you experience any difficulties please email our help desk.



SUSITNA RIVER SURVEY

**In addition to your own boat, please specify the number of other watercraft in your group for each type below**

| | # of Watercraft |
|---|---|
| Raft | 1 |
| Cataraft | 2 |
| Packraft | 3 |
| Inflatable kayak | |
| Whitewater kayak | |
| Sea Kayak | |

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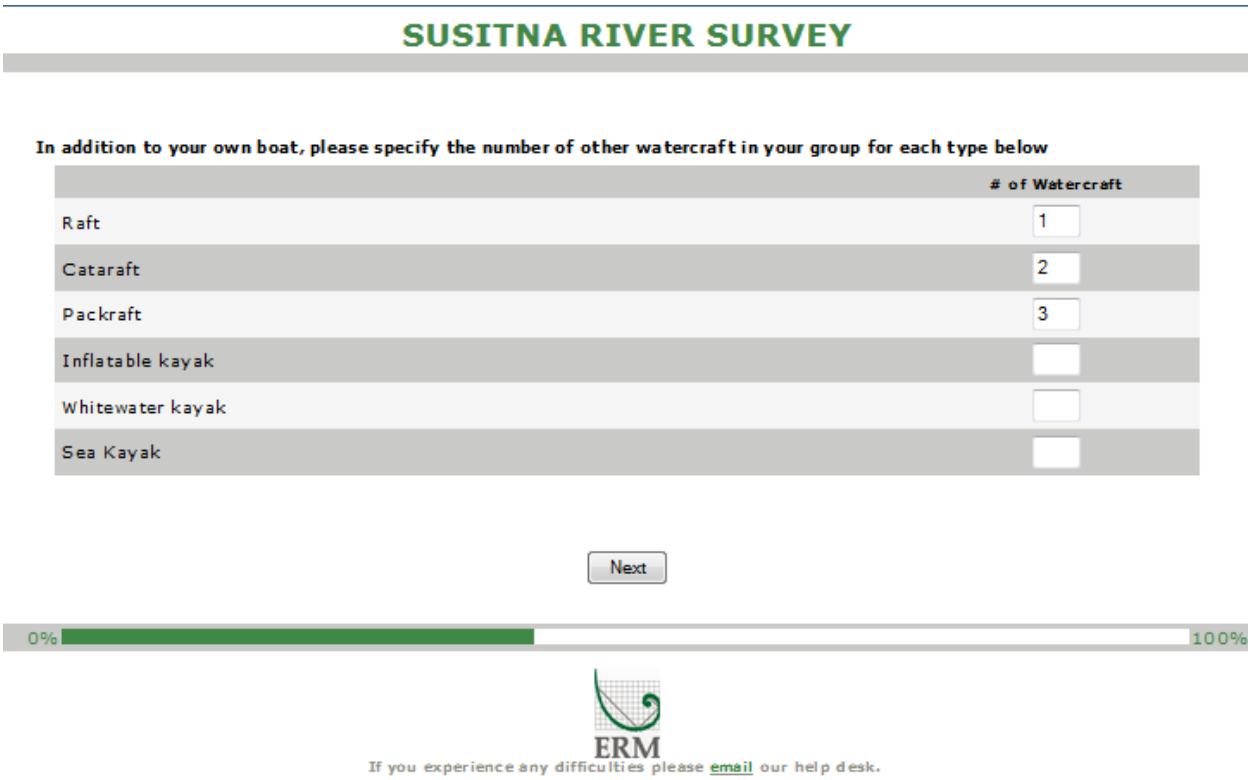
If you experience any difficulties please email our help desk.



SUSITNA RIVER SURVEY

**In addition to your own boat, please specify the number of other watercraft in your group for each type below**

| | # of Watercraft |
|---|---|
| Raft | 1 |
| Cataraft | 2 |
| Packraft | 3 |
| Inflatable kayak | |
| Whitewater kayak | |
| Sea Kayak | |

Next

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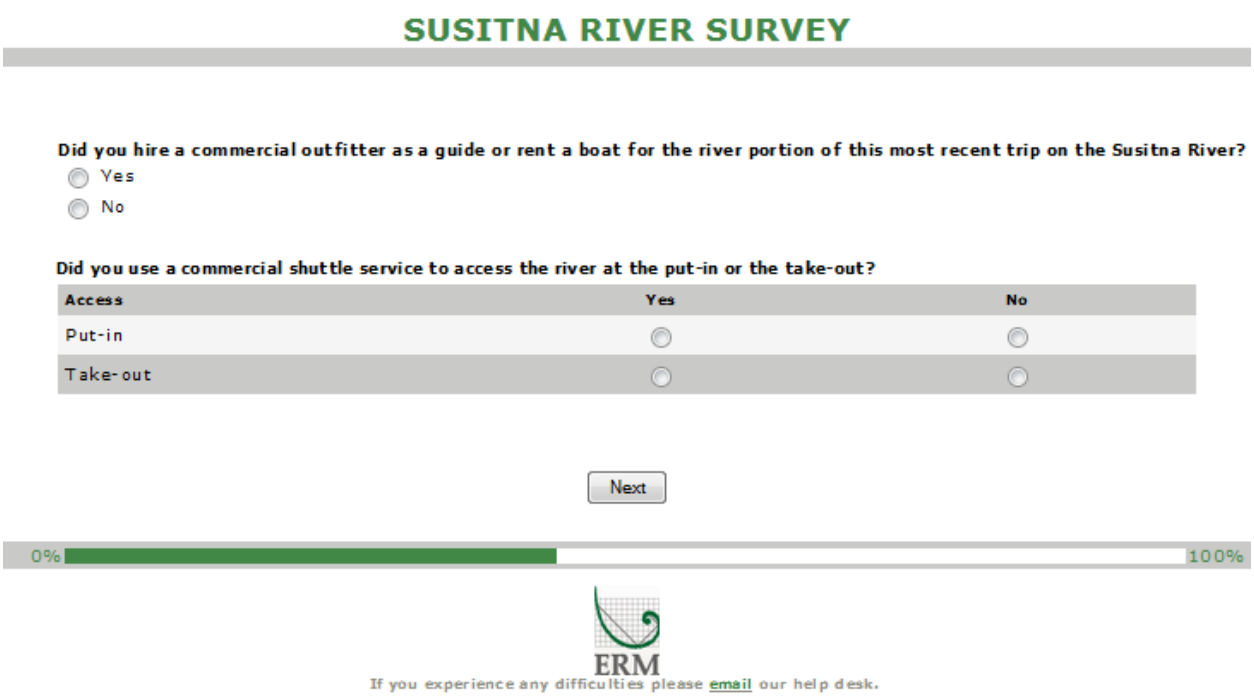
ERM

If you experience any difficulties please email our help desk.



SUSITNA RIVER SURVEY

**Did you hire a commercial outfitter as a guide or rent a boat for the river portion of this most recent trip on the Susitna River?**

- Yes
- No

**Did you use a commercial shuttle service to access the river at the put-in or the take-out?**

| Access | Yes | No |
|---|---|---|
| Put-in | | |
| Take-out | | |

Next

0% 100%

ERM

If you experience any difficulties please email our help desk.

## SUSITNA RIVER SURVEY

### Reach 1

**In the table below, select the transportation type you used to reach and leave the river at the put-in and take-out (e.g. the transportation type from which you unloaded/loaded equipment at the river). Select the put-in and take-out location name from the dropdown list. If possible, estimate the river mile location using the numeric entry text box.**
(Note: place your mouse pointer over the **Reach 1** text above, or the map below, to see detailed information and river miles.)

**Put-In**

| Transportation Type | Location Name | Location RM |
|---|---|---|
| select | select | |

**Take-Out**

| Transportation Type | Location Name | Location RM |
|---|---|---|
| select | select | |

Instruction: place mouse pointer over the map to enlarge.

Next

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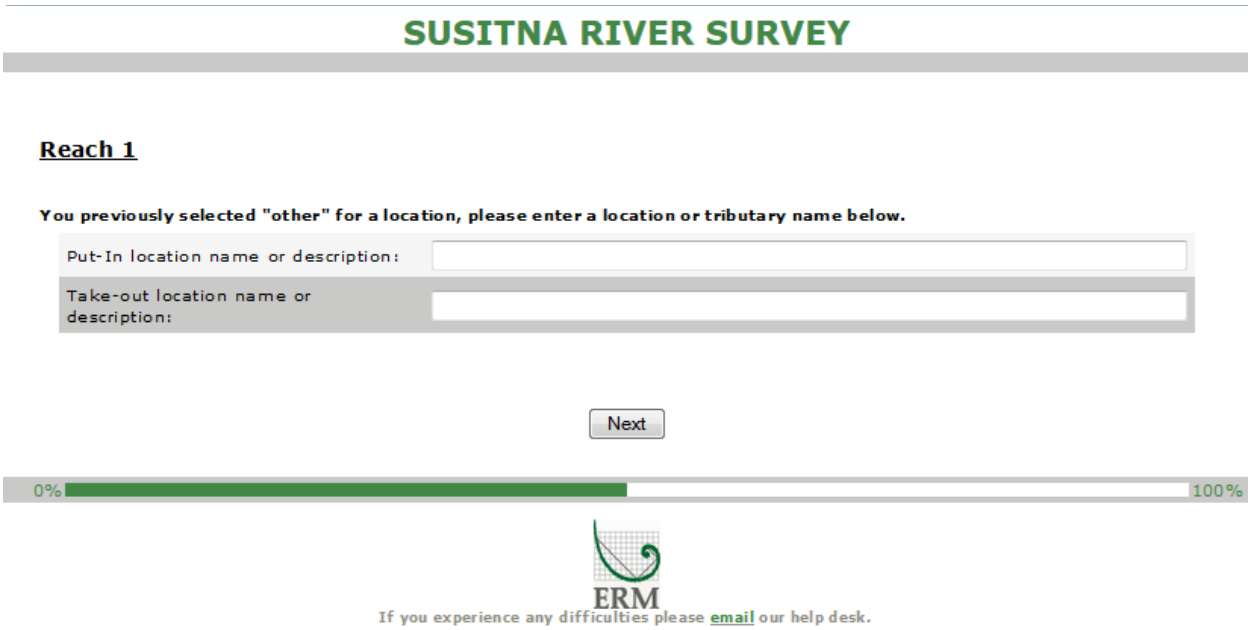
ERM

If you experience any difficulties please email our help desk.


SUSITNA RIVER SURVEY
Reach 1
You previously selected "other" for a location, please enter a location or tributary name below.
Put-In location name or description:
Take-out location name or description:
Next
0%
100%
ERM
If you experience any difficulties please email our help desk.

## SUSITNA RIVER SURVEY

### Reach 2

**In the table below, select the transportation type you used to reach and leave the river at the put-in and take-out (e.g. the transportation type from which you unloaded/loaded equipment at the river). Select the put-in and take-out location name from the dropdown list. If possible, estimate the river mile location using the numeric entry text box.**
(Note: place your mouse pointer over the **Reach 2** text above, or the map below, to see detailed information and river miles.)

**Put-In**

| Transportation Type | Location Name | Location RM |
|---|---|---|
| select | select | |

**Take-Out**

| Transportation Type | Location Name | Location RM |
|---|---|---|
| select | select | |

Instruction: place mouse pointer over the map to enlarge.

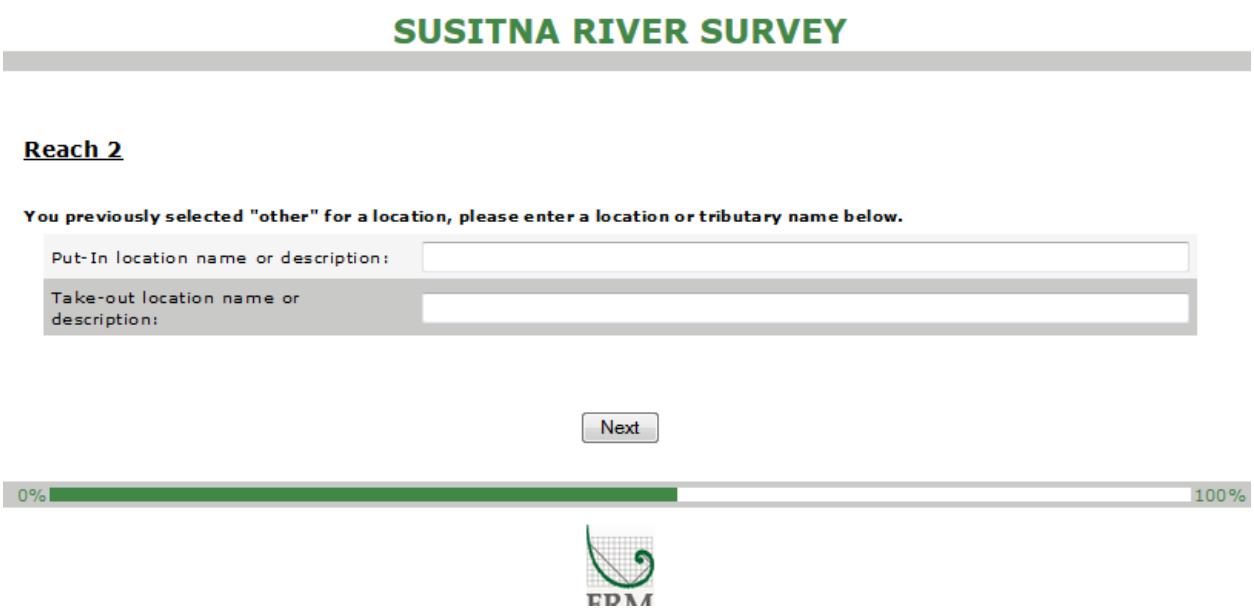
- select
- Float through to Reach 3
- Exit via tributary
- Reach 2 remote location
- Devil Creek
- Fog Creek
- Log Creek
- Portage Creek
- Other

Next

0% 100%

ERM

If you experience any difficulties please email our help desk.


SUSITNA RIVER SURVEY
Reach 2
You previously selected "other" for a location, please enter a location or tributary name below.
Put-In location name or description:
Take-out location name or description:
Next
0%
100%

# SUSITNA RIVER SURVEY

## Reach 3

**In the table below, select the transportation type you used to reach and leave the river at the put-in and take-out (e.g. the transportation type from which you unloaded/loaded equipment at the river). Select the put-in and take-out location name from the dropdown list. If possible, estimate the river mile location using the numeric entry text box.**
(Note: place your mouse pointer over the **Reach 3** text above, or the map below, to see detailed information and river miles.)

**Put-In**

| Transportation Type | Location Name | Location RM |
|---|---|---|
| select | select | |

**Take-Out**

| Transportation Type | Location Name | Location RM |
|---|---|---|
| select | select | |

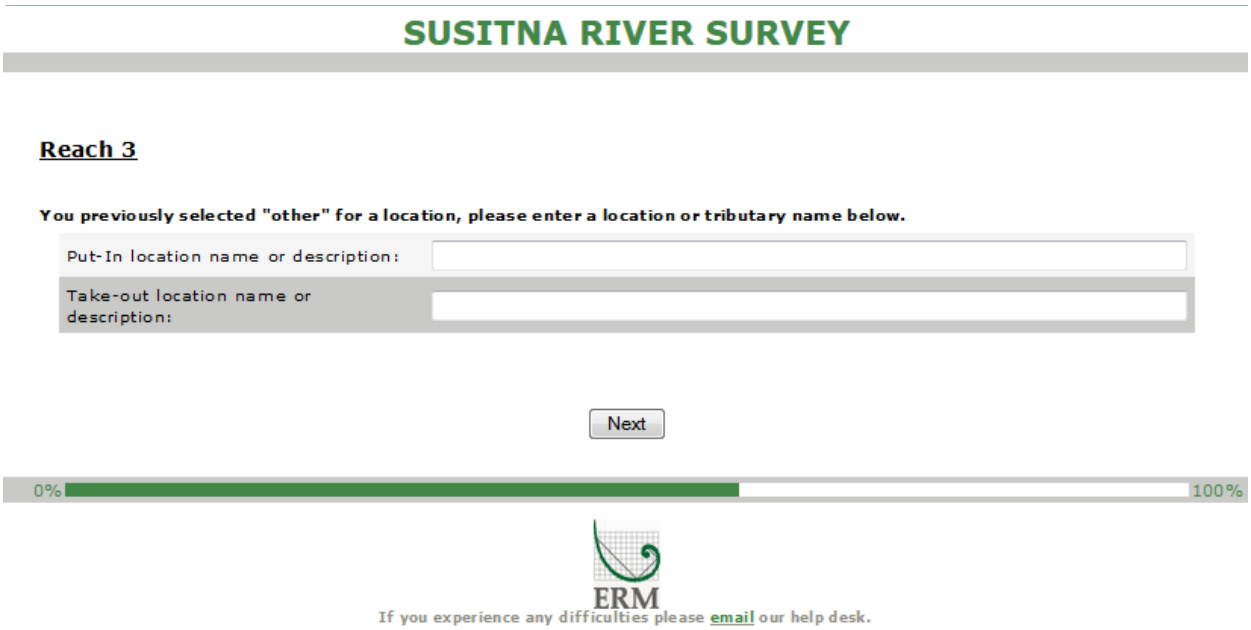
Instruction: place mouse pointer over the map to enlarge.

Next

0% 100%

ERM

If you experience any difficulties please email our help desk.


SUSITNA RIVER SURVEY
Reach 3
You previously selected "other" for a location, please enter a location or tributary name below.
Put-In location name or description:
Take-out location name or description:
Next
0%
100%
ERM
If you experience any difficulties please email our help desk.

## SUSITNA RIVER SURVEY

Instruction: place mouse pointer over the map to enlarge.

**Which of the following most closely reflects your opinion concerning Susitna River access?**
Please respond for each river reach.

| | Oppose Additional Access | In Favor of Improvements to Access River | Current Access is Sufficient | No Opinion |
|---|---|---|---|---|
| Reach 1 | ○ | ○ | ○ | ○ |
| Reach 2 | ○ | ○ | ○ | ○ |
| Reach 3 | ○ | ○ | ○ | ○ |

Note: hover mouse pointer over the Reach to get a more detailed description

Next

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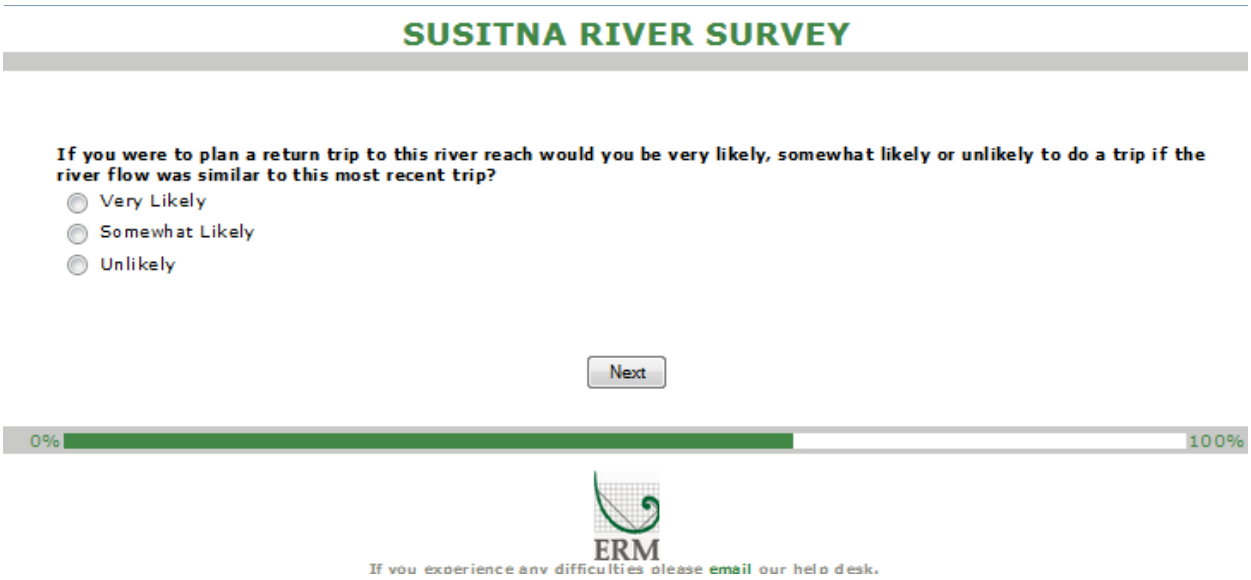
ERM

If you experience any difficulties please email our help desk.


SUSITNA RIVER SURVEY
If you were to plan a return trip to this river reach would you be very likely, somewhat likely or unlikely to do a trip if the river flow was similar to this most recent trip?
Very Likely
Somewhat Likely
Unlikely
Next
0%
100%
ERM
If you experience any difficulties please email our help desk.

# SUSITNA RIVER SURVEY

**For your recent trip on the Susitna, please rate the flow for each attribute that applies to your recreation activity.**
Consider your trip purpose, watercraft and skill level for each of the trip attributes.

**River flow level for this recent trip was...?**

| Trip Attribute | Totally Unacceptable | Unacceptable | Neither Too Low or Too High | Acceptable | Totally Acceptable |
|---|---|---|---|---|---|
| Multi-Day River Trip | ○ | ○ | ○ | ○ | ○ |
| Number of portages | ○ | ○ | ○ | ○ | ○ |
| River Safety | ○ | ○ | ○ | ○ | ○ |
| Speed of travel | ○ | ○ | ○ | ○ | ○ |
| River Camping | ○ | ○ | ○ | ○ | ○ |
| Bank fishing | ○ | ○ | ○ | ○ | ○ |
| Float fishing | ○ | ○ | ○ | ○ | ○ |
| Overall rating | ○ | ○ | ○ | ○ | ○ |

Next

0% 100%

ERM

If you experience any difficulties please email our help desk.

# SUSITNA RIVER SURVEY

**For your recent trip on the Susitna, please rate the flow for each attribute that applies to your recreation activity.**
Consider your trip purpose, watercraft and skill level for each of the trip attributes.

**River flow level for this recent trip was...?**

| Trip Attribute | Totally Unacceptable | Unacceptable | Neither Too Low or Too High | Acceptable | Totally Acceptable |
|---|---|---|---|---|---|
| River transportation corridor | ○ | ○ | ○ | ○ | ○ |
| Motorized navigation | ○ | ○ | ○ | ○ | ○ |
| Multi-Day River Trip | ○ | ○ | ○ | ○ | ○ |
| River Safety | ○ | ○ | ○ | ○ | ○ |
| River Camping | ○ | ○ | ○ | ○ | ○ |
| Bank fishing | ○ | ○ | ○ | ○ | ○ |
| Float fishing | ○ | ○ | ○ | ○ | ○ |
| Overall rating | ○ | ○ | ○ | ○ | ○ |

Next

0% 100%

ERM

If you experience any difficulties please email our help desk.

# SUSITNA RIVER SURVEY

**For your recent trip on the Susitna, please rate the flow for each attribute that applies to your recreation activity.**
Consider your trip purpose, watercraft and skill level for each of the trip attributes.

**River flow level for this recent trip was...?**

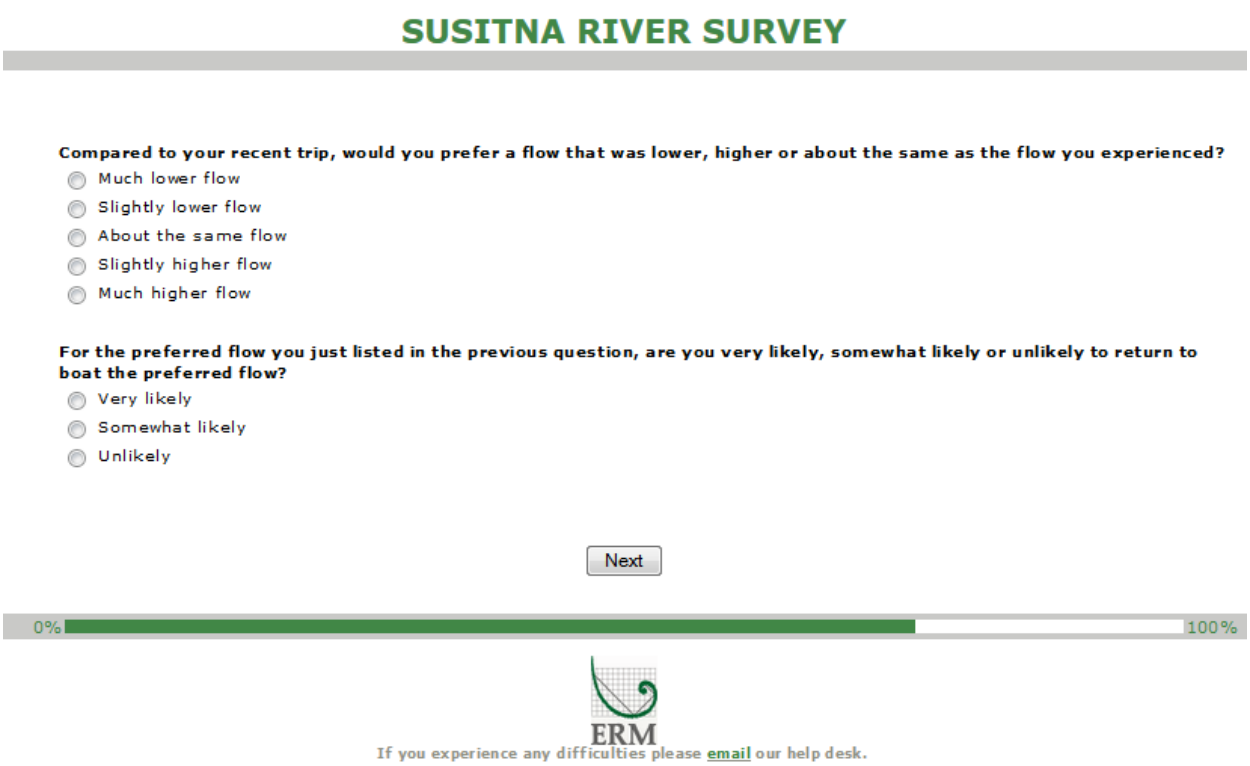
| Trip Attribute | Totally Unacceptable | Unacceptable | Neither Too Low or Too High | Acceptable | Totally Acceptable |
|---|---|---|---|---|---|
| Multi-Day River Trip | ○ | ○ | ○ | ○ | ○ |
| Whitewater boating | ○ | ○ | ○ | ○ | ○ |
| Technical boating | ○ | ○ | ○ | ○ | ○ |
| Powerful hydraulics | ○ | ○ | ○ | ○ | ○ |
| Whitewater play areas | ○ | ○ | ○ | ○ | ○ |
| Number of portages | ○ | ○ | ○ | ○ | ○ |
| River Safety | ○ | ○ | ○ | ○ | ○ |
| Speed of travel | ○ | ○ | ○ | ○ | ○ |
| River Camping | ○ | ○ | ○ | ○ | ○ |
| Overall rating | ○ | ○ | ○ | ○ | ○ |

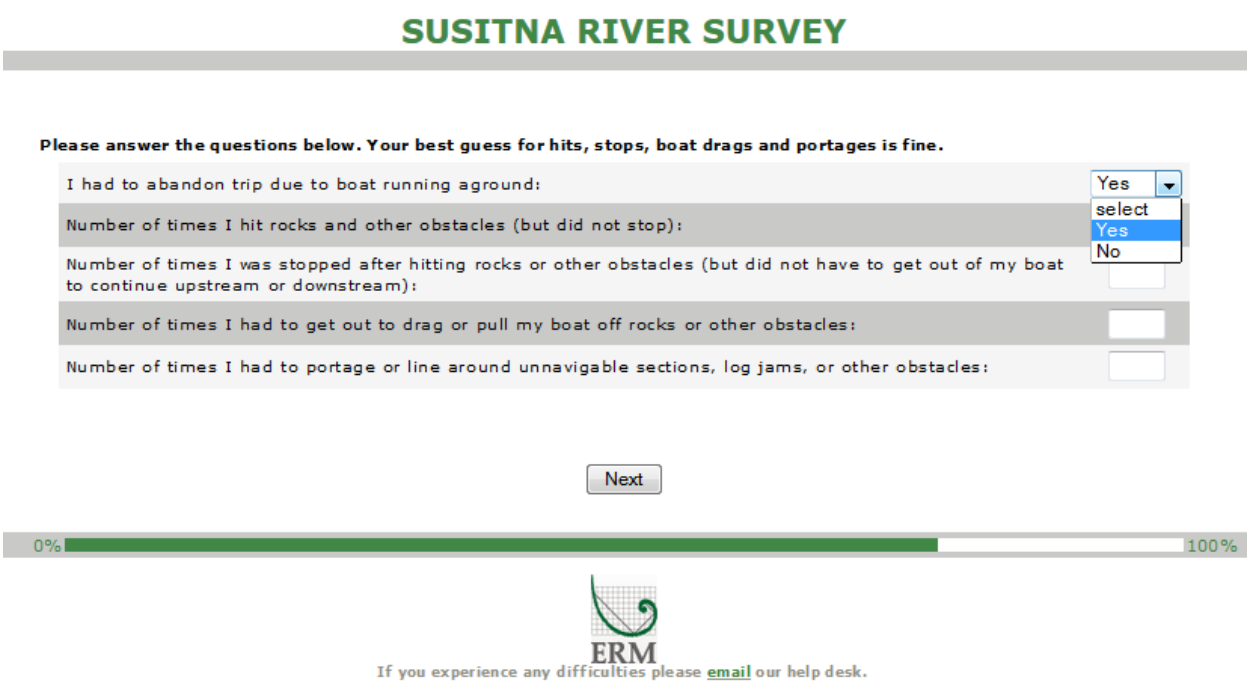
Next

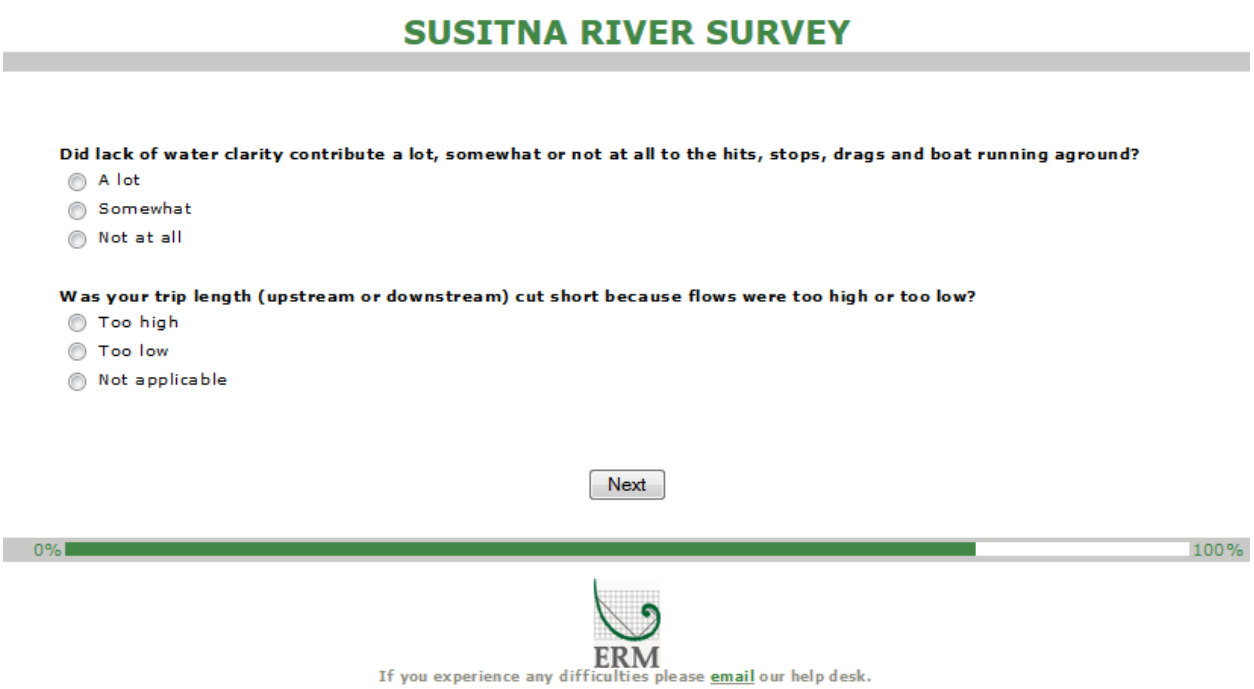
0% 100%

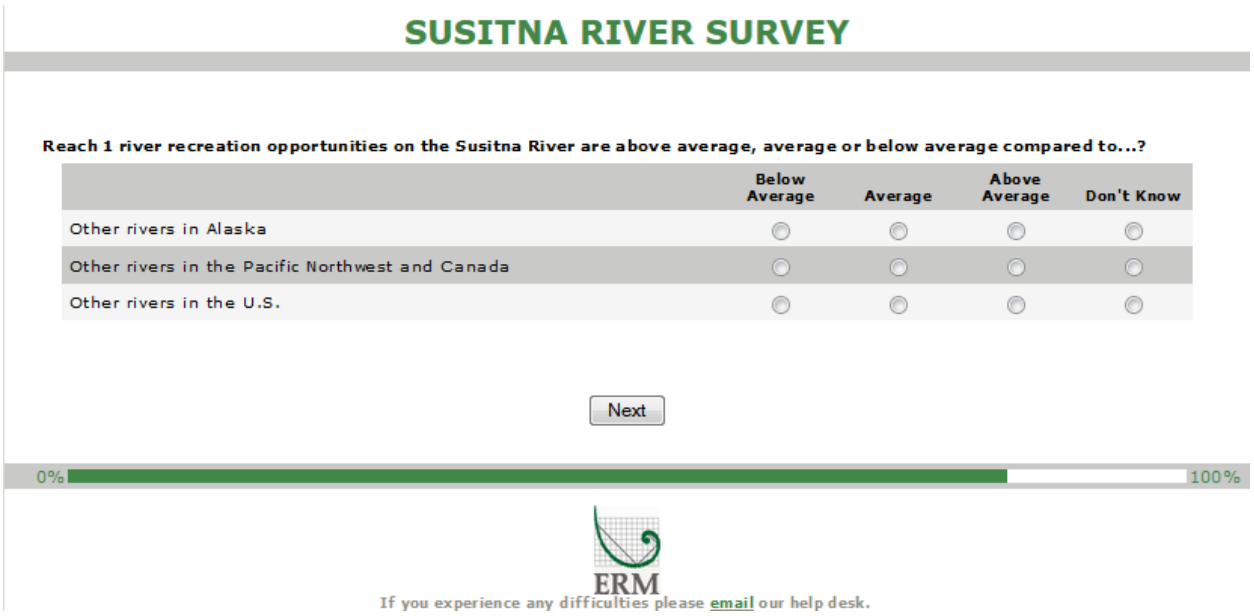
ERM

If you experience any difficulties please email our help desk.


SUSITNA RIVER SURVEY
Compared to your recent trip, would you prefer a flow that was lower, higher or about the same as the flow you experienced?
Much lower flow
Slightly lower flow
About the same flow
Slightly higher flow
Much higher flow
For the preferred flow you just listed in the previous question, are you very likely, somewhat likely or unlikely to return to boat the preferred flow?
Very likely
Somewhat likely
Unlikely
Next
0%
100%
ERM
If you experience any difficulties please email our help desk.


SUSITNA RIVER SURVEY
Please answer the questions below. Your best guess for hits, stops, boat drags and portages is fine.
I had to abandon trip due to boat running aground:
Yes
select
Yes
No
Number of times I hit rocks and other obstacles (but did not stop):
Number of times I was stopped after hitting rocks or other obstacles (but did not have to get out of my boat to continue upstream or downstream):
Number of times I had to get out to drag or pull my boat off rocks or other obstacles:
Number of times I had to portage or line around unnavigable sections, log jams, or other obstacles:
Next
0%
100%
ERM
If you experience any difficulties please email our help desk.


SUSITNA RIVER SURVEY
Did lack of water clarity contribute a lot, somewhat or not at all to the hits, stops, drags and boat running aground?
A lot
Somewhat
Not at all
Was your trip length (upstream or downstream) cut short because flows were too high or too low?
Too high
Too low
Not applicable
Next
0%
100%
ERM
If you experience any difficulties please email our help desk.



SUSITNA RIVER SURVEY

**Reach 1 river recreation opportunities on the Susitna River are above average, average or below average compared to...?**

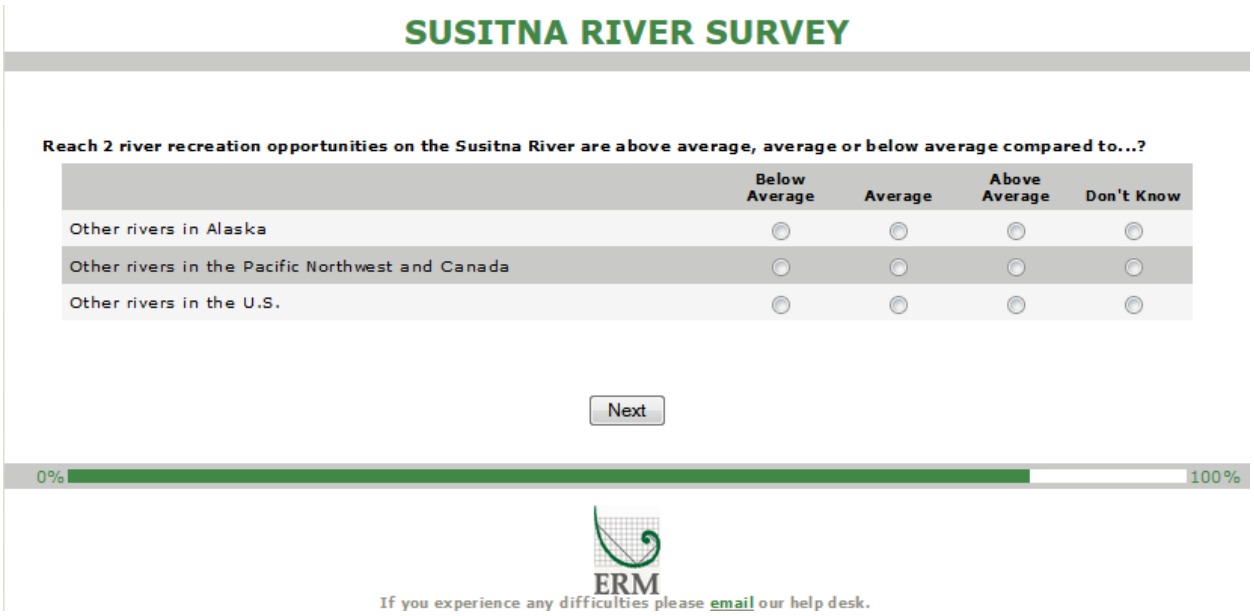
| | Below Average | Average | Above Average | Don't Know |
|---|---|---|---|---|
| Other rivers in Alaska | ○ | ○ | ○ | ○ |
| Other rivers in the Pacific Northwest and Canada | ○ | ○ | ○ | ○ |
| Other rivers in the U.S. | ○ | ○ | ○ | ○ |

Next

0% 100%

ERM

If you experience any difficulties please email our help desk.



SUSITNA RIVER SURVEY

**Reach 2 river recreation opportunities on the Susitna River are above average, average or below average compared to...?**

| | Below Average | Average | Above Average | Don't Know |
|---|---|---|---|---|
| Other rivers in Alaska | ○ | ○ | ○ | ○ |
| Other rivers in the Pacific Northwest and Canada | ○ | ○ | ○ | ○ |
| Other rivers in the U.S. | ○ | ○ | ○ | ○ |

Next

0% 100%

ERM

If you experience any difficulties please email our help desk.

# SUSITNA RIVER SURVEY

**Reach 3 river recreation opportunities on the Susitna River are above average, average or below average compared to...?**

| | Below Average | Average | Above Average | Don't Know |
|---|---|---|---|---|
| Other rivers in Alaska | ○ | ○ | ○ | ○ |
| Other rivers in the Pacific Northwest and Canada | ○ | ○ | ○ | ○ |
| Other rivers in the U.S. | ○ | ○ | ○ | ○ |

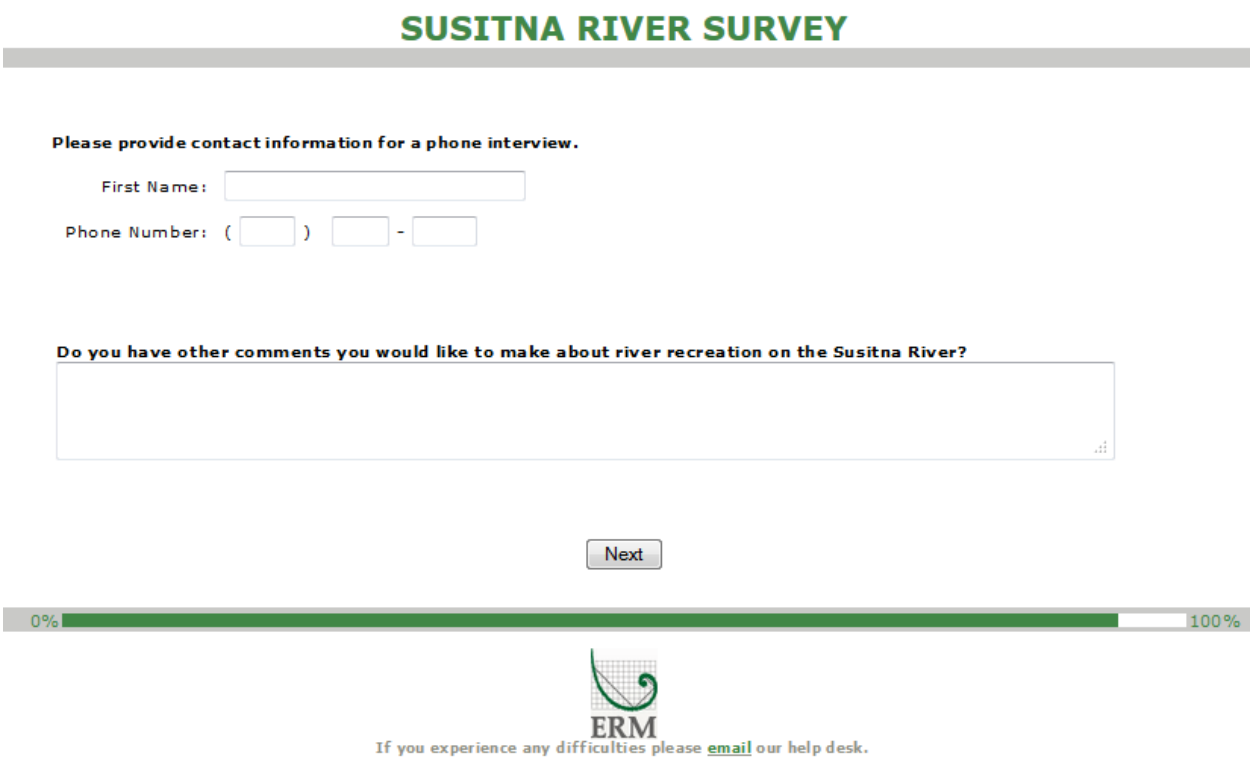
Next

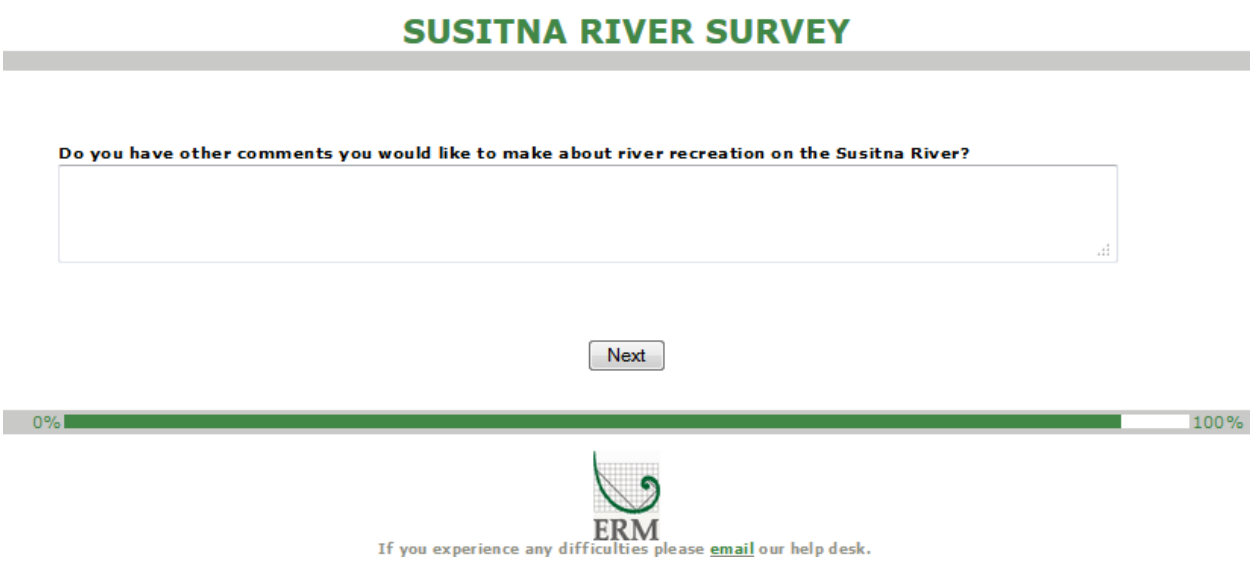
0% 100%

ERM

If you experience any difficulties please email our help desk.


SUSITNA RIVER SURVEY
As part of this study, we are interviewing recreational users to gain additional information about recreation opportunities on the Susitna. Would you like to participate in an interview?
Yes
No
Next
0%
100%
ERM
If you experience any difficulties please email our help desk.


SUSITNA RIVER SURVEY
Please provide contact information for a phone interview.
First Name:
Phone Number: ( ) -
Do you have other comments you would like to make about river recreation on the Susitna River?
Next
0%
100%
ERM
If you experience any difficulties please email our help desk.


SUSITNA RIVER SURVEY
Do you have other comments you would like to make about river recreation on the Susitna River?
Next
0%
100%
ERM
If you experience any difficulties please email our help desk.


SUSITNA RIVER SURVEY
Gift Certificate Drawing
As a respondent completing this survey you will be entered into a drawing for a $250 gift certificate redeemable at Northwest River Supply or Cabela's. Please enter your contact information below. This information will be used solely for contacting the drawing winner.
First Name:
Last Name:
Email Address:
Phone Number: ( ) -
Next
0%
100%
ERM
If you experience any difficulties please email our help desk.

# SUSITNA RIVER SURVEY

## Thank you for your participation!

Please encourage fellow boaters to participate in this study. If you have friends that recreate on the Susitna, please refer them to this webpage. The more responses we get the more useful our results will be. In addition to surveys, at least one focus group discussion on flow preferences for whitewater boating and one on winter ice and snow travel in the river corridor for motorized and non-motorized users will be completed.

This survey is part of the environmental studies being conducted as part of the proposed Susitna-Watana Hydroelectric Project. The Alaska Energy Authority is studying the feasibility of building the Susitna¬Watana Hydroelectric Project. The proposed Susitna-Watana Hydroelectric Project would be located on the Susitna River roughly 90-river miles north of Talkeetna and approximately 34 miles upstream of the Devils Canyon rapids. As currently envisioned, the Project would include a roughly 750-foot tall dam with a 42.5-mile long, 1-2-miles wide (average) reservoir. The Susitna-Watana Hydroelectric Project includes a single dam, located below Watana Creek. Preliminary studies have indicated the surface powerhouse should have three generating units with an installed capacity of 600 Megawatts of renewable energy. The powerhouse, dam, and related facilities would be linked by a transmission line (or lines) connecting to the Railbelt Intertie.

Click here to forward this survey link to individuals recreating on the Susitna River.

Click here to be visit Sustitna Watina Project Description webpage.

If you would like to simply exit the survey, please browse to another webpage or close your browser window. Your survey has been submitted.

0% 100%

ERM

If you experience any difficulties please email our help desk.

# PART A - APPENDIX B: RIVER RECREATION EXECUTIVE INTERVIEW QUESTIONS

# Susitna-Watana Hydroelectric Project
# River Recreation and Access 2013 Executive Interview Protocol (DRAFT)

## (revised DRAFT 10/10/2012)

**Introduction:**

*Hi I'm _____with OASIS ERM, a consulting firm located in Anchorage.*

*We are working for the Alaska Energy Authority on the Susitna-Watana Hydroelectric Project studying river recreation resources in the Susitna River area. We are contacting agencies, commercial providers, organizations, and individual users to get a better sense of river recreation use patterns on the Susitna River. We would like to conduct an interview with you. Is now a good time or can I schedule a time that is more convenient?*

***Before we start I would like to read you a brief description of the project.***

*This survey is part of a study to determine river recreation use patterns, access and flow preferences for three river reaches on the Susitna River. The Alaska Energy Authority is studying the feasibility of building the Susitna-Watana Hydroelectric Project. The proposed Project would be located on the Susitna River roughly 86 river miles upstream from Talkeetna and approximately 34 miles upstream of the Devils Canyon rapids. As currently envisioned, the project would include a roughly 750-foot tall dam located below Watana Creek and would result in a 23,546 acre, 42.5-mile long reservoir. Project construction and operation will alter river flows in the Susitna downstream. The dam and reservoir could alter downstream navigation and access. When completed, the project would produce nearly 50 percent of the Railbelt's electrical demand, or an annual average of 2,800,000 Megawatt Hours (MWh) of renewable energy generation.*

*This survey is designed to collect information on existing motorized and non-motorized river recreation opportunities using a variety of watercraft. The river has been divided into three distinct reaches: Reach 1, Denali Highway bridge to Fog Creek (RM 290 to 177); Reach 2, Fog Creek to Portage including Devils Canyon (RM 177 to 149); and Reach 3, Portage Creek to the George Parks Highway Bridge (RM 149 to 86).*

a) First of all, can you please describe your business/organization/agency or individual?
    a. Areas of operation/activity relative to the three river recreation reaches
    b. Years in business/doing activity
    c. Services/tours provided
    d. Client / membership base – Anchorage? Fairbanks? Non-residents? Local area residents?
    e. Other information

2) Do you or your [organization/ business/agency] have any [knowledge/or use] of river recreation activities on the three river recreation reaches on the Susitna River? Can you please provide me with some background on the following?

a) Types of river recreation use by river reach/location
b) Type of watercraft
c) Time of year the river is used
d) Frequency of use
e) Level of use (ex. heavy, light, etc.) –[look for hard numbers]
f) Any other information?

3) For your river recreation trips on the Susitna River what is the….?

a) Primary trip purpose
b) Secondary activities associated with trip
c) Type of watercraft
d) Trip length (days and miles)
e) Time of year the river is used
f) Frequency of use
g) For commercial providers--Client / membership base – Anchorage? Fairbanks? Non-residents? Local area residents?
h) Any other information?

4) Please describe the flow levels when you participate or observe river use for:

a) Transportation
b) Recreation
c) Whitewater

5) Relative to river flows, what flow related factors most influence your decision to initiate a trip on the Susitna River? Please elaborate for each factor that applies and identify high and low flow levels that trigger you to initiate vs. cancel a trip.

a) river safety
b) speed of travel
c) navigation
d) access to river camps
e) portages (lack thereof or access to river-level portages around difficult rapids)
f) whitewater opportunities: challenging rapids, powerful hydraulics, play spots
g) access for fixed wing aircraft on floats or wheels (specify)
h) Other

6) How do you estimate the flow levels in the River?

a) Internet
b) Direct observation
c) Communication with other river users
d) Other
e) Do not check flow levels

7) How and where do you access the river?
   a) Access locations for respective river reaches
   b) Modes of transportation to access each location
   c) Approximate cost for each mode of transportation to the river

8) Are you noticing any trends in recreational use of the area?
   a) Seasonal Changes?
   b) Is use and interest growing?
   c) Lessening?
   d) About the same?
   e) Is the mix of recreational use changing?

9) What types of new infrastructure might help improve river access? Would you prefer river access not be improved? [If yes] Why?

10) Are there any other issues regarding river recreation use or access that we should be aware of?

11) Would you consider this area a unique setting for river recreation use in Alaska? Why or why not?

# PART A - APPENDIX C: WINTER RIVER RECREATION & TRANSPORTATION EXECUTIVE INTERVIEW QUESTIONS

# Winter Recreation & Transportation Exec. Interview Template

Day, Month xx, 2013
TIME

| **Name and Contact Number:** | **Organization or Agency:** | **Date of Interview:5//2013**<br>Time of Interview (start):Time of Interview (end): |
|---|---|---|
| Primary Use Season:<br>Summer☐<br>Winter ☐<br>Main Month of Use: | Type of Use:<br>Recreation ☐<br>Utilitarian ☐<br>Transportation ☐ | Main Winter Activities:<br>Snow machining☐<br>Skiing ☐<br>Dog mushing/skijoring ☐<br>Hunting/Trapping ☐<br>Cabin-access ☐<br>Other☐ |
| Commercial☐<br>Non-Commercial☐ | Interviewee Expertise<br>Aesthetics ☐<br>Soundscape ☐<br>River Recreation/Flow ☐<br>General Recreation ☐ | River Reach for Winter Use:<br>RR1 ☐ RR2 ☐ RR3 ☐<br>Main locations of Use (see map grid): |

1. First of all, do you use the river in the capacity as a commercial operator, organization, event, agency, or as a non-commercial user? Indicate all that apply.

2. For [commercial operator, organization, event, agency] please describe your [business/organization/ event/agency]
a) Areas of operation:
b) Years in operation:
c) Services/tours provided:
d) Membership
e) Event type and dates
f) Other information

3. Do you or your [business/organization/ event/agency/individual] have any [knowledge/or use] of the three winter recreation reaches on the Susitna River?

4. Can you please provide me with some background on this?
a) Type of activity
1. Snow machining
2. Skiing—ungroomed vs groomed surface/marked trail
3. Dog mushing
4. Trapping
5. Snowshoeing.

6. Aviation
7. Walking or other (Recreational cabin access and re-supply)
8. Other?

b) Time of winter—specific months and level of use (ex. heavy, light, etc.) [look for hard numbers].

c) Client / membership base–
1. Local area resident?
2. Anchorage?
3. Fairbanks?
4. Non-resident?

5. Please describe the timing of winter recreation activities and your preferences for winter recreation and travel for each river reach where you have experience along the river corridor:
a) Do you consider your activities to be transportation, winter recreation or both?

**Transportation**
b) What areas of the Susitna River corridor do you use for winter transportation?
c) Why do you use the river corridor in winter for transportation?
d) From a transportation perspective, do you use the river ice to cross the river from one side to the other or travel longitudinally up and down the river corridor?
e) What type of ice conditions do you require to safely travel the river during the winter?
f) What is the earliest and the latest month to safely travel the river during the winter?
g) In what month is your highest frequency of winter transportation activity on the river corridor.

**Recreation** (follow up questions if not answered above)
h) What recreation activities are you pursuing during the winter on or near the Susitna?
i) What areas of the Susitna River corridor do you use for these winter recreation activities?
j) For these recreation activities, do you recreate on the river corridor specifically or do you cross the river to pursue your desired recreation activity?
k) What is the earliest month you typically engage in these recreation activities on the river corridor?
l) What is the latest month for these winter recreation activities on the river corridor?
m) In what month is your highest period of winter recreation activity?
Winter Recreation Events
n) Are there any special events during the winter that are dependent on safe ice conditions? If so, what month of the winter does this event(s) occur?
o. What type of ice conditions do you require for safe recreation during the winter?

**Winter Recreation Events**
a. Are there any special events during the winter that are dependent on safe ice conditions? If so, what month of the winter does this event(s) occur?
b. Do you participate in any of these events? Please name.

6. Are you noticing any trends in recreational use of the area? a) Seasonal Changes during the winter (month to month)? b) Is use and interest growing for winter recreation?
c) Lessening?
d) About the same?
e) Is the mix of recreational use changing?

7. What types of provisions might help improve winter access to the river? (i.e. informational signs, postings, public access points, developed facilities).
8. Would you prefer access not be improved? [If yes] Why?

9. Are there any other issues regarding winter recreation use on the river corridor or access that we should be aware of?
10. Would you consider this area a unique setting for winter recreation use in Alaska? Why or why not?

11. What other areas with winter recreation opportunities similar to the Susitna do you use for recreational outings?

12. Are there any specific people that you think it would be important for us to include in our interview research?