Oregon Non-Motorized Boater Participation and Priorities

Report in support of the 2015-2024 Oregon Trails Plan
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Acknowledgments

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Executive Summary

In preparation for the 2015-2024 Oregon Trails Plan, the Oregon Parks and Recreation Department contracted with Oregon State University to conduct surveys of Oregon residents regarding their participation in four categories of trail-related recreation: non-motorized trail, non-motorized boating, motorized (ATV / OHV), and snowmobile recreation. Each survey was designed to elicit information on current use patterns (amount, location, and type of use), user experiences and preferences, and the economic contribution of the recreation activity. This report provides the results of the non-motorized boater questionnaire, which also was supported by funding from the Oregon State Marine Board. All references to boating in this report are to non-motorized boating. Reference is made to “boater sample” and “boater survey” in this report to differentiate the results of the current survey from those of other referenced studies.

The project involved both a probability sample and a convenience sample. The probability sample, which is the primary focus, was designed to be as representative as possible of all non-motorized boaters in Oregon – persons recreating with watercraft that rely primarily on paddles or oars for propulsion. Coverage included drift and row boating, canoeing, kayaking, rafting, and standup paddle boarding. It excluded outrigger canoes and sculling / sweep boats, as well as sailboats, surf boards, windsurfing boards, kiteboards, float tubes, inner tubes, inflatable mattresses, and similar "floatie" craft.

The probability sample was drawn from two sources: 1) persons who reported participating in one of the relevant activities in the 2011 survey conducted for the 2013-2017 Oregon Statewide Comprehensive Outdoor Recreation Plan (SCORP) and 2) persons who purchased an Oregon Aquatic Invasive Species Prevention (AIS) permit. Approximately 23% of the mail out sample was from SCORP respondents, the remainder from AIS permit holders. The convenience sample was drawn from additional AIS permit holders who provided email addresses when purchasing their permit.

The probability sample included 1,983 people who completed the questionnaire and boated in the past 12 months (37% of eligible invitation recipients). An additional 343 people (6%) responded but did not boat in the past 12 months. Prior to analysis, the data were weighted by age and whether respondent most often engaged in whitewater or flat water boating.

The report includes further analysis of demographic data from the SCORP 2011 questionnaire. Relative to all Oregonians who engage in outdoor recreation, boaters tend to be younger and with slightly higher income. They tend to be similar with respect to gender, education, and race / ethnicity.

The 2011 SCORP data also are the best source for estimates of user days (occasions). Across Oregon as a whole, there were an estimated 2.9 million whitewater and 4.0 million flat water user occasions in 2011. These figures include tubing and floating, which were excluded from the current analysis.

Most (73%) respondents in the current probability sample were male, though the gender balance was more even when additional boaters in the household were included. Respondents tended to be younger than Oregonians as a whole and to live in households with above-average income.

Only a minority (7%) of respondents belong to boating organizations. Kayaks other than whitewater kayaks were owned in highest amounts, with an average of 0.69 boats across all boating households. This was followed by whitewater kayaks, with 0.59 boats per household.

"Other" kayaks also were the most frequently purchased in the past 12 months, with 0.111 boats per household. However, stand up paddleboards were the boat type with the highest "new in past 12 months" percentage, with 54% of all paddleboards owned in households being new in the past 12 months.

Approximately equal percentages of days were spent boating on whitewater parts of rivers (29%), flat water parts of rivers (33%), and lakes / reservoirs (31%), with smaller percentages in bays, inlets, estuaries (5%), and the Pacific Ocean (1%).

Almost all (95%) respondents took at least one boating day trip and most (52%) took at least one multi-day trip in the past 12 months. Region 1 (the north coast) had the highest percentage of day trips (91% of all days spent boating in the region) and Region 7 & 10 combined (northeast Oregon) had the highest percentage of multi-day trips (66% of all days spent boating in the region). Most day trips (59%) involved fewer than 30 miles of travel distance to the launch point, whereas almost half (47%) of multi-day trips involved 90 or more miles of travel distance. For both types of trips, the plurality of respondents had two persons in their travel party, with multi-day trips involving larger average travel parties compared to day trips. Most travel parties utilized one or two boats for both day and multi-day trips. Roughly one-third (36%) of multi-day trips were three days in length, with another 20% each being two days or four days.

Respondents were asked about scenic waterways and water trails. Keeping in mind that the survey only covered boaters, who are likely to favor scenic waterways, most (61%) indicated strong support for the Oregon Scenic Waterways program. Fish and wildlife, as well as broader environmental values, were identified as the most important qualities when evaluating potential additions to the program. Respondent suggestions for scenic waterway additions varied across the online and mail questionnaires, but the three most popular suggestions across the two versions were the Crooked River, McKenzie River, and Willamette River.

Respondents indicated that access and safety information were the two most important information needs if a water trail "app" were to be developed. Across the online and mail questionnaires, the most common suggestions for water trail additions were the McKenzie River, Metolius River, John Day River, and Waldo Lake.

Reported waiting time was modest, with 60% of respondents indicating they do not have to wait at all at launch areas. Constraints on boat camping participation included vehicle safety, lack of primitive campgrounds, and lack of information. Various activities were important to enjoyment of boating, with fishing, viewing nature, and camping (any kind) rated most highly.

With respect to facilities and services, public access and online information were rated most important (87% and 74%, respectively, rated these as Somewhat or Very Important). Across potential management actions, support was greatest for restricting development along shores (apparently due to concern that development would reduce access), followed by "pack in, pack out" requirements, more public access points, and more water-accessible campsites. Across various boating issues, car safety and increased access were rated as most important (60% and 59%, respectively, rated these as Somewhat or Very Important). The majority of boaters were supportive or neutral with respect to an increased annual fee, but a significant minority opposed such a program. Opposition increased at higher fee amounts, within the range of $10 to $20.

Boater expenditure varied across regions and trip types (local versus non-local, day trips versus multi-day trips). The SCORP 2011 survey data, adjusted for removal of tubing and floating, indicate 4.4 million annual boater user days, which generated $114 million in expenditure across the state. In turn, this expenditure contributed 1,084 jobs, $54 million in value added, and $34

million in labor income. When out-of-state visitors are included, the estimated amounts increase to 1,258 jobs, $63 million in value added, and $39 million in labor income.

1. Introduction

1.1. Background

In preparation for the 2015-2024 Oregon Trails Plan, the Oregon Parks and Recreation Department (OPRD, Oregon State Parks) contracted with Oregon State University (OSU) to conduct surveys of Oregon residents regarding their participation in four categories of trail-related recreation: non-motorized trail, non-motorized boating, motorized (ATV / OHV), and snowmobile recreation. Each survey was designed to elicit information on current use patterns (amount, location, and type of use), user experiences and preferences, and the economic contribution of the recreation activity.

This report provides the results of the non-motorized boater questionnaire, which also was supported by funding from the Oregon State Marine Board (OSMB). The sample design was developed to derive information at the regional level. In some cases, multiple rural regions are combined to achieve an adequate sample size.

All references to boating in this report are to non-motorized boating. Reference is made to “boater sample” and “boater survey” in this report to differentiate the results of the current survey from those of other referenced studies.

1.2. Data presentation

For ease of reading, numbers are rounded in this report; this may lead to some percentages not totaling 100. All averages in this report are means rather than medians. There are “missing values” for many variables. For example, some people did not answer the income question. Percentages shown in this report are “valid percentages” unless otherwise noted; valid percentages adjust for missing values and total 100.

Exclusion of missing values also leads to discrepancies. For example, there were 1,983 completes in the probability sample (Table 1.1), but only 1,937 had an identifiable region – from self-report or mailing address. Table 1.2 only includes the latter respondents.

The paper version of the questionnaire is included in Appendix 6. In presenting results, reference is made to question numbers in the paper version (e.g., Q17). Some questions were asked only in the online version and therefore lack reference numbers.

Results by region of residence are shown graphically in the body of the report for some variables, as well as in tabular form in Appendix 2 for a fuller set of variables. Note that region of residence and region of boating activity reflect respondent reports based on maps presented with the questionnaire. Checks were conducted, such as comparing reported region of residence with mailing address and comparing reported region of residence with region of day trip boating activity. These checks indicate that most respondents reported accurate locational information, but some reporting errors are possible.

For ease of reading, neither p-values nor effect sizes are presented for the bivariate analyses in this report (e.g., differences across regions for a given survey question). Readers should keep in mind that some regional variability, for example, will be due to the sampling error that is inherent in surveys (see Section 1.4), rather than to actual differences across regions.

1.3. Survey methodology

The probability sample was designed to be as representative as possible of all non-motorized boaters in Oregon. For this project, non-motorized boating referred to recreating with non-motorized watercraft that rely primarily on paddles or oars for propulsion. Coverage included drift and row boating, canoeing, kayaking, rafting, and standup paddle boarding. It excluded outrigger canoes and sculling / sweep boats, as well as sailboats, surf boards, windsurfing boards, kiteboards, float tubes, inner tubes, inflatable mattresses, and similar "floatie" craft.

The probability sample was drawn from two sources:

- Persons in the 2013-2017 Oregon Statewide Comprehensive Outdoor Recreation Plan (SCORP) data file who reported participating in one of two activity groups that included: flat-water canoeing, sea kayaking, rowing, stand-up paddling, tubing / floating, white-water canoeing, white-water kayaking, or white-water rafting. Approximately 23% of the mail-out sample was from this source.

- Persons who purchased an Oregon Aquatic Invasive Species Prevention (AIS) permit. Approximately 77% of the mail out sample was from this source.

AIS permits are required only for non-motorized crafts that are 10 feet long or longer. In addition, the AIS program is a relatively new program with uncertain compliance rates. Despite these limitations, AIS permit holders were included in the probability sample because the SCORP list was of insufficient size to achieve region-level results for this boater survey.

The probability sample was complemented by a convenience sample of AIS permit holders who provided email addresses when purchasing their permit. Though this sample is expected to be less representative of all non-motorized boaters, it provides additional information. Results for the convenience sample are presented in Appendix 3. Some analyses were not conducted for the convenience sample. For example, the fee question was not included in the early version of the convenience questionnaire, so there were insufficient responses to analyze those results.

Persons in the probability sample could complete the questionnaire in either online or paper format. Persons in the convenience sample could complete the questionnaire only in online format.

Each person in the probability sample was sent the following correspondence:

- A “pre-letter” from OPRD explaining the reason for the questionnaire and encouraging participation.

- An invitation letter from OSU, with the URL for the online questionnaire and a postage-paid reply postcard for those preferring to complete the questionnaire in traditional paper format. Paper questionnaires were sent to those returning the postcard.

- A reminder letter and reply postcard from OSU, sent to persons who had not completed the online questionnaire or returned the postcard within approximately one week.

- A reminder letter from OSU, with the URL for the online questionnaire, as well as a copy of the paper questionnaire and postage-paid reply envelope, sent to persons who had not completed the questionnaire within approximately three weeks.

For households with more than one adult boater, the invitation letter requested that the adult boater with the most recent birthday complete the questionnaire.

The questionnaire was developed in collaboration with OPRD, OSMB, and the project planning advisory committee.[1] An online-only "pre survey" was conducted with a portion of the convenience sample. After questionnaire revision, a pre-test was conducted with 300 persons from the probability sample, following the process described above. The questionnaire was further revised and conducted with the remaining persons in the probability and convenience samples.

Response rates are shown in Table 1.1 below. The probability sample response rate of 43% (37% + 6%) is good by current survey standards, especially considering the long median online completion time of 27 minutes. This rate does not include a substantial number of persons who completed part of the questionnaire but were removed from the sample as only partial completes. It does include persons who completed a majority of the questionnaire, despite leaving some questions unanswered.

The lower response rates for the convenience sample may be due to fewer contacts and the absence of a paper questionnaire option.

Table 1.1. Sample and response rates

	Probability	**Convenience**
Initial sample	5,675	2,026
Eligible (undeliverables removed)	5,428	1,878
Responded, did not boat (non-motorized) in past 12 months	343	43
Percent of eligible	6%	2%
Responded, boated in past 12 months	1,983	547
Percent of eligible	37%	29%

For the probability sample, 73% of the questionnaires were completed online and 27% in paper format.

Figure 1.1 shows the planning regions across the state, and Table 1.2 shows the number of respondents by region. Table 1.2 reflects respondents who boated in the past 12 months and whose region of residence could be identified.

[1] The advisory committee included Julie Chick (Tillamook Estuaries Partnership), Geoff Frank (Tumalo Creek Canoe & Kayak / RTP Advisory Committee), Jan Fitzpatrick (USDA Forest Service), Ashley Massey (Oregon State Marine Board), Sam Drevo (ENRG Kayaking), Travis Williams (Willamette Riverkeeper), Kate Ross (Willamette Riverkeeper), Clyde Zeller (Oregon Department of Forestry), Jeff Powers (Benton County), Bob Schulz (LaPine Parks & Recreation District), Jan Wirtz (City of Lake Oswego), Maggie Rivers (Port of Alsea), Galen McBee (Yamhill County Parks Board), Will Blount (Ruff Wear / Bend Paddle Trail Alliance), and Rachel Bullene (Oregon State Marine Board).

Figure 1.1. Map of planning regions

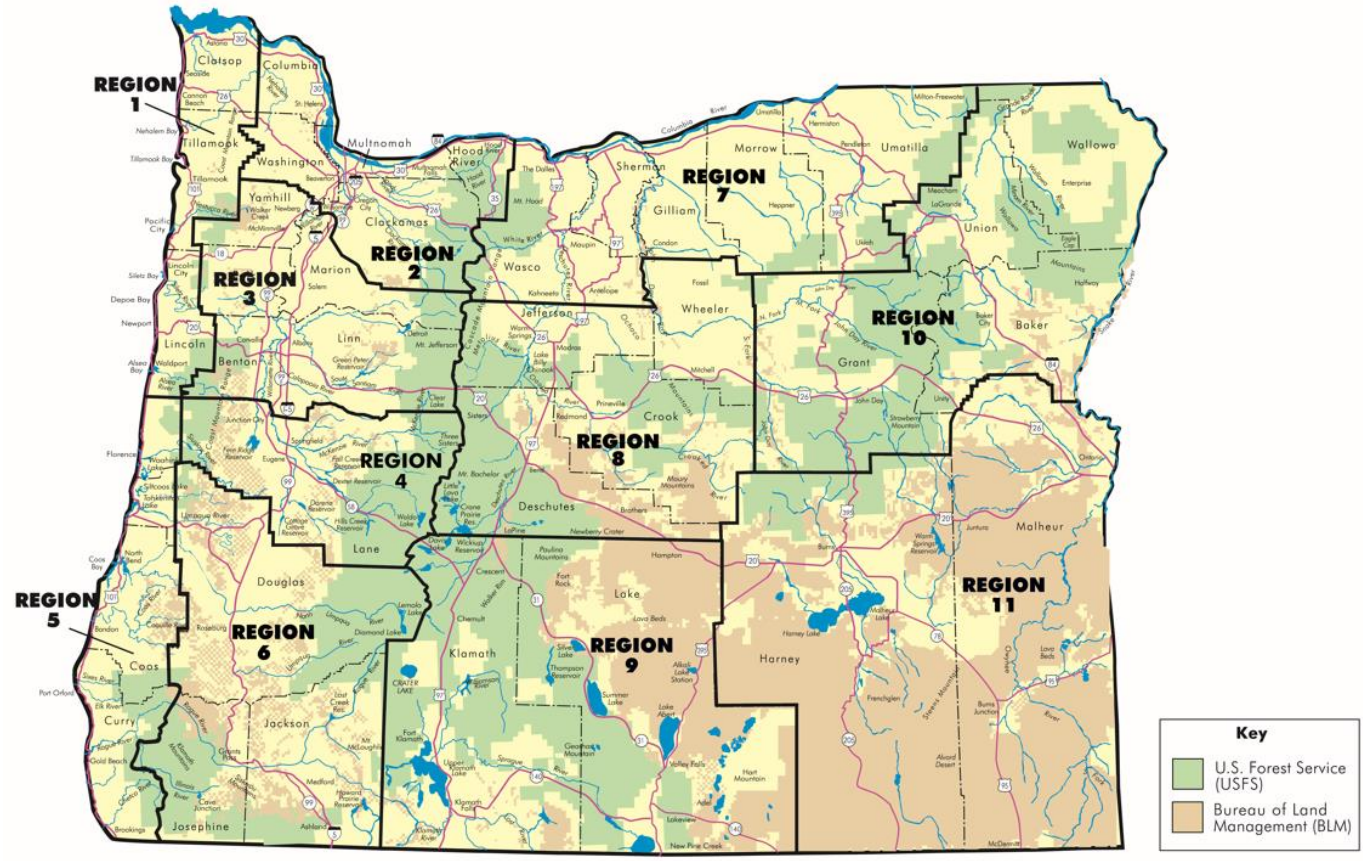


Table 1.2. Number of respondents who boated in past 12 months, by region					
Region	**Probability**	**Percent of statewide probability sample**	**Convenience**	**Total (Probability + Convenience)**	**Percent of statewide total sample**
1	93	5	16	109	5
2	498	26	143	641	27
3	363	19	115	478	20
4	241	12	42	283	12
5	96	5	12	108	5
6	221	11	22	243	10
7	49	3	3	52	2
8	253	13	42	295	13
9	54	3	4	58	2
10	62	3	2	64	3
11	6	0	0	6	0
Out-of-state	1	0	21	22	1
Statewide total	1,937	100	422	2,359	100

The out-of-state respondents were removed prior to analysis. Due to the small number of observations for rural regions east of the Cascades, Region 7 and Region 10 were combined into a

single region, as were Region 9 and Region 11. Even with this combination, the probability sample was under 100 for Region 1, Region 5, Region 7 & 10, and Region 9 & 11 once data were weighted.

1.4. Maximizing data accuracy

The goal of surveys such as this one is to use a sample (limited number of respondents) to obtain information on the population (everyone of interest, in this case all resident non-motorized boaters in Oregon). Because only a portion of the population is sent a questionnaire, and not all recipients complete the questionnaire, this type of data collection is susceptible to various sources of error.

This survey administration addressed the four main potential sources of error in the following ways:

- Coverage error was addressed through the use of the SCORP and AIS probability sampling frames. Though imperfect, they are preferable to relying on a convenience sample. The AIS sampling frame only includes boaters who have purchased permits, and these permits are only required for boats 10 feet long or longer. The use of this sampling frame may lead to an over-sampling of flat water craft relative to shorter whitewater kayaks. Weighting was used to address this potential source of error.

- Sampling error was addressed through a reasonably-large sample size.

- Measurement error was addressed through an extensive questionnaire development, review, and pre-test process.

- Non-response error was addressed by maximizing response rates via multiple mailings, as well as identifying and correcting for potential non-response error via weighting in both the original SCORP sample and the current boater sample.

Non-response error arises when those who complete the questionnaire (respondents) differ from those who do not (non-respondents) on a variable of interest. This potential error jeopardizes conclusions about the population based on responses in the sample.

Sample data were adjusted 1) for non-response by age and 2) for coverage by whether engaged in a whitewater (WW) versus flat water (Flat) boating type (Question 2, activity engaged in most often). Potential reference points for calculating weights include SCORP results, the Outdoor Foundation special report on paddle sports (OF, with data from 2009),[2] and the National Survey on Recreation and the Environment (NSRE, with data from 1999 to 2007). Neither the OF nor the NSRE data differentiate WW versus Flat. Therefore, the boating type weighting relied on SCORP results, despite the imperfect match between the categories used in SCORP and the current boater sample. In computing the weights, half the "Drift / row boat" and half the "Other type of inflatable raft or pontoon boat" respondents in the current boater sample were randomly allocated to each of WW versus Flat categories. All the "Canoe" and "SUP" respondents were treated as Flat, though canoes and paddleboards sometimes are used in WW.

With respect to age distribution amongst kayakers, canoeists, and rafters, NSRE distributions for 1) Oregon and Washington respondents were similar to those for 2) all other state respondents. All (not just Northwest) NSRE respondents were used for further analysis due to the larger sample

[2] Outdoor Foundation Special Report on Paddlesports, 2009 (http://www.outdoorfoundation.org/research.paddlesports.html). A 2013 update of this report became available after the weighting process was completed and most of the current analyses were conducted. The updated data reflect relatively minor changes in the data used in the weighting calculations.

size. The age distributions for NSRE respondents, by activity, were similar to those in the OF data. Because the NSRE distributions were finer (smaller age ranges), they were used to weight the present data. SCORP data were not used due to the potential effect on the age distribution of floating and tubing being included in the SCORP Flat category. Weights were calculated based on the characteristics of the probability sample, but they also were applied to the convenience sample.

Weighting can reduce error, but the potential for some error is inevitable in survey research. Women are under-represented in the boater sample relative to the SCORP and NSRE distributions. In addition, calls to non-respondents in the boater survey indicated that people who most often engage in drift and row boating may be under-represented in the boater sample. Weighting was limited to two variables due to 1) small (under 10 observations) cell sizes for computing more complex weighting patterns, 2) loss of additional observations from non-response on potential weighting variables, and 3) the absence of a clear quantitative reference point for drift and row boat participation. Nonetheless, the above patterns should be considered when interpreting results.

1.5. Demographic profiles from SCORP

Results from the 2011 survey conducted for the 2013-2017 Oregon Statewide Comprehensive Outdoor Recreation Plan (SCORP) provide additional information and a reference point for the current boater survey results. This section includes demographic profiles from SCORP.

Respondents indicated whether they engaged in the following activities in 2011:

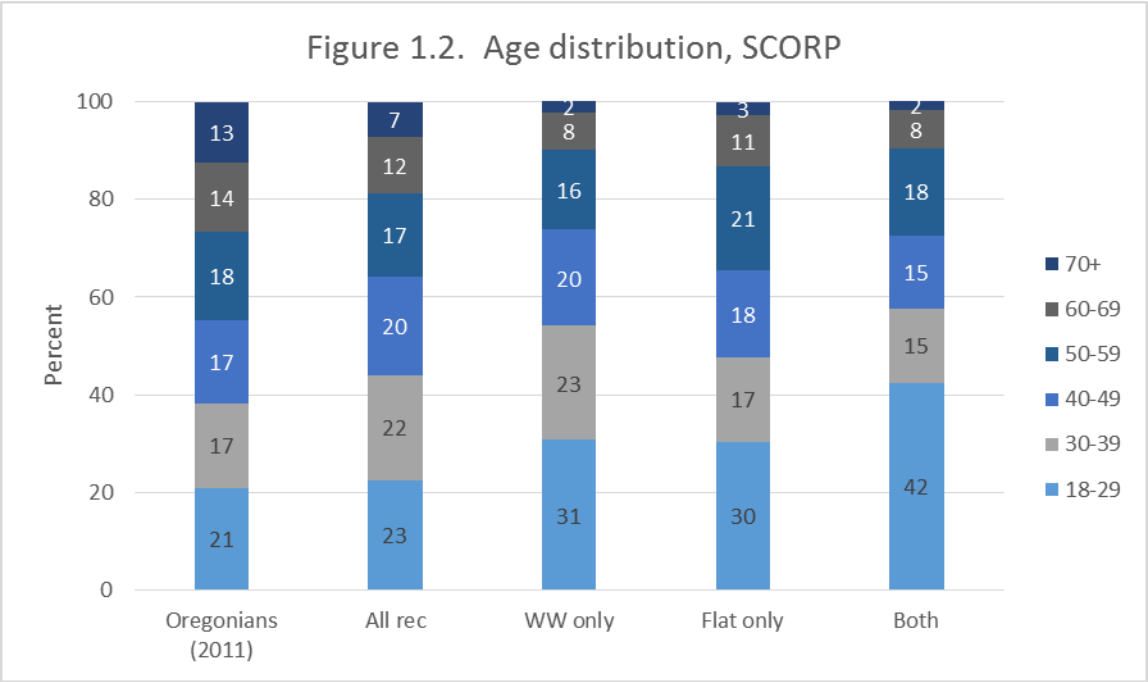
- White-water canoeing, kayaking, rafting.
- Flat-water canoeing, sea kayaking, rowing, stand-up paddling, tubing / floating.

These categories are referred to here as WW and Flat. Note that the SCORP Flat category includes a range of flat-water boating types, from sea kayaking to tubing.

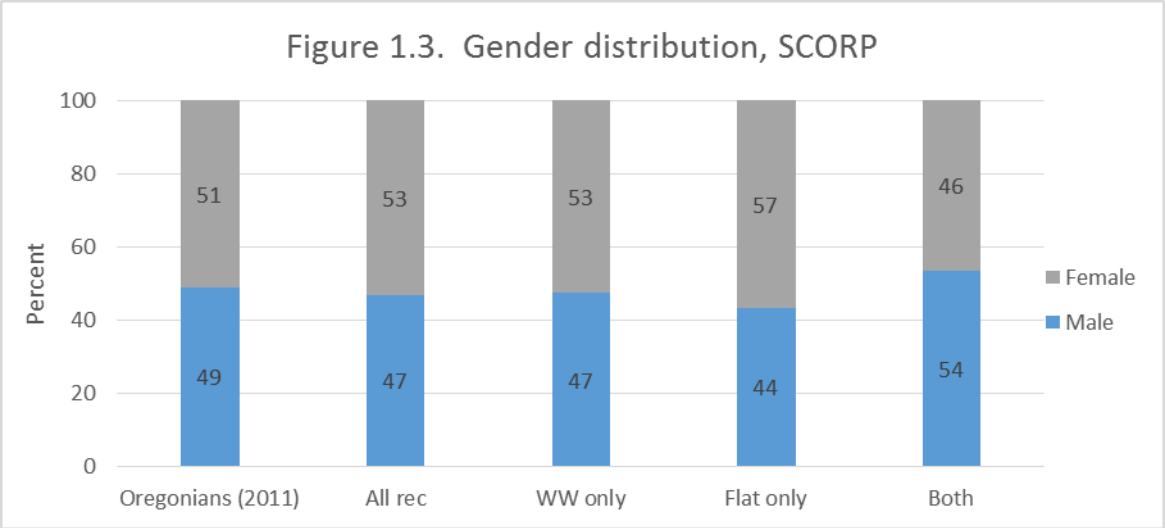
Figure 1.2 shows 2011 age distributions for Oregonians as a whole, Oregon outdoor recreationists as a whole, for residents who engaged in WW at least once (but not Flat), engaged in Flat at least once (but not WW), and engaged in both. The "all recreationist" category is provided for reference and reflects all SCORP respondents who indicated they engaged in outdoor recreation of any type (walking on local streets or sidewalks, hunting, downhill skiing, etc.). All results in this section are from the SCORP survey and are weighted in the same manner as in the SCORP report.[3]

As expected, older Oregonians are under-represented amongst participants in boating activities. Conversely, younger residents are over-represented. Oregonians who engage in both WW and Flat boating have a particularly "youthful" distribution. Oregonians who engage in Flat only tend to be somewhat older than those who engage in WW only.

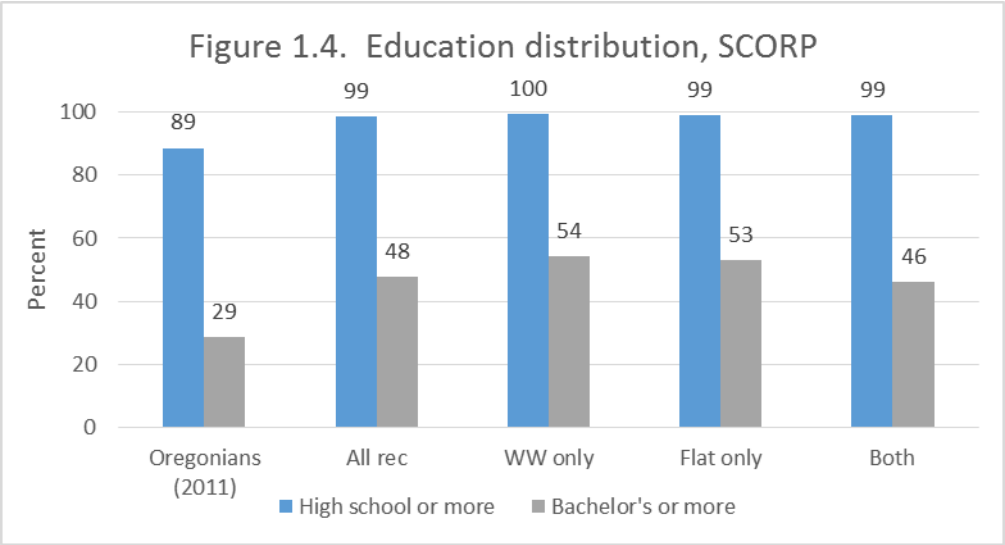
[3] Rosenberger, R. and K. Lindberg. 2012. Oregon Resident Outdoor Recreation Demand Analysis. Report to the Oregon Parks and Recreation Department. Available at http://www.oregon.gov/oprd/PLANS/docs/scorp/2013-2018_SCORP/2013-2017-SCORP_App_C.pdf



As shown in Figure 1.3, women tend to be over-represented amongst Oregonians who participate in Flat only and under-represented amongst those who participate in Both.



Boaters have education levels similar to all Oregon recreationists, with somewhat higher levels of university degrees for WW only and Flat only and slightly lower levels for Both (Figure 1.4). The lower level of university education for those in the Both category may be due in part to the higher proportion of young people in that category (see Figure 1.2); some may be in the process of completing a bachelor's degree.



With respect to race and ethnicity, boaters follow the general Oregon recreationist population insofar as most identify as white and non-Latino (Figure 1.5). Note that respondents could select multiple races, and that Latino / non-Latino was asked separately, following the US Census approach.

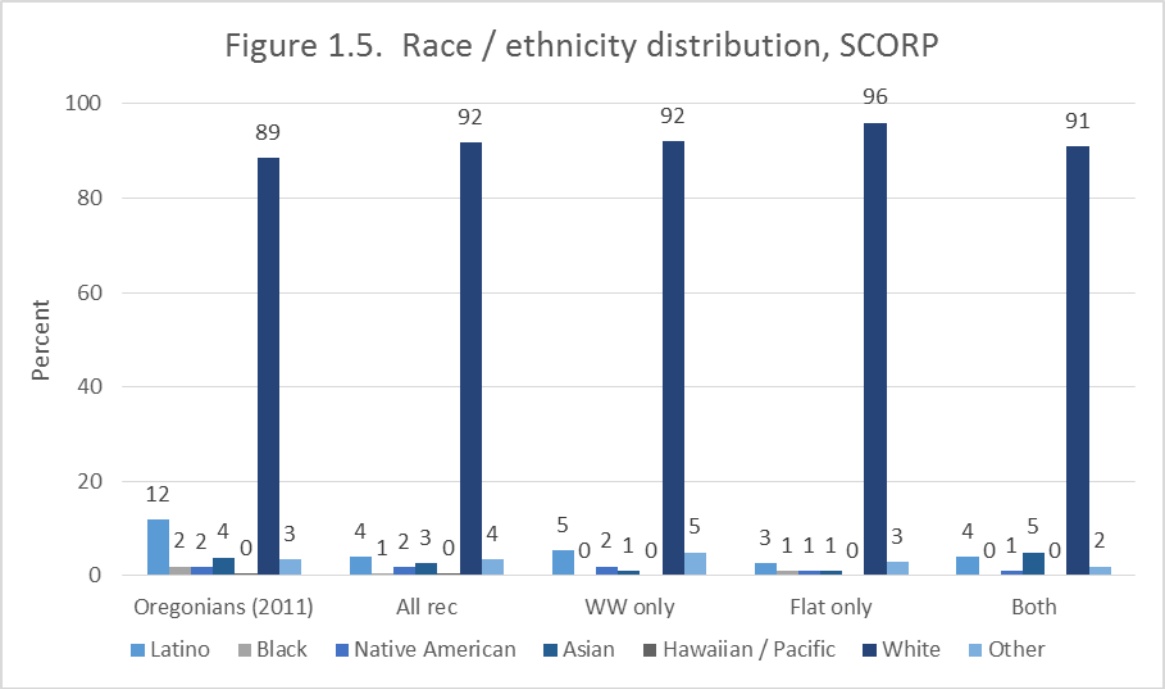
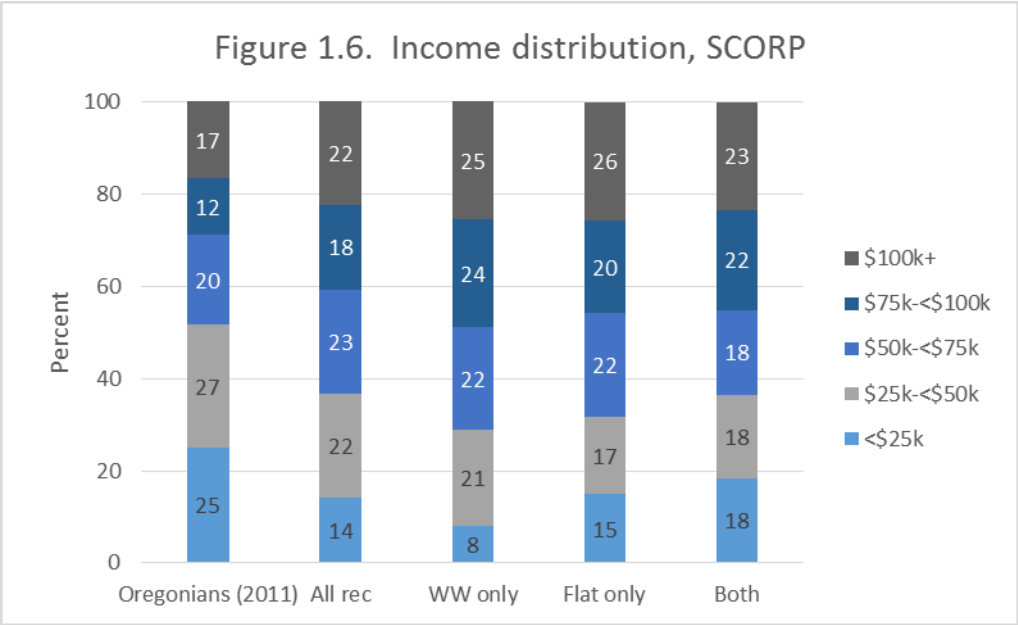


Figure 1.6 presents household annual income distribution, with boaters having slightly higher income levels than Oregonians overall who participate in outdoor recreation. Residents who engage in WW only are less likely than residents who engage in Flat only to be in the lowest income category, though residents who engage in Both are more likely to be in that category. This may be due in part to the high proportion of young people who engage in Both (see Figure 1.2).



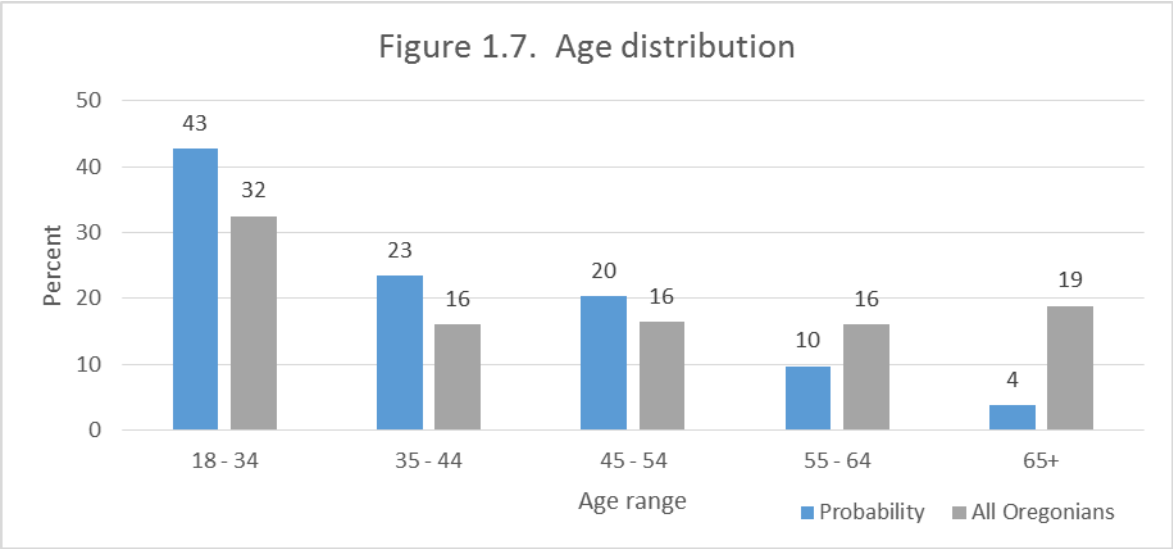
1.6. Boater sample demographics

This section presents demographic results from the current boater survey probability sample. Within that sample, 73% of respondents were male, 27% female. Respondents also reported the gender and age of any additional boaters in the household. When these additional boaters are accounted for, the distribution of boaters is more equally balanced (Table 1.3). Note that the number of observations decreases as one moves from respondent to 6th boater (i.e., there are fewer households with 6 boaters than with 1 or 2 boaters).

Table 1.3. Gender of boaters in household, percent

	Male	Female
Respondent	73	27
2nd boater	36	64
3rd boater	50	50
4th boater	49	51
5th boater	45	56
6th boater	34	66
Total	54	46

Figure 1.7 shows the age distribution for respondents and for all adult Oregonians (not just those who engage in outdoor recreation). Boating participation occurs across the lifespan, though it is particularly high amongst people in the 18 to 34 age range and declines with age.



As with gender, respondents reported the ages of additional boaters in the household. As shown in Table 1.4, the age of additional boaters is lower than that of the respondent. Evaluation of the full distributions suggests that the "2nd boater" typically was an additional adult, whereas the 3rd or higher boaters often were children (Figure 1.8). The average age across all boaters was 34.

Table 1.4. Age of boaters in household, years old

	Mean age
Respondent	41
2nd boater	39
3rd boater	21
4th boater	19
5th boater	21
6th boater	22
Total	34

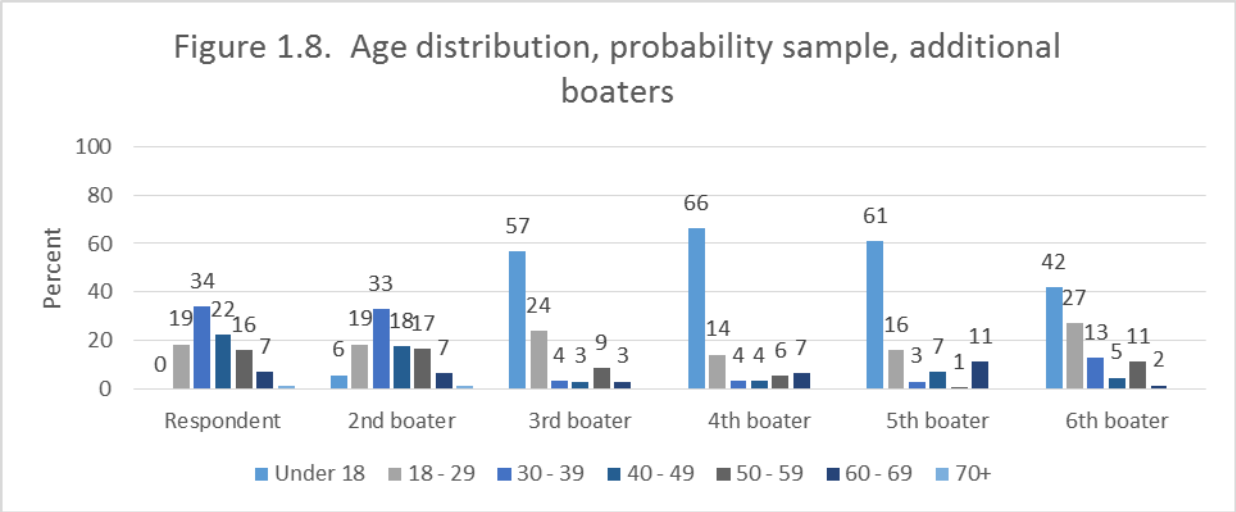
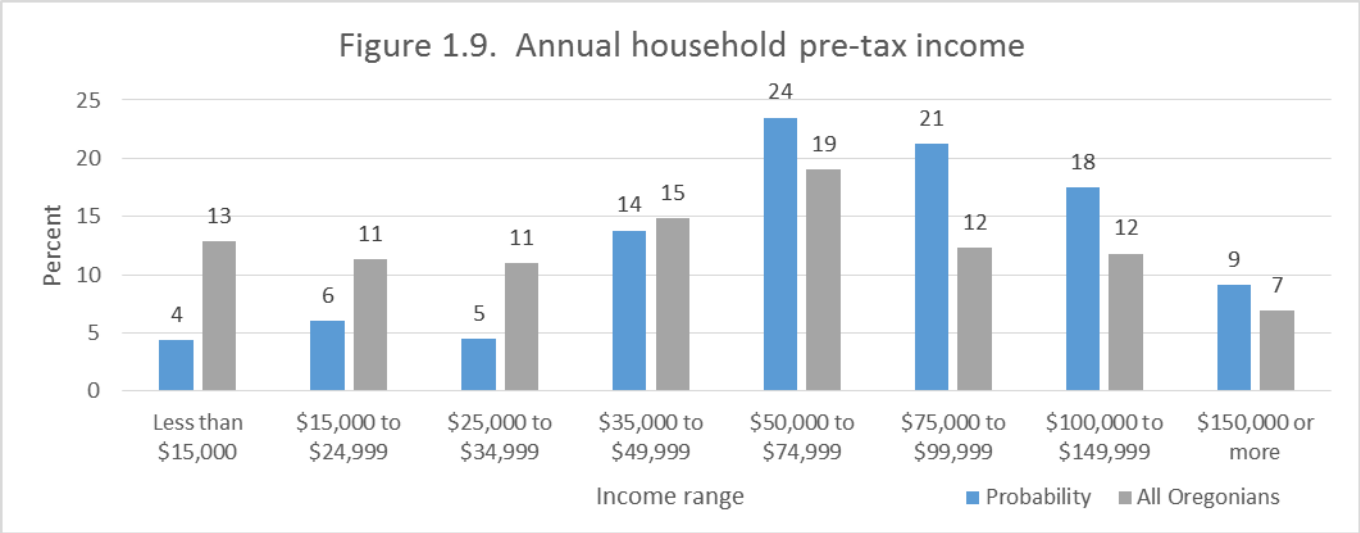


Figure 1.9 shows the distribution of annual household pre-tax income. Boaters tend to have a higher income level than Oregonians as a whole.



Only 2% of respondents reported they identified as Latino. Almost all (97%) reported they identified as white, with 3% reporting American Indian, 4% Asian, less than 1% African American, 1% Native Hawaiian, and 3% "some other race"; respondents could select multiple categories, so the total is greater than 100%. Relative to the Oregon population as a whole, minorities are under-represented amongst non-motorized boaters.

2. Ownership, trip characteristics, and participation

2.1. Boat ownership and use characteristics

Amongst probability sample respondents, 7% belonged to a non-motorized boating organization or club, 92% did not, and 1% were unsure (Q31). Across both the probability and convenience samples, common club memberships were with:

- America Whitewater
- American Canoe Association
- Cascade Canoe (and Kayak) Club
- Chemeketans
- Kayak Portland Meetup
- Lower Columbia Canoe Club
- McKenzie River Guides Association
- Northwest Kayak Anglers
- Northwest Rafters Association
- Oregon Ocean Paddling Society
- Oregon Whitewater Association
- OutKayaking
- Wasabi Paddling Club
- Willamette Kayak and Canoe Club
- Willamette Riverkeeper

Table 2.1 shows ownership patterns by boat type (Q1). For example, 24% of non-motorized boating households own one drift or row boat, 2% own two, and 1% own three or more. In total, 27% (the sum of the previous three columns) own one or more. An average of .31 drift or row boats are owned across all non-motorized boating households. An average of .033 drift or row boats were new to the households in the past 12 months. This represents 11% of those owned (0.033 / 0.31).

Note that WW was not defined specifically, so respondent interpretation of WW may affect classification of boats. In order to reduce the effect of outliers when calculating the means, boat counts above 10 were converted to 10 for the small number of households with more than 10 boats in a given category.

As expected given the novelty of the sport, stand up paddle board (SUP) has the highest percentage of "new to the household." WW rafts and canoes have the lowest percentages.

Table 2.1. Boat ownership by type, probability sample

	Percent owning number of boats				Mean number owned	New in past 12 months	New as percent of owned
	1	2	3 or more	1 or more			
Drift or row	24	2	1	27	0.31	0.033	11
Canoe	28	6	1	35	0.44	0.037	8
WW kayak	13	8	7	28	0.59	0.057	10
Other kayak	11	17	6	34	0.69	0.111	16
WW raft	22	5	3	30	0.44	0.027	6
Other raft	16	3	1	20	0.25	0.026	10
SUP	4	3	1	8	0.13	0.071	54

Figure 2.1 shows the ownership pattern, in percentage of non-motorized boating households owning each number of boats. Note that one or more people in a household may have engaged in non-motorized boating in the past 12 months despite owning no boats (due to borrowing, renting, participating in a guided trip, etc.). Most households own one or two boats.

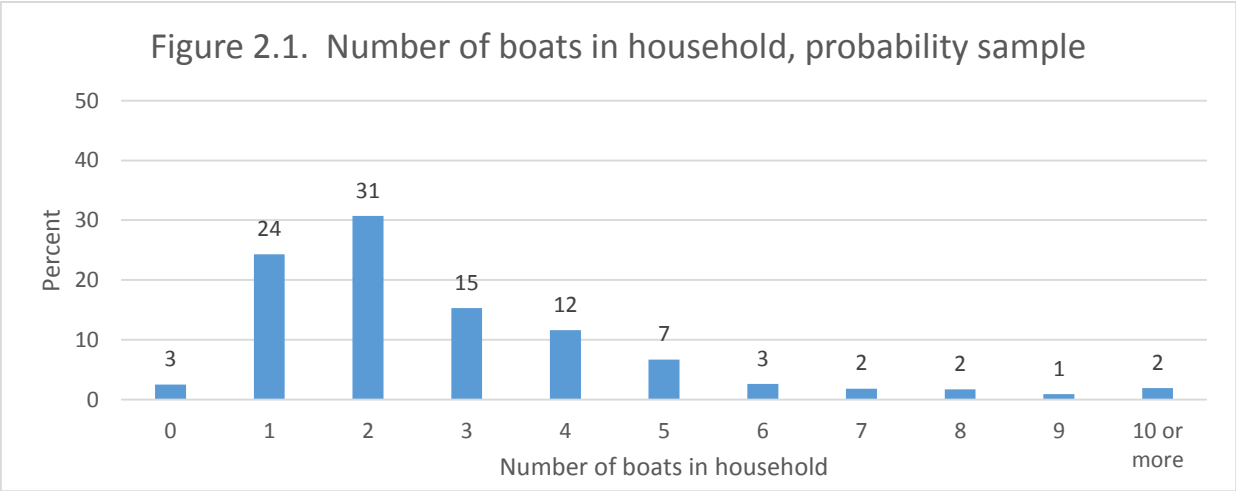


Figure 2.2 shows the number of types of boats (drift / row, canoe, WW kayak, etc.) in households, across the number of boats in each household. For example, 100% of households with only one boat (far left column) have only one type of boat, as one would expect. Of the households with two boats (second column from the left), 49% own one type of boat (both of the household's two boats are the same type) and 51% own two types of boats (the two boats are of different types).

In general, the number of types of boats increases with the number of boats owned. The column for nine boats owned represents a relatively small number of observations (14), so that exception to the general trend should be interpreted with caution.

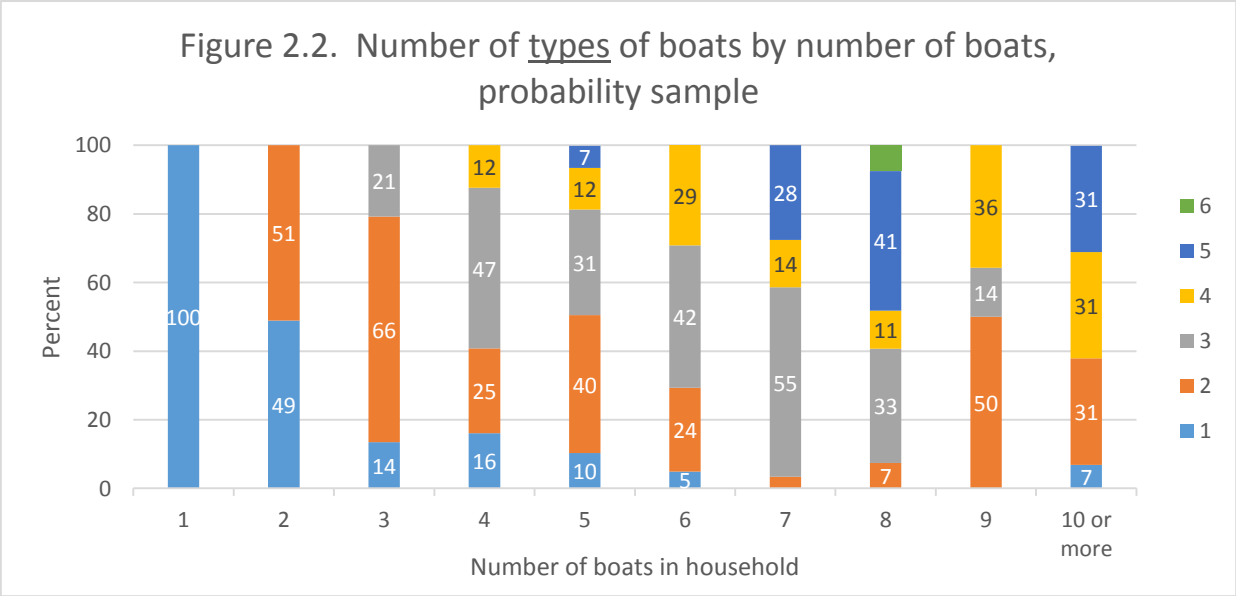
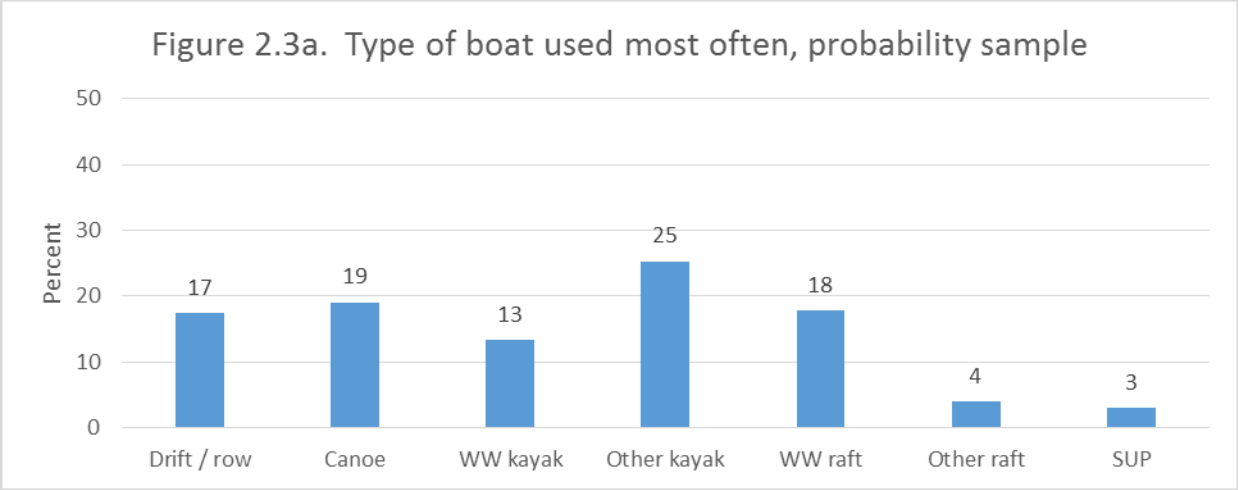


Figure 2.3a presents type of boat used most often (Q2), with Other kayak being the most common category. Allowing for differences in topography, and thus WW versus Flat balance, the results shown in Figure 2.3a are broadly consistent with national participation (relative across boat / activity types) in the Outdoor Foundation 2014 Outdoor Participation report .[4]

Figure 2.3b presents results by region. As a reminder, regional results are presented in tabular form in Appendix 2. The absence of SUP from some regions may accurately reflect no residents in that region using SUP most often. However, it also may reflect the inevitable potential for error that is described above. For example, SUP is a new activity with possible under-representation in the SCORP 2011 address list, SUP participants may not be purchasing AIS permits, the sample may be too small across some regions to achieve sufficient "contacts" with SUP participants, and non-response by a small number of participants can have a large effect for low-participation activities.



[4] http://www.outdoorfoundation.org/research.participation.2014.html

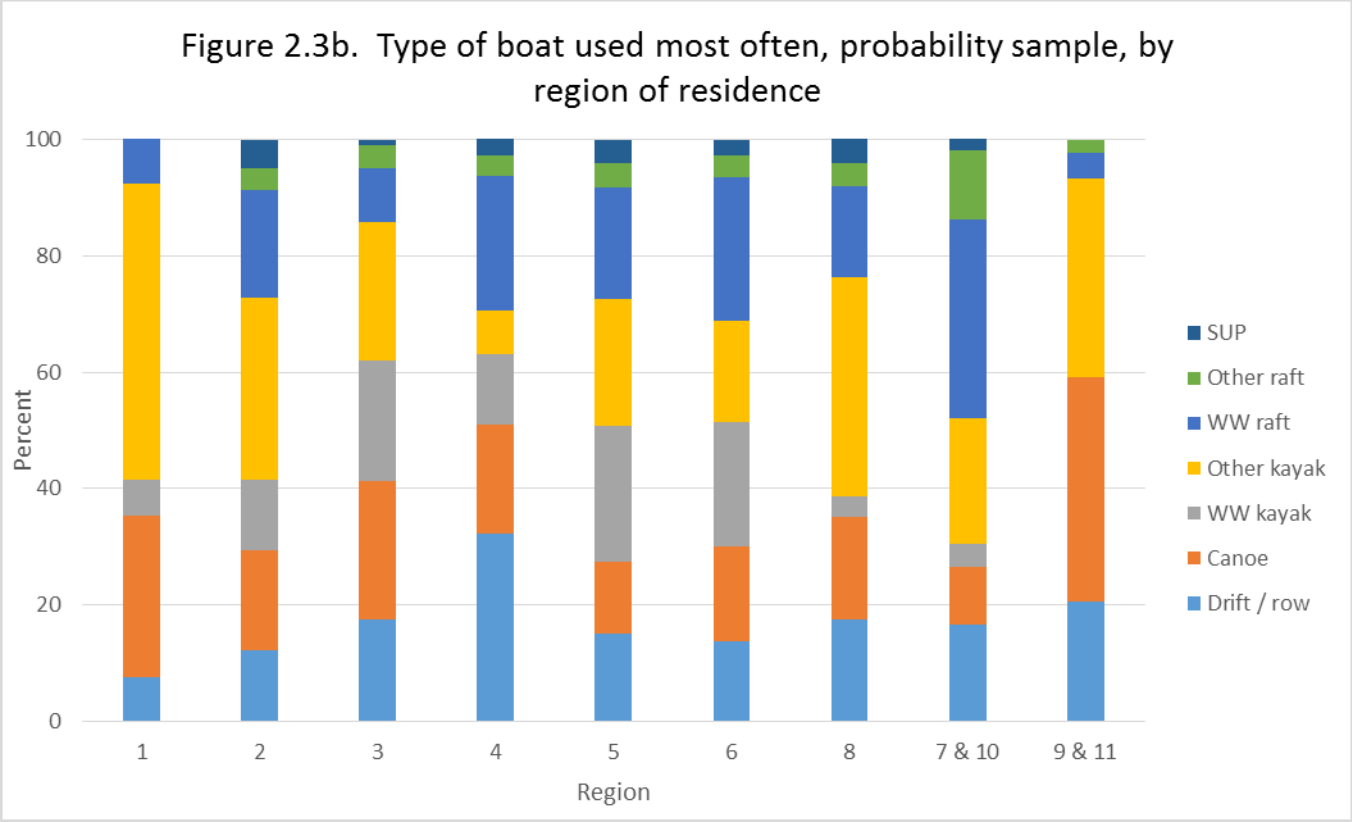


Figure 2.4 shows number of boats (across all types) owned in household by type of boat used most often (Q1 and Q2). Respondents who most often use WW kayaks own the most boats, on average.

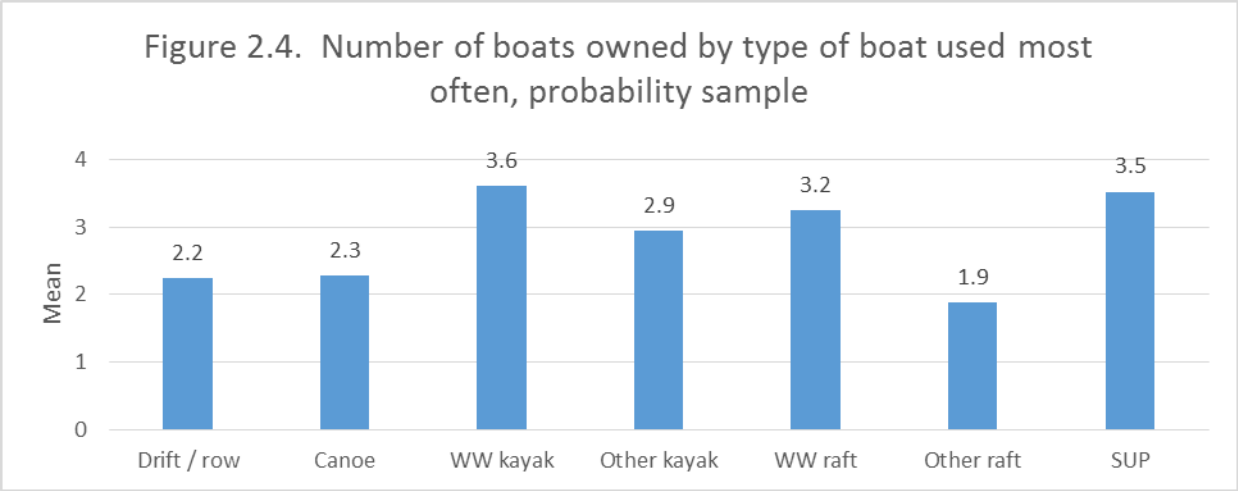
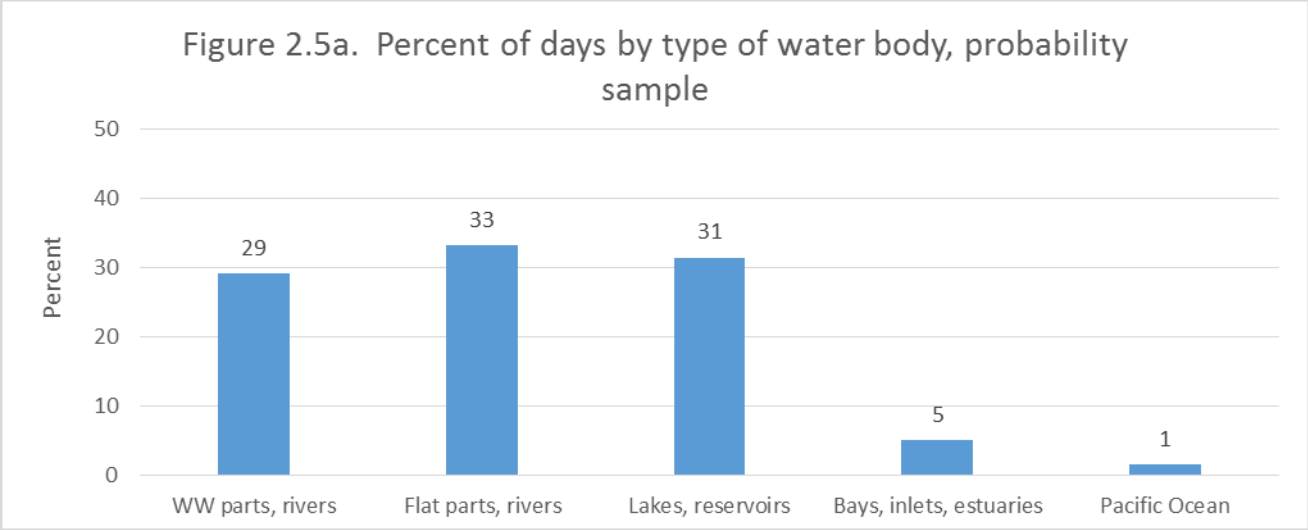
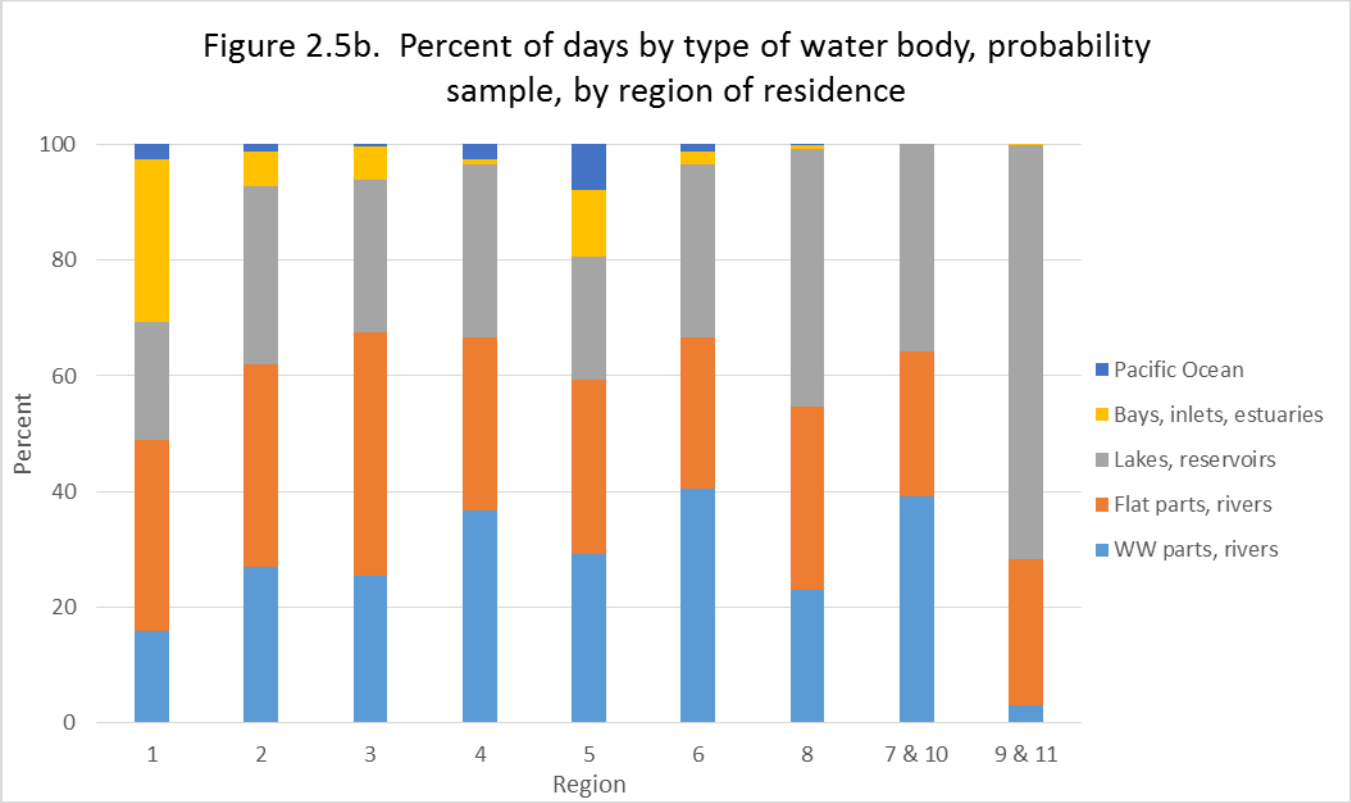


Figure 2.5a presents percentage of days paddling Oregon water bodies by type of water body (Q3), with Figure 2.5b showing results by region. Almost one-third of the days are spent on each of whitewater parts of rivers and streams, flat water parts of rivers and streams, and lakes, reservoirs and ponds. Fewer days are spent in bays and on the Pacific Ocean. As expected, residents of coastal regions spend a greater percentage of their days in bays and on the ocean, relative to residents of inland regions.





2.2. Day trip and multi-day trip characteristics

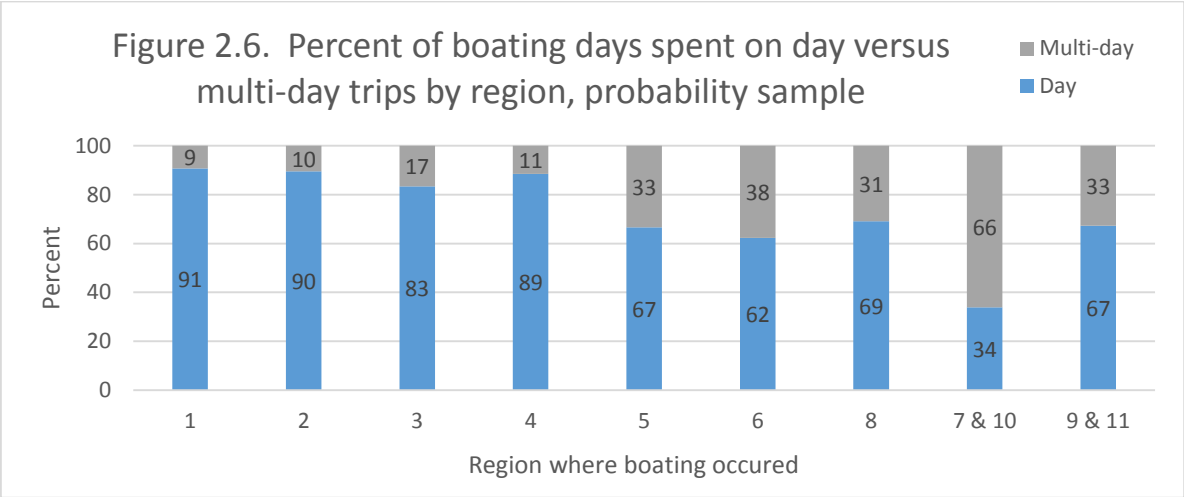
This section describes trip characteristics. User days, by region and water body, are presented in Section 2.4 below.

Almost all respondents (95%) took at least one day trip and the majority (52%) took at least one multi-day trip in the past year (12 months). In the mail questionnaire, respondents reported the number of days boating in each region and the allocation of those days into day and multi-day trips (Q5). Observations were included only if reported "days on day trips" and "days on multi-day trips" matched total days boating in the region.

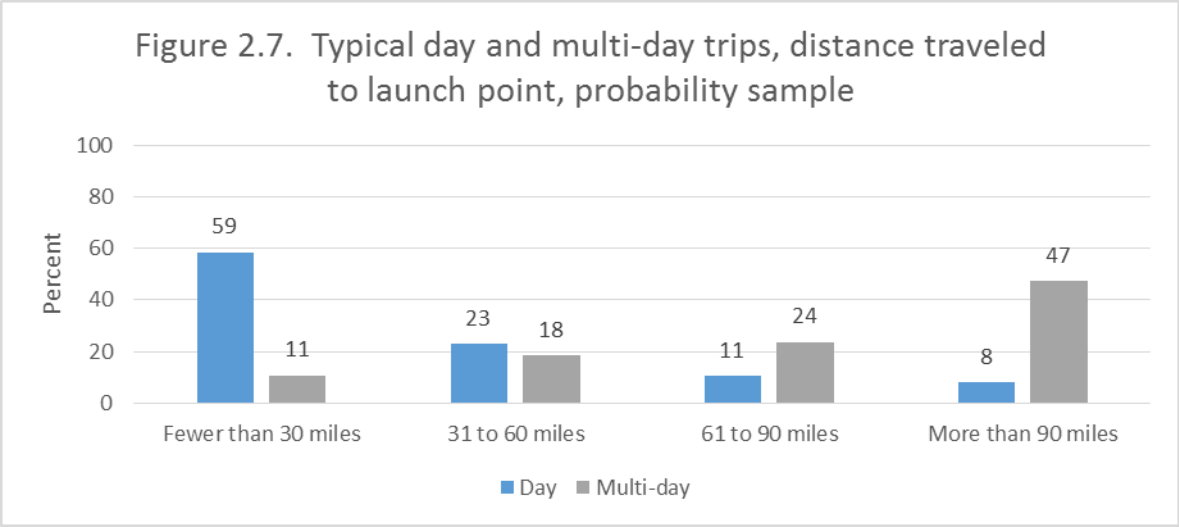
Multi-day trips are defined as those involving an overnight stay away from home, even if the respondent only boated one day during the trip. The day versus multi-day distinction is used in presenting results in this section as well as in estimating economic contribution in Section 6.

In the online questionnaire, respondents reported the number of days boating on specific water bodies by region, then reported how many of each region's total days reflected day versus multi-day trips.

Figure 2.6 shows the percentage of all days boating in each region that involved day trips versus multi-day trips.



The following results are for the "typical" day and multi-day trips, defined as the single location where respondents most often engaged in each type of trip in the past 12 months. Figure 2.7 indicates that the majority of day trips (59%) were within 30 miles of home while almost half (47%) of multi-day trips were more than 90 miles from home (Q7 and Q12).



The remaining results in this section and in section 6 (expenditure and economic significance) are based on travel parties. The National Visitor Use Monitoring (NVUM) approach to outliers is followed here, with observations excluded if reported travel party was eight or more persons, length of stay was more than 30 days, total expenditure was $500 or more per night (per day for

day trips), or sporting goods expenditure was $500 or more.[5] In addition, respondents were excluded if they indicated that their confidence in their expenditure reporting was below five on a 0 to 10 scale, where 5 = Somewhat confident (this was not asked in the mail questionnaire). Exclusion was "listwise" across the set of questions within each type of trip. For example, if one of the above conditions was met for multi-day trips, the respondent does not appear in the results for any of these questions within the multi-day trip analysis.

Figure 2.8 shows number of persons in travel party for Day and Multi-day trips. For both types of trips, two people in the travel party is the most common.

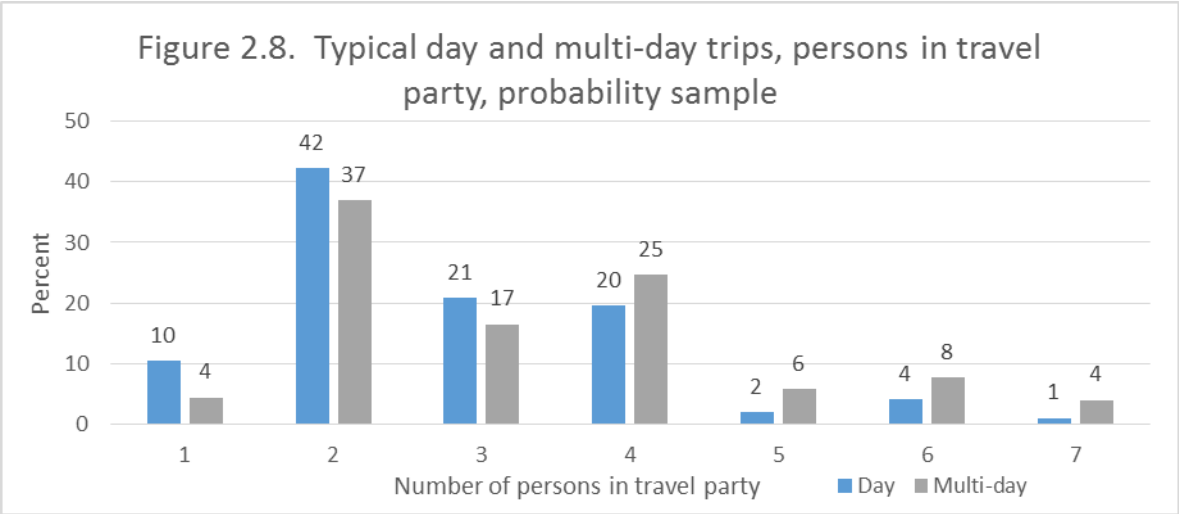


Figure 2.9 shows number of boats used by travel party. Most trips involve one or two boats.

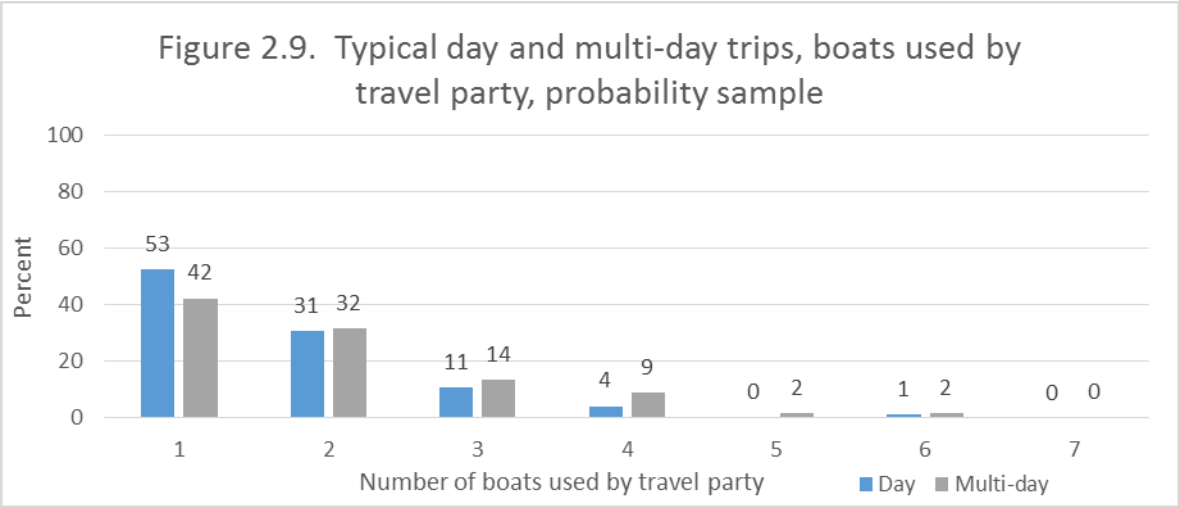
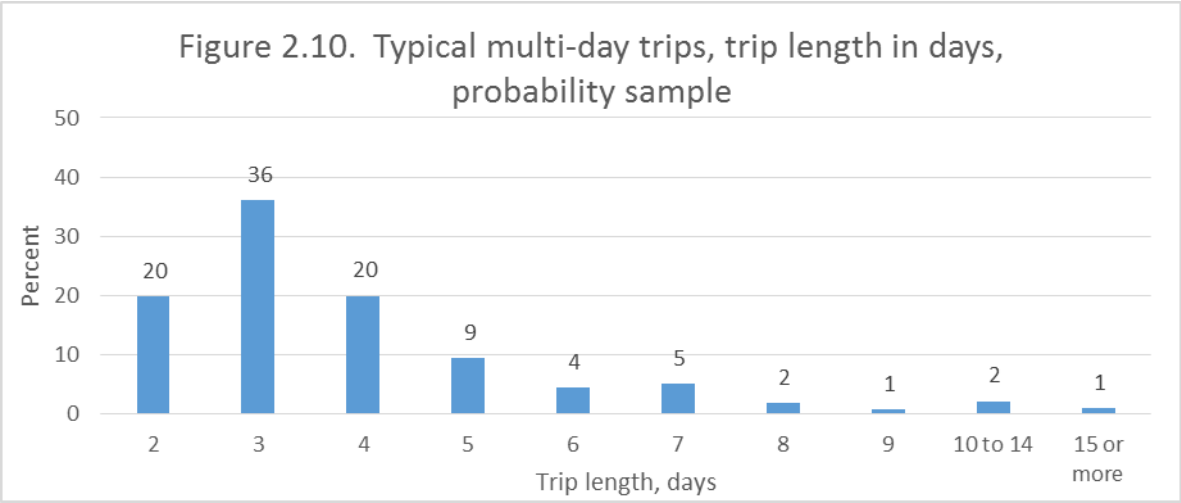


Figure 2.10 shows number of days for multi-day trips. As a reminder, this includes trip days that did not involve boating. Three days is the most common trip length, which may reflect a high proportion of "long weekend" trips.

[5] White, E.M., D.B. Goodding, and D.J. Stynes. 2013. Estimation of national forest visitor spending averages from National Visitor Use Monitoring: round 2. Gen. Tech. Rep. PNW-GTR-883. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.



2.3. Participation by county, SCORP surveys

The 2011 SCORP survey was a large general population survey and, therefore, provides the best foundation for estimating recreation use across Oregon counties. Table 2.2 presents 2011 SCORP estimates, separated into WW and Flat based on the following categories:

- White-water canoeing, kayaking, rafting.
- Flat-water canoeing, sea kayaking, rowing, stand-up paddling, tubing / floating.

Note that the SCORP estimates reflect a different set of activities relative to the current boater survey. For example, floating / tubing is included in the SCORP data but not in the boater data. Therefore, the SCORP data were adjusted before use in the boater survey economic contribution analysis described in Section 6. In addition, both sets of data are subject to the inevitable sources of error described in Section 1.4. Therefore, the estimates presented here should be treated as approximations.

User occasions are the number of times people engage in an activity; in this report, they are treated as the equivalent of user days. Occasions are by location of use (the boating activity occurred in that county) and are rounded to the nearest hundred. Blank user occasions reflect 1,000 or fewer occasions. Percent participation is by location of residence (the percent of county residents who engaged in activity in the category) and are rounded to the nearest whole number.

Coastal Lane and Douglas counties were included in Region 5 in the current boater survey. However, the SCORP data for location of user occasions did not reflect a coastal versus inland split for these counties. The user occasions estimates in Table 2.2 present coastal results within the regions that include the main part of each county (Region 4 for Lane, Region 6 for Douglas).

For percent participating, an asterisk by the county name (Gilliam, Grant, Harney, Lake, Morrow, Sherman, Wallowa and Wheeler) indicates that 2011 SCORP regional values were used due to low samples sizes for those counties.

Table 2.2. SCORP estimates of 2011 user occasions and participation				
	Location, user occasions		Percent participating	
	Whitewater	Flat water	Whitewater	Flat water
Clatsop	12,000	432,500	6	11
Lincoln	33,800	71,400	10	12
Tillamook	10,500	63,800	5	10
Region 1	*56,300*	*567,600*		
Clackamas	260,800	345,000	11	11
Columbia	8,200	29,800	7	10
Hood River	27,900	59,000	14	20
Multnomah	155,800	1,173,100	9	12
Washington	3,700	23,000	14	8
Region 2	*456,400*	*1,629,900*		
Benton	18,400	48,100	11	14
Linn	274,000	48,200	9	11
Marion	30,900	67,900	11	7
Polk	-	3,400	13	8
Yamhill	-	16,000	8	11
Region 3	*325,300*	*183,600*		
Lane	130,100	359,900	13	13
Region 4	*130,100*	*359,900*		
Coos	30,400	174,500	22	25
Curry	18,100	29,500	16	16
Region 5	*48,500*	*204,000*		
Douglas	48,500	80,100	11	16
Jackson	183,100	160,400	29	11
Josephine	152,500	14,200	29	11
Region 6	*384,100*	*254,700*		
Gilliam*	-	-	9	10
Morrow*	-	21,500	9	10
Sherman*	-	-	9	10
Umatilla	4,900	32,000	8	12
Wasco	215,600	9,100	15	7
Region 7	*223,400*	*64,500*		
Crook	9,600	21,600	10	11
Deschutes	1,196,800	503,800	14	32
Jefferson	18,100	26,100	10	10
Wheeler*	2,100	-	12	7
Region 8	*1,226,600*	*552,600*		
Klamath	25,600	106,000	16	11
Lake*	-	13,800	15	12
Region 9	*26,600*	*119,800*		
Baker	2,800	11,300	10	9

Grant*	8,600	2,800	12	12
Union	16,700	23,200	13	13
Wallowa*	9,800	10,000	12	12
Region 10	*37,900*	*47,300*		
Harney*	-	-	5	3
Malheur	2,600	1,700	5	3
Region 11	*3,600*	*2,700*		

Accounting for rounding, there were an estimated 2,911,800 whitewater and an estimated 3,982,700 flat water user occasions in 2011. Combined, there were 6,894,500 user occasions.

The SCORP and boater survey use estimates are based on surveys of Oregon residents and do not include boating by non-residents on water bodies in Oregon. The US Forest Service National Visitor Use Monitoring (NVUM) program provides one reference point for estimating the balance of Oregon resident versus non-resident boating activity in Oregon. Across all national forest units in Oregon, there are an estimated 137,425 non-motorized water visits annually. Of these, 83% are visits by Oregon residents and 17% by non-residents.

Keeping in mind that NVUM results are subject to the same sources of survey error, they also provide a reference point for considering overall SCORP use estimates. As reflected in Figure 1.1, national forests cover a significant portion of Oregon's land area, including much of the mountainous terrain in which alpine lakes and WW river segments are located. However, WW rafting and kayaking occur across a range of national forest, other public, and private lands. For example, the Big Eddy stretch of WW on the Deschutes River near Bend is within the Deschutes National Forest, but the Segment Two stretch of WW on the Deschutes River near Maupin is not within national forest. Likewise, the upper stretch of the McKenzie River is within the Willamette National Forest while the lower stretches are not within national forest. Therefore, it is expected that the NVUM use estimates for national forests in Oregon will be substantially lower than the SCORP use estimates across all lands in Oregon.

2.4. Participation by region and water body, boater survey

Tables 2.3.R1 through 2.3.R11 show weighted user days by water body (river stretch, lake, or bay) for the probability sample online questionnaire; it was not feasible in the mail questionnaire to gather use data at the level of water bodies. Unweighted results are presented in Appendix 4. Appendix 7 presents the maps utilized in the online questionnaire.

For example, the results in Table 2.3.R1 indicate that respondents in the probability sample spent 381 days on the Siletz River. This represents 30% of all sample user days on rivers in Region 1 and 20% of all sample user days across Region 1 rivers, lakes, and bays combined. A total of 1,285 user days were spent on rivers in Region 1. This represents 68% of all user days across Region 1 rivers, lakes, and bays combined. Table 2.3.R1 also shows that 13% of all users days across Region 1 were on lakes and 19% were on bays.

Respondent write-ins of water bodies were allocated where possible. The Other category reflects regional water bodies that were not on the list and only written-in once. For the coastal regions (1 and 5), it is not always clear where a river ends and a bay starts. Thus, some of the days allocated to Yaquina River, for example, may actually reflect days in Yaquina Bay – or vice versa. In addition, some respondents wrote in the names of rivers in the bay section of the questionnaire. These write-ins explain the names of rivers (e.g., Salmon River) in the bay sections of the tables below.

Each water body in these tables experienced at least one user day within the sample. Some water bodies are listed as having zero site days due to the effects of weighting and rounding. For example, weighting decreases the results for respondents who fall within categories that are over-represented in the sample and increases the results for those who are under-represented. If weighted days are below 0.5, the amount is rounded down to zero.

Note that some water bodies have 50 or more observations, many have 10 or more, but many have fewer than 10. By chance, the survey data may include people who use the water body more heavily (or, conversely, less heavily) than is typical. The potential for this inevitable sampling error is greatest for water bodies with the fewest observations.

Summary tables follow the detailed set of Table 2.3 regional tables.

Table 2.3.R1. Probability sample user days across water bodies, weighted, Region 1

	Site days	% of category	% of region
Rivers			
R17 Siletz River (Mainstem from confluence of North and South Forks to Siletz Bay)	381	30	20
R18 Yaquina River	154	12	8
R21 Alsea River (RM 12 near Tidewater to USFS boundary)	135	10	7
Salmon River (Lincoln County)	97	8	5
R5 Nehalem River	77	6	4
R127 Columbia River (Mouth to Saint Helens)	77	6	4
R12 Nestucca River (RM 7 to RM 15, near Beaver)	52	4	3
R9 Wilson River	41	3	2
R20 Alsea River (Pacific Ocean to head of tide, RM 12 near Tidewater)	35	3	2
Beaver Creek (Lincoln County)	35	3	2
R11 Nestucca River (mouth up to RM 7, near Cloverdale)	32	3	2
R10 Trask River	32	2	2
R22 Alsea River (Mainstem from onfluence of North and South Forks to USFS boundary)	28	2	1
Drift Creek	20	2	1
R4 Necanicum River	18	1	1
R16 Little Nestucca River	17	1	1
Other	10	1	1
R19 Elk Creek	10	1	1
R8 Kilchis River	8	1	0
R7 Salmonberry River	6	0	0
R2 Lewis and Clark River	6	0	0
R24 Yachats River	4	0	0
R6 North Fork Nehalem River	3	0	0
R1 Youngs River	3	0	0
Tillamook River	2	0	0
John Day River (Clatsop County)	2	0	0
R13 Nestucca River (RM 15 to RM 26, above confluence of Limestone Creek and Blaine)	1	0	0
R15 Nestucca River (RM 35 to RM 47, near the lower end of Old Meadow Lake)	0	0	0
R23 Five Rivers	0	0	0
Rivers total	**1,285**	**100**	**68**
Lakes			
Ollala Reservoir	110	45	6
Big Creek Reservoir	44	18	2
L7 Devils Lake	44	18	2
L1 Coffenbury Lake	23	9	1
L5 Cape Meares Lake	7	3	0

Eckman Lake	7	3	0
Other	4	2	0
Lake Lytle	2	1	0
L4 Cullaby Lake	1	1	0
L3 Sunset Lake	1	1	0
L6 Town Lake	1	0	0
Hebo Lake	1	0	0
Lost Lake, Clatsop County	0	0	0
Lakes total	**244**	**100**	**13**
Bays			
B1 Nehalem Bay	76	21	4
B7 Yaquina Bay	65	18	3
B6 Siletz Bay	40	11	2
Salmon River (Lincoln County)	40	11	2
B8 Alsea Bay	38	11	2
B3 Netarts Bay	33	9	2
B2 Tillamook Bay	30	8	2
B5 Nestucca Bay	26	7	1
Ocean (Region 1)	8	2	0
B4 Sand Lake Estuary	4	1	0
Depoe Bay	2	0	0
R127 Columbia River (mouth to Saint Helens)	1	0	0
Beaver Creek (Lincoln County)	0	0	0
Bays total	**364**	**100**	**19**
Region total	**1,892**		**100**

Table 2.3.R2. Probability sample user days across water bodies, weighted, Region 2			
	Site days	% of category	% of region
Rivers			
R128 Columbia River (Saint Helens to Troutdale)	918	26	21
R124 Willamette River (Columbia River to Canby)	858	25	20
R57 Sandy River (Confluence with Bull Run River to Columbia River)	251	7	6
R51 Clackamas River (Source to River Mill Dam)	235	7	5
R50 Clackamas River (River Mill Dam to Willamette River confluence)	217	6	5
R49 Tualatin River	213	6	5
R130 Columbia River (Bonneville Dam to Deschutes River)	162	5	4
R127 Columbia River (Mouth to Saint Helens)	139	4	3
Hood River (mainstem)	101	3	2
R58 Sandy River (Source to confluence with Bull Run River)	77	2	2
R125 Willamette River (Canby to Sam Daws Bend, near Peoria)	63	2	1
R56 Molalla River (Glen Avon to Willamette River, near Canby)	38	1	1
Multnomah Channel	37	1	1
R64 Pudding River	35	1	1
W Fork Hood River	29	1	1
R5 Nehalem River	28	1	1
R61 Middle Fork Hood River	19	1	0
R52 North Fork Clackamas River	16	0	0
Willamette (Region 2)	13	0	0
R129 Columbia River (Troutdale to Bonneville)	10	0	0
R59 Salmon River	8	0	0
R60 White River	7	0	0
R55 Molalla River (Source to Glen Avon)	6	0	0
R48 Clatskanie River	5	0	0
R54 Oak Grove Fork Clackamas River	3	0	0
Gilbert River	0	0	0
Other	0	0	0
R53 South Fork Clackamas River	0	0	0
Rivers total	**3,488**	**100**	**80**
Lakes			
L27 Henry Hagg Lake	214	25	5
L32 Trillium Lake	210	25	5
L34 Timothy Lake	171	20	4
Oswego Lake	71	8	2
L31 Laurance Lake	40	5	1
L28 Sturgeon Lake	28	3	1
Smith & Bybee Lakes	26	3	1
Frog Lake	25	3	1
L30 Green Peter Reservoir	23	3	1
L26 Vernonia Lake	9	1	0
Lost Lake (Hood River County)	9	1	0
Benson Lake	6	1	0
L29 Blue River Lake	5	1	0
L33 Harriet Lake	4	0	0
Estacada Lake (Clackamas)	3	0	0
Other	2	0	0
North Fork Reservoir	2	0	0
Fairview Lake & Blue Lake	0	0	0
Lakes total	**849**	**100**	**20**
Region total	**4,337**		**100**

Table 2.3.R3. Probability sample user days across water bodies, weighted, Region 3			
	Site days	**% of category**	**% of region**
Rivers			
R125 Willamette River (Canby to Sam Daws Bend, near Peoria)	601	32	25
R66 North Santiam River	302	16	12
R70 McKenzie River	189	10	8
R126 Willamette River (Sam Daws Bend, near Peoria, to Mid Fork Junction)	168	9	7
R65 Santiam River (Junction with N Santiam to Willamette River (Lower))	98	5	4
Other	86	5	4
R17 Siletz River (Confluence of North and South Forks to Siletz Bay)	83	5	3
R63 Yamhill River	48	3	2
R68 South Santiam River	46	3	2
Luckiamute River	37	2	2
R67 Little North Santiam River	31	2	1
Mary's River	27	1	1
Calapooia River	25	1	1
R62 North Yamhill River	24	1	1
R22 Alsea River (Mainstem from confluence of North and South Forks to USFS boundary, near Fall Cr)	22	1	1
R18 Yaquina River	19	1	1
R69 Middle Santiam River	18	1	1
Willamette (Region 3)	17	1	1
R15 Nestucca River (RM 35, near Bear Cr, to RM 47, below Walker Cr)	3	0	0
R16 Little Nestucca River	2	0	0
R73 South Fork Alsea River	1	0	0
R64 Pudding River	0	0	0
R72 North Fork Alsea River (Bailey Creek to confluence with Alsea River, near Alsea)	0	0	0
Rivers total	**1,848**	**100**	**76**
Lakes			
L36 Silverton Reservoir	139	23	6
L44 Big Lake	108	18	4
L43 Clear Lake	64	11	3
L41 Foster Reservoir	59	10	2
L40 Detroit Lake	55	9	2
L46 Smith Reservoir	52	9	2
L47 Trail Bridge Reservoir	43	7	2
L38 Freeway Lakes	23	4	1
L45 Carmen Reservoir	20	3	1
L39 Elk Lake	10	2	0
L42 Lost Lake	10	2	0
Other	5	1	0
L35 Mission Lake	4	1	0
L37 Walter Wirth Lake	3	0	0
Breitenbush Lake	2	0	0
Marion Lake	1	0	0
Big Cliff Reservoir	0	0	0
Silver Creek Reservoir	0	0	0
Fish Lake	0	0	0
Lakes total	**598**	**100**	**24**
Region total	**2,447**		**100**

Table 2.3.R4. Probability sample user days across water bodies, weighted, Region 4			
	Site days	% of category	% of region
Rivers			
R70 McKenzie River	464	40	27
R126 Willamette River (Sam Daws Bend, near Peoria, to Mid Fork Junction)	218	19	13
R80 Middle Fork Willamette River	125	11	7
R81 North Fork Middle Fork Willamette River	107	9	6
R79 Coast Fork Willamette River	76	7	4
R74 Lake Creek	43	4	2
Other	31	3	2
R76 Siuslaw River (Wildcat Cr, near Austa, to Clay Creek Campground)	27	2	2
R25 Siuslaw River (mouth to confluence with Lake Creek, near Swisshome)	17	2	1
R75 Siuslaw River (Confluence of Lake Cr, near Sweethome, to Wildcat Cr, near Austa)	15	1	1
R82 South Fork McKenzie River	15	1	1
R73 South Fork Alsea River	8	1	0
Row River	4	0	0
Coyote Creek	3	0	0
R77 Siuslaw River (Clay Creek Campground to Siuslaw Falls)	2	0	0
R78 Siuslaw River (Siuslaw Falls to junction of North and South Fork)	1	0	0
Rivers total	**1,156**	**100**	**67**
Lakes			
L50 Fern Ridge Reservoir	214	38	12
L58 Waldo Lake	93	16	5
L56 Hills Creek Reservoir	82	14	5
L51 Fall Creek Lake	43	7	2
L59 Gold Lake	32	6	2
L54 Dorena Reservoir	21	4	1
L52 Dexter Reservoir	21	4	1
Leaburg Reservoir	15	3	1
L55 Cottage Grove Lake	13	2	1
L48 Triangle Lake	10	2	1
Blair Lake	9	2	1
L49 Hult Reservoir	7	1	0
L57 Cougar Reservoir	2	0	0
L60 Summit Lake	2	0	0
Blue River Reservoir	1	0	0
Clear Lake	1	0	0
Other	0	0	0
L53 Lookout Point Reservoir	0	0	0
Lakes total	**568**	**100**	**33**
Region total	**1,724**		**100**

Table 2.3.R5. Probability sample user days across water bodies, weighted, Region 5			
	Site days	% of category	% of region
Rivers			
R42 Rogue River (Grave Creek confluence to Illinois River Confluence)	669	41	29
R36 South Fork Coquille River	271	16	12
R27 Umpqua River (mainstem from confluence of North and South Fork to mouth at Pacific Ocean)	133	8	6
R38 Elk River	122	7	5
R41 Rogue River (Illinois River confluence to mouth at Pacific Ocean)	94	6	4
R43 Illinois River (Deer Creek to Agness)	64	4	3
R37 Sixes River	53	3	2

R25 Siuslaw River (mouth to confluence with Lake Creek, near Swisshome)	42	3	2
R29 Coos River	40	2	2
R33 North Fork Coquille River	32	2	1
R46 Chetco River (from Boulder Creek to Loeb State Park)	28	2	1
R32 Coquille River, mainstem	25	2	1
R28 Smith River	19	1	1
R31 South Fork Coos River	16	1	1
R34 East Fork Coquille River	10	1	0
R24 Yachats River	9	1	0
R45 Chetco River (from Loeb State Park to the mouth at Pacific Ocean)	5	0	0
Other	4	0	0
Tenmile Creek	4	0	0
Siltcoos River	3	0	0
R30 Millicoma River	3	0	0
R26 North Fork Siuslaw River	2	0	0
New River	2	0	0
R136 Pistol River	1	0	0
R35 Middle Fork Coquille River	0	0	0
Rivers total	**1,648**	**100**	**72**
Lakes			
L23 Floras Lake	94	26	4
L25 Powers Park Pond	73	20	3
L17 N. Tenmile Lake	35	10	2
L16 Eel Lake	23	6	1
L21 Empire Lakes	19	5	1
L9 Mercer Lake	18	5	1
L19 Tenmile Lake	17	5	1
L12 Siltcoos Lake	17	5	1
L11 Woahink Lake	14	4	1
L20 Loon Lake	12	3	1
L10 Munsel Lake	10	3	0
L14 Tahkenich Lake	8	2	0
Cleawox Lake	7	2	0
L8 Sutton Lake	6	2	0
L18 Saunders Lake	3	1	0
L15 Elbow Lake	2	1	0
Other	2	0	0
L13 Carter Lake	0	0	0
L22 Bradley Lake	0	0	0
Lakes total	**359**	**100**	**16**
Bays			
B10 Coos Bay	134	49	6
B9 Winchester Bay	95	35	4
Other	18	7	1
R41 Rogue River (Illinois River confluence to mouth at Pacific Ocean)	14	5	1
Sunset Bay	12	4	1
R45 Chetco River (from Loeb State Park to the mouth at Pacific Ocean)	1	0	0
Siltcoos River	0	0	0
Port Orford	0	0	0
Bays total	**275**	**100**	**12**
Region total	**2,283**		**100**

Table 2.3.R6. Probability sample user days across water bodies, weighted, Region 6			
	Site days	% of category	% of region
Rivers			
R42 Rogue River (Grave Creek confluence to Illinois River Confluence)	550	34	26
R89 Rogue River (Lost Creek Lake to Grave Creek)	531	33	25
R27 Umpqua River (From confluence of North and South Forks to the Pacific Ocean)	211	13	10
R84 North Umpqua River	160	10	8
R43 Illinois River (Deer Cr to Agness near confluence w/ Rogue R)	53	3	3
R87 South Umpqua River (Tiller to confluence with North Umpqua River, near Riversdale)	34	2	2
R86 South Umpqua River (Source to Tiller)	23	1	1
Other	20	1	1
R90 Rogue River (above Lost Creek Lake)	18	1	1
R91 Applegate River	11	1	1
R85 Little River	8	0	0
R44 Illinois River (Illinois River Forks State Park to Deer Creek)	1	0	0
R28 Smith River	1	0	0
R88 Cow Creek	0	0	0
Rivers total	**1,621**	**100**	**77**
Lakes			
L72 Emigrant Lake	125	26	6
L69 Lake Selmac	53	11	3
L68 Lost Creek Lake	52	11	2
L71 Applegate Lake	51	10	2
L76 Hyatt Reservoir	40	8	2
L62 Ben Irving Reservoir	34	7	2
L67 Diamond Lake	33	7	2
L75 Howard Prairie Lake	32	7	2
L66 Lemolo Lake	22	5	1
L65 Toketee Reservoir	15	3	1
L63 Galesville Reservoir	8	2	0
Squaw Lakes	7	1	0
L73 Fish Lake	6	1	0
L74 Agate Lake	2	0	0
L64 Hemlock Lake	2	0	0
Other	2	0	0
L61 Cooper Creek Reservoir	1	0	0
L70 Bolan Lake	0	0	0
Willow Lake	0	0	0
Lakes total	**485**	**100**	**23**
Region total	**2,106**		**100**

Table 2.3.R7. Probability sample user days across water bodies, weighted, Region 7			
	Site days	% of category	% of region
Rivers			
R96 Deschutes River (Pelton Dam to Columbia River)	809	62	56
R99 John Day River (Service Cr. to Columbia River)	304	23	21
R102 Umatilla River	68	5	5
R103 North Fork John Day River	60	5	4
R130 Columbia River (Bonneville Dam to Deschutes River)	34	3	2
R133 Columbia River (Heppner Junction, near Hwy 74, to state line above Hat Rock State Park)	27	2	2
Other	8	1	1

R131 Columbia River (Deschutes River to John Day Dam)	4	0	0
R132 Columbia River (John Day Dam to Heppner Junction, near Hwy 74)	1	0	0
Rivers total	**1,315**	**100**	**91**
Lakes			
L79 McKay Reservoir	72	52	5
Rock Creek Reservoir	58	42	4
Pine Hollow Reservoir	4	3	0
Indian Lake	3	2	0
Other	0	0	0
L78 Willow Creek Reservoir	0	0	0
L77 Lake Wallula	0	0	0
Lakes total	**138**	**100**	**9**
Region total	**1,452**		**100**

Table 2.3.R8. Probability sample user days across water bodies, weighted, Region 8

	Site days	% of category	% of region
Rivers			
R95 Deschutes River (Upper, source to Pelton Dam)	912	57	39
R96 Deschutes River (Lower, Pelton Dam to Columbia River)	396	25	17
R99 John Day River (Service Cr. to Columbia River)	235	15	10
R98 Crooked River	26	2	1
R97 Metolius River	19	1	1
R100 John Day River (Source to Service Cr.)	17	1	1
Little Deschutes River	9	1	0
Other	0	0	0
Rivers total	**1,612**	**100**	**68**
Lakes			
L91 Hosmer Lake	113	15	5
L89 Sparks Lake	104	14	4
L85 Suttle Lake	84	11	4
L83 Lake Billy Chinook	51	7	2
L87 Prineville Reservoir	48	6	2
L98 Wickiup Reservoir	46	6	2
L90 Elk Lake	45	6	2
L100 East Lake	41	5	2
L96 Crane Prairie Reservoir	36	5	2
L99 Paulina Lake	29	4	1
L94 Cultus Lake	25	3	1
Devils Lake (Deschutes)	18	2	1
L95 Little Cultus Lake	17	2	1
South Twin Lake (Deschutes)	17	2	1
L93 Little Lava Lake	14	2	1
L92 Lava Lake	11	2	0
L81 Olallie Lake	9	1	0
L82 Lake Simtustis	8	1	0
L96 North Twin Lake	8	1	0
L86 Ochoco Reservoir	6	1	0
Three Creeks Lake	6	1	0
L88 Antelope Flat Reservoir	4	1	0
Walton Lake	4	0	0
L84 Haystack Reservoir	3	0	0
Lakes total	**747**	**100**	**32**
Region total	**2,360**		**100**

Table 2.3.R9. Probability sample user days across water bodies, weighted, Region 9			
	Site days	**% of category**	**% of region**
Rivers			
R92 Klamath River (Boyle Dam to CA state line)	167	84	42
R94 Williamson River	13	7	3
Other	6	3	2
Wood River	3	2	1
Spring Creek	3	1	1
Sprague River	3	1	1
R93 Klamath River (Klamath River Falls to Boyle Dam)	2	1	1
Rivers total	**197**	**100**	**49**
Lakes			
L103 Crescent Lake	48	24	12
L110 Lake of the Woods	38	19	9
L109 Upper Klamath Lake	24	12	6
L101 Odell Lake	18	9	5
L126 Vee Lake	11	6	3
L102 Davis Lake	11	6	3
L120 Lofton Reservoir	8	4	2
L121 Cottonwood Meadow Lake	8	4	2
L104 Miller Lake	6	3	2
L122 Willow Valley Reservoir	5	3	1
L116 Campbell Lake	5	3	1
L107 Fourmile Lake	5	3	1
L108 Agency Lake	4	2	1
L118 Holbrook Reservoir	3	1	1
L115 Deadhorse Lake	2	1	0
L111 Lake Ewauna	1	1	0
L114 Thompson Reservoir	1	1	0
L119 Heart Lake	1	0	0
L105 Duncan Reservoir	1	0	0
L112 J.C. Boyle Reservoir	1	0	0
L106 Ana Reservoir	1	0	0
L124 Drews Reservoir	0	0	0
L123 Dog Lake	0	0	0
Other	0	0	0
L128 Hart Lake	0	0	0
Lakes total	**204**	**100**	**51**
Region total	**401**		**100**

Table 2.3.R10. Probability sample user days across water bodies, weighted, Region 10			
	Site days	**% of category**	**% of region**
Rivers			
R110 Grande Ronde River (Confluence with the Wallowa River to WA state line, near Troy)	290	40	32
R116 Snake River (Baker Co Line, near Copper Cr, to WA state line)	148	20	17
R114 Wallowa River (Minam to confluence with the Grande Ronde River)	99	14	11
R113 Wallowa River (Wallowa Lake to Minam)	49	7	6
R100 John Day River (Source to Service Cr.)	37	5	4
R115 Imnaha River	26	4	3
R103 North Fork John Day River	25	3	3
R108 Grande Ronde River (Red Bridge State Park to Hilgard Junction State Park)	20	3	2
R104 Middle Fork John Day River	13	2	1
R107 Grande Ronde River (Confluence with East Fork Grande Ronde to Red Bridge State Park)	9	1	1
R109 Grande Ronde River (Hilgard Junction State Park to confluence with the Wallowa River)	9	1	1
R111 Minam River	2	0	0
Other	0	0	0
R112 Lostine River	0	0	0
Rivers total	**728**	**100**	**81**
Lakes			
L134 Wallowa Lake	40	23	4
L132 Jubilee Reservoir	29	17	3
L133 Morgan Lake	26	15	3
L144 Olive Lake	24	14	3
L143 Anthony Lake	17	10	2
L145 Phillips Lake	10	6	1
L139 Hells Canyon Reservoir	5	3	1
L142 Grande Ronde Lake	5	3	1
L141 Oxbow Reservoir	5	3	1
L148 Magone Lake	3	2	0
L146 Brownlee Reservoir	2	1	0
L135 Pilcher Creek Reservoir	1	1	0
L136 Wolf Creek Reservoir	1	0	0
Other	0	0	0
L138 Fish Lake	0	0	0
Lakes total	**170**	**100**	**19**
Region total	**898**		**100**

Table 2.3.R11. Probability sample user days across water bodies, weighted, Region 11			
	Site days	**% of category**	**% of region**
Rivers			
R122 Owhyee River (Lake Owyhee to Rome, near Hwy 95)	48	96	50
R121 Owhyee River (Owyhee Dam to Snake River)	1	2	1
R123 Owhyee River (Rome, near Hwy 95, to state line)	1	2	1
R120 Snake River (Owyhee River to State Line)	0	1	1
Rivers total	**50**	**100**	**52**
Lakes			
L151 Bully Creek Reservoir	32	68	33
Fish Lake (Harney County)	6	13	6
L160 Mann Lake	6	12	6
L158 Krumbo Reservoir	1	2	1
L154 Chickahominy Reservoir	1	2	1
L153 Delintment Lake	1	1	1
L157 Lake Owyhee	0	1	1
Lakes total	**46**	**100**	**48**
Region total	**97**		**100**

Table 2.4 presents summary results by region and type of water body, while Table 2.5 presents results by region across all types of water bodies. Table 2.6 presents the "Top 5" rivers and lakes in terms of site days within the probability sample. Note that a given river (or river stretch) may occur in more than one region; site days reflect only the region with the greatest number of days for that water body.

Table 2.4. Probability sample user days across regions and water body categories, weighted			
Water body category + region	**Site days**	**% of category**	**% of statewide total**
Rivers			
Region 1	1,285	9	6
Region 2	3,488	23	17
Region 3	1,848	12	9
Region 4	1,156	8	6
Region 5	1,648	11	8
Region 6	1,621	11	8
Region 7	1,315	9	7
Region 8	1,612	11	8
Region 9	197	1	1
Region 10	728	5	4
Region 11	50	0	0
Rivers total	**14,949**	**100**	**75**
Lakes			
Region 1	244	6	1
Region 2	849	19	4
Region 3	598	14	3
Region 4	568	13	3
Region 5	359	8	2
Region 6	485	11	2
Region 7	138	3	1
Region 8	747	17	4
Region 9	204	5	1
Region 10	170	4	1

Region 11	46	1	0
Lakes total	**4,409**	**100**	**22**
Bays			
Region 1	364	57	2
Region 5	275	43	1
Bays total	**639**	**100**	**3**
Statewide, all water bodies	**19,997**		**100**

Table 2.5. Probability sample user days across regions, weighted

	Site days	% of statewide total
Region 1	1,892	9
Region 2	4,337	22
Region 3	2,447	12
Region 4	1,724	9
Region 5	2,283	11
Region 6	2,106	11
Region 7	1,452	7
Region 8	2,360	12
Region 9	401	2
Region 10	898	4
Region 11	97	0
Statewide, all water bodies	**19,997**	**100**

Table 2.6. Top 5 rivers and lakes by site days in probability sample, weighted

Region	Waterbody	Site days
	Rivers	
2	R128 Columbia River (Saint Helens to Troutdale)	918
8	R95 Deschutes River (Upper, source to Pelton Dam)	912
2	R124 Willamette River (Columbia River to Canby)	858
7	R96 Deschutes River (Pelton Dam to Columbia River)	809
5	R42 Rogue River (Grave Creek confluence to Illinois River Confluence)	669
	Lakes	
4	L50 Fern Ridge Reservoir	214
2	L27 Henry Hagg Lake	214
2	L32 Trillium Lake	210
2	L34 Timothy Lake	171
3	L36 Silverton Reservoir	139

3. Scenic waterways

Respondents were asked whether they support the Scenic Waterway program (Q24), with results shown in Figure 3.1a. When interpreting these results, readers should in mind that land designations can have complex effects across multiple stakeholders, and that this survey was of boaters, not of adjacent landowners nor the general population. One would expect boaters to have positive perspectives regarding this type of designation.

In addition, the scenic waterway content was a small part of a much larger survey. As a result, a short introduction was utilized based on wording in the legislative act that created the program. It is the nature of such acts that they present a positive perspective on the new program, and survey responses may be affected by the short and positive introduction.

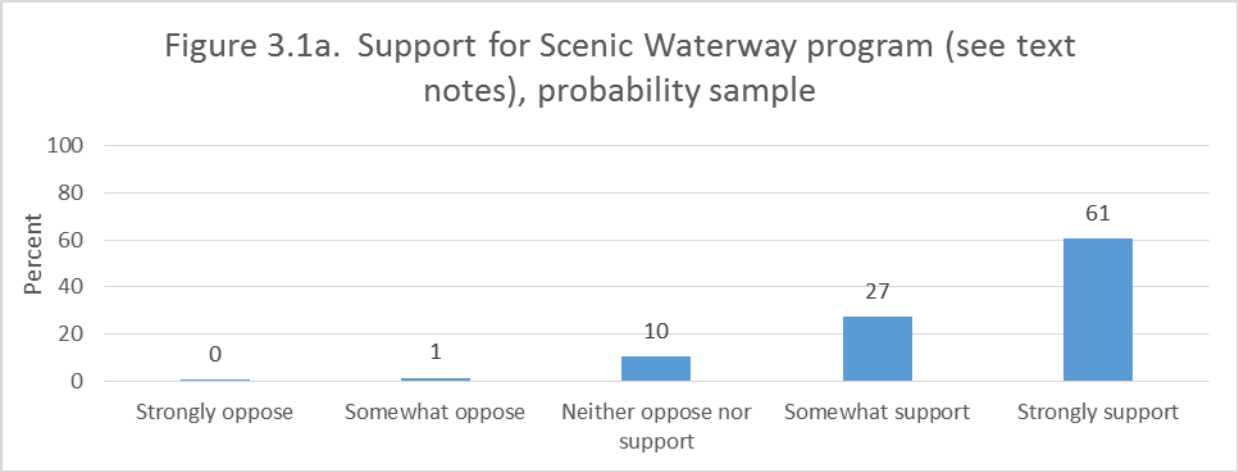


Figure 3.1b shows support by region, on a scale of 1 = Strongly oppose to 5 = Strongly support (Q25). The highest level of support is in the Willamette Valley while the lowest level is in southern Oregon.

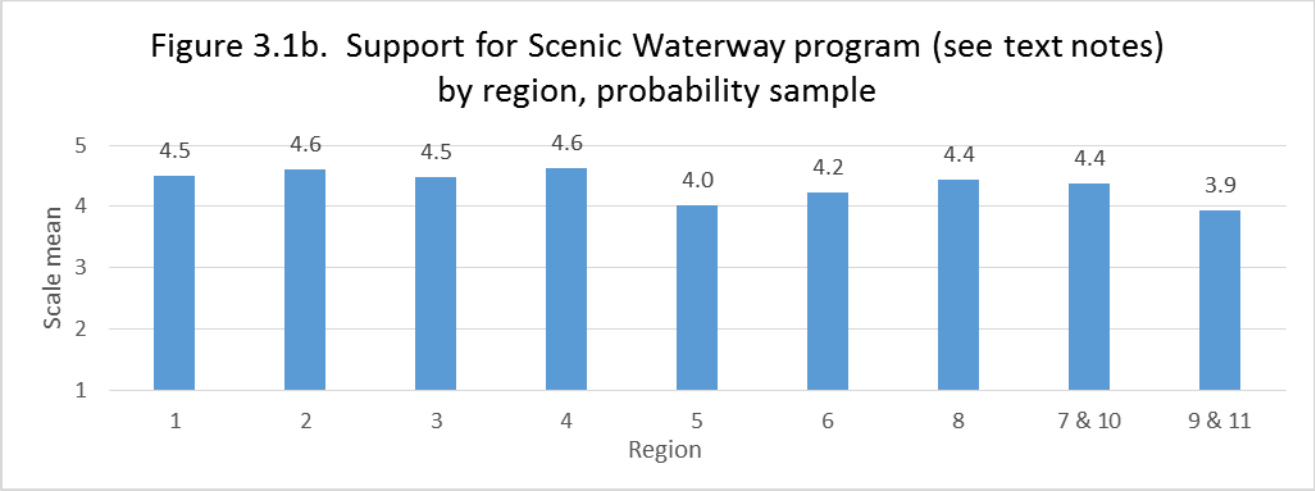


Figure 3.2 shows respondent importance of various qualities when evaluating potential additions to the Scenic Waterways program (Q25), in percent of respondents who selected 4 or 5 on a scale of 1 = Not important to 5 = Very important. Scenery and environmental values (including fish and wildlife habitat) were most important. As a reminder, results by region are presented in tabular form in Appendix 2.

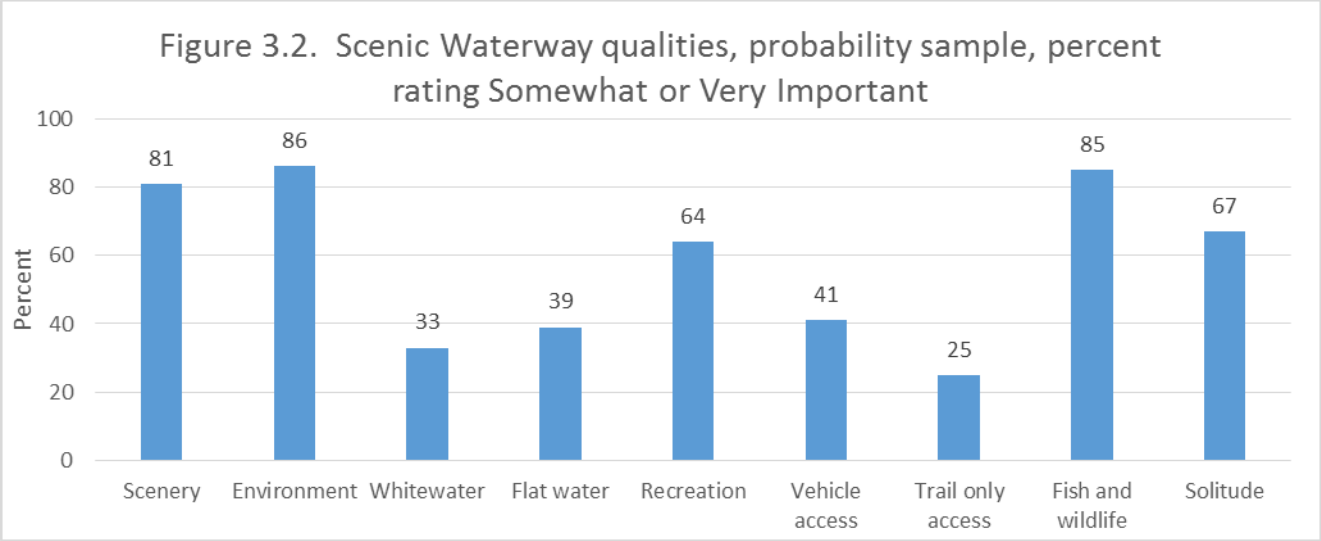
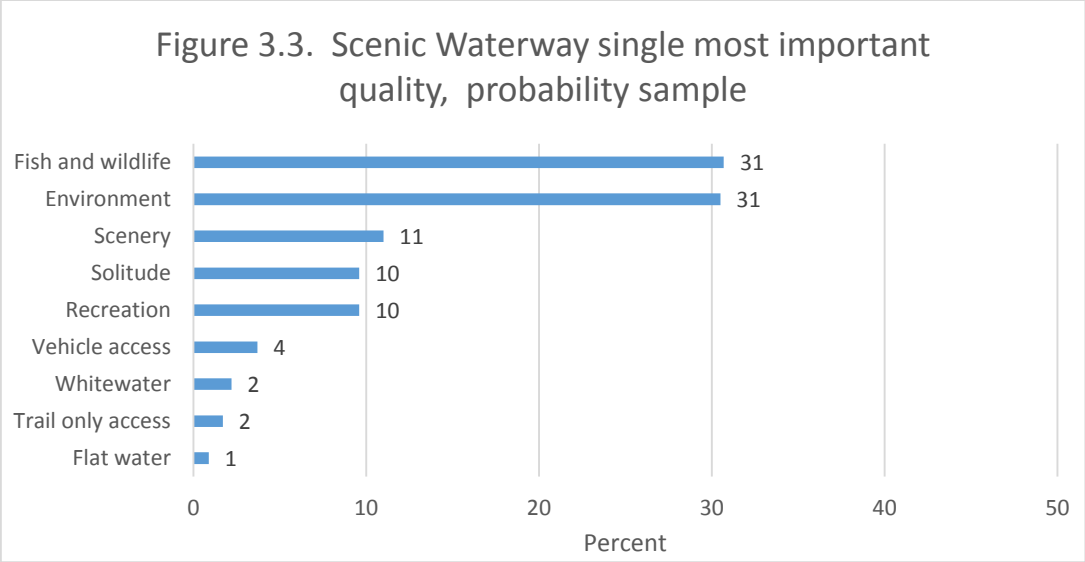


Figure 3.3 shows respondent selection of the single most important quality for consideration when adding waterways to the program (Q26). Environmental qualities clearly dominate.



Respondents were then asked to recommend additional rivers for inclusion in the Scenic Waterway program. In the online questionnaire, recommended additions were identified using drop-down menus to select the highest, second highest, and third highest priority addition for each region. The list included separate segments for longer rivers. Rivers that already are scenic waterways were excluded.

In the mail questionnaire, recommended additions were identified using write-in reporting of the five highest priority additions for the state as a whole. Many write-in recommendations did not match the online segments or did not identify segments. Therefore, results are presented separately below. Maps were provided in both the online and paper questionnaires.

Table 3.1 includes the number of times a river segment was identified as either a first, second, or third priority addition in the online questionnaire (priority = 1, 2, or 3). The overall points score was calculated based on three points for each time the river was identified as a first priority addition, two points for a second priority, and one point for a third priority. Some rivers cross regional

boundaries and were recommended in more than one region in the online questionnaire. In such cases, the highest region-level score was used for that river segment.

Table 3.2 shows points for the paper questionnaire. An equivalent system was used in calculating those points (5 points for first priority to 1 point for fifth priority).

Full lists of all recommended scenic waterways (separately for online and paper versions) is presented in Appendix 1.

The availability of rivers may affect the ranking. For example, in Region 8 the only river that is not already a scenic waterway is the Crooked River. Thus, anyone seeking an additional scenic waterway in Region 8 selected the Crooked River and reported it as the highest priority.

Table 3.1. Recommended scenic waterway additions by priority and total points, online probability sample, unweighted, top 25

	Regions	1	2	3	Points
R98 Crooked River	8	109			327
R70 McKenzie River	4	68	14	11	243
R66 North Santiam River	3	40	17	9	163
R89 Rogue River (Lost Creek Lake to Grave Creek)	6	34	21	10	154
R94 Williamson River	9	24	32		136
R93 Klamath River (Klamath River Falls to Boyle Dam)	9	35	15		135
R100 John Day River (Source to Service Cr.)	10	32	13	11	133
R80 Middle Fork Willamette River	4	13	30	13	112
R60 White River	2,7	31	6	4	109
R27 Umpqua River (From confluence of North and South Forks to the Pacific Ocean)	5,6	24	9	12	102
R44 Illinois River (Illinois River Forks State Park to Deer Creek)	6	15	18	12	93
R58 Sandy River (Source to confluence with Bull Run River)	2	19	13	10	93
R5 Nehalem River	1,2	20	13	6	92
R115 Imnaha River	10	17	11	13	86
R49 Tualatin River	2	21	9	5	86
R121 Owhyee River (Owyhee Dam to Snake River)	11	20	7	7	81
R126 Willamette River (Sam Daws Bend, near Peoria, to Mid Fork Junction)	3,4	17	3	21	78
R124 Willamette River (Columbia River to Canby)	2	17	7	12	77
R69 Middle Santiam River	3	17	9	6	75
R101 Warm Springs River	7	11	17	6	73
R125 Willamette River (Canby to Sam Daws Bend, near Peoria)	2,3	8	19	11	73
R68 South Santiam River	3	4	21	19	73
R102 Umatilla River	7	11	8	16	65
R113 Wallowa River (Wallowa Lake to Minam)	10	9	14	10	65
R134 North Fork Owyhee River	11	8	14	13	65

Table 3.2. Recommended scenic waterway additions, mail probability sample, unweighted, by total points, top 20		
	Regions	**Points**
R210 Willamette River	2,3,4,6	97
R206 McKenzie River	4	68
R208 Siletz River	1	51
R5 Nehalem River	1,2	51
R202 Columbia River	2,7	50
R18 Yaquina River	1	35
R9 Wilson River	1	34
R98 Crooked River	8	34
R66 North Santiam River	3	33
R207 Salmon River	1	31
R204 Grande Ronde River	10	30
R209 South Umpqua River	6	28
R213 Siuslaw River	5	26
R27 Umpqua River (from confluence of North and South Forks to the Pacific Ocean)	5,6	26
R211 Alsea River	1	21
R94 Williamson River	9	21
R201 Chetco River	5	20
R203 Donner und Blitzen River	11	17
R212 John Day River	7,8,10	16
R205 Mary's River	3	15

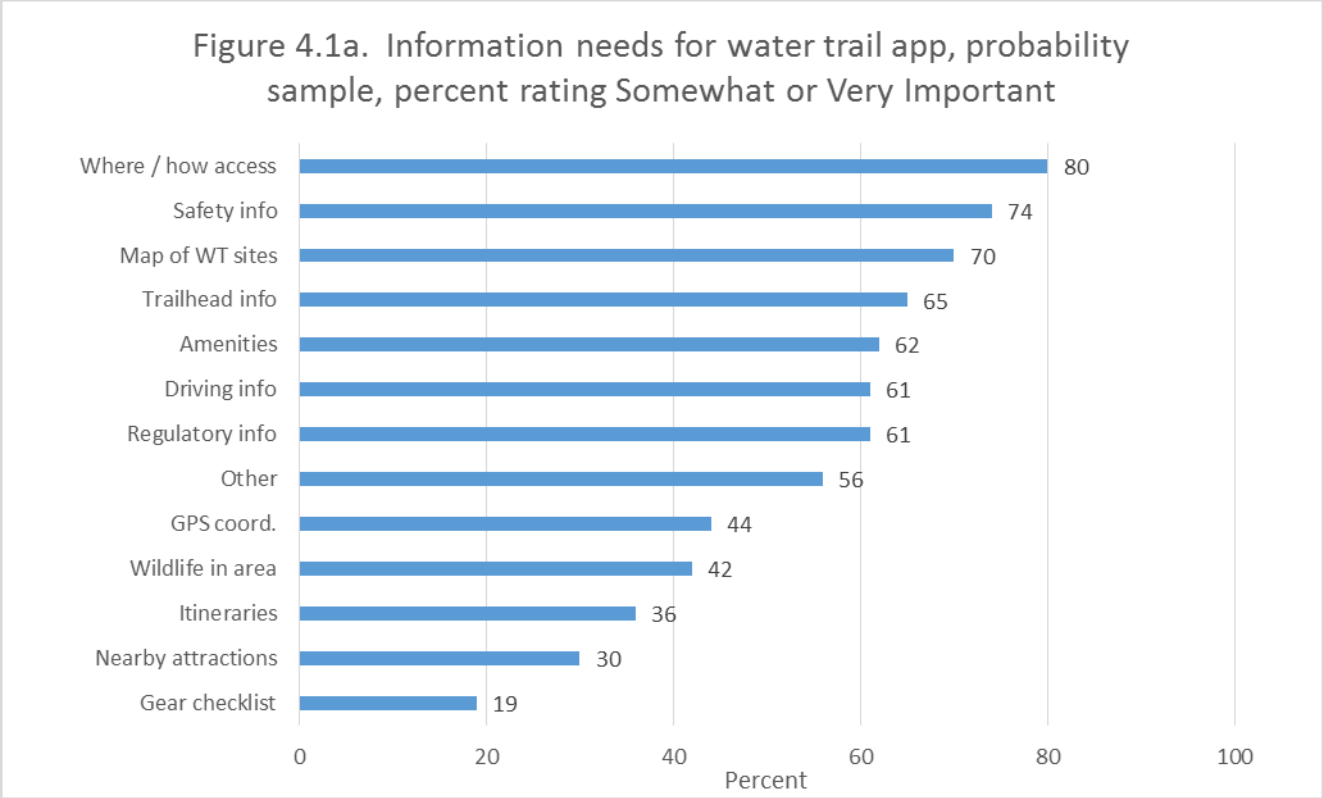
4. Water trails

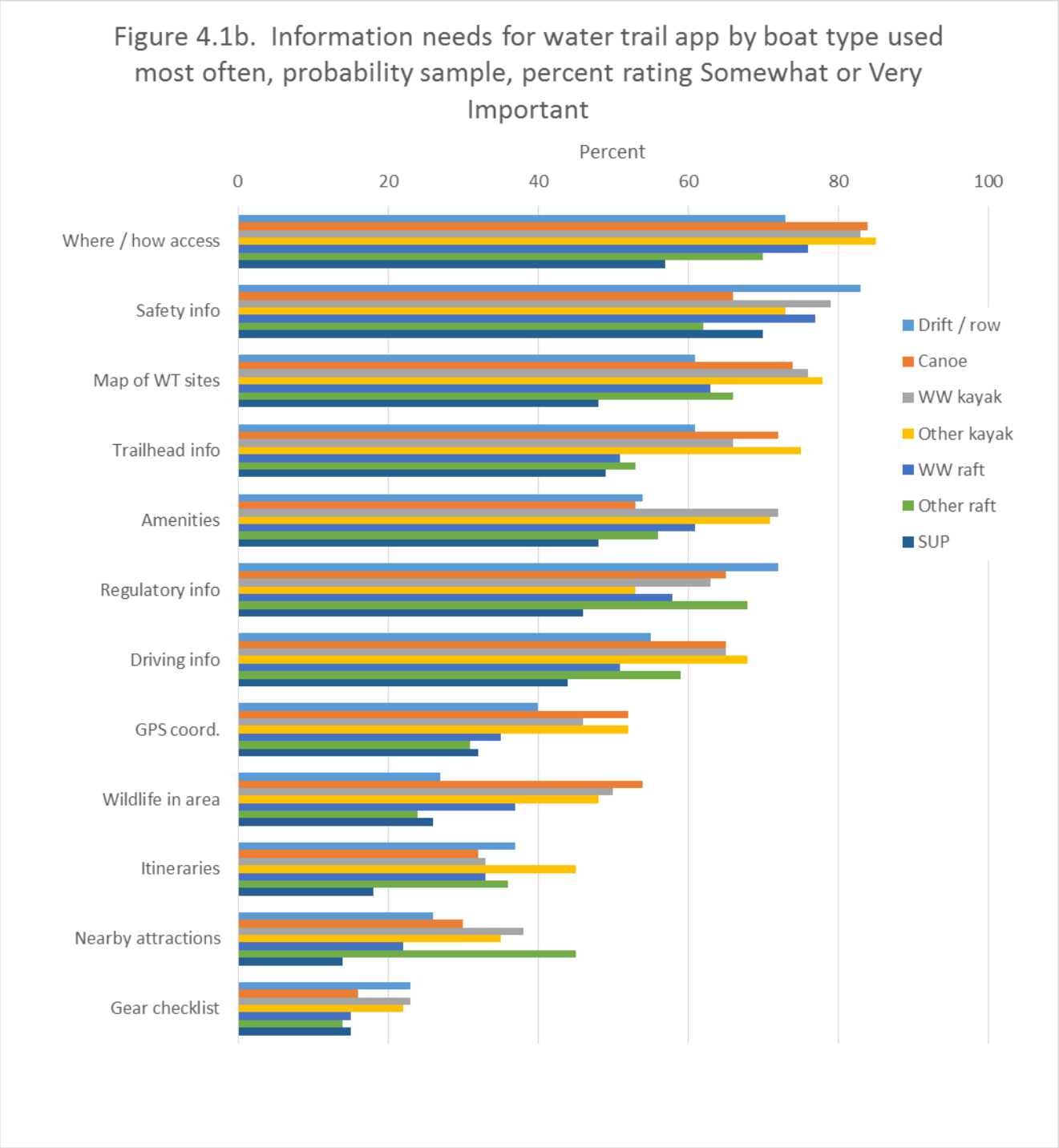
In the online questionnaire, respondents reported the information they would like a "water trail" smart app to provide if it were created for water bodies in Oregon. Figure 4.1a shows the percent giving a rating of 4 or 5 on a scale of 1 = "Not important" to 5 = "Very important".

Complete wording for the items is as follows:

- Where / how to access the water body
- Safety information / water body obstructions
- Map of water trail sites
- Trailhead information
- List of amenities that are available at launch site
- Driving directions
- Regulatory information (e.g., fishing and hunting regulations)
- Other
- GPS coordinates
- Common wildlife in area
- Suggested itineraries
- Nearby attractions
- Gear checklist

Location and safety information were rated as the most important. Items noted in the Other category included water levels, difficulty ratings (e.g., whitewater class), level of use / crowding in area, nearby camping / lodging, and user ratings / feedback. Figure 4.1b shows results by boat used most often (Q2).





As for scenic waterways, respondents were asked to recommend additional water bodies for inclusion in the water trails program. In the online questionnaire, recommended additions were identified using drop-down menus to select the highest, second highest, and third highest priority addition for each region. The list included separate segments for longer rivers.

In the mail questionnaire, recommended additions were identified using write-in responses of the five highest priority additions for the state as a whole. Many write-in recommendations did not match the online segments or did not identify segments. Therefore, results are presented separately below. Maps were provided in both the online and paper questionnaires.

Table 4.1 includes the number of times a river segment was identified as either a first, second, or third priority addition in the online questionnaire. The overall points score was calculated based on three points for each time the river was identified as a first priority addition, two points for a second priority, and one point for a third priority. Some rivers cross regional boundaries and were recommended in more than one region in the online questionnaire. In such cases, the highest region-level score was used for that river segment.

Table 4.2 shows points for the paper questionnaire. Due to the smaller number of recommendations, relative to scenic waterways, a smaller set is presented here and weighting was not used for mail questionnaire responses.

Table 4.1. Recommended water trail additions by priority and total points, online probability sample, unweighted, top 20

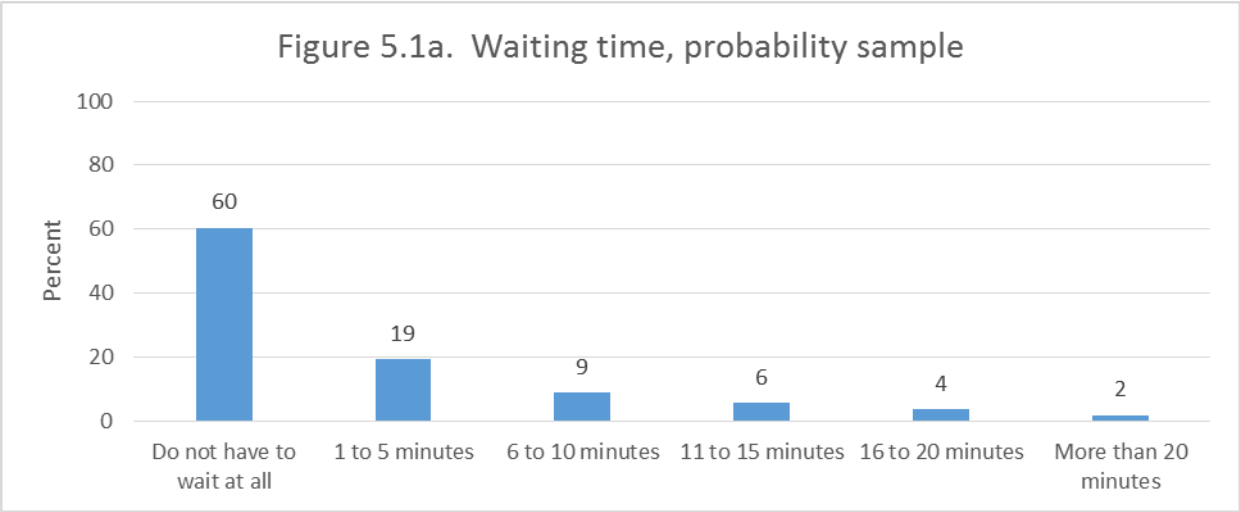
	Regions	1	2	3	Points
R70 McKenzie River	4	19	8	0	73
R97 Metolius River	8	19	3	3	66
R49 Tualatin River	2	15	3	5	56
R103 North Fork John Day River	7,10	14	4	4	54
R98 Crooked River	8	9	12	3	54
R84 North Umpqua River	6	10	5	4	44
R81 North Fork Middle Fork Willamette River	4	8	6	3	39
R27 Umpqua River (From confluence of North and South Forks to the Pacific Ocean)	5,6	9	4	3	38
R66 North Santiam River	3	5	10	2	37
L109 Upper Klamath Lake	9	10	1	2	34
R110 Grande Ronde River (Confluence with the Wallowa River to WA state line, near Troy)	10	9	2	3	34
L58 Waldo Lake	4	8	2	4	32
R100 John Day River (Source to Service Cr.)	10	8	4	0	32
R63 Yamhill River	3	8	3	0	30
R50 Clackamas River (River Mill Dam to Willamette River confluence)	2	7	2	4	29
R109 Grande Ronde River (Hilgard Junction State Park to confluence with the Wallowa River)	10	4	7	2	28
R94 Williamson River	9	5	5	3	28
B10 Coos Bay	5	6	3	2	26
L91 Hosmer Lake	8	4	5	4	26
R43 Illinois River (Deer Cr to Agness near confluence w/ Rogue R)	5,6	3	8	0	25

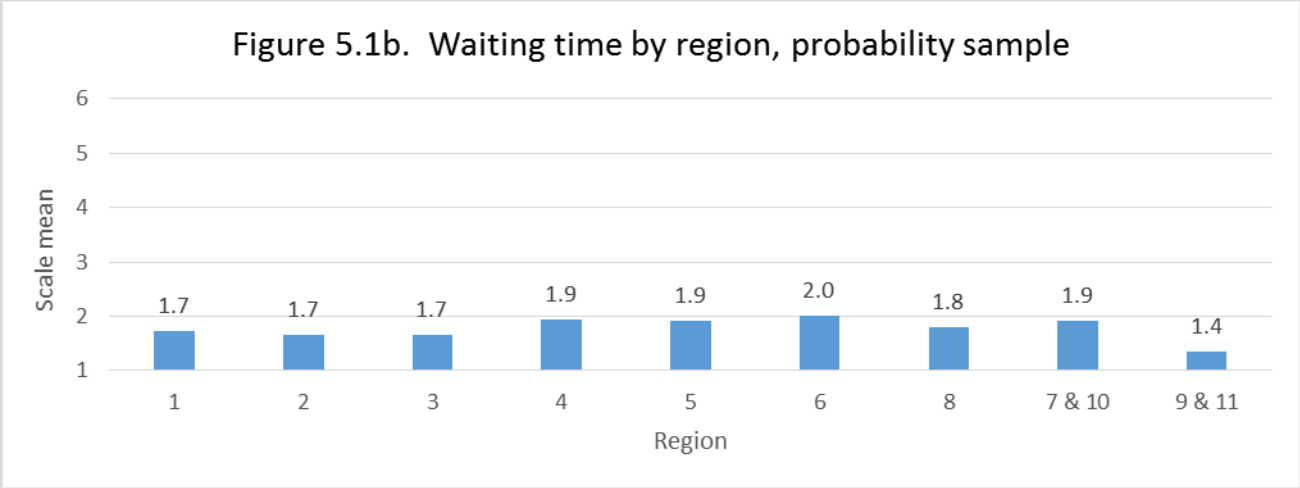
Table 4.2. Recommended water trail additions by mentions, mail probability sample, unweighted, top 16		
	Regions	**Mentions**
John Day River	7, 10	11
McKenzie River	4	11
Waldo Lake	4	11
Nehalem River	1, 2	10
North Umpqua River	6	7
Clackamas River	2, 3	6
Deschutes River	7, 8	6
Hosmer Lake	8	6
Siletz River	1, 3	6
Siuslaw River	4, 5	6
Columbia River	1, 2, 7	5
Crooked River	8	5
Owyhee River	11	5
Timothy Lake	2	5
Tualatin River	2	5
Willamette River	2, 3, 4	5

5. Experiences, preferences, and priorities

5.1. Waiting time

Respondents were asked how long they have to wait at launch areas for others to launch or take out (Q17). Figure 5.1a suggests that waiting is not a major issue. Figure 5.1b shows results by region, using averages on a scale of 1 = "Do not have to wait at all" to 6 = "More than 20 minutes." Even in the "highest" regions, average reported waiting time is only "1 to 5 minutes."

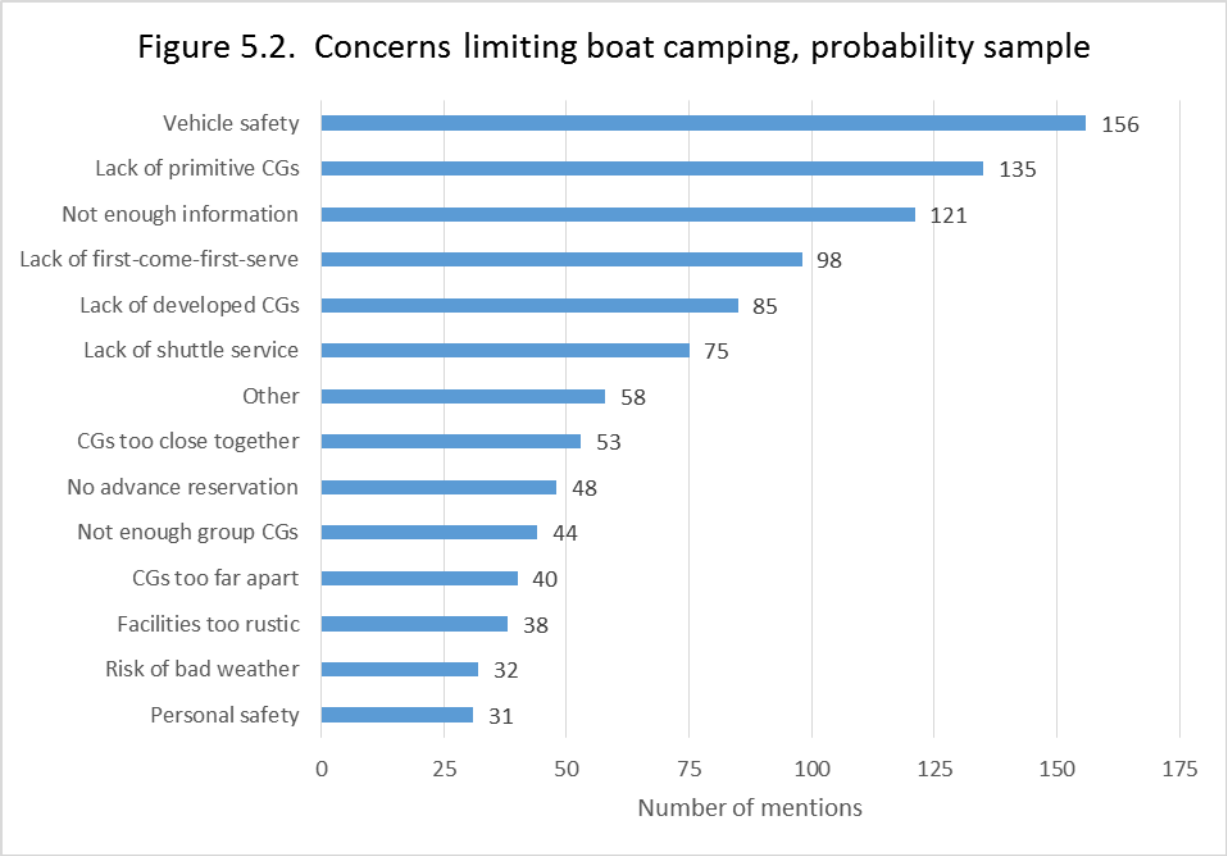




5.2. Boat camping

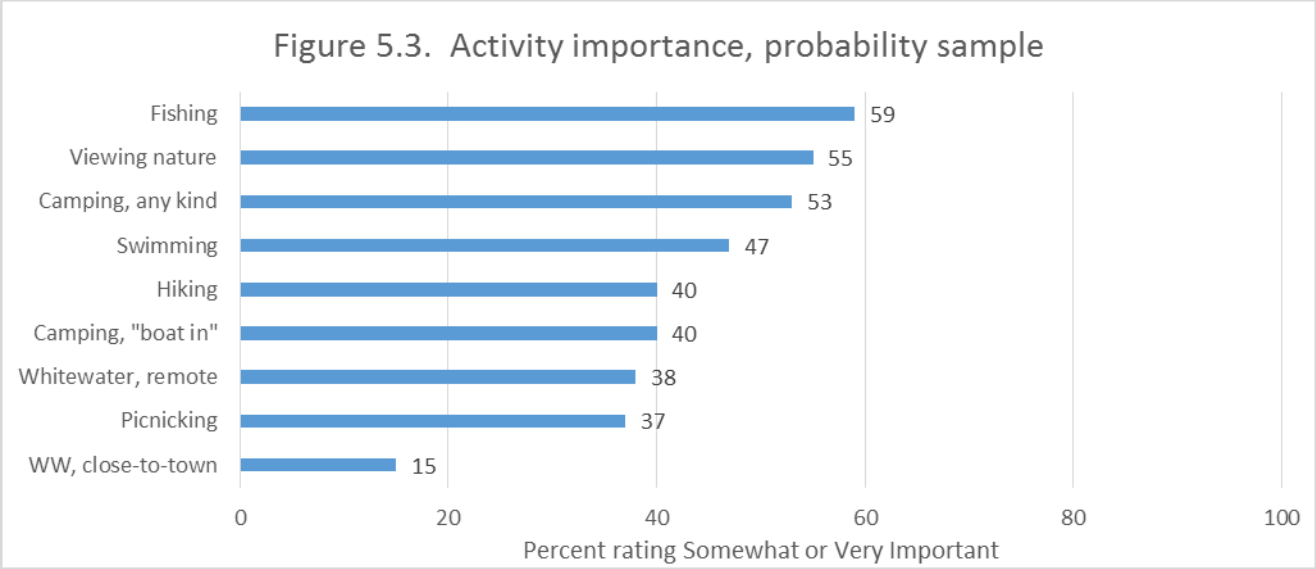
With respect to non-motorized boat camping, 22% of the probability sample indicated they camp less often than they would like on Oregon water bodies (Q18). Figure 5.2 shows the frequency of concerns that constrain camping from boats (Q19). "Campground" is abbreviated as "CG."

Write-in responses in the Other category include cost, crowds, kayaks too small for overnight gear, and lack of available permits, launch sites, and / or camp sites.



5.3. Activity importance

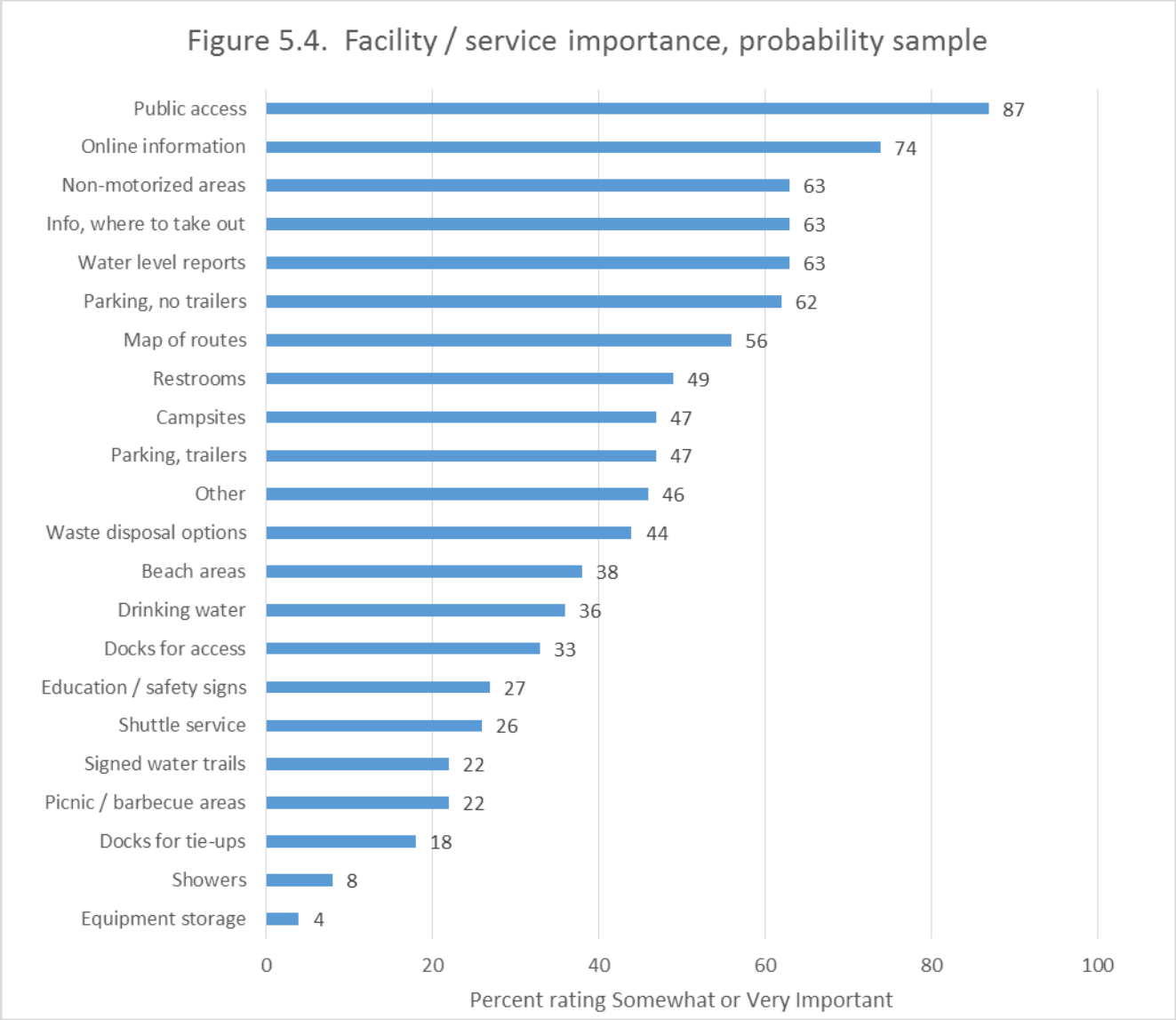
Respondents indicated the importance of various activities to their enjoyment of non-motorized boating, with Figure 5.3 showing percent giving a rating of 4 or 5 on a scale of 1 = "Not important" to 5 = "Very important" (Q20). Fishing, viewing nature, and camping were the most important, while whitewater close-to-town was the least important. The high percentages across diverse activities may reflect a general “enthusiasm” for indicating importance.



5.4. Facility / service importance

Figure 5.4 shows importance ratings for facilities and services (Q21), in percent giving a rating of 4 or 5 on a scale of 1 = "Not important" to 5 = "Very important". Access is clearly the most important, followed by online information.

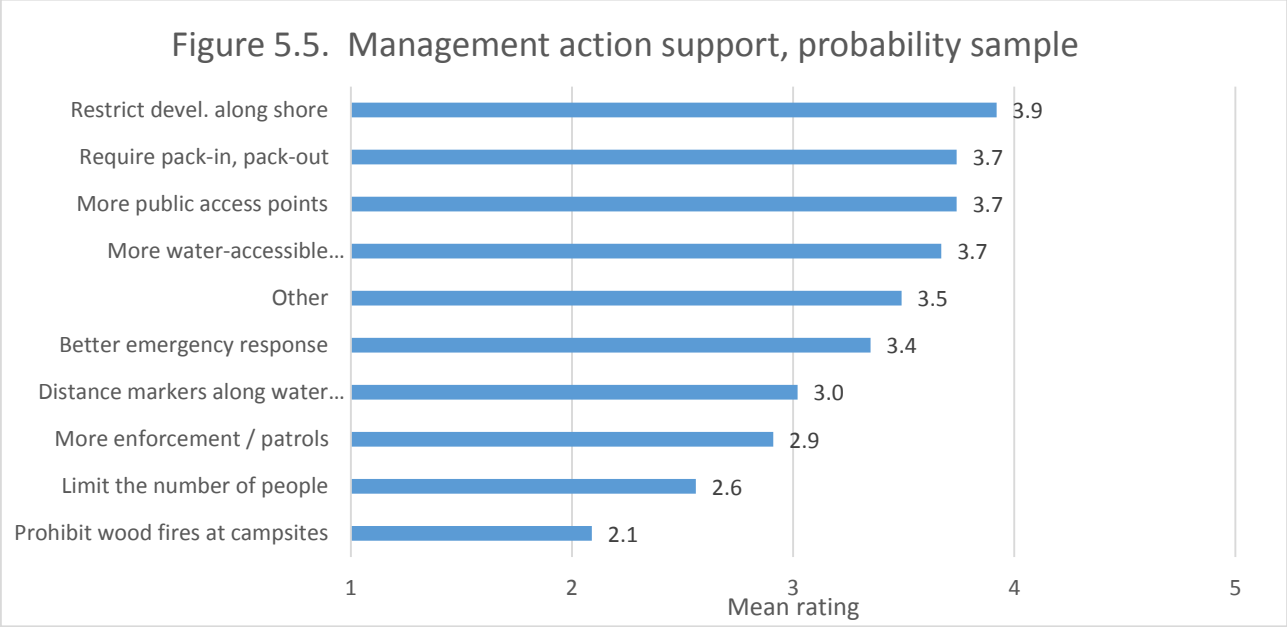
Write-in responses in the Other category were quite diverse, with no clear themes mentioned more than once or twice. Topics that were mentioned include fish cleaning stations, information on water quality (not just water level), and dog-friendly access.



5.5. Support for management actions

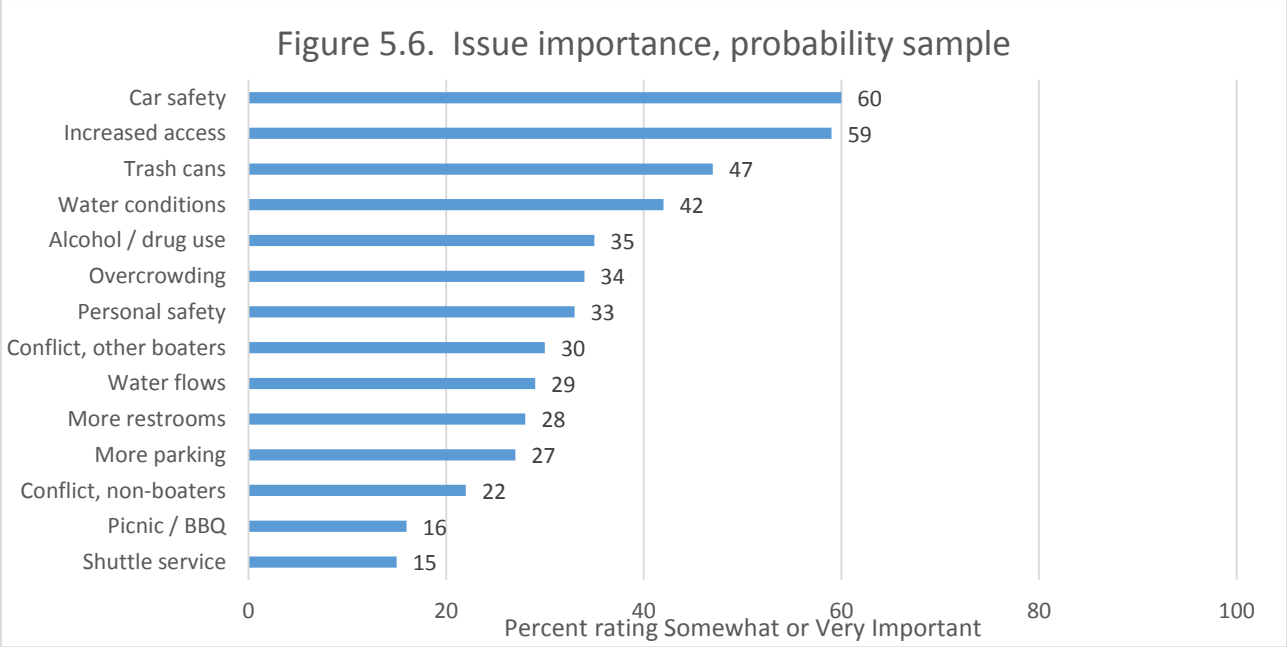
Figure 5.5 shows support for various management actions, on a scale of 1 = "Strongly oppose" to 5 = "Strongly support," with 3 = "Neutral" (Q22). The strongest support was for restricting development along the shoreline, while the least support was for prohibiting wood fires at campsites. Open-ended comments suggest that the concern about shoreline development may reflect the effect on water access.

Management actions in the Other category included support for more information and limits on motorized use (in general, as well as specifics such as no-wake zones), as well as opposition to fees.



5.6. Issue importance

Figure 5.6 shows importance ratings for non-motorized boating issues (Q23), in percent giving a rating of 4 or 5 on a scale of 1 = "Not important" to 5 = "Very important." Car safety and access were the most important issues.



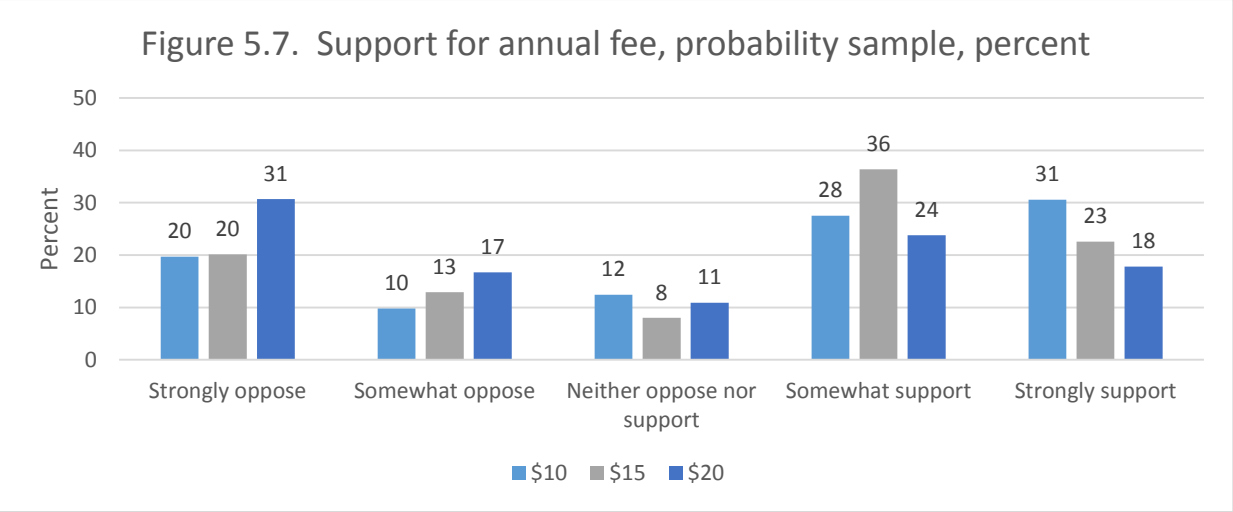
5.7. Support for annual fee for boating enhancement

Respondents were asked whether they would support a fee that would fund land acquisition and other enhancements to non-motorized boating (Q29). In the online questionnaire, the question included one of the following fee amounts: $10, $15, or $20. In the paper questionnaire, the

question included either $10 or $20 as the fee amount. In both questionnaires, the amount presented was randomly allocated across respondents. Question wording was as follows:

> Would you oppose or support an annual fee of $10 [amount varied] that would be required for all non-motorized boats (regardless of length) and would be transferable across boats?
>
> The fee would include the current Aquatic Invasive Species permit, with $5 of the total fee used to fund the invasive species program. The remaining amount would fund land acquisition for boater access, expanded parking and restrooms, camping facilities along paddling routes, and safety and educational material.

Figure 5.7 shows results for the probability sample. The majority of boaters were supportive or neutral, but there was a substantial level of opposition. As expected, the level of "strong" support decreased with higher fees. The level of "strong" opposition increased at the highest fee level.



5.8. Open-ended comments, summary

Respondents were asked to write suggestions for improving non-motorized boating opportunities in Oregon (Q30). The following is a summary of those responses. Note that several comments presented here overlap with responses presented above as part of "Other" categories in previous questionnaire questions.

For the probability and convenience samples combined, 985 respondents provided open-ended responses to the "how improve opportunities" question. Responses were categorized by general subject, with some comments falling into multiple categories.

The most frequent content reflected a desire for more access to boating opportunities; this was noted by 27% of the 986 commenters. This includes general statements calling for more access, as well as specific requests for more put-ins, increased parking, or improving existing ramps. Some respondents requested increased access across private property or better demarcation of the ordinary high water mark.

The next most frequent concern was conflict with motorized boaters, mentioned by 18% of commenters. These comments include direct expressions of conflict with motorized users, as well as calls for more speed limits, no wake areas, or areas exclusively for non-motorized use.

Additional information from managers was requested by 15% of commenters. This included calls for more maps, information on boating areas, conditions, or regulations, or calls for such information to be made available online. This also included calls for more interpretive events and better boater education.

Complaints about fees were expressed by 13% of commenters. These include concerns that fees are too high or too complicated, or that fees should be used differently or administered in a different way.

All other topics were voiced by fewer than 10% of commenters. Topics included improved or increased facilities, such as campgrounds, trash service, and restrooms (8%), increased enforcement of rules (7%), more environmental protection (7%), recommendations or complaints about administrative policies (6%), site-specific concerns (6%), statements that current management is doing a good job (4%), complaints about crowding (4%), and calls for less regulation (4%).

6. Expenditure and economic contribution

This section outlines boater expenditure, based on the "typical trips" described in Section 2.2. Note that this expenditure is only associated with travel, not with equipment purchase. The expenditure and economic contribution reflects boating activity by both local (to the boating location) and non-local Oregon residents.

As noted in Section 2.2, these results are based on travel parties. The National Visitor Use Monitoring (NVUM) approach to outliers is followed here, with observations excluded if reported travel party was eight or more persons, length of stay was more than 30 days, total expenditure per travel party was $500 or more per night (per day for day trips), or sporting goods expenditure per travel party was $500 or more.[6] In addition, respondents were excluded if they indicated that their expenditure reporting was below five on a 0 to 10 certainty scale, where 5 = Somewhat confident (this was not asked in the mail questionnaire). Exclusion was "listwise" across the set of questions within each trip type. For example, if one of the above conditions was met for multi-day trips, the respondent does not appear in the results for any of these questions within the multi-day trip analysis.

Table 6.1 provides an NVUM reference point for expenditure estimates. The probability sample data reflect Oregon residents boating in Oregon. For expenditure, the NVUM data reflect national averages for in-state and out-of-state visitors (Table 3 in White and Stynes 2010[7]). Importantly, non-motorized water activities were not analyzed as a separate category in NVUM expenditure estimates. Therefore, the NVUM expenditure values presented here are from the "Other" activity grouping, which excludes selected activities, such as downhill skiing, hunting, hiking / biking, and so on. Both probability sample and NVUM expenditure data are dollars per party per trip, amounts spent within 50 miles (for the boater survey, within 50 miles of the launch location; for NVUM, within 50 miles of the on-site survey location). The NVUM data are inflation adjusted from 2007 to 2014.

[6] White, E.M., D.B. Goodding, and D.J. Stynes. 2013. Estimation of national forest visitor spending averages from National Visitor Use Monitoring: round 2. Gen. Tech. Rep. PNW-GTR-883. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.

[7] White, E.M. and D.J. Stynes. 2010. Updated spending profiles for national forest recreation visitors by activity. Report under Joint Venture Agreement # 10-JV-11261955-018.

The NVUM persons per party and nights per trip data reflect Oregon resident boaters on national forests in Oregon.

Table 6.1. Expenditure and party size, probability sample and NVUM reference point

	Local day trips	Local multi-day trips	Non-local day trips	Non-local multi-day trips
Expenditure, $ per party per trip				
Probability sample	61	195	150	350
NVUM, national, Other activity	46	213	82	376
Persons per party				
Probability sample	2.7	3.1	2.9	3.4
NVUM, Oregon resident boaters	2.7	2.7	2.8	3.0
Nights per trip				
Probability sample		2.9		3.0
NVUM, Oregon resident boaters		2.9		3.8

The probability sample results match NVUM results reasonably well, especially when one considers differences across the sources. NVUM data only reflect boaters on national forests, whereas the probability sample data reflect boaters both on and off national forests. The most noticeable discrepancy occurs for non-local day visitor expenditure (noticeably higher for the probability sample) and non-local overnight trip length (noticeably lower for the probability sample).

Figure 6.1 shows expenditure by destination region (where the trip occurred) and trip type, unweighted by party size or trip length. Note that sample size for some regions is small after removal of outliers, especially for multi-day trips, which are less common than day trips. Region 9 & 11 has fewer than 25 observations for multi-day trips, so those results (highlighted in red) should be treated with caution.

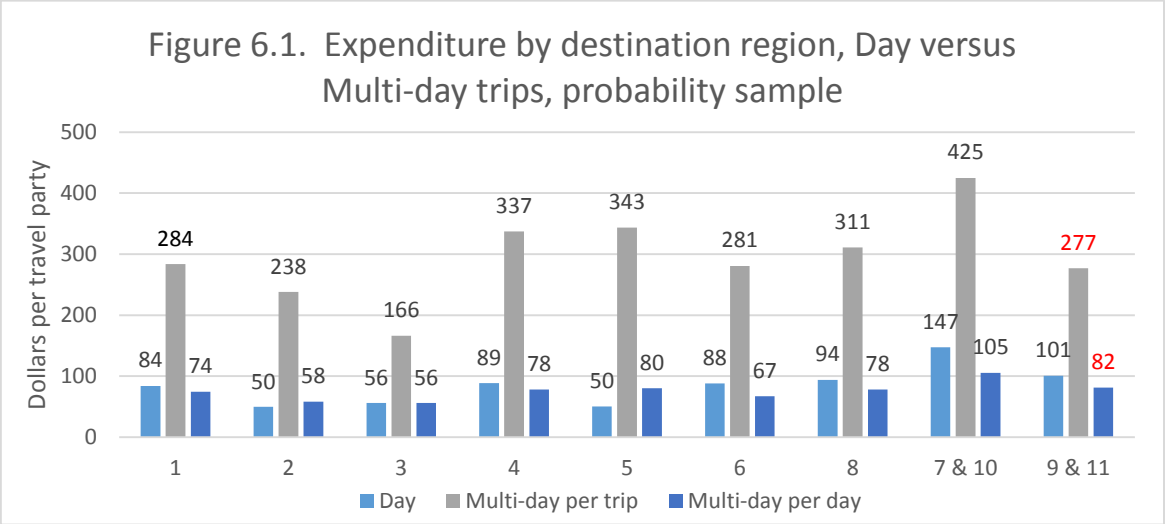


Table 6.2 presents expenditure by destination region and trip type. Expenditure per person per day matches the use occasions metric from SCORP and is calculated by dividing total expenditure in each region by the number of user days in the region, based on Q5, Q10, and Q16.

As noted in Section 2.3, the 2011 SCORP project provides the best estimates of user occasions across regions. Regional expenditure is the product of expenditure per person per day and user occasions, with total by region reflecting the sum of values in the Day and Multi-day columns.

Table 6.2. Annual expenditure by destination region and trip type								
	Boater survey, expenditure, $ per person per day		SCORP, adjusted user occasions (days)			Regional expenditure (millions of dollars)		
Region	**Day**	**Multi-day**	**Total**	**Day**	**Multi-day**	**Total**	**Day**	**Multi-day**
1	38	25	443,000	402,000	41,000	15.9	14.9	1.0
2	20	22	1,481,200	1,326,000	155,200	28.5	25.1	3.4
3	21	13	359,900	300,300	59,500	6.6	5.9	0.8
4	32	24	347,900	308,000	39,900	10.3	9.4	1.0
5	19	20	179,300	119,500	59,800	3.3	2.1	1.2
6	34	19	453,600	282,400	171,200	11.6	8.4	3.2
8	39	25	803,900	413,400	390,500	24.7	15.1	9.6
7 & 10	46	30	261,400	88,600	172,800	9.0	3.8	5.2
9 & 11	38	24	106,300	71,500	34,800	3.5	2.7	0.8
Total			4,436,500	3,311,700	1,124,700	113.5	87.4	26.2

Note that expenditure per day for multi-day trips is based on overall trip expenditure and trip length, including days that did not involve boating. However, user occasions and regional expenditure only reflect days engaged in boating.

User occasions are extrapolated from the SCORP estimates by county, shown in Section 2.3. As noted in that section, the SCORP categories differ from the boater survey categories. The most notable difference is that tubing / floating is included in SCORP and excluded here. An estimate of user occasions specifically for tubing / floating is not available for Oregon, nor was it possible to measure it in this project (it would have required a general population survey). However, it is estimated as 29% of the SCORP figures based on extrapolation from Outdoor Foundation data. Therefore, Table 6.2 user occasions are 71% of those presented in Table 2.2.[8]

User occasions for Region 8 were the one exception to the 71% approach. The number of occasions on day trips was evaluated relative to the population for each of the regions. Statewide, the ratio of day trip user occasions to population was just under 1.0 (0.96). Two regions had ratios above 2.0: Region 1 at 3.7 and Region 8 at 4.2. Given proximity to the populous Region 2 and Region 3, the concentration of day trips in Region 1 appeared reasonable; in other words, day trips in Region 1 may reflect day trips by residents of Region 2 and Region 3 in addition to Region 1.

[8] Based on data contained in the 2007 State-Level Economic Contributions of Active Outdoor Recreation – Technical Report on Methods and Findings (http://www.outdoorfoundation.org/pdf/ResearchRecreationEconomyStateTechnicalReport.pdf). This Outdoor Foundation (OF) report estimates Oregon participation in paddle sports at 13.4%, excluding SUP and drift / row boating. In the trail survey, the latter two activities are the boat type used "most often" by 20.4% of the trail probability sample (see Figure 2.3a); all other boat types total 79.6%. The OF equivalent for Oregon, with SUP and drift / row boating included, can be calculated by solving for X: (13.4 / X) = (79.6 / 100). This equals 16.8%. The SCORP data indicate that 23.7% engaged in either whitewater or flatwater or both, including tubing / floating. This implies that tubing / floating = 23.7% - 16.8% = 6.9% participation. This 6.9% is 29% of the combined 23.7%; the remaining 71% reflects non-motorized boating excluded tubing / floating (the present focus). This extrapolation is imperfect, but it is the best approach given available data, and it is consistent with the types of extrapolations utilized in similar analyses.

Although Region 8 is rich in non-motorized boating opportunities, those opportunities are not proximate to population centers outside the region. Therefore, it was concluded that Region 8 day trip occasions reflected an unusually high level of tubing / floating, and the number of occasions was scaled down to twice the regional population (twice the statewide average ratio of user days to population).

Coastal Lane and Douglas counties are included in Region 5 in the expenditure per person per day figures in Table 6.2, but are included in the main part of each county (Region 4 for Lane, Region 6 for Douglas) in the SCORP user occasions and economic contribution calculations in this section. This treatment reflects the SCORP regional grouping as well as the county-based availability of IMPLAN data for the contribution analysis.

Note that the calculations in this report only reflect the contribution of Oregon residents. Non-residents who engage in non-motorized boating in Oregon contribute additional amounts to regional economies. The magnitude of this additional contribution is unknown, but can be estimated from external data sources. As noted in Section 2.3, NVUM data suggest that 17% of non-motorized boaters on national forests in Oregon are non-residents. If this pattern is the same for non-motorized boating outside national forests, the statewide contribution of non-resident boaters would be an additional 20% of the estimates provided here (16.9% / 83.1%). Recent analysis in Washington state indicates that their ratio of out-of-state versus in-state expenditure is 77.8 / (578.7 - 77.8) = 16%.[9] This suggests that out-of-state spending in Oregon adds another 16% to 20% of the amounts shown in Table 6.2 above and Table 6.5 below.

The expenditure results shown in Table 6.2 are significantly lower than those in the recent Washington analysis, presumably due to Washington's larger population, inclusion of out-of-state boaters, and use of national expenditure averages rather than the state-specific data used here.

The expenditure of non-motorized boaters by region was “run” through the IMPLAN input-output model to estimate “multiplier effects” of money flowing through the local economy. To illustrate, assume that a WW rafter eats lunch at Restaurant X in Region 8. In order to provide the lunch, Restaurant X hires employees and purchases food that is then prepared for customers. Food is an input purchased from another business, and this process generates indirect effects. Wages paid to employees generate induced effects, because those employees spend a portion of their income in the local economy (perhaps by eating at Restaurant Y or shopping at Supermarket Z). Additional information on input-output and its application for this analysis is provided in Appendix 5.

Table 6.3 shows the expenditure breakdown across categories and trip type, in dollars per person per day. Expenditure categories were as follows:

- Hotel, motel, condo, cabin, B&B, or other lodging <u>except camping</u>
- Camping (RV, tent, etc.)
- Restaurants, bars, pubs
- Groceries
- Gas and oil
- Other transportation
- Park / forest entry, parking, or recreation use fees
- Recreation and entertainment, including guide fees
- Sporting goods
- Other expenses, such as souvenirs

[9] Briceno, T. and G. Schundler. 2015. Economic Analysis of Outdoor Recreation in Washington State. Earth Economics, Tacoma, WA. Available at: http://www.rco.wa.gov/documents/ORTF/EconomicAnalysisOutdoorRec.pdf

For multi-day visitors, expenditure on hotels, which includes other non-camping lodging, appears low. However, it reflects an average across all multi-day boaters, including those that do not stay in hotels. Only 7% of respondents (probability sample) had expenditure in this category. Of those that did, the average expenditure per night per travel party was $103.

Table 6.3. Expenditure by category and trip type, dollars per person per day

	Day	Multi-day
Hotel	0.00	2.66
Camping	0.00	1.84
Restaurants	4.32	2.09
Groceries	5.98	6.04
Gas	9.40	5.46
Other transportation	1.05	1.90
Recreation fees	3.27	1.24
Recreation + guiding	0.42	0.33
Sporting goods	2.90	1.45
Other	0.26	0.25
Total	**27.60**	**23.26**

Per-person per-day expenditure in some categories is fairly similar across day versus multi-day trips. In others, it is higher for day trips. Given that expenditure is spread across fewer days (only one), it is understandable that amounts are higher for day trips. For example, boaters may drive further to destination regions for multi-day trips (see Figure 2.7), but then drive less during the days in the region. This may explain the lower per-day expenditure for gas for multi-day trips.

Not all respondents indicated whether their typical trip was commercially guided (it was not asked in the mail questionnaire) and, of those asked, relatively few had trips that were commercially guided. Therefore, a full analysis of guided versus non-guided expenditure is not possible. However, guided trips on average involved higher levels of total expenditure relative to unguided trips, especially for day trips (see Table 6.4). As expected, guided trips also had higher levels of expenditure specifically in the recreation category, which includes guide fees.

Table 6.4. Total expenditure, dollars per person per day

	Guided	Unguided
Day trips	36.37	26.60
Multi-day trips	23.72	22.07

Table 6.5 shows the results of the multiplier analysis, by region. The columns are as follows:

- Employment, full-time or part-time jobs
- Labor income, which includes employee compensation (including wages, salaries, and benefits) and proprietary income (including self-employment income).
- Value added, which includes labor income, rents, profits, and indirect business taxes.
- Output, which is the dollar value of goods and services sold.

Note that much travel-related expenditure is on retail items, with only the retail margin included in this analysis. As a result, output may be lower than expenditure, despite the multiplier effect.

Table 6.5. Multiplier effects of non-motorized boater trip expenditure, by region; employment in jobs, other measures in dollars				
Region	**Employment**	**Labor Income**	**Value Added**	**Output**
1	144	4,017,900	6,690,500	10,319,800
2	264	9,807,100	15,241,200	23,147,500
3	61	1,759,100	2,864,400	4,429,600
4	94	2,880,200	4,701,700	7,106,300
5	32	834,000	1,383,100	2,221,100
6	114	3,284,100	5,413,900	8,593,300
8	252	7,805,500	12,824,100	20,391,400
7 & 10	91	2,301,800	3,820,800	6,352,700
9 & 11	34	822,100	1,395,400	2,237,800
Total	1,084	33,511,900	54,335,300	84,799,500

Statewide, non-motorized boating by Oregon residents contributes 1,084 jobs, $34 million in labor income, and $54 million in value added. Inclusion of out-of-state boaters is estimated to add another 16% to 20% to these figures. Table 6.6 shows the statewide total for in-state boaters from Table 6.5, together with estimated contribution from out-of-state boaters, using the 16% reference point.

Table 6.6. Multiplier effects of non-motorized boater trip expenditure, out-of-state boaters included; employment in jobs, other measures in dollars				
Origin	**Employment**	**Labor Income**	**Value Added**	**Output**
In-state	1,084	33,511,900	54,335,300	84,799,500
Out-of-state	174	5,361,900	8,693,600	13,567,900
Combined	1,258	38,873,800	63,028,900	98,367,400

Appendix 1. Full lists of recommended scenic waterway and water trail additions

The following are the full lists of recommended scenic waterway and water trail additions. They represent extended versions of Table 3.1, Table 3.2, Table 4.1, and Table 4.2.

Table A1.3.1. Recommended scenic waterway additions by priority and total points, online probability sample, unweighted

	Regions	1	2	3	Points
R98 Crooked River	8	109			327
R70 McKenzie River	4	68	14	11	243
R66 North Santiam River	3	40	17	9	163
R89 Rogue River (Lost Creek Lake to Grave Creek)	6	34	21	10	154
R94 Williamson River	9	24	32		136
R93 Klamath River (Klamath River Falls to Boyle Dam)	9	35	15		135
R100 John Day River (Source to Service Cr.)	10	32	13	11	133
R80 Middle Fork Willamette River	4	13	30	13	112
R60 White River	2, 7	31	6	4	109
R27 Umpqua River (From confluence of North and South Forks to the Pacific Ocean)	5, 6	24	9	12	102
R44 Illinois River (Illinois River Forks State Park to Deer Creek)	6	15	18	12	93
R58 Sandy River (Source to confluence with Bull Run River)	2	19	13	10	93
R5 Nehalem River	1, 2	20	13	6	92
R115 Imnaha River	10	17	11	13	86
R49 Tualatin River	2	21	9	5	86
R121 Owhyee River (Owyhee Dam to Snake River)	11	20	7	7	81
R126 Willamette River (Sam Daws Bend, near Peoria, to Mid Fork Junction)	3, 4	17	3	21	78
R124 Willamette River (Columbia River to Canby)	2	17	7	12	77
R69 Middle Santiam River	3	17	9	6	75
R101 Warm Springs River	7	11	17	6	73
R125 Willamette River (Canby to Sam Daws Bend, near Peoria)	2, 3	8	19	11	73
R68 South Santiam River	3	4	21	19	73
R102 Umatilla River	7	11	8	16	65
R113 Wallowa River (Wallowa Lake to Minam)	10	9	14	10	65
R134 North Fork Owyhee River	11	8	14	13	65
R28 Smith River	5, 6	13	10	5	64
R118 Malheur River	10, 11	13	9	5	62
R17 Siletz River (Confluence of North and South Forks to Siletz Bay)	1, 3	14	6	5	59
R24 Yachats River	1, 5	15	5	3	58
R59 Salmon River	2	10	11	5	57
R7 Salmonberry River	1	13	5	7	56
R79 Coast Fork Willamette River	4	7	12	11	56
R91 Applegate River	6	7	11	10	53
R25 Siuslaw River (mouth to confluence with Lake Creek, near Swisshome)	4, 5	8	13	0	50
R37 Sixes River	5	8	5	13	47

R127 Columbia River (Mouth to Saint Helens)	1, 2	7	10	5	46
R106 Grande Ronde River (Source to confluence with East Fork Grande Ronde)	10	6	10	7	45
R109 Grande Ronde River (Hilgard Junction State Park to confluence with the Wallowa River)	10	11	3	6	45
R71 North Fork Alsea River (Outlet of Klickitat Lake to confluence with Bailey Creek)	1, 3	14	1	0	44
R9 Wilson River	1	5	8	10	41
R137 Chetco River (from headwaters to Boulder Creek)	5	12	0	4	40
R65 Santiam River (Junction with N Santiam to Willamette River (Lower))	3	5	11	3	40
R72 North Fork Alsea River (Bailey Creek to confluence with Alsea River, near Alsea)	3	0	18	4	40
R46 Chetco River (from Boulder Creek to Loeb State Park)	5	1	17	2	39
R86 South Umpqua River (Source to Tiller)	6	4	8	11	39
R131 Columbia River (Deschutes River to John Day Dam)	7	7	5	7	38
R45 Chetco River (from Loeb State Park to the mouth at Pacific Ocean)	5	8	4	6	38
R55 Molalla River (Source to Glen Avon)	2	7	5	7	38
R112 Lostine River	10	5	8	5	36
R130 Columbia River (Bonneville Dam to Deschutes River)	2, 7	5	7	7	36
R135 South Fork Owyhee River	11	4	6	12	36
R119 Snake River (Owyhee to Farewell Bend State Recreation Area)	11	8	5	1	35
R87 South Umpqua River (Tiller to confluence with North Umpqua River, near Riversdale)	6	5	6	8	35
R10 Trask River	1	3	9	7	34
R132 Columbia River (John Day Dam to Heppner Junction, near Hwy 74)	7	5	6	5	32
R18 Yaquina River	1, 3	4	1	15	29
R22 Alsea River (Mainstem from confluence of North and South Forks to USFS boundary, near Fall Cr)	1, 3	5	6	2	29
R128 Columbia River (Saint Helens to Troutdale)	2	3	8	3	28
R20 Alsea River (Pacific Ocean to head of tide, RM 12 near Tidewater)	1	5	3	7	28
R116 Snake River (Baker Co Line, near Copper Cr, to WA state line)	10	6	1	7	27
R120 Snake River (Owyhee River to State Line)	11	4	7	1	27
R26 North Fork Siuslaw River	5	5	3	6	27
R13 Nestucca River (RM 15 to RM 26, above confluence of Limestone Creek and Blaine)	1	6	3	2	26
R32 Coquille River, mainstem	5	6	2	4	26
R21 Alsea River (RM 12 near Tidewater to USFS boundary)	1	3	8	0	25
R54 Oak Grove Fork Clackamas River	2	4	3	7	25
R56 Molalla River (Glen Avon to Willamette River, near Canby)	2	2	7	5	25
R8 Kilchis River	1	2	6	7	25
R74 Lake Creek	4	2	6	6	24
R107 Grande Ronde River (Confluence with East Fork Grande Ronde to Red Bridge State Park)	10	3	4	6	23
R136 Pistol River	5	3	4	6	23
R29 Coos River	5	5	1	5	22
R108 Grande Ronde River (Red Bridge State Park to Hilgard Junction State Park)	10	0	8	5	21
R2 Lewis and Clark River	1	1	6	6	21

R11 Nestucca River (mouth up to RM 7, near Cloverdale)	1	5	1	3	20
R6 North Fork Nehalem River	1	4	2	3	19
R61 Middle Fork Hood River	2	1	6	4	19
R63 Yamhill River	3	3	4	1	18
R1 Youngs River	1	2	4	3	17
R117 Snake River (Farewell Bend to Baker Co Line, near Copper Cr)	10	1	7	0	17
R12 Nestucca River (RM 7 to RM 15, near Beaver)	1	1	6	2	17
R77 Siuslaw River (Clay Creek Campground to Siuslaw Falls)	4	2	3	5	17
R16 Little Nestucca River	1, 3	2	4	2	16
R48 Clatskanie River	2	2	4	2	16
R73 South Fork Alsea River	3, 4	0	0	16	16
R75 Siuslaw River (Confluence of Lake Cr, near Sweethome, to Wildcat Cr, near Austa)	4	2	4	2	16
R133 Columbia River (Heppner Junction, near Hwy 74, to state line above Hat Rock State Park)	7	1	4	4	15
R4 Necanicum River	1	2	1	4	12
R88 Cow Creek	6	1	1	6	11
R129 Columbia River (Troutdale to Bonneville)	2	1	2	3	10
R62 North Yamhill River	3	1	3	1	10
R30 Millicoma River	5	1	3	0	9
R47 Winchuck River	5	1	2	2	9
R78 Siuslaw River (Siuslaw Falls to junction of North and South Fork)	4	1	1	4	9
R85 Little River	6	0	2	5	9
R23 Five Rivers	1, 3, 4	0	3	2	8
R33 North Fork Coquille River	5	1	2	1	8
R36 South Fork Coquille River	5	2	0	1	7
R76 Siuslaw River (Wildcat Cr, near Austa, to Clay Creek Campground)	4	0	2	3	7
R64 Pudding River	2, 3	0	2	2	6
R83 Calapooya Creek	6	0	2	1	5
R34 East Fork Coquille River	5	0	1	2	4
R35 Middle Fork Coquille River	5, 6	0	2	0	4
R31 South Fork Coos River	5	0	1	1	3
R19 Elk Creek	1	0	0	1	1
R3 Klaskanine River	1	0	0	1	1

Table A1.3.2. Recommended scenic waterway additions, mail probability sample, unweighted, by total points

	Regions	Points
R210 Willamette	2,3,4,6	97
R206 McKenzie River	4	68
R208 Siletz	1	51
R5 Nehalem River	1,2	51
R202 Columbia	2,7	50
R18 Yaquina River	1	35

R9 Wilson River	1	34
R98 Crooked River	8	34
R66 North Santiam River	3	33
R207 Salmon	1	31
R204 Grande Ronde	10	30
R209 South Umpqua	6	28
R213 Siuslaw	5	26
R27 Umpqua River (From confluence of North and South Forks to the Pacific Ocean)	5,6	26
R211 Alsea	1	21
R94 Williamson River	9	21
R201 Chetco	5	20
R203 Donner und Blitzen	11	17
R212 John Day	7,8,10	16
R205 Mary's River	3	15
R61 Middle Fork Hood River	2	15
R91 Applegate River	6	15
R10 Trask River	1	14
R37 Sixes River	5	12
R65 Santiam River (Junction with N Santiam to Willamette River (Lower))	3	12
R115 Imnaha River	10	10
R19 Elk Creek	1	10
R44 Illinois River (Illinois River Forks State Park to Deer Creek)	6	10
R49 Tualatin River	2	10
R63 Yamhill River	3	10
R83 Calapooya Creek	6	8
R89 Rogue River (Lost Creek Lake to Grave Creek)	6	8
R214 Mollala	3	7
R113 Wallowa River (Wallowa Lake to Minam)	10	6
R118 Malheur River	11	6
R68 South Santiam River	3	6
R102 Umatilla River	7	5
R11 Nestucca River (mouth up to RM 7, near Cloverdale)	1	3
R25 Siuslaw River (mouth to confluence with Lake Creek, near Swisshome)	5	3
R28 Smith River	5, 6	3
R58 Sandy River (Source to confluence with Bull Run River)	2	3
R121 Owhyee River (Owyhee Dam to Snake River)	11	2

Table A1.4.1. Recommended water trail additions by priority and total points, online probability sample, unweighted

	Regions	1	2	3	Points
R70 McKenzie River	4	19	8	0	73
R97 Metolius River	8	19	3	3	66
R49 Tualatin River	2	15	3	5	56

R103 North Fork John Day River	7,10	14	4	4	54
R98 Crooked River	8	9	12	3	54
R84 North Umpqua River	6	10	5	4	44
R81 North Fork Middle Fork Willamette River	4	8	6	3	39
R27 Umpqua River (From confluence of North and South Forks to the Pacific Ocean)	5,6	9	4	3	38
R66 North Santiam River	3	5	10	2	37
L109 Upper Klamath Lake	9	10	1	2	34
R110 Grande Ronde River (Confluence with the Wallowa River to WA state line, near Troy)	10	9	2	3	34
L58 Waldo Lake	4	8	2	4	32
R100 John Day River (Source to Service Cr.)	10	8	4	0	32
R63 Yamhill River	3	8	3	0	30
R50 Clackamas River (River Mill Dam to Willamette River confluence)	2	7	2	4	29
R109 Grande Ronde River (Hilgard Junction State Park to confluence with the Wallowa River)	10	4	7	2	28
R94 Williamson River	9	5	5	3	28
B10 Coos Bay	5	6	3	2	26
L91 Hosmer Lake	8	4	5	4	26
R43 Illinois River (Deer Cr to Agness near confluence w/ Rogue R)	5,6	3	8	0	25
B6 Siletz Bay	1	5	3	3	24
R5 Nehalem River	1,2	6	2	2	24
R68 South Santiam River	3	5	4	1	24
R90 Rogue River (above Lost Creek Lake)	6	6	2	2	24
L89 Sparks Lake	8	3	6	2	23
R65 Santiam River (Junction with N Santiam to Willamette River (Lower))	3	4	4	3	23
R91 Applegate River	6	6	2	1	23
R92 Klamath River (Boyle Dam to CA state line)	9	6	2	1	23
L12 Siltcoos Lake	5	5	2	1	20
R82 South Fork McKenzie River	4	1	6	5	20
R114 Wallowa River (Minam to confluence with the Grande Ronde River)	10	2	5	3	19
R17 Siletz River (Confluence of North and South Forks to Siletz Bay)	1,3	4	3	1	19
R32 Coquille River, mainstem	5	5	1	2	19
R122 Owhyee River (Lake Owyhee to Rome, near Hwy 95)	11	3	4	1	18
R60 White River	7	3	4	1	18
B8 Alsea	1	5	0	2	17
B9 Winchester Bay	5	4	1	3	17
R102 Umatilla River	7	3	3	1	16
R51 Clackamas River (Source to River Mill Dam)	2,3	2	5	0	16
R55 Molalla River (Source to Glen Avon)	2	3	2	3	16
L85 Suttle Lake	8	3	2	2	15
R64 Pudding River	2,3	3	3	0	15
R69 Middle Santiam River	3	2	3	3	15
R9 Wilson River	1	2	3	3	15
B7 Yaquina Bay	1	1	4	3	14
L43 Clear Lake	3	4	1	0	14
R28 Smith River	5	2	3	2	14
L134 Wallowa Lake	10	3	1	2	13
L157 Lake Owyhee	11	3	2	0	13
R131 Columbia River (Deschutes River to John Day Dam)	7	2	2	3	13
R16 Little Nestucca River	1,3	2	1	5	13

R22 Alsea River (Mainstem from confluence of North and South Forks to USFS boundary, near Fall Cr)	1,3	2	1	5	13
L27 Henry Hagg Lake	2	1	4	1	12
L34 Timothy Lake	2	2	3	0	12
L7 Devils Lake	1	1	3	3	12
R10 Trask River	1	1	4	1	12
R127 Columbia River (Mouth to Saint Helens)	1,2	2	2	2	12
R130 Columbia River (Bonneville Dam to Deschutes River)	2,7	2	3	0	12
R137 Chetco River (from headwaters to Boulder Creek)	5	1	4	1	12
R18 Yaquina River	1,3	2	3	0	12
R56 Molalla River (Glen Avon to Willamette River, near Canby)	2	0	5	2	12
R62 North Yamhill River	3	1	4	1	12
R74 Lake Creek	4	1	3	3	12
R93 Klamath River (Klamath River Falls to Boyle Dam)	9	1	4	1	12
R123 Owhyee River (Rome, near Hwy 95, to state line)	11	2	1	3	11
R67 Little North Santiam River	3	1	2	4	11
L99 Paulina Lake	8	1	1	5	10
R108 Grande Ronde River (Red Bridge State Park to Hilgard Junction State Park)	10	2	1	2	10
R118 Malheur River	10,11	3	0	1	10
R121 Owhyee River (Owyhee Dam to Snake River)	11	2	1	2	10
R2 Lewis and Clark River	1	2	2	0	10
R24 Yachats River	1,5	2	1	2	10
L108 Agency Lake	9	2	1	1	9
L35 Mission Lake	3	1	2	2	9
L40 Detroit Lake	3	2	1	1	9
L72 Emigrant Lake	6	3	0	0	9
R29 Coos River	5	1	3	0	9
R7 Salmonberry River	1	2	1	1	9
R86 South Umpqua River (Source to Tiller)	6	2	1	1	9
L103 Crescent Lake	9	2	1	0	8
L110 Lake of the Woods	9	1	1	3	8
L5 Cape Meares Lake	1	2	0	2	8
R21 Alsea River (RM 12 near Tidewater to USFS boundary)	1	1	2	1	8
R52 North Fork Clackamas River	2	0	2	4	8
R73 South Fork Alsea River	4	1	2	1	8
R75 Siuslaw River (Confluence of Lake Cr, near Sweethome, to Wildcat Cr, near Austa)	4	1	1	3	8
R87 South Umpqua River (Tiller to confluence with North Umpqua River, near Riversdale)	6	2	0	2	8
L1 Coffenburry Lake	1	1	2	0	7
L104 Miller Lake	9	1	2	0	7
L11 Woahink Lake	5	1	2	0	7
L50 Fern Ridge Reservoir	4	1	2	0	7
L6 Town Lake	1	1	2	0	7
L71 Applegate Lake	6	0	3	1	7
R1 Youngs River	1	2	0	1	7
R111 Minam River	10	1	2	0	7
R115 Imnaha River	10	2	0	1	7
R48 Clatskanie River	2	0	2	3	7
L100 East Lake	8	2	0	0	6
L150 Malheur Reservoir	11	1	1	1	6
L28 Sturgeon Lake	2	0	3	0	6
L92 Lava Lake	8	2	0	0	6
R112 Lostine River	10	2	0	0	6

R25 Siuslaw River (mouth to confluence with Lake Creek, near Swisshome)	4,5	2	0	0	6
R45 Chetco River (from Loeb State Park to the mouth at Pacific Ocean)	5	2	0	0	6
R46 Chetco River (from Boulder Creek to Loeb State Park)	5	1	1	1	6
R76 Siuslaw River (Wildcat Cr, near Austa, to Clay Creek Campground)	4	0	2	2	6
L102 Davis Lake	9	0	1	3	5
L107 Fourmile Lake	9	0	2	1	5
L143 Anthony Lake	10	1	1	0	5
L16 Eel Lake	5	1	1	0	5
L44 Big Lake	3	0	1	3	5
L67 Diamond Lake	6	1	0	2	5
L77 Lake Wallula	7	1	0	2	5
R101 Warm Springs River	7	0	2	1	5
R104 Middle Fork John Day River	10	0	1	3	5
R107 Grande Ronde River (Confluence with East Fork Grande Ronde to Red Bridge State Park)	10	1	0	2	5
R136 Pistol River	5	1	1	0	5
R30 Millicoma River	5	1	1	0	5
R59 Salmon River	1,2	1	1	0	5
L101 Odell Lake	9	0	1	2	4
L138 Fish Lake	10	0	2	0	4
L151 Bully Creek Reservoir	11	0	2	0	4
L32 Trillium Lake	2	1	0	1	4
L36 Silverton Reservoir	3	1	0	1	4
L53 Lookout Point Reservoir	4	1	0	1	4
L54 Dorena Reservoir	4	1	0	1	4
L55 Cottage Grove Lake	4	1	0	1	4
L68 Lost Creek Lake	6	1	0	1	4
L78 Willow Creek Reservoir	7	0	1	2	4
L83 Lake Billy Chinook	8	0	2	0	4
R105 South Fork John Day River	10	1	0	1	4
R135 South Fork Owyhee River	11	0	2	0	4
R26 North Fork Siuslaw River	5	0	1	2	4
R44 Illinois River (Illinois River Forks State Park to Deer Creek)	6	0	1	2	4
R6 North Fork Nehalem River	1	0	2	0	4
L126 Vee Lake	9	1	0	0	3
L130 Mud Lake	9	1	0	0	3
L14 Tahkenich Lake	5	0	0	3	3
L156 Warm Springs Reservoir	11	1	0	0	3
L24 Garrison Lake	5	1	0	0	3
L26 Vernonia Lake	2	0	1	1	3
L39 Elk Lake	3	1	0	0	3
L4 Cullaby Lake	1	1	0	0	3
L52 Dexter Reservoir	4	0	1	1	3
L57 Cougar Reservoir	4	0	1	1	3
L79 McKay Reservoir	7	1	0	0	3
L81 Olallie Lake	8	0	1	1	3
L90 Elk Lake	8	0	0	3	3
L93 Little Lava Lake	8	0	1	1	3
L95 Little Cultus Lake	8	1	0	0	3
L96 Crane Prairie Reservoir	8	0	1	1	3
R113 Wallowa River (Wallowa Lake to Minam)	10	0	1	1	3
R128 Columbia River (Saint Helens to Troutdale)	2	1	0	0	3

R134 North Fork Owyhee River	11	1	0	0	3
R23 Five Rivers	1	0	1	1	3
R36 South Fork Coquille River	5	0	1	1	3
R4 Necanicum River	1	0	1	1	3
R47 Winchuck River	5	1	0	0	3
R83 Calapooya Creek	6	1	0	0	3
L15 Elbow Lake	5	0	1	0	2
L17 N. Tenmile Lake	5	0	1	0	2
L3 Sunset Lake	1	0	1	0	2
L45 Carmen Reservoir	3	0	1	0	2
L47 Trail Bridge Reservoir	3	0	1	0	2
L60 Summit Lake	4	0	1	0	2
L66 Lemolo Lake	6	0	1	0	2
L73 Fish Lake	6	0	1	0	2
L76 Hyatt Reservoir	6	0	1	0	2
L94 Cultus Lake	8	0	1	0	2
L96 North Twin Lake	8	0	1	0	2
L98 Wickiup Reservoir	8	0	0	2	2
R116 Snake River (Baker Co Line, near Copper Cr, to WA state line)	10	0	0	2	2
R129 Columbia River (Troutdale to Bonneville)	2	0	1	0	2
R132 Columbia River (John Day Dam to Heppner Junction, near Hwy 74)	7	0	1	0	2
R78 Siuslaw River (Siuslaw Falls to junction of North and South Fork)	4	0	0	2	2
L111 Lake Ewauna	9	0	0	1	1
L116 Campbell Lake	9	0	0	1	1
L19 Tenmile Lake	5	0	0	1	1
L30 Green Peter Reservoir	2	0	0	1	1
L38 Freeway Lakes	3	0	0	1	1
L41 Foster Reservoir	3	0	0	1	1
L42 Lost Lake	3	0	0	1	1
L46 Smith Reservoir	3	0	0	1	1
L48 Triangle Lake	4	0	0	1	1
L51 Fall Creek Lake	4	0	0	1	1
L56 Hills Creek Reservoir	4	0	0	1	1
L61 Cooper Creek Reservoir	6	0	0	1	1
L75 Howard Prairie Lake	6	0	0	1	1
L8 Sutton Lake	5	0	0	1	1
L80 Penland Lake	7	0	0	1	1
R106 Grande Ronde River (Source to confluence with East Fork Grande Ronde)	10	0	0	1	1
R119 Snake River (Owyhee to Farewell Bend State Recreation Area)	11	0	0	1	1
R133 Columbia River (Heppner Junction, near Hwy 74, to state line above Hat Rock State Park)	7	0	0	1	1
R19 Elk Creek	1	0	0	1	1
R33 North Fork Coquille River	5	0	0	1	1
R38 Elk River	5	0	0	1	1
R53 South Fork Clackamas River	2	0	0	1	1
R71 North Fork Alsea River (Outlet of Klickitat Lake to confluence with Bailey Creek)	3	0	0	1	1
R8 Kilchis River	1	0	0	1	1
R85 Little River	6	0	0	1	1

Table A1.4.2. Recommended water trail additions by mentions, mail probability sample, unweighted		
	Regions	**Mentions**
John Day River	7, 10	11
McKenzie River	4	11
Waldo Lake	4	11
Nehalem River	1, 2	10
North Umpqua River	6	7
Clackamas River	2, 3	6
Deschutes River	7, 8	6
Hosmer Lake	8	6
Siletz River	1, 3	6
Siuslaw River	4, 5	6
Columbia River	1, 2, 7	5
Crooked River	8	5
Owyhee River	11	5
Timothy Lake	2	5
Tualatin River	2	5
Willamette River	2, 3, 4	5
Umpqua River	5,6	4
Wilson River	1	4
Yaquina River	1	4
Chetco River	5	3
Coos Bay	5	3
Fern Ridge Res	4	3
Illinois River	6	3
Lake Billy Chinook	8	3
Metolius River	8	3
Rogue	5	3
South Santiam	3	3
Sparks Lake	8	3
Suttle Lake	8	3
Town Lake	1	3
Wallowa Lake	10	3
Wallowa River	10	3
Yaquina Bay	1	3
Alsea River	1	2
Clear Lake	3	2
Crane Prairie Res	8	2
Detroit Lake	3	2
Devils Lake	1	2
Elk River	3	2
Foster Res	3	2
Grand Ronde River	10	2
Little Lava Lake	8	2
Little Nestucca	1	2
Minam River	10	2
N. Santiam	3	2
Ochoco Res	8	2
Prineville Res	8	2
Salmon River	1,2	2
Sandy	2	2
Siletz	1	2
Siltcoos Lake	5	2
Siltcoos River	5	2

Snake River	10,11	2
South Umpqua	6	2
Summit Lake	4	2
Tahkenitch Lake	5	2
Umatilla River	7	2
Upper Rogue River	6	2
Upper Willamette	3	2
North/Middle Fork Willamette	3	2
Anna River	9	1
Applegate	6	1
Big Lave Lake	8	1
Billy Chinook Res	8	1
Blue River Res	4	1
Calipooia River Trail	3	1
Chewacan River	9	1
Coquille	5	1
Cougar Reservoir	4	1
Davis Lake	9	1
Dexter Res	4	1
Eel Lake	5	1
Elbow Lake	5	1
Elk Lake (Detroit area)	3	1
Empire Lakes	5	1
Frog Lake (near Mt. Hood)	2	1
Gold Lake	4	1
Hagg Lake	2	1
Hebo Lake	1	1
Hills Creek	4	1
Hood River	2	1
Johnson Mill Pond	5	1
Jubilee Lake	10	1
Kilchis	1	1
Klamath Lake	9	1
Lake of the Woods	9	1
Little Cultlus? Lake	8	1
Little Deschutes River	8	1
Little Lake Tahoe	1	1
Long Tom	3,4	1
Lost Lake	2	1
Lostine River	10	1
Lower Clackamas?	2	1
Lower McKenzie River	4	1
Maquina Bay	1	1
Marys	3	1
Maybe Mary's River Trail	3	1
Mercer Lake	5	1
Middle Creek	5	1
Middle mainstream Umpqua	6	1
Molalla	2	1
Multoma Channel	2	1
Nestuea ? Bay	1	1
New River	5	1
Newport Res	1	1
Nort Fork John Day	10	1
Notarts Bay?	1	1

Odell Lake	9	1
Paulina Lake	8	1
Quartzville	3	1
Row River-Cottage Grove, OR	4	1
Sandlake Est.	1	1
Sandy River	2	1
Santiam South	3	1
Santium North	3	1
Saunder Lake	5	1
Scappoose Bay Estuary	2	1
Scout Lake	8	1
Silcoos Lake	5	1
Siletz Bay	1	1
Silverton Res	3	1
Sixes River	5	1
Smith Res	4	1
Smith River north of Reedsport	5	1
South Lake (coast range Hebo area)	1	1
South Slough	5	1
Sprague River	9	1
Tipanagas Las	4	1
Toledo Res	1	1
Umpqua Bay	5	1
Upper Klamath Lake	9	1
Upper South Fork Coquille	5	1
Wahtum Lake	2	1
Waldport Estuary	1	1
Walker Creek	6	1
Wenoha River	10	1
West Fork Coos River	5	1
Whiskey Creek	6	1

Appendix 2. Results by region, probability sample

This appendix includes tables of results by region, sorted by values in the Total (statewide) column. Read down the column for each region. Table numbers match figure numbers in the body of the text. Because not all results shown in the figures are presented by region, the table numbering pattern is not continuous.

As a reminder, some regions have more observations than others, with larger numbers of observations leading to tighter confidence intervals (greater confidence that these sample values match the values for all boaters in the region). Regions 2, 3, and 4 have the largest number of observations, while regions 1 and 9 & 11 have the smallest number of observations.

Table 2.1b. Type of boat used most often, probability sample, percent, columns sum to 100

	1	2	3	4	5	6	8	7 & 10	9 & 11	Total
Other kayak	51	31	24	8	22	18	38	22	34	25
Canoe	28	17	24	19	12	16	18	10	39	19
WW raft	8	19	9	23	19	25	16	34	5	18
Drift / row	8	12	17	32	15	14	18	17	21	17
WW kayak	6	12	21	12	23	21	3	4	0	14
Other raft	0	4	4	3	4	4	4	12	2	4
SUP	0	5	1	3	4	3	4	2	0	3

Table 2.2b. Percent of days by type of water body, probability sample, columns sum to 100

	1	2	3	4	5	6	8	7 & 10	9 & 11	Total
Flat parts, rivers	33	35	42	30	30	26	32	25	25	33
Lakes, reservoirs	20	31	26	30	21	30	44	36	72	32
WW parts, rivers	16	27	25	37	29	41	23	39	3	29
Bays, inlets, estuaries	28	6	6	1	11	2	1	0	0	5
Pacific Ocean	3	2	1	3	8	1	0	0	0	2

Table 3.2. Scenic Waterway qualities, probability sample, percent rating Somewhat or Very Important										
	1	**2**	**3**	**4**	**5**	**6**	**8**	**7 & 10**	**9 & 11**	**Total**
Environment	93	92	82	92	56	80	88	80	89	86
Fish and wildlife	68	89	88	96	62	73	88	86	89	86
Scenery	92	87	74	88	57	77	86	71	78	81
Solitude	69	67	74	70	43	55	74	65	72	67
Recreation	64	72	57	67	66	60	55	73	66	64
Vehicle access	55	47	42	36	28	44	31	25	41	41
Flat water	45	40	41	41	26	33	35	24	71	39
Whitewater	27	24	35	53	17	35	31	25	37	32
Trail only access	44	21	27	24	13	29	22	20	44	25

Table 4.1b. Information needs for water trail app by region, probability sample, percent rating Somewhat or Very Important										
	1	**2**	**3**	**4**	**5**	**6**	**8**	**7 & 10**	**9 & 11**	**Total**
Where / how access	89	86	85	70	80	75	58	83	79	80
Safety info	71	75	77	80	73	76	65	71	62	74
Map of WT sites	90	77	70	54	65	70	59	76	62	70
Trailhead info	76	72	62	54	46	62	56	80	73	65
Regulatory info	44	67	53	69	66	60	51	65	51	61
Amenities	67	71	55	52	80	65	43	60	71	61
Driving info	76	71	51	47	72	69	50	40	77	60
Other	74	70	49	61	0	48	23	90	20	56
GPS coord.	57	46	48	36	33	39	46	45	41	44
Wildlife in area	52	43	38	44	42	55	37	35	34	42
Itineraries	47	50	29	26	26	35	23	33	54	36
Nearby attractions	13	33	20	26	33	43	26	26	51	29
Gear checklist	18	20	17	20	11	24	11	26	29	19

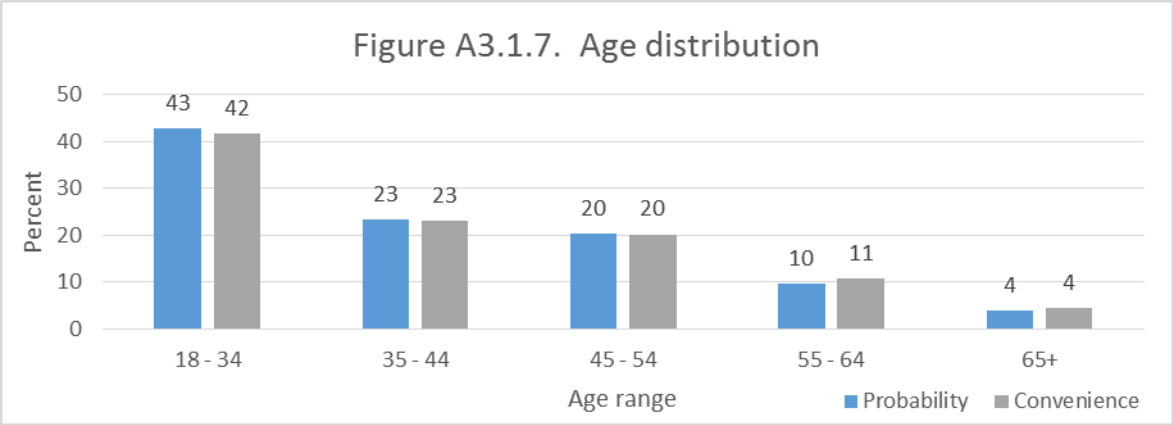
Table 5.3. Activity importance by region, probability sample, percent rating Somewhat or Very Important										
	1	**2**	**3**	**4**	**5**	**6**	**8**	**7 & 10**	**9 & 11**	**Total**
Fishing	35	52	58	74	72	55	61	66	61	59
Viewing nature	82	52	53	50	51	54	63	60	44	55
Camping, any kind	31	51	52	50	60	59	55	65	54	53
Swimming	22	42	43	43	54	70	45	56	48	47
Camping, "boat in"	47	43	37	46	22	34	43	41	27	40
Hiking	44	38	38	34	40	36	53	59	36	40
Whitewater, remote	32	34	35	41	47	51	28	53	20	38
Picnicking	33	32	30	35	61	40	42	42	54	37
WW, close-to-town	12	12	13	21	5	16	14	24	1	14

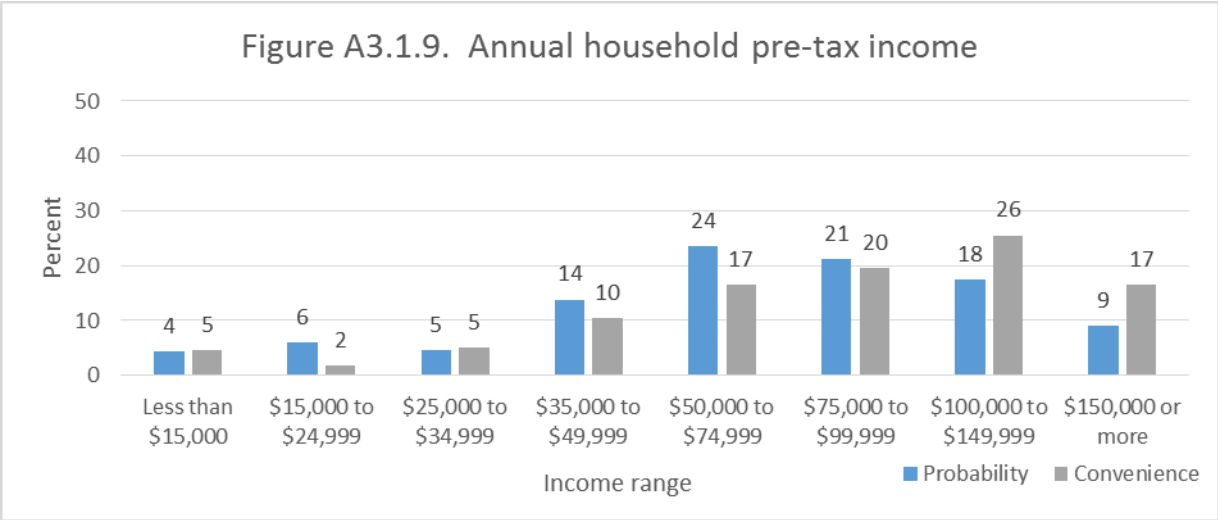
Table 5.4. Facility / service importance by region, probability sample, percent rating Somewhat or Very Important										
	1	**2**	**3**	**4**	**5**	**6**	**8**	**7 & 10**	**9 & 11**	**Total**
Public access	95	90	86	83	85	92	82	84	78	87
Online information	68	83	70	73	78	76	66	59	62	74
Water level reports	48	61	66	70	70	69	55	61	53	63
Non-motorized areas	60	64	68	58	39	58	66	68	69	63
Info, where to take out	72	73	65	61	67	60	55	32	23	62
Parking, no trailers	84	72	60	46	52	69	55	56	45	62
Map of routes	50	68	55	53	52	51	56	40	32	56
Restrooms	63	54	45	39	61	53	38	58	40	49
Campsites	47	49	42	41	66	51	47	60	27	47
Parking, trailers	39	41	39	52	50	59	52	56	24	46
Other	19	39	51	57	2	54	49	26	0	46
Waste disposal options	42	49	38	49	49	45	38	28	47	43
Beach areas	53	37	35	32	38	49	39	40	12	38
Drinking water	38	34	42	29	43	42	27	44	22	36
Docks for access	64	36	29	23	24	53	20	27	18	33
Education / safety signs	42	23	27	26	31	39	25	14	23	27
Shuttle service	11	29	25	32	7	21	28	40	16	26
Picnic / barbecue areas	43	20	11	20	37	38	13	31	15	22
Signed water trails	32	23	24	18	12	28	22	5	7	21
Docks for tie-ups	30	17	18	13	25	27	6	21	7	18
Showers	11	9	7	4	19	18	2	3	6	8
Equipment storage	7	4	2	5	3	6	3	0	1	4

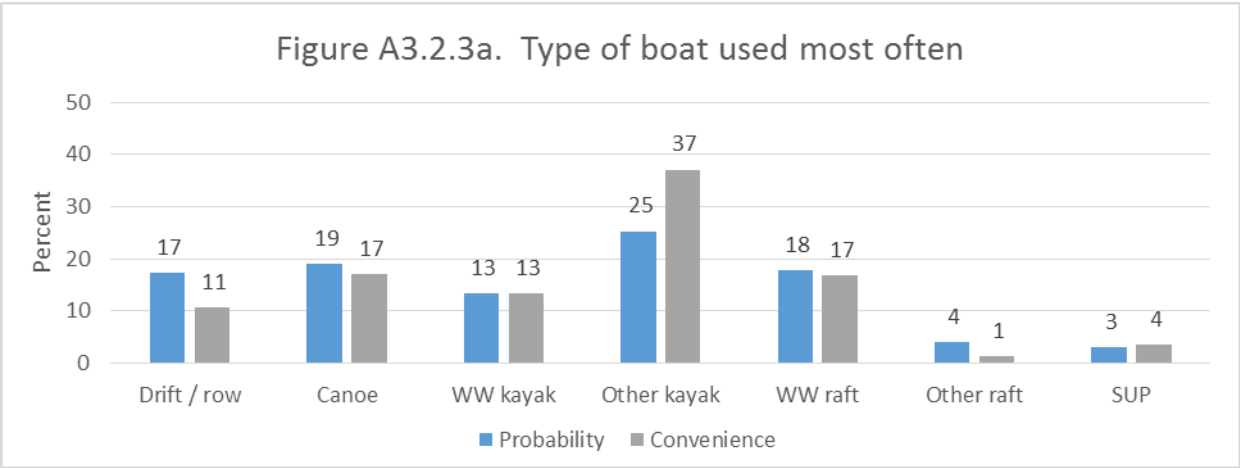
Table 5.5. Management action support by region, probability sample, mean										
	1	**2**	**3**	**4**	**5**	**6**	**8**	**7 & 10**	**9 & 11**	**Total**
Restrict devel. along shore	3.8	4.0	3.9	4.1	3.6	3.7	4.2	3.8	3.5	3.9
Require pack-in, pack-out	3.7	3.7	3.8	3.8	3.6	3.7	3.8	3.8	4.1	3.7
More public access points	4.1	3.8	3.8	3.6	3.7	4.0	3.3	3.7	3.9	3.7
More water-accessible campsites	4.0	3.7	3.6	3.6	3.8	3.8	3.6	3.6	3.8	3.7
Other	4.7	3.6	3.6	3.5	2.1	3.6	3.5	4.0	2.4	3.5
Better emergency response	3.4	3.3	3.3	3.4	3.4	3.4	3.2	3.2	3.5	3.3
Distance markers along water bodies	3.3	3.0	3.1	3.0	3.1	3.1	2.8	2.8	3.1	3.0
More enforcement / patrols	2.9	3.1	2.9	3.0	2.7	2.7	2.6	3.1	2.6	2.9
Limit the number of people	2.4	2.7	2.4	2.5	2.3	2.7	2.6	2.7	2.5	2.6
Prohibit wood fires at campsites	2.1	2.2	2.0	1.9	1.5	2.0	2.4	2.1	2.1	2.1

Table 5.6. Issue importance by region, probability sample, percent rating Somewhat or Very Important										
	1	**2**	**3**	**4**	**5**	**6**	**8**	**7 & 10**	**9 & 11**	**Total**
Car safety	64	60	55	79	57	71	49	44	38	60
Increased access	67	65	58	49	66	66	52	52	45	59
Trash cans	54	44	42	56	43	50	43	34	68	46
Water conditions	37	37	45	51	46	45	37	37	37	42
Alcohol / drug use	45	35	37	38	24	45	25	23	36	35
Overcrowding	35	37	27	34	32	34	42	32	49	34
Personal safety	32	31	30	46	37	37	23	19	41	32
Conflict, other boaters	33	33	29	31	19	29	31	18	37	29
Water flows	29	23	31	27	32	40	29	22	26	28
More restrooms	35	23	29	27	38	35	24	21	31	28
More parking	28	28	26	26	39	34	27	9	17	27
Conflict, non-boaters	20	22	22	23	11	28	15	20	27	22
Picnic / BBQ	23	9	15	17	35	27	9	26	16	16
Shuttle service	6	15	19	15	3	24	11	9	14	15

Appendix 3. Convenience sample results







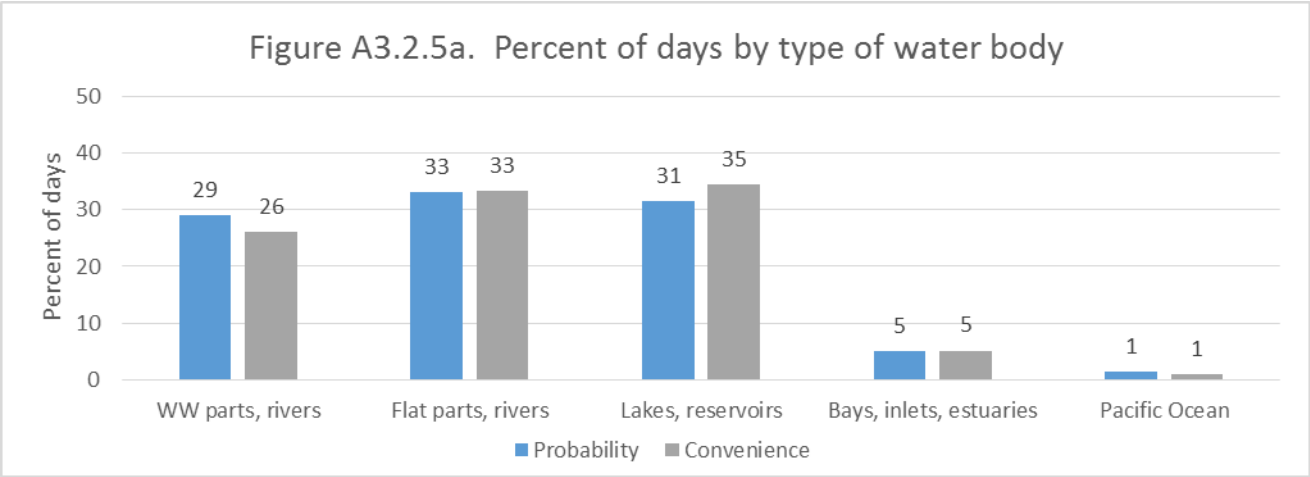


Figure A3.2.5a. Percent of days by type of water body
Percent of days
50
40
30
20
10
0
29
26
33
33
31
35
5
5
1
1
WW parts, rivers
Flat parts, rivers
Lakes, reservoirs
Bays, inlets, estuaries
Pacific Ocean
Probability
Convenience

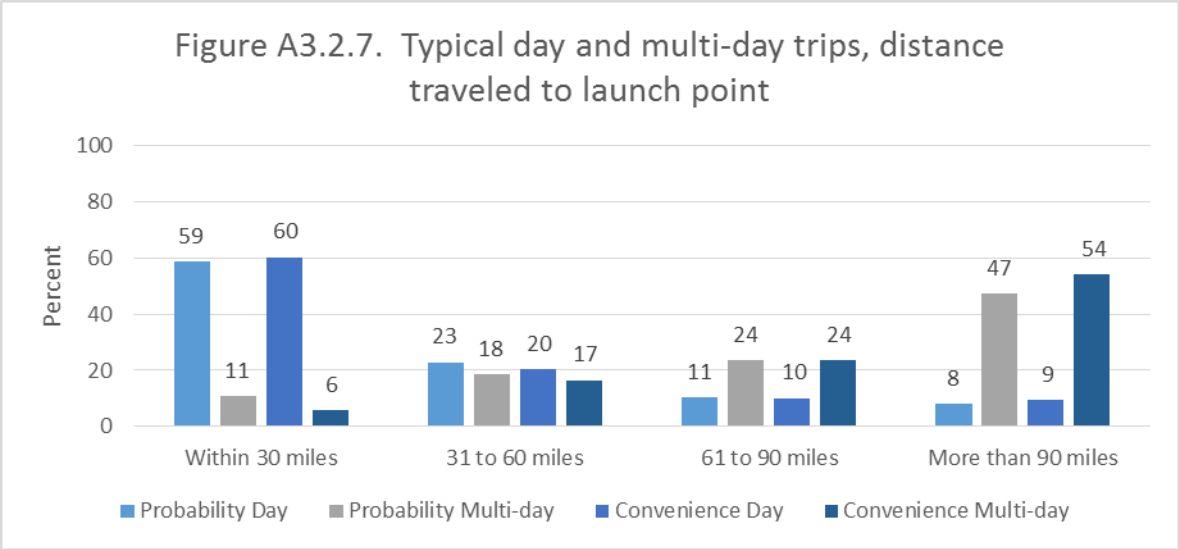


Figure A3.2.7. Typical day and multi-day trips, distance traveled to launch point
Percent
100
80
60
40
20
0
59
11
60
6
23
18
20
17
11
24
10
24
8
47
9
54
Within 30 miles
31 to 60 miles
61 to 90 miles
More than 90 miles
Probability Day
Probability Multi-day
Convenience Day
Convenience Multi-day

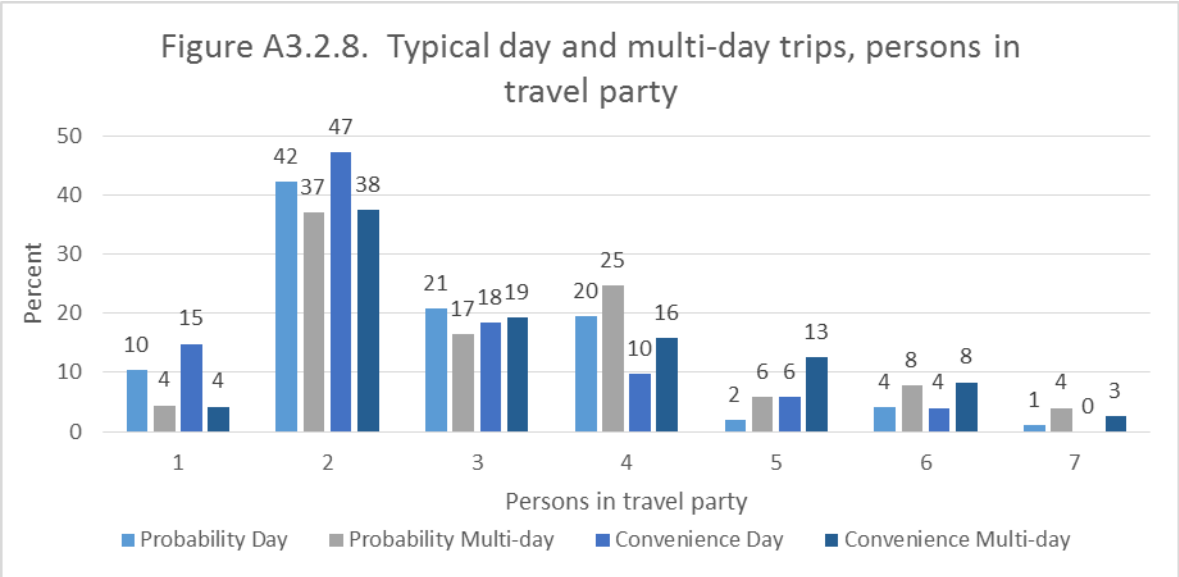


Figure A3.2.8. Typical day and multi-day trips, persons in travel party
Percent
50
40
30
20
10
0
10
4
15
4
42
37
47
38
21
17
18
19
20
25
10
16
2
6
6
13
4
8
4
8
1
4
0
3
1
2
3
4
5
6
7
Persons in travel party
Probability Day
Probability Multi-day
Convenience Day
Convenience Multi-day

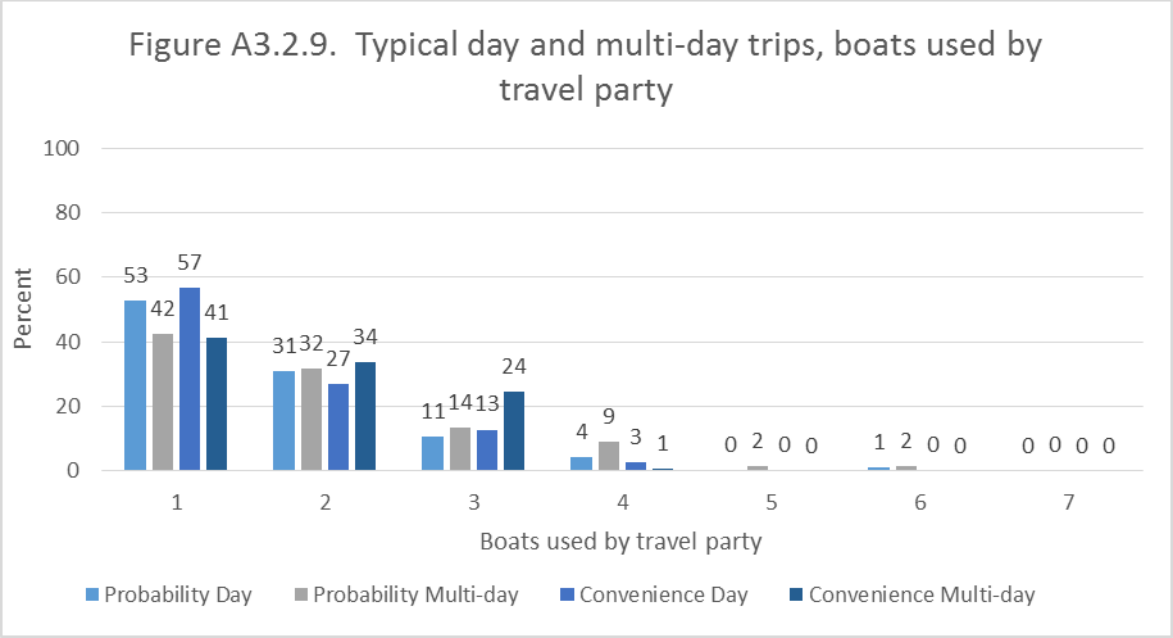


Figure A3.2.9. Typical day and multi-day trips, boats used by travel party
Percent
100
80
60
40
20
0
53 42 57 41
31 32 27 34
11 14 13 24
4 9 3 1
0 2 0 0
1 2 0 0
0 0 0 0
1
2
3
4
5
6
7
Boats used by travel party
Probability Day
Probability Multi-day
Convenience Day
Convenience Multi-day

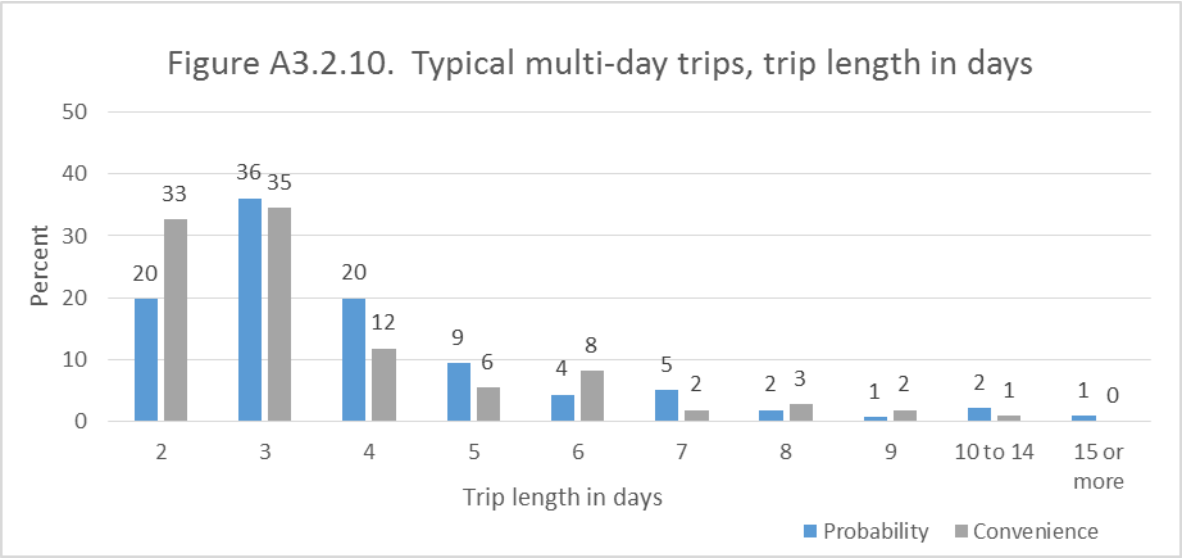


Figure A3.2.10. Typical multi-day trips, trip length in days
Percent
50
40
30
20
10
0
20 33
36 35
20 12
9 6
4 8
5 2
2 3
1 2
2 1
1 0
2
3
4
5
6
7
8
9
10 to 14
15 or more
Trip length in days
Probability
Convenience

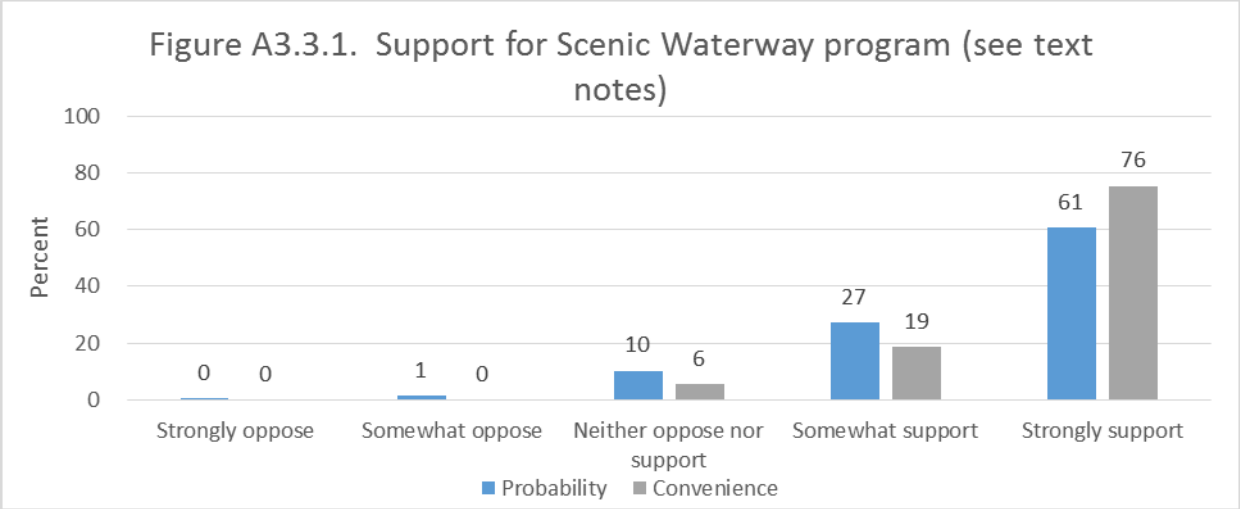


Figure A3.3.1. Support for Scenic Waterway program (see text notes)
Percent
100
80
60
40
20
0
0
0
1
0
10
6
27
19
61
76
Strongly oppose
Somewhat oppose
Neither oppose nor support
Somewhat support
Strongly support
Probability
Convenience

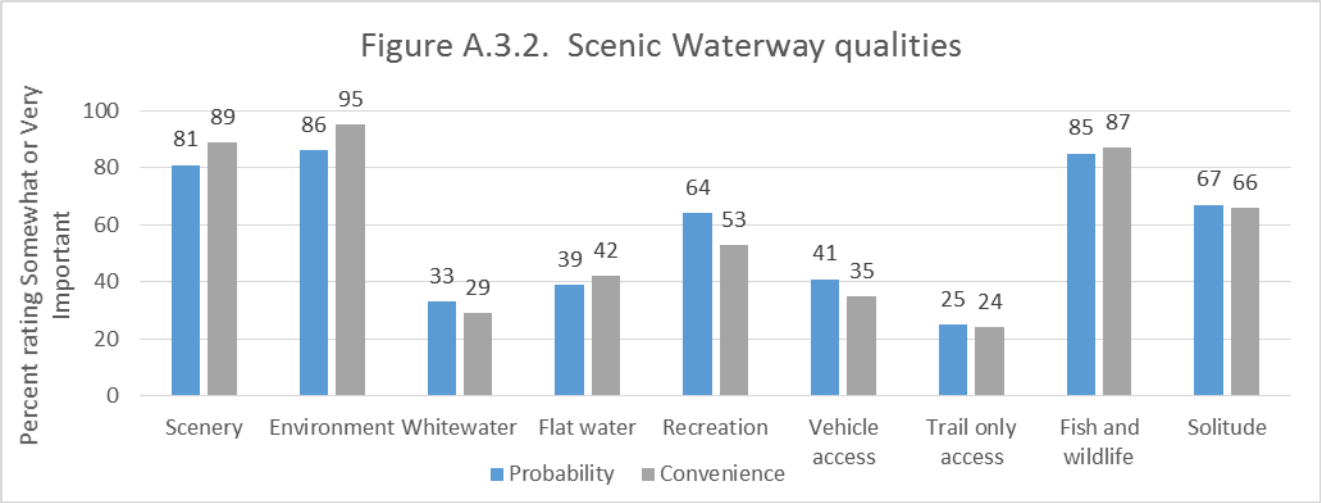


Figure A.3.2. Scenic Waterway qualities
Percent rating Somewhat or Very Important
100
80
60
40
20
0
81
89
86
95
33
29
39
42
64
53
41
35
25
24
85
87
67
66
Scenery
Environment
Whitewater
Flat water
Recreation
Vehicle access
Trail only access
Fish and wildlife
Solitude
Probability
Convenience

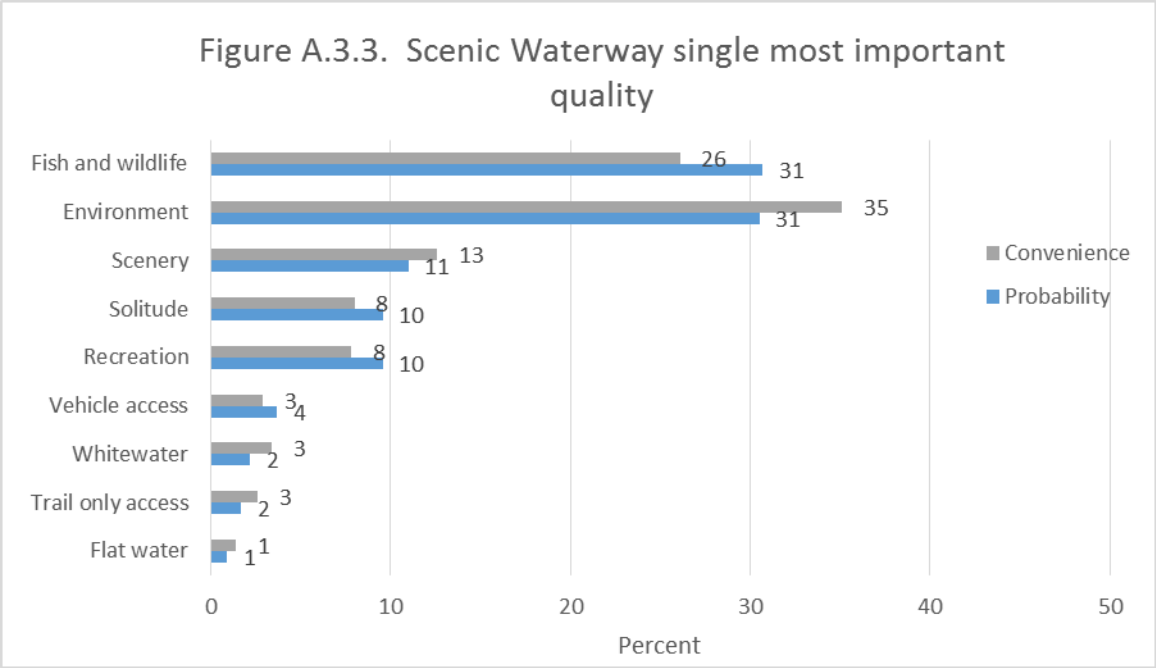


Figure A.3.3. Scenic Waterway single most important quality
Fish and wildlife
26
31
Environment
35
31
Scenery
13
11
Solitude
8
10
Recreation
8
10
Vehicle access
3
4
Whitewater
3
2
Trail only access
3
2
Flat water
1
1
0
10
20
30
40
50
Percent
Convenience
Probability

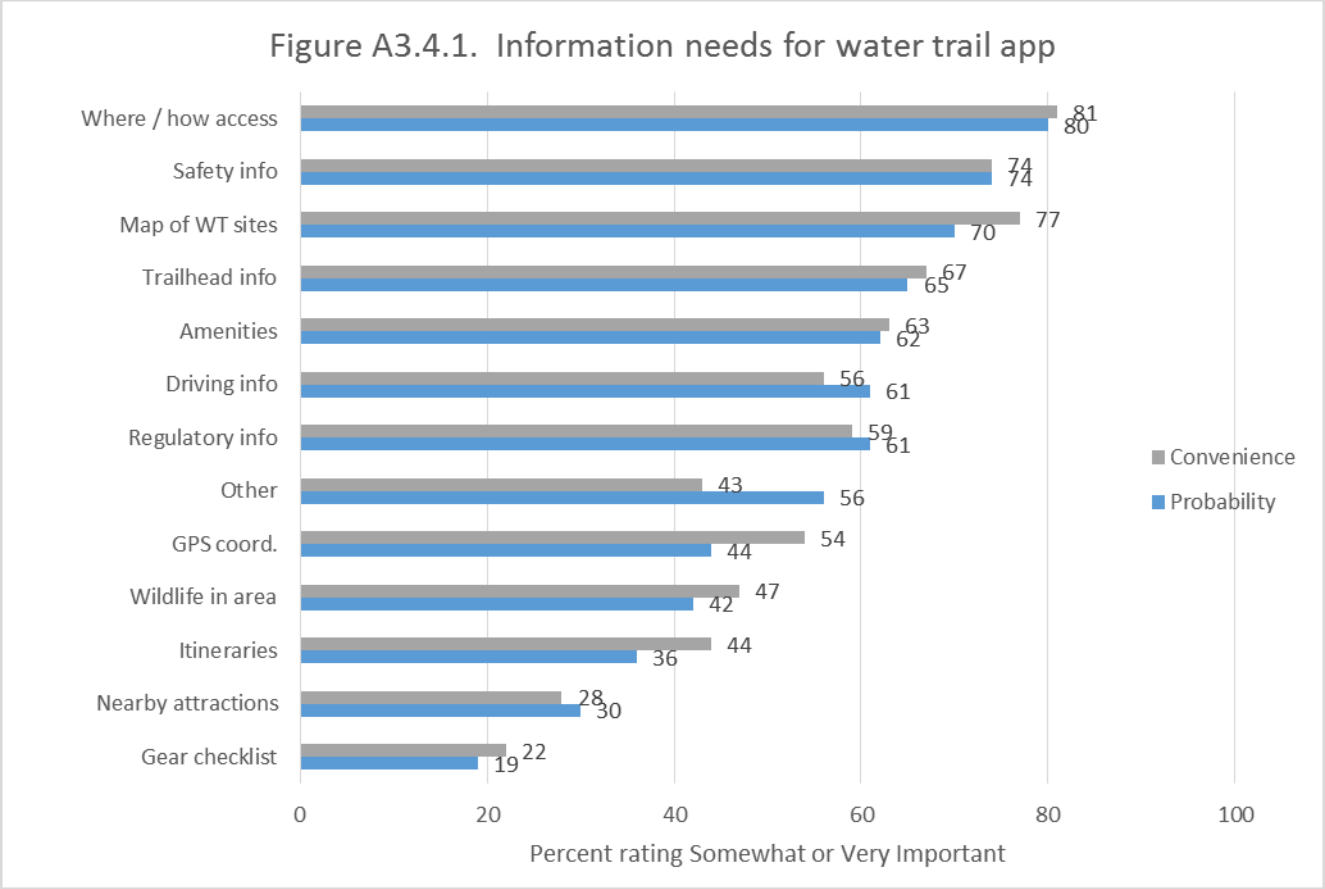


Figure A3.4.1. Information needs for water trail app
Where / how access
Safety info
Map of WT sites
Trailhead info
Amenities
Driving info
Regulatory info
Other
GPS coord.
Wildlife in area
Itineraries
Nearby attractions
Gear checklist
81
80
74
74
77
70
67
65
63
62
56
61
59
61
43
56
54
44
47
42
44
36
28
30
22
19
0
20
40
60
80
100
Percent rating Somewhat or Very Important
Convenience
Probability

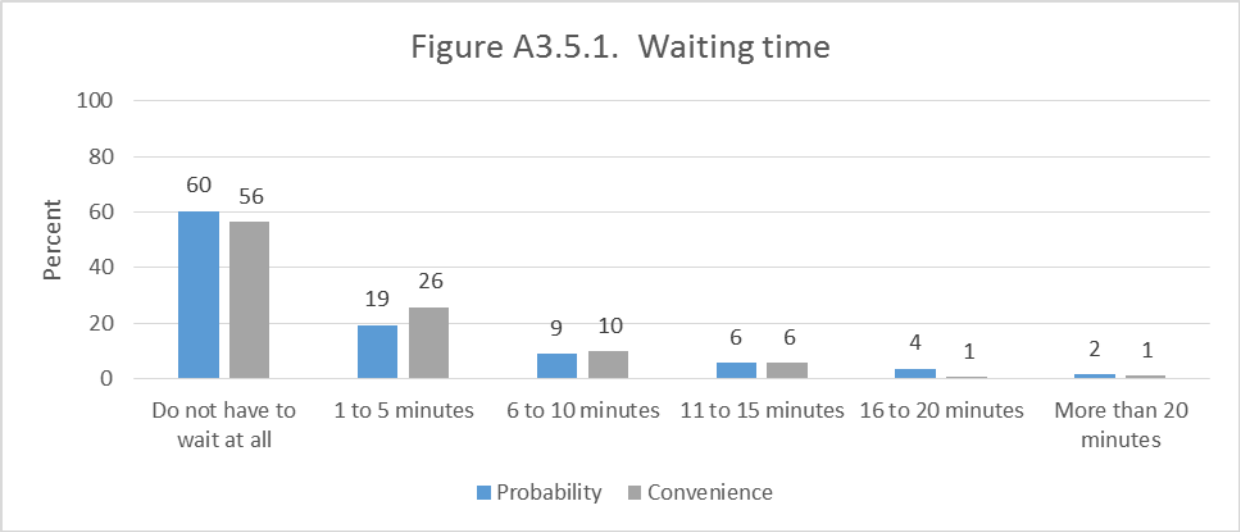


Figure A3.5.1. Waiting time
Percent
100
80
60
40
20
0
60
56
19
26
9
10
6
6
4
1
2
1
Do not have to wait at all
1 to 5 minutes
6 to 10 minutes
11 to 15 minutes
16 to 20 minutes
More than 20 minutes
Probability
Convenience

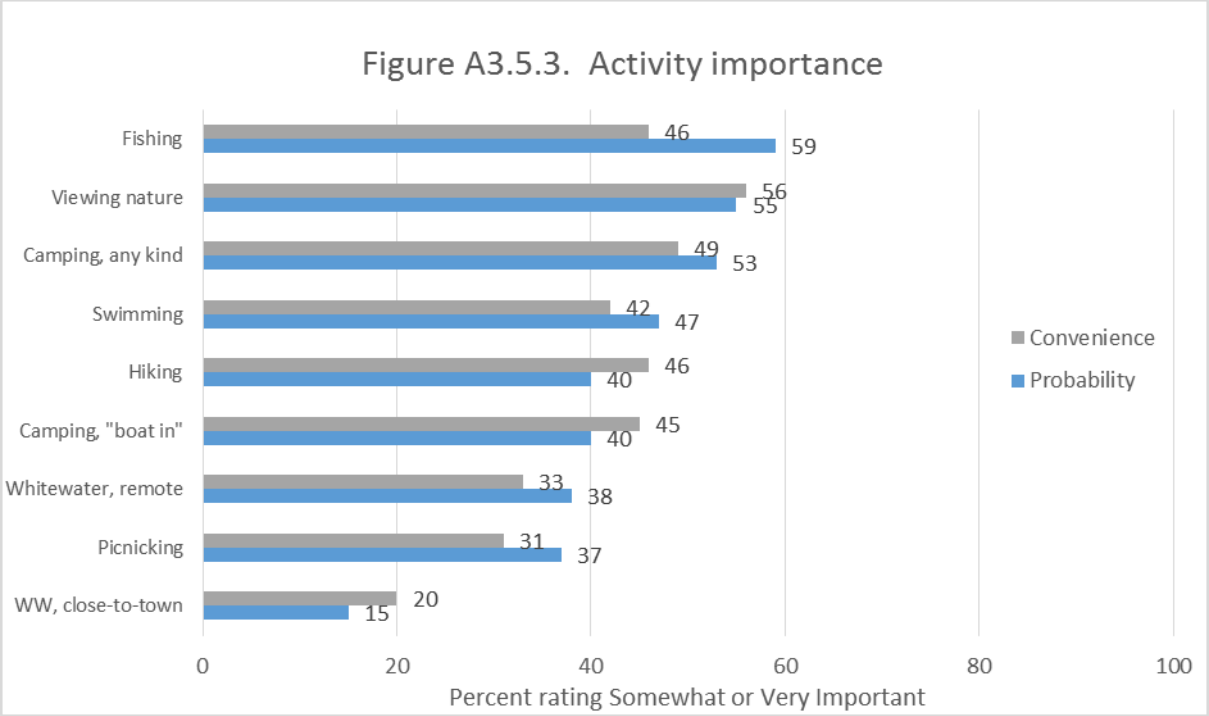


Figure A3.5.3. Activity importance
Fishing
Viewing nature
Camping, any kind
Swimming
Hiking
Camping, "boat in"
Whitewater, remote
Picnicking
WW, close-to-town
46
59
56
55
49
53
42
47
46
40
45
40
33
38
31
37
20
15
0
20
40
60
80
100
Percent rating Somewhat or Very Important
Convenience
Probability

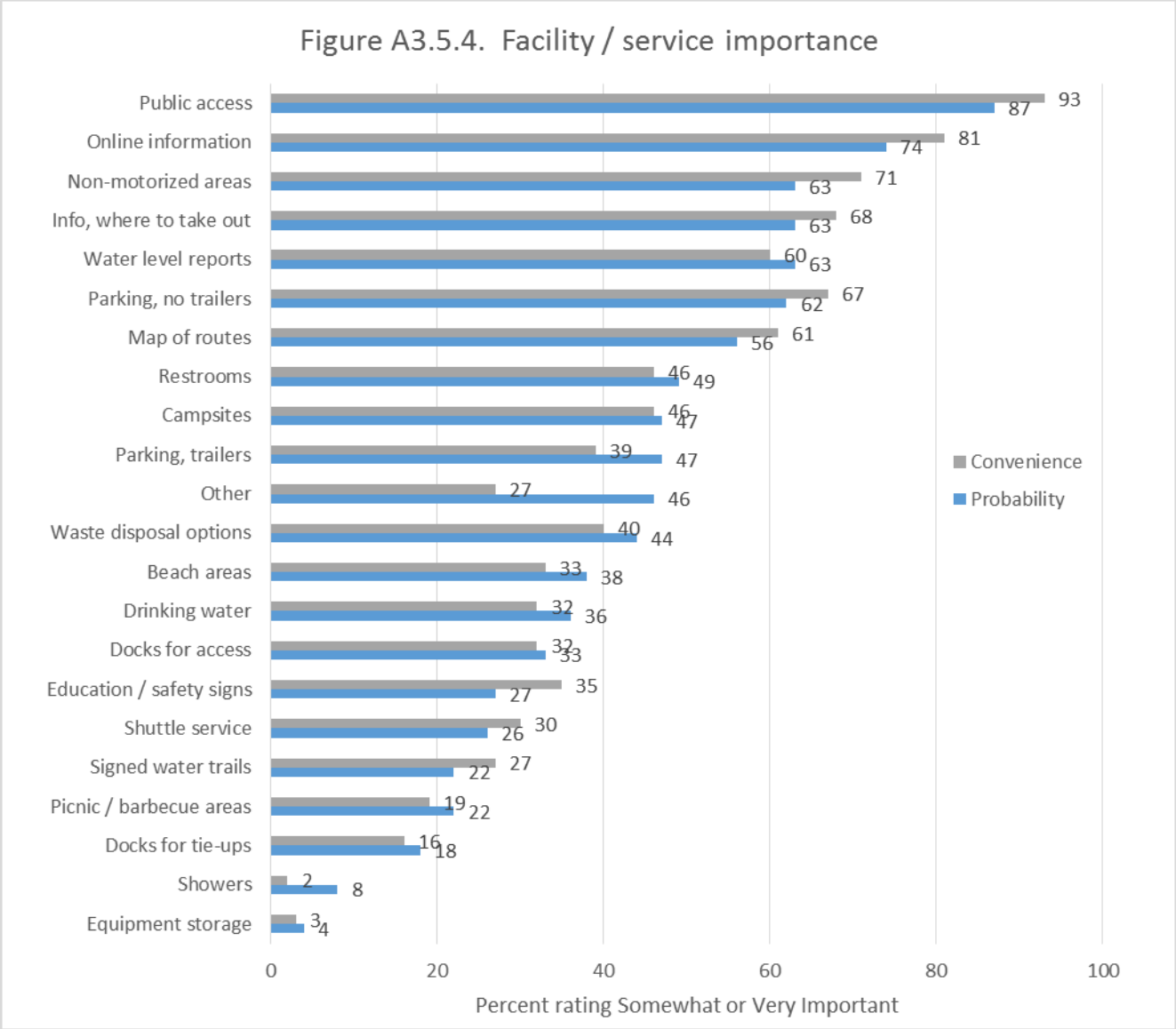


Figure A3.5.4. Facility / service importance
Public access
Online information
Non-motorized areas
Info, where to take out
Water level reports
Parking, no trailers
Map of routes
Restrooms
Campsites
Parking, trailers
Other
Waste disposal options
Beach areas
Drinking water
Docks for access
Education / safety signs
Shuttle service
Signed water trails
Picnic / barbecue areas
Docks for tie-ups
Showers
Equipment storage
93
87
81
74
71
63
68
63
60
63
67
62
61
56
46
49
46
47
39
47
27
46
40
44
33
38
32
36
32
33
35
27
30
26
27
22
19
22
16
18
2
8
3
4
Convenience
Probability
0
20
40
60
80
100
Percent rating Somewhat or Very Important

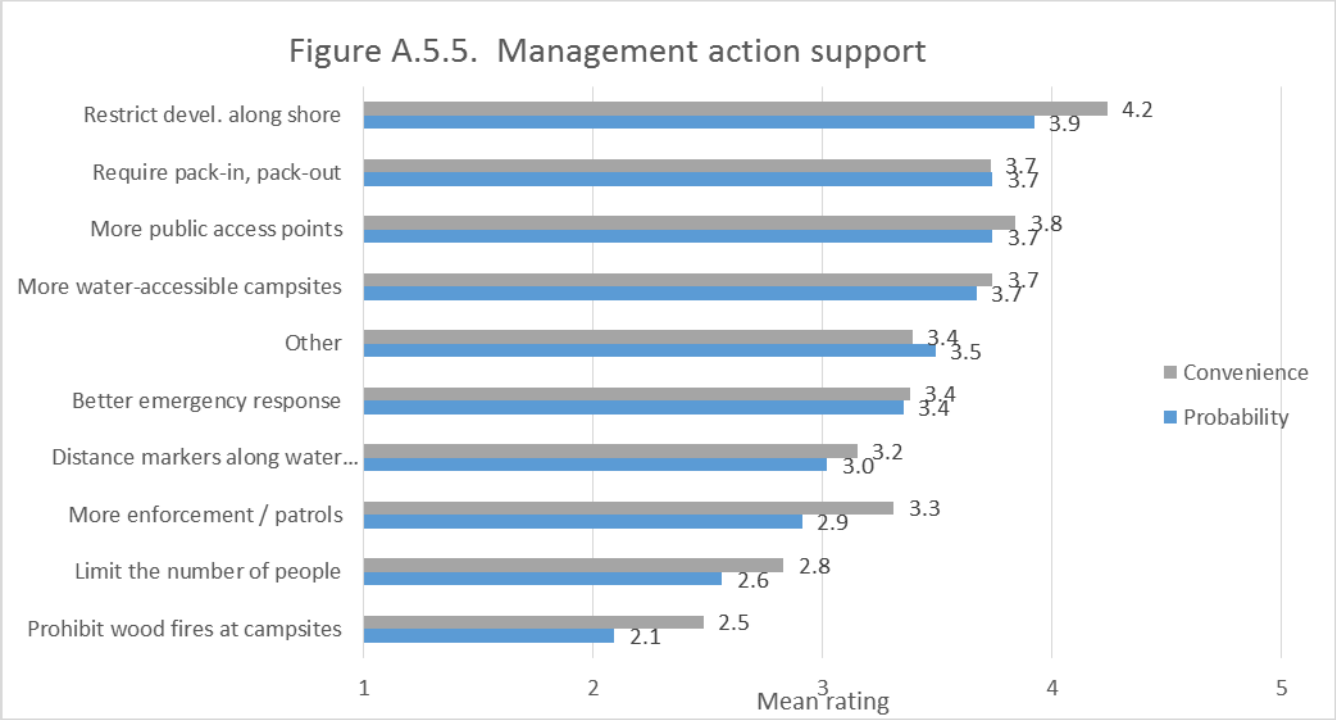


Figure A.5.5. Management action support
Restrict devel. along shore
Require pack-in, pack-out
More public access points
More water-accessible campsites
Other
Better emergency response
Distance markers along water...
More enforcement / patrols
Limit the number of people
Prohibit wood fires at campsites
4.2
3.9
3.7
3.7
3.8
3.7
3.7
3.7
3.4
3.5
3.4
3.4
3.2
3.0
3.3
2.9
2.8
2.6
2.5
2.1
Convenience
Probability
1
2
3
4
5
Mean rating

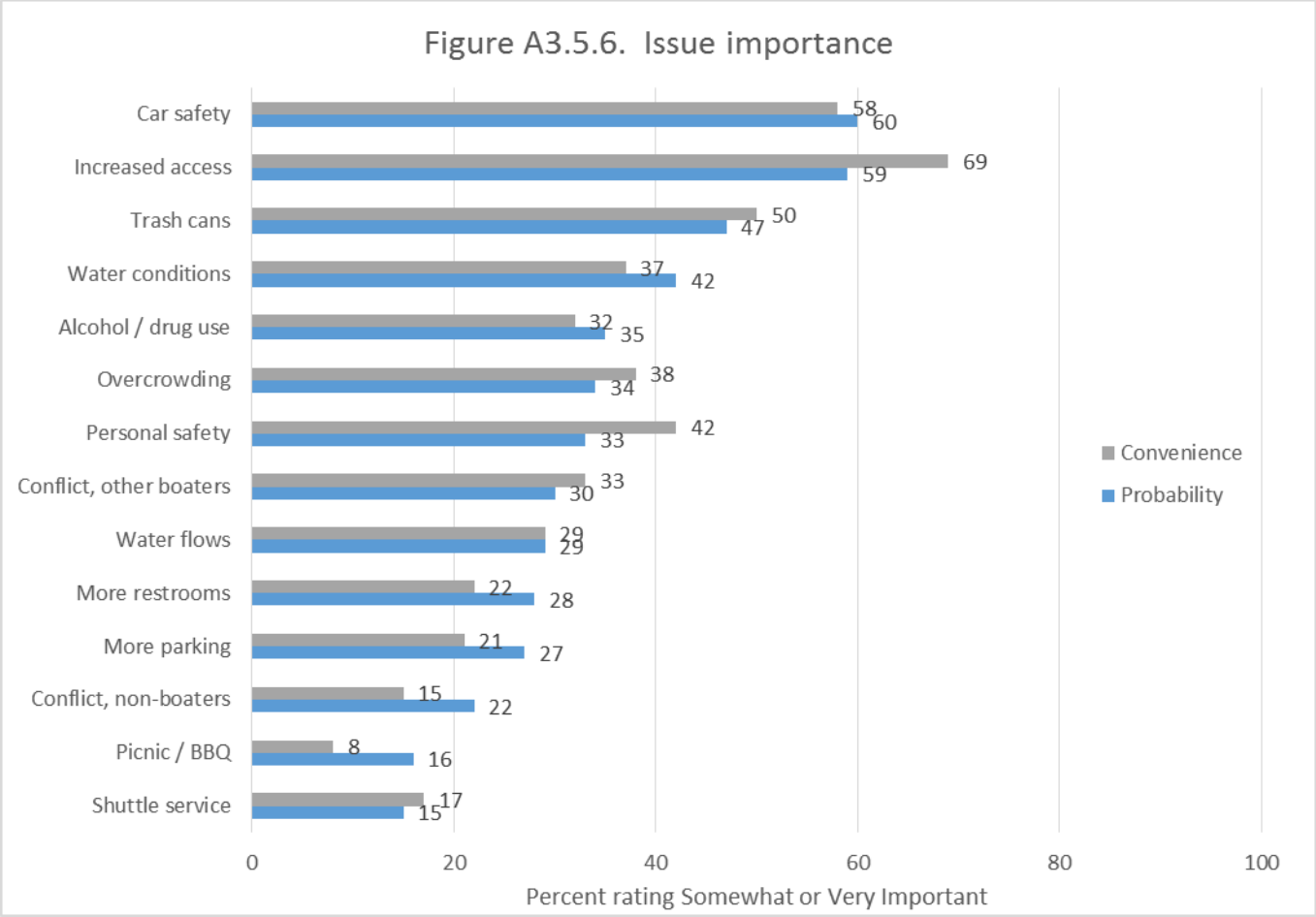


Figure A3.5.6. Issue importance
Car safety
Increased access
Trash cans
Water conditions
Alcohol / drug use
Overcrowding
Personal safety
Conflict, other boaters
Water flows
More restrooms
More parking
Conflict, non-boaters
Picnic / BBQ
Shuttle service
58
60
69
59
50
47
37
42
32
35
38
34
42
33
33
30
29
29
22
28
21
27
15
22
8
16
17
15
Convenience
Probability
0
20
40
60
80
100
Percent rating Somewhat or Very Important

Appendix 4. Participation by water body, unweighted results

This appendix presents unweighted results for participation by water body. The tables complement the weighted results presented in Section 2.4. Differences between weighted and unweighted results are due to two primary causes. First, weighting may increase or decrease the number of days for a given respondent, depending on that respondent's characteristics with respect to the weighting variable (age and whether the most often boating activity is classified as whitewater or flat water). Second, respondents who have item non-response (missing values) for age or most often boating activity appear in the unweighted results but not in the weighted results.

Table A4.2.3.R1. Probability sample user days across water bodies, unweighted, Region 1

	Site days	% of category	% of region
Rivers			
R17 Siletz River (Mainstem from confluence of North and South Forks to Siletz Bay)	335	20	13
R5 Nehalem River	143	9	5
R18 Yaquina River	135	8	5
R21 Alsea River (RM 12 near Tidewater to USFS boundary)	128	8	5
R9 Wilson River	114	7	4
R127 Columbia River (Mouth to Saint Helens)	112	7	4
R22 Alsea River (Mainstem from onfluence of North and South Forks to USFS boundary)	95	6	4
R10 Trask River	91	5	3
Beaver Creek (Lincoln County)	82	5	3
R20 Alsea River (Pacific Ocean to head of tide, RM 12 near Tidewater)	75	4	3
R12 Nestucca River (RM 7 to RM 15, near Beaver)	71	4	3
R11 Nestucca River (mouth up to RM 7, near Cloverdale)	59	4	2
Salmon River (Lincoln County)	54	3	2
R16 Little Nestucca River	30	2	1
R4 Necanicum River	25	1	1
Other	23	1	1
R8 Kilchis River	17	1	1
R6 North Fork Nehalem River	16	1	1
R15 Nestucca River (RM 35 to RM 47, near the lower end of Old Meadow Lake)	11	1	0
R24 Yachats River	11	1	0
R2 Lewis and Clark River	10	1	0
R19 Elk Creek	8	0	0
R23 Five Rivers	6	0	0
R7 Salmonberry River	6	0	0
R1 Youngs River	5	0	0
R13 Nestucca River (RM 15 to RM 26, above confluence of Limestone Creek and Blaine)	5	0	0
Tillamook River	4	0	0
Drift Creek	4	0	0
John Day River (Clatsop County)	3	0	0
Rivers total	**1,678**	**100**	**64**
Lakes			
L7 Devils Lake	92	30	4
Ollala Reservoir	79	26	3
Eckman Lake	27	9	1
Big Creek Reservoir	25	8	1
L1 Coffenbury Lake	21	7	1
Other	18	6	1
L5 Cape Meares Lake	16	5	1
L4 Cullaby Lake	7	2	0

L3 Sunset Lake	7	2	0
Lost Lake, Clatsop County	7	2	0
L6 Town Lake	4	1	0
Lake Lytle	3	1	0
Hebo Lake	3	1	0
Lakes total	**309**	**100**	**12**
Bays			
B2 Tillamook Bay	118	19	5
B1 Nehalem Bay	91	15	3
B6 Siletz Bay	77	12	3
B7 Yaquina Bay	76	12	3
B8 Alsea Bay	74	12	3
B3 Netarts Bay	70	11	3
Salmon River (Lincoln County)	43	7	2
B5 Nestucca Bay	39	6	1
B4 Sand Lake Estuary	12	2	0
Depoe Bay	7	1	0
Ocean (Region 1)	6	1	0
R127 Columbia River (mouth to Saint Helens)	4	1	0
Beaver Creek (Lincoln County)	1	0	0
Bays total	**618**	**100**	**24**
Region total	**2,605**		**100**

Table A4.2.3.R2. Probability sample user days across water bodies, unweighted, Region 2

	Site days	% of category	% of region
Rivers			
R124 Willamette River (Columbia River to Canby)	1,196	38	31
R128 Columbia River (Saint Helens to Troutdale)	400	13	11
R49 Tualatin River	283	9	7
R50 Clackamas River (River Mill Dam to Willamette River confluence)	232	7	6
R130 Columbia River (Bonneville Dam to Deschutes River)	203	6	5
R51 Clackamas River (Source to River Mill Dam)	164	5	4
R127 Columbia River (Mouth to Saint Helens)	139	4	4
R57 Sandy River (Confluence with Bull Run River to Columbia River)	124	4	3
R125 Willamette River (Canby to Sam Daws Bend, near Peoria)	82	3	2
Multnomah Channel	68	2	2
R58 Sandy River (Source to confluence with Bull Run River)	39	1	1
R52 North Fork Clackamas River	25	1	1
R56 Molalla River (Glen Avon to Willamette River, near Canby)	24	1	1
R61 Middle Fork Hood River	24	1	1
R129 Columbia River (Troutdale to Bonneville)	23	1	1
R64 Pudding River	21	1	1
R5 Nehalem River	21	1	1
Hood River (mainstem)	16	1	0
Willamette (Region 2)	13	0	0
R55 Molalla River (Source to Glen Avon)	12	0	0
R59 Salmon River	9	0	0
R48 Clatskanie River	6	0	0
R54 Oak Grove Fork Clackamas River	6	0	0
W Fork Hood River	4	0	0
R53 South Fork Clackamas River	3	0	0
Gilbert River	2	0	0
R60 White River	1	0	0
Other	1	0	0

Rivers total	**3,141**	**100**	**83**
Lakes			
L27 Henry Hagg Lake	169	25	4
L34 Timothy Lake	133	20	3
Oswego Lake	94	14	2
L32 Trillium Lake	78	12	2
Smith & Bybee Lakes	41	6	1
L31 Laurance Lake	34	5	1
L28 Sturgeon Lake	32	5	1
Lost Lake (Hood River County)	31	5	1
L30 Green Peter Reservoir	9	1	0
Benson Lake	8	1	0
L33 Harriet Lake	8	1	0
L29 Blue River Lake	6	1	0
Estacada Lake (Clackamas)	6	1	0
Frog Lake	5	1	0
L26 Vernonia Lake	5	1	0
Other	2	0	0
North Fork Reservoir	1	0	0
Fairview Lake & Blue Lake	1	0	0
Lakes total	**663**	**100**	**17**
Region total	**3,804**		**100**

Table A4.2.3.R3. Probability sample user days across water bodies, unweighted, Region 3

	Site days	% of category	% of region
Rivers			
R125 Willamette River (Canby to Sam Daws Bend, near Peoria)	604	39	28
R66 North Santiam River	188	12	9
R70 McKenzie River	152	10	7
R126 Willamette River (Sam Daws Bend, near Peoria, to Mid Fork Junction)	126	8	6
R68 South Santiam River	102	7	5
R17 Siletz River (Confluence of North and South Forks to Siletz Bay)	61	4	3
R65 Santiam River (Junction with N Santiam to Willamette River (Lower))	59	4	3
R63 Yamhill River	54	3	2
Other	31	2	1
R67 Little North Santiam River	30	2	1
R22 Alsea River (Mainstem from confluence of North and South Forks to USFS boundary, near Fall Cr)	29	2	1
Willamette (Region 3)	29	2	1
Calapooia River	24	2	1
Mary's River	23	1	1
R62 North Yamhill River	11	1	1
R15 Nestucca River (RM 35, near Bear Cr, to RM 47, below Walker Cr)	11	1	1
R18 Yaquina River	9	1	0
Luckiamute River	8	1	0
R69 Middle Santiam River	6	0	0
R64 Pudding River	4	0	0
R16 Little Nestucca River	3	0	0
R73 South Fork Alsea River	2	0	0
R72 North Fork Alsea River (Bailey Creek to confluence with Alsea River, near Alsea)	1	0	0
Rivers total	**1,567**	**100**	**72**
Lakes			
L36 Silverton Reservoir	130	21	6

L40 Detroit Lake	125	20	6
L43 Clear Lake	107	17	5
L41 Foster Reservoir	71	11	3
L45 Carmen Reservoir	32	5	1
L38 Freeway Lakes	26	4	1
L44 Big Lake	25	4	1
L46 Smith Reservoir	25	4	1
Other	16	3	1
L39 Elk Lake	14	2	1
L35 Mission Lake	11	2	1
Breitenbush Lake	10	2	0
L47 Trail Bridge Reservoir	9	1	0
L42 Lost Lake	7	1	0
Big Cliff Reservoir	6	1	0
Marion Lake	5	1	0
L37 Walter Wirth Lake	4	1	0
Silver Creek Reservoir	1	0	0
Fish Lake	1	0	0
Lakes total	**624**	**100**	**28**
Region total	**2,191**		**100**

Table A4.2.3.R4. Probability sample user days across water bodies, unweighted, Region 4

	Site days	% of category	% of region
Rivers			
R70 McKenzie River	665	52	34
R80 Middle Fork Willamette River	247	19	12
R126 Willamette River (Sam Daws Bend, near Peoria, to Mid Fork Junction)	129	10	7
R81 North Fork Middle Fork Willamette River	46	4	2
R79 Coast Fork Willamette River	38	3	2
R75 Siuslaw River (Confluence of Lake Cr, near Sweethome, to Wildcat Cr, near Austa)	30	2	2
R25 Siuslaw River (mouth to confluence with Lake Creek, near Swisshome)	26	2	1
R74 Lake Creek	21	2	1
R76 Siuslaw River (Wildcat Cr, near Austa, to Clay Creek Campground)	20	2	1
Row River	18	1	1
R78 Siuslaw River (Siuslaw Falls to junction of North and South Fork)	13	1	1
Coyote Creek	8	1	0
R82 South Fork McKenzie River	7	1	0
Other	6	0	0
R77 Siuslaw River (Clay Creek Campground to Siuslaw Falls)	3	0	0
R73 South Fork Alsea River	2	0	0
Rivers total	**1,279**	**100**	**64**
Lakes			
L50 Fern Ridge Reservoir	207	29	10
L58 Waldo Lake	139	20	7
L53 Lookout Point Reservoir	59	8	3
L56 Hills Creek Reservoir	54	8	3
L59 Gold Lake	48	7	2
L51 Fall Creek Lake	40	6	2
L52 Dexter Reservoir	33	5	2
L54 Dorena Reservoir	32	5	2
Leaburg Reservoir	17	2	1
L55 Cottage Grove Lake	15	2	1
L48 Triangle Lake	13	2	1

Blair Lake	13	2	1
Blue River Reservoir	13	2	1
Clear Lake	7	1	0
L49 Hult Reservoir	5	1	0
L57 Cougar Reservoir	5	1	0
Other	3	0	0
L60 Summit Lake	2	0	0
Lakes total	**705**	**100**	**36**
Region total	**1,984**		**100**

Table A4.2.3.R5. Probability sample user days across water bodies, unweighted, Region 5

	Site days	% of category	% of region
Rivers			
R42 Rogue River (Grave Creek confluence to Illinois River Confluence)	393	34	18
R38 Elk River	94	8	4
R27 Umpqua River (mainstem from confluence of North and South Fork to mouth at Pacific Ocean)	83	7	4
R32 Coquille River, mainstem	74	6	3
R29 Coos River	71	6	3
R36 South Fork Coquille River	63	5	3
R25 Siuslaw River (mouth to confluence with Lake Creek, near Swisshome)	60	5	3
R41 Rogue River (Illinois River confluence to mouth at Pacific Ocean)	55	5	3
R37 Sixes River	45	4	2
R46 Chetco River (from Boulder Creek to Loeb State Park)	30	3	1
R31 South Fork Coos River	25	2	1
Other	23	2	1
R28 Smith River	22	2	1
R45 Chetco River (from Loeb State Park to the mouth at Pacific Ocean)	20	2	1
R26 North Fork Siuslaw River	20	2	1
R43 Illinois River (Deer Creek to Agness)	18	2	1
R30 Millicoma River	18	2	1
Siltcoos River	13	1	1
R35 Middle Fork Coquille River	12	1	1
Tenmile Creek	7	1	0
R33 North Fork Coquille River	6	1	0
New River	6	1	0
R24 Yachats River	4	0	0
R136 Pistol River	4	0	0
R34 East Fork Coquille River	2	0	0
Rivers total	**1,168**	**100**	**55**
Lakes			
L19 Tenmile Lake	91	16	4
L17 N. Tenmile Lake	71	13	3
L23 Floras Lake	64	11	3
L16 Eel Lake	54	10	3
L9 Mercer Lake	48	9	2
L21 Empire Lakes	47	8	2
L12 Siltcoos Lake	43	8	2
L10 Munsel Lake	25	4	1
L11 Woahink Lake	24	4	1
Other	22	4	1
L18 Saunders Lake	19	3	1
L20 Loon Lake	14	2	1
L25 Powers Park Pond	11	2	1

L14 Tahkenich Lake	8	1	0
Cleawox Lake	8	1	0
L8 Sutton Lake	8	1	0
L15 Elbow Lake	4	1	0
L13 Carter Lake	2	0	0
L22 Bradley Lake	1	0	0
Lakes total	**564**	**100**	**26**
Bays			
B10 Coos Bay	238	60	11
B9 Winchester Bay	94	24	4
Other	20	5	1
Sunset Bay	16	4	1
Port Orford	15	4	1
R45 Chetco River (from Loeb State Park to the mouth at Pacific Ocean)	10	3	0
R41 Rogue River (Illinois River confluence to mouth at Pacific Ocean)	5	1	0
Siltcoos River	1	0	0
Bays total	**399**	**100**	**19**
Region total	**2,131**		**100**

Table A4.2.3.R6. Probability sample user days across water bodies, unweighted, Region 6

	Site days	% of category	% of region
Rivers			
R89 Rogue River (Lost Creek Lake to Grave Creek)	514	39	27
R42 Rogue River (Grave Creek confluence to Illinois River Confluence)	382	29	20
R27 Umpqua River (From confluence of North and South Forks to the Pacific Ocean)	149	11	8
R84 North Umpqua River	128	10	7
R87 South Umpqua River (Tiller to confluence with North Umpqua River, near Riversdale)	45	3	2
R43 Illinois River (Deer Cr to Agness near confluence w/ Rogue R)	32	2	2
R91 Applegate River	27	2	1
R90 Rogue River (above Lost Creek Lake)	14	1	1
Other	7	1	0
R86 South Umpqua River (Source to Tiller)	5	0	0
R28 Smith River	5	0	0
R85 Little River	3	0	0
R44 Illinois River (Illinois River Forks State Park to Deer Creek)	1	0	0
R88 Cow Creek	1	0	0
Rivers total	**1,313**	**100**	**68**
Lakes			
L72 Emigrant Lake	114	18	6
L67 Diamond Lake	80	13	4
L76 Hyatt Reservoir	69	11	4
L71 Applegate Lake	67	11	3
L75 Howard Prairie Lake	43	7	2
L66 Lemolo Lake	43	7	2
L68 Lost Creek Lake	42	7	2
L74 Agate Lake	31	5	2
L73 Fish Lake	24	4	1
L69 Lake Selmac	22	4	1
L65 Toketee Reservoir	18	3	1
L63 Galesville Reservoir	17	3	1
L61 Cooper Creek Reservoir	15	2	1
L62 Ben Irving Reservoir	14	2	1

Squaw Lakes	11	2	1
L64 Hemlock Lake	5	1	0
Willow Lake	3	0	0
L70 Bolan Lake	2	0	0
Other	1	0	0
Lakes total	**621**	**100**	**32**
Region total	**1,934**		**100**

Table A4.2.3.R7. Probability sample user days across water bodies, unweighted, Region 7

	Site days	% of category	% of region
Rivers			
R96 Deschutes River (Pelton Dam to Columbia River)	668	60	54
R99 John Day River (Service Cr. to Columbia River)	302	27	25
R102 Umatilla River	53	5	4
R103 North Fork John Day River	36	3	3
R130 Columbia River (Bonneville Dam to Deschutes River)	28	3	2
R133 Columbia River (Heppner Junction, near Hwy 74, to state line above Hat Rock State Park)	14	1	1
R131 Columbia River (Deschutes River to John Day Dam)	7	1	1
Other	6	1	0
R132 Columbia River (John Day Dam to Heppner Junction, near Hwy 74)	6	1	0
Rivers total	**1,120**	**100**	**91**
Lakes			
L79 McKay Reservoir	77	71	6
Rock Creek Reservoir	13	12	1
Pine Hollow Reservoir	7	6	1
Indian Lake	7	6	1
L78 Willow Creek Reservoir	2	2	0
Other	1	1	0
L77 Lake Wallula	1	1	0
Lakes total	**108**	**100**	**9**
Region total	**1,228**		**100**

Table A4.2.3.R8. Probability sample user days across water bodies, unweighted, Region 8

	Site days	% of category	% of region
Rivers			
R95 Deschutes River (Upper, source to Pelton Dam)	712	48	24
R96 Deschutes River (Lower, Pelton Dam to Columbia River)	419	28	14
R99 John Day River (Service Cr. to Columbia River)	206	14	7
Little Deschutes River	62	4	2
R98 Crooked River	36	2	1
R100 John Day River (Source to Service Cr.)	32	2	1
R97 Metolius River	26	2	1
Other	1	0	0
Rivers total	**1,494**	**100**	**51**
Lakes			
L91 Hosmer Lake	284	20	10
L89 Sparks Lake	220	15	7
L96 Crane Prairie Reservoir	124	9	4
L100 East Lake	92	6	3
L90 Elk Lake	83	6	3
L85 Suttle Lake	75	5	3

L98 Wickiup Reservoir	73	5	2
L83 Lake Billy Chinook	68	5	2
L99 Paulina Lake	66	5	2
L87 Prineville Reservoir	61	4	2
L92 Lava Lake	42	3	1
L93 Little Lava Lake	40	3	1
L96 North Twin Lake	34	2	1
L94 Cultus Lake	30	2	1
Three Creeks Lake	30	2	1
L95 Little Cultus Lake	18	1	1
South Twin Lake (Deschutes)	18	1	1
Devils Lake (Deschutes)	16	1	1
L84 Haystack Reservoir	16	1	1
L86 Ochoco Reservoir	15	1	1
L81 Olallie Lake	13	1	0
L82 Lake Simtustis	13	1	0
L88 Antelope Flat Reservoir	6	0	0
Walton Lake	5	0	0
Lakes total	**1,441**	**100**	**49**
Region total	**2,935**		**100**

Table A4.2.3.R9. Probability sample user days across water bodies, unweighted, Region 9

	Site days	% of category	% of region
Rivers			
Other	44	27	7
R94 Williamson River	33	20	6
R92 Klamath River (Boyle Dam to CA state line)	26	16	4
Wood River	22	14	4
Sprague River	15	9	3
R93 Klamath River (Klamath River Falls to Boyle Dam)	13	8	2
Spring Creek	8	5	1
Rivers total	**161**	**100**	**27**
Lakes			
L109 Upper Klamath Lake	91	21	15
L110 Lake of the Woods	75	17	13
L103 Crescent Lake	55	13	9
L102 Davis Lake	26	6	4
L108 Agency Lake	22	5	4
L101 Odell Lake	21	5	4
L107 Fourmile Lake	18	4	3
L104 Miller Lake	16	4	3
L116 Campbell Lake	16	4	3
L120 Lofton Reservoir	14	3	2
L121 Cottonwood Meadow Lake	13	3	2
L115 Deadhorse Lake	9	2	2
L111 Lake Ewauna	8	2	1
L114 Thompson Reservoir	8	2	1
L119 Heart Lake	7	2	1
L122 Willow Valley Reservoir	6	1	1
L118 Holbrook Reservoir	6	1	1
L126 Vee Lake	5	1	1
L106 Ana Reservoir	5	1	1
L105 Duncan Reservoir	3	1	1
L112 J.C. Boyle Reservoir	3	1	1

Other	3	1	1
L124 Drews Reservoir	2	0	0
L128 Hart Lake	2	0	0
L123 Dog Lake	1	0	0
Lakes total	**435**	**100**	**73**
Region total	**596**		**100**

Table A4.2.3.R10. Probability sample user days across water bodies, unweighted, Region 10

	Site days	% of category	% of region
Rivers			
R110 Grande Ronde River (Confluence with the Wallowa River to WA state line, near Troy)	256	47	32
R116 Snake River (Baker Co Line, near Copper Cr, to WA state line)	121	22	15
R114 Wallowa River (Minam to confluence with the Grande Ronde River)	55	10	7
R113 Wallowa River (Wallowa Lake to Minam)	28	5	4
R103 North Fork John Day River	22	4	3
R109 Grande Ronde River (Hilgard Junction State Park to confluence with the Wallowa River)	16	3	2
R100 John Day River (Source to Service Cr.)	15	3	2
R115 Imnaha River	11	2	1
R104 Middle Fork John Day River	10	2	1
R108 Grande Ronde River (Red Bridge State Park to Hilgard Junction State Park)	4	1	1
R107 Grande Ronde River (Confluence with East Fork Grande Ronde to Red Bridge State Park)	4	1	1
R111 Minam River	4	1	1
Other	2	0	0
R112 Lostine River	2	0	0
Rivers total	**550**	**100**	**69**
Lakes			
L134 Wallowa Lake	81	33	10
L133 Morgan Lake	26	11	3
L143 Anthony Lake	23	10	3
L144 Olive Lake	21	9	3
L132 Jubilee Reservoir	18	7	2
L145 Phillips Lake	15	6	2
L139 Hells Canyon Reservoir	13	5	2
L146 Brownlee Reservoir	13	5	2
L148 Magone Lake	11	5	1
L141 Oxbow Reservoir	6	2	1
L135 Pilcher Creek Reservoir	5	2	1
L142 Grande Ronde Lake	3	1	0
L136 Wolf Creek Reservoir	3	1	0
Other	2	1	0
L138 Fish Lake	2	1	0
Lakes total	**242**	**100**	**31**
Region total	**792**		**100**

Table A4.2.3.R11. Probability sample user days across water bodies, unweighted, Region 11

	Site days	% of category	% of region
Rivers			
R122 Owhyee River (Lake Owyhee to Rome, near Hwy 95)	29	81	36
R123 Owhyee River (Rome, near Hwy 95, to state line)	4	11	5
R120 Snake River (Owyhee River to State Line)	2	6	2

R121 Owhyee River (Owyhee Dam to Snake River)	1	3	1
Rivers total	**36**	**100**	**44**
Lakes			
L151 Bully Creek Reservoir	12	27	15
Fish Lake (Harney County)	10	22	12
L160 Mann Lake	8	18	10
L158 Krumbo Reservoir	5	11	6
L154 Chickahominy Reservoir	4	9	5
L153 Delintment Lake	4	9	5
L157 Lake Owyhee	2	4	2
Lakes total	**45**	**100**	**56**
Region total	**81**		**100**

Appendix 5. Calculation of economic contribution

The following steps were used in estimating the economic contribution of expenditure by non-motorized boaters.

1. An IMPLAN model was created for each region, with 2012 economic structure data. Because IMPLAN data is at the county level, coastal Lane and Douglas counties were included the main part of each county (Region 4 for Lane, Region 6 for Douglas).

2. IMPLAN default values were used and Type SAM multipliers were created. These multipliers treat households as endogenous and thus include induced effects.

3. An impact scenario was created by allocating visitor expenditure into relevant IMPLAN categories (bridging). Spending in the groceries, gas and oil, and miscellaneous categories was treated as retail expenditure and margined.

4. Impact estimates were generated. Impact results are shown in 2014 dollars.

Input-output analysis assumptions

IMPLAN is based on input-output (IO) analysis and is widely used to estimate the economic contribution of tourism, recreation, and other activities. The IO approach involves several assumptions. These assumptions generally are not met in their entirety, but IO (and IMPLAN in particular) provides a good balance between practicality and accuracy. That is particularly true in cases, such as the present, in which the impact being evaluated is a small proportion of the overall study area economy. In such cases, non-linearities can be reasonably approximated with the linear relationships inherent in IO. IO assumptions include the following.

1. All businesses within each sector produce a single, homogeneous product or service; the input procedures used in the production process are identical.

2. An increase of production will lead to purchase of inputs in the proportions shown in the technical coefficients matrix. In technical terms, the production function is linear and homogeneous. This assumption restricts economies of scale; IO analysis assumes a business always will use the same proportion of inputs regardless of how much it grows.

3. When households are included in the analysis (as is done for this analysis), their spending patterns (consumption functions) also are assumed to be linear and homogeneous.

4. The structure of the economy will not change. Many input-output models, including the one used here, are static in nature. They are based on data from a single year, in this case 2012. Dramatic structural changes in the economy would mean the relationship between expenditure and impact would be different in future years.

5. When IO is used to estimate the effect of changes in final demand (as in the present case), there must be unemployed resources available to be brought into the sector as inputs.

Appendix 6. Questionnaire instrument (mail version)

The mail questionnaire is reproduced below. Note that the online version involved greater detail, notably in reporting of participation by water body, as well as recommended scenic waterways and water trails by water body.

Oregon Non-motorized Boater Recreation

Please Complete This Survey and Return It As Soon As Possible

Your Input Helps Inform Future Boating Opportunities

Thank You for Your Participation

OSU
Oregon State University
Cascades

This research survey, and each question in it, is voluntary. Your responses will be confidential – responses will only be reported as part of larger groups. We do not anticipate any direct risks or benefits in completing the survey, but your responses may enhance future opportunities for you and other boaters. The survey takes approximately 15 to 25 minutes to complete, depending on your boating patterns.

If you have any questions about the survey, please contact Principal Investigator Kreg Lindberg at 541-322-3126 or by e-mail at kreg.lindberg@osucascades.edu. If you have any questions about your rights as a survey participant, please contact the OSU Institutional Review Board (IRB) Human Protections Administrator at 541-737-8008 or by e-mail at IRB@oregonstate.edu V10

For this survey, boat and boating refers to recreating with non-motorized watercraft that rely primarily on paddles or oars

for propulsion (but excluding outrigger canoes and sculling / sweep boats). The survey covers:

- drift and row boating;
- canoeing, kayaking, and rafting; and
- standup paddle boarding.

It does not cover:

- motor boats, jet skis, or other motorized water recreation;
- sailboats, surf boards, windsurfing boards, or kiteboards;
- float tubes, such as those used for fishing;
- inner tubes, inflatable mattresses, or similar "floatie" craft; or
- outrigger canoes or sculling / sweep (crew) boats.

Water body refers to rivers, reservoirs, lakes, the ocean, and any other body of water used for boating.

We ask you to report some details, such as where you've boated and for how long. If you don't remember exactly, please report your best approximation.

If you did not engage in boating in Oregon in the past 12 months (August 2013 through July 2014) using one of the covered boat types, tick this box ☐, skip the remaining questions, and return the survey in the postage-paid envelope.

1. How many non-motorized boats are owned within your household? For each type of boat:

- **In the first column, write the number of boats owned in household.**
- **In the second column, write how many were "new to you" (purchased, received as a gift, etc.) in the past 12 months – August 2013 through July 2014.**

If your household does not currently own any boats, skip to the next question.

Non-motorized boat type	Number of boats owned in household	Number of boats "new to household" in past 12 months
1. Drift boat or row boat		
2. Canoe – hard-shell or inflatable		
3. Whitewater kayak – hard-shell or inflatable		
4. Other type of kayak – sea, touring, sit-on-top, etc.		
5. Inflatable whitewater raft – oar or paddle		
6. Other type of inflatable raft or pontoon boat using oars or paddles for propulsion		
7. Standup paddle board (SUP)		
8. Other (describe) _____		

2. What type of boat did you use most often in Oregon in the past 12 months (August 2013 through July 2014)? Write in the number shown to the left of the type of boat in Question 1 above. For example, if you most often used a canoe, write in "2".

Include your use of boats that are not owned in your household (borrowed, rented, used during a guided trip, etc.).

I most often used type _____

3. Of all the days you paddled on Oregon waterways in the past 12 months (August 2013 through July 2014), approximately what percent of these days occurred on each of the following types of water body? Write in a percent for each; they should total 100.

_____ % on whitewater parts of rivers and streams

_____ % on flatwater parts of rivers and streams

_____ % on lakes, reservoirs, or ponds

_____ % on bays, inlets, or estuaries

_____ % on the Pacific ocean

A map of water bodies across 11 regions in Oregon is enclosed with this survey (the backside of that map shows scenic

waterways and water trails – we'll cover those later). Please refer to this map for the following questions.

4. In which region did you live in the past 12 months (August 2013 through July 2014)? Please write in one number; if you moved across regions, indicate the region where you lived the most days in the past 12 months. If you lived outside Oregon, please write in the name of the state.

I lived in region _____

5. Please write the number of days you engaged in recreational non-motorized boating in the past 12 months (August 2013 through July 2014) in each of the regions (1 through 11) shown on the map. Any portion of a day counts as a full day.

Include even short trips close to home, such as boating on a river near your house. If a trip crossed more than one region, please report all days on the trip for the region where you spent the most time.

Include trips that involved commercially guides or borrowed or rented boats, not just trips using your own boats.

Then split the total number of days boating in each region into:

- **days spent on day boating trips (did not involve an overnight stay away from home); and**
- **days spent on multi-day boating trips (involved an overnight stay, even if you only boated one day during the trip).**

For the Example region, assume you boated 8 days total in that region in the past 12 months. Five of those days were day trips (1 day each) and three of those days were from a multi-day trip. In the Example row, you would write 8 in the first column, 5 in the second column, and 3 in the third column.

Region	Total number of days boating in region		Of these total days boating in each region, how many days were spent on…	
			# of days on day boating trips	# of days on multi-day boating trips
Example	8	→	5	3

Region	Total number of days boating in region		Of these total days boating in each region, how many days were spent on…	
			# of days on day boating trips	# of days on multi-day boating trips
1		→		
2		→		
3		→		
4		→		
5		→		
6		→		
7		→		
8		→		
9		→		
10		→		
11		→		

Please tell us more about your "typical" day boating trip – at the single location where you most often boated on day trips in the past 12 months (August 2013 through July 2014). The location may be a lake, stretch of river, bay or ocean access point, etc.

Think of your typical day trip as what you'd tell friends who ask where you most often boated on day trips, such as after work or on a weekend morning. Reminder – trips in this survey always refer to non-motorized boating trips.

If you did not take any day trips in the past 12 months, please skip to Question 11.

6. In which of the 11 Oregon regions was the location (where you boated) on your typical day boating trip? It may be the same as the region you live in. If your typical day boating trip crossed regions, write the number for the region where you spent the most time during the trip. Write in one number.

My typical day boating trip was in region _____ (write one number between 1 and 11)

7. How far away was the launch point for this location (where you got on the water) – in one-way driving miles from your home? Check one box.

☐ Within 30 miles ☐ 31 to 60 miles ☐ 61 to 90 miles ☐ More than 90 miles

8. How many people usually were in your travel party for your typical day boating trip? This includes everyone who traveled in the same vehicle with you to the boating location. Write in the number of people, including yourself.

If you traveled to the location without using a vehicle, your travel party is everyone from your household (including yourself) that traveled to the location together.

_____ person(s)

9. How many boats were used by the people in your travel party for your typical day boating trip? Write the number of boats used.

_____ boat(s)

10. On this typical day boating trip, how much did you and other members of your travel party combined spend within 50 miles of the launch location? If the typical trip was a short trip near your home, it is possible that you spent little or no money. Write in the amount for each item, rounding off to the nearest dollar.

Item	Amount spent by everyone in travel party within 50 miles of the location
Hotel, motel, condo, cabin, B&B, or other lodging except camping	$
Camping (RV, tent, etc.)	$
Restaurants, bars, pubs	$
Groceries	$
Gas and oil	$
Other transportation	$
Park / forest entry, parking, or recreation use fees	$
Recreation and entertainment, including guide fees	$
Sporting goods	$
Other expenses, such as souvenirs	$
Total	$

☐ I don't recall my trip spending

☐ I don't want to report my trip spending

Please tell us more about your "typical" multi-day boating trip – at the single location where you most often boated on multi-day trips in the past 12 months (August 2013 through July 2014).

Think of your typical multi-day trip as what you'd tell your friends who ask where you most often boated when you took trips involving overnight stays away from home – even if you only boated one day during the trip. If you did not take any multi-day trips in the past 12 months, please skip to Question 17.

11. In which of the 11 Oregon regions was the location (where you boated) on your typical multi-day boating trip? If your typical multi-day boating trip crossed regions, write the number for the region where you spent the most time during the trip. Write in one number.

My typical multi-day boating trip was in region _____ (write one number between 1 and 11)

12. How far away was the launch point for this location (where you got on the water) – in one-way driving miles from your home? Check one box.

☐ Within 30 miles ☐ 31 to 60 miles ☐ 61 to 90 miles ☐ More than 90 miles

13. On this typical multi-day boating trip, how many days did you spend within 50 miles of the launch point for this location? Write in the number of days, including the days you didn't boat during the trip.

_____ days on my typical multi-day trip

14. How many people usually were in your travel party for your typical multi-day boating trip? This includes everyone who traveled in the same vehicle with you to the boating location. Write in the number of people, including yourself.

If you traveled to the location without using a vehicle, your travel party is everyone from your household (including yourself) that traveled to the location together.

_____ person(s)

15. How many boats were used by the people in your travel party? Write the number of boats used.

_____ boat(s)

16. On this typical multi-day boating trip, how much did you and other members of your travel party combined spend within 50 miles of the launch location? If the typical trip was a short trip near your home, it is possible that you spent little or no money. Write in the amount for each item, rounding off to the nearest dollar.

Item	Amount spent by everyone in travel party within 50 miles of the location
Hotel, motel, condo, cabin, B&B, or other lodging except camping	$
Camping (RV, tent, etc.)	$
Restaurants, bars, pubs	$
Groceries	$
Gas and oil	$
Other transportation	$
Park / forest entry, parking, or recreation use fees	$
Recreation and entertainment, including guide fees	$
Sporting goods	$
Other expenses, such as souvenirs	$
Total	$

☐ I don't recall my trip spending

☐ I don't want to report my trip spending

The remaining questions relate to all trips (day and / or multi-day trips).

17. On average, how long do you or your group have to wait at the launch area for others to launch / take out and get out of the way so you can launch? Check one box.

- ☐ Do not have to wait at all
- ☐ 1 to 5 minutes
- ☐ 6 to 10 minutes
- ☐ 11 to 15 minutes
- ☐ 16 to 20 minutes
- ☐ More than 20 minutes

18. Do lack of access, lack of facilities, or other issues lead you to engage in non-motorized boat camping less often than you'd like on Oregon water bodies? This refers to overnight camping on a trip involving non-motorized boats as your transportation. Check one box.

- ☐ Yes
- ☐ No – skip to Question 20

19. Please identify the concerns that keep you from camping from your boat. Check all that apply.

- ☐ Lack of primitive (undeveloped) campgrounds
- ☐ Lack of developed campgrounds
- ☐ Campgrounds are too close together
- ☐ Campgrounds are too far apart to be reached in a day of boating
- ☐ Campgrounds cannot be reserved in advance
- ☐ Not enough first-come-first-serve campgrounds
- ☐ Not enough group sites at campgrounds
- ☐ Lack of reliable shuttle service for self or vehicle
- ☐ Don't have enough information about camping from a canoe / kayak / raft
- ☐ Don't want to risk getting stranded by bad weather
- ☐ Facilities are too rustic (pit toilets, no running water, etc.)
- ☐ Safety concern for self or others in group
- ☐ Safety concerns for vehicle left overnight
- ☐ Other (please describe) _____

20. How important are the following activities and features to the enjoyment of your non-motorized boating trips in Oregon? Circle one number for each activity / feature.

Activity / Feature	Not important				Very important
Viewing, identifying, or photographing birds, wildlife, or nature generally	1	2	3	4	5
Whitewater in remote settings	1	2	3	4	5
Whitewater in close-to-town settings (such as constructed whitewater parks that are being considered)	1	2	3	4	5
Camping (at any kind of campground)	1	2	3	4	5
Camping specifically at "boat in" campsites	1	2	3	4	5
Fishing	1	2	3	4	5
Hiking	1	2	3	4	5
Picnicking	1	2	3	4	5
Swimming	1	2	3	4	5

21. How important are the following facilities and services to the enjoyment of your non-motorized boating trips in Oregon? Circle one number for each.

Facility / Service	Not important				Very important
Public access to the water (developed or undeveloped)	1	2	3	4	5
Water level reporting (river, reservoir)	1	2	3	4	5
Map of routes	1	2	3	4	5
Information on where to take out	1	2	3	4	5
Information available online	1	2	3	4	5
Parking for cars with trailers	1	2	3	4	5
Parking for cars without trailers	1	2	3	4	5
Docks for water access (near parking)	1	2	3	4	5
Docks for boat tie-ups	1	2	3	4	5
Restrooms	1	2	3	4	5
Showers	1	2	3	4	5
Drinking water	1	2	3	4	5
Disposal options, including for "carry out" waste (trash, sewage, etc.)	1	2	3	4	5
Picnic / barbecue areas	1	2	3	4	5
Campsites	1	2	3	4	5
Beach areas	1	2	3	4	5
Equipment storage	1	2	3	4	5
Designated water trails with signs	1	2	3	4	5
Areas without motorized boats	1	2	3	4	5
Education / safety signs	1	2	3	4	5
Shuttle service	1	2	3	4	5
Other (please describe) _____	1	2	3	4	5

22. Various management actions may be considered in the water body context. These actions may benefit the boater experience or the natural environment. They also may generate costs to boaters or others. For each action, please circle the number reflecting how much you oppose or support the action.

Action	Strongly oppose	Oppose	Neutral	Support	Strongly support
Restrict development along shoreline	-2	-1	0	+1	+2
Create more public access points	-2	-1	0	+1	+2
Develop more water-accessible campsites along water bodies	-2	-1	0	+1	+2
Prohibit wood fires at campsites	-2	-1	0	+1	+2
Require pack-in, pack-out in more locations	-2	-1	0	+1	+2
Limit the number of people boating on water bodies	-2	-1	0	+1	+2
Provide more enforcement / patrols on water bodies	-2	-1	0	+1	+2
Provide better emergency response on water bodies	-2	-1	0	+1	+2
Provide distance markers along water bodies	-2	-1	0	+1	+2
Other (please describe) _____	-2	-1	0	+1	+2

23. Based on your non-motorized boating in Oregon in the past 12 months, how important do you feel each of the following is? Circle one number for each.

	Not important				Very important
Increased access for non-motorized boating	1	2	3	4	5
More consistent water flows and/or dam releases	1	2	3	4	5
Reduced overcrowding	1	2	3	4	5
More parking	1	2	3	4	5
More restrooms	1	2	3	4	5
More trash receptacles	1	2	3	4	5
More picnic / barbecue areas	1	2	3	4	5
Improved water conditions (quality, obstructions, rapids, currents, low levels, floating debris, etc.)	1	2	3	4	5
More reliable shuttle service for self or vehicle	1	2	3	4	5
Increased safety for self or others	1	2	3	4	5
Reduced vandalism and car clouting (break-ins)	1	2	3	4	5
Reduced alcohol or drug use by boaters	1	2	3	4	5
Reduced conflict with other boaters	1	2	3	4	5
Reduced conflict with non-boating recreationists (swimmers, anglers, etc.)	1	2	3	4	5

Oregon's Scenic Waterways system currently includes approximately 1,150 miles on 20 waterways (shown in blue on the enclosed State Scenic Waterways and Water Trails map).

As described in the 1970 Scenic Waterway Act, the Scenic Waterways program protects designated water bodies and adjacent lands that possess outstanding scenic, fish, wildlife, geological, botanical, historical, archaeological, and outdoor recreation values. It preserves the water bodies in a natural free-flowing condition, preserves scenic and esthetic qualities, and protects water quality and quantity at a level necessary for recreation, fish, and wildlife.

24. Do you oppose or support the Scenic Waterway program? Please check one box.

☐ Strongly oppose ☐ Somewhat oppose ☐ Neither oppose nor support ☐ Somewhat support ☐ Strongly support

25. The governor has directed Oregon State Parks to evaluate potential additions to the program. In your opinion, how important are the following qualities for the state to consider when evaluating a water body for inclusion in the State Scenic Waterway program? Circle one number for each quality.

Quality	Not important				Very important
1. Scenery, as seen from the river	1	2	3	4	5
2. Natural environment	1	2	3	4	5
3. Fast moving white water	1	2	3	4	5
4. Slow moving flat water	1	2	3	4	5
5. Opportunities for recreation	1	2	3	4	5
6. Easy to reach by vehicle	1	2	3	4	5
7. Access by trail only (e.g., walking, hiking, or horseback)	1	2	3	4	5
8. Habitat for fish and wildlife	1	2	3	4	5
9. Opportunities for solitude (few other people recreating)	1	2	3	4	5

26. Of the qualities listed in question 25 above, which is the single most important to consider for inclusion in the State Scenic Waterway program? Please write in the number shown to the left of the quality you feel is most important.

_____ is most important

27. Please write in up to five additional rivers you would like to see added to the Oregon State Scenic Waterway program, in order of priority. For long rivers, please describe the specific segment (reach) you would like to see added.

	Name of river (including segment / reach for long rivers)
Highest priority addition	
Second-highest priority addition	
Third-highest priority addition	
Fourth-highest priority addition	
Fifth-highest priority addition	

Oregon has a number of water trails (shown in pink on the State Scenic Waterways and Water Trails map) – rivers, lakes, and bays that act as corridors or "trails." Water trail facilities include put-ins and take-outs, parking, maps, restrooms, and camping – all designed for kayaks, canoes, drift boats, and other small watercraft.

28. Please write in up to five additional water bodies (rivers, lakes, or bays) you would like to see added to the Oregon water trails program, in order of priority.

	Name of water body (including segment / reach for long rivers)
Highest priority addition	
Second-highest priority addition	
Third-highest priority addition	
Fourth-highest priority addition	
Fifth-highest priority addition	

29. Would you oppose or support an annual fee of $10 that would be required for all non-motorized boats (regardless of length) and would be transferable across boats? Please check one box.

The fee would include the current Aquatic Invasive Species permit, with $5 of the total fee used to fund the invasive species program. The remaining amount would fund land acquisition for non-motorized boater access, expanded parking and restrooms, camping facilities along paddling routes, and safety and educational material.

☐ Strongly oppose ☐ Somewhat oppose ☐ Neither oppose nor support ☐ Somewhat support ☐ Strongly support

30. What can be done to improve non-motorized boating opportunities in Oregon? Please write your suggestion.

_____

31. Do you currently belong to a non-motorized boating organization or club? Check one box.

☐ Yes ☐ No ☐ Unsure

32. For each person in your household who participated in <u>non-motorized boating in Oregon in the past 12 months</u> (August 2013 through July 2014), please check the relevant box for their gender and write their age in years.

Boater	Gender (check one)	Current age (write in age)
Yourself	☐ Male ☐ Female	years old
2nd boater in household	☐ Male ☐ Female	years old
3rd boater in household	☐ Male ☐ Female	years old
4th boater in household	☐ Male ☐ Female	years old
5th boater in household	☐ Male ☐ Female	years old
6th boater in household	☐ Male ☐ Female	years old

33. What is your household's total <u>annual</u> income before taxes? Include income for all persons that regularly live in your household and all sources of income – salary, pensions, interest or dividends, and all other sources. Check one box.

☐ Less than $10,000
☐ $10,000 to $14,999
☐ $15,000 to $24,999
☐ $25,000 to $34,999
☐ $35,000 to $49,999
☐ $50,000 to $74,999
☐ $75,000 to $99,999
☐ $100,000 to $149,999
☐ $150,000 or more

34. Are you of Spanish / Hispanic / Latino descent? Tick one box.

☐ Yes
☐ No

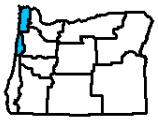
35. Please select one or more of the following categories that best describes your race.

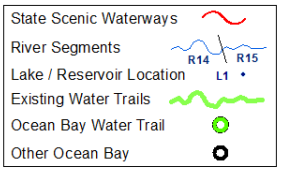
☐ Black / African American
☐ American Indian or Alaska Native
☐ Asian
☐ Native Hawaiian or other Pacific Islander
☐ White
☐ Some other race

Appendix 7. Regional maps of water bodies

The following are maps of water bodies by region. These were presented in the online survey, for each region in which the respondent boated.

REGION 1

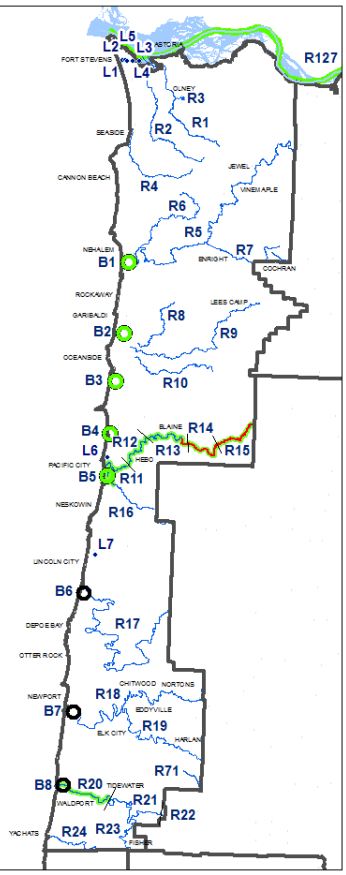




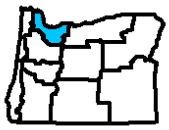
ID NUMBER	RIVER REACH
R1	Youngs River
R2	Lewis and Clark River
R3	Klaskanine River
R4	Necanicum River
R5	Nehalem River
R6	North Fork Nehalem River
R7	Salmonberry River
R8	Kilchis River
R9	Wilson River
R10	Trask River
R11	Nestucca River (mouth up to RM7, near Cloverdale)
R12	Nestucca River (RM7 to RM15, near Beaver)
R13	Nestucca River (RM15 to RM26, above confluence of Limestone Creek and Blaine)
R14	Nestucca River (RM26 to RM35, near USFS boundary)
R15	Nestucca River (RM35 to RM47, near the lower end of Old Meadow Lake)
R16	Little Nestucca River
R17	Siletz River (Mainstem from confluence of North and South Forks to Siletz Bay)
R18	Yaquina River
R19	Elk Creek
R20	Alsea River (Pacific Ocean to head of tide, RM12 near Tidewater)
R21	Alsea River (RM12 near Tidewater to USFS boundary)
R22	Alsea River (Mainstem from confluence of North and South Forks to USFS boundary)
R23	Five Rivers
R24	Yachats River
R71	North Fork Alsea River (Outlet of Klickitat Lake to confluence with Bailey Creek)
R127	Columbia River (Mouth to Saint Helens)

ID NUMBER	LAKE / RESERVOIR
L1	Coffenburry Lake
L2	Crabapple Lake
L3	Sunset Lake
L4	Cullaby Lake
L5	Cape Meares Lake
L6	Town Lake
L7	Devils Lake

ID NUMBER	OCEAN BAY / ESTUARY
B1	Nehalem Bay
B2	Tillamook Bay
B3	Netarts Bay
B4	Sand Lake Estuary
B5	Nestucca Bay
B6	Siletz Bay
B7	Yaquina Bay
B8	Alsea Bay



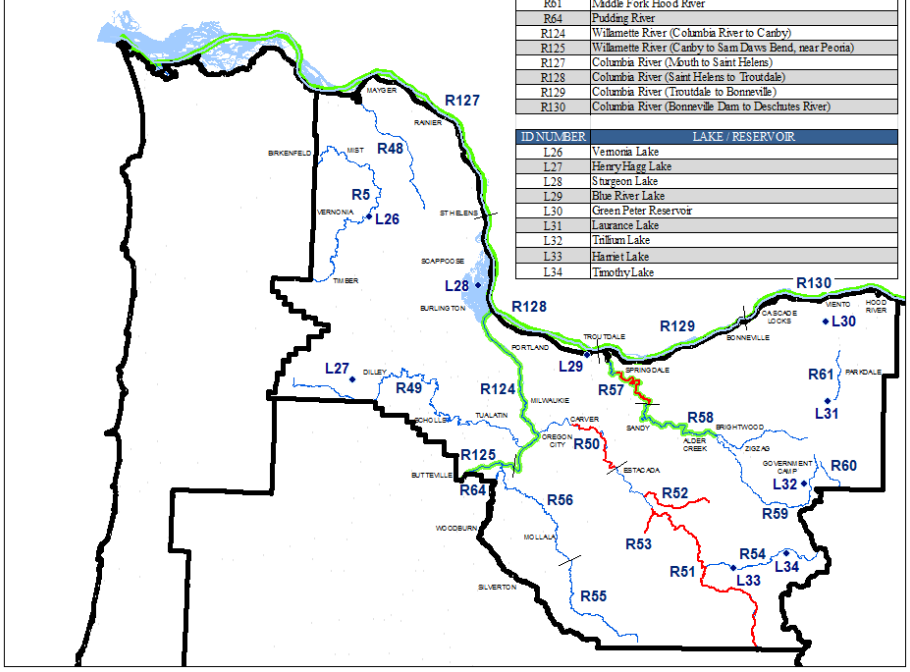
REGION 2



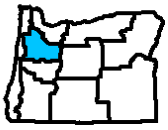
State Scenic Waterways
River Segments R56 R55
Lake / Reservoir Location L27
Existing Water Trails

ID NUMBER	RIVER REACH
R5	Nehalem River
R48	Clatskanie River
R49	Tualatin River
R50	Clackamas River (River Mill Dam to Willamette River confluence)
R51	Clackamas River (Source to River Mill Dam)
R52	North Fork Clackamas River
R53	South Fork Clackamas River
R54	Oak Grove Fork Clackamas River
R55	Molalla River (Source to Glen Avon)
R56	Molalla River (Glen Avon to Willamette River, near Canby)
R57	Sandy River (Confluence with Bull Run River to Columbia River)
R58	Sandy River (Source to confluence with Bull Run River)
R59	Salmon River
R60	White River
R61	Middle Fork Hood River
R64	Pudding River
R124	Willamette River (Columbia River to Canby)
R125	Willamette River (Canby to Sam Daws Bend, near Peoria)
R127	Columbia River (Mouth to Saint Helens)
R128	Columbia River (Saint Helens to Troutdale)
R129	Columbia River (Troutdale to Bonneville)
R130	Columbia River (Bonneville Dam to Deschutes River)

ID NUMBER	LAKE / RESERVOIR
L26	Vernonia Lake
L27	Henry Hagg Lake
L28	Sturgeon Lake
L29	Blue River Lake
L30	Green Peter Reservoir
L31	Laurance Lake
L32	Trillium Lake
L33	Harriet Lake
L34	Timothy Lake



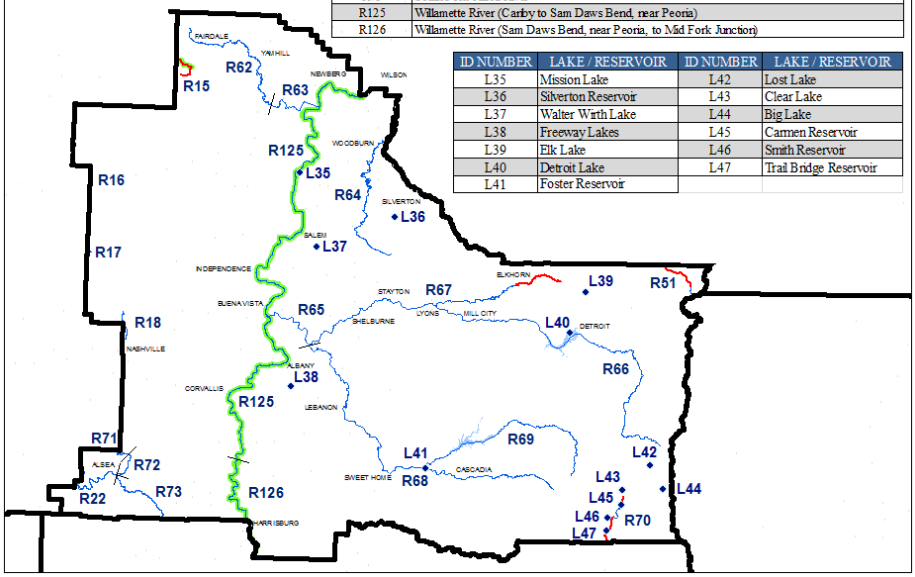
REGION 3



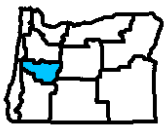
State Scenic Waterways
River Segments R62 R63
Lake / Reservoir Location L37
Existing Water Trails

ID NUMBER	RIVER REACH
R15	Nestucca River (RM 35, near Bear Cr, to RM 47, below Walker Cr)
R16	Little Nestucca River
R17	Siletz River (Confluence of North and South Forks to Siletz Bay)
R18	Yaquina River
R22	Alsea River (Mainstem from confluence of North and South Forks to USFS boundary, near Fall Cr)
R23	Five Rivers
R51	Clackamas River (Source to River Mill Dam)
R62	North Yamhill River
R63	Yamhill River
R64	Pudding River
R65	Santiam River (Junction with N Santiam to Willamette River (Lower))
R66	North Santiam River
R67	Little North Santiam River
R68	South Santiam River
R69	Middle Santiam River
R70	McKenzie River
R71	North Fork Alsea River (Outlet of Klickitat Lake to confluence with Bailey Creek)
R72	North Fork Alsea River (Bailey Creek to confluence with Alsea River, near Alsea)
R73	South Fork Alsea River
R125	Willamette River (Canby to Sam Daws Bend, near Peoria)
R126	Willamette River (Sam Daws Bend, near Peoria, to Mid Fork Junction)

ID NUMBER	LAKE / RESERVOIR	ID NUMBER	LAKE / RESERVOIR
L35	Mission Lake	L42	Lost Lake
L36	Silverton Reservoir	L43	Clear Lake
L37	Walter Wirth Lake	L44	Big Lake
L38	Freeway Lakes	L45	Carmen Reservoir
L39	Elk Lake	L46	Smith Reservoir
L40	Detroit Lake	L47	Trail Bridge Reservoir
L41	Foster Reservoir		



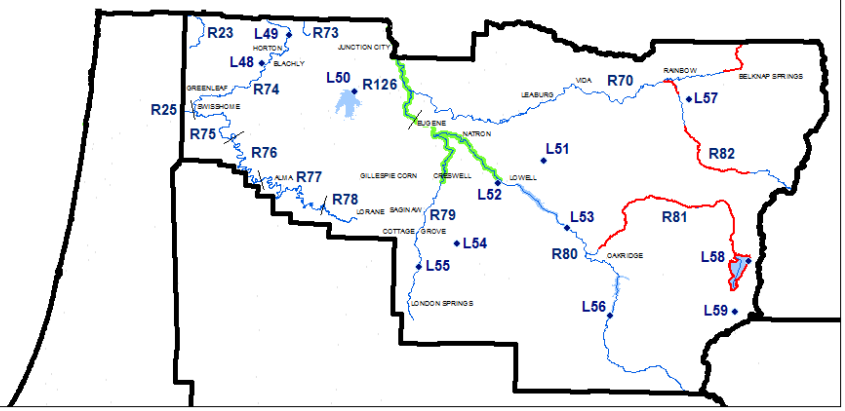
REGION 4



State Scenic Waterways
River Segments R75 R75
Lake / Reservoir Location L53
Existing Water Trails

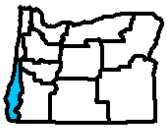
ID NUMBER	LAKE / RESERVOIR
L48	Triangle Lake
L49	Hult Reservoir
L50	Fern Ridge Reservoir
L51	Fall Creek Lake
L52	Dexter Reservoir
L53	Lookout Point Reservoir
L54	Dorena Reservoir
L55	Cottage Grove Lake
L56	Hills Creek Reservoir
L57	Cougar Reservoir
L58	Waldo Lake
L59	Gold Lake
L60	Summit Lake

ID NUMBER	RIVER REACH
R23	Five Rivers
R25	Siuslaw River (mouth to confluence with Lake Creek, near Swisshome)
R70	McKenzie River
R73	South Fork Alsea River
R74	Lake Creek
R75	Siuslaw River (Confluence of Lake Cr, near Sweethome, to Wildcat Cr, near Austa)
R76	Siuslaw River (Wildcat Cr, near Austa, to Clay Creek Campground)
R77	Siuslaw River (Clay Creek Campground to Siuslaw Falls)
R78	Siuslaw River (Siuslaw Falls to junction of North and South Fork)
R79	Coast Fork Willamette River
R80	Middle Fork Willamette River
R81	North Fork Middle Fork Willamette River
R82	South Fork McKenzie River
R126	Willamette River (Sam Daws Bend, near Peoria, to Mid Fork Junction)



REGION 5

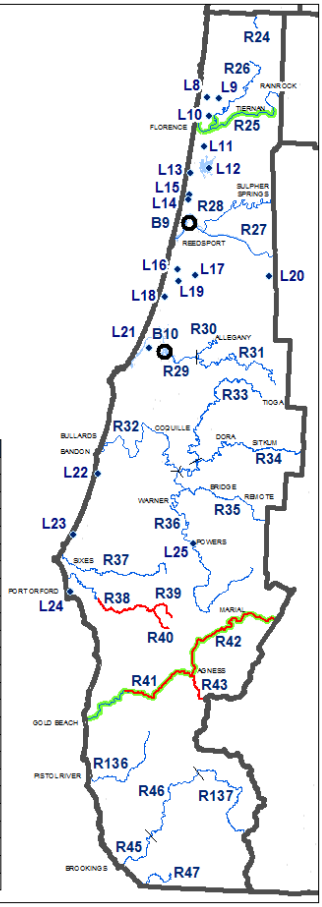
ID NUMBER	LAKE / RESERVOIR
L8	Sutton Lake
L9	Mercer Lake
L10	Munsel Lake
L11	Woahink Lake
L12	Siltcoos Lake
L13	Carter Lake
L14	Tahkenich Lake
L15	Elbow Lake
L16	Eel Lake
L17	N. Tenmile Lake
L18	Saunders Lake
L19	Tenmile Lake
L20	Loon Lake
L21	Empire Lakes
L22	Bradley Lake
L23	Floras Lake
L24	Garrison Lake
L25	Powers Park Pond



State Scenic Waterways
River Segments R45 R46
Lake / Reservoir Location L25
Existing Water Trails
Ocean Bay Water Trail
Other Ocean Bay

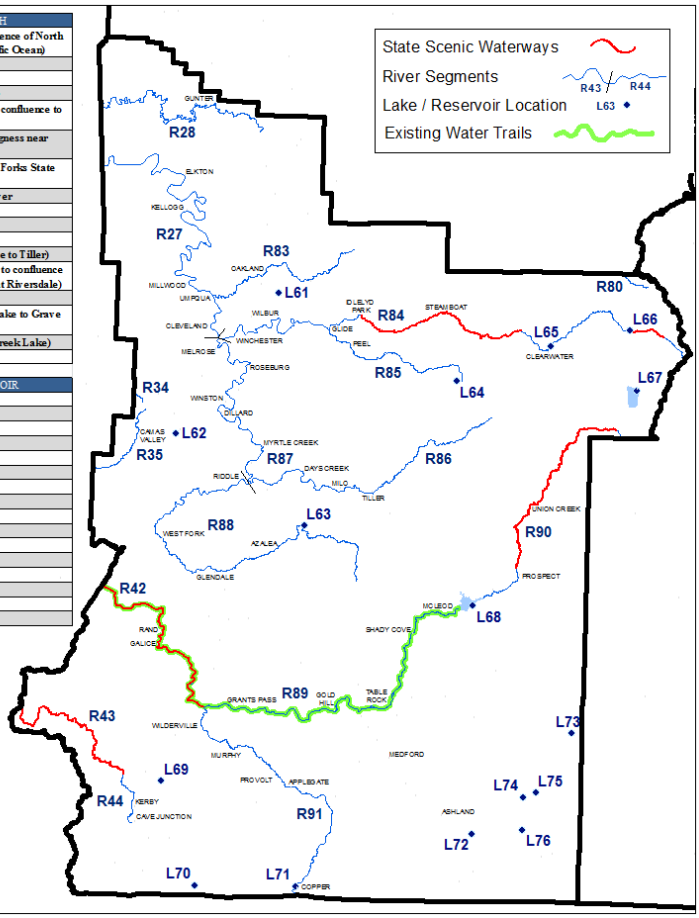
ID NUMBER	OCEAN BAY / ESTUARY
B9	Winchester Bay
B10	Coos Bay

ID NUMBER	RIVER REACH
R24	Yachats River
R25	Siuslaw River (mouth to confluence with Lake Creek, near Swisshome)
R26	North Fork Siuslaw River
R27	Umpqua River (mainstem from confluence of North and South Fork to mouth at Pacific Ocean)
R28	Smith River
R29	Coos River
R30	Millicoma River
R31	South Fork Coos River
R32	Coquille River, mainstem
R33	North Fork Coquille River
R34	East Fork Coquille River
R35	Middle Fork Coquille River
R36	South Fork Coquille River
R37	Sixes River
R38	Elk River
R39	North Fork Elk River
R40	South Fork Elk River
R41	Rogue River (Illinois River confluence to mouth at Pacific Ocean)
R42	Rogue River (Grave Creek confluence to Illinois River Confluence)
R43	Illinois River (Deer Creek to Agness)
R136	Pistol River
R45	Chetco River (from Loeb State Park to the mouth at Pacific Ocean)
R46	Chetco River (from Boulder Creek to Loeb State Park)
R137	Chetco River (from headwaters to Boulder Creek)
R47	Winchuck River

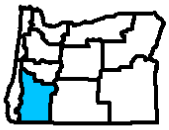


ID NUMBER	RIVER REACH
R27	Umpqua River (From confluence of North and South Forks to the Pacific Ocean)
R28	Smith River
R34	East Fork Coquille River
R35	Middle Fork Coquille River
R42	Rogue River (Grave Creek confluence to Illinois River Confluence)
R43	Illinois River (Deer Cr to Agness near confluence w/ Rogue R)
R44	Illinois River (Illinois River Forks State Park to Deer Creek)
R80	Middle Fork Willamette River
R83	Calapooya Creek
R84	North Umpqua River
R85	Little River
R86	South Umpqua River (Source to Tiller)
R87	South Umpqua River (Tiller to confluence with North Umpqua River, at Riversdale)
R88	Cow Creek
R89	Rogue River (Lost Creek Lake to Grave Creek)
R90	Rogue River (above Lost Creek Lake)
R91	Applegate River

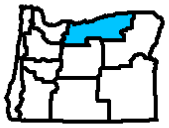
ID NUMBER	LAKE / RESERVOIR
L61	Cooper Creek Reservoir
L62	Ben Irving Reservoir
L63	Galesville Reservoir
L64	Hemlock Lake
L65	Toketee Reservoir
L66	Lemolo Lake
L67	Diamond Lake
L68	Lost Creek Lake
L69	Lake Selmac
L70	Bolan Lake
L71	Applegate Lake
L72	Emigrant Lake
L73	Fish Lake
L74	Agate Lake
L75	Howard Prairie Lake
L76	Hyatt Reservoir



REGION 6

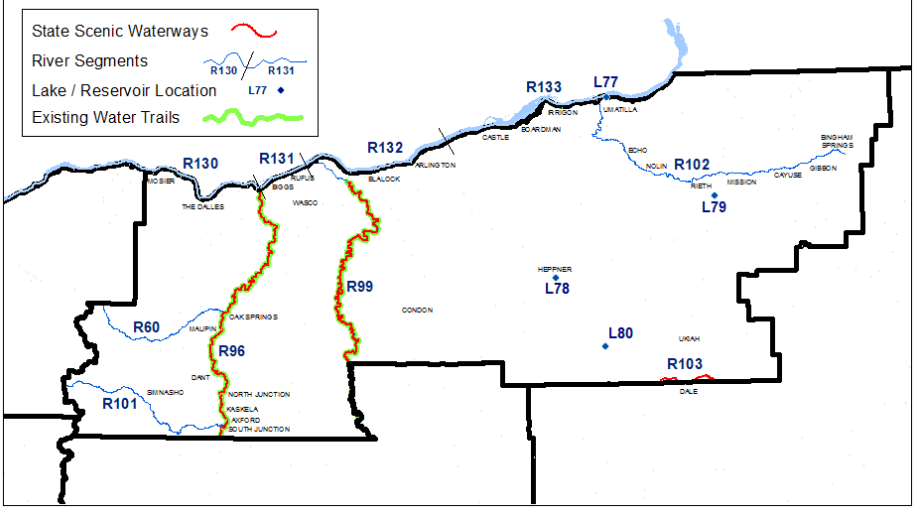


REGION 7



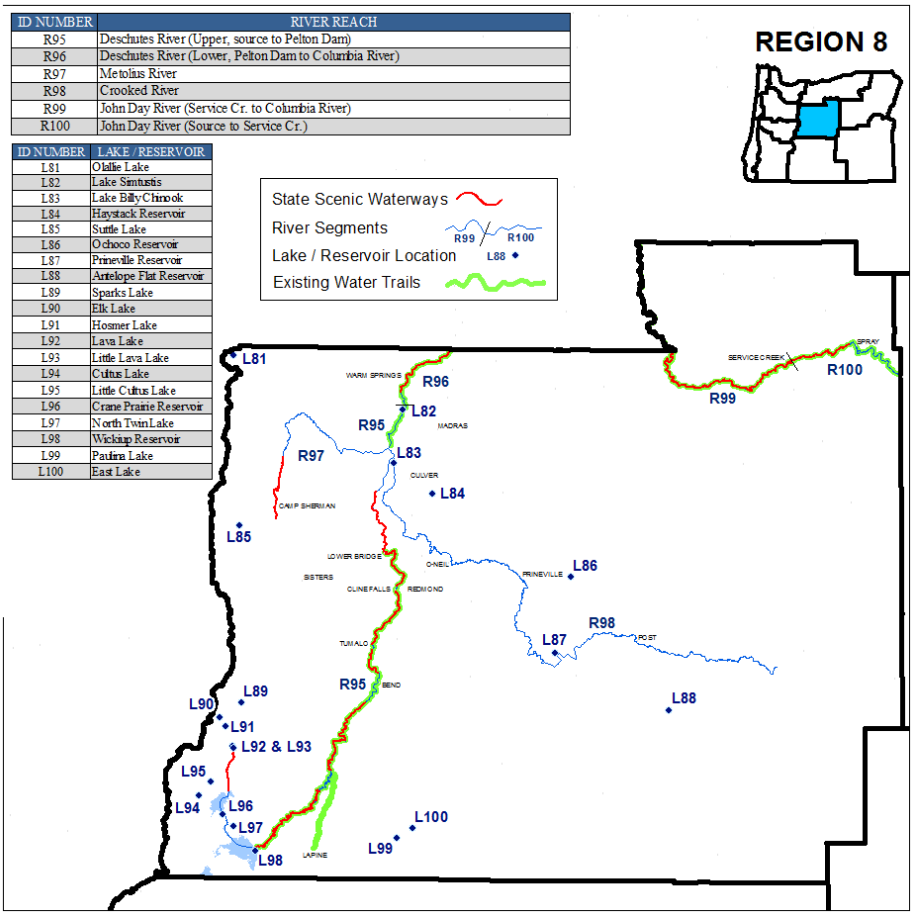
ID NUMBER	RIVER REACH
R60	White River
R96	Deschutes River (Pelton Dam to Columbia River)
R99	John Day River (Service Cr. to Columbia River)
R101	Warm Springs River
R102	Umatilla River
R103	North Fork John Day River
R130	Columbia River (Bonneville Dam to Deschutes River)
R131	Columbia River (Deschutes River to John Day Dam)
R132	Columbia River (John Day Dam to Heppner Junction, near Hwy 74)
R133	Columbia River (Heppner Junction, near Hwy 74, to state line above Hat Rock State Park)

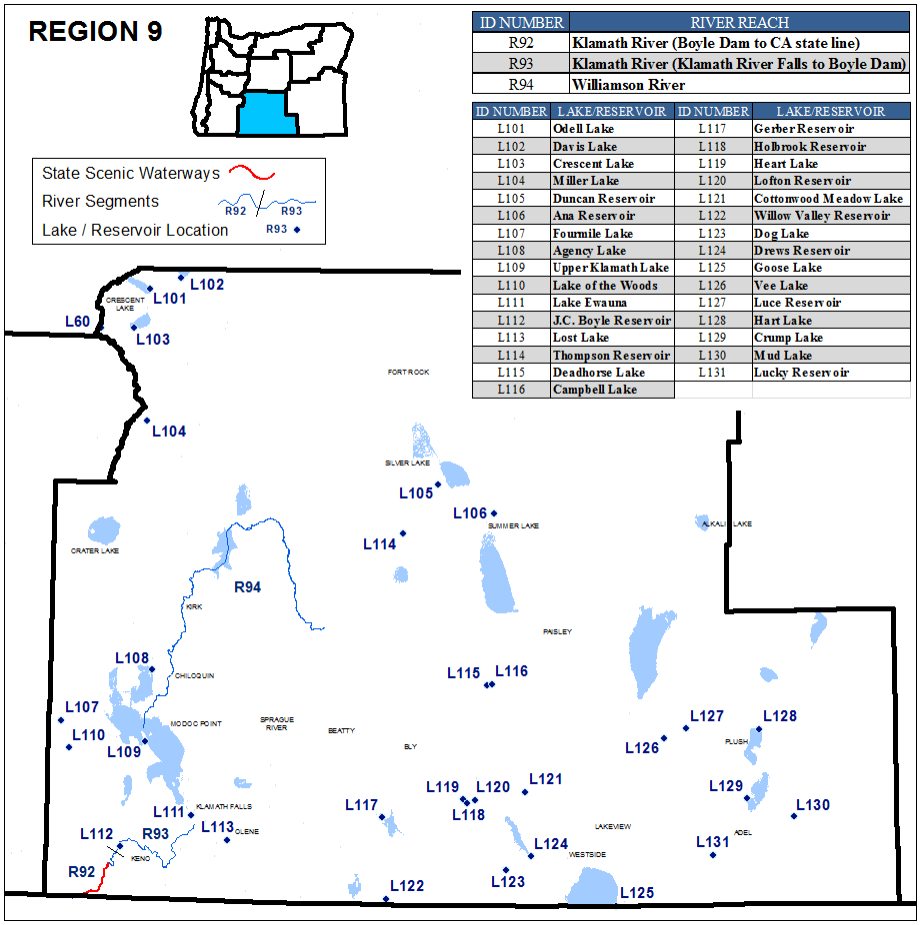
ID NUMBER	LAKE / RESERVOIR
L77	Lake Wallula
L78	Willow Creek Reservoir
L79	McKay Reservoir
L80	Penland Lake



ID NUMBER	RIVER REACH
R95	Deschutes River (Upper, source to Pelton Dam)
R96	Deschutes River (Lower, Pelton Dam to Columbia River)
R97	Metolius River
R98	Crooked River
R99	John Day River (Service Cr. to Columbia River)
R100	John Day River (Source to Service Cr.)

ID NUMBER	LAKE / RESERVOIR
L81	Olallie Lake
L82	Lake Simtustus
L83	Lake Billy Chinook
L84	Haystack Reservoir
L85	Suttle Lake
L86	Ochoco Reservoir
L87	Prineville Reservoir
L88	Antelope Flat Reservoir
L89	Sparks Lake
L90	Elk Lake
L91	Hosmer Lake
L92	Lava Lake
L93	Little Lava Lake
L94	Cultus Lake
L95	Little Cultus Lake
L96	Crane Prairie Reservoir
L97	North Twin Lake
L98	Wickiup Reservoir
L99	Paulina Lake
L100	East Lake



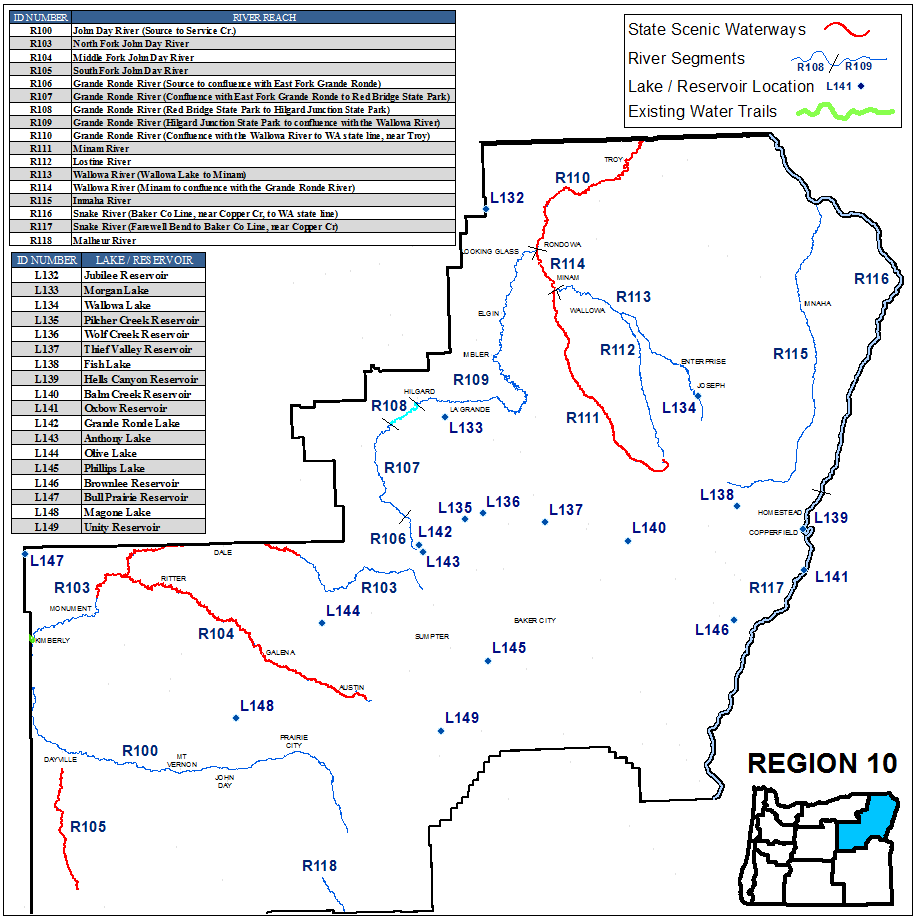


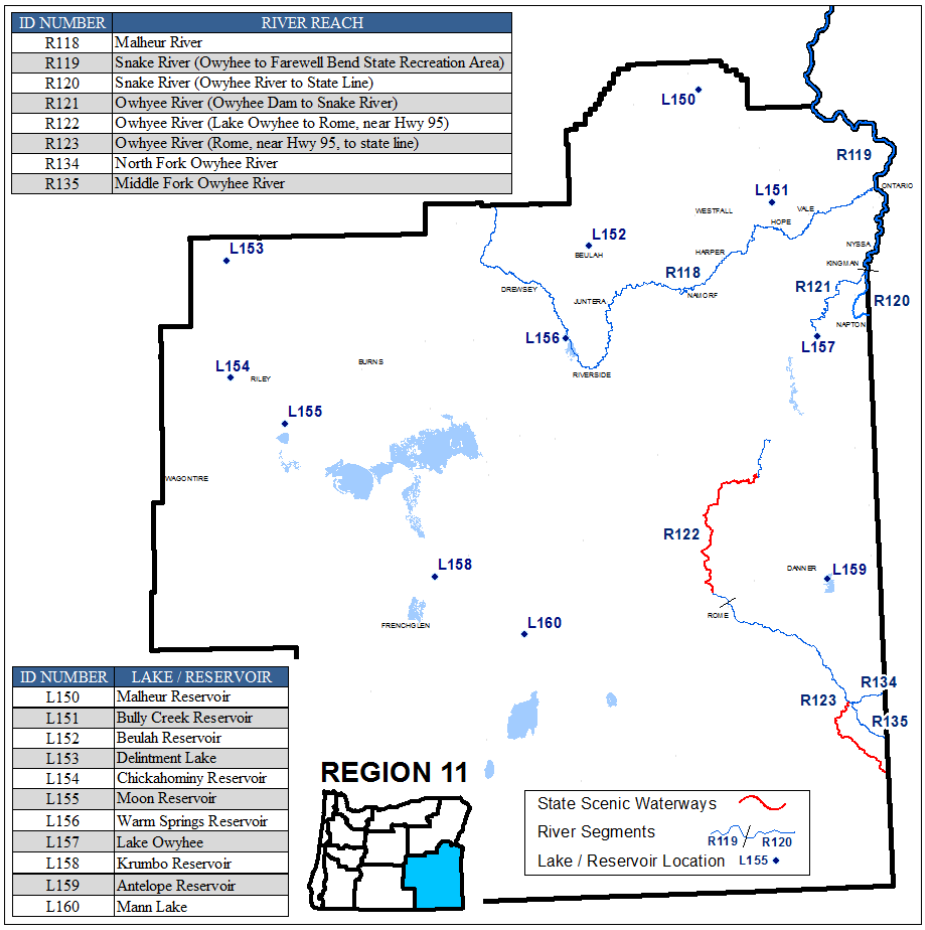
ID NUMBER	RIVER REACH
R92	Klamath River (Boyle Dam to CA state line)
R93	Klamath River (Klamath River Falls to Boyle Dam)
R94	Williamson River

ID NUMBER	LAKE/RESERVOIR	ID NUMBER	LAKE/RESERVOIR
L101	Odell Lake	L117	Gerber Reservoir
L102	Davis Lake	L118	Holbrook Reservoir
L103	Crescent Lake	L119	Heart Lake
L104	Miller Lake	L120	Lofton Reservoir
L105	Duncan Reservoir	L121	Cottonwood Meadow Lake
L106	Ana Reservoir	L122	Willow Valley Reservoir
L107	Fourmile Lake	L123	Dog Lake
L108	Agency Lake	L124	Drews Reservoir
L109	Upper Klamath Lake	L125	Goose Lake
L110	Lake of the Woods	L126	Vee Lake
L111	Lake Ewauna	L127	Luce Reservoir
L112	J.C. Boyle Reservoir	L128	Hart Lake
L113	Lost Lake	L129	Crump Lake
L114	Thompson Reservoir	L130	Mud Lake
L115	Deadhorse Lake	L131	Lucky Reservoir
L116	Campbell Lake		

ID NUMBER	RIVER REACH
R100	John Day River (Source to Service Cr.)
R103	North Fork John Day River
R104	Middle Fork John Day River
R105	South Fork John Day River
R106	Grande Ronde River (Source to confluence with East Fork Grande Ronde)
R107	Grande Ronde River (Confluence with East Fork Grande Ronde to Red Bridge State Park)
R108	Grande Ronde River (Red Bridge State Park to Hilgard Junction State Park)
R109	Grande Ronde River (Hilgard Junction State Park to confluence with the Wallowa River)
R110	Grande Ronde River (Confluence with the Wallowa River to WA state line, near Troy)
R111	Minam River
R112	Lostine River
R113	Wallowa River (Wallowa Lake to Minam)
R114	Wallowa River (Minam to confluence with the Grande Ronde River)
R115	Imnaha River
R116	Snake River (Baker Co Line, near Copper Cr, to WA state line)
R117	Snake River (Farewell Bend to Baker Co Line, near Copper Cr)
R118	Malheur River

ID NUMBER	LAKE / RESERVOIR
L132	Jubilee Reservoir
L133	Morgan Lake
L134	Wallowa Lake
L135	Pilcher Creek Reservoir
L136	Wolf Creek Reservoir
L137	Thief Valley Reservoir
L138	Fish Lake
L139	Hells Canyon Reservoir
L140	Balm Creek Reservoir
L141	Oxbow Reservoir
L142	Grande Ronde Lake
L143	Anthony Lake
L144	Olive Lake
L145	Phillips Lake
L146	Brownlee Reservoir
L147	Bull Prairie Reservoir
L148	Magone Lake
L149	Unity Reservoir



ID NUMBER	RIVER REACH
R118	Malheur River
R119	Snake River (Owyhee to Farewell Bend State Recreation Area)
R120	Snake River (Owyhee River to State Line)
R121	Owhyee River (Owyhee Dam to Snake River)
R122	Owhyee River (Lake Owyhee to Rome, near Hwy 95)
R123	Owhyee River (Rome, near Hwy 95, to state line)
R134	North Fork Owyhee River
R135	Middle Fork Owyhee River

ID NUMBER	LAKE / RESERVOIR
L150	Malheur Reservoir
L151	Bully Creek Reservoir
L152	Beulah Reservoir
L153	Delintment Lake
L154	Chickahominy Reservoir
L155	Moon Reservoir
L156	Warm Springs Reservoir
L157	Lake Owyhee
L158	Krumbo Reservoir
L159	Antelope Reservoir
L160	Mann Lake