

Appendix F
Area Resident Survey Results

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Lewis River Hydroelectric Projects
FERC Nos. 2111, 2213, 2071, and 935

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AREA RESIDENT SURVEY RESULTS

The Recreation Surveys (REC 3) consist of a group of 7 user count, visitor attitude, and other surveys to supplement similar surveys conducted in 1996 through 1998 in the vicinity of the projects. Combined with previous survey data for the project area, these surveys provide information on demand and use levels in the study area. These 7 recreation surveys, once completed, will be compiled into the Recreation Demand Analysis report (REC 4). This survey, the Area Resident Survey, is 1 of these 7 surveys. The results of this survey are presented below.

Study Objectives

The overall objectives of the Recreation Surveys (REC 3) are to answer key questions identified in the previous watershed scoping process. The data will be used to assess existing demand and use levels, visitor attitudes, preferences, and perceptions of crowding. The results from this survey will be used to specifically address issues related to area residents potentially missed during previous surveys. These results will respond to various issues raised by the Recreation Resource Group related to specific visitor sub-groups.

Study Area

The Area Resident Survey study area includes the communities of Ariel, Cougar, Amboy, and Woodland, plus 7 homeowner associations that surround the 3 project reservoirs. Five of these 7 homeowner associations were included in this study; one association was unresponsive to requests to obtain an address list and one association was only recently formed and does not have any residents at this time.

Methods

The methods for this study are described on pages REC 3-3 to REC 3-6 of the Study Plan Document (PacifiCorp and Cowlitz PUD 1999a). The primary method for gathering data was a mail survey of area residents.

Study Results

The Recreation Resource Group initiated this subtask in the winter of 1999 following approval. The focus of this survey is the seasonal and year-round residents of the local area surrounding the Lewis River reservoir system.

The principle objective was to detail the attitudes and characteristics of these individuals as they relate to recreation in the area. Of primary interest was how increasing recreational use and occasional crowded conditions affect residents. The survey also focused on obtaining information about residents' recreational use of the area and how it is similar or different from non-resident recreational users previously surveyed. Results are also provided for items dealing specifically with resident perceptions and opinions regarding user-fees, as well as the perceived need for alternative or additional facilities or services in the project area.

Surveys were sent out in December of 1999 to seasonal and year-round residents of the Lewis River Valley from Woodland near Interstate 5 to the eastern end of Swift Reservoir. Of the 1,022 surveys sent, a total of 376 surveys were returned for a final response rate of 37%, which is higher than usual for this type of landowner survey in which there is only one mailing. Residents of the five shoreline homeowners associations where surveys were sent returned 198 surveys (45 percent response rate), while residents of the local communities returned 178 surveys (30 percent response rate). This resulted in a relatively equal representation of both homeowners and residents from the local area. Table 1 provides a detailed listing of where survey respondents resided.

Table 1. Area Resident Survey Responses by Location

Location	Number of Surveys Sent	Number of Surveys Received	Response Rate
<u>Homeowners Associations</u>			
Kings Lakeside	44	24	55%
Northwoods	122	66	54%
Woodland Park	29	19	66%
Swift Creek Estates	47	27	57%
Campers Hideaway	191	62	32%
<i>Sub-Total</i>	437	198	45%
<u>Local Communities</u>			
Woodland	228	57	25%
Amboy	188	59	31%
Cougar	38	13	34%
Ariel	131	49	37%
<i>Sub-Total</i>	585	178	30%
Total	1,022	376	37%

Source: Provided by EDAW

Area Resident Characteristics

Area residents who responded to this mail survey have many characteristics and visitation patterns that distinguish them from other visitors contacted in previous survey efforts. The average age of area residents was older, at 52 years, compared to 39 years for respondents to the 1998 visitor surveys on Lake Merwin and Swift Reservoir. See Table 2 for a more complete presentation of the age of area residents. While about one-third (34 percent) of all visitors in 1998 were younger than 35 years of age, only 10 percent of area residents were 35 years of age or younger.

Table 2. Age of Area Resident Respondents

Age	Percent
Under 35	10.2
35-50	41.0
51-70	37.0
Over 70	11.8

Source: Provided by EDAW

Nearly two-thirds (65 percent) of respondents were male. It is important to note that surveys were addressed to the entire household, and that typically, men have a greater tendency to complete this type of survey when it is addressed in such a manner. This may explain the higher percentage of men who responded to the survey.

Just over half (51 percent) of residents live in the local area year-round, with the remaining percentage residing in the area either on a seasonal basis (31 percent) or on weekends (17 percent). Most area residents (71 percent) surveyed do not work in the local area.

Seasonal and weekend residents are primarily members of the homeowner associations identified in Table 1. Most residents have lived in the area for many years and have visited the recreation facilities at the project reservoirs for an even longer period of time. Table 3 indicates that while some (19 percent) residents have lived in the area less than 5 years, many (44 percent) have lived in the area for more than 20 years. Nearly one-third (32 percent) of all respondents first visited the recreation facilities at the project reservoirs more than 30 years ago (Table 4).

Table 3. Number of Years Survey Respondents Have lived in the Lewis River Area

Years	Percent
Less than 5	18.6
5-10	20.5
11-20	16.5
21-30	22.0
31-40	9.0
41-50	5.9
51-60	5.6
61-70	1.9

Source: Provided by EDAW; Mean = 17.7 years

Table 4. Year Area Residents First Visited the Recreation Facilities at the Project Reservoirs

Years	Percent
1996-1999	6.3
1990-1995	19.7
1980-1989	18.9
1970-1979	23.3
1960-1969	18.1
1950-1959	9.1
Before 1950	4.6

Source: Provided by EDAW; Mean = 1976

As previously mentioned, 2 distinct populations of area residents were identified and surveyed in this study. These 2 groups included residents who live in surrounding communities, and those who live in the various private shoreline developments. These 2 distinct groups are evident when examining how far respondents live from the project reservoirs (Table 5). Table 5 indicates that while most of the respondents live within 20 miles of the reservoirs, there is a second cluster of residents who live between 40 and 50

miles from the reservoirs. Subsequent columns indicate that many of the respondents in this second cluster reside in the shoreline homeowner associations. Further distinctions between these 2 groups are presented in Attachment F-1.

Table 5. Distance Area Residents Live from the Project Reservoirs
By Survey Group

Miles	Total Percent	Shoreline Homeowner Group	Local Communities Group
Less than 1	14.2	4.1	26.3
2-10	21.3	0.6	45.1
11-20	11.5	2.1	23.2
21-30	7.0	8.7	5.4
31-40	5.9	10.9	0.0
41-50	13.2	23.8	0.0
51-60	4.2	7.7	0.0
61-70	5.6	10.3	0.0
More than 70	17.1	31.8	0.0

Source: Provided by EDAW

Participation in Recreation Activities

Area residents surveyed indicated that they participate in a wide range of recreational activities while visiting the project reservoirs. The most popular activities among area residents from those shown in Table 6 include relaxation (72 percent), spending time with family (71 percent), sunbathing/swimming (67 percent), and fishing from a boat (61 percent). Only around one-quarter (27 percent) of area residents participate in tent camping or RV camping (24 percent), highlighting the fact that their permanent or seasonal residence is near enough that they focus their visit primarily on day use activities.

It is interesting to note that among respondents to the 1998 recreation survey, only 5 activities were enjoyed by more than 40 percent of visitors, while 12 activities were enjoyed by more than 40 percent of the area residents surveyed in this study. This indicates that area residents are participating in a wider array of activities compared to the average non-resident visitor. This is likely due to having visited the area more often. Area residents are generally more aware of the various activities available in the area.

Table 6. Area Residents' Participation in Activities at the Project Reservoirs

Activity	Percent ¹
Relaxation	72.0
Spending time with family	71.4
Sunbathing/swimming	66.8
Fishing from a boat	61.2
Hiking/walking	60.6
Sightseeing by boat	57.5
Picnicking	55.6
Water skiing	54.3
Sightseeing by car	52.0
Powerboating	49.4
Fishing from shore	41.3
Driving for pleasure	40.4
Kayaking/canoeing/rafting/tubing	27.0
Tent camping	26.7
RV camping	24.2
Jet skiing/personal watercraft use	20.8
Nature study/photography	19.9
Sailing	18.0
Caving/rock climbing	15.2
Mountain/road biking	11.8
Backpacking	11.5
Horseback riding	4.3
Windsurfing	1.9
Hunting	1.6

¹ Respondents could indicate more than one activity. For this reason, the percentages do not add up to 100 percent.

Source: Provided by EDAW

Area residents were also asked to indicate from the same list of activities, which primary activity they participate in most frequently. The top 4 primary activities tended to focus on water-based recreation with fishing from a boat (17 percent), powerboating (12 percent), and sunbathing/swimming (11 percent) among the top activities (Table 7). Spending time with family (14 percent) was also a primary activity. Over twice as many area residents indicated fishing from a boat as their primary activity (17 percent) than did visitors surveyed in the 1998 recreation survey (7 percent).

Table 7. Area Residents' Primary Activity at the Project Reservoirs

Activity	Percent
Fishing from a boat	16.7
Spending time with family	14.2
Powerboating	12.0
Sunbathing/swimming	10.9
Relaxation	9.1
Hiking/walking	7.3
Water skiing	6.5
RV camping	6.2
Jet skiing/personal watercraft use	2.9
Fishing from shore	2.5
Driving for pleasure	2.5
Picnicking	2.2
Kayaking/canoeing/rafting/tubing	1.8
Sightseeing by boat	1.4
Tent camping	1.1
Sailing	1.1
Sightseeing by car	0.4
Nature study/photography	0.4
Windsurfing	0.4
Hunting	0.4

Source: Provided by EDAW

In addition to these activities, 28 area residents felt that there were activities they would like to participate in but could not (latent demand). Table 8 indicates that the most frequently cited activities in this category were being able to ride all-terrain vehicles (ATV's) on the dry lakebed of Swift Reservoir during the winter, and boat-in camping on the project reservoirs.

Table 8. Activities Area Residents Could Not (But Would Like to) Do in the Project Area

Activity	Number
Use ATV's on Swift Reservoir lakebed in winter	8
Camp at boat-in campsites	4
Boat on Swift Reservoir (without floating debris)	3
Cross-country ski on groomed trails	2
Recreate without fees	2
Consume alcohol in campgrounds	2
Ride mountain bikes on designated trails	2
Pick mushrooms on Monument lands	1
Walk on paved paths	1
Hike on a long trail	1
Fish for spring salmon, steelhead	1
Drive gated mountain roads	1

Source: Provided by EDAW; N = 28

Past Visitation

Area residents surveyed indicated that they visit a wide variety of places and sites in answering 2 separate questions about past visitation. The first question asked respondents to indicate how often they visited various places in the Lewis and Kalama river watersheds in the last 12 months. Results from this question indicate that residents visit many places in the area; however, Lake Merwin, Yale Lake, Swift Reservoir, Mount St. Helens National Volcanic Monument (Monument), and the Gifford Pinchot National Forest (GPNF) are the most popular among those shown in Table 9. Only 14 percent of residents visited the private RV parks in the area in the past year. Several other areas, including Merrill Lake, the Lewis River below Merwin Dam, the Swift No. 2 power canal, DNR Siouxon lands, private timber lands, and areas above Swift Reservoir, were also lightly visited by area residents. Alternatively, about two thirds (64 percent) of area residents visited Lake Merwin in the past year. When asked to indicate their favorite place among those listed, area residents overwhelmingly indicated Lake Merwin as their favorite (41 percent), followed by Swift Reservoir (24 percent).

Table 9. Percent of Area Resident Visits to Lewis and Kalama River Watershed Recreation Sites in the Past 12 Months and Favorite Site

Place	0	1-5	6-10	11-15	>15	Favorite
Lake Merwin	35.6	27.3	6.1	4.4	26.5	41.0
Yale Lake	56.9	28.7	5.5	3.0	5.8	8.4
Swift Reservoir	52.9	16.9	6.9	4.2	19.2	24.4
Swift 2 Canal	82.8	11.6	1.4	0.8	3.3	1.2
Lewis River area below Merwin Dam	71.8	15.8	6.1	1.9	4.6	2.4
Lewis River area above Swift Reservoir	64.1	21.8	5.5	2.2	6.4	2.7
Mt. St. Helens National Volcanic Mon.	52.8	37.3	5.8	2.2	1.9	2.7
Gifford Pinchot National Forest	45.9	28.5	9.4	3.0	13.3	5.7
Merrill Lake	78.2	17.4	3.6	0.6	0.3	0.4
Siouxon Lands	79.8	12.7	3.0	1.4	3.1	4.8
Private RV parks/resorts in the Lewis River area	85.9	6.6	1.1	0.6	5.9	4.8
Private timber lands in the Lewis River area	73.4	13.0	5.0	2.2	6.4	1.5

Source: Provided by EDAW

When asked why they preferred the place they selected as their favorite, area residents indicated a wide variety of reasons. The overwhelming response was that the place was located close to their home or seasonal residence, such as an RV space or a cabin (Table 10). This indicates the area residents' emphasis on convenience. Another important reason for preferring a particular site was a preference for a specific activity such as boating, hiking, picnicking or camping.

Table 10. Area Residents' Reasons for Preference of Favorite Site in the Lewis and Kalama River Watersheds

Reason	Percent
Own a cabin, home, RV space nearby	63.6
To do activities	11.6
Less crowded	6.6
Natural environment	4.3
No fees	2.0
More water (bigger lake)	2.0
Good facilities	1.7
Rustic/secluded	1.7
Like it there	1.3
Clean and safe	1.3
Only one been to	1.3
Familiar with it	0.8
Less debris	0.3
Less people from Oregon	0.3
It's nice	0.3
Used to work there	0.3
Like to watch it change over time	0.3
It's where I grew up	0.3

Source: Provided by EDAW

A second question dealing with visitation to the project area asked area residents how often they visited a more specific list of recreation sites located on or in proximity to the project reservoirs. Speelyai Bay Park and Yale Park are the sites that area residents visited the most in the past year (Table 11). This corresponds with the fact that these 2 sites are located on the 2 most frequently visited reservoirs, Lake Merwin and Yale Lake. Relatively few residents visited most of the other sites, emphasizing the fact that many residents only visit a few favorite sites. The site that residents indicated most frequently as their favorite site was Speelyai Bay Park (21 percent).

Table 11. Percentage of Area Resident Visits to Recreation Sites Around Project Reservoirs (Merwin, Yale, and Swift) in the Past 12 Months

Place	0	1-5	6-10	11-15	>15	Favorite
Speelyai Bay Park	54.6	31.9	6.0	2.7	4.8	20.9
Merwin Park	72.3	21.4	3.3	0.3	2.7	6.6
Cresap Bay Campground/Day Use Area	71.1	23.8	3.6	0.6	0.9	5.8
Yale Park	67.0	23.5	4.8	2.7	2.1	5.8
Saddle Dam Day Use Area	81.2	16.4	1.5	0.3	0.6	1.9
Siouxon County Park Site (undeveloped)	93.8	5.1	0.9	0.0	0.3	0.4
Cougar Park	82.1	14.3	1.2	0.6	1.8	4.3
Cougar Campground	89.0	9.0	1.5	0.6	0.0	0.8
Beaver Bay Campground/Day Use Area	82.1	16.4	0.9	0.3	0.3	1.5
Swift Campground/Day Use Area	70.2	16.4	6.0	3.0	4.5	14.0
Eagle Cliff Park	78.3	15.2	2.7	1.2	2.7	5.0
Forest Service viewpoint at Swift Reservoir	73.2	21.1	3.6	0.9	1.2	0.4
Canyon Creek	83.0	12.5	0.3	1.2	3.0	4.3
Drift Creek	94.0	3.6	1.5	0.6	0.3	1.1
Cougar Creek	88.4	8.6	1.8	0.3	0.9	0.4
Siouxon Creek	83.9	12.2	2.1	0.3	1.5	3.5
Private RV parks/resorts near the reservoirs	84.2	5.7	1.8	1.2	7.2	12.8
Lewis River Golf Course	73.5	18.8	4.8	0.9	2.1	3.9
Boat launch sites below Merwin Dam	79.8	12.2	3.9	1.2	3.0	3.9
Swift 2 canal area	88.1	8.6	0.6	0.3	2.4	1.5
Swift 2 bypass reach (old river channel)	91.7	6.3	1.2	0.6	0.3	0.4
Devil's backbone area by Swift Reservoir	87.5	10.1	0.9	0.3	1.2	0.8

Source: Provided by EDAW

When asked why they preferred the site they selected as their favorite, area residents indicated a wide variety of reasons. The overwhelming response, similar to Table 10, was that the site was located close to their home or seasonal residence (Table 12). It is also worth noting that 14 percent of area residents preferred a specific site because of the boating facilities available. This reinforces the importance of the boat launches at Speelyai Bay and Yale Park as a reason for their popularity among area residents.

Table 12. Reasons for Area Residents' Preference of Their Favorite Site at the Project Reservoirs

Reason	Percentage
Own a cabin, home, RV space nearby	41.8
To do activities	14.3
Boating facilities	14.3
Less crowded	7.3
Natural environment	4.4
Good facilities	4.4
No fees	3.0
Quiet	2.5
Clean	2.0
Only one been to	1.0
It's nice	1.0
It's big (the lake)	1.0
Easy access	0.5
Fewer drunk people	0.5
Nice place for kids	0.5
It's new	0.5
Used to work there	0.5
Visit family and friends	0.5

Source: Provided by EDAW

In addition to asking area residents about their visits to various sites on or near the project reservoirs, the survey also asked respondents to indicate how often they had visited the area in their lifetime, as well as how and why their use patterns may have changed over time. Over half (52 percent) of respondents indicated that they had visited the area more than 100 times, or simply entered the words "lots" (Table 13).

Table 13. Total Percentage of Area Resident Past Visits to the Recreation Facilities at the Project Reservoirs

Number of Visits	Percent
Less than 10	7.8
11-50	20.4
51-100	20.0
101-1000	40.0
More than 1000	4.3
Lots	7.5

Source: Provided by EDAW

Area residents were also asked to indicate how their use of the project reservoir recreation facilities had changed over time. Four out of 10 residents (40 percent) indicated that they are using these facilities less than in the past, with lesser amounts indicating they visit more than in the past (30 percent), or about the same as in the past (31 percent) (Table 14). Of the 102 residents who indicated that they visit the area less than in the past, the most common reason provided for this decrease was user fees (n = 57) (Table 15). Other reasons included getting older (average age of 52) and not recreating as much (n = 21), that there are too many people in the area (n = 19), and that they have less time to recreate than in the past (n = 5).

Table 14. Change in Area Resident Use of Project Reservoir Recreation Facilities

Response	Percent
Less than in the past	39.6
Same as in the past	30.7
More than in the past	29.7

Source: Provided by EDAW

Table 15. Reason Area Residents Visit the Area Less Than in the Past

Reason	Number
Higher fees	57
Getting older	21
Too many people	19
Less time	5

Source: Provided by EDAW; N = 102

Fifty-one area residents provided reasons for why they are visiting the area more frequently than in the past. Most indicated that they visit the area more often because they have recently moved to the area or now own or rent a cabin nearby (n = 38), or that they have more time to recreate now than in the past (n = 13) (Table 16).

Table 16. Reason Area Residents Visit the Area More Than in the Past

Reason	Number
Own property nearby now	38
Have more time now	13

Source: Provided by EDAW; N = 51

Regardless of how often area residents visit the project reservoirs, they have a tendency to visit the area in groups primarily consisting of family and friends. Nearly two-thirds (62 percent) of the residents surveyed are typically part of a group of more than 4 people (Table 17). This is a slightly lower percentage than was found among visitors surveyed previously, indicating that area residents visit the project area in slightly smaller groups than other visitors do. These resident groups overwhelmingly (81 percent) consist of both family and friends, with 13 percent indicating that they are visiting the area primarily with their family (Table 18).

Table 17. Typical Group Size for Area Residents

Number of People in Group	Percent
Alone	3.2
2-3	34.8
4-5	38.3
6-10	22.4
11-15	1.3
More than 15	0.0

Source: Provided by EDAW

Table 18. Typical Group Composition for Area Residents

Type of Group	Percent
Family only	12.7
Friends only	3.3
Family and friends	81.1
Usually alone	2.9
Organized group	0.0

Source: Provided by EDAW

When asked to indicate what was the most popular time to visit the project reservoirs, almost two-thirds (72 percent) of area residents indicated July 4 to Labor Day (Table 19). However, many residents indicated in the margin of the survey form that they do visit the area at various times throughout the entire year. This is reinforced by the fact that most (87 percent) residents have visited the area during the off-season (after Labor Day to before Memorial Day). Over 200 residents provided reasons for why they visit the project reservoirs in the off-season. The most popular reasons provided had to do with a type of activity (n = 64), because the area was less crowded (n = 60), and to visit their seasonal cabin or RV space (n = 48) (Table 20).

Table 19. Season Area Residents Most Often Recreate at the Project Reservoirs

Season	Percent
January 1 to April 15	2.5
April 15 to Memorial Day weekend	9.8
Memorial Day to July 4	7.4
July 4 to Labor Day weekend	71.7
Labor Day to October 31	7.0
October 31 to December 31	1.6

Source: Provided by EDAW

Table 20. Reasons Area Residents Visit the Project Reservoirs during the Off-Season

Reason	Number
To do activities (fishing, boating, etc.)	64
Less crowded	60
Visit cabin or RV space	48
Weather	9
No fees	6
Like it there	3
To relax	2
To see the empty lakes (low pool in winter)	2
To attend church activities	1
Like the area best in the fall	1
Like winter weekends	1
We live nearby	1
To see the changing seasons	1
To attend community work parties	1
To go to work	1

Source: Provided by EDAW; N = 201

Area residents who indicated that they did not visit the project area during the off-season were asked to indicate why (Table 21). The most popular responses were the weather (n = 20), being busy doing other activities (n = 4), the fact that some sites are closed in the off-season (n = 4), and that water levels are too low or erratic (n = 3).

Table 21. Reasons Area Residents Gave for Not Visiting the Project Reservoirs During the Off-Season

Reason	Number
Weather	20
School/work/other activities	4
Sites are closed	4
Water levels low/erratic	3

Source: Provided by EDAW; N = 31

Evaluation of Facilities at Project Reservoirs

Area residents were asked several questions regarding their evaluations and opinions of facilities at the project reservoirs. When rating the facilities at project reservoirs, just under half felt that they liked them better than either most or all other similar areas that they use (Table 22). Only 9 percent of respondents like the project reservoir facilities less than other similar areas.

Table 22. Overall Rating of the Recreation Facilities at Project Reservoirs Compared to Other Similar Areas Used by Area Residents

Rating	Percent
Less than any other similar areas I use	2.8
Less than most other similar areas I use	6.3
About the same as most other similar areas I use	41.4
Better than most other similar areas I use	36.5
Better than any other similar areas I use	13.0

Source: Provided by EDAW

Area residents were also asked to compare a more specific list of facilities with those found at other similar areas that they used in the past. Several of the facilities and features of the project reservoirs that they like better than other areas include the scenic views (78 percent feel the project area is better), the natural environment (68 percent), the amount of travel time needed (60 percent), and the feeling of peace and quiet (59 percent) (Table 23).

Facilities and features that area residents feel are worse than other areas include the weather (30 percent), the quality of the fishing (27 percent), the cost of recreating (27 percent), and the quality of the shoreline (20 percent). It is interesting to note that none of the components mentioned as better or worse than other areas were facility-related responses, indicating that in general, area residents feel that the quality of these facilities is about the same as at other areas.

Table 23. Area Residents' Comparison of Reservoir Recreation Facilities with Other Similar Areas

Issue	Worse than Others	Same as Others	Better than Others	Don't Know
Design or quality of facilities	8.6	39.2	42.8	9.4
Scenic views	2.1	16.4	78.0	3.5
Sense of safety	5.3	42.6	44.0	8.1
Quality of the fishing	27.4	27.1	18.7	26.8
Quality of the reservoirs	9.9	37.0	42.0	11.0
Feeling of peace and quiet	13.5	24.1	59.3	3.1
Good places for kids	3.7	29.1	58.9	8.2
Natural environment (trees, plants)	3.1	26.1	67.6	3.1
Overall level of development	13.5	34.3	43.6	8.6
Your ability to access areas	18.6	37.7	40.5	3.2
Quality of the shoreline	20.0	38.6	35.1	6.3
Activities available here	10.3	51.1	29.4	9.2
Weather typically found here	30.1	50.0	14.7	5.2
Amount of travel time needed	4.9	31.7	59.8	3.5
Cost of recreating here	26.6	33.1	29.2	11.2

Source: Provided by EDAW

Area residents were asked to evaluate the number or amount of existing recreation facilities and services available at the project reservoirs. Those facilities and services that the highest percentage of residents felt there were not enough of include the amount of parking (43 percent), the amount of shoreline available for dispersed use (43 percent), the number and quality of boat launches (38 percent), the number and quality of swimming/sunbathing areas (37 percent), and the number and quality of picnic or day use areas (32 percent) (Table 24). Three of these facilities and services that residents felt were inadequate were water-based, indicating the importance of water-based facilities to area residents. A small percentage of area residents feel that the amount of shoreline litter/sanitation control and the overall level of recreation development are too high. In general, most area residents feel that the right amount of facilities and services are being provided. A relatively large percentage of area residents did not know how to evaluate the number and quality of RV campsites (43 percent) and tent campsites (39 percent), as well as the number of interpretive/educational programs (41 percent). This is likely due to the fact that area residents seldom use project campgrounds, and that they do not participate in the relatively few opportunities available for interpretation and education.

Table 24. Area Residents' Evaluation of Existing Recreation Facilities and Services

Issue	Too High	About Right	Too Low	Don't Know
Overall level of recreation development	10.0	57.1	18.2	14.6
Number and quality of RV campsites	8.4	36.0	12.7	42.8
Number and quality of tent campsites	4.6	39.0	17.0	39.4
Number and quality of picnic or day use areas	3.6	43.3	32.0	21.1
Amount of shoreline available for dispersed use	1.8	40.1	42.6	15.6
Amount of shoreline litter/sanitation control	11.4	44.6	24.7	19.3
Number of interpretive/educational programs	2.9	39.9	16.0	41.3
Amount of Sheriff's Dept. marine patrols	5.3	51.9	21.4	21.4
Amount of on-shore law enforcement patrols	5.2	43.4	27.6	23.8
Number and quality of boat launches	2.0	46.9	37.5	13.5
Number and quality of swim/sunbathing areas	0.7	49.3	37.2	12.8
Amount of parking	1.7	44.2	42.9	11.3

Source: Provided by EDAW

Many of the facilities and services that residents judged to be inadequate were the same ones that they would desire to see provided or expanded upon at the project reservoirs. Just under one-fifth (19 percent) of area residents surveyed identified a potential recreational facility that they desired at the project reservoirs. Among the many responses provided, the most popular potential recreation facility desired in the area is a new or improved boat launch on Swift Reservoir (n = 17) (Table 25). Combination of the two types of restroom facilities desired (at facilities and on the water), creates the second most frequently requested facility improvement. Several other potential facilities or improvements are also listed in this table.

Table 25. Potential Recreational Facilities Desired at Project Reservoirs by Area Residents

Facility	Number
Another/better boat launch on Swift	17
Fuel docks (boating)	6
Boat-in campsites	6
More/bigger parking areas	5
More trails (hiking or biking)	5
More/better/accessible boat launches (general)	5
More facilities (in general)	4
More/better swimming areas	4
More restrooms (at facilities)	4
Floating restrooms	2
More campsites	2
Zoning of lake (motorboat or jetski only areas)	2
Off-road vehicle camp/trail area	2
Water park at Saddle Dam	1
More playgrounds	1
Boat (kayak) rental facility	1
More dump stations	1
More homes for rent	1
Year-round (winterized) campgrounds	1
Facilities for locals only	1

Source: Provided by EDAW; N = 71

Area Resident Perceptions of Crowding

Area residents were asked several questions about crowding in the area. On a typical 9-point crowding scale, area residents indicated an average perceived crowding score of 5.3. This represents a level located between “slightly crowded” and “moderately crowded.” Only 9 percent indicated that they felt “not at all crowded,” while 14 percent felt “extremely crowded” (Table 26). In the 1998 visitor survey of all users, just under half (46 percent) felt “not at all crowded,” much higher than for area residents. This indicates that residents perceive a much higher level of crowding than visitors.

Table 26. Area Resident Perceptions of Crowding at Merwin and Swift Reservoirs

Not at all crowded		Slightly Crowded			Moderately Crowded		Extremely Crowded	
1	2	3	4	5	6	7	8	9
4.6	4.0	12.5	16.8	10.2	23.8	14.2	7.3	6.6

Source: Provided by EDAW, and Shelby and Heberlein (1986).

One possible explanation for this difference in perception could be that area residents have visited the area over many years and compare current use levels with those from as long as 20 or 30 years ago. This comparison results in a higher perception of crowding. The larger population (other weekend visitors) may not have as long a period of use, and are not able to perceive as big of a change in use. In addition, visitors to the area may come from densely populated areas or visit other more crowded recreation sites. As a result, they are accustomed to higher use levels than local residents are.

Higher levels of perceived crowding among area residents are causing many of them to change their use of the area. Nearly two-thirds (63 percent) indicated that they have changed their visitation to the project reservoirs as a result of crowding (Table 27). The most common ways that these residents have altered their use of the area is to visit more often either on weekdays (47 percent) or during the off-season.

Table 27. Effect of Crowding on Area Residents’ Visits to the Project Reservoirs

Nature of Effect	Percent
Crowding Had Any Effect	62.7
Visit earlier or later in year	31.8
Visit on weekdays	46.6
Would come more often if not so crowded	22.5
Use different sites on the project reservoirs	22.5
Visit earlier in the day	21.5
Visit other places in Washington or Oregon	18.0

Source: Provided by EDAW

Similar results were obtained when area residents were asked to indicate how the amount of visitor use affected their enjoyment of their visit to the project reservoir. Over half (52 percent) indicated that the level of use had detracted “a little” or “a lot” from their overall enjoyment (Table 28). Out of these respondents, 18 percent said crowding detracts from their enjoyment a lot, while 34 percent said it detracts from their enjoyment a little.

Table 28. Effect of Crowding on Area Residents' Overall Enjoyment of Visits to the Project Reservoirs

Nature of Effect	Percent
Adds a lot	6.7
Adds a little	5.6
Doesn't really affect enjoyment	35.7
Detracts a little	34.0
Detracts a lot	18.0

Source: Provided by EDAW

Although the perception of crowding has clearly affected area resident use of the project reservoir recreational facilities, it does not appear to significantly affect resident lifestyle or personal safety. Nearly three-quarters (73 percent) of respondents did not feel that increased use had affected their lifestyle or personal safety. Of the remaining 27 percent, 47 residents provided an example of how use had affected them. The issue mentioned by the greatest number of residents (n = 20) was increased traffic and its associated problems (Table 29). Other area resident survey responses are provided in Table 29.

Table 29. Perceived Affects of Recreation Use on Area Residents' Lifestyle and Personal Safety

Component	Number
Caused more traffic	20
PWC use (dangerous)	7
Areas are too crowded	6
Increased crime	6
Increased noise	5
Increased user fees	3

Source: Provided by EDAW; N = 47

Area Resident Opinions and Evaluation of Other Recreation Issues

A final set of survey questions dealt with various other recreation-related issues in the project area, and how area residents perceived these issues. Table 30 lists levels of concern for numerous issues, many of which were specifically included in the survey because they were believed to be issues of importance to area residents, such as traffic and crime. However, Table 30 indicates that other issues were of more importance. The issues that area residents felt the most concerned about (big level of concern) included floating debris in the water (34 percent), interaction between personal watercraft (PWC) and other users (30 percent), cost to use area facilities (30 percent), reservoir pool levels (28 percent), and concerns over the ability to launch a boat or watercraft (26 percent).

As with other results discussed previously, the issues that are of greatest concern (with the exception of fees) to area residents are water-related. Once again this highlights the importance of water-based activities to area residents. Issues that area residents were not concerned with included the variety of recreation services or facilities (60 percent), interaction between boaters and anglers (54 percent), the location and quality of restrooms (54 percent), traffic on nearby roads (48 percent), and interaction between water skiers and others (47 percent).

Table 30. Area Residents' Perceptions of Potential Issues at the Project Reservoirs

Potential Issue	Level of Concern				
	Big	Moderate	Slight	Not	Don't Know
Litter around the reservoirs	20.4	19.0	28.2	29.9	2.5
Variety of recreation services or facilities	2.6	13.4	18.2	59.5	6.3
Number of people at developed sites	22.5	24.6	31.3	17.6	3.9
Behavior by other users	26.0	23.2	31.6	16.5	2.8
Ability to find a picnic table	5.5	16.2	17.3	47.1	14.0
Ability to find a campsite	8.9	10.8	16.0	46.5	17.8
Access to the shoreline	17.7	22.7	15.9	37.9	5.8
Ability to park vehicles	21.4	19.9	20.6	33.1	5.0
Ability to launch a boat or watercraft	26.2	21.3	13.3	33.6	5.6
Wait times to launch a boat or watercraft	16.4	18.2	21.4	36.4	7.5
Location and quality of restrooms	9.4	12.9	18.7	53.6	5.4
Boat speeds or wakes	14.7	18.3	23.7	38.7	4.7
Interaction between boaters and anglers	8.7	10.9	19.3	53.8	7.3
Interaction between PWC and other users	30.4	21.0	16.4	26.2	5.9
Interaction between water skiers and others	8.8	16.5	20.9	47.3	6.6
Reservoir pool levels	27.7	16.3	22.8	28.0	5.2
Exposed stumps during low pool levels	18.2	22.7	23.1	31.1	4.9
Exposed land during low pool levels	4.5	21.1	23.3	43.7	4.3
Shallow areas during low pool levels	9.0	17.3	27.1	42.6	4.0
Floating debris in the water	33.9	22.5	28.7	12.1	2.8
Safety, security and forest fire hazard	13.4	18.8	26.4	38.4	2.9
Traffic on nearby highways and roads	7.1	17.1	26.0	48.4	1.4
Overflow parking along roads	11.9	19.4	27.3	34.9	6.5
Increase in crime during peak use periods	15.7	21.4	24.3	26.4	12.1
Cost to use facilities	30.1	19.6	13.3	31.8	5.2

Source: Provided by EDAW

The remaining questions focused on user fee issues. Since this survey was administered in the winter following the first year of PacifiCorp's day-use fee, it was important to assess how this fee affected area resident use and opinions of fee-related issues. When asked how user fees affected their visitation to project reservoir day-use areas, 38 percent of respondents indicated that they visit these areas less than in the past, or not at all Table 31). However, one-third indicated that this question did not apply to them, suggesting that they may have not visited these areas during periods when user fees were required, or were not previously visiting these areas at all.

Table 31. Effect of User Fees on Area Residents' Visitation to the Project Reservoir Day-Use Areas

Potential Effect	Percent
Visit day use areas more	2.9
Visit day use areas the same amount	26.8
Visit day use areas less	20.3
Don't visit day use areas anymore	17.4
Does not apply	32.6

Source: Provided by EDAW

Area residents were asked to indicate their level of interest in several types of seasonal or frequent user passes that PacifiCorp was considering at the time of this survey. In general, residents seemed to prefer a year-round pass, as opposed to a pass valid only on weekdays, or on weekends and holidays. Nearly half (48 percent) indicated that a year-round pass was the type they were most interested in (Table 32). It is important to note that 44 percent of the respondents did not answer this question, the lowest response rate of any question in the survey. Anecdotal comments provided in the survey margins suggest that some of these residents did not feel that any day-use fees should be assessed, and that they did not provide an answer as a means of protest.

Table 32. Level of Interest in Types of Visitor Use Passes by Area Residents

Type of Pass	Percent
Pass valid only on weekdays	34.9
Pass valid weekends and holidays	17.0
Pass valid year round	48.1

Source: Provided by EDAW

Results from 2 management-related items indicated mixed support for an expanded campsite reservation system and higher fees for increased law enforcement. When asked if they thought the existing group campsite reservation system should be expanded to include a portion of the individual campsites, less than one quarter (24 percent) agreed (Table 33). The large percentage (42 percent) of residents who indicated "maybe" suggests that they are still unsure as to their opinion on this issue. In addition, since relatively few area residents camp in the area, few may know enough about this issue to have a definitive opinion.

Table 33. Area Residents' Opinion on Whether the Campsite Reservation System should be Expanded to Include Individual Campsites

Response	Percent
Yes	23.8
No	34.4
Maybe	41.8

Source: Provided by EDAW

Area residents were even less supportive of a proposal that would provide increased law enforcement services in return for paying higher fees. Nearly half (48 percent) of the

respondents would not be willing to pay increased fees for increased law enforcement services, however one third of respondents indicated “maybe” (Table 34).

Table 34. Area Residents’ Willingness to Pay More for Increased Law Enforcement Services

Response	Percent
Yes	18.9
No	48.0
Maybe	33.1

Source: Provided by EDAW

Attachment F-1

**Comparison of Significant Differences in Survey Results
Between Groups of Area Residents**

Comparison of Significant Differences in Survey Results Between Groups of Area Residents

As requested by the Recreation Resource Group in February 2000, survey data were further analyzed by comparing several variables. This section includes an analysis of the results of this survey based on 4 variables:

- Shoreline homeowner association members versus local community residents
- Upper valley residents (Cougar and Ariel) versus lower valley residents (Amboy and Woodland)
- Men versus women
- Whether their first visit was before or after 1980

Limited results are provided for each of the 4 separate analyses focusing only on those survey variables that had significantly different (t-test; 95% confidence level that individual results are different) results for both groups in each comparison.

Shoreline Homeowner Association Members versus Local Community Residents

The first analysis attempted to determine if members of the shoreline homeowner associations (association members) differed from local community residents (residents) on the items included in the survey. Below is a brief discussion of those variables for which the populations significantly differed. Some of these differences are obvious while others are not. The total sample of 376 respondents was stratified into those who were contacted through a shoreline homeowner association (n = 198) and those who were contacted at their local community residence (n = 178).

Several summarizing points can be made regarding the differences between these two groups of area residents. Association members tend to be newer to the area and frequent only a few sites around the project reservoirs. Residents visit sites farther from the reservoirs more often, perhaps due to their local knowledge. In general, association members perceive fewer issues as problems and feel that the area is better than other areas for most features and facilities. The overall summary for association members is that they appear to be more satisfied with the social and physical conditions in the area than do residents. One reason for this may be that they are typically only seasonal residents who can enjoy the benefits of the area without having to experience the difference between the recreation season and non-recreation season experiences. More differences were found in the analysis of these two groups than were similarities; however, both groups still differed from non-local visitors.

Visitor Characteristics

- Association members are slightly older (54 years) than residents (50 years).
- Association members live farther away from the project reservoirs (88 miles) than do residents (8 miles).

- Association members reside in the area for a shorter duration during the year than do residents.
- Association members are less likely to work in the local area than are residents.

Participation in Recreation Activities

- Association members participate more frequently in sailing, biking, personal watercraft use, relaxation, and spending time with family compared to residents.
- Association members participate less frequently in tent camping, horseback riding and backpacking compared to residents.

Past Visitation

- Association members visit areas including Lake Merwin, Swift Reservoir, the Lewis River above Swift Reservoir, and the private RV parks in the area more often than residents do.
- Association members visit sites including Swift Campground, Eagle Cliff Park, Drift Creek, and the Devil's Backbone area more often than residents do.
- Association members visit the area less frequently (289 times) than residents do (418 times).
- Association members are more likely to visit later in the year compared to residents.
- Association members are more likely to visit during the off-season compared to residents.
- Association members visit the area as part of slightly larger groups than do residents.

Evaluation of Facilities at Project Reservoirs

- Association members are more likely to feel that there are enough of the following facilities compared to residents:
 - Tent campsites
 - Picnic/day use areas
- Association members are more likely to rate the following facilities and features as better than other areas compared to residents:
 - The scenic views
 - The feeling of peace and quiet
 - Good places for kids

- The natural environment
- Ability to access areas
- The cost of recreating
- Association members are more likely to rate the following facilities and features as worse than other areas compared to residents:
 - The quality of the reservoirs
 - The weather

Perceptions of Crowding

- Association members perceive lower levels of crowding (4.9) than do residents (5.7) (9-point scale).
- Association members are also less likely to have changed their use of the area due to crowding than residents.

Opinions and Evaluation of Other Issues Related to Recreational Use of the Project Area

- Association members perceive many issues as being lower in importance than do residents, including:
 - Variety of facilities
 - Ability to find a picnic table
 - Ability to find a campsite
 - Boat speeds or wakes
 - Interaction between boaters and anglers
 - Interaction between PWC and other users
 - Traffic on nearby highways
 - Overflow parking along roads
 - Location and quality of restrooms
- Association members perceive the following issues as being higher in importance than do residents:
 - Exposed stumps during low pool levels
 - Exposed land during low pool levels
 - Shallow areas during low pool levels
- Association members rate the area as better overall than do residents.
- Association members are more likely to have visited day use areas less due to user fees than residents are.

Upper Valley Residents versus Lower Valley Residents

This analysis looked for significant differences in responses between residents who live in the upper Lewis River Valley closer to the project reservoirs, and residents who live in the lower valley. Residents from 4 communities were included in the survey and were stratified into these categories once the initial analysis had been completed. The upper valley residents were categorized as those residents from Cougar and Ariel (n = 59), while lower valley residents were categorized as residents from Woodland and Amboy (n = 105). A brief discussion follows of those responses for which the populations significantly differed.

There are relatively few differences between upper and lower valley residents, most of which appear to be a result of upper valley residents living closer to the project reservoirs. This proximity accounts for why upper valley residents visit the area and specific sites more often. This situation is likely to cause them to feel that the cost of recreating is worse than other areas. Living closer to the project reservoirs and visiting them more frequently has also caused upper valley residents to feel that reservoir pool levels and traffic are bigger issues than do lower valley residents. These issues may account for the fact that upper valley residents are more likely to have decreased their use of the area compared to lower valley residents.

Visitor Characteristics

- Upper valley residents live closer to the project reservoirs (within 2 miles) than do lower valley residents (11 miles).
- Upper valley residents are more likely to live in a shoreline development (year-round or seasonally) than lower valley residents.

Participation in Recreation Activities

- Upper valley residents participate more frequently in sailing and photography than lower valley residents. Lower valley residents participate more frequently in horseback riding and personal watercraft use.

Past Visitation

- Upper valley residents visit areas including Lake Merwin, Yale Lake, Swift Reservoir, Swift 2 power canal area, the Monument, Merrill Lake, and private timber lands in the area more often than lower valley residents. The lower valley residents visit GPNF, the Siouxon lands, and the private RV parks in the area more often than upper valley residents do.
- Upper valley residents visit sites including Speelyai Bay, Merwin Park, Yale Lake, Cougar Park, Beaver Bay, Cougar Creek, and the Swift 2 bypass reach more often than lower valley residents do.

- Upper valley residents visit the area more frequently (671 times) than lower valley residents do (279 times).
- Upper valley residents are more likely to have decreased their use of the area in recent years than lower valley residents are.
- Upper valley residents visit the area as part of slightly smaller groups than lower valley residents do.
- Upper valley residents are more likely to visit during the off-season than lower valley residents are.

Evaluation of Facilities at Project Reservoirs

- No significant differences were identified.

Perceptions of Crowding

- Upper valley residents are less likely to change their use of the area due to crowding by going to other places in Washington or Oregon than are lower valley residents.

Opinions and Evaluation of Other Issues Related to Recreational Use of the Project Area

- Upper valley residents perceive the following issues as being higher in importance than do lower valley residents:
 - Reservoir pool levels
 - Traffic
- Upper valley residents feel that the cost of recreating at the project reservoirs is slightly worse than at other areas as compared to lower valley residents.
- More upper valley residents feel that recreation use has affected their lifestyle more than do lower valley residents.

Residents Whose First Visit to the Project Reservoirs Was Before 1980 versus Residents Whose First Visit Was After 1980

This analysis of the survey data attempted to determine if the residents, who first visited the area before 1980 (veterans), had significantly different survey responses than those residents who first visited the area after 1980 (newcomers). This date was chosen as it creates fairly equal-sized populations for each of the 2 groups. This data also equates to the eruption of nearby Mount St. Helens that caused a change in the overall recreation use patterns in the region. What follows is a brief discussion of only those variables for which the 2 populations significantly differed. There were 162 veterans and 129 newcomers included in this analysis.

The 162 veterans in this group are made up of nearly equal numbers of local community residents (80) and homeowner association members (82), suggesting that there are significant amounts of homeowner association members (41 percent) that visited the area for the first time before 1980. This is important to note because it indicates that this group of veteran visitors cuts across different types of visitors from different places. Specifically, the average veteran lives nearly 38 miles away from the project reservoir. In general, these results suggest that veterans have visited the area for a longer period of time and thus visit most of the sites many times each year. Overall, both of these groups, veterans and newcomers, have survey results that are mostly consistent with those of the overall population of area residents.

Visitor Characteristics

- As expected, veterans are older (54 years) than newcomers (47 years).
- Veterans live closer to the project reservoirs (38 miles) than do newcomers (59 miles).
- Among area residents who live in the area, veterans have lived in the area longer (28 years) than newcomers (9 years).

Participation in Recreation Activities

- Veterans participate more frequently in sailing and horseback riding compared to newcomers.

Past Visitation

- Veterans visit areas including the Swift 2 power canal, the Lewis River below Lake Merwin, the Lewis River above Swift Reservoir, Merrill Lake, the Siouxon lands, and private timberlands more often than newcomers.
- Veterans have also visited the following sites more often than newcomers:
 - Speelyai Bay
 - Cresap Bay
 - Yale Lake
 - Saddle Dam
 - Siouxon Park
 - Eagle Cliff Park
 - Canyon Creek
 - Drift Creek
 - Siouxon Creek
 - Swift Power Canal
 - Swift Bypass Reach

- Devil's Backbone area
- As expected, veterans have visited the area more frequently (590 times) compared to newcomers (123 times).
- Veterans are more likely to visit during the off-season compared to newcomers.

Evaluation of Facilities at Project Reservoirs

- Veterans feel that the variety of services and facilities offered and the cost to use project recreation facilities is not as big of an issue compared to newcomers.
- Veterans are more likely to rate the following facilities and features as better than other areas compared to newcomers:
 - The feeling of peace and quiet
 - The ability to access areas
 - The weather
- Veterans are more likely to feel that the natural environment is worse compared to other similar areas, than are newcomers.
- Veterans are more likely to like the facilities at the project reservoirs compared to other similar areas, than are newcomers.

Perceptions of Crowding

- No significant differences were identified.

Opinions and Evaluation of Other Issues Related to Recreational Use of the Project Area

- Veterans feel that overflow parking along roads is a bigger issue than do newcomers.

Male Area Residents versus Female Area Residents

The final specific analysis of the data attempted to determine if male area residents (men) differed from female area respondents (women) in responses to the survey questions. Below is a brief discussion of those variables for which the 2 populations significantly differed. There were 231 men and 121 women included in this analysis.

There are relatively few significant differences in survey results between men and women. However, some differing responses are likely a result of several factors:

- Men tend to fish more often from a boat or from shore compared to women.
- Men tend to accept a lesser level of recreation development compared to women.
- Men tend to visit dispersed undeveloped sites more frequently to go hiking, hunting, fishing, and boating compared to women.

- Men visit the area more frequently than women, some coming alone or with other men to participate in various outdoor activities.

Visitor Characteristics

- Male respondents tend to live farther away from the project reservoirs (58 miles) than female respondents (39 miles).

Participation in Recreation Activities

- Men participate more frequently in fishing from a boat, fishing from shore, sailing, backpacking, and windsurfing than women.

Past Visitation

- Men visit the following recreation areas more than women:
 - Swift Reservoir
 - Swift 2 power canal area
 - Lewis River below Lake Merwin
 - Lewis River above Lake Merwin
 - Merrill Lake
 - GPNF
 - The Monument
 - Siouxon lands
 - Private RV parks in the area
 - Private timber lands in the area
- Men visit the following recreation sites more than women:
 - Swift Campground
 - Eagle Cliff Park
 - Canyon Creek
 - Drift Creek
 - Boat launch sites below Merwin Dam
 - Swift 2 power canal area
 - Swift 2 bypass
 - Devil's Backbone area by Swift Reservoir
- Men visit the area more frequently (369 times) compared to women (263 times).
- Men are more likely to visit later in the year compared to women (possibly for hunting and fishing).

Evaluation of Facilities at Project Reservoirs

- Men are more likely to like the recreation facilities at the project reservoirs less than other similar areas, as compared to women.
- Men do not feel that the location and quality of restrooms in the area is as big of an issue compared to women.
- Men are more likely to feel that the number and quality of boat launches in the area is better compared to women.
- Men do not feel that the natural environment is as good compared to other similar areas, than do women.
- Men feel that the activities available in the area are slightly worse compared to other similar areas, than do women.

Perceptions of Crowding

- No significant differences were identified.

Opinions and Evaluation of Other Issues Related to Recreational Use of the Project Area

- No significant differences were identified.